DEPARTMENT OF CIVIL AVIATION THE REPUBLIC OF MALAWI

PROJECT COMPLETION REPORT ON THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN THE REPUBLIC OF MALAWI

APRIL 2016

JAPAN INTERNATIONAL COOPERATION AGENCY

GYROS CORPORATION KOKUSAI KOGYO CO., LTD. AVIATION SYSTEM TECHNOLOGY CORPORATION



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ACC	Area Control Center		
ACS	Aeronautical Communication Service		
ADL	Airport Development Company Ltd (Malawi)		
ADS	Automatic Dependent Surveillance		
ADS-B	Automatic Dependent Surveillance – Broadcast		
AIM	Aeronautical Information Management		
AIP	Aeronautical Information Publication		
AIS	Aeronautical Information Services		
AIM	Aeronautical Information Management		
AIT	Advance Instructional Technique		
AMHS	Aeronautical Message Handling System		
ANSP	Air Navigation Service Provider		
АРСН	Approach		
ATC	Air Traffic Control		
ATM	Air Traffic Management		
ATNS	Air Traffic Navigation Service (Johannesburg)		
ATS	Air Traffic Services		
ATSEP	Air Traffic Safety Electronics Personnel		
CAA	Civil Aviation Authority		
CNS	Communication, Navigation and Surveillance		
С/Р	Counterpart		
CIA	Chileka International Airport (Blantyre)		
CNS/ATM	Communication Navigation Surveillance/Air Traffic Management		
DAC	Development Assistance Committee		
DCA	Department of Civil Aviation (Malawi)		
DME	Distance Measuring Equipment		
DVOR	Doppler Very High Frequency Omni-Directional Range		
EASA	European Air Safety Agency		
EASA	East African School of Aviation (Nairobi)		
E/M	Electrical & Mechanical		
FAA	Federal Aviation Authority		
FIR	Flight Information Region		
FIS	Flight Information Services		
GOJ	Government of Japan		
GOM	Government of Malawi		
ICAO	International Civil Aviation Organization		
IDP	Instructor Development Program		
ILS	Instrument Landing System		
JCAB	Civil Aviation Bureau of Japan		
JCC	Joint Coordination Committee		
JFY	Japanese Fiscal Year		
JICA	Japan International Cooperation Agency		
JPY	Japanese Yen		

1/I A	Variante Internetional Aimant (Lilanana)	
KIA	Kamuzu International Airport (Lilongwe)	
MET	Meteorology	
MTPW	Ministry of Transport and Public Works	
ODA	Official Development Assistance	
OECD	Organization for Economic Cooperation and Development	
OJT	On the Job Training	
PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations	
PBN	Performance Based Navigation	
PDM	Project Design Matrix	
РО	Plan of Operation	
R/D	Record of Discussions	
RNAV	Area Navigation	
SID	Standard Instrument Departure	
SMS	Safety Management System	
SOA	School of Aviation (Malawi)	
SSP	State Safety Program	
STAR	Standard Terminal Arrival Route	
UPSS	Uninterrupted Power Supply System	
USOAP	Universal Safety Oversight Audit Program	
VHF	Very High Frequency	
VOR	Very High Frequency Omni-directional Range	
WGS84	World Geodetic System 1984	

1 Basic Information of the Project

1.1 Country

The Republic of Malawi

1.2 Title of the Project

"The Project for Capacity Development for Air Navigation Services"

1.3 Duration of the Project (Planned and Actual)

The project was implemented for the period from June 2014 to April 2016 as planned.

1.4 Background (from Record of Discussions (R/D))

Malawi Department of Civil Aviation (hereinafter referred to as "DCA") has the mandate to inter alia regulate and facilitate the development of airports and air navigation facilities. Kamuzu International Airport (hereinafter referred to as "KIA") was inaugurated in 1983 after the capital city was transferred from Zomba to Lilongwe. The Government of Japan (hereinafter referred to as "GOJ") provided Japanese ODA loans for the construction of the airport terminal building and installation of air navigation facilities from 1977 to 1982 in three phases. Recently, GOJ also provided a grant aid for the replacement of new navigation systems.

However, DCA faces a serious shortage of trained staff for KIA as well as for the other airports in the Republic of Malawi. Also, upgrading of advanced training for current air navigation staff is deemed necessary to keep up with technological changes in air navigation services.

DCA, in recognition of these issues, plans to strengthen its training functions in order to utilize air navigation facilities that comply with international standards. Those improvements will help secure sustainability in both operation and maintenance of air navigation facilities, and comprises the essence of request from the Government of Malawi (hereinafter referred to as "GOM") for the implementation of the Project for Capacity Development for Air Navigation Services (hereinafter referred to as "the Project").

1.5 Overall Goal and Project Purpose (from Record of Discussions (R/D))

1.5.1 Overall Goal

The Project's overall goal statement is: "Training by the trained instructors is sustainably conducted for officers of air navigation services".

1.5.2 Project Purpose

The Project's purpose statement is: "Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities".

1.6 Implementing Agency

Department of Civil Aviation (DCA) of the Ministry of Transport and Public Works

2 **Results of the Project**

2.1 Results of the Project

2.1.1 Input by the Japanese side (Planned and Actual)

a. JICA Experts

Table 2-1 shows the list of experts dispatched from Japanese side for the Project. A total of approximately 46.4 person-months of experts have been provided to the Project. This translates into an input of approximately 23.2 person-months per year.

Position/Technical Field	Person-Months	
Position/Technical Fleta	Planned	Actual
Chief Advisor	13.60 months	15.33 months
Deputy Chief Advisor/Capacity Development Specialist	5.40 months	5.42 months
ATC & AIS Training Specialist – 1	8.80 months	9.03 months
ATC & AIS Training Specialist – 2	7.40 months	6.23 months
CNS Maintenance Training Specialist	11.80 months	12.07 months
E/M Maintenance Training Specialist	2.50 months	2.47 months
Flight Procedure Design Specialist	2.50 months	2.50 months
Total	52.00 months	53.05 months

Table 2-1: List of JICA Experts in Person-Months

The number of days which the experts were engaged in the activities in Malawi is shown in Table 2-2.

Position/Technical Field	Duration (days)
Chief Advisor	427
Deputy Chief Advisor/Capacity Development Specialist	119
ATC & AIS Training Specialist – 1	238
ATC & AIS Training Specialist – 2	160
CNS Maintenance Training Specialist	329
E/M Maintenance Training Specialist	59
Flight Procedure Design Specialist	60
Total	1,392

Table 2-2: Dispatched Duration (days) of JICA Experts

b. Training Equipment

The following training equipment was procured for the implementation of the Project under the Grant Aid of Japanese Government.

Table 2-3: List of Training Equipment Procured under the Grant Aid
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Name of Product	Qty	Procured Date
Computer Based Training for ATC (6 sets of PCs with CBT application)	1	November 2014
Test Instrument and Equipment (Oscilloscopes, Frequency Counter, Tester, Spectrum Analyzer, Signal Generator, etc.)	1	December 2014
PC-based Simulator Training System for ATC (Aerodrome Control, Radar Approach, Radar Area Control Function)	1	May 2015

Besides the above-mentioned training equipment, "Learning Aids and Office Equipment" to facilitate the trainings and overall operations of the Project were also provided in which the details are listed in Table 2-4.

No.	Name of Item	Qty.	Procured Date
1	Display Monitor 40 inch / Hisense LEDN40K20DP	2	01/07/2014
2	A3 Inkjet Printer / CANON IX6840	1	12/07/2014
3	Laptop Computer / DELL DUAL CORE	1	23/06/2014
4	Laptop Computer / HP DC/4GB/500GB	1	27/06/2015
5	Laptop Computer / DELL 3542 13/6GB	2	26/10/2015
6	Microsoft Office Software	4	26/10/2015
7	Microsoft Visio Software	2	02/11/2015
8	Network Router	1	27/06/2014
9	Projector / EPSON EHTW410	1	08/05/2014
10	Projector / EPSON EB-1761/W	1	17/09/2015
11	Photocopy Machine / Gestetner MP2501	1	22/07/2014
12	UPS APC Smart/UPS 1000VA	1	23/06/2014
13	UPS APC-UPS 500VA	1	13/12/2014
14	UPS SU-KAM 2.5KVA/48V	1	16/05/2015
15	UPS SU-KAM 3.5KVA/48V	1	09/10/2015
16	UPS SU-KAM 5KVA/96V	1	07/11/2015
17	Security Alarm System	1	29/02/2016
18	ICAO 021 AIS Course Material	1	13/01/2015
19	ICAO 051 ATC Basic Course Material	1	13/01/2015

Table 2-4: List of Learning Aids and Office Equipment Provided by Japanese Side

As of April 2016

c. Overseas Training

The list of overseas training conducted under Japanese budget is shown in Table 2-5. The number of overseas training was 4, and a total of 26 trainees participated. Out of the 4 trainings, 3 were conducted in Nairobi, Kenya at the East African School of Aviation (EASA) and 1 training was conducted in Johannesburg, South Africa at the Air Traffic & Navigation Services (ATNS).

Name of Training	Target Persons	No. of	Remarks
Nume of Training	Target Persons	Trainees	
Team Resource Management	ATC/CNS/EM	8	26 th – 30 th January 2015
<atns></atns>			
Supervisory Management	Supervisors of	4	2 nd – 27 th February 2015
<easa></easa>	ATM/CNS/EM		
Instructor Development Program	ATC/AIS/ACS/	8	4 th – 21 st August 2015
<easa></easa>	CNS/EM		-
Advanced Instructor Training	ATC/CNS/EM	6	5 th – 23 rd October 2015
<easa></easa>			
Total		26	

Table 2-5: List of Overseas Training Conducted under Japanese Budget

2.1.2 Input by the Malawi side (Planned and Actual)

a. Counterpart Personnel (C/P)

The Counterpart personnel assigned for the Project are shown in Table 2-6.

Role in project	Name (Planned)	Name (Actual as of April 2016)
Project Director	Mr. A. C. Mtilatila (Director of Civil Aviation, DCA)	No change
Project Manager	Mr. A. G. Matiya (Deputy Director (Operations), DCA)	*Co-project Manager (Mr. S. P. Galafa) is acting as the PM
Co-Project Manager	Mr. S. Galafa (Principal, School of Aviation, DCA)	No change
Project Coordinator	Mr. F. Kholowa (Chief Air Traffic Services Officer, Operation Division, DCA)	No change
	Mr. M.F.T. Bongwe (Chief telecommunications engineer, Operation Division, DCA)	Mr. R. C. Kanunkha, (Assistant Chief Aeronautical Telecommunications Engineer, Operation Division, DCA)
ATC and FIS training	Mr. S. P. Galafa (Principal lecturer of ATS, School of Aviation, DCA)	No change
AIS and ACS training	Mr. R. Y. Malanga (Lecturer School of Aviation, DCA)	No change
	Mr. S. Liundi (Lecturer School of Aviation, DCA)	No change
Electronic Engineering (CNS) training	Mr. R. Kanunkha (Senior CNS Lecturer, School of Aviation, DCA) Mr. C. F. Betenigo (Electronics Engineer, KIA, DCA)	Mr. C. F. Betenigo (Electronics Engineer, KIA, DCA)
Electrical/ Mechanical Engineering training	Mr. T. P. M. Mtonga (Electrical Engineer, KIA, DCA)	No change

Table 2-6: List of Counterparts

b. Support Staff

The Support Staff, who act as instructors for respective fields, assigned for the Project are shown in Table 2-7.

Role in project	Name (Planned)	Name (Actual as of April 2016)
ATC and FIS Training Instructor	Ms. L. Manondo (Air Traffic Controller, KIA, DCA)	No change
	Mr. D. Zamaere (Air Traffic Controller, Chileka Airport, DCA)	Mr. Zamaere was transferred to KIA in August 2015.
	Mr. F. Chisepeya (Air Traffic Controller, KIA, DCA)	No change
	Mr. J. Kazito (Air Traffic Controller, KIA, DCA)	Mr. J. Kazito was transferred to Chileka International Airport (CIA)
AIS and ACS Training Instructor	Mr. R. Nkosi (Air Crew Briefing Officer, DCA)	No change
	Mr. N. B. Kaliyasi (Communication Officer, KIA, DCA)	No change
Electronic Engineering (CNS) Training Instructor	Mr. S. Kunje (Electronics Engineer, Chileka Airport, DCA)	No change
		Mr. F. N. Chisale (Electronics Engineer, KIA, DCA) was added as an CNS instructor from June 2015.
E/ M Training Instructor	Mr. O. Yokonia (Electrical Engineer, Chileka Airport, DCA)	No change

Table 2-7: List of Support Staff

c. Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA. DCA also provided air-conditioners for the Project office as well as for the CBT and simulator training rooms.

d. Project Office Expenses

Utility cost was paid by the Malawian side and DCA provided the following expenses for the project office as of March 2016.

No.	Item	Cost (MWK)
1	Purchase of two desktop computers:	1,055,000
2	Purchase and installation of two split air conditioners.	989,114
	(Project & CBT)	
3	Purchase and installation of air conditioners for ATC	862,100
	simulator room	
4	Purchase of desks and chairs for CNS Laboratory (May	951,105
	2015)	
5	Purchase of 2 desks and chairs for CBT (May 2015)	477,000
6	Advertising Cost	1,362,589
7	Installing 2 security doors for equipment room	70,000
8	Installing 4 Air-conditioner cages	90,000
9	Building material for class room	30,000
10	Labor charge for installation security items	43,000
11	ESCOM (Power) (Oct. 2015 – Mar. 2016)	1,000,000
12	Water (Oct. 2015 – Mar. 2016)	1,500,000
13	Stationery and Consumables (Oct. 2015 – Mar. 2016)	500,000
14	Fuel (Oct. 2015 – Mar. 2016)	440,000
	Total	9,369,908

Table 2-8: Project Office Expenses

e. Travel Expenses, Allowance and Ration for Counterpart Personnel within Malawi

The travel expenses, Subsistence Allowance for C/P to travel from outside the Lilongwe area provided by SOA and Ration for trainees at SOA were as follows (as of March 2016):

No.	Item	Cost (MWK)
1	CBT Training (Nov. 2014)	75,000
2	Test Equipment Training (Jan.2015)	126,000
3	Team Resource Management Course Internal Training	146,000
	(Jan.2015)	
4	Electro-Mechanical Training (May 2015)	515,100
5	Microsoft Office PC Training (May 2015)	60,000
6	AIS & ACS Working Group (May 2015)	90,000
7	Flight Procedure Design Training (May 2015)	602,000
8	General Communication Training (May 2015)	577,500
9	ATC Aerodrome Control 052 Training (Jun 2015)	783,000
10	Park-Air VHF Maintenance Training (Jun. 2015)	466,000
11		
	(Jun. 2015)	
12	ATC Basic 051 for Freshmen (Oct 2015 - Jan 2016)	7,660,800
13	NORMARC ILS Maintenance (Oct - Dec 2015)	302,400
14	Flight Procedure Design <departure> (Nov 2015)</departure>	144,000
15	AIS for ACS (Nov 2015)	492,000
16	Microsoft Office PC Training II (Dec 2015)	21,600
17	New CNS/ATM (Feb 2016)	357,000
18	MARU DVOR/DME (Feb - Mar 2016)	334,800
19	Microsoft Office PC Training III (Mar 2016)	120,000
20	Basic ATSEP for CNS/EM Freshmen (Mar 2016)	606,400
	Total	14,182,700

Table 2-9: Travel Expenses, Allowance and Ration
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2.1.3 Activities (Planned and Actual)

a. Activities Related to Output 1

There are 7 activities related to Output 1: "Training of Air Traffic Control (ATC) and Flight Information Services (FIS) are improved" in the PDM. The results of each activity are shown below.

PDM Activities	Results
1-1. Review current training syllabus and training materials	<u>Completed:</u> All the training syllabuses and materials were reviewed. Most of them were made in 1980s.
1-2. Improve/develop training syllabus and training materials	<u>Completed:</u> Six training syllabuses and materials were developed or being developed for completion by April 2016.
1-3. Conduct training of instructors	<u>Completed:</u> Four courses (051 ATC Basic, 052 Aerodrome Control, Conventional Flight Procedure Design (Approach), and Conventional Flight Procedure Design (Departure)) for ATC and FIS instructors (including existing officers) were conducted.
1-4. Implement improved training courses	<u>Continuing:</u> Training of instructors for 053 Procedural Approach Control and 055 Procedural Area Control is continuing. Twelve new students were recruited in October 2015. Course 051 for new students was completed. Course 052 is in progress. Courses 053 and 055 will be completed by December 2016.
1-5. Implement supervisor training	<u>Completed:</u> Team Resource Management Course, Supervisory Management Course, Instructor Development Course, and Advanced Instructor Training Course were conducted in January, February, August, and October in 2015 respectively.
1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	<u>Continuing:</u> 051 ATC Basic and 052 Aerodrome Control courses for new ATC students implemented by instructors were monitored and evaluated and all of 12 new students obtained more than 70% in the comprehension test. Monitoring and evaluation of the remaining courses (053 and 055) will be continuously conducted for in March, April and May 2016.

Table 2-10: Progress	of Activities related to Output 1

1-7. Improve the training courses based on the results from the monitoring and evaluation	<u>Continuing:</u> The evaluation results of 051 ATC Basic course was utilized for the improvement of the trainings. Course 052 is in progress while the other two courses 053 and 055 will be completed by December 2016.
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In summary, 4 out of 7 activities under Output 1 were completed, and the remaining 3 activities will be completed by December 2016.

b. Activities Related to Output 2

There are 7 activities related to Output 2: "Training of Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) are improved" in the PDM. The results of each activity are shown below.

PDM Activities	Results
2-1. Review current training syllabus and training materials	<u>Completed:</u> All the training syllabuses and materials were reviewed. Most of them were made in 1980s.
2-2. Improve/develop training syllabus and training materials	<u>Completed:</u> Two Working Groups, consisting of 4 AIS and ACS officers, were established in May 2015 and one combined AIS/ACS training syllabus and materials were developed.
2-3. Conduct training of instructors	<u>Completed:</u> AIS course for ACS instructors/officers was conducted in November 2015.
2-4. Implement improved training courses	No new students were recruited, but retraining of existing officers were conducted as a part of restructuring of AIS/ACS divisions into AIM division.
2-5. Implement supervisor/advanced/specialist training	<u>Completed:</u> Team Resource Management Course, Supervisory Management Course, Instructor Development Course, and Advanced Instructor Training Course were conducted in January, February, August, and October in 2015 respectively.
2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	<u>Completed:</u> AIS course for ACS officers implemented by instructors was monitored and evaluated and all of the trainees obtained more than 70% in the comprehension test.
2-7. Improve the training courses based on the results from the monitoring and evaluation	<u>Completed:</u> The above evaluation results were utilized for the improvement of the trainings.

Table 2-11: Progress of Activities related to	Output 2
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In summary, all 7 activities under Output 2 will be completed by the end of project period.

c. Activities Related to Output 3

There are 7 activities related to Output 3: "Training of Electronic Engineering is improved" in the PDM. The results of each activity are shown below.

PDM Activities	Results
3-1. Review current training syllabus and training materials	<u>Completed:</u> All the training syllabuses and materials were reviewed. Most of them were made in 1980s.
3-2. Improve/develop training syllabus and training materials	<u>Completed:</u> Six training syllabuses and materials were developed.
3-3. Conduct training of instructors	<u>Completed:</u> Six courses (General Communications, Park Air T6 VHF Radio, CVOR/DVOR/ILS/DME/RADAR Concept, NORMARC ILS Maintenance, New CNS/ATM, and Maru DVOR/DME) for CNS instructors (including existing officers) were conducted.
3-4. Implement improved training courses	<u>Completed:</u> Training for 7 new students recruited in March 2016 has started.
3-5. Implement equipment-specific training	<u>Completed:</u> Test Equipment Course was conducted in January 2015. NORMARC ILS Maintenance and Maru DVOR/DME Maintenance training were conducted by use of knowledge gained with Test Equipment Course
3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	<u>Completed:</u> Abovementioned courses implemented by instructors was monitored and evaluated.
3-7. Improve the training courses based on the results from the monitoring and evaluation	<u>Completed:</u> The above evaluation results were utilized for the improvement of the trainings.

Table 2-12: Progress of Activities related to Output	t 3
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In summary, all 7 activities under Output 3 were completed.

d. Activities Related to Output 4

There are 6 activities related to Output 4: "Training of Electrical/Mechanical Engineering (E/M Eng.) is improved" in the PDM. The results of each activity are shown below.

PDM Activities	Results
4-1. Review current training syllabus and training materials	<u>Completed:</u> All the training syllabuses and materials were reviewed. Most of them were made in 1980s.
4-2. Improve/develop training syllabus and training materials	<u>Completed:</u> Two training syllabuses and materials were developed or being developed by April 2016.
4-3. Conduct training of instructors	Completed:
4-4. Implement improved training courses	Electrical & Mechanical (UPS & Generator, Airfield Lightning) course for instructors (including existing officers) was conducted in April 2015.
	Training for 2 new electrical engineers and 1 new mechanical engineer recruited in March 2016 has started.
4-5. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	<u>Completed:</u> The abovementioned course implemented by instructors was monitored and evaluated.
4-6. Improve the training courses based on the results from the monitoring and evaluation	<u>Completed:</u> The above evaluation results were utilized for the improvement of the trainings.

Table 2-13: Progress of Activities related to Output 4

In summary, all 6 activities under Output 4 will be completed by the end of project period.

2.2 Achievements of the Project

2.2.1 Outputs and Indicators (Target values and actual values achieved at completion)

The achievements of the above-mentioned 4 project outputs are summarized in the following table according to the PDM indicators. As shown in the table 2-14, all of the training syllabuses and materials were developed and all of the target numbers of DCA officers successfully completed trainings (Comprehension test score of all trainees exceeded 80 %). Details of the test results of each trainee are shown in the Annex 1-3.

Indicators for the PDM Outputs		Achievement as of April 2016
X		*
Training syllabuses and training materials are improved or developed for the following number of courses:	Indic ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6	Achieved:1.051: ATC Basic: 100%2.052: Aerodrome Control: 100%3.053: Approach Control: 100%4.055: Area Control: 100%5.CNS/ATM for ATC: 100%6.Flight Information Service: 100%Achieved:1.1.AIS & ACS: 100%*AIS and ACS were combined into oneAIS&ACS materialsAchieved:1.General Communication Equipment: 100%2.Navigation Concept Course: 100%3.Park Air VHF: 100%4.Normarc ILS: 100%5.Maru VOR/DME: 100%
	E/M Eng.: 2	 6. CNS/ATM: 100% <u>Achieved:</u> 1. Theory of Airfield Lighting: 100% 2. Theory of UPS: 100% ator No. 2
The following number	Instructors: 10* ¹	Achieved:
of DCA officers successfully complete supervisor/advanced/ specialist training:	ATC/FIS: 4* ¹ AIS/ACS: 4* ¹	 26 instructors/officers successfully completed the following four overseas training courses. 1) 8 officers successfully completed "Team Resource Management Course" in South Africa. 2) 4 officers successfully completed "Supervisory Management Course" in Kenya. 3) 8 officers successfully completed "Instructor Development Course" in Kenya. 4) 6 officers successfully completed "Advanced Instructor Training Course" in Kenya.
	Aeronautical Cartography: 2* ² PANS/OPS: 2* ²	Achieved: 3 ATC officers and 1 AIS officer successfully completed "Conventional Flight Procedure Design (Approach)" conducted in May 2015, and "Conventional Flight Procedure Design (Departure)" conducted in November 2015.
	ILS Maintenance: 4* ²	Achieved: 6 CNS officers successfully completed "NORMARC ILS Maintenance Course" conducted in October 2015.

Table 2-14: Achievement of Output

*1: Overseas trainings *2: In-country trainings

2.2.2 Project Purpose and Indicators (Target values and actual values achieved at completion)

The achievements of the Project Purpose: "Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities" are summarized in the following table according to the PDM indicators. As shown in the table 2-15, all of the target numbers of instructors appointed by DCA can conduct the improved/developed training courses and comprehension test score of all trainees who received the improved/developed training courses exceeded 70%. Details of the test results of each trainee are shown in the Annex 1-3.

Indio	cators for the P	Achievement	as of April 2016	
Indicator No. 1				
The following number of instructors can conduct the improved/developed training courses (fulltime + part time) *Number in () indicates		ATC/FIS: 6 (1)	Achieved: 6 (4 ATC instructors including 1 original instructor + 2 ATC instructors selected among those who received Flight Procedure Design Training Courses)	
original number instructors at the of the project.		AIS/ACS: 4 (2)	Achieved:4 (2 new instructors + 2 original instructors)Achieved:4 (3 new instructors + 1 original instructor)Achieved:2 (1 new instructor + 1 original instructor)	
		Electronic Eng.: 4 (1)		
		E/M Eng.: 2 (1)		
		Indicator No. 2		
Comprehensi		Achievement as of April 2016		
on test score of trainees		Course Name	No.of Trainees	Average Score
who receive	Computer Ba	ased Training (CBT) *	6	*Not scored
the	Test Equipm	ent	5	87.07%
improved/ developed	Electrical &	Mechanical Training	6	93.72%
training	Microsoft Of	fice -1*	5	*Not scored
courses exceeds at	Conventiona Design (App	l Flight Procedure roach)	4	89.0%
least 70%.	General Com	munications	6	89.61%
	Park Air T6	VHF Radio	6	85.31%
	052 Aerodro	me	9	90.74%
	CVOR/DVO Concept	R/ILS/DME/RADAR	5	86.82%
	051 Basic A	ΓC (new students)	12	85.83%

Table 2-15: Achievement of Project Purpose

Comprehensi	NORMARC ILS MAINTENANCE	6	86.38%
on test score of trainees who receive	Conventional Flight Procedure Design (Departure)	4	89.58%
the	AIS for ACS (Group1)	6	80.78%
improved/	AIS for ACS (Group2)	6	88.50%
developed training	Microsoft Office - 2	6	*Not scored
courses	New CNS/ATM	8	90.22%
exceeds at least 70%.	052 Aerodrome Control (new students)	12	**In progress
	Maru DVOR/DME	6	90.73%
	Microsoft Office - 3	6	*Not scored
	Total	124	

*CBT and Microsoft Office Courses are not required in the activities of the project, therefore not scored. The trainees were evaluated based on their skills in developing questions using the CBT software and the level of performance in presentation skills using Microsoft Office. **052 Aerodrome Control Training for new students will be finished in May 2016.

2.3 History of PDM Modification

The Project revised the PDM twice from the PDM version 1 dated 30 May 2014 as shown below to suit to assistance needs. The revisions were all related to clarification of indicators and verification method. The details of the revisions are shown in Annex 3.

- (1) The 1st revision dated 1 August 2014
- Indicators of Project Purpose: number of instructors was amended from "AIS: 4 and ACS: 4" to "AIS/ACS: 4", and from "E/M Eng.: 4" to "E/M Eng.: 2". Also, the target value of comprehension test score was set as "80 %" after the baseline survey.
- Means of Verification: amended from "Project Progress Reports" to "Monitoring Sheet".
- Indicators of Outputs: number of officers was amended from "ATC: 4" to "ATC/FIS: 4", and from "AIS: 4 and ACS: 4" to "AIS/ACS: 4".
- (2) The 2nd revision dated 5 June 2015
- Indicator of Overall Goal: defined as "The targeted number of trainees (serving officers and new staff) who will successfully complete the improved/developed training courses between 2016 and 2020 is at least 80".
- Indicators of Project Purpose: minimum score of comprehension test was amended from "80%" to "70%" in accordance with international standard of ICAO.
- Means of Verification: amended from "Terminal Evaluation Report" to "Project Completion Report". In addition, inserted "Results of comprehension test score of trainees".
- Indicators of Outputs: deleted "Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 80%" as this indicator duplicates with that of the Project Purpose.

2.4 Others

2.4.1 New Students to School of Aviation

As an important assumption to the Project, it is assumed that DCA recruit new students for SOA during the project period. The following table 2-16 indicated the results of this assumption.

		Actual	
Planne	d	as of April	Remarks
		2016	
Air Traffic	12	12	Recruited as planned in PDM.
Controllers	October	October	
(ATC)	2015	2015	
Flight	8	0	DCA cancelled the recruitment of FIS
Information	October		officers. DCA will fill this position from
Services (FIS)	2014		ATC students.
Aeronautical	10	0	DCA plans to merge AIS and ACS to form
Information	October		AIM division. DCA cancelled the
Services (AIS)	2014		recruitment of AIS/ACS staff and plans to
Aeronautical	6	0	meet staff requirements for AIM with
Communications	October		existing AIS/ACS officers with AIM
(ACS)	2014		Integration Training.
Electronics	8	7	Recruited as planned with delay. One
Engineers (CNS)	April 2014	March	resigned with no replacement.
	_	2016	
Electrical/Mecha	2/2	2/2	Recruited as planned with delay.
nical Engineers	April 2014	March	
(E/M)	_	2016	
TOTAL	48	23	

Table 2-16: New Students to SOA

As for the training of ATC officers, recruitment of new students was implemented and training for these students by trained instructors was conducted as planned. DCA changed the plan for recruitment of FIS, AIS and ACS officers during the project period. These changes did not influence to the project effects since the Project successfully developed capacity of relevant instructors, and trained existing officers of these fields. Impact of delays in recruitment of CNS and E/M officers to the project effects was also minimal since the instructors were trained during the Project, and those instructors are capable of training new students of CNS and E/M engineering. Therefore, this assumption in the PDM had only minimal impact to indicator of the project purpose.

2.4.2 Results of Environmental and Social Considerations

Not applicable.

2.4.3 Results of Considerations on Gender/Peace Building/Poverty Reduction

Not applicable.

3 Results of Joint Review

3.1 Results of Review based on DAC Evaluation Criteria

The Project is reviewed jointly by both the Japanese side and the Malawian side from the viewpoint of Five Evaluation Criteria, defined by JICA which was originally proposed by DAC (OECD) shown in the following table. The Evaluation Grid is attached as Annex 6-1.

	Criteria	Description
1.	Relevance	Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the Government development policy and the needs of the target group and/or ultimate beneficiaries in Malawi.
2.	Effectiveness	Effectiveness is assessed to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs.
3.	Efficiency	Efficiency of the Project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity.
4.	Impact	Impact of the Project is assessed in terms of positive/negative, and intended/unintended influence caused by the Project.
5.	Sustainability	Sustainability of the Project is assessed in terms of institutional, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

Source: JICA Project Evaluation Guideline (2010), JICA

3.1.1 Relevance

The relevance of the Project is judged "High" for the following reasons:

- The "Malawi Growth and Development Strategy II" (2011-2016) positions the transportation infrastructure development as one of the priority areas, and states "Government recognizes the need to continuously improve air transport infrastructure and services to enhance trade, tourism and investment. In the medium term, a number of outcomes will be achieved, including improved air safety and management in line with international standards; improved regulatory and institutional framework, and improved security in airports." Also the National Transport Policy positions the air transportation as one of the political priorities and mentions the importance of development and improvement of aviation infrastructures to promote economic activities. Therefore, the project is consistent with these policies.
- The Japanese "Country Assistance Policy for the Republic of Malawi" (April, 2012) establishes "Infrastructure development for fostering agriculture and the mining industry" as one of the priority areas, and states "the promotion of efficient movement of people and goods in an international corridor and surrounding regions, Japan also helps Malawi develop transportation infrastructure". In addition, the JICA, in the JICA Country Position Paper, establishes the development of infrastructure that becomes the foundation of economic growth as a strategic framework for achieving the medium and long term

development goals of Malawi, and states the need to develop the infrastructure for economic development. Therefore, the project conforms to the Japan and JICA's assistance policy.

• Japan has sufficient experiences in introducing and operating the CNS/ATM and E&M systems, and has been providing various technical assistances in this field in several countries in Southeast Asia. Since Japan has technical advantages necessary for the Project, assistance to the Project is appropriate.

3.1.2 Effectiveness

The effectiveness of the Project is judged "High" for the following reasons:

- As stated in Section 2.2.2, the Project Purpose has been almost achieved at the time of the project completion. All of the instructors obtained skills and knowledge through the Overseas and In-country Trainings and considered to be capable enough to conduct the improved/developed training courses. Most of the equipment (Simulator Training System for ATC, CBT, and Test Equipment) procured by the Project is being utilized effectively in trainings. Also, according to the results of the training evaluation sheet (5-rank evaluation), all of the trainee answer that skills and knowledge obtained through trainings are very useful to their job (average score exceeds 4).
- It is anticipated that the level for maintaining various equipment installed under "The Project for the Replacement of Air Navigation System at Kamuzu International Airport" in 2012, such as ILS, VHF, Air-field Lighting, will be improved and upgraded through the courses conducted under this Project which targeted CNS and E/M engineers at KIA.
- The Project was designed appropriately through amendments of the PDM in the past, and four Outputs in the current PDM are necessary and sufficient for achievement of the Project Purpose.

3.1.3 Efficiency

The efficiency of the Project is judged "High" for the following reasons:

- The Project was designed appropriately through amendments of the PDM in the past, and all the activities in the current PDM are essential for achievement of the Outputs. In addition to the activities planned in the PDM, two courses (CNS Test Equipment and Microsoft Office Training) were added in order to supplement the capacity of instructors upon request of the C/P.
- Regarding the Input made by the Japanese side, the person-months of the JICA Experts were slightly increased from 52.00 to 53.05 in January 2016 in order to support activities under Output 2 and 3. The person-months for the Chief Advisor was increased by 1.7 MM in order to accommodate the realignment of trainings and extending the total period of activities in Malawi. The reason behind such change was due to the limited human resource which prevented from conducting the trainings simultaneously. In addition, the person-months for the Experts for Outputs 2 and 3 also required extension for 0.5MM due to the extended length of training courses. As for the Expert for Output 1, the training period was realigned and with the involvement of trained C/P as core instructors, the person-month was shortened by 1.1 MM. Among the three Experts for Outputs 1, 2 and 3,

a total of 1.05MM was increased. The additional input was essential to achieve the planned outputs.

- Regarding the Input made by the Malawian side, recruitment of new students of Electronic Engineers and Electrical/Mechanical Engineers was delayed due to lack of funds for recruitment. The delay in recruitment reduced the opportunities for instructors to train new students during the project; however, these instructors showed sufficient knowledge and skill when they teach existing officers during the project. It is highly estimated that SOA will continuously conduct trainings for new students by themselves after the completion of the Project.
- Other donors such as European Aviation Safety Agency (EASA) and European Investment Bank (EIB) are also engaged in enhancing the civil aviation safety in Malawi. Meetings were held with such agencies to exchange information on the on-going activities and to discuss future prospects and strategies. It allowed each party to avoid overlapping of activities and also to open discussions on possible areas of coordination and harmonization among their activities in air navigation services in Malawi.
- Answers to questionnaires to the C/P (5-rank self-evaluation) shows that appropriateness of inputs from Japan and Malawi sides are relatively good (average score 4.7 and 3.9 respectively).

3.1.4 Impact

The impact of the Project is predicted as "High" for the following reasons:

• The Project had already given positive impacts on the capacity of instructors in all areas and there is high possibility of achieving of Overall Goal: "Training by the trained instructors is sustainably conducted for officers of air navigation services".

Other impacts of the Project are predicted as follows:

- Since the training system has been established through the implementation of the Project, there could be more staff with sufficient knowledge and experience related to aviation safety activities. Therefore, it is expected to improve the quality of safety of air transportation.
- Facilities and equipment in the airport will be operated and maintained properly and effectively by those trained engineers and staff.
- It is expected to reduce workloads of each officer since the quality of staff was improved and even more staff will be trained in the SOA, which will result in the improvement of working conditions in navigation services and safety of flights.
- The SOA used to send staff for training to the neighboring country but they can conduct trainings by themselves in Malawi now. Therefore, it will be economically effective.
- It is anticipated that the SOA will be able to fully train ATCs in a sustainable manner and that it will contribute to enhanced safety of air navigation services in Malawi.

There is no negative effect observed at the completion of the Project, and no negative impact

is foreseen.

3.1.5 Sustainability

The sustainability of the Project is estimated as "Medium" based on the reasons stated below. The effect of the Project is expected to continue by the Malawi Government even after the Japanese technical cooperation terminates, but financial weakness of SOA should be overcome.

(1) Policy Aspect

As stated in Section 3.3.1, the Project is/will be in line with the policies of the Malawi Government as stipulated in "Malawi Growth and Development Strategy II" (2011-2016) and the National Transport Policy. It is not expected that drastic change in government policy will occur.

(2) Financial Aspect

The financial status of SOA is dependent on DCA since it is a subsidiary organization under DCA. Financial basis of DCA is weak. The Project experienced budget constraints, such as for the recruitment of new staff, the procurement of PC for instructors and provision of travel expense and daily allowance for trainees. Continuous efforts will be required to seek support of the MoTPW and top management of DCA in securing budget for achievement of the Overall Goal of the Project.

(3) Technical Aspect

The SOA developed capacity to provide trainings on the skills and techniques learned through the Project, and have already been conducting such training so as to secure sufficient number of serving officers and new staff to sustain the outcome of the Project. The planned structural reform of the civil aviation administration assisted by EASA, which will create autonomous Civil Aviation Authority (CAA) with air navigation service provider function, should have positive impact on the finance of SOA since the CAA will follow ICAO's principle that aviation user charges should be used for the development and operation of civil aviation. Draft Act for creation of CAA will be under deliberation of the parliament soon.

3.2 Key Factors Affecting Implementation and Outcomes

(1) Input of Project Coordinator

No Project Coordinator was assigned for the JICA expert team at the planning stage of this Project. However, due to the far location between DCA Headquarters and SOA, as well as the various operations affiliated with trainings and overall management of the Project, a Project Coordinator was dispatched from the second assignment to Malawi in November 2014 for a more efficient and smooth implementation of the Project.

(2) Involvement of JCAB, FAA & ICAO official experienced experts

Technical trainings carried out through this Project were aimed to upgrade and strengthen Air Navigation Services in Malawi, which is closely associated with National Licensing System and International Regulations. In order to provide sound advice and recommendations to DCA on licensing and rating procedures besides technical guidance, experts with various experience working in such licensing and regulatory institutions, i.e. Japan Civil Aviation Bureau (JCAB), Federal Aviation Administration (FAA), and International Civil Aviation Organization (ICAO), were selected and dispatched.

(3) Information Exchange with Other Donors

Other donors such as European Aviation Safety Agency (EASA) and European Investment Bank (EIB) are also engaged in activities^{*1} with the aim of enhancing the civil aviation safety in Malawi. On a regular basis, meetings were held with such agencies to exchange information on the on-going activities and to discuss future prospects and strategies. Through these exchanges, the Project members were able to acquire knowledge and increase awareness of the overall aviation safety situation in Malawi from another perspective aside from its own and DCA. Moreover, such consultation not only allowed each party to avoid overlapping of activities, but also opened discussions on possible areas of coordination and harmonization among their activities in air navigation services in Malawi.

(4) Mutual Consultation with Counterpart Personnel

In order to facilitate effective and efficient progress of the Project, Project members and DCA consulted each other whenever any issues arose in the course of Project implementation. Monthly meetings were held and frequent visits to DCA Headquarters and SOA were made, which enhanced communication and higher level of involvement by the Counterparts to the Project. Good communication leads to timely resource allocation of finance and personnel which were vital to the sound implementation of the Project.

(5) Additional Training Input-I: "Test Equipment" Training

Through interviews and visits to the workshops at KIA, it became clear that the engineers had limited knowledge on the Test Equipment, e.g. Oscilloscope and Digital Multi-Meter, etc., which were provided by JICA for the use in Navigation Equipment maintenance courses. Since such equipment is vital in airport operations which directly affects the safety of aviation in Malawi, JICA experts found it necessary to provide a 2 weeks course on "Test Equipment", targeting electronic engineers and electricians of DCA. This in effect, became the basis of a smooth implementation of the succeeding trainings on navigation equipment maintenance.

(6) Additional Training Input-II: PC Training.

Following the current trend in the use of digital course contents and interactive training, basic knowledge and skills on computer literacy are essentials in delivering effective trainings. Through interviews, such skills seemed limited/lacking in some of the assigned instructors. As a means to increase effectiveness of training the instructors and improving the training courses, both which are mandated in this Project, training course to introduce basic computer skills was conducted three times which was outside the scope of TOR.

(7) Dissemination of Knowledge and Skills Obtained through Overseas Training

Trainees of "Team Resource Management Course" (held at ATNS in South Africa), gave a presentation to DCA officers and JICA experts to share the knowledge and skills obtained

¹ Such activities are "Improvement of Aviation Safety and Oversight in Malawi (IASOM)" by EASA and "Airport Safety and Security Equipment Project" by EIB.

through the course. According to their feedbacks, the training experience also led to motivating and creating a spin-off effect for their daily operations. In addition, trainees of "Instructor Development Program" and "Advanced Instructor Training" (both held at EASA in Kenya) have been practicing their skills as instructors in various trainings at the School.

3.3 Evaluation on the results of the Project Risk Management

The Project has taken several measures properly against risks occurred during the project implementation. Therefore, the results of the Project Risk Management are evaluated as "High" for the following reasons:

(1) Visiting ATNS (South Africa) & EASA (Kenya) Training Center

Since the schedules for the Overseas Trainings could have extensive impact on the progress of the Project, the Project team visited the training institutes in South Africa (ATNS) in August 2014 and Kenya (EASA) in April 2015 respectively with the aim of meeting the Dean and instructors, exchanging views and ideas on the training needs which are specific to Malawi, and observing the actual conditions of training facilities and accommodations. These visits, which were not included in the initial plan, enabled to establish a timely communication channel with the contact persons, to acquire necessary information and logistics on a timely basis, which lead to early preparation and sound implementation of overseas trainings.

(2) Installation of appropriate UPS (Uninterrupted Power Supply) at Training Center

Due to frequent power outage, common in Malawi, overhead projectors and lights in classes were affected that interfered/hampered the operation and trainings at the early stage of the Project. Therefore, several large UPS were installed so as to avoid any interference by such power outage. This enabled all training equipment and system, including the ATC Simulator System, to function/run all day despite the shortage of power/electrical power failure, electricity failure, blackout or power cut which in turned out to be highly effective to the Project operation.

(3) Installation of Security System

On 25th December 2015, there was an incident in which several burglars broke-in to SOA and stole a computer. If any of the equipment provided by JICA, i.e. ATC simulator system, CBT and test equipment were robbed or destroyed, it will have a devastating effect and may lead to irreparable damage that will impede further training activities at SOA. Therefore, higher security measures were taken, by installing intrusion sensors and burglar-bars, to upgrade and strengthen safety of the equipment and facilities, which are vital to conducting trainings at SOA.

(4) Securing Sufficient Budget for the Project

Due to the government procedures, securing funds from Malawian side may require many months. Thus, it should be noted that when requesting financial inputs from Malawian side, ample time is necessary.

3.4 Lessons Learnt

(1) Input of Project Coordinator

A Project which includes trainings require extensive coordination and logistical arrangements among various people involved, i.e. trainees, instructors, C/Ps. Therefore, a Project Coordinator shall be assigned from the planning stage of such project.

(2) Involvement of Experts as Policy Advisors to DCA

Institutional support by DCA plays a key role in to what extent the inputs provided to SOA could be fully utilized. Enhancing institutional aspect of DCA is essential and, therefore, experts to be dispatched for such capacity building project should have a background not only in training but also in policy making related to training of officers in the air navigation services.

(3) Information Exchange with Other Donors

Exchanging information with other donors which are involved in the same aviation field, i.e. European Aviation Safety Agency (EASA) and European Investment Bank (EIB), is also important to acknowledge the various activities and to avoid overlapping of such projects and programs. Such coordination may also lead to harmonizing the activities and create a synergy effect in strengthening air navigation services in Malawi.

(4) Assessment of Levels of Basic Skills & Knowledge of the Trainees

It is important to have a good understanding on the levels of basic skills and knowledge of trainees at the initial stage, since it will affect the outcome and overall effectiveness of the Project. If considered necessary, there should be enough mobility and flexibility to include relevant trainings based on the needs, such as those which were included in this Project, i.e. computer skills training and Test Equipment Course.

(5) Serving Refreshments

Serving refreshments in the morning and afternoon sessions during trainings is part of Malawian custom. Understanding towards such socio-cultural norms is necessary and shall be communicated between DCA and the Project Team in advance, so as to secure budget pertaining to trainings.

(6) Access to Public Transport

Since public transportation to the village where most trainees reside is only available until at around 16:30 hrs, it is important to plan all trainings to end before the last transportation.

(7) Addition of Project Evaluation Experts

Addition of a project evaluation expert is necessary to conduct final evaluation of the Project for the Project Completion Report under the new monitoring system recently introduced to JICA Technical Cooperation Projects.

4 For the Achievement of Overall Goals after the Project Completion

4.1 **Prospects to achieve Overall Goal**

Prospect of achieving the Overall Goal: "Training by the instructors is sustainably conducted for officers of air navigation services" is summarized in the following Table 4-1. It is premature to make any conclusive statement in this regard; however, with DCA's success in recruiting new officers despite the financial difficulties, and efforts in minimizing costs for conducting trainings by utilizing the existing dormitory and cafeteria at the SOA, it could be anticipated that target values may be achievable.

Indicators for the	Prospect of Achievement in 2020 (Planned as of March 2016)			
Overall Goal	Course Name	Field	No. of Trainees	
The target number of trainees (serving officers and new	Basic ATSEP	CNS, E/M	10	
	053 Procedural Approach Control	ATC	12	
staff) who will successfully complete the	055 Procedural Area Control	ATC	12	
improved/developed	AIM Integration	AIM	12	
training courses by between 2016 to	Flight Data Processing	AIM	6	
2020 is at least 80.	AMHS	AIM	6	
	054A Radar Approach Control	ATC	31	
	054B Radar Area Control	ATC	31	
	Radar Maintenance	CNS	25	
	Total		145	

Table 4-1: Prospects and Indicators to Achieve Overall Goal

4.2 Plan of Operation and Implementation Structure of the Malawian side to achieve Overall Goal

In order to achieve the Overall Goal, the Malawi side prepared the plan of operation by 2020 in the following Table 4-2. The instructors who were trained through the Project shall be allocated in each course properly so as not to disturb their daily work at the airport.

	Year	2016	2017	2018	2019	2020
Field	Course					
	053 Procedural Approach Control					
ATC/	055 Procedural Area Control					
FIS	054A Radar Approach Control					
	054B Radar Area Control					
	AIM Integration					
AIS/ ACS	Flight Data Processing					
	AMHS					
CNS	Basic ATSEP					
& E/M	Radar Maintenance					

Table 4-2: Plan of Operation and Implementation Structure by 2020

4.3 **Recommendations for the Malawian side**

(1) Improve the Financial Structure

Revenues derived from aeronautical charges, i.e. Air Navigation Usage Charge, Landing Fee and Passenger Charge are used for the development and operation of civil aviation worldwide and are usually not diverted into general revenue as the case in Malawi. Therefore, it is highly recommended that the financial structure be arranged so as to ensure that such aeronautical revenues are used for the provision of airport and air navigation services including labor cost, equipment procurement costs, operation and maintenance costs, training costs and other expenses vital for aviation safety in Malawi. It is essential to realize creation of Civil Aviation Authority, of which draft ACT will be under deliberation of the parliament soon.

(2) Improve Recruitment Method

Along with the curriculum vitae, appropriate achievement tests and aptitude tests shall be used to examine and screen the candidates' abilities during recruitment.

The following tests are recommended for an improved recruitment process:

- ATC: English, basic mathematics, aptitude tests (including physical examination and abstract ability);
- AIM: English, general aptitude test;
- CNS: English, basic mathematics and basic electronics;
- E/M: English, basic mathematics and basic electrical/mechanical.

To secure fair and impartial recruitment and to ensure appropriate human resource development of DCA officers, the scores of abovementioned tests shall be the basis for enrollment to DCA.

(3) Structural Change in Recruitment Plan

It is recommended that DCA recruits its officers on an annual or continuous basis rather than hiring a large number once in every several year time. Currently, there is a wide age gap between the senior and junior officers, which hinders appropriate technical transfer of knowledge and skills in every aspect of air navigation services. If the numbers of newly recruited officers are reduced and recruited annually or at shorter intervals, more attention could be placed on each trainee, increasing efficiency and quality of trainings, as well as the load of expenditures could be alleviated on an annual basis which could facilitate budget planning.

4.4 Monitoring Plan from the End of the Project to Ex-post Evaluation

Monitoring Plan was prepared to check if the effects generated by the Project continue after completion of the Project. The Project members agreed on that they would report the progress status by the use of Post-Project Monitoring Format in Annex 7 to DCA and JICA Malawi Office every 6 months until the time of ex-post evaluation planned 3 years after completion of the Project, i.e. April 2019.

Major items of the monitoring are as follows:

- (1) Progress of training for air navigation services at SOA;
- (2) Status of maintenance of major equipment procured by the Project;
- (3) Budget allocation for the human resource training at SOA;
- (4) Progress of reorganization from DCA to CAA and revenue reform.

ANNEX 1

Results of the Project

ANNEX 1-1: List of Dispatched Experts ANNEX 1-2: List of Counterparts and Support Staff ANNEX 1-3: List of Trainings ANNEX 1-4: Comprehension Test Score Results

ANNEX 1-1 List of Dispatched Experts

• List of Dispatched Experts

Name	Name Role in the Project	
Hiroshi MIZUMASA	Chief Advisor	15.33 months
Mie NAGAYASU	Deputy Chief Advisor/ Capacity Development Specialist	5.42 months
Kiichiro HIRANO	Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist - 1	9.03 months
Daniel Paul DIGGINS	Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist – 2	6.23 months
Reynaldo Alido BATACAN Communications, Navigation and Surveillance (CNS) Maintenance Training Specialist		12.07 months
Kiyoshi SUZUKI Electrical/Mechanical Maintenance Training Specialist		2.47 months
Yumi HOSOYA Flight Procedure Design Specialist		2.50 months

ANNEX 1-2 List of Counterparts & Support Staff

Role in the Project	Name	Affiliation (Division, Section, Unit)
Project Director	Mr. A. C. Mtilatila	Director of Civil Aviation, DCA
Project Manager/ Co-Project Manager	Mr. S. P. Galafa	Principal, School of Aviation, DCA
Project Coordinator	Mr. F. Kholowa	Chief Air Traffic Services Officer, Operation Division, DCA
Project Coordinator	Mr. R. Kanunkha	Assistant Chief Aeronautical Telecommunications Engineer, Operation Division, DCA
ATC and FIS Training	Mr. S. Galafa	Principal Lecturer of ATS, School of Aviation, DCA
AIS and ACS Training	Mr. R. Y. Malanga	Lecturer School of Aviation, DCA
AIS and ACS Training	Mr. S. Liundi	Lecturer School of Aviation, DCA
Electronic Engineering (CNS) Training	Mr. C. F. Betenigo	Electronics Engineer, KIA, DCA
Electrical/ Mechanical Engineering Training	Mr. T. P. M. Mtonga	Electrical Engineer, KIA, DCA

• List of Counterparts

• Support Staff

Role in the Project	Name	Affiliation (Division, Section, Unit)
	Ms. L. Manondo	Air Traffic Controller, KIA, DCA
ATC and FIS	Mr. D. Zamaere	Air Traffic Controller, KIA, DCA
Training Instructor	Mr. F. Chisepeya	Air Traffic Controller, KIA, DCA
	Mr. J. Kazito	Air Traffic Controller, Chileka Airport, DCA
AIS and ACS	Mr. R. Nkosi	Air Crew Briefing Officer, DCA
Training Instructor	Mr. N. B. Kaliyasi	Communication Officer, KIA, DCA
Electronic Engineering	Mr. S. Kunje	Electronics Engineer, Chileka Airport, DCA
(CNS) Training Instructor	Mr. F. C. Chisale	Electronics Engineer, KIA, DCA
E/ M Training Instructor	Mr. O. Yokonia	Electrical Engineer, Chileka Airport, DCA

ANNEX 1-3 List of Trainings

• List of Trainings

<Overseas>

Course Title	No. of Trainees	Duration	
Team Resource Management	8	2015/01/26-30	
(ATNS, South Africa)	0	1 week	
Supervisory Management	4	2015/02/02-2/28	
(EASA, Kenya)	4	3 weeks	
Instructor Development Program	8	2015/08/04-8/21	
(EASA, Kenya)	0	3 weeks	
Advanced Instructor Training	6	2015/10/05-10/23	
(EASA, Kenya)	6	3 weeks	
То	tal 26		

<Malawi>

Course Title	No. of Trainees	Duration
CBT Training	6	2014/11/24
Test Equipment	5	2015/01/12-23 2 weeks
Electrical & Mechanical (UPS & Generator, Airfield Lighting)	6	2015/04/20-30 2 weeks
Microsoft Office -1	6	2015/04/21-23 4 days
Conventional Flight Procedure Design (Approach)	4	2015/05/05-29 4 weeks
General Communications	6	2015/05/18-06/04 3 weeks
Park Air T6 VHF Radio	6	2015/06/08-19 2 weeks
ICAO Course 052, Aerodrome	9	2015/06/01-07/03 5 weeks
CVOR/DVOR/ILS/DME/ RADAR Concept	5	2015/06/22-07/10 2 weeks
051 ATC Basic Course for Freshmen	12	2015/10/12-2016/01/29 13 weeks
NORMARC ILS MAINTENANCE	6	2015/10/26-12/04 6 weeks
Conventional Flight Procedure Design (Departure)	4	2015/11/02-11/26 4 weeks

Course Title	No. of Trainees	Duration
AIS for ACS (Group 1)	6	2015/11/02-11/13 2 weeks
AIS for ACS (Group 2)	6	2015/11/16-11/27 2 weeks
Microsoft Office -2	6	2015/12/01-12/03 3 days
New CNS/ATM	8	2016/02/01-02/12 2 weeks
Aerodrome Control 052 for Freshmen	12	2016/02/01- In progress
MARU DVOR/DME	6	2016/02/15-03/24 6 weeks
Microsoft Office -3	6	4 th & 7 th March 2016 2 days
Total	124	

*The total number of trainees in both overseas and Malawi is 150 as of April 2016.

ANNEX 1-4 Comprehension Test Score Results

Course Name	No. of Trainees	Trainee	Field	Score	Period
Team Resource		No. 1	CNS	96.00%	
Management		No. 2	ATC	97.00%	
Venue: ATNS (South Africa)		No. 3	ATC	98.00%	
	0	No. 4	ATC	98.00%	2015/01/26-30
	8	No. 5	AIS	99.00%	1 week
		No. 6	E&M	100.00%	
		No. 7	E&M	99.00%	
		No. 8	ATC	98.00%	
Supervisory Management		No. 1	CNS	90.75%	
Venue: EASA (Kenya)	4	No. 2	CNS	95.75%	2015/02/02-2/28
	4	No. 3	ATC	96.38%	3 weeks
		No. 4	ATC	81.00%	
Instructor Development		No. 1	CNS	84.40%	
Program		No. 2	ATC	89.00%	
Venue: EASA (Kenya)		No. 3	ATC	83.10%	
	o	No. 4	CNS	82.40%	2015/08/04-8/21
	8	No. 5	AIS/ACS	85.60%	3 weeks
		No. 6	AIS/ACS	83.30%	
		No. 7	E&M	87.50%	
		No. 8	E&M	88.00%	
Advanced Instructor		No. 1	CNS	91.20%	
Training	6	No. 2	ATC	95.90%	
Venue: EASA (Kenya)		No. 3	CNS	97.60%	2015/10/05-10/23
		No. 4	ATC	98.20%	3 weeks
		No. 5	E&M	97.20%	
		No. 6	ATC	98.20%	
Total	26				

<School of Aviation Malawi>

Course Name	No. of Trainees	Trainee	Field	Score	Period
CBT Training		No. 1	CNS	Not scored	2014/11/24 1 day
		No. 2	ATC		
	C.	No. 3	CNS		
	6	No. 4	ATC		
		No. 5	AIS/ACS		
		No. 6	AIS/ACS		
Test Equipment		No. 1	CNS	93.20% 83.86%	2015/01/12 22
		No. 2	CNS		
	6	No. 3	CNS	78.02%	2015/01/12-23 2 weeks
		No. 4	E&M	93.00%	2 WEEKS
		No. 5	CNS	87.29%	
Electrical & Mechanical		No. 1	E&M	91.76%	2015/04/20-30 2 weeks
(UPS & Generator,		No. 2	E&M	90.00%	
Airfield Lighting)	6	No. 3	E&M	93.89%	
	0	No. 4	E&M	97.22%	
		No. 5	E&M	93.33%	
		No. 6	E&M	96.10%	
Microsoft Office - 1		No. 1	ATC	Not scored	2015/04/21-23 4 days
		No. 2	ACS/AIS		
	5	No. 3	ACS/AIS		
		No. 4	ACS/AIS		
		No. 5	ATC		
Conventional Flight	4	No. 1	ATC	90.00%	2015/05/05-29 4 weeks
Procedure Design		No. 2	ATC	95.00%	
(Approach)		No. 3	ATC	82.00%	
		No. 4	AIS	89.00%	
General Communications	6	No. 1	CNS	82.63%	-
		No. 2	CNS	92.70%	
		No. 3	CNS	87.53%	2015/05/18-06/04
		No. 4	CNS	94.10%	3 weeks
		No. 5	CNS	92.05%	
		No. 6	CNS	88.67%	

Course Name	No. of Trainees	Trainee	Field	Score	Period
Park Air T6 VHF Radio	6	No. 1	CNS	79.40%	
		No. 2	CNS	84.40%	
		No. 3	CNS	86.60%	2015/06/08-19
		No. 4	CNS	88.00%	2 weeks
		No. 5	CNS	85.43%	
		No. 6	CNS	88.03%	
ICAO Course 052,		No. 1	FIS	87.00%	
Aerodrome		No. 2	FIS	92.00%	
		No. 3	FIS	84.00%	
		No. 4	FIS	79.00%	2015/06/01-07/03
	9	No. 5	AIS	87.00%	5 weeks
		No. 1 Instructor	ATC	87.69%	J WEEKS
		No. 2 Instructor	ATC	100.00%	
		No. 3 Instructor	ATC	100.00%	
		No. 4 Instructor	ATC	100.00%	
CVOR/DVOR/ILS/DME/		No. 1	CNS	85.83%	-
RADAR Concept		No. 2	CNS	86.00%	2015/06/22-07/10
	5	No. 3	CNS	90.63%	2013/00/22-07/10 2 weeks
		No. 4	CNS	85.83%	2 WCCKS
		No. 5	CNS	85.83%	
051 Basic ATC		No. 1	ATC	88.80%	
(new students)		No. 2	ATC	82.00%	
		No. 3	ATC	91.30%	
		No. 4	ATC	90.10%	
		No. 5	ATC	76.00%	2015/10/12-
	12	No. 6	ATC	81.80%	2015/10/12-
	12	No. 7	ATC	86.30%	13 weeks
		No. 8	ATC	84.70%	15 WEEKS
		No. 9	ATC	88.80%	
		No. 10	ATC	88.80%	
		No. 11	ATC	87.40%	
		No. 12	ATC	90.30%	

Course Name	No. of Trainees	Trainee	Field	Score	Period
NORMARC ILS		No. 1	CNS	86.16%	
MAINTENANCE		No. 2	CNS	83.00%	
	6	No. 3	CNS	86.72%	2015/10/26-12/04
	6	No. 4	CNS	86.96%	6 weeks
		No. 5	CNS	87.80%	
		No. 6	CNS	87.64%	
Conventional Flight		No. 1	ATC	95.00%	
Procedure Design	4	No. 2	ATC	96.66%	2015/11/02-11/26
(Departure)	4	No. 3	ATC	81.67%	4 weeks
		No. 4	AIS	85.00%	
AIS for ACS (Group 1)		No. 1	ACS	75.00%	
		No. 2	ACS	74.65%	
		No. 3	ACS	89.00%	2015/11/02-11/13
	6	No. 4	ACS	75.00%	2 weeks
		No. 5	ACS	79.00%	
		No. 6	ACS	92.00%	
AIS for ACS (Group 2)		No. 1	ACS	90.00%	
		No. 2	ACS	88.00%]
	E	No. 3	ACS	88.00%	2015/11/16-11/27
	6	No. 4	ACS	86.00%	2 weeks
		No. 5	ACS	97.00%	
		No. 6	ACS	82.00%	
Microsoft Office - 2		No. 1	CNS		
		No. 2	ATC		
	6	No. 3	CNS	Not seered	2015/12/01-12/03
	6	No. 4	E&M	Not scored	3 days
		No. 5	E&M		
		No. 6	ATC		

Course Name	No. of Trainees	Trainee	Field	Score	Period
New CNS/ATM		No. 1	ATC/ATM	90.78%	
		No. 2	CNS	82.75%	
		No. 3	ATC/ATM	88.54%	
		No. 4	FIS/ATM	91.77%	2016/02/01-02/12
	8	No. 5	ATC/ATM	92.04%	2 weeks
		No. 6	CNS	90.61%	
		No. 7	CNS	92.51%	
		No. 8	E&M/CNS	92.74%	
052 Aerodrome Control		No. 1	ATC		
(new students)		No. 2	ATC		
		No. 3	ATC		
		No. 4	ATC	In progress	
		No. 5	ATC		2016/02/01-02/12 2 weeks
	10	No. 6	ATC		
	12	No. 7	ATC		
		No. 8	ATC		
		No. 9	ATC		
		No. 10	ATC		
		No. 11	ATC		
		No. 12	ATC		
MARU DVOR/DME		No. 1	CNS	91.04%	
		No. 2	CNS	80.86%	
		No. 3	CNS	89.79%	2016/02/15-03/24
	6	No. 4	CNS	93.16%	6 weeks
		No. 5	CNS	95.61%	
		No. 6	CNS	93.93%	
Microsoft Office - 3		No. 1	CNS		
		No. 2	CNS		
	6	No. 3	CNS	Not scored	4 & 7 March 2016
	6	No. 4	ATC	inot scored	2 days
		No. 5	ATC		
		No. 6	CNS		
Total	124				

ANNEX 2

List of Products Produced by the Project

ANNEX 2: List of Products Produced by the Project

• Reports

Name of Products	
Inception Report	
Work Plan	
Monitoring Sheet I	
Monitoring Sheet II	
Monitoring Sheet III	

• Training Materials & Syllabus

Name of Products
. ATC & FIS [6 Courses]
1) Basic Training for Air Traffic Controllers
2) Aerodrome Control Services (Non-Radar)
3) Procedural Approach Control Services (Non-Radar)
4) Procedural Area Control Services (Non-Radar)
5) New CNS/ATM Technology for Air Traffic Controllers
6) Basic Training for Flight Information Officers
. AIM (AIS/ACS integrated) [1 Course]
1) Basic Training for AIM Officers
. Electronic Engineers (CNS) [7 Courses]
1) Test Equipment
2) General Communication Maintenance
3) Concept Course for ILS, DVOR, DME and Radar
4) Maintenance Course for Park Air VHF
5) Maintenance Course for Normarc ILS
6) Maintenance Course for Maru DVOR/DME
7) New CNS/ATM Technology for Electronic Engineers
. Electrical/Mechanical Engineers [2 Courses]
1) Concept Course for Airfield Lighting System
2) Concept Course for Uninterrupted Power Supply System (UPSS)

ANNEX 3

PDM (All versions of PDM)

ANNEX 3-1: PDM Version 1 (30 May 2014) ANNEX 3-2: PDM Version 2 (1 August 2015) ANNEX 3-3: PDM Version 3 (5 June 2015) ANNEX 3-4: Plan of Operation (1 April 2016)

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers,

Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project) Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS: 4 (1) Electronic Eng.: 4 (1) E/M Eng.: 4 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least XXX %. (Target value "XXX %" will be set with the results of a baseline survey.)	- Project Progress Reports - Terminal Evaluation Report	 Trained counterpart personnel continue to be engaged in the activities of air navigation services. No major change in the national policy on air navigation services within the national plan/ strategy is occurred. 		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	 Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2 The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC: 4 AIS: 4 ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4 Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least XXX %. 	 Project Progress Reports Results of completion tests for supervisor/ advanced/specialist training courses 	- Trained counterpart personnel continue to be engaged in the activities of air navigation services. - No major change in the national policy on air navigation services within the national plan/ strategy is occurred.		

Version 1

Dated 30, May, 2014

Activities			
(Specific actions to produce each Output by use of Inputs)	Inputs		Pre-Conditions
	The Japanese Side	The DCA Side	
Improvement of ATC and FIS Training	- Experts	- Counterpart Personnel	- DCA secures budget
1-1. Review current training syllabus and training materials	Chief Advisor/Training Manager	- Support Staff	necessary for preparation of
1-2. Improve/develop training syllabus and training materials	ATC Training Specialist	- Project Office Space	the Project Office and
1-3. Conduct training of instructors	AIS/ACS Training Specialist		allocation of counterpart
1-4. Implement improved training courses	Electronic Maintenance Training Specialist	- Travel Expenses of	personnel before the
1-5. Implement supervisor training	Electrical/ Mechanical Maintenance Training	Counterpart Personnel	commencement of the
1-6. Conduct monitoring and evaluation of the trainings implemented	Specialist	within Malawi	Project.
by the trained instructors 1-7. Improve the training courses based on the results from the	Others as necessary - Training materials	- The others mentioned in Appendix1, II, 6, of R/D	- New trainees are recruited as scheduled.
monitoring and evaluation	- Training materials	- DCA implements the	as scheduled.
	- Overseas training	Project with sufficient	
Improvement of AIS and ACS Training		ownership.	
2-1. Review current training syllabus and training materials		ownoromp.	
2-2. Improve/develop training syllabus and training materials			
2-3. Conduct training of instructors			
2-4. Implement improved training courses			
2-5. Implement supervisor/advanced/specialist training			
2-6. Conduct monitoring and evaluation of the trainings implemented			<lssues and<="" td=""></lssues>
by the trained instructors			countermesures>
2-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electronic Engineering Training			
3-1. Review current training syllabus and training materials			
3-2. Improve/develop training syllabus and training materials			
3-3. Conduct training of instructors			
3-4. Implement improved training courses			
3-5. Implement equipment-specific training			
3-6. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
3-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electrical/Mechanical Engineering Training			
4-1. Review current training syllabus and training materials			
4-2. Improve/develop training syllabus and training materials			
4-3. Conduct training of instructors			
4-4. Implement improved training courses			
4-5. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
4-6. Improve the training courses based on the results from the			
monitoring and evaluation			

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers,

Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project)					
Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.	- Monitoring Sheet - Terminal Evaluation Report	 Trained counterpart personnel continue to be engaged in the activities of air navigation services. No major change in the national policy on air navigation services within the national plan/ strategy is occurred. 		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose)					
 Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. Training of Electronic Engineering is improved. Training of Electrical/Mechanical Engineering (E/M Eng) is improved. 	 Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2 The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC/FIS: 4 AIS/ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4 Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%. 	- Monitoring Sheet - Results of completion tests for supervisor/ advanced/specialist training courses	- No major change of the international standards on air navigation services is occurred.		

Version 2

Dated 1, Aug, 2014

Activities	Inputs	Pre-Conditions	
(Specific actions to produce each Output by use of Inputs)	· · · ·		
Improvement of ATC and EIS Training	The Japanese Side	The DCA Side	- DCA implements the
Improvement of ATC and FIS Training	- Experts	- Counterpart Personnel	Project with sufficient
 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 	Chief Advisor/Training Manager ATC Training Specialist	- Support Staff - Project Office Space	ownership.
1-3. Conduct training of instructors	AIS/ACS Training Specialist	- Project Office Expenses	
1-4. Implement improved training courses	Electronic Maintenance Training Specialist	- Travel Expenses of	
1-5. Implement supervisor training	Electronic Maintenance Training Specialist Electrical/ Mechanical Maintenance Training	Counterpart Personnel	Pre-Conditions
1-6. Conduct monitoring and evaluation of the trainings implemented	Specialist	within Malawi	 DCA secures budget
by the trained instructors	Others as necessary	- The others mentioned in	necessary for preparation of
1-7. Improve the training courses based on the results from the	- Training materials	Appendix1, II, 6, of R/D	the Project Office and
monitoring and evaluation	- Training equipment - Overseas training	· • • • • • • • • • • • • • • • • • • •	allocation of counterpart personnel before the
Improvement of AIS and ACS Training			commencement of the
2-1. Review current training syllabus and training materials			Project.
2-2. Improve/develop training syllabus and training materials			- New trainees are recruited
2-3. Conduct training of instructors			as scheduled.
2-4. Implement improved training courses			
2-5. Implement supervisor/advanced/specialist training			
2-6. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
2-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electronic Engineering Training			
3-1. Review current training syllabus and training materials			
3-2. Improve/develop training syllabus and training materials			
3-3. Conduct training of instructors			
3-4. Implement improved training courses			
3-5. Implement equipment-specific training3-6. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
3-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electrical/Mechanical Engineering Training			
4-1. Review current training syllabus and training materials			
4-2. Improve/develop training syllabus and training materials			
4-3. Conduct training of instructors			
4-4. Implement improved training courses			
4-5. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors 4-6. Improve the training courses based on the results from the			
monitoring and evaluation			

Project Design Matrix

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	The targeted number of trainees (serving officers and new staff) who will successfully complete the improved/developed training courses by between 2016 and 2020 is at least 80.	- Training records			
Project Purpose (Objective at the end of the Project) Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 70%.	Report - Results of the comprehension test score of trainees.	 Trained counterpart personnel continue to be engaged in the activities of air navigation services. No major change in the national policy on air navigation services within the national plan/ strategy is occurred. 		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	 Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2 The following number of DCA officers successfully complete supervisor/advanced/specialist training: Instructors: 10 ATC/FIS: 4 AIS/ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4 		- No major change of the international standards on air navigation services is occurred.		

Version 3

Dated 5 June 2015

Activities	Inputs		- DCA implements the
(Specific actions to produce each Output by use of inputs)	The Jananese Side		
(Specific actions to produce each Output by use of Inputs) Improvement of ATC and FIS Training 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 1-3. Conduct training of instructors 1-4. Implement improved training courses 1-5. Implement supervisor training 1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 1-7. Improve the training courses based on the results from the monitoring and evaluation Improvement of AIS and ACS Training 2-1. Review current training syllabus and training materials 2-2. Improve/develop training syllabus and training materials 2-3. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 2-4. Implement improved training courses 2-5. Implement supervisor/advanced/specialist training 2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 2-7. Improve the training syllabus and training materials 3-2. Improve/develop training syllabus and training materials 3-3. Conduct monitoring and evaluation Improvement of Electronic Engineering Training 3-1. Review current training syllabus and training materials 3-2. Improve/develop training courses </td <td>The Japanese Side - Experts Chief Advisor/Training Manager ATC Training Specialist Electronic Maintenance Training Specialist Electrical/ Mechanical Maintenance Training Specialist Others as necessary - Training materials - Training equipment - Overseas training</td> <td>The DCA Side Counterpart Personnel Support Staff Project Office Space Travel Expenses of Counterpart Personnel within Malawi The others mentioned in Appendix1, II, 6, of R/D</td> <td>Project with sufficient ownership. Pre-Conditions - DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project. - New trainees are recruited as scheduled.</td>	The Japanese Side - Experts Chief Advisor/Training Manager ATC Training Specialist Electronic Maintenance Training Specialist Electrical/ Mechanical Maintenance Training Specialist Others as necessary - Training materials - Training equipment - Overseas training	The DCA Side Counterpart Personnel Support Staff Project Office Space Travel Expenses of Counterpart Personnel within Malawi The others mentioned in Appendix1, II, 6, of R/D	Project with sufficient ownership. Pre-Conditions - DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project. - New trainees are recruited as scheduled.

Monitoring Sheet II Plan of Operation

Project Title: The Project for Capacity Development for Air Navigati	on S	onvior	ac in	the P	Jonul	blic of		i		-															Dated 1 April 2	nitoring
Project fittle: The Project for Capacity Development for Air Navigati	51 36	YY/MM	/ '14/4	4 5	6	6 7	8	<u> </u> 9 10	11	12 '15	<u>5/1 2</u>	3	4 5	5 6	7	8	9 10	11	12	'16/1	2 3	3	4 5	Remarks	Issue	Solution
•		Month	1st	2nd	<u>l 3r</u>	rd 4th	5th	6th 7th	8th	9th 10t	th 11th	12th 1	13th 14	4th 15th	h 16th	17th 18	th 19th	20th	21st 2	22nd 2	3rd 24	th 2	5th 26th	i tomanto	13500	Colution
. Expert Chief Advisor		- Plan	+++	╉╋	╈				╉╈╈╋	┢╈╈		┼┼╆╋	┍┽╁┾┥	┢┥╋╧┙	┢╋┿┿┙				+++						1	
	ذ	Actual Plan	I	ŦŦ	┯		(60)				(91)	₩₽₽₽			44	(118)			(74)				(76)		4	
Deputy Chief Advisor/Capacity Development Specialist	r-2	Actual	I	##	#		(45)				(14)	┾┿┿┿╋┙ ┿┿┿╋╋	(1)	8)					(16)			(26)		1	4	
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist - 1	- - 3	Actual	I				(52)			(45)		┾╪╧╋╋			(46)				(40)			(45)				
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist - 2	4	Plan Actual	I			(27			(19)))				(54)	,			(35)			(31)					
Communications, Navigation and Surveillance (CNS) Maintenance Training Specialist	-5 L	Plan Actual					(60)				(89)				(70)				(48)			(62)	-		
Electrical/Mechanical Maintenance Training Specialist	ę	Plan Actual		ŦŦ	Ħ					(30)			(29	29)	\square									-		
Flight Procedure Design Specialist	L-7	Plan Actual		\mp	\square						<u> </u>	┼┼┼╊		(30)	\square				(30)							
2. Training Equipment	hitti													(00)					(00)							
PC-based Simulator Training System for Air Traffic Controllers		Plan Actual		++-								++++												ATC Simulator installed in May 2015 on schedule		
Computer Based Training (ATC)		Plan Actual		ŦŦ	\square										Æ									CBT installed in November 2014 on schedule		
Test Instrument and Equipment		Plan Actual		ŦŦ	Ħ										— ——									Test Equipment installed in December 2014 on schedule		
		Plan Actual		фт																				Almost Office equipment installed in Jun 2014		
			╉╋┙	++	+										++++									2014		
Team Resource Management Training		Plan Actual		—						- 		╄╋			\mathbf{P}									8 instructors completed in Jan 2015		
Supervisory Management Training		Plan Actual		Ħ	##							┟┊┊╞╞										Ŧ		4 instructors completed in Feb 2015	1	
Instructor Development Training		Plan		Ħ	Ħ							╇╈╈╋╪	###	##										8 instructors completed in Aug 2015	1	
Advance Instructor Training		Plan		<u>tt</u>	Ħ							╞╪╧╧╊┙												6 instructors completed in October 2015	1	
		Actual YY/MM	_	4 5	6	6 7	8	9 10	11	12 '15	5/1 2	3	4 5	5 6		8	9 10	11	12	'16/1	2 3	3	4 5		loouro	Polyticz
Inputs from DCA	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Month	1st	2nc	<u>1 3r</u>	rd 4th	5th	6th 7th	8th	9th 10	<u>th 11th</u>	12th	13th 14	th 15th	<u>16th</u>	17th 18	th 19th	20th	21st 2	22nd 2	3rd 241		5th 26th	Remarks	Issue	Solution
Project Director		Plan Actual	<u> </u>									┢╧╧╊┙													1	
Mr. A. C. Mtilatila, Director of Civil Aviation, DCA Project Manager (TBD. Vacant as of 30th September 2015)	┼┼┼┼┼	Actual Plan		ŦŦ	Ŧ																			Changed from Mr. Matiya due to	-	
Co-Project Manager (Mr. S. P. Galafa) acting as the Project Manager	$\left \right \left \right \left \right \right $	Actual	I	ĦŦ	井∎																			retirement in August 2015	-	
Co-Project Manager Mr. S. P. Galafa, Principal, School of Aviation, DCA		Actual	I	Ħ	#																			Acting also as the Project Manager until the next person is assigned.		
Project Coordinator Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division		Plan Actual	I																					1		
Project Coordinator Mr. R. Kanunkha, Assistant Chief Aeronautical Telecommunications Engineer (ACATE), Operation Division		Plan Actual		╘╋╋	╧╋╋																			Changed from Mr. Bongwe due to personnel transfer in June 2015		
ATC and FIS Training Mr. S. Galafa, Principal lecturer of ATS, School of Aviation, DCA		Plan Actual	Æ	Ŧ	Ŧ																					
AIS and ACS Training		Plan Actual		+	Ŧ																				1	
AIS and ACS Training	TH	Plan		<u> </u>	井∎																				1	
Mr. S. Liundi, Lecturer School of Aviation, DCA Aeronautical/Telecommunication Engineering (CNS) Training	┼┼┼┼┼	Actual Plan																						Vacant due to personnel transfer after	1	
Mr. R. Kanunkha, Senior CNS Lecturer, School of Aviation, DCA Aeronautical/Telecommunication Engineering (CNS) Training	\\\\	Actual Plan		++-	┼┼╋				╉╋╃			┍╒╤╤			╉╆┯┛				+ T	H				July 2015	-	
Mr. C. F. Betenigo, Electronics Engineer, KIA	╏╎╎╎╎	Actual	1	ŦŦ	\square																				4	
Mr. Mtonga, Electrical Engineer, KIA		Actual		Ħ	#						444													1	4	
Instructor-1		Plan																						<u> </u>	-	
		Actual Plan		++	╈							┍╒╒╴╤													-	
		Actual Plan	I	##																				1	4	
Mr. F. Chisepeya, Air Traffic Controller, KIA		Actual	I	ĦŦ	Ħ																			1	-	
		Actual	I	曲	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;																			1	_	
		Plan Actual	I																					<u> </u>		
		Plan Actual	I	╧╋╌	╧╋╋┛																			1		
Electronic Engineering (CNS) Instructor		Plan Actual		Ŧ	\blacksquare							╇╇╇														
CNS Electronic Engineering (CNS) Instructor Mr. F. Nyanda Chisale, Electronics Engineer, KIA		Plan		Ħ					++															1	1	
Electrical/Mechanical Engineering Instructor				фт	#																			1		
3. New Students to School of Aviation																									1	
		Plan Actual		ŦŦ	Ŧ				+			╀╄╊			ŦŦ									Due to restructuring of DCA, FIS has	FIS, AIS and ACS students are not	FIS will be integrated into ATC.
		Plan		Ħ	Ħ																			been integrated into ATC.	recruited due to DCA financial reason.	
3-3 Aeronautical Information Service (AIS) 10 students		Plan			\pm																				anola reason.	and strengthen the A services system.
3-4 Aeronautical Communications (ACS) 6 students		Actual Plan		<u>tt</u>	Ħ										╞╧╧┙									DCA will not recruit new students for AIS and ACS Officers.		
	╏	Actual Plan			Ш																			CNS Engineers were recruited in	-	
3-6 Electrical/Mechanical (E&M) Engineers (2/2 students)	╂╂╂╂	Actual Plan																						February and start training in March 2016.		ĺ
																								2010.	4	
		Actual	╏	+++-	+++					+++++		+++							1111	4 4 4 1 4						
4. Update of DCA Manuals and Procedures		Plan																						The project provided the latest document from ICAO (International Civil Aviation	t	
4. Update of DCA Manuals and Procedures 4-1 Update of Manual of Air Traffic Services 1		\langle																						The project provided the latest document from ICAO (International Civil Aviation Updating procedure through the Equipment & Maintenance Training.	t	

Version 6 Dated 1 April 2016

5. Project Office							тег																	- 1	
5-1 Project Office		Plan Actual																						1	
5-2 ATC Simulator Room		Plan Actual																				Broject off	ice & training rooms		
5-3 CBT Room		Plan Actual																					ice & training rooms used propary		
5-4 Electronic Training Laboratory		Plan Actual				╈╋╋╋																			
Activities			'14/4 5	6	7	8 9	10	11 12	'15/1	2	3 4	5	6	7	8 9) 10	11	12 '10	6/1 2		4 5	Respor	sible Organization	Achievemente	Issue &
Sub-Activities		Month	1st 2n	d 3rd	4th \$	5th 6th	7th	8th 9th	n 10th	11th	12th 13	th 141	h 15th	16th	17th 18	th 19th	20th	21st 22	2nd 23rd	24th 2	25th 26	th Japan	Malawi	Achievements C	Countermeasures
Output 1-A: Improvement of Air Traffic Control Assistant/ Basic Course Training 1-A-1 Review current training syllabus/materials		Plan Actual				ППП																JICA		Training materials to be	
1-A-2 Improve/develop training syllabus/materials		Plan																				JICA		used as a base for developing basic Air Traffic Control Course	
1-A-3 Conduct training of instructors		Actual Plan																				JICA	DCA	have been procured. The materials are being	
1-A-4 Implement improved training courses		Actual Plan																				JICA	DCA	localized by JICA Expert & SOA Instructors to suit	
1-A-5 Implement supervisor training (Overseas training)		Actual Plan																				010/1	DCA	Malawian context. The course based on	
1-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Actual Plan																					DCA	these materials will start from early October 2015	
	┼┼┼┼┼┼┼	Actual Plan			H							\pm											DCA	for the new ATC students.	
1-A-7 Improved training based on the result from the monitoring and evaluation Output 1-B: Improvement of Aerodrome Control Training		Actual																				1	DUA	<u> </u>	
1-B-1 Review current training syllabus/materials		Plan				<u> </u>																JICA		Training materials for	
	┼┼┼┼┼┼┼	Actual Plan																						Aerodrome Control Training were	
1-B-2 Improve/develop training syllabus/materials		Actual Plan																				JICA		developed by JICA Expert.	
1-B-3 Conduct training of instructors		Actual Plan																				JICA	DCA	Training for instructors	
1-B-4 Implement improved training courses		Actual																				JICA	DCA	on Aerodrome Control course finished in July	
1-B-5 Implement supervisor training (Overseas training)		Plan Actual																					DCA	2015.	
1-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual	┝╾╾╾															┟┊┊┊┠╸					DCA	1 L	
1-B-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																					DCA		
Output 1-C: Improvement of Approach Control (Procedural) Training		Plan															 							Training material for	
1-C-1 Review current training syllabus/materials		Actual																				JICA		Approach Control	
1-C-2 Improve/develop training syllabus/materials		Plan Actual																				JICA		Procedural Training is being developed by	
1-C-3 Conduct training of instructors		Plan Actual																				JICA	DCA	JICA Expert and was finished in February	
1-C-4 Implement improved training courses		Plan Actual			\square																- FF	JICA	DCA	2016.	
1-C-5 Implement supervisor training (Overseas training)		Plan Actual																					DCA	This training will be conducted after	
1-C-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																					DCA	- February 2016 by DCA	
1-C-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																					DCA	support from JICA Expert.	
Output 1-D: Improvement of Area Control (Procedural) Training	<u></u>			· · · · · ·			 	· · · · ·	· · · · · ·			· · · ·	· · · · ·	 	· · · · · · · ·		<u> </u>	<u> </u>	· · · · · ·						
1-D-1 Review current training syllabus/materials		Plan Actual																				JICA		Training material for Area Control	
1-D-2 Improve/develop training syllabus/materials		Plan Actual			HH																	JICA		Procedural Training is being developed by	
1-D-3 Conduct training of instructors																						JICA	DCA	JICA Expert and was finished in February	
1-D-4 Implement improved training courses		Plan Actual																				JICA	DCA	2016	
1-D-5 Implement supervisor training (Overseas training)		Plan Actual																					DCA	This training will be conducted after March	
1-D-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																					DCA	2016 by DCA instructors with the	
1-D-7 Improved training based on the result from the monitoring and evaluation		Plan																					DCA	support from JICA Expert.	
Output 1-E: Improvement of CNS/ATM Technology for ATC Training		Actual																					2011	+ +	
1-E-1 Improve/develop training materials		Plan Actual																				JICA		Base material for CNS/ATM for ATC	
1-E-2 Conduct training of DCA staffs		Plan Actual																				JICA		training is being prepared by JICA	
1-E-3 Conduct monitoring and evaluation of the trainings		Plan Actual																				JICA	DCA	Expert.	
1-E-4 Improved training based on the result from the monitoring and evaluation		Plan Actual																				JICA	DCA	Training for instructors on CNS/ATM for ATC	
1-E-5 Implement supervisor training (Overseas training)		Plan																					DCA	was conducted by JICA Expert in February	
1-E-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	┼┼┼┼┼┼┼	Actual Plan																					DCA	2016	
1-E-7 Improved training based on the result from the monitoring and evaluation	┼┼┼┼┼┼┼	Actual Plan																					DCA	┥ ┝	
Dutput 1-F: Improvement of Aeronautical Cartography Training		Actual																						Departure Procedure &	
1-F-1 Conduct training of DCA staffs		Plan Actual																				Malawi	ining by JICA Expert ir	Cartography was conducted in November 2015.	
Output 1-G: Improvement of Flight Procedure Design (Conventional Flight Procedure) Training				<u> </u>		<u></u>	<u> : : : </u>	<u></u>	<u>. </u>					<u>, ; ; ;]</u>					· · · · · ·				ining by JICA Expert ir	Conventional Flight Procedure	
1-G-1 Conduct training of DCA staffs		Plan Actual			HA																	Malawi		Design (Approach) training was conducted in May 2015.	
																								<u> </u>	

tivities	_111111	YY/MM		5 6												10 11				4 5		e Organization	Achievements	Issue
Sub-Activities tput 1-H: Improvement of Flight Information Services Training		Month	1st 2	2nd 3rd	d 4th	5th	6th 71	h 8th	9th 1	10tn 11tl	n 12th	13th 14th	n 15th	16th 1	/th 18th	19th 20t	tn 21st	22nd 2	z3ra 24th	25th 26th	Japan	Malawi		Counterme
-H-1 Review current training syllabus/materials		Plan																			JICA		Integration of FIS into	
		Actual																			-		ATC is under transition. The training	
-H-2 Improve/develop training syllabus/materials		Plan Actual																			JICA	DCA	material is developed	
-H-3 Conduct training of instructors		Plan																			JICA	DCA	by JICA Expert.	
		Actual Plan																			-		_	
-H-4 Implement improved training courses		Actual																			JICA	DCA		
-H-5 Implement supervisor training (Overseas training)		Plan																			JICA	DCA		
		Actual Plan																					-	
-H-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																			JICA	DCA		
-H-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																			_	DCA		
					- I								· · · · · · · · ·			<u> </u>								
tivities Sub-Activities		YY/MM Month		5 6 2nd 3rd	7 d 4th	8 5th							6 15th	7 16th 1	8 9 7th 18th	10 11 19th 20t			2 3 23rd 24th	4 5 25th 26th		e Organization Malawi	Achievements	Issu Countern
tout 2-A: Improvement of Basic AIS Officer Training			100		4.11	our		un our	our			1001 140	i iotii	i vai		1001 200	2100	22110		2011 2011	oapan	Waldwi		Countern
-A-1 Review current training syllabus/materials		Plan																			JICA		Instructor training was	5
		Actual Plan																			-		carried out through Working Group activity	v.
-A-2 Improve/develop training syllabus/materials		Actual																			JICA	DCA		
-A-3 Conduct training of instructors		Plan Actual																			JICA	DCA	Training for AIS officer was conducted in	r
		Plan																				5.04	November 2015.	
-A-4 Implement improved training courses		Actual				ЩÌ					ΠП										JICA	DCA	4	
-A-5 Implement supervisor/advanced/specialist training (Overseas training)		Plan Actual				┝╋╋╋	╉╋╋		┼┼┼┼										┽┼┼┼		JICA	DCA		1
-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																			JICA	DCA	-	
		Actual																			JICA		_	
-A-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																				DCA		
put 2-B: Improvement of Basic Aeronautical Communication Officer Training	111111	Plan									<u> </u>		ППТ								1104		Training material is	
B-1 Review current training syllabus/materials		Actual																			JICA		being developed as	
B-2 Improve/develop training syllabus/materials		Plan Actual						_													JICA	DCA	AIM training by the Working Group.	
D.2. Conduct training of instructors		Plan																			JICA	DCA		
-B-3 Conduct training of instructors		Actual																			JICA	DCA	Training for ACS office was conducted in	er
-B-4 Implement improved training courses		Plan Actual																			JICA	DCA	November 2015.	
B-5 Implement supervisor/advanced/specialist training (Overseas training)		Plan																			JICA	DCA	ACS officer will be	
		Actual Plan																					integrated to AIM	
-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Actual																			JICA	DCA	section.	
-B-7 Improved training based on the result from the monitoring and evaluation		Plan							┟┊┊┊┠┊					++++		╉┋╧┽┨╧┿					-	DCA		
-B-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																				DCA		
tivit <u>ies</u>		Actual YY/MM	'14/4	5 6	7	8		0 11		15/1 2		4 5	-	7	8 9			'16/1	2 3	4 5		e Organization	Achievements	
tivities Sub-Activities	 		'14/4		7 d 4th	8							-	7 16th 1	8 9 7th 18th				2 3				- Achievements	
tivities Sub-Activities put 3-A: Improvement of General Communication Maintenance for Electronic Engineers		Actual YY/MM	'14/4		7 d 4th	8							-	7 16th 1	8 9 7th 18th				2 3	4 5	Japan	e Organization		Counter
tivit <u>ies</u>		Actual YY/MM Month Plan Actual	'14/4		7 d 4th	8	6th 71			10th 11th			-	7 16th 1	8 9 7th 18th	19th 201			2 3	4 5 25th 26th		e Organization	Training material was developed by JICA	Counter Carrying or with the eq
tivities Sub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials		Actual YY/MM Month Plan Actual Plan	'14/4		7 d 4th	8 5th	6th 71			10th 11th	th 12th		-	7 16th 11		19th 201			2 3 23rd 24th	4 5 25th 26th	Japan	e Organization	Training material was	Counter Carrying of with the ec difficult be
Sub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials		Actual YY/MM Month Plan Actual	'14/4	2nd 3rd		8 5th	6th 71			10th 11th	th 12th		-			19th 201			2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA	e Organization	Training material was developed by JICA Expert. Training with the	Counter Carrying or with the ec difficult be equipment operation.
tivities Sub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials		Actual YY/MM Month Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual	<u>'14/4</u> 1st 2	2nd 3rd		8 5th	6th 71		9th 1			13th 14th	15th			19th 201			2 3 23rd 24th	4 5 25th 26th	Japan JICA	e Organization	Training material was developed by JICA Expert. Training with the material was	Counter Carrying or with the ec difficult be equipment operation. There is no
Sub-Activities Iput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors		Actual YY/MM Month Plan Actual Plan Actual Plan Actual Plan Plan	<u>'14/4</u> 1st 2	2nd 3rd		8 5th	6th 71		9th 1			13th 14th	15th						2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA	e Organization	Training material was developed by JICA Expert. Training with the	Counter Carrying or with the ec difficult ber equipment operation. There is no equipment
Sub-Activities Igub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors -A-4 Implement improved training courses		Actual YY/MM Month Plan Actual Plan Actual Plan Actual Plan Actual Plan	<u>'14/4</u> 1st 2	2nd 3rd		8 5th	6th 7(9th 1			13th 14th	15th						2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA JICA JICA	e Organization Malawi DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronic: Engineers by JICA	Counter Carrying of with the ec difficult bere equipment operation. There is no equipment s Project use
Sub-Activities Sub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors		Actual YY/MM Month Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual	<u>'14/4</u> 1st 2	2nd 3rd					9th 1			13th 14th	15th						2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA JICA	e Organization Malawi	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics	Counter Carrying of with the ec difficult bee equipment operation. There is no equipment s Project use transmitter
Sub-Activities Igub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors -A-4 Implement improved training courses		Actual YY/MM MMM Plan Actual Actual Plan Actual Plan Actual Plan Actual Plan A	<u>'14/4</u> 1st 2	2nd 3rd		8 5th			9th 1			13th 14th	15th						2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA JICA JICA	e Organization Malawi DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronic: Engineers by JICA Expert & DCA	Counter Carrying of with the ec difficult bee equipment operation. There is no equipment s Project use transmitter
Sub-Activities Isub-Activities tput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors -A-4 Implement improved training courses -A-5 Implement specific training (Implement by 3-C、3-D、3-E) -A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Actual YY/MM Month Plan Actual		2nd 3rd					9th 1			13th 14th	15th						2 3 23rd 24th		Japan JICA JICA JICA JICA JICA JICA	e Organization Malawi DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronic: Engineers by JICA Expert & DCA	Counter Carrying o with the ec difficult be equipment operation. There is no equipment s Project us transmitter which wer
tivities Sub-Activities sput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors -A-4 Implement improved training courses -A-5 Implement equipment specific training (Implement by 3-C、3-D、3-E) -A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors -A-7 Improved training based on the result from the monitoring and evaluation		Actual YY/MM Month Plan Actual		2nd 3rd					9th 1			13th 14th	15th						2 3 23rd 24th	4 5 25th 26th	Japan JICA JICA JICA JICA JICA JICA	e Organization Malawi DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronic: Engineers by JICA Expert & DCA	Counter Carrying o with the ec difficult be equipment operation. There is no equipment s Project us transmitter which wer
Sub-Activities Sput 3-A: Improvement of General Communication Maintenance for Electronic Engineers -A-1 Review current training syllabus/materials -A-2 Improve/develop training syllabus/materials -A-3 Conduct training of instructors -A-4 Implement improved training courses -A-5 Implement equipment specific training (Implement by 3-C、3-D、3-E) -A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors -A-7 Improved training based on the result from the monitoring and evaluation Sput 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar		Actual YY/MM Month Plan Actual		2nd 3rd					9th 1			13th 14th	15th						2 3 23rd 24th		Japan JICA JICA JICA JICA JICA JICA	e Organization Malawi DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronic: Engineers by JICA Expert & DCA instructor.	Counter Carrying o with the ex difficult be equipment operation. There is n equipment s Project us transmitte which wer JICA.
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ANNEX 4

R/D, M/M, Minutes of JCC (copy)

ANNEX 4-1 R/D ANNEX 4-2 M/M ANNEX 4-3 Minutes of JCC1 ANNEX 4-4 Minutes of JCC2 ANNEX 4-5 Minutes of JCC3 ANNEX 4-6 Minutes of JCC4

RECORD OF DISCUSSIONS

ON

THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES

IN

THE REPUBLIC OF MALAWI

AGREED UPON BETWEEN

THE MINISTRY OF TRANSPORT AND PUBLIC WORKS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Lilongwe, 13th January 2014

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Katsuro Saito Chief Representative Malawi Office Japan International Cooperation Agency

Hon. Mohammed Sidik Mia, (MP) Minister of Transport and Public Works Government of Malawi

Based on the minutes of meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services (hereinafter referred to as "the Project") signed on 6 September 2013 between Department of Civil Aviation (hereinafter referred to as "DCA"), under the Ministry of Transport and Public Works, and Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with DCA and relevant organizations to develop a detailed plan of the Project.

Both parties agreed on the details of the Project and the main points discussed as described in Appendices 1 and 2 respectively.

Both parties also agreed that DCA, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Malawi.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 1 March 2006 (hereinafter referred to as "the Agreement") and the Note Verbales to be exchanged between the Government of Japan (hereinafter referred to as "GOJ") and the Government of the Republic of Malawi (hereinafter referred to as "GOM").

Appendix 1: Project Description

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- Appendix 2: Main Points Discussed
- Appendix 3: Minutes of Meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services

PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services signed on 6 September 2013 (Appendix 3).

I. BACKGROUND

Department of Civil Aviation (hereinafter referred to as "DCA") has the mandate to inter alia regulate and facilitate the development of airports and air navigation facilities. Kamuzu International Airport (hereinafter referred to as "KIA") was inaugurated in 1983 after the capital city was transferred from Zomba to Lilongwe. The Government of Japan (hereinafter referred to as "GOJ") provided Japanese ODA loans for the construction of the airport terminal building and installation of air navigation facilities from 1977 to 1982 in three phases. Recently, GOJ also provided a grant aid for the replacement of new navigation systems.

However, DCA faces serious shortage of trained staff for KIA as well as for the other airports in the Republic of Malawi. Upgrading of training for current air navigation staff is also deemed necessary to keep up with technological progress in air navigation services.

DCA, in recognition of these issues, plans to strengthen its training functions in order to utilize air navigation facilities in compliance with international standards and to secure sustainability in operation and maintenance of air navigation facilities, and requested GOJ for the implementation of the Project for Capacity Development in Air Navigation Services.

II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).

1. Input

- (1) Input by JICA
 - (a) Dispatch of Experts
 - Chief Advisor/Training Manager
 - Air Traffic Controller (ATC) Training Specialist
 - Aeronautical Information Service (AIS) Training Specialist
 - Communications, Navigation and Surveillance (CNS) Maintenance Training Specialist
 - Electrical/Mechanical Maintenance Training Specialist
 - Flight Procedure Design Specialist
 - Others as necessary

- (b) Overseas Trainings
- (c) Machinery and Equipment
 - Training equipment

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of GOM upon being delivered C.I.F. (cost, insurance and freight) to the Republic of Malawi authorities concerned at the ports and/or airports of disembarkation.

Input other than indicated above will be determined through mutual consultations between JICA and DCA during the implementation of the Project, as necessary.

(2) Input by DCA

DCA will take necessary measures to provide at its own expense:

- (a) Services of DCA's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project including the project office expenses and travel expenses of DCA staff within the Republic of Malawi;
- (h) Expenses necessary for transportation within the Republic of Malawi of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to JICA experts for the remittance as well as utilization of the funds introduced into the Republic of Malawi from Japan in connection with the implementation of the Project

2. Implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

1) DCA

- (a) Director, DCA, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
- (b) Deputy Director, DDCA (Operations), as the Project Manager, will be responsible for the managerial and technical matters of the Project.
- (c) Principal, School of Aviation, DCA, as the Co-Project Manager, will be responsible for the managerial and technical matters of the Project.
- (d) The Project Coordinators, Heads of Divisions, DCA, will assist the Project Manager for respective fields of management.
- (2) JICA Experts

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The JICA experts will give necessary technical guidance, advice and recommendations to DCA on any matters pertaining to the implementation of the Project.

(3) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex 4.

3. Project Site(s) and Beneficiaries

The project sites are DCA, School of Aviation, airports and relevant facilities. Beneficiaries of the Project are Air Traffic Controllers, Flight Information Officers, AIS Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA. The Project will benefit airlines and air travelling passengers flying Malawi airspaces.

4. Duration

The duration of the technical cooperation for the Project under the attached documents will be two (2) years from the date of arrival of the first expert.

5. Reports

DCA and JICA experts will jointly prepare the following reports in English.

- (1) Progress reports on semiannual basis until the project completion.
- (2) Project completion reports at the time of project completion.
- 6. Environmental and Social Considerations

ICCA agreed to libide by IICA Guidelines for Environmental and Social Considerations in

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order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.



III. UNDERTAKINGS OF DCA AND GOM

DCA and GOM will take necessary measures to;

- (1) ensure that the technologies and knowledge acquired by the Republic of Malawi nationals as a result of Japanese technical cooperation contributes to the economic and social development of the Republic of Malawi, and that the knowledge and experience acquired by the personnel of the Republic of Malawi from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to JICA experts referred to in II-1 (1) (a) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in the Republic of Malawi.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement on Technical Cooperation signed on 1 March 2006 between the Government of Japan and GOM.

IV. EVALUATION

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JICA and DCA will jointly conduct the Terminal evaluation during the last six (6) months of the cooperation term.

Subsequently JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. DCA is required to provide necessary support for them.

- 1. Ex-post evaluation three (3) years after the project completion, in principle
- 2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, DCA will take appropriate measures to make the Project widely known to the people of the Republic of Malawi.

VI. MUTUAL CONSULTATION

JICA and DCA will consult each other whenever any major issues arise in the course of Project implementation.

VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and DCA.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1: Logical Framework (Project Design Matrix: PDM)
- Annex 2: Tentative Plan of Operation (PO)
- Annex 3: Project Organization Chart

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Annex 4: A List of Proposed Members of Joint Coordinating Committee

Annex 1: Project Design Matrix (PDM)

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The Project for Capacity Development for Air Navigation Services Date: 6 September 2013 Project Design Matrix (PDM) Ver. 1.0 Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical

Target Group:Air Traffic Controllers, Flight Information Officers, Aeronautical
Information Services Officers, Aeronautical Communication Officers,
Electronic Engineers and Electrical/Mechanical Engineers of DCAImplementation Period:2 years from April 2014

Narrative Summary	Performance Targets/ Indicators	Data Source/ Reporting Mechanism	Assumptions and Risks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records	
Project Purpose (Objective at the end of the Project)			
Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	 Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS: 4 (1) ACS: 4 (1) Electronic Eng.: 4 (1) E/M Eng.: 4 (1) E/M Eng.: 4 (1) Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least XXX %. (Target value "XXX %" will be set with the results of a baseline survey.) 	 Project Progress Reports Terminal Evaluation Report 	 Trained counterpart personnel continue to be engaged in the activities of air navigation services. No major change in the national policy on air navigation services within the national plan/ strategy is occurred.
Outputs (Objectives to be realized by Activities to achieve the Project Purpose)			
 Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. Fraining for Example 4 	 Training syllabus and training materials are improved or developed for the following number of courses: MC FIS 6 MS ACS 	 Project Progress Reports 	 No major change of the international standards on air navigation arvices is occurred

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Electronic Engineering is improved. 4. Training of Electrical/ Mechanical Engineering (E/M Eng) is improved. 4. Training of Electrical/ Mechanical Engineering (E/M Eng) is improved. 4. Training of Engineering (E/M Eng) is improved. 4. ACS: 4 4. ACS: 4. ACS: 4 4. ACS: 4. ACS: 4. ACS: 4 4. ACS: 4. ACS:	score ive the t eeds at t value
Activities (Specific actions to produce each Output	Inputs
 Improvement of ATC and FIS Training 1-1. Review current training syllabus a materials 1-2. Improve/develop training syllabus materials 1-3. Conduct training of instructors 1-4. Implement improved training course 1-5. Implement supervisor training 1-6. Conduct monitoring and evaluation trainings implemented by the train instructors 1-7. Improve the training courses base results from the monitoring and evaluation materials 2-1. Review current training syllabus and materials 2-2. Improve/develop training syllabus and materials 2-3. Conduct training of instructors 2-4. Implement improved training course 2-5. Implement supervisor/advanced/spet training 2-6. Conduct monitoring and evaluation of training syllabus implemented by the trained training 	Personnelsufficientaining-Support Staff-Project OfficeSpaceProject OfficeExpensesTravel Expensesof CounterpartPersonnel withinMalawiThe others mentionedin Appendix1, II, 6, ofR/D-Experts-Chief-ChiefAdvisor/TrainingATC TrainingManagerATC TrainingSpecialist-

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Improvement of Electronic Engineering Training	Maintenance
3-1. Review current training syllabus and training materials	Training Specialist Electrical/
3-2. Improve/develop training syllabus and training materials	Mechanical Maintenance
3-3. Conduct training of instructors	Training Specialist
3-4. Implement improved training courses	Others as
3-5. Implement equipment-specific training	necessary
3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	 Training materials Training
3-7. Improve the training courses based on the results from the monitoring and evaluation	equipment - Overseas training
Improvement of Electrical/Mechanical Engineering Training	
 4-1. Review current training syllabus and training materials 	
4-2. Improve/develop training syllabus and training materials	
4-3. Conduct training of instructors	
4-4. Implement improved training courses	
4-5. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	
4-6. Improve the training courses based on the results from the monitoring and evaluation	

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Annex 2: Tentative Plan of Operation (PO)

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The Project for Capacity Development for Air Navigation Services Date: 6 September 2013 Tentative Plan of Operation (PO) Ver. 1.0 Target Group: Air Traffic Controllers, Elight Information Officers, Apropartice

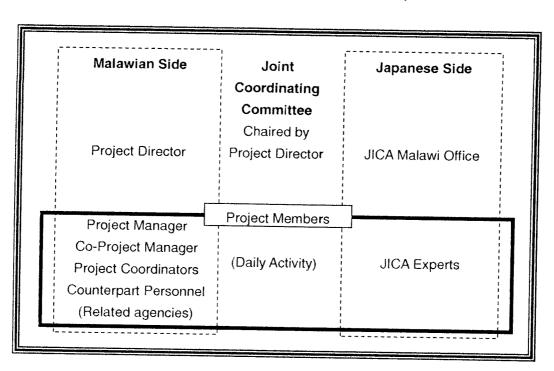
Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers,

Electronic Engineers and Electrical/Mechanical Engineers of DCA Implementation Period: 2 years from April 2014

imom-	ts Activities	Target Group	<u>'</u>		2014				2015		201
1-1.		ATC/FIS		_						1	
	Review current training syllabus and training materials	ļ									
1-2.	Improve/develop training syllabus and training materials										
1-3.	Conduct training of instructors										
1-4.	Implement improved training courses									-+	
1-5.	Implement supervisor training								·		
1-6.	Conduct monitoring and evaluation of the trainings implemented by the trained instructors										
1-7.	Improve training based on the result from the monitoring and evaluation			1							
	New Recruits				F	IS 🔺			AT	c 🔺	
nprover	ment of AIS and ACS Training	AIS/ACS									+
2-1.	Review current training syllabus and training materials										•
2.2.	Improve/develop training syllabus and training materials			+							
2-3.	Conduct training of instructors			+							
2-4.	Implement improved training courses			-						-	
2-5.	Implement supervisor/advanced/specialist training			+	_						
2-6.	Conduct monitoring and evaluation of the trainings implemented by the trained instructors										
2-7.	Improve training based on the result from the monitoring and evaluation			-			_				
	New Recruits	ľ		ļ ,	AIS/AC	s 🛦					
proven	nent of Electronic Engineering Training	Electronic			T	-				+	+
3-1	Review current training syllabus and training materials	-	······		_				+		
3-2.	Improve/develop training syllabus and training materials	-		t		-					
3-3.	Conduct training of instructors	-	-1. 18 m	<u> </u>		· • • · · ·					ļ
3-4.	Implement improved training courses	L					-				.
3-5.	Implement equipment-specific training	-		h						ļ	
3-6.	Conduct monitoring and evaluation of the trainings implemented by the trained instructors	-						-		ļ	
3-7	Improve training based on the result from the monitoring and evaluation	-						-			
_	New Recruits				· · · · · -						
provem	ent of Electrical/Mechanical Engineering Training	E·M			+		+		<u> </u>		
-	Review current training syllabus and training in aterials						· +				
1-2.	Improve/develop training syllabus and training materials				1	+	+		ļ		
4-3.	Conduct training of instructors						•	+	Ļ	•	
1-4	Implement improved training courses		· _		ļ	*****		I 	ļ		
1-5	Conduct monitoring and evaluation of the trainings implemented by the trained instructors										
4 19	Improve training based on the result from the monitoring and evaluation		-					2300			-
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Annex 3: Organization Chart

The Project will be implemented by DCA in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:



Joint Implementation Structure of the Project

Annex 4: A List of Proposed Members of Joint Coordinating Committee

Chairperson and members of the JCC will be as follows:

1) Chairperson

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- Project Director: Director, Department of Civil Aviation (DCA)
- 2) Members from the Malawian Side
 - Project Manager: Deputy Director, DDCA (Operations)
 - Co- Project Manager: Principal, School of Aviation, DCA
- Project Coordinators
- Members of the Counterpart Teams
- Heads of Relevant Sections
- Personnel concerned to be decided by the Malawian Side
- 3) Members from the Japanese Side
 - Japanese Experts
 - Representative, JICA Malawi Office
- Personnel concerned to be decided by the Japanese Side
- 4) Others

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- Officials of the Embassy of Japan in Malawi may attend the meeting as observers.
- Persons who are invited by the Chairperson may attend the meeting as observers.

Appendix 2

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MAIN POINTS DISCUSSED

This part of the R/D notes remarkable issues for the implementation of the Project that were confirmed by DCA and JICA through the discussions during the Detailed Planning Survey in August and September 2013.

1. Training of Instructors and Improvement of Training Courses

The Malawi taskforce members with assistance of JICA experts will implement training of instructors and improvement of training courses at School of Aviation for the following subjects.

- 1.1 Training of Air Traffic Controllers and Flight Information Officers
 - (a) Basic Training for Air Traffic Controllers
 - (b) Aerodrome Control Services
 - (c) Procedural Approach Control Services
 - (d) Procedural Area Control Services
 - (e) New CNS/ATM Technology for Air Traffic Controllers
 - (f) Basic Training for Flight Information Officers
- 1.2 Training of Aeronautical Information and Communication Services Officers
 - (a) Basic Training for AIS Officers
 - (b) Basic Training for Aeronautical Communication Officers
- 1.3 Training of Electronic Engineers
 - (a) General Communication Maintenance
 - (b) Concept Courses for ILS, DVOR, DME and Radar
 - (c) Maintenance Course for Park Air VHF
 - (d) Maintenance Courses for Normarc ILS
 - (e) Maintenance Courses for Maru DVOR/DME
 - (f) New CNS/ATM Technology for Electronic Engineers
- 1.4 Training of Electrical/Mechanical Engineers
 - (a) Concept Course for Airfield Lighting System
 - (b) Concept Course for Uninterrupted Power Supply System (UPSS)
- 2. Instructors

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DCA will assign the flowing instructors for the implementation of the Project.

Areas of Specialization	Instructors
Air Traffic Services (ATC and FIS)	3 full-time and 3 part-time and OJT
AIS and Aeronautical Communication Services	4 full-time
Electronic Engineering	2 full-time and 2 part-time
Electrical/Mechanical Engineering	2 full-time and 2 part-time

3. New Students to School of Aviation

DCA will train the following number of students for which basic training will be undertaken at the School of Aviation.

Areas of Specialization	Number	Start of Training
Air Traffic Controllers	12	October 2015
Flight Information Officers	8	October 2014
AIS Officers	10	October 2014
Aeronautical Communication Officers	6	October 2014
Electronic Engineers	8	January 2014
Electrical/Mechanical Engineers	2/2	March 2014

4. Overseas Training

Based on the assessment of HRD needs in DCA's air navigation services, the following were identified for training of instructors, supervisors and specialists. These training needs are efficiently conducted at overseas training institutes of ATNS Aviation Academy in South Africa, East Africa School of Aviation (EASA) in Kenya and others. JICA does not commit the implementation of those specialized training at this stage, but will make best effort to meet the needs of DCA for effective implementation of the Project.

Training Subjects	Number of Trainees	Probable Venue
Instructor Development Program (Train the Trainer Course)	10	EASA/ATNS
Supervisor Training for Air Traffic Controllers (Team Resource Management)	4	ATNS
Supervisor/Advanced Training for AIS Officers	4	ATNS
Supervisor/Advanced Training for Aeronautical Communication Officers	4	EASA
Aeronautical Cartography (Aeronautical Charts)	2	EASA/ATNS
PANS/OPS Instrument Procedure Design Conventional Flight Procedures	2	EASA
Maintenance of Normarc ILS 7013B/7033B	-4	Tbd

The selection of trainees of the above courses will require consensus between DCA and JICA

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experts, and those trainees who have completed the above courses should conduct echo seminar or cascade training to share the knowledge and skills obtained through the training to relevant DCA officers.

5. Training Equipment

JICA will provide the following equipment for the implementation of the Project:

- (a) PC-based Simulator Training System for Air Traffic Controllers
- (b) Computer Based Training (ATC)
- (c) Test Instrument and equipment such as Oscilloscope, Digital Multi-Meter, Frequency Counter, RF Power Meter, Level Meter, Function Generator, Spectrum Analyzer, etc.
- (d) Learning Aids and Office Equipment such as Personal Computer, Copier/Printer/ Scanner, Projector, Network Equipment, Voltage Regulator, etc.
- 6. Update of Manuals of Air Traffic Services and CNS Equipment Maintenance Procedures

DCA will update the Manual of Air Traffic Services and the CNS Equipment Maintenance Procedures by the middle of 2014 as it is an important reference material for training for various air navigation services.

7. Project Office

DCA will provide Project office space at School of Aviation or wherever may seem necessary. The office space should accommodate 6 desks and chairs and other office facilities, and have access to internet. DCA will also provide air-conditioners for the Project office and simulator training rooms.

8. PBN Flight Procedure Design Training

JICA organizes a PBN Flight Procedure Design Training Course in Tokyo every year. Flight procedure designers, who will successfully complete PANS/OPS Instrument Procedure Design Training under this Project, are expected to apply for the PBN training in Japan.

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Appendix 3:

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Minutes of Meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services

(Please refer to the following pages)

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MINUTES OF MEETING

THE DETAILED PLANNING SURVEY ON THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES

The Government of the Republic of Malawi (hereinafter referred to as "GOM") made an official request to the Government of Japan (hereinafter referred to as "GOJ) for the Project for Capacity Development for Air Traffic Safety in August 2010.

In response to the request, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a detail planning survey team (hereinafter referred to as "the feam") headed by Mr. Hiroyuki UEDA, Senior Advisor on Transport Sector, to the Republic of Malawi from 25 August to 11 September 2013.

During its stay, both the Team and authorities of GOM concerned had a series of discussions and exchanged views on the Project based on the field observations at various air navigation facilities. Both Japanese and Malawi sides also held meetings to prepare the drafts of the Record of Discussions (R/D), the Project Design Matrix (PDM) and the Plan of Operation (PO) of the Project.

As a result of the discussions, both sides agreed to the matters referred to in the documents attached hereto.

Lilongwe, 6 September 2013

Hirosoki Cada

Ecader (7) Defailed Planning Survey Team (i) an Interactional Cooperation Agency (IICA) (7)

Alfred C. Mtilatila Director of Civil Aviation Department of Civil Aviation (DCA) The Government of the Republic of Malawi

I. Title of the Project

Both sides confirmed that the title of the Project should be "the Project for Capacity Development for Air Navigation Services" (hereinafter referred to as "the Project"). Both sides confirmed to undertake necessary actions to formalize the title of the Project with relevant government authorities.

11. Draft PDM and PO

The drafts of the PDM and the PO of the Project were prepared in consultation of stakeholders and through meetings as attached in Appendices I and II. The PDM and the PO will be used as a management tool of the Project, and will be finalized by the time of signing of the R/D.

III. Draft Record of Discussions (R/D)

The draft R/D, as the official document which defines the contents of a technical cooperation project, was prepared and agreed through a series of discussions as attached in Appendix III. The draft R/D will be finalized in the course of further consultations towards the signing.

IV. Provisional Schedule until the Project Commencement

- (1) Signing on the R/D in October 2013
- (2) Commencement of the Project in March 2014

Appendices

Appendix I: Project Design Matrix (PDM)

Appendix II: Tentative Plan of Operation (PO)

Appendix III: Draft Record of Discussion (R/D)

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Appendix I to Minutes of Meeting on the Project for Capacity Development for Air Navigation Services Project Design Matrix (PDM)

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The Project for Capacity Development for Air Navigation Services Date: 6 September 2013 Project Design Matrix (PDM) Ver. 1.0 Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical

Target Group:Air Traffic Controllers, Flight Information Officers, Aeronautical
Information Services Officers, Aeronautical Communication Officers,
Electronic Engineers and Electrical/Mechanical Engineers of DCAImplementation Period:2 years from March 2014

Narrative Summary	Performance Targets/ Indicators	Data Source/ Reporting Mechanism	Assumptions and Risks	
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training record		
Project Purpose (Objective at the end of the Project) Training system for air navigation services is enhanced	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) - ATC/FIS: 6 (1) - AIS: 4 (1) - ACS: 4 (1) - Electronic Eng.: 4 (1) - E/M Eng.: 4 (1) Number in () indicates current situation.	 Project Progress Reports Terminal Evaluation Report 	 DCA secures budget for conducting training for air navigation services. DCA secures necessary number of new staff for air navigation services. 	
Dutputs Objectives to be ealized by Activities o achieve the Project Purpose)				
Fraining of Air Fraining of Air (ATC) and Flight Information Services (FIS) is improved Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is moroved Training of	 Training syllabus and training materials are improved or developed for the following number of courses: AFC/FIS 6 AIS/ACS 2 Electronic Eng. 6 E/M Eng 2 The following number of DCA officers successfully complete supervisor/ advanced/specialist training 	 Project Progress Reports Results of completion tests for supervisor/ advanced/specialist training courses 	 DCA allocates adequate budget for human resource development. Counterpart personnel continue to engage in the Project. 	

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Appendix I to Minutes of Meeting on the Project for Capacity Development for Air Navigation Services Project Design Matrix (PDM)

improved. 4 Training of Electrical/ Mechanical Engineering is improved. 4 AIS: 4 • ACS. 4 • Aeronautical Cartography: 2 • PANS/OPS: 2 • ILS Maintenance: 4		
 ILS Maintenance: 4 Activities (Specific actions to produce each Output by use of Inputs) Improvement of ATC and FIS Training 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 1-3. Conduct training of instructors 1-4. Implement improved training courses 1-5 Implement supervisor training Improvement of AIS and ACS Training 2-1 Review current training syllabus and training materials 2-2. Improve/develop training syllabus and training materials 2-3. Conduct training of instructors 2-4 Implement improved training courses 2-5 Implement supervisor/advanced/specialist training Improvement of Electronic Engineering Training 3-1. Review current training syllabus and training materials 3-2 Improve/develop training syllabus and training materials 3-3 Conduct training of instructors 3-4. Implement improved training syllabus and training materials 3-5. Implement improved training courses 3-6. Implement improved training courses 3-7. Implement improved training syllabus and training materials 3-2. Improve/develop training syllabus and training materials 3-3. Conduct training of instructors 3-4. Implement improved training courses 3-5. Implement equipment-specific training Improvement of Electrical/Mechanical Engineering Improvement of Electrical/Mechanical Engineering Improvement of Electrical/Mechanical Engineering Improvement of Electrical/Mechanical Engineering 	Inputs Inputs Inputs from DCA Counterpart Personnel Support Staff Project Office Space Project Office Expenses Travel Expenses Travel Expenses Travel Expenses Travel Expenses Counterpart Personnel within Malawi Inputs from JICA Experts Chief Advisor/Training Manager ATC Training Specialist AIS/ACS Training Specialist Electronic Maintenance Training Specialist Electrical/ Mechanical Maintenance Training Specialist Others as	 DCA implements the Project with sufficient ownership. Preconditions The Project is supported by the Ministry of Transport and Public Works. DCA secures budget for inputs of the Project.
4-2 Improve/develop training syllabus and training materials	necessary - Training materials - Training	
 1-3 Conduct training of instructors 1-4 Implement improved training courses 	equipment Overseas training	:

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Appendix II to Minutes of Meeting on the Project for Capacity Development for Air Navigation Services Tentative Plan of Operation (PO)

The Project for Capacity Development for Air Navigation Services Date: 6 September 2013 Tentative Plan of Operation (PO) Ver. 1.0 Target Group:

Air Traffic Controllers, Flight Information Officers, Aeromautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA Implementation Period: 2 years from March 2014

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Outputs		Target Group	2014	2015	
Improver	tent of ATC and FIS Training	ATC/FIS			2016
1-1	Review current training syllabus and training materials				
1-2.	Improve/develop training syllabus and training materials				╞
1-3.	Conduct training of instructors				
1-4	Implement improved training courses				<u> </u>
1-5	Implement supervisor training				
	New Recruits		FIS 🛦	ATC A	÷
Improven	ent of AIS and ACS Training	AIS/ACS			
2-1	Review current training syllabus and training materials	-		······	
2-2.	Improve/develop training syllabus and training materials	-			
2-3	Conduct training of instructors				
2-4	Implement improved training courses				
2-5	Implement supervisor/advanced/specialist training			1 / · · · · · · · · · · · · · · · · · ·	
	New Recruits		AIS/ACS		
mprovern	ent of Electronic Engineering Training	Electronic			
3-1	Review current training syllabus and training materials				· · · · · · · · · · · · · · · · · · ·
3-2.	Improve/develop training syllabus and training materials				
3-3	Conduct training of instructors			energe e la serie de la se	
3-4	Implement improved training courses		· · · · · · · · · · · · · · · · · · ·		
3-5	Implement equipment-specific training	-			
~~~~	New Recruits				· · ·
mprovem	ent of Electrical/Mechanical Engineening Training	E/M			
4-1	Review current training syllabus and training materials				
4-2.	mprove/develop training syllabus and training materials				
4-3	Conduct training of instructors				
4-4	mplement improved training courses	-	1 <u>+ -</u>		
	New Recruits		- *		

# RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN THE REPUBLIC OF MALAWI

### AGREED UPON BETWEEN

# THE DEPARTMENT OF CIVIL AVIATION AND JAPAN INTERNATIONAL COOPERATION AGENCY

Lilongwe, xxx October 2013

Katsuro Saito Chief Representative Malawi Office Double Committional Cooperation Agency

Alfred C. Mtilatila Director Department of Civil Aviation (DCA) The Government of Malawi

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ANNEX 4(1

Based on the minutes of meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services (hereinafter referred to as "the Project") signed on 6 September 2013 between Department of Civil Aviation (hereinafter referred to as "DCA") and Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with DCA and relevant organizations to develop a detailed plan of the Project.

Both parties agreed on the details of the Project and the main points discussed as described in Attachments 1 and 2 respectively.

Both parties also agreed that DCA, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Malawi.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 1 March 2006 (hereinafter referred to as "the Agreement") and the Note Verbales to be exchanged between the Government of Japan (hereinafter referred to as "GOJ") and the Government of the Republic of Malawi (hereinafter referred to as "GOM").

Attachment 1: Project Description

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- Attachment 2: Main Points Discussed
- Attachment 3: Minutes of Meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services

### Attachment 1 to the R/D

#### PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the Detailed Planning Survey on the Project for Capacity for Air Navigation Services signed on 6 September 2013 (Attachment 3).

#### I. BACKGROUND

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Department of Aviation (DCA) has the mandate to inter alia regulate and facilitate the development of airports and air navigation facilities. Kamuzu International Airport (KIA) was inaugurated in 1983 after the capital city was transferred from Zomba to Lilongwe. The Government of Japan (GOJ) supported the Government of Malawi (GOM) with Japanese Yen loan for the construction of the airport terminal building and installation of air navigation facilities from 1977 to 1982 in three phases. Recently, GOJ also implemented a grant aid project for the replacement of new navigation systems.

However, DCA faces serious shortage of trained staff for KIA as well as for other airports in Malawi. Upgrading of training for existing air navigation staff is also deemed necessary to up with technological progress in air navigation services.

DCA, in recognition of these issues, plans to strengthen its training functions in order to best utilize air navigation facilities in compliance with international standards and to secure sustainability in operation and maintenance of air navigation facilities, and requested GOJ for the implementation of the Project for Capacity Development in Air Navigation Services.

# II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).

1. Input

(1) Input by JICA

(a) Dispatch of Experts

Chief Advisor/Training Manager

ATC Training Specialist

AIS Training Specialist

CNS Maintenance Training Specialist

Electrical/Mechanical Maintenance Training Specialist

Thers as necessary

Second Contracts

- (c) Machinery and Equipment
  - Training equipment

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of GOM upon being delivered C.I.F. (cost, insurance and freight) to the Republic of Malawi authorities concerned at the ports and/or airports of disembarkation.

Input other than indicated above will be determined through mutual consultations between JICA and DCA during the implementation of the Project, as necessary.

(2) Input by DCA

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DCA will take necessary measures to provide at its own expense:

- (a) Services of DCA's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project including the project office expenses and travel expenses of DCA staff within Malawi;
- (h) Expenses necessary for transportation within the Republic of Malawi of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to JICA experts for the remittance as well as utilization of the funds introduced into the Republic of Malawi from Japan in connection with the implementation of the Project

#### 2. implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) DCA

a) Director DCA, as the Project Director, will bear overall responsibility for the connistration and implementation of the Project.

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- (b) Deputy Director, DDCA (Operations), as the Project Manager, will be responsible for the managerial and technical matters of the Project.
- (c) Principal, School of Aviation, DCA, as the Co-Project Manager, will be responsible for the managerial and technical matters of the Project.
- (d) The Project Coordinators, Heads of Divisions, will assist the Project Manager for respective fields of management.

#### (2) JICA Experts

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The JICA experts will give necessary technical guidance, advice and recommendations to DCA on any matters pertaining to the implementation of the Project.

(3) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex 4.

#### 3. Project Site(s) and Beneficiaries

The project sites are DCA, School of Aviation, airports and relevant facilities. Beneficiaries of the Project are Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA. The Project will benefit airlines and air travelling passengers flying Malawi airspaces.

#### 4. Duration

The duration of the technical cooperation for the Project under the Attached Documents will be two (2) years from the date of arrival of the first expert.

#### 5. Reports

DCA and JICA experts will jointly prepare the following reports in English.

- (1) Progress reports on semiannual basis until the project completion.
- (2) Project completion reports at the time of project completion.

# 6. Environmental and Social Considerations

OCA agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in other to ensure that appropriate considerations will be made for the environmental and social oddts of the Project.

# III. UNDERTAKINGS OF DCA AND GOM

DCA and GOM will take necessary measures to;

- (1) ensure that the technologies and knowledge acquired by the Republic of Malawi nationals as a result of Japanese technical cooperation contributes to the economic and social development of the Republic of Malawi, and that the knowledge and experience acquired by the personnel of the Republic of Malawi from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to JICA experts referred to in II-1 (1) (a) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in the Republic of Malawi.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement on Technical Cooperation signed on 1 March 2006 between the Government of Japan and GOM.

#### IV. EVALUATION

JICA and DCA will jointly conduct the Terminal evaluation during the last six (6) months of the cooperation term

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. DCA is required to provide necessary support for them.

- 1 Ex-post evaluation three (3) years after the project completion, in principle
- 2. Follow-up surveys on necessity basis

# V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, DCA will take appropriate measures to make the Project widely known to the people of the Republic of Malawi.

#### VI. MUTUAL CONSULTATION

JICA and DCA will consult each other whenever any major issues arise in the course of Project implementation.

#### VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and OCA

a manage of meetings will be signed by authorized persons of each side who may be received in the express of the lecond of tiscussions.

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- Annex 1: Logical Framework (Project Design Matrix: PDM)
- Annex 2: Tentative Plan of Operation (PO)
- Annex 3: Project Organization Chart

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Annex 4: A List of Proposed Members of Joint Coordinating Committee

Annex 1 to the Project Descriptions: Project Design Matrix (PDM)

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(PDM in the Minutes of Meeting with necessary modifications agreed between JICA and DCA will be here)



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Annex 2 to the Project Descriptions: Tentative Plan of Operation (PO)

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(Tentative PO in the Minutes of Meeting with necessary modifications agreed between JICA and DCA will be here)

# Annex 3 to the Project Descriptions: Organization Chart

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The Project will be implemented by DCA in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:

Μ	lalawian Side	Joint Coordinating Committee Chaired by	Japanese Side
Pr	oject Director	Project Director	JICA Malawi Office (Embassy of Japan)
Pro	oject Manager	Project Members	
Co-F Proje	Project Manager ect Coordinators	(Daily Activity)	JICA Experts
	erpart Personnel ated agencies)		

# Joint Implementation Structure of the Project

# Annex 4: A List of Proposed Members of Joint Coordinating Committee

Chairperson and members of the JCC will be as follows:

1) Chairperson

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- Director, Department of Civil Aviation (DCA)
- 2) Members from the Malawian Side
- Deputy Director, DDCA (Operations)
- Principal, School of Aviation, DCA
- Project Coordinators
- Members of the Counterpart Teams
- Heads of Relevant Sections
- Personnel concerned to be decided by the Malawian Side
- 3) Members from the Japanese Side
- Japanese Experts
- Chief Representative, JICA Malawi Office
- Personnel concerned to be decided by the Japanese Side
- 4) Others

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- Officials of the Embassy of Japan in Malawi may attend the meeting as observers.
- Persons who are invited by the Chairperson may attend the meeting as observers.

#### Attachment 2 to the R/D

### MAIN POINTS DISCUSSED

This part of the R/D notes remarkable issues for the implementation of the Project that were confirmed by DCA and JICA through the discussions during the Detailed Planning Survey in August 2013.

1. Training of Instructors and Improvement of Training Courses

The Malawi taskforce members with assistance of JICA experts will implement training of instructors and improvement of training courses at School of Aviation for the following subjects.

- 1.1 Training of Air Traffic Controllers and Flight Information Officers
  - (a) Basic Training for Air Traffic Controllers
  - (b) Aerodrome Control Services

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- (c) Procedural Approach Control Services
- (d) Procedural Area Control Services
- (e) New CNS/ATM Technology for Air Traffic Controllers
- (f) Basic Training for Flight Information Officers
- 1.2 Training of Aeronautical Information and Communication Services Officers
  - (a) Basic Training for AIS Officers
  - (b) Basic Training for Aeronautical Communication Officers
- 1.3 Training of Electronic Engineers
  - (a) General Communication Maintenance
  - (b) Concept Courses for ILS, DVOR, DME and Radar
  - (c) Maintenance Course for Park Air VHF
  - (d) Maintenance Courses for Normarc ILS
  - (e) Maintenance Courses for Maru DVOR/DME
  - (t) New CNS/ATM Technology for Electronic Engineers
- 1.4 Training of Electrical/Mechanical Engineers
  - (a) Concept Course for Airfield Lighting System
  - (b) Concept Course for Uninterrupted Power Supply System (UPSS)
- Pathietors

- 2 set is state the flowing instructors for the implementation of the Project

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Areas of Specialization	Instructors
Air Traffic Services (ATC and FIS)	3 full-time and 3 part-time and OJT
AIS and Aeronautical Communication Services	4 full-time
Electronic Engineering	2 full-time and 2 part-time
Electrical/Mechanical Engineering	2 full-time and 2 part-time

# 3. New Students to School of Aviation

DCA will train the following number of students for which basic training will be undertaken at the School of Aviation.

Areas of Specialization	Number	Start of Training
Air Traffic Controllers	12	October 2015
Flight Information Officers	8	October 2014
AIS Officers	10	October 2014
Aeronautical Communication Officers	6	October 2014
Electronic Engineers	8	January 2014
Electrical/Mechanical Engineers	2/2	March 2014

# 4. Overseas Training

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Based on the assessment of HRD needs in DCA's air navigation services, the following were identified for training of instructors, supervisors and specialists. These training needs are efficiently conducted at overseas training institutes of ATNS Aviation Academy in South Africa, East Africa School of Aviation (EASA) in Kenya and others. JICA does not commit the implementation of those specialized training at this stage, but will make best effort to meet the needs of DCA for effective implementation of the Project.

Training Subjects	Number of Trainees	Probable Venue
Instructor Development Program (Train the Trainer Course)	10	EASA/ATNS
Supervisor Training for Air Traffic Controllers (Team Resource Management)	4	ATNS
Supervisor/Advanced Training for AIS Officers	4	ATNS
Supervisor/Advanced Training for Aeronautical Communication Officers	4	EASA
Veronautical Cartography (Aeronautical Charts)	2	EASA/ATNS
PANS/OPS Instrument Procedure Design – Conventional Flight Procedures	2	EASA
Maintenance of Normarc ILS 7013B/7033B	4	Fbd

The selection of trainees of the above courses will require consensus between DCA and JICA a lefts, and these trainees who have completed the above courses should conduct echo

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seminar or cascade training to share the knowledge and skills obtained through the training to relevant DCA officers.

#### 5. Training Equipment

JICA will provide the following equipment for the implementation of the Project:

- (a) PC-based Simulator Training System for Air Traffic Controllers
- (b) Computer Based Training (ATC)
- (c) Test Instrument and equipment such as Oscilloscope, Digital Multi-Meter, Frequency Counter, RF Power Meter, Level Meter, Function Generator, Spectrum Analyzer, etc.
- (d) Learning Aids and Office Equipment such as Personal Computer, Copier/Printer/ Scanner, Projector, Network Equipment, Voltage Regulator, etc.
- 6. Update of Manuals of Air Traffic Services and CNS Equipment Maintenance Procedures

DCA will update the Manual of Air Traffic Services and the CNS Equipment Maintenance Procedures by the middle of 2014 as it is an important reference material for training for various air navigation services.

7. Project Office

DCA will provide Project office space at School of Aviation or wherever may seem necessary. The office space should accommodate 6 desks and chairs and other office facilities, and have access to internet. DCA will also provide air-conditioners for the Project office and simulator training rooms.

# 8. PBN Flight Procedure Design Training

JICA organizes a PBN Flight Procedure Design Training Course in Tokyo every year. Flight procedure designers, who will successfully complete PANS/OPS Instrument Procedure Design Training under this Project, are expected to apply for the PBN training in Japan.

- END -

ANNEX 4-1



(e) Attachment 3 to the R/D

(Minutes of Meetings on the Project for Capacity Development for Air Navigation Services signed on 6 September 2013 will be attached here)



#### **MINUTES OF MEETING**

# THE DETAILED PLANNING SURVEY ON THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES

The Government of the Republic of Malawi (hereinafter referred to as "GOM") made an official request to the Government of Japan (hereinafter referred to as "GOJ) for the Project for Capacity Development for Air Traffic Safety in August 2010.

In response to the request, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a detail planning survey team (hereinafter referred to as "the Team") headed by Mr. Hiroyuki UEDA, Senior Advisor on Transport Sector, to the Republic of Malawi from 25 August to 11 September 2013.

During its stay, both the Team and authorities of GOM concerned had a series of discussions and exchanged views on the Project based on the field observations at various air navigation facilities. Both Japanese and Malawi sides also held meetings to prepare the drafts of the Record of Discussions (R/D), the Project Design Matrix (PDM) and the Plan of Operation (PO) of the Project.

As a result of the discussions, both sides agreed to the matters referred to in the documents attached hereto.

Lilongwe, 6 September 2013

Var

Hiroyuki Ueda Leader Detailed Planning Survey Team Japan International Cooperation Agency (JICA)

Alfred C. Mtilatila Director of Civil Aviation Department of Civil Aviation (DCA) The Government of the Republic of Malawi

### I. Title of the Project

Both sides confirmed that the title of the Project should be "the Project for Capacity Development for Air Navigation Services" (hereinafter referred to as "the Project"). Both sides confirmed to undertake necessary actions to formalize the title of the Project with relevant government authorities.

### II. Draft PDM and PO

The drafts of the PDM and the PO of the Project were prepared in consultation of stakeholders and through meetings as attached in Appendices I and II. The PDM and the PO will be used as a management tool of the Project, and will be finalized by the time of signing of the R/D.

### III. Draft Record of Discussions (R/D)

The draft R/D, as the official document which defines the contents of a technical cooperation project, was prepared and agreed through a series of discussions as attached in Appendix III. The draft R/D will be finalized in the course of further consultations towards the signing.

### IV. Provisional Schedule until the Project Commencement

- (1) Signing on the R/D in October 2013
- (2) Commencement of the Project in March 2014

### Appendices

Appendix I: Project Design Matrix (PDM)

Appendix II: Tentative Plan of Operation (PO)

Appendix III: Draft Record of Discussion (R/D)

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#### The Project for Capacity Development for Air Navigation Services Project Design Matrix (PDM) Target Group:

#### Date: 6 September 2013 Ver. 1.0

Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, **Electronic Engineers and Electrical/Mechanical Engineers of DCA** Implementation Period: 2 years from March 2014

Narrative Summary	Performance Targets/ Indicators	Data Source/ Reporting Mechanism	Assumptions and Risks	
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training record		
Project Purpose (Objective at the end of the Project) Training system for air navigation services is enhanced.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) - ATC/FIS: 6 (1) - AIS: 4 (1) - ACS: 4 (1) - Electronic Eng.: 4 (1) - E/M Eng.: 4 (1) <i>Number in ( ) indicates</i> <i>current situation.</i>	<ul> <li>Project Progress Reports</li> <li>Terminal Evaluation Report</li> </ul>	<ul> <li>DCA secures budget for conducting training for air navigation services.</li> <li>DCA secures necessary number of new staff for air navigation services.</li> </ul>	
<ul> <li>Outputs <ul> <li>(Objectives to be realized by Activities to achieve the Project Purpose)</li> </ul> </li> <li>1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.</li> <li>2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.</li> <li>3. Training of Electronic Engineering is</li> </ul>	<ul> <li>Training syllabus and training materials are improved or developed for the following number of courses:</li> <li>ATC/FIS: 6</li> <li>AIS/ACS: 2</li> <li>Electronic Eng.: 6</li> <li>E/M Eng.: 2</li> <li>The following number of DCA officers successfully complete supervisor/ advanced/specialist training:</li> <li>Instructors: 10</li> <li>ATC: 4</li> </ul>	<ul> <li>Project Progress Reports</li> <li>Results of completion tests for supervisor/ advanced/specialist training courses</li> </ul>	<ul> <li>DCA allocates adequate budget for human resource development.</li> <li>Counterpart personnel continue to engage in the Project.</li> </ul>	

ANNEX 4-2

Appendix I to Minutes of Meeting on the Project for Capacity Development for Air Navigation Services **Project Design Matrix (PDM)** 

improved a AIO-4	Į	1
improved.• AIS: 44. Training of• ACS: 4		
prove from an a fort		
Electrical/     Aeronautical     Mechanical     Cartography: 2		
Engineering is • PANS/OPS: 2		
improved. • ILS Maintenance: 4		
Activities (Specific actions to produce each Output by use of Inputs)	Inputs	
Improvement of ATC and FIS Training	Inputs from DCA	- DCA implements
1-1. Review current training syllabus and training materials	- Counterpart Personnel	the Project with sufficient
1-2. Improve/develop training syllabus and training materials	<ul><li>Support Staff</li><li>Project Office</li></ul>	ownership.
1-3. Conduct training of instructors	Space	Preconditions
1-4. Implement improved training courses	- Project Office	
1-5. Implement supervisor training	Expenses	magnet game, b , s
Improvement of AIS and ACS Training	- Travel Expenses	- The Project is
2-1. Review current training syllabus and training materials	of Counterpart Personnel within	supported by the Ministry of Transport and
2-2. Improve/develop training syllabus and training materials	Malawi Inputs from JICA	Public Works. - DCA secures
2-3. Conduct training of instructors	- Experts	<ul> <li>budget for inputs</li> </ul>
2-4. Implement improved training courses	Chief	of the Project.
2-5. Implement supervisor/advanced/specialist training	Advisor/Training Manager	
Improvement of Electronic Engineering Training	ATC Training     Specialist	
<ol> <li>Review current training syllabus and training materials</li> </ol>	Specialist <ul> <li>AIS/ACS Training</li> </ul>	
3-2. Improve/develop training syllabus and training materials	Specialist <ul> <li>Electronic</li> <li>Maintenance</li> </ul>	
3-3. Conduct training of instructors	Training Specialist	
3-4. Implement improved training courses	Electrical/	
3-5. Implement equipment-specific training	Mechanical	
Improvement of Electrical/Mechanical Engineering	Maintenance	
Training	Training Specialist	
4-1. Review current training syllabus and training materials	<ul> <li>Others as necessary</li> </ul>	
<li>4-2. Improve/develop training syllabus and training materials</li>	<ul> <li>Training materials</li> <li>Training</li> </ul>	
4-3. Conduct training of instructors	equipment	
4-4. Implement improved training courses	- Overseas training	



#### The Project for Capacity Development for Air Navigation Services Tentative Plan of Operation (PO) Target Group: Air Traffic Controllers, Flight Information Of

### Date: 6 September 2013 Ver. 1.0

Target Group:Air Traffic Controllers, Flight Information Officers, Aeronautical<br/>Information Services Officers, Aeronautical Communication Officers,<br/>Electronic Engineers and Electrical/Mechanical Engineers of DCA<br/>2 years from March 2014

Outputs	Activities	Target Group	2014	2015	2016
Improven	nent of ATC and FIS Training	ATC/FIS			1
1-1.	Review current training syllabus and training materials				
1-2.	Improve/develop training syllabus and training materials				
1-3.	Conduct training of instructors				1
1-4.	Implement improved training courses				
1-5.	Implement supervisor training				1
	New Recruits		FIS 🛦	ATC 🔺	
Improverr	nent of AIS and ACS Training	AIS/ACS			1
2-1.	Review current training syllabus and training materials				1
2-2.	Improve/develop training syllabus and training materials				-
2-3.	Conduct training of instructors				1
2-4.	Implement improved training courses				
2-5.	Implement supervisor/advanced/specialist training				
	New Recruits		AIS/ACS		
Improvem	ient of Electronic Engineering Training	Electronic			
3-1.	Review current training syllabus and training materials	[			
3-2.	Improve/develop training syllabus and training materials				
3-3.	Conduct training of instructors				1
3-4.	Implement improved training courses				-
3-5.	Implement equipment-specific training				-
	New Recruits				-
Improvem	ent of Electrical/Mechanical Engineering Training	E/M			
4-1.	Review current training syllabus and training materials				-
4-2.	Improve/develop training syllabus and training materials				1
4-3.	Conduct training of instructors				1
4-4.	Implement improved training courses	le l			1
	New Recruits				1



# RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN

THE REPUBLIC OF MALAWI

# AGREED UPON BETWEEN

# THE DEPARTMENT OF CIVIL AVIATION AND JAPAN INTERNATIONAL COOPERATION AGENCY

Lilongwe, xxx October 2013

Katsuro Saito Chief Representative Malawi Office Japan International Cooperation Agency

Alfred C. Mtilatila Director Department of Civil Aviation (DCA) The Government of Malawi



Based on the minutes of meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services (hereinafter referred to as "the Project") signed on 6 September 2013 between Department of Civil Aviation (hereinafter referred to as "DCA") and Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with DCA and relevant organizations to develop a detailed plan of the Project.

Both parties agreed on the details of the Project and the main points discussed as described in Attachments 1 and 2 respectively.

Both parties also agreed that DCA, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Malawi.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 1 March 2006 (hereinafter referred to as "the Agreement") and the Note Verbales to be exchanged between the Government of Japan (hereinafter referred to as "GOJ") and the Government of the Republic of Malawi (hereinafter referred to as "GOM").

- Attachment 1: Project Description
- Attachment 2: Main Points Discussed
- Attachment 3: Minutes of Meetings on the Detailed Planning Survey on the Project for Capacity Development for Air Navigation Services



# Attachment 1 to the R/D

# PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the Detailed Planning Survey on the Project for Capacity for Air Navigation Services signed on 6 September 2013 (Attachment 3).

# I. BACKGROUND

Department of Aviation (DCA) has the mandate to inter alia regulate and facilitate the development of airports and air navigation facilities. Kamuzu International Airport (KIA) was inaugurated in 1983 after the capital city was transferred from Zomba to Lilongwe. The Government of Japan (GOJ) supported the Government of Malawi (GOM) with Japanese Yen loan for the construction of the airport terminal building and installation of air navigation facilities from 1977 to 1982 in three phases. Recently, GOJ also implemented a grant aid project for the replacement of new navigation systems.

However, DCA faces serious shortage of trained staff for KIA as well as for other airports in Malawi. Upgrading of training for existing air navigation staff is also deemed necessary to up with technological progress in air navigation services.

DCA, in recognition of these issues, plans to strengthen its training functions in order to best utilize air navigation facilities in compliance with international standards and to secure sustainability in operation and maintenance of air navigation facilities, and requested GOJ for the implementation of the Project for Capacity Development in Air Navigation Services.

# II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).

- 1. Input
  - (1) Input by JICA
    - (a) Dispatch of Experts
      - Chief Advisor/Training Manager
      - ATC Training Specialist
      - AIS Training Specialist
      - CNS Maintenance Training Specialist
      - Electrical/Mechanical Maintenance Training Specialist
      - Others as necessary
    - (b) Overseas Trainings



- (c) Machinery and Equipment
  - Training equipment

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of GOM upon being delivered C.I.F. (cost, insurance and freight) to the Republic of Malawi authorities concerned at the ports and/or airports of disembarkation.

Input other than indicated above will be determined through mutual consultations between JICA and DCA during the implementation of the Project, as necessary.

(2) Input by DCA

DCA will take necessary measures to provide at its own expense:

- (a) Services of DCA's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project including the project office expenses and travel expenses of DCA staff within Malawi;
- (h) Expenses necessary for transportation within the Republic of Malawi of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- Necessary facilities to JICA experts for the remittance as well as utilization of the funds introduced into the Republic of Malawi from Japan in connection with the implementation of the Project
- 2. Implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

- (1) DCA
  - (a) Director, DCA, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.



- (b) Deputy Director, DDCA (Operations), as the Project Manager, will be responsible for the managerial and technical matters of the Project.
- (c) Principal, School of Aviation, DCA, as the Co-Project Manager, will be responsible for the managerial and technical matters of the Project.
- (d) The Project Coordinators, Heads of Divisions, will assist the Project Manager for respective fields of management.

# (2) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to DCA on any matters pertaining to the implementation of the Project.

(3) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex 4.

3. Project Site(s) and Beneficiaries

The project sites are DCA, School of Aviation, airports and relevant facilities. Beneficiaries of the Project are Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA. The Project will benefit airlines and air travelling passengers flying Malawi airspaces.

4. Duration

The duration of the technical cooperation for the Project under the Attached Documents will be two (2) years from the date of arrival of the first expert.

5. Reports

DCA and JICA experts will jointly prepare the following reports in English.

- (1) Progress reports on semiannual basis until the project completion.
- (2) Project completion reports at the time of project completion.
- 6. Environmental and Social Considerations

DCA agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.



# III. UNDERTAKINGS OF DCA AND GOM

DCA and GOM will take necessary measures to;

- (1) ensure that the technologies and knowledge acquired by the Republic of Malawi nationals as a result of Japanese technical cooperation contributes to the economic and social development of the Republic of Malawi, and that the knowledge and experience acquired by the personnel of the Republic of Malawi from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to JICA experts referred to in II-1 (1) (a) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in the Republic of Malawi.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement on Technical Cooperation signed on 1 March 2006 between the Government of Japan and GOM.

# IV. EVALUATION

JICA and DCA will jointly conduct the Terminal evaluation during the last six (6) months of the cooperation term

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. DCA is required to provide necessary support for them.

- 1. Ex-post evaluation three (3) years after the project completion, in principle
- 2. Follow-up surveys on necessity basis

# V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, DCA will take appropriate measures to make the Project widely known to the people of the Republic of Malawi.

# VI. MUTUAL CONSULTATION

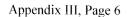
JICA and DCA will consult each other whenever any major issues arise in the course of Project implementation.

# VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and DCA.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.





- Annex 1: Logical Framework (Project Design Matrix: PDM)
- Annex 2: Tentative Plan of Operation (PO)
- Annex 3: Project Organization Chart
- Annex 4: A List of Proposed Members of Joint Coordinating Committee



Annex 1 to the Project Descriptions: Project Design Matrix (PDM)

(PDM in the Minutes of Meeting with necessary modifications agreed between JICA and DCA will be here)





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Annex 2 to the Project Descriptions: Tentative Plan of Operation (PO)

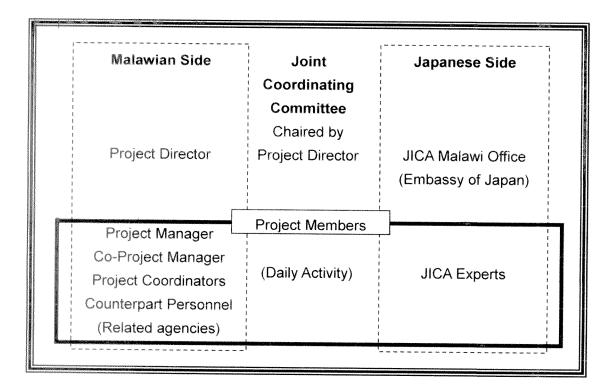
(Tentative PO in the Minutes of Meeting with necessary modifications agreed between JICA and DCA will be here)





# Annex 3 to the Project Descriptions: Organization Chart

The Project will be implemented by DCA in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:



# Joint Implementation Structure of the Project





# Annex 4: A List of Proposed Members of Joint Coordinating Committee

Chairperson and members of the JCC will be as follows:

- 1) Chairperson
- Director, Department of Civil Aviation (DCA)
- 2) Members from the Malawian Side
- Deputy Director, DDCA (Operations)
- Principal, School of Aviation, DCA
- Project Coordinators
- Members of the Counterpart Teams
- Heads of Relevant Sections
- Personnel concerned to be decided by the Malawian Side
- 3) Members from the Japanese Side
  - Japanese Experts
  - Chief Representative, JICA Malawi Office
  - Personnel concerned to be decided by the Japanese Side
- 4) Others
  - Officials of the Embassy of Japan in Malawi may attend the meeting as observers.
  - Persons who are invited by the Chairperson may attend the meeting as observers.



# Attachment 2 to the R/D

# MAIN POINTS DISCUSSED

This part of the R/D notes remarkable issues for the implementation of the Project that were confirmed by DCA and JICA through the discussions during the Detailed Planning Survey in August 2013.

1. Training of Instructors and Improvement of Training Courses

The Malawi taskforce members with assistance of JICA experts will implement training of instructors and improvement of training courses at School of Aviation for the following subjects.

- 1.1 Training of Air Traffic Controllers and Flight Information Officers
  - (a) Basic Training for Air Traffic Controllers
  - (b) Aerodrome Control Services
  - (c) Procedural Approach Control Services
  - (d) Procedural Area Control Services
  - (e) New CNS/ATM Technology for Air Traffic Controllers
  - (f) Basic Training for Flight Information Officers
- 1.2 Training of Aeronautical Information and Communication Services Officers
  - (a) Basic Training for AIS Officers
  - (b) Basic Training for Aeronautical Communication Officers
- 1.3 Training of Electronic Engineers
  - (a) General Communication Maintenance
  - (b) Concept Courses for ILS, DVOR, DME and Radar
  - (c) Maintenance Course for Park Air VHF
  - (d) Maintenance Courses for Normarc ILS
  - (e) Maintenance Courses for Maru DVOR/DME
  - (f) New CNS/ATM Technology for Electronic Engineers
- 1.4 Training of Electrical/Mechanical Engineers
  - (a) Concept Course for Airfield Lighting System
  - (b) Concept Course for Uninterrupted Power Supply System (UPSS)
- 2. Instructors

DCA will assign the flowing instructors for the implementation of the Project.



Areas of Specialization	Instructors
Air Traffic Services (ATC and FIS)	3 full-time and 3 part-time and OJT
AIS and Aeronautical Communication Services	4 full-time
Electronic Engineering	2 full-time and 2 part-time
Electrical/Mechanical Engineering	2 full-time and 2 part-time

#### 3. New Students to School of Aviation

DCA will train the following number of students for which basic training will be undertaken at the School of Aviation.

Areas of Specialization	Number	Start of Training
Air Traffic Controllers	12	October 2015
Flight Information Officers	8	October 2014
AIS Officers	10	October 2014
Aeronautical Communication Officers	6	October 2014
Electronic Engineers	8	January 2014
Electrical/Mechanical Engineers	2/2	March 2014

#### 4. Overseas Training

Based on the assessment of HRD needs in DCA's air navigation services, the following were identified for training of instructors, supervisors and specialists. These training needs are efficiently conducted at overseas training institutes of ATNS Aviation Academy in South Africa, East Africa School of Aviation (EASA) in Kenya and others. JICA does not commit the implementation of those specialized training at this stage, but will make best effort to meet the needs of DCA for effective implementation of the Project.

Training Subjects	Number of Trainees	Probable Venue
Instructor Development Program (Train the Trainer Course)	10	EASA/ATNS
Supervisor Training for Air Traffic Controllers (Team Resource Management)	4	ATNS
Supervisor/Advanced Training for AIS Officers	4	ATNS
Supervisor/Advanced Training for Aeronautical Communication Officers	4	EASA
Aeronautical Cartography (Aeronautical Charts)	2	EASA/ATNS
PANS/OPS Instrument Procedure Design – Conventional Flight Procedures	2	EASA
Maintenance of Normarc ILS 7013B/7033B	4	Tbd

The selection of trainees of the above courses will require consensus between DCA and JICA experts, and those trainees who have completed the above courses should conduct echo

seminar or cascade training to share the knowledge and skills obtained through the training to relevant DCA officers.

5. Training Equipment

JICA will provide the following equipment for the implementation of the Project:

- (a) PC-based Simulator Training System for Air Traffic Controllers
- (b) Computer Based Training (ATC)
- (c) Test Instrument and equipment such as Oscilloscope, Digital Multi-Meter, Frequency Counter, RF Power Meter, Level Meter, Function Generator, Spectrum Analyzer, etc.
- (d) Learning Aids and Office Equipment such as Personal Computer, Copier/Printer/ Scanner, Projector, Network Equipment, Voltage Regulator, etc.
- 6. Update of Manuals of Air Traffic Services and CNS Equipment Maintenance Procedures

DCA will update the Manual of Air Traffic Services and the CNS Equipment Maintenance Procedures by the middle of 2014 as it is an important reference material for training for various air navigation services.

#### 7. Project Office

DCA will provide Project office space at School of Aviation or wherever may seem necessary. The office space should accommodate 6 desks and chairs and other office facilities, and have access to internet. DCA will also provide air-conditioners for the Project office and simulator training rooms.

8. PBN Flight Procedure Design Training

JICA organizes a PBN Flight Procedure Design Training Course in Tokyo every year. Flight procedure designers, who will successfully complete PANS/OPS Instrument Procedure Design Training under this Project, are expected to apply for the PBN training in Japan.

- END -



#### (e) Attachment 3 to the R/D

(Minutes of Meetings on the Project for Capacity Development for Air Navigation Services signed on 6 September 2013 will be attached here)





for

# MINUTES OF MEETING OF THE FIRST JOINT COORDINATION COMMITTEE FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN MALAWI BETWEEN THE GOVERNMENT OF THE REPUBLIC OF MALAWI AND JAPAN INTERNATIONAL COOPERATION AGENCY

The first meeting of the Joint Coordination Committee (hereinafter referred to as "JCC") for the Project for Capacity Development for Air Navigation Services for the Republic of Malawi (hereinafter referred to as the "Project") was held in Lilongwe on June 30, 2014.

The meeting was co-chaired by Mr. Iijima, a member of the JICA Malawi Office (hereinafter referred to as "JICA") and Mr. Matiya, Deputy Director General of Malawi Department of Civil Aviation (hereinafter referred to as "DCA"). The other attendants were representatives from JICA, the chief advisor of the Project, and Project team members. A list of participants is shown in Annex-1.

During the meeting, JICA proposed the use of a Monitoring Sheet to track the Project progress. The Monitoring Sheet will be used instead of reports for interim and final evaluation of Project progress. Other matters of the Project, and desirable actions to be taken by both Governments towards successful completion of the Project were discussed. A summary of discussions during the first JCC is shown in Annex-2. As a result of those discussions, an agreement was reached for Project matters listed in the attached.

Lilongwe, June 30, 2014

K. Jokuhashi

Mr. Kazuhiko Tokuhashi Chief Representative Malawi Office Japan International Cooperation Agency

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Mr. A.C. Mtilatila Project Director Director General Department of Civil Aviation Republic of Malawi

# Annex-1

# List of participants

Date: 30th June, 2014 Venue: DCA conference room Time; 09:50-10:35 Attendance:

#### DCA

Director of Civil Aviation; Mr. Alfred C. Mtilatila Deputy Director of Civil Aviation; Mr. A.G. Matiya Chief Aeronautical Telecommunications Engineer; Mr. M.F.T. Bongwe Ex-Principal for School of Aviation; Mr. R. Kanunkha Principal for School of Aviation; Mr. S. Galafa

#### JICA Malawi Office

Resident Representative; Mr. Kazuhiko Tokuhashi Project Formulation Advisor; Mr. Atsushi Iijima

# JICA Project Team

The Team Leader; Mr. Hiroshi Mizumasa Deputy Chief; Mr. Masayuki Takazawa Expert in CNS; Mr. Reynaldo A. Batacan Expert in ATS/AIS-1; Ms. Tomoko Kida Expert in ATS/AIS-2; Mr. Daniel P. Diggins

# Annex-2

# Summary of meeting and discussions

# 1) Kicked off the meeting by Mr. Matiya and confirmation of today's agenda

#### 2) Self-Introduction

#### 3) Opening remarks by Mr. Tokuhashi

#### 4) Project Briefing by Mr. Mizumasa

- Project Described each member's background, activity schedule and expected role and responsibilities. It was emphasized that JICA cannot provide Malawi human resources. JICA hoped that DCA aggressively pursue additional staff recruitment plans. Member's background and outline of activity schedule are shown in Attachment-1
- DCA Responded that they understand the issue and will do whatever possible to increase technical staffing.

#### A comment from Mr. Diggins (Project Team ATC/AIS Expert)

Initial ATM Assessment Resulted in Two Types of Recommendations

- a) Immediate Recommendations for DCA Consideration will achieve higher risk management and will provide a stable foundation for long term training recommendations below
- b) Long Term ATM Training Recommendations develop and deliver to DCA ICAO compliant ATM training course, including lesson plans, tests and practical exercises. Practical exercises will be both procedural and electronic simulator based.
- 5) Briefing on Amendment of Record of Discussion (hereinafter, R/D) by Mr. Iijima

JICA – JICA would like to suggest introducing Monitoring Sheet instead of a project evaluation form. As previously explained, a Monitoring Sheet has the same function as project evaluation and provides more functional information. We would like you to confirm the Amendment of Record of Discussion_o

DCA – Understood introducing Monitoring Sheet.

#### 6) Signing on the M/M to amend the R/D done by Mr. Matiya and Mr. Tokuhashi

#### 7) Any other business

# **Budget for coming fiscal years**

DCA - The provisionally budget for 2014-2015 allocated to DCA is around MK210 billion

- Project As is already discussed and mutually confirmed with written document, your effort to put high priority on the issues regarding to this Project is essential.
- DCA The budget for the School of Aviation will be set based on the demand from the Principal, and then the Director places all demands from each division together for final submission.

#### Human resource assignment in DCA

Project – 3 weeks have passed since the Project team arrived and began work. The team is still trying to construct an accurate organizational chart and personnel assignments. Please assist us in completing this task.

There is an opportunity to accomplish a successful meeting with all project stakeholders in July. We ask that that each DCA counterpart member be identified prior to that meeting. In addition, please confirm any special budgetary allocations by DCA for the project at that time. Please consider a DCA-only meeting, prior to the next JCC meeting, to discuss counterpart assignments and budgetary progress.

DCA-Agreed.

Project – We should set an agreed upon date for the next JCC, sometime in July. DCA – Agreed.

# How to proceed trainings for ILS, VOR and DME

DCA - Does the project provide training for ILS, VOR and DME?

Project – The project will provide the theoretical training for ILS, VOR and DME and maintenance training for specific equipment which DCA currently uses.

# VISA for team staff, Duty free procedure for purchasing training equipment

DCA -- Were team members successful in acquiring long-term VISA's?

Project – Yes, we received 2-year VISA's. Thank you for your support.

- DCA Duty free processing procedure for project supplied equipment will take at least 2-months. Please provide a detailed equipment list at least 2-months prior to arrival dates of equipment.
- Project Agreed. Currently equipment is scheduled to arrive in early November 2014. JICA will provide detailed equipment list as soon as possible.

(Confirm that Equipment list information will be sent from JICA Malawi Office)

#### Holding next JCC meeting

JICA – JICA proposed that the next JCC meeting be sponsored by DCA. DCA-Agreed.

8) Way forward and closing remarks by the Project Director, Mr. Alfred Mtilatila We express our appreciation and future support for the Project. We ask that JICA bring any concerns or questions to our staff or me. We believe the project will benefit Malawi aviation and extend our thank you for your assistance.

Attachment-1 : Project Summary (Member & Schedule)



# MINUTES OF MEETING OF THE SECOND JOINT COORDINATING COMMITTEE FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN MALAWI BETWEEN THE GOVERNMENT OF THE REPUBLIC OF MALAWI AND THE JAPAN INTERNATIONAL COOPERATION AGENCY

The second meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the Project for Capacity Development for Air Navigation Services in the Republic of Malawi (hereinafter referred to as the "Project") was held in Lilongwe on August 1, 2014.

The meeting was co-chaired by Mr. Bongwe, Chief Aeronautical Telecommunications Engineer of Malawi Department of Civil Aviation (hereinafter referred to as "DCA") and Mr. Matiya, Deputy Director of Malawi DCA. Others in attendance were Program officer of the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the chief advisor of the Project, and Project team members. A list of participants is shown in Attachment-1.

As a result of the discussions, both sides agreed to the matters in the documents attached as Attachment-2.

Lilongwe, August 1, 2014

Mr. A.C. Mtilatila Project Director Director General Department of Civil Aviation Republic of Malawi

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Mr. Hiroshi Mizumasa Chief Advisor The Project for Capacity Development for Air Navigation Services

# Attachment-1: List of Participants

Date: August 1, 2014 Venue: DCA conference room Attendance:

#### DCA

Director of Civil Aviation; Mr. Alfred C. Mtilatila Deputy Director of Civil Aviation; Mr. A.G. Matiya Chief Aeronautical Telecommunications Engineer; Mr. M.F.T. Bongwe Principal for School of Aviation; Mr. S. Galafa Principal for Air Traffic Control Officer; Mr. S. D. MKANDAWIRE

#### JICA Malawi Office

Senior Program Officer; Mr. Kapalamula Godfrey

#### JICA Project Team

The Team Leader; Mr. Hiroshi Mizumasa Expert in CNS; Mr. Reynaldo A. Batacan



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# Attachment-2: Matters Agreed

#### 1) Approval of the Work Plan

The Project Team explained the Work Plan of the Project with PDM, Plan of Operations, and Project Achievement. The JCC in principle accepted the Work Plan as attached.

#### 2) Confirmation of the Instructor Nomination

DCA agreed to nominate new instructors to meet requirements of the Project as follows:

- six instructors for ATC/FIS;
- four instructors for AIS/ACS and possibly additional two for AIS/ACS;
- four instructors for Electronic Engineer; and
- two instructors for Electrical/Mechanical.

#### 3) Approval of updated PDM

DCA agreed on the updated PDM attached to the Work Plan as Annex-1.

#### 4) Confirmation of expense for domestic training/counterparts works

DCA confirmed that it will provide necessary expenses for transportation, accommodation and allowances for DCA staff for counterpart training or collaboration work conducted at the School of Aviation (SOA).

(Note: JICA will provide expenses for transportation, accommodation and tuition for training conducted in other countries, such as in Nairobi or Johannesburg.)

#### 5) Personal Computers for the DCA counterparts

DCA will provide at least 6 personal computers equipped with Microsoft Office (Power Point, when necessary) for the DCA counterparts by November 2014. The computers are to be used for training material update and for the provision of future technical training.

Project Work Plan is attached.



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# MINUTES OF THE MEETING THE THIRD JOINT COORDINATING COMMITTEE FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN MALAWI BETWEEN THE GOVERNMENT OF THE REPUBLIC OF MALAWI AND THE JAPAN INTERNATIONAL COOPERATION AGENCY

The third meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the Project for Capacity Development for Air Navigation Services in the Republic of Malawi (hereinafter referred to as the "Project") was held in Lilongwe on January 27, 2015.

The meeting was co-chaired by Mr. Bongwe, Chief Aeronautical Telecommunications Engineer of Malawi Department of Civil Aviation (hereinafter referred to as "DCA") and Mr. Matiya, Deputy Director of Malawi DCA. Others in attendance were Project Formulation Advisor and Chief Programme Officer of Japan International Cooperation Agency (hereinafter referred to as "JICA"), Chief Advisor of the Project, and Project team members. List of participants is shown in Attachment-1.

As a result of the discussions, both sides agreed to the matters in the documents attached as Attachment-2.

Lilongwe, January 27, 2015

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Mr. A.G. Matiya For Project Director Director of Civil Aviation Republic of Malawi

Mr. Kazuhiko Tokuhashi
 Chief Representative
 Malawi Office
 Japan International Cooperation Agency

# Attachment-1: List of Participants

Date: January 27, 2015 Venue: DCA conference room Attendance:

#### DCA

Deputy Director of Civil Aviation: Mr. A.G. Matiya Chief Aeronautical Telecommunications Engineer: Mr. M.F.T. Bongwe Acting Principal for School of Aviation: Mr. S. Liundi

#### JICA Malawi Office

Project Formulation Advisor: Mr. Atsushi Iijima Chief Programme Officer: Mr. Kapalamula Godfrey

#### JICA Project Team

Chief Advisor: Mr. Hiroshi Mizumasa Deputy Chief Advisor: Ms. Mie Nagayasu Expert in CNS: Mr. Reynaldo A. Batacan Project Coordinator: Ms. Aya Horiuchi

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# Attachment-2: Matters Discussed

#### 1) Report on Progress of the Project

The Project Team reported on the progress and status of the Project which were as follows:

- CBT Equipment was installed at SOA in November 2014;
- Test Equipment was installed at SOA in December 2014;
- Test Equipment Training Course was held at SOA from 12th to 23rd of January 2015;
- 8 DCA staff were dispatched to Air Traffic & Navigation Services (ATNS) in South Africa for Team Resource Management Course from 25th January to 31st of January 2015;
- 4 DCA executive staff will be dispatched to East African School of Aviation (EASA) in Kenya for Supervisory Management Course from 1st February to 28th of February 2015.

#### 2) Briefing on Project Schedule

DCA approved the Project Schedule for the following:

- ATC Simulator Procumbent & Delivery to SOA (scheduled in May 2015);
- Third Country Training for Instructor Development Course to be held in August and Advance Instructor Course in October 2015;
- Domestic training for Electrical & Mechanical staff (to be held in April 2015);
- Domestic training for PANS/OPS related staff (to be held in May 2015);
- Domestic training for Electronics Engineer staff (to be held in April 2015).

#### 3) Draft Monitoring Sheet Ver. 1

Both parties reviewed and agreed on the contents of the draft Monitoring Sheet Ver. 1 with Project Design Matrix and Plan of Operation (see Attachment-3).

#### 4) Progress on new recruitment

DCA reported on the progress of the new recruitment which had been approved by the Department of Public Service Management. The recruitment process would be done by the Malawi Public Service Commission through advertisement and interview process. Hopefully it would be finalized by May 2015.

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#### **TO CR of JICA Malawi OFFICE**

#### PROJECT MONITORING SHEET

# Project Title: The Project for Capacity Development for Air Navigation Services Version of the Sheet: Ver.1 (Term: 24 April, 2014 - 20 May, 2016)

Name: Hiroshi Mizumasa

Title: Chief Advisor

Submission Date: January, 2015

#### I. Summary

#### **1** Progress 1-1. Progress of Inputs (1) The Japanese Side 1) Experts Six experts (except Flight Procedure Design Expert) were assigned according to plan. [JICA Experts] Mr. Hiroshi Mizumasa, Chief Advisor Ms. Mie Nagavasu, Deputy Chief Advisor Mr. Kiichiro Hirano, ATC & AIS Training Specialist - 1 Mr. Daniel Paul Diggins, ATC & AIS training Specialist - 2 Mr. Reynaldo Alido Batacan, CNS Maintenance Training Specialist Mr. Kiyoshi Suzuki, E/M Maintenance Training Specialist * Expert for Flight Procedure Design Specialist will be named in 2015 Details of their assignment are shown in Project Monitoring Sheet (Plan of Operation) (see Annex-2). 2) Training Materials Progress on the following training materials was made by the experts: L Air Traffic Control Assistant/Basic 50% II. Aerodrome Control 30% III. CNS/ATM for ATC 70% IV. Aeronautical Information Service 40% V. Electronic Maintenance - Communication 20% VI. Communication Equipment and System 30% VII. Navigational Aids and Radar Theory 30% 70% VIII. CNS/ATM for ATSEP (Engineer) Other training materials, i.e. "Approach Control - Non Radar", "Area Control - non Radar",

"Flight Information Service", "Aeronautical Fixed Service Operator" will be prepared in due

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PM Form 3-1 Monitoring Sheet Summary

course.

3) Training Equipment

The following training equipment were procured:

I. Computer Based Training ATC (November, 2014)

II. Test Instrument and Equipment (December, 2014)

III. Learning Aids and Office Equipment (June, 2014)

4) Overseas Training (as of February 2015)

DCA officials participated/are participating in the following two overseas trainings:

I. Team Resource Management Course: January 26th to 30th, 2015 <South Africa>*1

II. Supervisory Management Course: February 2nd to 27th, 2015 <Kenya>*² [Organizers]

*1: Air Traffic and Navigation Services (ATNS) / Johannesburg, South Africa

*2: East African School of Aviation (EASA) / Nairobi, Kenya

5) Training in School Of Aviation (SOA) (as of February 2015)

Two trainings for instructors were held at the School of Aviation as follows:

I. Computer Based Training (ATC)

i) Date: November 24th, 2014 (1/2 day)

ii) No. of Participants: 6

II. Test Equipment Course

i) Date: January 12th - 23rd, 2015 (10 days)

ii) No. of Participants: 5

(2) The Malawi side

1) Counterpart Personnel (C/P)

The following DCA Officials were assigned for an effective and sound management of the project (see also Annex-2 "Plan of Operation").

[Counterpart Personnel]

Project Director (P/D): Mr. A. C. Mtilatila, Director of Civil Aviation

Project Manager (P/M): Mr. A. G. Matiya, Deputy Director (Operations)

Co-project Manager (Co-P/M): Mr. S. Galafa, Principal, School of Aviation

Project Coordinator: Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division

Project Coordinator: Mr. M.F.T. Bongwe, Chief Telecommunications Engineer, Operation Division

Trainers: Mr. S. Galafa, Principal, School of Aviation [ATC and FIS training]

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- Mr. R. Y. Malanga, Lecturer School of Aviation [AIS and ACS training]
- Mr. S. Liundi, Lecturer School of Aviation [AIS and ACS training]
- Mr. R. Kanunkha, Head of Engineering Section, KIA [Electronic Engineering & Electrical Engineering (CNS) training]
- Mr. C. F. Betenigo, Electronics Engineer, KIA [Electronic Engineering (CNS) training]
- Mr. T. Mtonga, Electrical Engineer, KIA [Electrical/ Mechanical Engineering training]
- 2) Support Staff

Eight instructors in total were assigned to the Project as support staff personnel: [Support Staff]

- Ms. L. Manondo, ATC, KIA [ATC and FIS Training Instructor]
- Mr. D. Zamaele, ATC, Chileka Airport [ATC and FIS Training Instructor]
- Mr. F. Chiespeya, ATC, KIA [ATC and FIS Training Instructor]
- Mr. J. Kazito, ATC, KIA [ATC and FIS Training Instructor]
- Mr. R. Nkosi, Air Crew Briefing Officer, DCA [AIS & ACS Training Instructor]
- Mr. N. B. Kaliyasi, Communication Officer, KIA [AIS & ACS Training Instructor]
- Mr. S. Kunje, Electronics Engineer, Chileka Airport [Electronic Engineering (CNS) Training Instructor]
- Mr. O. Yokonia, Electrical Engineer, Chileka Airport [E/M Training Instructor]
- 3) Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA.

4) Project Office Expenses

Utility cost was paid by the Malawi side. As of January 2015, DCA provided the following expenses for the project office.

I. Purchase of two desktop computers:1,055,210.00 MKWII. Purchase and installation of two split air conditioners:989,114.98 MKW

5) Travel Expenses of Counterpart Personnel within Malawi

The travel expenses for C/P to travel outside the Lilongwe area provided by DCA were as follows:

- I. Transport costs and subsistence allowances for students from Chileka (Team Resource Management Course/ from Chileka to Lilongwe) 76,000.00 MKW
- II. Transport costs for Lilongwe students 70,000.00 MKW

(Team Resource Management Course/ from Blantyre to Lilongwe)

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6) Others mentioned in Appendix 1, II, 6, of R/D

As agreed in R/D (Appendix 1, II, 6), appropriate considerations were made by DCA for environmental and social impacts of the Project, based on "JICA Guidelines for Environmental and Social Considerations".

#### 1-2. Progress of Activities

(1) Summary of Work Progress (June – August 2014)

1) Holding of the first JCC meeting

The first JCC meeting was held on 30th June 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, two officials from the JICA Malawi Office, and five members from the JICA Expert Team (hereinafter referred to as "JET") participated in the first JCC meeting. The JET Leader, Mr. Hiroshi Mizumasa presented summary of the Project. The minutes of meeting for implementation of the Project was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Kazuhiko Tokuhashi, Resident Representative, JICA Malawi Office.

2) Holding of the second JCC meeting

The second JCC meeting was held on 1st August 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, one official from the JICA Malawi Office, and two members from the JICA Expert Team (hereinafter referred to as "JET") participated in the second JCC meeting. The issues discussed and agreed were as follows:

I. Approval of the Work Plan

II. Confirmation of the Instructor Nomination

III. Approval of updated PDM

IV. Confirmation of expense for domestic training/counterparts works

The minutes of meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroshi Mizumasa, the JET Leader.

3) Baseline survey

JET conducted the baseline survey on capacity of SOA which includes the capacities of ATM (ATC, FIS, AIS, ACS), Electronics Engineering (CNS), Electrical and Mechanical (E/M).

a. Survey methods

They assessed their capacities from the following assessment viewpoints or items which are based on the ICAO's standard of assessing training organization. Assessment items for ATM, CNS and E/M:

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- 1) Training Regulation and Policy;
- 2) Organization;
- 3) Instructor (Full time), Supporting Staff (Part time) and Qualification;
- 4) Quality Control;
- 5) Curriculum/Syllabus;
- 6) Operating Rules;
- 7) Training Facilities (Aids);
- 8) Reference Material;
- 9) Examination and Examination Development;
- 10) On-the-Job Training;
- 11) Training, Certificate and License;
- 12) International Cooperation, Certification and Recognition; and
- 13) Training Demand, potential training participants (Both International and National)

*In addition to above 13 items, the following items are added for CNS and E/M respectively;

- 14) CNS System Admin on Laboratory, Simulator and Workshop,
- 14) E/M System Admin on Laboratory, Simulator and Workshop.
- b. Survey results
- b.1 Results of the capacity of ATM

As the result of the above survey, ATM qualifications of instructors are not well established. Instructor training programs for ATM instructors did not exist. Current instructors rely solely on their personally developed teaching skills and techniques. Most instructors are close to retirement age. ATM curriculum/syllabus is informal and not structured. Some have been used since the 1970's. Consequently, most of them are outdated. Training facilities are not enough and generally inadequate at the School of Aviation.

The result of the survey is shown in Annex-4 of the work plan.

#### b.2 Results of the capacity of CNS

The Aeronautical Telecommunication qualifications of instructors are not well established. Instructor training programs for CNS instructors did not exist. A structured CNS curriculum/syllabus was not used for at least the last 5 years. There was no CNS training laboratory facilities for practical application/certification of students. There was no System Administration on Laboratory, Simulator and Workshop. Reference materials were outdated and not responsive to new CNS/ATM technology systems.

The result of the survey is shown in Annex-5 of the work plan.

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b.3 Results of the capacity of E/M

The E/M Unit has no instructor position at the MSOA. There are three (3) identified part time instructors ready to assume duties when training commences. There was no E/M curriculum/syllabus. E/M had no training laboratory test equipment and tools for practical application/certification of students.

The result of the survey is shown in Annex-6 of the work plan.

# 4) Review of the existing training materials

The Project team, composed of JET members and the counterpart personnel (C/P) observed existing training syllabus and textbooks for all training courses conducted in School of Aviation (see "Results of the PDM Activities", described below).

5) Preparation of a work plan

The Project team prepared a work plan describing the material development, instructor training, as well as the method and schedule for the implementation of 16 training courses, on which agreement was reached with Malawi side.

6) Preparation of base materials for training courses

The Project team is proceeding to preparation of training course materials which follows ICAO guideline.

7) Procurement of equipment

The Project team procured equipment necessary for operating the Project in line with the JICA equipment procurement guideline.

(2) Results of the PDM Activities

Following is the summary of the Project activities having been conducted from June 2014 to January 2015. It is described according to the original PDM Activities.

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PDM Activities	Results	
1-1. Review current training syllabus and training materials	It has already reviewed and all syllabi are 1980's material. Project will make renew it.	
1-2. Improve/develop training syllabus and training materials	Two Base training materials were prepared and under proceeding for third one.	
1-3. Conduct training of instructors	<ul> <li>The training will be held in April 2015</li> <li>The training will be held at Nairobi in August</li> </ul>	
	and October 2015	

1) Improvement of ATC and FIS Training

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1-4. Implement improved training courses	-
1-5. Implement supervisor training	The training will be held at Johannesburg in January and Nairobi in February
1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	-
1-7. Improve the training courses based on the results from the monitoring and evaluation	-

# 2) Improvement of AIS and ACS Training

PDM Activities	Results
2-1. Review current training syllabus and training materials	It has already reviewed and all syllabi are 1980's material. Project will make renew it.
2-2. Improve/develop training syllabus and training materials	One Base training material was prepared and under proceeding for second one.
2-3. Conduct training of instructors	- The training will be held at Nairobi in August and October 2015
2-4. Implement improved training courses	-
2-5. Implement supervisor training	The training will be held at Johannesburg in January and Nairobi in February
2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	-
2-7. Improve the training courses based on the results from the monitoring and evaluation	-

# 3) Improvement of Electronic Engineering Training

PDM Activities	Results	
3-1. Review current training syllabus and training materials	g It has already reviewed and all syllabi are 1980's material. Project will make renew it	
3-2. Improve/develop training syllabus and training materials	One Base training material is prepared and under proceeding for others.	
3-3. Conduct training of instructors	<ul> <li>The training will be held at Nairobi in Augus and October 2015</li> <li>Test equipment training instructors was already done and communications training will be held in May.</li> </ul>	

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3-4. Implement improved training courses	-
3-5. Implement supervisor training	The training will be held at Johannesburg in
	January and Nairobi in February
3-6. Conduct monitoring and evaluation of	Partial monitoring and evaluation was done
the trainings implemented by the trained	through the test equipment training.
instructors	
3-7. Improve the training courses based on the	-
results from the monitoring and evaluation	

#### 4) Improvement of Electrical/Mechanical Engineering Training

PDM Activities	Results
4-1. Review current training syllabus and training materials	It has already reviewed and all syllabi are 1980's material. Project will make renew it.
4-2. Improve/develop training syllabus and training materials	-
4-3. Conduct training of instructors	<ul> <li>The training will be held at Nairobi in August and October 2015</li> <li>AFL &amp; UPS training will be held in April 2015</li> </ul>
4-4. Implement improved training courses	-
4-5. Implement supervisor training	The training will be held at Johannesburg in January and Nairobi in February 2015
4-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	-
4-7. Improve the training courses based on the results from the monitoring and evaluation	-

#### 1-3. Achievement of Output

Achievement of each output is observed according to the PDM indicators.

(1) Achievement of "Output 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved."

Six course syllabuses and materials were reviewed and one course syllabus was prepared at this stage. One ATC instructor is identified to be able to conduct CBT exercise.

(2) Achievement of "Output 2. Training for Aeronautical Information Services (AIS) and

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prepared at this stage.

(4) Achievement of "Output 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved."

Two course syllabuses and materials were reviewed at this stage.

Original Indicators for the PDM Outputs		Baseline date as of July 2014	Achievement as of January 2015
-Training syllabus and training materials are improved or	ATC/FIS: 6		1 syllabus is prepared
developed for the following number of courses:	AIS/ACS: 2		1 syllabus is prepared
	Electronic Eng.: 6	-There were 6 kinds of syllabus, prepared in March, 2001. -Training materials were prepared for every syllabus. They were prepared in the 1970's or in the beginning of the 1980's	1 syllabus is prepared
	E/M Eng.: 2		
-The following number of DCA	Instructors: 10		
officers successfully complete supervisor/advanced/ specialist training:	ATC/FIS: 4		
	AIS/ACS: 4		
	Aeronautical Cartography: 2		
	PANS/OPS: 2		
	ILS Maintenance: 4		
-Comprehension test score of tra receive the improved/ developed exceeds at least 80%.			

Achievement of Outputs

#### 1-3. Achievement of the Project Purpose

Achievement of the project purpose is observed according to the PDM indicators. Number of instructors who can conduct the improved/developed training courses is increased slightly since the baseline date.

Original Indicators for the Project	ct Purpose	Baseline date as of July 2014	Achievement as of January 2015
-Number of instructors who can A conduct the improved/developed A	ATC/FIS: 6	1	1
	AIS/ACS: 4	2	2
training courses (fulltime + part time)	Electronic Eng.: 4	1	1

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#### Achievement of the Project Purpose

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#### PM Form 3-1 Monitoring Sheet Summary

	E/M Eng.: 4	1
-Comprehension test score of receive the improved/ develo courses exceeds at least 80%.		

#### 1-5. Changes of Risks and Actions for Mitigation

No major changes were seen in the PDM Pre-conditions and Important Assumptions, therefore no special actions need to be taken.

#### (1) Pre-conditions

PDM Pre-conditions	Current Situations	Actions for mitigation
necessary for preparation of the Project Office and allocation of counterpart personnel before the	at the time of initiation of the work in Malawi in June 2014. -Counterpart personnel (C/P) was engaged in the Project, although	-No special actions were taken.
2) New trainees are recruited as scheduled.	-New trainees were not seen at the time of initiation of the work in Malawi in June 2014.	-No special actions were taken.

#### (2) Important Assumption when proceeding from Activities to Outputs

Importa	nt Assumptio	n	Current Situations	Actions for mitigation
,	with suffi	the icient	-DCA's ownership was seen.	-No special actions were taken.

#### (3) Important Assumptions when proceeding from Outputs to the Project Purpose

Important Assumption	Current Situations	Actions for mitigation
international standards on air	-No major changes were seen. It did not affect to the Project operation.	-No special actions were taken.

#### (4) Important Assumptions when proceeding from the Project Purpose to the Overall Goal

Important Assumption	Current Situations	Actions for mitigation
1) Trained counterpart personnel continue to be engaged in the activities of air navigation services.		-No special actions were taken.

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PM Form 3-1 Monitoring Sheet Summary

2) No major change in the national policy on air navigation services within the national plan/ strategy is occurred.	-Air Transportation Infrastructure Planning Policy is in force. No major changes in the policy were seen.	-No special actions were taken.
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#### 1-6. Progress of Actions undertaken by JICA

At the time of first arrival of JET, project office facility had not been prepared yet; therefore the JICA Malawi office sent a letter of request on installation of equipment to the DCA in late April, 2014.

#### 1-7. Progress of Actions undertaken by Gov. of Malawi

No actions have been taken.

#### 1-8. Progress of Environmental and Social Considerations (if applicable)

This Project focuses on enhancement of capacity for the DCA personnel concerned in the Project to conduct the trainings for air navigation services. It does not have a plan to construct any new large-scale infrastructures. It is expected that the Project will have a minimal negative impact on the environment.

# 1-9. Progress of Considerations on Gender/ Peace Building/ Poverty Reduction (if applicable)

No considerable issues were observed.

# 1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

(1) European Aviation Safety Agency (EASA) workshop

EASA is currently assisting DCA in training on safety management system (SMS) and auditing techniques. However this training is targeted for the higher executives of the DCA, whereas the JICA project is targeted for the professionals and engineers. Their project has no adverse impact on JICA training participation.

(2) European Investment Bank (EIB) fund

EIB is funding for the procurement of some safety equipment such as fire trucks in KIA. JET already had several meetings with EIB officers in order to avoid any overlapping on equipment provided for the DCA.

# 2 Delay of Work Schedule and/or Problems (if any)

2-1. Detail

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The test equipment training was supposed to be held for instructors in December 2014. However arrival of the test equipment was delayed so the training was postponed one month later.

#### 2-2. Cause

The procedures of the custom clearance in Malawi had not been through smoothly upon arrival of the equipment.

#### 2-3. Action to be taken

The abovementioned training was rescheduled to be held in late January, 2015. However, JET will be flexible in rescheduling the future trainings taking into account the possible delay of equipment.

#### 2-4. Roles of Responsible Persons/ Organization (JICA, Gov. of Malawi, etc.)

JET requests that the DCA might be of any help on smooth custom clearance, if possible.

# 3 Modification of the Project Implementation Plan

#### 3-1. PO

No major modification was made. However, some of the JICA expert members were changed due to personal health issues, which affected the original PO. Updated PO is attached as Annex 2.

#### 3-2. Other modifications on detailed implementation plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.) None.

4 Preparation of Gov. of Malawi toward after completion of the Project N/A yet.

II. Project Monitoring Sheet I & II (Version 1) as attached

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#### **Project Design Matrix**

#### Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

#### <u>Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers,</u> <u>Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA</u>

#### Period of Project: 2 years (24/04/2014-20/05/2016)

#### Project Site: School of Aviation

Model Site:

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project) Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.	- Monitoring Sheet - Terminal Evaluation Report	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	<ul> <li>Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2</li> <li>The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC/FIS: 4 AIS/ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4</li> <li>Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.</li> </ul>	- Monitoring Sheet - Results of completion tests for supervisor/ advanced/specialist training courses	- No major change of the international standards on air navigation services is occurred.		

Version 2

Dated 1, Aug, 2014

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Activities	Inputs		Pre-Conditions
Specific actions to produce each Output by use of Inputs)	The Japanese Side	The DCA Side	- DCA implements the
<ul> <li>mprovement of ATC and FIS Training</li> <li>1-1. Review current training syllabus and training materials</li> <li>1-2. Improve/develop training of instructors</li> <li>1-3. Conduct training of instructors</li> <li>1-5. Implement improved training courses</li> <li>1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>1-7. Improve the training courses based on the results from the monitoring and evaluation</li> <li>mprovement of AIS and ACS Training</li> <li>2-1. Review current training syllabus and training materials</li> <li>2-2. Improve/develop training syllabus and training materials</li> <li>2-3. Conduct monitoring and evaluation of the training materials</li> <li>2-3. Conduct training of instructors</li> <li>2-4. Implement improved training courses</li> <li>2-5. Implement supervisor/advanced/specialist training</li> <li>2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>2-7. Improve the training courses based on the results from the monitoring and evaluation</li> <li>mprovement of Electronic Engineering Training</li> <li>3-1. Review current training syllabus and training materials</li> <li>3-2. Improve/develop training syllabus and training materials</li> <li>3-3. Conduct training of instructors</li> <li>3-4. Implement improved training courses</li> <li>3-5. Implement equipment-specific training</li> <li>3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>3-7. Improve the training courses based on the results from the monitoring and evaluation of the training materials</li> <li>4. Implement improved training syllabus and training materials</li> <li>4. Implement improved training courses based on the results from the monitoring and evaluation</li> <li>Improve/develop training syllabus and training materials</li> <li>4. Implement improved training courses based on the results from the monitoring and evaluation</li> <li>Improve the training courses</li></ul>	The Japanese Side         - Experts         Chief Advisor/Training Manager         ATC Training Specialist         Electronic Maintenance Training Specialist         Electronic Maintenance Training Specialist         Others as necessary         - Training materials         - Training equipment         - Overseas training	The DCA Side         - Counterpart Personnel         - Support Staff         - Project Office Space         - Project Office Expenses of         Counterpart Personnel         within Malawi         - The others mentioned in         Appendix1, II, 6, of R/D	- DCA implements the Project with sufficient ownership. Pre-Conditions - DCA secures budget necessary for preparation the Project Office and allocation of counterpart personnel before the commencement of the Project. - New trainees are recruite as scheduled.

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Sub-Activities			Month	14/4 1 1st	2nd	3rd	4th	5th	9 6th	10 7th	11 8th		15/1 1 10th	2 11th	12th	4 13th	14th	0 15th	16th	o 17th	18th	10 19th	11 20th	12 21st	'16/1 22nd	23rd	24th
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1-H-2 Improve/develop training syllabus/materials			Plan Actua															201 1									
1-H-3 Conduct training of instructors			Plan Actua	1																							
1-H-4 Implement improved training courses			Plan Actua																								
1-H-5 Implement supervisor training (Overseas training)			Plan																								
1-H-6 Conduct monitoring and evaluation of the trainings implemented	d by the		Plan																								
Improved training based on the result from the monitoring and		++++	Actua Pian																								
1-H-7 evaluation		Ш	Actua																								
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2-A-5 Implement supervisor/advanced/specialist training (Overseas tra		111	Actua																								
2-A-6 Conduct monitoring and evaluation of the trainings implemented trained instructors	a by the		Plan Actua	al 👘																							
2-A-7 Improved training based on the result from the monitoring and evaluation			Plan Actua																								
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2-B-2 Improve/develop training syllabus/materials			Actua												12123												
2-B-3 Conduct training of instructors			Actua	al																							
2-B-4 Implement improved training courses			Plan Actua																								
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3-F-3 Conduct monitoring and evaluation of the trainings		Plan Actual																									
3-F-4 Improved training based on the result from the monitoring and evaluation		Plan Actual																									
Activities		YY/MM	'14/4	5	6	7	1 8	9	10	11	12	'15/1	1 2	3	1 4	5	6	7	8	9	10	11	12	16/1	2	3	4
Sub-Activities		Month	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		12th	13th	14th	15th	16th	17th	18th	19th	20th	-	22nd	23rc	24th	_
Output 4-A: Improvement of Concept Courses for Airfield Lighting System							-																				
4-A-1 Review current training syllabus/materials		Plan Actual																									
4-A-2 Improve/develop training syllabus/materials		Pian Actual																									
4-A-3 Conduct training of instructors		Plan Actual																									
4-A-4 Implement improved training courses		Plan Actual																									
4-A-5 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																									
4-A-6 Improved training based on the result from the monitoring and evaluation		Plan Actual																									
Output 4-B: Improvement of Concept Courses for Uninterrupted Power Supp	ply Sv		PSS)	1	1	1	1::		1 : 1 : :	1. 1 1	1	1	3	1			1 : : :	1	1		1	1		1			
4-B-1 Review current training syllabus/materials		Plan Actual																									
4-B-2 Improve/develop training syllabus/materials		Plan Actual																									
4-B-3 Conduct training of instructors		Plan Actual																									
4-B-4 Implement improved training courses		Plan Actual																									
4-B-5 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																									
4-B-6 Improved training based on the result from the monitoring and evaluation		Plan Actual									-																
Monitoring Plan		YY/MM			6	7	8	9	10	11	12	'15/1	2	3	4	5	6	7	8	9	10	11	12	'16/1	2	3	4
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Monitoring Joint Coordination Committee	-	Plan					A																				
Set-up the Detailed Plan of Operation		Actual Plan					A																				
Submission of Monitoring Sheet		Actual Plan																									
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#### Monitoring Sheet (Annex-2) Plan of Operation

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

nputs from JICA		Month	'14/4 1st	5 2nd	3rd	4th	5th	6th	10 7th	11 8th	12 9th	'15/1 10th	2 11th	12th	4 13th	5 14th	15th	16th	17th	18th	10 19th	11 1 20ti	1 h 21	16/1 2nd	23rd	24th	4 25th
. Expert		- Plan																									
Chief Advisor		Actual					(60)						(91)														
Deputy Chief Advisor/Capacity Development Specialist		Plan Actual					45)						(14)														
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training		Plan					(52)					5)															
Specialist - 1 Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training		Actual Plan					(52)				(4	5)															
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Specialist		Actua					(60)						(89)														
Electrical/Mechanical Maintenance Training Specialist	,	Actua									(30)																
Flight Procedure Design Specialist		Plan Actua																									
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PC-based Simulator Training System for Air Traffic Controllers		Actua																									
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Test Instrument and Equipment		Plan Actua																									
Learning Aids and Office Equipment		Plan																						44			
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Team Resource Management Training		Plan Actua																									
Supervisory Management Training		Plan Actua																									
Instructor Development Training		Pian																									
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Advance Instructor Training		Actua Plan																									
PANS/OPS Instrument Procedure Design – Conventional Flight Procedures		Actua Plan																									
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Project Director Mr. A. C. Mtilatila, Director of Civil Aviation, DCA		Plan Actua									2.1-1-1																
Project Manager		Plan Actua																									
Mr. A. G. Matiya, Deputy Director (Operations), DCA Co-Project Manager		Plan																									
Mr. S. Galafa, Principal, School of Aviation, DCA Project Coordinator	╫╫	Actua Plan	111																								
Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division Project Coordinator	++++	Actua	1																								
Mr. M.F.T. Bongwe, Chief telecommunications engineer, Operation Division	Ш	Actua	1				C CONS																				
ATC and FIS Training Mr. S. Galafa, Principal lecturer of ATS, School of Aviation, DCA		Actua	1																								
AlS and ACS Training Mr. R. Y. Malanga, Lecturer School of Aviation, DCA		Plan Actua	1																								
AIS and ACS Training Mr. S. Liundi, Lecturer School of Aviation, DCA		Plan																									
Electrical Engineering (CNS) Training		Plan										311		111	111				111	111	11	1 1 1	11	11			
Mr. R. Kanunkha, Senior CNS Lecturer, School of Aviation, DCA Electrical Engineering (CNS) Training		Actua										BRE															
Mr. C. F. Betenigo, Electronics Engineer, KIA Electrical/ Mechanical Engineering Training		Actua Plan																									
Mr. Mtonga, Electrical Engineer, KIA		Actua								12026	55 20 1025																
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Ms. L. Manondo, Air Traffic Controller, KIA Instructor-2		Actua Pian																									
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ATC&         Mr. D. Zamaele, Air Traffic Controller, Chileka Airport           FIS         Instructor-3         Mr. F. Chisepeya, Air Traffic Controller, KIA           Instructor-4         Mr. J. Kazito, Air Traffic Controller, KIA           AIS&A         Mr. R. Nkosi, Air Crew Briefing Officer, DCA HQ.           CS         Instructor-2           Mr. N. B. Kaliyasi, Communication Officer, KIA           CNS         Electronic Engineering (CNS) Instructor           Mr. S. Kunje, Electronics Engineer, Chileka Airport           Electrical/Mechanical Engineering Instructor		Plan Actua Plan Actua Plan Actua Plan Actua Plan Actua Plan	al a																								
ATC&         Mr. D. Zamaele, Air Traffic Controller, Chileka Airport           FIS         Instructor-3         Mr. F. Chisepeya, Air Traffic Controller, KIA           Instructor-4         Mr. J. Kazito, Air Traffic Controller, KIA           AIS&A         Mr. Mr. R. Nkosi, Air Crew Briefing Officer, DCA HQ.           CS         Instructor-2           Mr. N. B. Kaliyasi, Communication Officer, KIA           CNS         Electronic Engineering (CNS) Instructor           Mr. S. Kunje, Electronics Engineer, Chileka Airport           E/M         Electrical/Mechanical Engineering Instructor Mr. O. Yokonia, Electrical Engineer, Chileka Airport		Plan Actua Plan Actua Plan Actua Plan Actua Plan Actua Plan Actua	al a																								
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Update of DCA Manuals and Procedures		Plan																										
4-1 Update of Manual of Air Traffic Services		Actual																										
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Sub-Activities Dutput 1-A: Improvement of Air Traffic Control Assistant/ Basic Course Tr		Month	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	_ 13th	14th	15th	16th	17th	1 101	1 191	un   20	in 2	LISL		zaru	2401	250
1-A-1 Review current training syllabus/materials		Plan													ΠΠ			T										
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1-A-2 Improve/develop training syllabus/materials		Actual Plan																										
1-A-3 Conduct training of instructors		Actual																					1					
1-A-4 Implement improved training courses		Plan Actual																										
1-A-5 Implement supervisor training (Overseas training)		Plan																	-									
1-A_6 Conduct monitoring and evaluation of the trainings implemented by the		Actual Plan																						-				
1-A-O trained instructors		Actual Plan																										
I-A-7 evaluation		Actual																										
Output 1-B: Improvement of Aerodrome Control Training		Plan	111			1111		1111	ПП		1111	1111	1 1 1 1	TIT	1111	TIII	ТПТ	1111					111					
1-B-1 Review current training syllabus/materials		Actual																					0.00					
1-B-2 Improve/develop training syllabus/materials		Plan Actual																										
1-B-3 Conduct training of instructors		Plan Actual													114													
1-B-4 Implement improved training courses		Plan																										
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1-B-5 Implement supervisor training (Overseas training)		Actual																				5400						
1-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																										
1-B-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																										
Output 1-C: Improvement of Approach Control (Procedural) Training			111	1 :		1:1:	1111	1:::	1.: : :		1	1:::					1											1
1-C-1 Review current training syllabus/materials		Plan Actual																										
1-C-2 Improve/develop training syllabus/materials		Plan																										
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1-C-3 Conduct training of instructors		Actual Plan												1 128														
1-C-4 Implement improved training courses		Actual											1															
1-C-5 Implement supervisor training (Overseas training)		Plan Actual																										
1-C-6 Conduct monitoring and evaluation of the trainings implemented by the		Plan Actual																										
1-C-7 Improved training based on the result from the monitoring and evaluation		Plan																										
Output 1-D: Improvement of Area Control (Procedural) Training		Actual													1						111					111		
1-D-1 Review current training syllabus/materials		Plan						T							1													TH
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1-D-2 Improve/develop training syllabus/materials		Actual Pian																										
1-D-3 Conduct training of instructors		Actual																										
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1-D-5 Implement supervisor training (Overseas training)		Plan													2 3 2													
Conduct monitoring and evaluation of the trainings implemented by the		Actual Plan					-																					
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1-D-7 evaluation		Actual																			1							
Output 1-E: Improvement of CNS/ATM Technology for ATC Training		Plan	TTT	1111						тп	m		111						IIII	1111				TITT		111		
1-E-1 Improve/develop training materials		Actual																										
1-E-2 Conduct training of DCA staffs		Plan Actual					-																					111
1-E-3 Conduct monitoring and evaluation of the trainings		Plan																			1					111		
1-E-4 Improved training based on the result from the monitoring and		Actual Plan																			1				TIL			11
I-C-4 evaluation		Actual Plan																										
1-E-5 Implement supervisor training (Overseas training)		Actual																										
1-E-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual											-															
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Sub-Activities Output 1-H: Improvement of Flight Information Services Trai	ning	YY/M Mor		4/4 st	5 2nd	6 3rd	7 4th	8 5th	9 6th	10 7th	11 8th	12 9th	'15/1 10th	2 11th	3 12th	4 13th	5 14th	6 15th	7 16th	8 17th	9 18th	10 19th	11 20th	12 21st	'16/1 22nd	2 23rd	3 24th	E
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1-H-3 Conduct training of instructors		Pla	n																									t
1-H-4 Implement improved training courses		Pla	n																									t
1-H-5 Implement supervisor training (Overseas training)		Pla	n																									t
1-H-6 Conduct monitoring and evaluation of the trainings implement trained instructors	nted by the	Pla	n																									t
1-H-7 Improved training based on the result from the monitoring an evaluation	nd	Pla	n																									t
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Output 2-B: Improvement of Basic Aeronautical Commun	nication Officer	Fraining Pla	n Li	:: [ :		1 1 1			1:::	1111					1.1.1.1	1 : : :	1:::	1 : : :	1 : : :	1 : : *	r							_
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# MINUTES OF MEETING OF THE FOURTH JOINT COORDINATING COMMITTEE FOR THE PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES IN MALAWI BETWEEN THE GOVERNMENT OF THE REPUBLIC OF MALAWI AND THE JAPAN INTERNATIONAL COOPERATION AGENCY

The fourth meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the Project for Capacity Development for Air Navigation Services in the Republic of Malawi (hereinafter referred to as the "Project") was held in Lilongwe on 5th June 2015.

The meeting was co-chaired by Mr. Mtilatila, Director of Malawi Department of Civil Aviation (hereinafter referred to as "DCA") and Mr. Ueda, Senior Transport Sector Advisor, Japan International Cooperation Agency (hereinafter referred to as "JICA"). Attendants were the Project members, representatives from DCA, JICA Malawi Office and JICA Headquarters. List of participants is shown in Attachment-1.

Several issues were discussed during the meeting, including the current progress of the Project, update of the Monitoring Sheet, activity plan, and other relevant issues of the Project. As a result of the discussions, both sides agreed on the matters in the documents attached in Attachment-2.

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Lilongwe, 5th June 2015

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Mr. A.C. Mtilatila Project Director Director of Civil Aviation Ministry of Transport and Public Works Republic of Malawi

Mr. Hiroyuki Ueda Senior Transport Sector Advisor Japan International Cooperation Agency

# Attachment-1: List of Participants

Date: 5th June 2015 Venue: Conference Room, DCA Participants:

#### DCA

Director of Civil Aviation, Mr. A. C. Mtilatila Deputy Director of Civil Aviation, Mr. A. G. Matiya Chief Air Traffic Services Officer, Mr. Francis Z. Kholowa Chief Aeronautical Telecommunications Engineer, Mr. M. F.T. Bongwe Principal of School of Aviation, Mr. Sidney P. Galafa

#### **JICA Headquarters**

Senior Transport Sector Advisor, **Mr. Hiroyuki Ueda** Assistant Director, Group 2, Transportation and ICT Section, Infrastructure and Peacebuilding Department, **Mr. Shinichi Saito** 

#### **JICA Malawi Office**

Project Formulation Advisor, Mr. Atsushi Iijima Chief Programme Officer, Mr. Kapalamula Godfrey

#### **JICA Experts**

Chief Advisor, Mr. Hiroshi Mizumasa ATC/AIS Training Specialist, Mr. Kiichiro Hirano CNS Maintenance Training Specialist, Mr. Reynaldo A. Batacan Project Coordinator, Ms. Aya Horiuchi

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## Attachment-2: Matters Agreed

#### 1) Report on Progress of the Project

a) Training

The Project Team reported on the progress and status of the Project which were as follows:

 Trainings for instructors conducted from April to June 2015 at the School of Aviation (SOA)

Course Name	Date	No. of Trainees
Microsoft Office Training	21 st – 24 th April, 2015	5
Electrical/Mechanical Training	20 th - 30 th April 2015	6
Flight Procedure Design	5 th - 28 th May 2015	4
General Communications	18 th May – 4 th June 2015	6
Park Air T6 VHF Maintenance Course	8 th – 19 th June 2015	6
VOR/DVOR/DME/ILS/RADAR Concept Course	22 nd June – 10 th July 2015	6
052 ATC Aerodrome Training	1 st June – 3 rd July 2015	5

- Working Groups for AIS/ACS to develop training syllabuses and materials were launched from May 2015. Draft training syllabuses and materials will be prepared by October 2015.
- Operational training of ATC Simulator System installed at SOA was held in May 2015.
- b) Training Equipment
- Computer Based Training (CBT) system and Test Equipment for engineering training were handed over from JICA to DCA in January 2015 (see Attachment-4)
- ATC Simulator was installed in May 2015. It will be handed over from JICA to DCA in due course.

#### 2) Activity Plan

Arr

Activity Plan of the Project for the next six months was explained by the Project Team and approved by the JCC as follows:

- Overseas training for Instructor Development Course to be held in August 2nd 22nd 2015 and Advanced Instructor Course in 4th 24th October 2015 at East Africa School of Aviation (EASA) in Nairobi, Kenya
- Training for Flight Procedure and Cartography related staff (to be held in October 2015)

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ANNEX 4-6

- Training for Electronic Engineering staff/new recruits (to be held in October 2015)
- Training for ATC staff/new recruits (to be held in October 2015)

#### 3) Update Monitoring Sheet

The Project Team explained the Monitoring Sheet Ver. 2 with the updated Plan of Operations and verifiable indicators of the PDM. The JCC accepted the Monitoring Sheet (see Attachment-3).

#### 4) Progress on New Recruitment

DCA updated the progress of new recruitment, i.e. schedules for interviews and selection procedures. DCA explained that new recruits (12 ATC and 12 engineering staff) are expected to join in August 2015.

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Attachment-3: Monitoring Sheet

PM Form 3-1 Monitoring Sheet Summary

To Chief Representative of JICA Malawi Office

PROJECT MONITORING SHEET

Protect Coordination

Project Title: The Project for Capacity Developme	ant for Air Nevigation Services
Version of the Sheet: Ver.2 (Term: 24th April 2014	
	Name: Hiroshi Mizumasa
	Title: Chief Advisor
	Submission Date: June 2015
I. Summary	Mr. T. Ministra, Electronic Engineer, N
1. Progress	
1-1. Progress of Inputs	
(1) Japanese Side	
1) Experts	
Seven JICA experts were assigned according to	the plan.
Mr. Hiroshi Mizumasa, Chief Advisor	Mill Montheda, ATG, KAR (ATG & ES Training
Ms. Mie Nagayasu, Deputy Chief Advisor	
Mr. Kiichiro Hirano, ATC & AIS Training Special	list - 1 CH & OT ALADY OT A wenged the And
Mr. Daniel Paul Diggins, ATC & AIS training Sp	ecialist – 2
Mr. Reynaldo Alido Batacan, CNS Maintenance	Training Specialist
Mr. Kiyoshi Suzuki, E/M Maintenance Training	Specialist
Ms. Yumi Hosoya, Flight Procedure Design Spe	ecialist
Details of their assignment are shown in the Plan	of Operation (see Sheet-II "Plan of Operation").
2) Training Equipment	
The following training equipment was procured:	
a) Computer Based Training ATC (November 20	14) - America Noting Wells (Notice - American State
b) Test Instrument and Equipment (December 20	014)
c) Learning Aids and Office Equipment (June 20	14)
d) PC-based Simulator Training System for Air T	raffic Controllers (May 2015)
(2) Malawi side	
1) Counterpart Personnel (C/P)	
The following DCA Officials were assigned for eff	fective and sound management of the Project (see
also Sheet II "Plan of Operation").	
[Counterpart Personnel]	
Project Director (P/D): Mr. A. C. Mtilat	ila, Director of Civil Aviation
Project Manager (P/M): Mr. A. G. Matiy	a, Deputy Director (Operations)
Co-project Manager (Co-P/M): Mr. S. Galafa, F	Principal, School of Aviation

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**Project Coordinator:** 

Project Coordinator:

Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division Mr. M.F.T. Bongwe, Chief Telecommunications Engineer, Operation Division

Trainers*: Mr. S. Galafa, Principal, School of Aviation [ATC & FIS Training Instructor]

Mr. R. Y. Malanga, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. S. Liundi, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. C. F. Betenigo, Telecommunications Engineer, KIA [Aeronautical Engineering (CNS) Training Instructor]

Mr. T. Mtonga, Electrical Engineer, KIA [Electrical/Mechanical Engineering Training Instructor]

#### 2) Support Staff

Eight instructors in total were assigned to the Project as support staff personnel: [Support Staff]*

Ms. L. Manondo, ATC, KIA [ATC & FIS Training Instructor]

Mr. D. Zamaere, ATC, Chileka Airport [ATC & FIS Training Instructor]

Mr. F. Chisepeya, ATC, KIA [ATC & FIS Training Instructor]

Mr. J. Kazito, ATC, KIA [ATC & FIS Training Instructor]

Mr. R. Nkosi, Air Crew Briefing Officer, DCA [AIS & ACS Training Instructor]

Mr. N. B. Kaliyasi, Communication Officer, KIA [AIS & ACS Training Instructor]

Mr. F. N. Chisale, Electronics Engineer, KIA [Electronic Engineering (CNS) Training Instructor] Mr. S. Kunje, Electronics Engineer, Chileka Airport [Electronic Engineering (CNS) Training Instructor]

Mr. O. Yokonia, Electrical Engineer, Chileka Airport [Electrical/Mechanical Engineering Training Instructor]

*Additional Support Staff under consideration.

3) Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA.

#### 4) Project Office Expenses

Utility cost was paid by the Malawian side and DCA provided the following expenses for the project office as of June 2015.

a) Purchase of two desktop computers: 1,055,210 MWK
b) Purchase and installation of two split air conditioners: 989,114 MWK

c) Purchase and installation of air conditioners for ATC simulator room 862,100 MWK

d) Purchase of desks and chairs for training rooms 951,105 MWK

e) Advertising Cost and the loose and the loose and the loose 1,362,589 MWK

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#### f) School of Aviation (CBT furniture, meals, and student allowances) 1,405,700 MWK

5) Travel Expenses for Counterpart Personnel within Malawi
The travel expenses for C/P to travel outside the Lilongwe area provided by DCA were as follows (as of June 2015):
a) Transport costs and subsistence allowances for students from Chileka (Team Resource Management Course/ from Chileka to Lilongwe)
b) Transport costs for Lilongwe students (Team Resource Management Course/ from Blantyre to Lilongwe)
c) Transport costs and subsistence allowances for students from outside Lilongwe
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c) Transport costs and subsistence allowances for students from Outside Lilongwe
c) Transport costs and subsistence allowances for students from Outside Lilongwe
d) Test Equipment, E & M
d) State Output

#### 1-2. Progress of Activities

- (1) Summary of Work Progress (June 2014 June 2015)
  - 1) Baseline Survey

The Project Team conducted the baseline survey on capacity of SOA which includes the capacities of ATM (ATC, FIS, AIS, ACS), Electronics Engineering (CNS), Electrical and Mechanical (E/M). The survey was conducted according to the ICAO's standard of assessing training organization.

2) Review of the existing training materials

The Project Team, composed of JET members and the counterpart personnel (C/P), observed existing training syllabus and textbooks for all training courses conducted in SOA (see "Results of the PDM Activities", described below).

3) Preparation of a work plan

The Project Team prepared a work plan describing the material development, instructor training, as well as the method and schedule for the implementation of 16 training courses, on which agreement was reached with the Malawian side.

4) Preparation of base materials for training courses

The Project Team is preparing training course materials which follows ICAO guideline.

5) Procurement of equipment

The Project Team procured equipment necessary for operating the Project in line with the JICA equipment procurement guideline.

6) Trainings at the School of Aviation (SOA) (as of June 2015) The trainings for instructors which were held at the School of Aviation are as follows:

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- a) Computer Based Training (ATC) Date: 24th November 2014 (1/2 day) No. of Participants: 6 b) Test Equipment Course Date: 12th - 23rd January 2015 (10 days) No. of Participants: 5 million and an and a second s c) Electrical & Mechanical Training Date: 20th - 30th April 2015 (9 days) No. of Participants: 6 d) Microsoft Office PC Training Date: 21st – 24th April 2015 (4 days) No. of Participants: 5 e) Flight Procedure Design Training Date: 5th – 28th May 2015 (18 days) No. of Participants: 4 f) General Communications Course Date: 18th May– 5th June 2015 (15 days) No. of Participants: 6 g) Park Air T6 VHF Maintenance Course Date: 8th - 19th June 2015 (10 days) No. of Participants: 6 h) VOR/DVOR/DME/ILS/RADAR Concept Course Date: 22nd June – 10th July 2015 (15 days) No. of Participants: 6 i) ATC Simulator Operation Lecture Date: 25th - 29th May 2015 (5 days) No. of Participants: 6 where the second state of the second state of the second mean the second state of t j) 052 ATC Aerodrome Control Course Date: 3rd June – 3rd July 2015 (23 days) No. of Participants: 5 A total of 55 participants is expect to complete trainings by the beginning of July 2015. 7) Overseas Training DCA officials participated or will be participating in the following four overseas trainings: a) Team Resource Management Course: 26th to 30th January 2015 <South Africa>*1 b) Supervisory Management Course: 2nd to 27th February 2015 <Kenya>*² A total of 12 participants completed overseas trainings as of June 2015.
- [Overseas Training Institutes] *1: Air Traffic and Navigation Services (ATNS) in Johannesburg, South Africa

*2: East African School of Aviation (EASA) in Nairobi, Kenya

#### 8) First JCC Meeting

The First JCC Meeting was held on 30th June 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, two officials from the JICA Malawi Office, and five members from the JICA Expert Team (hereinafter referred to as "JET") participated in the meeting. The JET Leader, Mr. Hiroshi Mizumasa presented a summary of the Project. The minutes of the meeting for implementation of the Project were signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Kazuhiko Tokuhashi, Resident Representative, JICA Malawi Office.

#### 9) Second JCC Meeting

The Second JCC Meeting was held on 1st August 2014. Five people from the DCA side including the Director, the Deputy Director and three other officials, one official from the JICA Malawi Office, and two members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Approval of the Work Plan
- b) Confirmation of the Instructor Nomination
- c) Approval of updated PDM
- d) Confirmation of expense for domestic training/counterparts works

The minutes of the meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroshi Mizumasa, the JET Leader.

#### 10) Third JCC Meeting

The Third JCC Meeting was held on 27th January 2015. Three people from the DCA side including the Deputy Director and two other officials, two officials from the JICA Malawi Office, and four members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Report on project progress and schedule
- b) Approval of the Monitoring Sheet ver.1
- c) Progress on new recruitment

The minutes of the meeting was signed between Mr. A. G. Matiya, DCA Deputy Director and Mr. Kazuhiko Tokuhashi, Chief Representative of the JICA Malawi Office.

#### (2) Results of the PDM Activities

Following is the summary of the Project activities having been conducted from June 2014 to June 2015. It is described according to the original PDM Activities.

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#### 1) Improvement of ATC and FIS Training

PDM Activities	Results
1-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
1-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
1-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015
1-4. Implement improved training courses	Base Material of ATC Basic Course 051 was provided by JET and it will be customized by SOA/DCA Instructor team. Trainings course of 052 Aerodrome will be conducted in June - July 2015.
1-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January and in Nairobi in February 2015.
1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	and two members wern the JET methodowed in the m as follows: a) Approval of the Wark Plan
1-7. Improve the training courses based on the results from the monitoring and evaluation	b) Conferences of the Instructor Non Institut

### 2) Improvement of AIS and ACS Training

PDM Activities	Results
2-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
2-2. Improve/develop training syllabus and training materials	Two (AIS and ACS) training syllabuses and materials will be developed.
in for the UCA Miller's Office, and four	Two Working Groups, consisting of 4 AIS and ACS officers, were established in May to draft the training syllabuses and training materials which will be due in October 2015. The Working Groups will collect and update relevant information, and customize the base materials to match with the Malawian context. The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
2-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and in October 2015.
2-4. Implement improved training courses	CBT training course was held in November 2014.
2-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January 2015 and in Nairobi in February 2015.
2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	2019. If is described according to (Ne original FDM Ac
2-7. Improve the training courses based on the results from the monitoring and evaluation	

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ANNEX 4-6

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PDM Activities	Results
3-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
3-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
3-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015. Training course of test equipment for instructors was conducted in January 2015.
3-4. Implement improved training courses	Training courses of COM & VOR/DME are/will be conducted in May – July 2015.
3-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January and in Nairobi in February 2015.
3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the Test Equipment Training in January 2015.
3-7. Improve the training courses based on the results from the monitoring and evaluation	

### 3) Improvement of Electronic Engineering Training

# 4) Improvement of Electrical/Mechanical Engineering Training

PDM Activities	Results
4-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
4-2. Improve/develop training syllabus and training materials	Two training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
4-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015.
4-4. Implement improved training courses	Training courses of E & M were conducted in April 2015.
4-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January 2015 and in Nairobi in February 2015
4-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the Electrical & Mechanical Training.
4-7. Improve the training courses based on the results from the monitoring and evaluation	enabled within the improved an invigentiar text test test

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#### 1-3. Achievement of Output

Achievement of the Project outputs is observed according to the PDM indicators.

- Output 1 Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.
- Output 2 Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.
- Output 3 Training of Electronic Engineering is improved.

Output 4 Training of Electrical/Mechanical Engineering (E/M Eng) is improved.

	Achievement	-		
Indicators for the PDM Outputs		Achievement as of June 2015		
-Training syllabuses and training materials are improved or developed for the following number of courses:	ATC/FIS: 6	<ol> <li>051: ATC Basic: 80%</li> <li>052: Aerodrome Control: 100%</li> <li>053: Approach Control: 60%</li> <li>055: Area Control: 30%</li> <li>CNS/ATM for ATC: 80%</li> <li>Flight Information Service: 50%</li> </ol>		
	AIS/ACS: 2	1. AIS & ACS (combined): 50%		
Electro	Electronic Eng.: 6	<ol> <li>General Communication Equipment: 100%</li> <li>Navigation Concept Course: 90%</li> <li>Park Air VHF: 90%</li> <li>Normarc ILS: 70%</li> <li>Maru VOR/DME: 70%</li> <li>CNS/ATM: 80%</li> </ol>		
	E/M Eng.: 2	<ol> <li>Theory of Airfield Lighting: 90%</li> <li>Theory of UPS: 90%</li> </ol>		
-The following number of	Instructors: 10*1			
CA officers successfully omplete	ATC/FIS: 4*1	8 officers successfully completed "Team Resource Management Course" in South Africa		
supervisor/advanced/ specialist training:	AIS/ACS: 4*1	4 officers successfully completed "Supervisory Management Course" in Kenya.		
Manageria E-1 general a	Aeronautical Cartography: 2*2			
	PANS/OPS: 2*2	4 officers successfully completed "PANS/OPS Conventional Flight Procedure Design for Non-Precision Approach"		
	ILS Maintenance: 4*2	a seneral constant parate in a single shift		

*1: Overseas trainings

*2: In-country trainings

#### 1-4. Achievement of the Project Purpose

Achievement of the Project purpose: "Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities." is observed according to the PDM indicators as follows:

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Achievement of the Project Purpose

Indicators for	the Project Purpose	Achievement as of June 2015
- The following number of instructors can conduct the	ATC/FIS: 6	0
	AIS/ACS: 4	0
improved/developed training courses (fulltime + part time)	Electronic Eng.: 4	0
	E/M Eng.: 4	0
- Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 70%.	Computer Based Training (CBT) (6 participants)	Not scored
	Test Equipment Course (5 participants)	87.1%
	Electrical & Mechanical Training (6 participants)	93.7%
	Microsoft Office PC Training	Not scored
	(5 participants)	requirer And call contait of
	Flight Procedure Design Training	80.0%
www.y.Rutuchion (Zapiška).	(4 participants)	
	General Communications Course (6 participants)	89.6%

#### 1-5. Changes of Risks and Actions for Mitigation

No major changes were seen in the PDM Important Assumptions; therefore no special actions need to be taken. However, as for the Pre-conditions, new trainees were not recruited yet, which may affect the project outcomes.

(1) Pre-conditions

PDM Pre-conditions	Current Situations	Actions for Mitigation	
1) DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project.	<ul> <li>Project office space was provided at the time of initiation of the work in Malawi in June 2014.</li> <li>Counterpart personnel (C/P) were allocated in the Project before the commencement of the project.</li> </ul>	- No special actions need to be taken.	
2) New trainees are recruited as scheduled.	<ul> <li>New trainees are not recruited since the initiation of the project in May 2014 to date.</li> <li>Recruitment of 24 new staff is in progress. They are planned to join DCA in August 2015.</li> </ul>	<ul> <li>JET requested DCA ensure the recruitment of new staff.</li> <li>Further 24 new staff has to be recruited to meet pre-condition of the Project.</li> </ul>	

#### (2) Important Assumption when proceeding from Activities to Outputs

Important Assumption	Current Situations	Actions for mitigation
1) DCA implements the Project with sufficient ownership.	- DCA's ownership was seen.	- No special actions need to be taken.

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(3) Important Assumptions when proceeding from Outputs to the Project Purpose

Important Assumption	Current Situations	Actions for mitigation
1) No major change of the international standards on air navigation services occurred.	- No major changes were seen. It did not affect to the Project operation.	- No special actions need to be taken.

#### 1-6. Progress of Actions undertaken by JICA

No remarkable issues.

1-7. Progress of Actions undertaken by the Government of Malawi

In May 2015, the Government of Malawi/DCA began procedures to recruit new students for ATC, Electronics Engineer, Electrical Engineer and Mechanical Engineer.

- 1-8. Progress of Environmental and Social Considerations (if applicable) No remarkable issues.
- 1-9. Progress of Considerations on Gender/ Peace Building/ Poverty Reduction (if applicable) No remarkable issues.
- 1-10. Other remarks or issues related to the project (such as other projects of JICA, activities of counterparts, other donors, private sectors, NGOs, etc.)
  - (1) Project for the Improvement of Aviation Safety Oversight in Malawi by European Aviation Safety Agency (EASA)

EASA is currently assisting DCA and the Ministry of Transport and Public Works improving safety oversight capacity of civil aviation. There is no overlapping of activities between JICA project and EASA project.

(2) Airport Safety and Security Equipment Project by European Investment Bank (EIB) EIB is funding the procurement of safety equipment such as fire trucks at Kamuzu International Airport. There is no overlapping of activities between JICA project and EIB project.

(3) The Project for Expansion of the Terminal Building at Kamuzu International Airport by JICA JICA is currently conducting a Preparatory Survey for the project, which will include installation of the aircraft surveillance system. Current capacity development project will strengthen the foundation for the introduction of radar control services; however, does not include training for operation and maintenance of the aircraft surveillance system. DCA should plan capacity development for the radar control services if the project is realized.

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2. Delay of Work Schedule and/or Issues (if any)

#### 2-1. Detail

The project is on schedule; however, delay in recruitment of new staff would possibly affect the activities related to training of new staff under the Project.

#### 2-2. Cause of Delay

Recruiting process had been delayed due to lack of funds for recruitment on the part of the recruiting agencies.

#### 2-3. Actions to be taken

Recruitment process of the first 24 staff was initiated in mid-May 2015 and it is expected that new staff will join DCA in August 2015. Additional 24 staff has to be recruited to meet pre-condition of the Project.

### 2-4. Roles of Responsible Persons/ Organization (JICA, Gov. of Malawi, etc.) DCA and the Government of Malawi are responsible for recruitment of new staff.

#### 3. Modification of the Project Implementation Plan

#### 3-1. Plan of Operation (PO)

No major modification was made.

#### 3-2. Other Modifications on Detailed Implementation Plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

Some changes to be made, mainly in "Objectively Verifiable Indicators", were discussed among DCA and JICA Team prior to the 4th JCC meeting as follows (*<u>underlined</u> = changes to be made); 1) Overall Goal

Define the Objectively Verifiable Indicator as "<u>The targeted number of trainees (serving officers and</u> <u>new staff) who will</u> successfully complete the improved/developed training courses <u>between 2016</u> and 2020 is at least 80".

#### 2) Project Purpose

Change minimum score of comprehension test from 80% to <u>70%</u> in accordance with international standard of ICAO.

Replace the Means of Verification "Terminal Evaluation Report" with "Project Completion Report". In addition, insert "- Results of comprehension test score of trainees".

Outputs

Delete the Objectively Verifiable Indicator "Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 80%" as this indicator duplicates with that of the Project Purpose. The revised PDM is attached as Project Monitoring Sheet I.

4. Preparation of the Government of Malawi towards the completion of the Project Not applicable.

#### II. Project Monitoring Sheet I (PDM) & Sheet II (PO) (Version 2) as attached

2-4. Rollss of Responsible Personal Organization (JICA, Gov. of Malmvk, etc.) DCA and the Gevenment of Malovi are responsible for requirment of new staff.

- 3. Modification of the Project Implementation Plan
  - Plan of Operation (PO)
     No-major moduloation was mide
- 3-2. Other Modifications on Detailed Implementation Plan

(Remeater. The emendment of R/D and PDM (Mile of the project, dumnon, project ske(s), lenget groups), implementation structure, everall geer project corpose, outputs, adminio, and input) should be authorized by JICA HDQs. If the project (earn deems if neordbary to mpdify any part of R/D and PCM. the tearth may produce the draft.)

Bonje changes to be made, mainly in "Ovjectively Verifiable Indicatore", were discreted among SICA and JICA Team prior to the 4th JICC meeting as follows ("<u>underlined</u> = changes to be made); 1) Diversil Goal

Behave the Coljectively Verfigeble Indicator as <u>"The propered number of Italness Serving officers and</u> new staffi who will automasculiy complete the improved/iteveloped training courses <u>behaver, 2018</u> and 2020 is at Yeast 30°.

2) Project Purpoise

ANNEX 4-6

Change minimum score of comprehension test from 30 % to <u>70%</u> in eccentance with International standard of ICAO.

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#### **Project Design Matrix (Sheet I)**

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

#### Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

Model Site:

#### Period of Project: 2 years (24/04/2014-20/05/2016)

Version 3

Dated 5 June 2015

Project Site: School of Aviation	Model Site:				
Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	The targeted number of officers-trainees (serving officers and new staff) who will successfully complete the improved/developed training courses for each year by between 2016 and 2020 is at least 80.	- Training records			
roject Purpose (Objective at the end of the Project)					
	Number of instructors can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 8070%.	Monitoring Sheet     Terminal Evaluation- Report- Project     Completion Report     Results of the     comprehension test     score of trainees.	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose)					
<ol> <li>Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.</li> <li>Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.</li> <li>Training of Electronic Engineering is improved.</li> <li>Training of Electrical/Mechanical Engineering (E/M Eng) is improved.</li> </ol>	Instructors: 10     ATC/FIS: 4     AIS/ACS: 4	- Monitoring Sheet - Results of comprehension test score of supervisor/ advanced/specialist training courses	- No major change of the international standards on air navigation services is occurred.		
	<ul> <li>Aeronautical Cartography: 2</li> <li>PANS/OPS: 2</li> <li>ILS Maintenance: 4         <ul> <li>Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 80%</li> </ul> </li> </ul>				

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	Inputs		Pre-Conditions
Activities Specific actions to produce each Output by use of Inputs) Improvement of ATC and FIS Training 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 1-3. Conduct training of instructors 1-3. Implement supervisor training 1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 1-7. Improve the training courses based on the results from the monitoring and evaluation of the training materials 2-2. Improve/develop training syllabus and training materials 2-3. Conduct training of instructors 2-3. Conduct training of instructors 2-4. Implement improved training courses 2-5. Implement supervisor/advanced/specialist training 2-6. Conduct monitoring and evaluation of the training simplemented by the trained instructors 2-7. Improve the training courses based on the results from the monitoring and evaluation of the training simplemented by the trained instructors 2-7. Improve the training courses based on the results from the monitoring and evaluation of the training materials 2-8. Conduct monitoring and evaluation of the training materials 2-9. Improve/develop training syllabus and training materials 2-9. Improve/develop training syllabus and training materials 2-9. Improve the training courses based on the results from the monitoring and evaluation of the training simplemented by the trained instructors 3-9. Implement improved training courses 3-9. Implement equipment-specific training 3-1. Improve the training courses based on the results from the monitoring and evaluation of the training materials 3-2. Improve/develop training syllabus and training materials 3-3. Conduct monitoring and evaluation of the training simplemented by the trained instructors 3-1. Improve the training courses based on the results from the monitoring and evaluation 3-1. Review current training syllabus and training materials 3-2. Improve/develop training syllabus and training materials 3-3. Conduct training of instructors 3-4.	Inputs  The Japanese Side  Experts Chief Advisor/Training Manager ATC Training Specialist Electronic Maintenance Training Specialist Electronic Maintenance Training Specialist Chers as necessary Training materials Training equipment Overseas training	The DCA Side - Counterpart Personnel - Support Staff - Project Office Space - Travel Expenses of Counterpart Personnel within Malawi - The others mentioned in Appendix1, II, 6, of R/D	Pre-Conditions - DCA implements the Project with sufficient ownership.  Pre-Conditions - DCA secures budget necessary for preparation the Project Office and allocation of counterpart personnel before the commencement of the Project New trainees are recruit as scheduled.

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Sheet - I

#### Monitoring Sheet II Plan of Operation

Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

nputs from JICA			Mont	M '14/4 h 1st	 3rd	4th	5th	6th	7th	8th	9th	10th	11th	1 12th	h 13t	n 14th	15th	16th	17th	18th	19th	20th	21st	22nc	1 23rd	24th	25t
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Chief Advisor		_	Actu	al		1 1 100001 201001 00000 00000	(60)			- Boost Hore			(91)		1 Contract March												
Deputy Chief Advisor/Capacity Development Specialist			Pian Actu		~	(45	5)						(14)														
Air Traffic Controller (ATC), Aeronautical Information Service ( Specialist - 1	IS) Training		Plan				(52)				7	45)															
Air Traffic Controller (ATC), Aeronautical Information Service (	IS) Training		+ Plan									T															
Specialist - 2 Communications, Navigation and Surveillance (CNS) Mainten	nce Training		- Actu			(27)				()	19)																
Specialist			Actu				(60)						(89)														
Electrical/Mechanical Maintenance Training Specialist			Actu							100 kindin	(30)																
Flight Procedure Design Specialist			- Plan	al																							
Training Equipment																											
PC-based Simulator Training System for Air Traffic Controller			Plan																								
Computer Based Training (ATC)			Plan																								
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Learning Aids and Office Equipment			Actu	al																							
Coverseas Training Team Resource Management Training			Pla																								
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Supervisory Management Training			Actu																								
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I. C/P Project Director, etc.			Pia																								
Project Director Mr. A. C. Mtilatila, Director	f Civil Aviation, DCA		Act	lal																							
Project Manager Mr. A. G. Matiya, Deputy Direc	r (Operations) DCA		Pla																								
Co-Project Manager		11111	Pla	n																							
Mr. S. Galafa, Principal, Sc Project Coordinator	ool of Aviation, DCA	+++++	Pla	n																							
Mr. F. Kholowa, Chief Air Traffic Services Office Project Coordinator	r, Operation Division	+++++	Act																								
Mr. M.F.T. Bongwe, Chief telecommunications engine	r, Operation Division	11111	Act	Jal																							
ATC and FIS Training Mr. S. Galafa, Principal lecturer of ATS, So	ool of Aviation, DCA		Act	ual																						8888	
AIS and ACS Training Mr. R. Y. Malanga, Lecturer Sc	nonl of Aviation DCA		Pla																								
AIS and ACS Training	1987 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	1111	Pla	n																	111						
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Mr. R. Kanunkha, Senior CNS Lecturer, So Electrical Engineering (CNS) Training	nool of Aviation, DCA		Act												state land a state water water water												
Mr. C. F. Betenigo, Ele	ronics Engineer, KIA		Act	ual				1920																			
Electrical/ Mechanical Engineering Training Mr. Mtonga, E	ectrical Engineer, KIA		Pla																								
2. Support Staff			Pla																								
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FIS Instructor-3	Traffic Controller, KIA		Pla																								
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Mr. J. Kazito, Ai	Traffic Controller, KIA		Act																								
AIS& Mr. R. Nkosi, Air Crew Bri	fing Officer, DCA HQ.		Act																								
ACS Instructor-2 Mr. N. B. Kaliyasi, Com	unication Officer, KIA		Act	ual						- 2007 - 2007 - 2008 - 2008 - 2007 - 2008 - 2008 - 2008																	
Electronic Engineering (CNS) Instructor Mr. S. Kunje, Electronics Er	ineer. Chileka Airport		Pi																								
Electronic Engleering (CNS) Instructor	and the second second		PI	an																							
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3-2 Flight Information Officers (8 students)			Ac	tual								N. C. M.															
3-3 AIS Officers (10 students)	_		Ac	tual																							
3-4 Aeronautical Communications Officers (6 students		Ш	PI Ac						<b>A</b>																		
3-5 Electronic Engineers (8 students)		11111	PI	an 🔺																							
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3-6 Electrical/Mechanical Engineers (2/2 students) 4. Update of DCA Manuals and Procedures			Ac																								
4-1 Update of Manual of Air Traffic Services		****	P																								
4-1 Update of CNS Equipment Maintenance Procedu		++++	Ac																								
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5-1 Project Office		Pian Actual											
5-2 ATC Simulator Room		Plan Actual											
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5-4 Electronic Training Laboratory		Plan Actual										-	_
ctivities	IIIII					6 7 8	9 10 11	12 '16/1 2	3	4 5		- Achievements	Issue &
Sub-Activities tput 1-A: Improvement of Air Traffic Control Assistant/ Basic Course		Month 1st 2nd 3rd	4th 5th 6th 7th	8th 9th 10th 11th	12th 13th 14th	15th   16th   17th	18th   19th   20th	21st 22nd 23	rd 24th	25th 26	h Japan Malawi	Achievenients	Countermea
-A-1 Review current training syllabus/materials		Plan									1	-	
-A-2 Improve/develop training syllabus/materials													
A-3 Conduct training of instructors		Actual Plan Actual Actual											
-A-4 Implement improved training courses	tttt	Plan Actual										-	
-A-5 Implement supervisor training (Overseas training)		Plan Actual											
I-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors.	****	Plan Actual											
I-A-7 Improved training based on the result from the monitoring and	THI	Plan										-	
tput 1-B: Improvement of Aerodrome Control Training	шш	Actual									1		
-B-1 Review current training syllabus/materials	ШП	Pian Actual										1	
I-B-2 Improve/develop training syllabus/materials													
-B-3 Conduct training of instructors		Plan Actual											
-B-4 Implement improved training courses		Plan Actual											
I-B-5 Implement supervisor training (Overseas training)		Plan Actual											
-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual											
-B-7 Improved training based on the result from the monitoring and		Pian Actual										-	
tput 1-C: Improvement of Approach Control (Procedural) Training									11111		1		
-C-1 Review current training syllabus/materials		Plan Actual											
-C-2 Improve/develop training syllabus/materials		Plan Actual											
I-C-3 Conduct training of instructors		Plan Actual											
I-C-4 Implement improved training courses	ШП	Plan Actual											
1-C-5 Implement supervisor training (Overseas training)		Plan Actual											
1-C-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	IIII	Plan Actual											
I-C-7 Improved training based on the result from the monitoring and evaluation		Plan Actual											
tput 1-D: Improvement of Area Control (Procedural) Training		the second s							1.1.1.1.1	111111			
1-D-1 Review current training syllabus/materials		Plan Actual Actual											1
I-D-2 Improve/develop training syllabus/materials		Plan Actual											
I-D-3 Conduct training of instructors		Plan Actual											-
1-D-4 Implement improved training courses		Plan Actual											1
I-D-5 Implement supervisor training (Overseas training)		Plan Actual				· 戴林子 龙汉林田 老婆子子!!	计杂杂器 医被病毒 权利能力						-
1-D-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Actual Actual										-	
I-D-7 Improved training based on the result from the monitoring and evaluation		Plan Actual							4 1 1 1	11111			
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-E-2 Conduct training of DCA staffs		Pian Actual Pian											
-E-3 Conduct monitoring and evaluation of the trainings		Actual											
-E-4 Improved training based on the result from the monitoring and evaluation		Plan Actual											
-E-5 Implement supervisor training (Overseas training)		Plan Actual		2 5 8 8 8 8 8 8 8 9 8 8 8 8 8 8 8 8 8 8 8									
trained instructors		Plan Actual											
1-E-7 Improved training based on the result from the monitoring and evaluation		Plan Actual											
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1-F-1 Conduct training of DCA staffs		Actual									Malawi	-	
tput 1-G: Improvement of Flight Procedure Design (Conventional Flight I-G-1 Conduct training of DCA staffs	Proce	Plan Plan									Change to training by JICA Exper	tin	

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ANNEX 446

ctivities	Ш	YY/MM					7	8	9	10	11	12	'15/	1 2		3	4	5 1	6	7	8	9	10	11	12	16/	1 2	3		4	5	Responsibl	e Organization	Achievenesta	Issue &
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3-E-1 Improve/develop training materials		Actual																																	
3-E-2 Conduct training of DCA staffs		Plan Actual																															-		-
B-E-3 Conduct monitoring and evaluation of the trainings	Ш	Plan Actual																																	-
Improved training based on the result from the monitoring and evaluation	Ш	Plan Actual																																	
tput 3-F: Improvement of New CNS/ATM Technology for Electronic Engin	neer 1	raining		0.7		_		11														1 1.1													
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-F-3 Conduct monitoring and evaluation of the trainings	IIII	Plan																																	-
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tput 4-A: Improvement of Concept Courses for Airfield Lighting System	TTT	Plan		111	1 1000	5 T T	A LA LA	111			111		111	TTT	111					TTT	1111	111		TTT											
A-1 Review current training syllabus/materials	Ш	Actual Plan											_									_													
-A-2 Improve/develop training syllabus/materials		Actual									60				325														_						
-A-3 Conduct training of instructors		Plan Actual																																	-
L-A-4 Implement improved training courses		Plan Actual																																	
I-A-5 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Ш	Plan																																	
Improved training based on the result from the monitoring and evaluation	Ш	Plan Actual																														All Contracts		a service and a service of the	
tput 4-B: Improvement of Concept Courses for Uninterrupted Power Suppl		stem (UPS			- ind	· Ini							1. 1. 1								1	1::								<u></u> :					CALCULAR ST DW 11
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I-B-3 Conduct training of instructors		Plan Actual																																	
-B-4 Implement improved training courses		Plan Actual																																	
I-B-5 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actual																																	
4-B-6 Improved training based on the result from the monitoring and evaluation	HH	Plan Actual																															-		
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Joint Coordination Committee		Plan																																	
Set-up the Detailed Plan of Operation	1	Plan Actual																																	
Submission of Monitoring Sheet		Plan																																	
eports/Documents		/															11	1111									1 1				1 1				
Project Completion Report		Plan																1111								1111									

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# Attachement - 4





Date: 30th January 2015

#### HANDOVER NOTES

Hereby the Japan International Cooperation Agency (JICA) Malawi Office would like to handover the equipment as listed in the attachment to the School of Aviation. The handover equipment is provided based on the request by the Department of Civil Aviation, the Ministry of Transport and Public Works in accordance with the Article II-1-(1) of the Record of Discussions signed between the Republic of Malawi and Japan International Cooperation Agency on 13th January, 2014 for "The Project for Capacity Development for Air Navigation Services in the Republic of Malawi.".

The Department of Civil Aviation, the Ministry of Transport and Public Works shall take necessary measures:

- a) to ensure that the equipment is used properly and exclusively for the purpose of facilitating the project related activities during and after the project,
- b) to maintain the equipment in good condition and bear all the expenses necessary for or in connection with the use of the equipment,
- c) to ensure that the equipment will not be used for any individual use.

JICA and the Department of Civil Aviation, the Ministry of Transport and Public Works shall consult with each other in the event of any dispute for the handover equipment.

Alfred C. Mtilatila (Mr.) Director for Civil Aviation Ministry of Transport and Public Works

K. Josuhashi

Kazuhiko TOKUHASHI (Mr.) Resident Representative Malawi Office Japan International Cooperation Agency

Appendix: List of Equipment

#### LIST OF EUIPMENT

PROJECT FOR CAPACITY DEVELOPMENT FOR AIR NAVIGATION SERVICES

1.	Computer	Based	Training	System
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No.	Item Description	Quantity
1	HP Elitedesk 800 G1 TW/CT	6 EA
	(P/N: C8N27AV / ORIGIN: JAPAN)	
	-including software: MASTOOL AIR TRAFFIC CONTROLLER	
	TRAINING SYSTEM	e not view
	(ORIGIN: JAPAN)	
2	SMART-UPS 1000 LCD 100V	6 EA
	(P/N: SMT 1000J / ORIGIN: PHILIPPINES)	
3	HP 21.5 INCH MONITOR	6 EA
	(P/N: C4D29A2 / ORIGIN: JAPAN)	
4	STEREO SPEAKER	6 EA
	(P/N: MM-SPU6BK / ORIGIN: CHINA)	
5	AUDIO HEADSET	6 EA
	(P/N: MM-HSUSB16SV / ORIGIN: CHINA)	
6	VOLTAGE CONVERTER	6 EA
	(P/N: PAL-350E / ORIGIN: JAPAN)	
7	NETWORK HUB	1 EA
	(P/N: LD-CTN/BK10 / ORIGIN: CHINA)	1.00
8	LAN CABLE	1 EA
	(P/N: LSW3-TX-8NS/WH / ORIGIN: CHINA)	
9	SOFTWARE MANUAL	5 EA

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### 2. Test Equipment

Item No.	Item Description	Quantity
1	Oscilloscope TBS1152	2
	Standard Accessory	
	- Standard probe (2pcs/unit)	2
	Special Accessories	
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (1pc/unit)	2
2	Digital Multimeter PM33a/C	4
	Standard Accessory	
	• Test Lead (2pcs 1set/unit)	4
	Special Accessory	
*.	- Operation manual (English 5pcs/unit)	20
3	Frequency Meter GFC-8131H	2
	Standard Accessories	
	- Test Lead BNC-BNC 1m (1pc/unit)	2
	- Test Lead BNC-Alligator 1.1m (1pc/unit)	2
	Special Accessory	
	- Operation manual (English 5pcs/unit)	10
4	Radio Frequency Wattmeter (Passage Type) MODEL 43	2
	Special Accessories	
	- Low power element 60~80MHz 1W (1pc/unit) 060-1	2
	- Standard element 50~125MHz 10W (1pc/unit) 10B	2
	- Standard element 50~125MHz 25W (1pc/unit) 25B	2
	- Low power element 110~160MHz 1W (1pc/unit) 110-1	2
	- Standard element 100~250MHz 5W (1pc/unit) 5C	2
	- Standard element 100~250MHz 50W (1pc/unit) 50C	2
	- Standard element 100~250MHz 100W (1pc/unit) 100C	2
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (English 1pc/unit)	14 .
5	Radio Frequency Wattmeter (Termination Type)	2
	TP-3503A-01	
	Special Accessory	
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (Japanese 1pc/unit)	2

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6	Level Meter LM321	2
19475	Standard Accessories	d'and i
	- Measurement code (M1PS-Electrical clip) (2pcs/unit)	4
	- Tester stick (red/ black) (1set/unit)	2
	- Transceiver (1pc/unit)	2
	- Soft case (1pc/unit)	2
	- AA cell battery (4pcs/unit)	8
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection Certificate (Japanese 1pc/unit)	2
7	Standard Signal Generator	2
	Special Accessories KSG4310	
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (English 1pc/unit)	2
8 .	Distortion Meter MAK-6630	2
	Special Accessories	
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (English 1pc/unit)	2
9	Spectrum Analyzer GSP-810VT	2
	Special Accessories	-
	- Operation Manual (English 5pcs/unit)	10
	- Factory inspection certificate (English 1pc/unit)	2
10	Directional Couplers MAK-6630	2
	Standard Accessories	
	- Coaxial cable S-5DWP, 5D-2W, S-5DWP 1m (1pc/unit)	2
	- Terminating resistor 50Q (1pc/unit)	2
	Special Accessory	
	- Coaxial cable S-5DWP, 5D-2W, S-5DWP 1m (2pcs/unit)	4
	- Operation Manual (English 5pcs/unit)	10
11	Low Frequency Variable Attenuator AT-50	2
	Special Accessories	
	- Operation Manual (Japanese 5pcs/unit)	10
	- Factory inspection certificate (Japanese 1pc/unit)	2
12	Detector SDT-50	2
	Special Accessory	
	- Factory inspection certificate (English 1pc/unit)	2

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13	LCR meter	LCR915	2
	Standard Accessories		
	- Short cube (lpc/unit)		10
	- 2 wire alligator clip (1set/unit)		2
	- Handle kit (lpc/unit)		2
	- AA cell battery (4pcs/unit)		8
	Special Accessory		
	- Operation manual (English 5pcs/unit)	)	10
14	VHF Air Band Transceiver	IC-A110	2
	Standard Accessories		
	- Handheld microphone (lpc/unit)		2
	- DC power cable (1pc/unit)		2
	- Mount bracket kit (1pc/unit)		2
	- Microphone hanger kit (1set/unit)		2
	- Fuse (1set/unit)		2
	Special Accessories		
	- Power supply unit (1pc/unit)	GSV3000	2
	- BF type plug converter for Power sup	ply unit	2
	- Operation manual (English 5pcs/unit)	)	10
15	Transmitting and Receiving Antenna	DS747PRO	2
	for VHF Air Band Transceiver		
	Special Accessories		
	- Antenna coaxicial cable 5D-FB 30m w	vith connector	2
	corresponding to Item No.17 (DS150S	) and	
	Item No.16 (AR8600MK2)		
	- Pole fixing bracket (2sets/unit)	GMB-GH	4
	- Self-fusing tape (2pcs/unit)	No.11 Black	4
	- Vinyl tape (2pcs/unit)	No.223S Black	4
	- Conductive grease (1pc/unit)		2
	- Operation manual (English 5pcs/unit)	)	10
16	General Receiver	AR8600MK2	1
	Standard Accessory		
	- AC adapter (lpc/unit)		1
	Special Accessories		
	- External speaker		1
	- BF type plug converter for AC adapte		1



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	- Operation manual	5
17	Antenna for General Receiver DS150S Special Accessories	1
	- Antenna coaxicial cable 5D-FB 30m with connecter corresponding to Item No.17 (DS150S) and Item No.16 (AR8600MK2)	1
	- Pole fixing bracket (2sets/unit) GMB-GH	2
	- Self-fusing tape (1pc/unit) No.11 Black	1
	- Vinyl tape (1pc/unit) No.223S Black	1
	- Conductive grease (lpc/unit)	1
	- Operation manual (English 5pcs/unit)	5
19	UPS ALS-1.5KH	4
	Standard Accessory	
	- Operation manual (English 5pcs/unit) Special Accessories	20
	- Input BF type - C13 type cable 2m (1pc/unit)	4
	Output solderless terminal - BF type 4-outlet-socket power strip (1pc/unit)	4
20	Tool for Practice	
	- Needle-nose plier P-35	2
21	Tool for Practice	
	- Nipper N-9-125	2
22	Tool for Practice - Plier P-43-150	2
0.0	Tool for Practice	2
23	- Plier P-211Z-150	2
24	Tool for Practice - Phillips screwdriver No.0 (1pc/set) L=178mm D-540-100	2
	- Phillips screwdriver No.1 (1pc/set) L=200mm D-550-100	2
	- Phillips screwdriver No.2 (1pc/set) L=200mm D-555-100	2
	- Slotted screwdriver 2.5x0.35 (1pc/set)	2
	L=149mmD-630-100	2
	- Slotted screwdriver 5.0x0.7 (1pc/set) L=200mm D-650-100	
25	Tool for Practice	
	Precision screwdriver set     D-20	2
	Standard Accessory	

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	- Case for Precision screwdriver	set (1pc/set)	2			
26	Tool for Practice - Voltage detector screwdriver	83L	2			
27	Tool for Practice • Wire stripper	P-90-A	2			
28	Tool for Practice - Adjustable spanner	WM-200	1			
29	Tool for Practice • Adjustable spanner	WM-300	1			
30	Tool for Practice - Pipe wrench	PWA-450	1			
31	Peripheral equipment for measuri - Cable set (1 set)	ing instrument (1)	1			
33	Peripheral equipment for measuri - Connecter	ing instrument (3) BNC-TA-JJJ-CF 50Q	2			
34	Peripheral equipment for measuri Coaxial cable 3D2W BNC male	lm	4 2			
	- Coaxial cable 3D2W N male - BNCmale 50cm - Coaxial cable 3D2W BNC male - electrical clip 50cm					
	- Relay adapter - Conversion Connecter	BJ-J (50Q) BNCJ-NJ (Ni)	2 2			
	- Conversion connecter	SMAP-BNCJ(Ni)	2			

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# **ANNEX 5**

# **Monitoring Sheet (copy)**

ANNEX 5-1 Monitoring Sheet I (Inception June 2014)ANNEX 5-2 Monitoring Sheet I (January 2015)ANNEX 5-3 Monitoring Sheet II (June 2015)ANNEX 5-4 Monitoring Sheet III (October 2015)

# TO CR of JICA Malawi OFFICE

## **PROJECT MONITORING SHEET**

## Project Title : The Project for Capacity Development for Air Navigation Services Version of the Sheet: Ver.1 (Term: 24 April, 2014 - 20 May, 2016)

Name: Hiroshi Mizumasa

Title: Chief Advisor

### Submission Date: 30 May, 2014

## I. Summary

# **1** Progress

- 1-1. Progress of Inputs
- 1-2. Progress of Activities
- 1-3. Achievement of Output
- 1-4. Achievement of the Project Purpose
- 1-5. Changes of Risks and Actions for Mitigation
- 1-6. Progress of Actions undertaken by JICA
- 1-7. Progress of Actions undertaken by Gov. of Malawi
- 1-8. Progress of Environmental and Social Considerations (if applicable)
- 1-9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

# 2 Delay of Work Schedule and/or Problems (if any)

- 2-1. Detail
- 2-2. Cause
- 2-3. Action to be taken
- 2-4. Roles of Responsible Persons/Organization (JICA, Gov. of Malawi, etc.)

# **3** Modification of the Project Implementation Plan

3-1. PO:

3-2. Other modifications on detailed implementation plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

This is initial Monitoring Sheet at the initial point. Above information will be reported from 2nd Monitoring Sheet.

# 4 Preparation of Gov. of Malawi toward after completion of the Project

Above information will be reported after start of Project activities.

II. Project Monitoring Sheet I & II (Version 1) as attached

#### **Project Design Matrix**

#### Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

# Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

#### Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

	model one.				
Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project)					
Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS: 4 (1) Electronic Eng.: 4 (1) E/M Eng.: 4 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least XXX %. (Target value "XXX %" will be set with the results of a baseline survey.)	- Project Progress Reports - Terminal Evaluation Report	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		
Outputs (Objectives to be realized by Activities to achieve the Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	<ul> <li>Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2</li> <li>The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC: 4 AIS: 4 ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4</li> <li>Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least XXX %.</li> </ul>	<ul> <li>Project Progress Reports</li> <li>Results of completion tests for supervisor/ advanced/specialist training courses</li> </ul>	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		

Version 1 Dated 30, May, 2014

The Japaness Side         The Japaness Side         The DCA Side           Improvement of ATC and FIS Training         - Condergat Presonnel         - CCA secures budget           12. Improved evelop training syllabus and training materials         - Conduct training instructors         - Conduct training Specialist         - Project Office Expenses           13. Conduct training of an evaluation         - Experts         - Conterpart Presonnel         - DCA secures budget           14. Implement improved training sources         - Attornating Specialist         - Project Office Expenses         - Project Office Expenses           15. Implement supervisor training         - Training specialist         - Travel Expenses of         - DCA secures budget           14. Improve the training courses based on the results from the monitoring and evaluation         - Training specialist         - Travel Expenses of         - DCA implementcements the Project.           21. Review current training syllabus and training materials         - Training specialist training         - Ocer seas training         - Oce implements the Project.         - DCA implements the Project.           23. Conduct training of subcors         - Training specialist training         - Ocer seas training         - Ocer seas training         - Ocer seas training           24. Implement improved training syllabus and training materials         - Improved/develop training syllabus and training materials         - Office Spenses <td< th=""><th>Activities</th><th>Inputs</th><th></th><th>Pre-Conditions</th></td<>	Activities	Inputs		Pre-Conditions
Improvement of ATC and FIS Training 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 1-3. Conduct training of instructors 1-4. Implement supervisor training 1-6. Conduct monitoring and evaluation 1-7. Improve the training syllabus and training materials 2-2. Improve/develop training syllabus and training materials 2-2. Improve/develop training syllabus and training materials 2-2. Improve/develop training syllabus and training materials 2-3. Conduct training of instructors 2-4. Implement supervisor/raining syllabus and training materials 2-5. Improve the training syllabus and training materials 3-2. Conduct training of instructors 2-4. Implement supervisor/advanced/specialist training 3-1. Review current training syllabus and training materials 3-2. Improve/develop training syllabus and training materials 3-3. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 3-4. Implement equipment-specific training 3-5. Implement tequipment-specific training 3-6. Conduct monitoring and evaluation of the training simplemented by the trained instructors 3-7. Improve the training syllabus and training materials 3-3. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 3-7. Improve the training syllabus and training materials 3-3. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 3-7. Improve the training syllabus and training materials 3-5. Implement tequipment-specific training 3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors 3-7. Improve the training syllabus and training materials 3-5. Implement timproved training syllabus and training materials 3-6. Implement t	(Specific actions to produce each Output by use of inputs)	The Jananasa Sida	The DCA Side	
<ul> <li>4-2. Improved training synables and training materials</li> <li>4-3. Conduct training of instructors</li> <li>4-4. Implement improved training courses</li> <li>4-5. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>4-6. Improve the training courses based on the results from the monitoring and evaluation</li> </ul>	<ul> <li>1-1. Review current training syllabus and training materials</li> <li>1-2. Improve/develop training syllabus and training materials</li> <li>1-3. Conduct training of instructors</li> <li>1-4. Implement improved training courses</li> <li>1-5. Implement supervisor training</li> <li>1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>1-7. Improve the training courses based on the results from the monitoring and evaluation</li> <li>Improvement of AIS and ACS Training</li> <li>2-1. Review current training syllabus and training materials</li> <li>2-2. Improve/develop training syllabus and training materials</li> <li>2-3. Conduct monitoring and evaluation of the training materials</li> <li>2-3. Conduct monitoring of instructors</li> <li>2-4. Implement supervisor/advanced/specialist training</li> <li>2-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>2-7. Improve the training courses based on the results from the monitoring and evaluation</li> <li>Improvement of Electronic Engineering Training</li> <li>3-1. Review current training syllabus and training materials</li> <li>3-2. Improve/develop training syllabus and training materials</li> <li>3-3. Conduct monitoring and evaluation of the training materials</li> <li>3-4. Implement improved training courses</li> <li>3-5. Implement equipment-specific training</li> <li>3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors</li> <li>3-7. Improve the training courses based on the results from the monitoring and evaluation of the training implemented by the trained instructors</li> <li>3-7. Improve the training courses based on the results from the monitoring and evaluation</li> <li>Improvement of Electrical/Mechanical Engineering Training</li> <li>4-1. Review current training syllabus and training materials</li> <li>4-2. Improve/develop training courses</li> <li>4-3. Conduct monitoring and evaluation of the training implement</li></ul>	The Japanese Side - Experts Chief Advisor/Training Manager ATC Training Specialist AIS/ACS Training Specialist Electronic Maintenance Training Specialist Electrical/ Mechanical Maintenance Training Specialist Others as necessary - Training materials - Training equipment	<ul> <li>Counterpart Personnel</li> <li>Support Staff</li> <li>Project Office Space</li> <li>Project Office Expenses of</li> <li>Travel Expenses of</li> <li>Counterpart Personnel</li> <li>within Malawi</li> <li>The others mentioned in</li> <li>Appendix1, II, 6, of R/D</li> <li>DCA implements the</li> <li>Project with sufficient</li> </ul>	- DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project. - New trainees are recruited as scheduled.

# **Tentative Plan of Operation**

Project Title: The Project for Capacity Development	for	Air Na	avida	ation		es in the				- r			••••												Dated 30, May, 2 Moni	toring
nputs from JICA			1 '14/4	5	6	7 8	9	10	11 [·]				-	4 5 13th 14th	6 7 15th 16th	8 9 17th 18th	10 19th	11 20th	12 21st	'16/1 22nd	2 3 23rd 24th	4 5 n 25th 26		Remarks	Issue	Solution
. Expert		$\sim$																								
Chief Advisor	Ē	Plan Actual																								
Deputy Chief Advisor/Capacity Development Specialist	L-2	Plan Actual																								
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training	Ϋ́	Plan																							1	
Specialist - 1 Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training	4	Actual Plan																							-	
Specialist - 2 Communications, Navigation and Surveillance (CNS) Maintenance Training		Actual Plan																							-	
Specialist	1	Actual Plan																							_	
Electrical/Mechanical Maintenance Training Specialist	P-9	Actual																								
Flight Procedure Design Specialist	L-7	Plan Actual																								
2. Training Equipment		Plan																								
PC-based Simulator Training System for Air Traffic Controllers		Actual																								
Computer Based Training (ATC)		Plan Actual								<b>A</b> .																
Test Instrument and Equipment		Plan Actual								<b>A</b>			••••			••••••		••••								
Learning Aids and Office Equipment		Plan			<b>A</b> .																	•			1	
3. Overseas Training		Actual																								
Instructor Development Program (Training of Trainer)		Plan Actual											•								•••••		10 people			
Supervisor Training for Air Traffic Controllers (Team Resource Management)		Plan								••						•••••		•••••			••••		4 people		1	
Supervisor/Advanced Training for AIS Officers	╎╎╎╎	Plan								•••											••••		4 people		1	
	┼┼┼┼	Actual Plan	┢							•			<u>.</u>	<u> </u>		<b>.</b>		<u>.</u>	<u>.</u>		···· •				-	
Supervisor/Advanced Training for Aeronautical Communication Officers	┼┼┼┼	Actual Plan								Ħ	Ħ											•	4 people Change to ti	raining by JICA Expert in	4	
Aeronautical Cartography (Aeronautical Charts)		Actual								TT.	Ħ												Malawi		4	
PANS/OPS Instrument Procedure Design – Conventional Flight Procedures		Actual																				•	Malawi	raining by JICA Expert in		
Maintenance of Normarc ILS 7013B/7033B		Plan Actual						•	•••••		•••••	••••		•••••			•			•••			Change to tr Malawi	raining by JICA Expert in		
nputs from DCA		YY/MM Month			6 3rd	7 8 4th 5t	9 h 6th	10		12 '1 th 10	5/1	2 1th 12	3	4 5 13th 14th	6 7	8 9 17th 18th	10 19th	11	12 21st	'16/1 22nd	2 3 23rd 24th	4 5 n 25th 26		Remarks	Issue	Solution
. Project Director, etc.	ШП	$\geq$	151	2nd	Ju	411 51		7th 8	Sth 9		0th 1		2th 1	13th 14th	15th 16th	17th 18th	1901	20th	2151	22110	2310 240	1 2301 20				
Project Director, Project Manager, Co-Project Manager, Project Coordinators		Plan Actual			••••	••••••				••••	****						••••••					•				
2. Instructors		Plan	1																							
2-1 ATC/FIS Instructors (3 full-time and 3 part-time/OJT)		Actual																								
2-2 AIS/ACS Instructors (4 full-time)		Plan Actual			••••	••••••									•••••••		••••••					•				
2-3 Electronic Engineering Instructors (2 full-time and 2 part-time)		Plan Actual			••••	•				****												▶				
2-4 Electrical/Mechanical Engineering Instructors (2 full-time and 2 part-time)		Plan Actual			<b>•••</b>	•••••					****				••••••							•				
3. New Students to School of Aviation		$\sim$																								
3-1 Air Traffic Controllers (12 students)		Plan Actual																								
3-2 Flight Information Officers (8 students)		Plan Actual						<b>A</b>			•••••						• • • • • • •					▶				
3-3 AIS Officers (10 students)		Plan Actual						<b>A</b>														►				
3-4 Aeronautical Communications Officers (6 students)		Plan						<b>*</b> ·····	••••		•••••	••••					• • • • • •		•••••			▶				
3-5 Electronic Engineers (8 students)	┼┼┼┼	Actual Plan																				•	Start from 1	anuary 2014	-	
	┼┼┼┼	Actual Plan																				*			-	
3-6 Electrical/Mechanical Engineers (2/2 students)		Actual																					Start from M	larch 2014	4	
Update of DCA Manuals and Procedures     Update of Manual of Air Traffic Services		Plan																							-	
4-2 Update of CNS Equipment Maintenance Procedures	+++	Actual Plan																							-	
	┼┼┼┼	Actual																							-	
5-1 Project Office		Plan			•																	▶	-		1	
5-2 ATC Simulator Room	┼┼┼┼	Actual Plan											-									▶			1	
5-3 CBT Room	┼┼┼┼	Actual Plan																				▶			-	
	┼┼┼┼	Actual Plan	_																			•			-	
5-4 Electronic Training Laboratory		Actual																								
Activities		YY/MM Month	1 '14/4 1st		-	7 8 4th 5t	6 9 h 6th			12 '1 th 10			3 2th 1		6 7 15th 16th	8 9 17th 18th					2 3 23rd 24th			nsible Organization Nalawi	- Achievements	Issue & Countermeasure
Output 1-A: Improvement of Basic Training for Air Traffic Controllers	1111	Plan																								
1-A-1 Review current training syllabus/materials		Actual Plan																					<b>T</b>		l	
1-A-2 Improve/develop training syllabus/materials		Actual											T												ļ	
1-A-3 Conduct training of instructors		Plan Actual															╞╋									
1-A-4 Implement improved training courses		Plan Actual									Ħ		Ħ									•				
1-A-5 Implement supervisor training (Overseas training)		Plan											•				• • • • • • •	•••••			•••••				1	
1-A-6 Conduct monitoring and evaluation of the trainings implemented by the training inclusion of the training inclusion o	╎╎╎╎	Plan																				•	1		1	
	┼┼┼┼	Actual Plan				╉╍╌┠╌╴		+		$\square$			++							╞╧╧┼					1	
1-A-7 Improved training based on the result from the monitoring and evaluation	11111	Actual						1									1							1	1	1

#### Version 1 Dated 30, May, 2014

1141 D. Improvement of Associations Control Training							
But 1-B: Improvement of Aerodrome Control Training           3-1         Review current training syllabus/materials		Plan III					
3-2 Improve/develop training syllabus/materials		Actual Plan		┋┥┊┋┊╽┊┊┊╽┋┊╴╞┊╴┇┫┊┋┊╽┋┊			
3-3 Conduct training of instructors		Plan					
-		Actual Plan					
		Actual Plan					
		Actual					
		Actual					
3-7 Improved training based on the result from the monitoring and evaluation		Plan Actual					
out 1-C: Improvement of Procedural Approach Control (Non-Radar)	Fraining	Plan					
		Actual					
		Plan Actual					
C-3 Conduct training of instructors		Plan Actual			<u>╶┼┼┼┼┼┼┼┼┼┼┼</u> ┣		
C-4 Implement improved training courses		Plan Actual					
		Plan Actual				•••••••••••••••••••••••••••••	
		Plan					
		Actual Plan					
but 1-D: Improvement of Procedural Area Control Training		Actual					<u> </u>
D-1 Review current training syllabus/materials		Plan Actual					
		Plan Actual					
		Plan					
		Actual Plan					
		Actual Plan					
		Actual Plan					
		Actual					
D-7 Improved training based on the result from the monitoring and evaluation		Plan Actual					
put 1-E: Improvement of New CNS/ATM Technology for ATC Trainin	g 	Plan					
		Actual Plan					
		Actual					
E-3 Conduct monitoring and evaluation of the trainings		Plan Actual					
E-4 Improved training based on the result from the monitoring and evaluation		Plan Actual					
out 1-F: Improvement of Basic Flight Information Officer Training		Plan					
		Actual					
E-2 Improve/develop training syllabus/materials		Actual					
F-3 Conduct training of instructors		Plan Actual					
F-4 Implement improved training courses		Plan Actual					
		Plan Actual					
		Plan Actual					
		Plan					
but 2-A: Improvement of Basic AIS Officer Training		Actual					
A-1 Review current training syllabus/materials		Plan Actual					
A-2 Improve/develop training syllabus/materials		Plan Actual	4	<del>╸┥┥┇┥┥┥┥┥</del> ┇┇┇┇╏┇┇╏┇┇╏┇┇			
A-3 Conduct training of instructors		Plan Actual					
		Actual Plan Actual Actual					
Conduct monitoring and eveluation of the trainings implemented by the		Plan E E					<del></del>
trained instructors		Actual					
		Actual					
but 2-B: Improvement of Basic Aeronautical Communication Offic	er Train	ing Plan					
8-1 Review current training syllabus/materials	╎╎╎╎	Plan E E					
		Plan E E					
		Plan Actual					
B-5 Implement supervisor/advanced/specialist training (Overseas training)		Plan Actual					
One does to an effective and a sector firm of the testistic as includes a state that the		Plan	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓				
						╒┽┰┲┽┽┼┼┽┽┼┽╡┼╡╡┫┋┊╡┼┊┊┨	
5-0 trained instructors		Plan			┽ <del>┡╍╒┎┎┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍┍</del>	╤┼╤╤╤┼┼┼┼┼┼┼┼┼┥	
trained instructors     Trained instructors     Improved training based on the result from the monitoring and evaluation     trained instructors     Trained instructors     Trained instructors	ectronic	Engineers					
trained instructors     trained instructors     Improved training based on the result from the monitoring and evaluation <b>put 3-A: Improvement of General Communication Maintenance for Ele</b> A-1 Review current training syllabus/materials	ectronic	Engineers Plan Actual					

								LII-PU (Engl
3-A-3 Conduct training of instructors	Plan Actual					-		
3-A-4 Implement improved training courses	Plan Actual					-		
3-A-5 Implement equipment specific training (Implement by 3-C、3-D、3-E)	Plan Electronic Electr							
3-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors								
3 A 7 Improved training based on the result from the monitoring and evaluation	Plan Actual							
Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar								
3-B-1 Review current training syllabus/materials	Plan     Image: Constraint of the second secon							
3-B-2 Improve/develop training syllabus/materials	Plan Actual							
3-B-3 Conduct training of instructors	Plan Actual							
3-B-4 Implement improved training courses	Plan Plan Actual							
3-B-5 Implement equipment specific training (Implement by 3-C、3-D、3-E)								
3-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Plan Actual							
2 D 7 Improved training based on the result from the meritarian and such after	Plan Actual							
Output 3-C: Improvement of Maintenance Courses for Park Air VHF								
3-C-1 Improve/develop training materials	Plan  Actual							
3-C-2 Conduct training of DCA staffs	Plan Actual							
3-C-3 Conduct monitoring and evaluation of the trainings	Plan Actual							
3-C-4 Improved training based on the result from the monitoring and evaluation	Plan E							
Output 3-D: Improvement of Maintenance Courses for Normarc ILS			· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •		Change to training by JICA Expert in Malawi		
3-D-1 Improve/develop training materials	Plan Actual							
3-D-2 Conduct training of DCA staffs	Plan         Image: Constraint of the second se							
3-D-3 Conduct monitoring and evaluation of the trainings	Plan         Image: Second					<u> </u>		
3-D-4 Improved training based on the result from the monitoring and evaluation	Plan Actual							
Output 3-E: Improvement of Maintenance Courses for Maru DVOR/DME								
	Plan Actual Plan							
3-E-2 Conduct training of DCA staffs	Actual Plan							
3-E-3 Conduct monitoring and evaluation of the trainings	Actual							
3-E-4 Improved training based on the result from the monitoring and evaluation	Plan         Image: Second							
Output 3-F: Improvement of New CNS/ATM Technology for Electronic Engineer 3-F-1 Improve/develop training materials	er Training Plan Actual							
3-F-2 Conduct training of DCA staffs	Actual Plan							
	Actual Plan							
3-F-3 Conduct monitoring and evaluation of the trainings	Actual							
3-F-4 Improved training based on the result from the monitoring and evaluation	Plan         Image: Constraint of the second se							
	Plan         Image: Constraint of the second se							
4-A-2 Improve/develop training syllabus/materials	Plan							
	Plan I I I I I I I I I I I I I I I I I I I							
4-A-4 Implement improved training courses								
Conduct monitoring and evoluation of the trainings implemented by the	Actual Plan		· · · · · · · · · · · · · · · · · · ·					
4-A-5 trained instructors	Actual							
	Actual							
4-B-1 Review current training syllabus/materials	Plan Actual							
4-B-2 Improve/develop training syllabus/materials	Plan IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							
	Plan							
4-B-4 Implement improved training courses	Actual Plan					$\frac{1}{1}$		
Conduct monitoring and evaluation of the trainings implemented by the	Plan					<u>}                                    </u>		
trained instructors	Actual Plan					+		
	Actual Actual							
5-A-1 Conduct training of DCA staffs	Plan Actual					Change to training by JICA Expert in — Malawi		
Output 5-B: Improvement of Flight Procedure Design (Conventional Flight Pro-	ocedure) Training					Observed to training here IIOA Franceting		
5-B-1 Conduct training of DCA staffs						Malawi		
Monitoring Plan	YY/MM '14/4 5 6 Month 1st 2nd 3rd	7         8         9         10         11         12           4th         5th         6th         7th         8th         9th			0 11 12 '16/1 2 3 4 5 hth 20th 21st 22nd 23rd 24th 25th 26th	Remarks	Issue S	Solution
Monitoring								
Joint Coordination Committee	Plan     Image: A line and the second s					<u>                                     </u>		
Set-up the Detailed Plan of Operation	Plan Actual							
Submission of Monitoring Sheet	Plan A							
Reports/Documents	Plan						AND V C	5 1
Project Completion Report	Actual Actual					1	ANNEX 5-	<b>)-1</b>

# TO CR of JICA Malawi OFFICE

## **PROJECT MONITORING SHEET**

## Project Title: The Project for Capacity Development for Air Navigation Services Version of the Sheet: Ver.1 (Term: 24 April, 2014 - 20 May, 2016)

Name: Hiroshi Mizumasa

Title: Chief Advisor

Submission Date: January, 2015

## I. Summary

## **1** Progress

### 1-1. Progress of Inputs

(1) The Japanese Side

1) Experts

Six experts (except Flight Procedure Design Expert) were assigned according to plan.

[JICA Experts]

Mr. Hiroshi Mizumasa, Chief Advisor

Ms. Mie Nagayasu, Deputy Chief Advisor

Mr. Kiichiro Hirano, ATC & AIS Training Specialist - 1

Mr. Daniel Paul Diggins, ATC & AIS training Specialist - 2

Mr. Reynaldo Alido Batacan, CNS Maintenance Training Specialist

Mr. Kiyoshi Suzuki, E/M Maintenance Training Specialist

* Expert for Flight Procedure Design Specialist will be named in 2015

Details of their assignment are shown in Project Monitoring Sheet (Plan of Operation) (see Annex-2).

2) Training Materials

Progress on the following training materials was made by the experts:

I. Air Traffic Control Assistant/Basic	50%
II. Aerodrome Control	30%
III. CNS/ATM for ATC	70%
IV. Aeronautical Information Service	40%
V. Electronic Maintenance - Communication	20%
VI. Communication Equipment and System	30%
VII. Navigational Aids and Radar Theory	30%

VIII. CNS/ATM for ATSEP (Engineer) 70%

Other training materials, i.e. "Approach Control - Non Radar", "Area Control - non Radar", "Flight Information Service", "Aeronautical Fixed Service Operator" will be prepared in due

course.

3) Training Equipment

The following training equipment were procured:

I. Computer Based Training ATC (November, 2014)

II. Test Instrument and Equipment (December, 2014)

III. Learning Aids and Office Equipment (June, 2014)

4) Overseas Training (as of February 2015)

DCA officials participated/are participating in the following two overseas trainings:

I. Team Resource Management Course: January 26th to 30th, 2015 <South Africa>*1

II. Supervisory Management Course: February 2nd to 27th, 2015 <Kenya>*² [Organizers]

*1: Air Traffic and Navigation Services (ATNS) / Johannesburg, South Africa

*2: East African School of Aviation (EASA) / Nairobi, Kenya

5) Training in School Of Aviation (SOA) (as of February 2015)

Two trainings for instructors were held at the School of Aviation as follows:

I. Computer Based Training (ATC)

i) Date: November 24th, 2014 (1/2 day)

ii) No. of Participants: 6

II. Test Equipment Course

i) Date: January 12th – 23rd, 2015 (10 days)

ii) No. of Participants: 5

(2) The Malawi side

1) Counterpart Personnel (C/P)

The following DCA Officials were assigned for an effective and sound management of the project (see also Annex-2 "Plan of Operation").

[Counterpart Personnel]

Project Director (P/D): Mr. A. C. Mtilatila, Director of Civil Aviation

Project Manager (P/M): Mr. A. G. Matiya, Deputy Director (Operations)

Co-project Manager (Co-P/M): Mr. S. Galafa, Principal, School of Aviation

Project Coordinator: Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division

Project Coordinator: Mr. M.F.T. Bongwe, Chief Telecommunications Engineer, Operation Division

Trainers: Mr. S. Galafa, Principal, School of Aviation [ATC and FIS training]

Mr. R. Y. Malanga, Lecturer School of Aviation [AIS and ACS training]

- Mr. S. Liundi, Lecturer School of Aviation [AIS and ACS training]
- Mr. R. Kanunkha, Head of Engineering Section, KIA [Electronic Engineering & Electrical Engineering (CNS) training]
- Mr. C. F. Betenigo, Electronics Engineer, KIA [Electronic Engineering (CNS) training]
- Mr. T. Mtonga, Electrical Engineer, KIA [Electrical/ Mechanical Engineering training]
- 2) Support Staff

Eight instructors in total were assigned to the Project as support staff personnel:

[Support Staff]

- Ms. L. Manondo, ATC, KIA [ATC and FIS Training Instructor]
- Mr. D. Zamaele, ATC, Chileka Airport [ATC and FIS Training Instructor]
- Mr. F. Chiespeya, ATC, KIA [ATC and FIS Training Instructor]
- Mr. J. Kazito, ATC, KIA [ATC and FIS Training Instructor]
- Mr. R. Nkosi, Air Crew Briefing Officer, DCA [AIS & ACS Training Instructor]
- Mr. N. B. Kaliyasi, Communication Officer, KIA [AIS & ACS Training Instructor]
- Mr. S. Kunje, Electronics Engineer, Chileka Airport [Electronic Engineering (CNS) Training Instructor]

Mr. O. Yokonia, Electrical Engineer, Chileka Airport [E/M Training Instructor]

3) Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA.

4) Project Office Expenses

Utility cost was paid by the Malawi side. As of January 2015, DCA provided the following expenses for the project office.

- I. Purchase of two desktop computers: 1,055,210.00 MKW
- II. Purchase and installation of two split air conditioners: 989,114.98 MKW

5) Travel Expenses of Counterpart Personnel within Malawi

The travel expenses for C/P to travel outside the Lilongwe area provided by DCA were as follows:

- I. Transport costs and subsistence allowances for students from Chileka (Team Resource Management Course/ from Chileka to Lilongwe) 76,000.00 MKW
- II. Transport costs for Lilongwe students 70,000.00 MKW (Team Resource Management Course/ from Blantyre to Lilongwe)

6) Others mentioned in Appendix 1, II, 6, of R/D

As agreed in R/D (Appendix 1, II, 6), appropriate considerations were made by DCA for environmental and social impacts of the Project, based on "JICA Guidelines for Environmental and Social Considerations".

# 1-2. Progress of Activities

(1) Summary of Work Progress (June – August 2014)

1) Holding of the first JCC meeting

The first JCC meeting was held on 30th June 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, two officials from the JICA Malawi Office, and five members from the JICA Expert Team (hereinafter referred to as "JET") participated in the first JCC meeting. The JET Leader, Mr. Hiroshi Mizumasa presented summary of the Project. The minutes of meeting for implementation of the Project was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Kazuhiko Tokuhashi, Resident Representative, JICA Malawi Office.

2) Holding of the second JCC meeting

The second JCC meeting was held on 1st August 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, one official from the JICA Malawi Office, and two members from the JICA Expert Team (hereinafter referred to as "JET") participated in the second JCC meeting. The issues discussed and agreed were as follows:

I. Approval of the Work Plan

II. Confirmation of the Instructor Nomination

III. Approval of updated PDM

IV. Confirmation of expense for domestic training/counterparts works

The minutes of meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroshi Mizumasa, the JET Leader.

3) Baseline survey

JET conducted the baseline survey on capacity of SOA which includes the capacities of ATM (ATC, FIS, AIS, ACS), Electronics Engineering (CNS), Electrical and Mechanical (E/M).

a. Survey methods

They assessed their capacities from the following assessment viewpoints or items which are based on the ICAO's standard of assessing training organization.

Assessment items for ATM, CNS and E/M:

1) Training Regulation and Policy;

2) Organization;

3) Instructor (Full time), Supporting Staff (Part time) and Qualification;

4) Quality Control;

5) Curriculum/Syllabus;

6) Operating Rules;

7) Training Facilities (Aids);

8) Reference Material;

9) Examination and Examination Development;

10) On-the-Job Training;

11) Training, Certificate and License;

12) International Cooperation, Certification and Recognition; and

13) Training Demand, potential training participants (Both International and National)

*In addition to above 13 items, the following items are added for CNS and E/M respectively;

14) CNS System Admin on Laboratory, Simulator and Workshop,

14) E/M System Admin on Laboratory, Simulator and Workshop.

b. Survey results

b.1 Results of the capacity of ATM

As the result of the above survey, ATM qualifications of instructors are not well established. Instructor training programs for ATM instructors did not exist. Current instructors rely solely on their personally developed teaching skills and techniques. Most instructors are close to retirement age. ATM curriculum/syllabus is informal and not structured. Some have been used since the 1970's. Consequently, most of them are outdated. Training facilities are not enough and generally inadequate at the School of Aviation.

The result of the survey is shown in Annex-4 of the work plan.

# b.2 Results of the capacity of CNS

The Aeronautical Telecommunication qualifications of instructors are not well established. Instructor training programs for CNS instructors did not exist. A structured CNS curriculum/syllabus was not used for at least the last 5 years. There was no CNS training laboratory facilities for practical application/certification of students. There was no System Administration on Laboratory, Simulator and Workshop. Reference materials were outdated and not responsive to new CNS/ATM technology systems.

The result of the survey is shown in Annex-5 of the work plan.

b.3 Results of the capacity of E/M

The E/M Unit has no instructor position at the MSOA. There are three (3) identified part time instructors ready to assume duties when training commences. There was no E/M curriculum/syllabus. E/M had no training laboratory test equipment and tools for practical application/certification of students.

The result of the survey is shown in Annex-6 of the work plan.

4) Review of the existing training materials

The Project team, composed of JET members and the counterpart personnel (C/P) observed existing training syllabus and textbooks for all training courses conducted in School of Aviation (see "Results of the PDM Activities", described below).

5) Preparation of a work plan

The Project team prepared a work plan describing the material development, instructor training, as well as the method and schedule for the implementation of 16 training courses, on which agreement was reached with Malawi side.

6) Preparation of base materials for training courses

The Project team is proceeding to preparation of training course materials which follows ICAO guideline.

7) Procurement of equipment

The Project team procured equipment necessary for operating the Project in line with the JICA equipment procurement guideline.

(2) Results of the PDM Activities

Following is the summary of the Project activities having been conducted from June 2014 to January 2015. It is described according to the original PDM Activities.

PDM Activities	Results
1-1. Review current training syllabus and training	It has already reviewed and all syllabi are
materials	1980's material. Project will make renew it.
1-2. Improve/develop training syllabus and	Two Base training materials were prepared
training materials	and under proceeding for third one.
1-3. Conduct training of instructors	- The training will be held in April 2015
	- The training will be held at Nairobi in August
	and October 2015
1-4. Implement improved training courses	-

# 1) Improvement of ATC and FIS Training

1-5. Implement supervisor training	The training will be held at Johannesburg in
	January and Nairobi in February
1-6. Conduct monitoring and evaluation of	-
the trainings implemented by the trained	
instructors	
1-7. Improve the training courses based on the	-
results from the monitoring and evaluation	

# 2) Improvement of AIS and ACS Training

, ,	
PDM Activities	Results
2-1. Review current training syllabus and training	It has already reviewed and all syllabi are
materials	1980's material. Project will make renew it.
2-2. Improve/develop training syllabus and	One Base training material was prepared and
training materials	under proceeding for second one.
2-3. Conduct training of instructors	- The training will be held at Nairobi in August
	and October 2015
2-4. Implement improved training courses	-
2-5. Implement supervisor training	The training will be held at Johannesburg in
	January and Nairobi in February
2-6. Conduct monitoring and evaluation of	-
the trainings implemented by the trained	
instructors	
2-7. Improve the training courses based on the	-
results from the monitoring and evaluation	

# 3) Improvement of Electronic Engineering Training

PDM Activities	Results
3-1. Review current training syllabus and training	It has already reviewed and all syllabi are
materials	1980's material. Project will make renew it.
3-2. Improve/develop training syllabus and	One Base training material is prepared and
training materials	under proceeding for others.
3-3. Conduct training of instructors	- The training will be held at Nairobi in August
	and October 2015
	- Test equipment training instructors was
	already done and communications training
	will be held in May.
3-4. Implement improved training courses	-

3-5. Implement supervisor training	The training will be held at Johannesburg in	
	January and Nairobi in February	
3-6. Conduct monitoring and evaluation of	Partial monitoring and evaluation was done	
the trainings implemented by the trained	through the test equipment training.	
instructors		
3-7. Improve the training courses based on the	-	
results from the monitoring and evaluation		

# 4) Improvement of Electrical/Mechanical Engineering Training

PDM Activities	<u>Results</u>
4-1. Review current training syllabus and training	It has already reviewed and all syllabi are
materials	1980's material. Project will make renew it.
4-2. Improve/develop training syllabus and	-
training materials	
4-3. Conduct training of instructors	- The training will be held at Nairobi in August
	and October 2015
	- AFL & UPS training will be held in April 2015
4-4. Implement improved training courses	-
4-5. Implement supervisor training	The training will be held at Johannesburg in
	January and Nairobi in February 2015
4-6. Conduct monitoring and evaluation of	-
the trainings implemented by the trained	
instructors	
4-7. Improve the training courses based on the	-
results from the monitoring and evaluation	

# **1-3. Achievement of Output**

Achievement of each output is observed according to the PDM indicators.

(1) Achievement of "Output 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved."

Six course syllabuses and materials were reviewed and one course syllabus was prepared at this stage. One ATC instructor is identified to be able to conduct CBT exercise.

(2) Achievement of "Output 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved."

Two course syllabuses and materials were reviewed and one course syllabus was prepared at this stage.

(3) Achievement of "Output 3. Training of Electronic Engineering is improved."

Six course syllabuses and materials were reviewed and one course syllabus was prepared at this stage.

(4) Achievement of "Output 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved."

Two course syllabuses and materials were reviewed at this stage.

Original Indicators for the PDM Outputs		Baseline date as of	Achievement as of
	-	<u>July 2014</u>	<u>January 2015</u>
-Training syllabus and training	ATC/FIS: 6		1 syllabus is
materials are improved or			prepared
developed for the following	AIS/ACS: 2		1 syllabus is
number of courses:			prepared
	Electronic	-There were 6 kinds of	1 syllabus is
	Eng.: 6	syllabus, prepared in	prepared
		March, 2001.	
		-Training materials	
		were prepared for	
		every syllabus. They	
		were prepared in the 1970's or in the	
		beginning of the	
		1980's	
	E/M Eng.: 2	10000	
-The following number of DCA	Instructors: 10		
officers successfully complete	ATC/FIS: 4		
supervisor/advanced/	AIS/ACS: 4		
specialist training:	Aeronautical		
	Cartography: 2		
	PANS/OPS: 2		
	ILS		
	Maintenance: 4		
-Comprehension test score of tra			
receive the improved/ developed	training courses		
exceeds at least 80%.			

#### Achievement of Outputs

# 1-3. Achievement of the Project Purpose

Achievement of the project purpose is observed according to the PDM indicators. Number of instructors who can conduct the improved/developed training courses is increased slightly since the baseline date.

Achievement of the Project Purpose			
Original Indicators for the Project Purpose		Baseline date as of July 2014	Achievement as of January 2015
-Number of instructors who can	ATC/FIS: 6	1	1
conduct the improved/developed	AIS/ACS: 4	2	2
training courses (fulltime + part time)	Electronic Eng.: 4	1	1
	E/M Eng.: 4		1
-Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.			

# 1-5. Changes of Risks and Actions for Mitigation

No major changes were seen in the PDM Pre-conditions and Important Assumptions, therefore no special actions need to be taken.

#### (1) Pre-conditions

DDM Dra conditiona Current Cituationa Actiona for mitigation		
PDM Pre-conditions <u>Current Situations</u>		Actions for mitigation
necessary for preparation of the Project Office and	at the time of initiation of the work in Malawi in June 2014. -Counterpart personnel (C/P) was engaged in the Project, although	-No special actions were taken.
2) New trainees are recruited as scheduled.	New trainees were not seen at the time of initiation of the work in Malawi in June 2014.	-No special actions were taken.

# (2) Important Assumption when proceeding from Activities to Outputs

Important Assumption	Current Situations	Actions for mitigation
1) DCA implements t Project with sufficie ownership.	•	-No special actions were taken.

# (3) Important Assumptions when proceeding from Outputs to the Project Purpose

Important Assumption	Current Situations	Actions for mitigation
international standards on air	, 0	-No special actions were taken.

# (4) Important Assumptions when proceeding from the Project Purpose to the Overall Goal

	1 0 7	•
Important Assumption	Current Situations	Actions for mitigation
1) Trained counterpart personnel continue to be engaged in the activities of air navigation services.		-No special actions were taken.
2) No major change in the national policy on air navigation services within the national plan/ strategy is occurred.	-Air Transportation Infrastructure Planning Policy is in force. No major changes in the policy were seen.	-No special actions were taken.

# 1-6. Progress of Actions undertaken by JICA

At the time of first arrival of JET, project office facility had not been prepared yet; therefore the JICA Malawi office sent a letter of request on installation of equipment to the DCA in late April, 2014.

# 1-7. Progress of Actions undertaken by Gov. of Malawi

No actions have been taken.

# **1-8. Progress of Environmental and Social Considerations (if applicable)**

This Project focuses on enhancement of capacity for the DCA personnel concerned in the Project to conduct the trainings for air navigation services. It does not have a plan to construct any new large-scale infrastructures. It is expected that the Project will have a minimal negative impact on the environment.

# 1-9. Progress of Considerations on Gender/ Peace Building/ Poverty Reduction (if applicable)

No considerable issues were observed.

# 1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

(1) European Aviation Safety Agency (EASA) workshop

EASA is currently assisting DCA in training on safety management system (SMS) and auditing techniques. However this training is targeted for the higher executives of the DCA, whereas the JICA project is targeted for the professionals and engineers. Their project has no adverse impact on JICA training participation.

# (2) European Investment Bank (EIB) fund

EIB is funding for the procurement of some safety equipment such as fire trucks in KIA. JET already had several meetings with EIB officers in order to avoid any overlapping on equipment provided for the DCA.

# 2 Delay of Work Schedule and/or Problems (if any)

# 2-1. Detail

The test equipment training was supposed to be held for instructors in December 2014. However arrival of the test equipment was delayed so the training was postponed one month later.

# 2-2. Cause

The procedures of the custom clearance in Malawi had not been through smoothly upon arrival of the equipment.

# 2-3. Action to be taken

The abovementioned training was rescheduled to be held in late January, 2015. However, JET will be flexible in rescheduling the future trainings taking into account the possible delay of equipment.

# 2-4. Roles of Responsible Persons/ Organization (JICA, Gov. of Malawi, etc.)

JET requests that the DCA might be of any help on smooth custom clearance, if possible.

# 3 Modification of the Project Implementation Plan

# 3-1. PO

No major modification was made. However, some of the JICA expert members were changed due to personal health issues, which affected the original PO. Updated PO is attached as Annex 2.

# 3-2. Other modifications on detailed implementation plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.) None.

# **4 Preparation of Gov. of Malawi toward after completion of the Project** N/A yet.

II. Project Monitoring Sheet I & II (Version 1) as attached

#### **Project Design Matrix**

#### Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

#### Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers,

Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

#### Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

Name (inc. Original and	Obligation by Mariffahlia Indiant		Incompany Account of	A - I. :	Demon
Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project)					
Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.	- Monitoring Sheet - Terminal Evaluation Report	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		
Outputs (Objectives to be realized by Activities to achieve the					
Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	<ul> <li>Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2</li> <li>The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC/FIS: 4 AIS/ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4</li> <li>Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.</li> </ul>	<ul> <li>Monitoring Sheet</li> <li>Results of completion tests for supervisor/ advanced/specialist training courses</li> </ul>	- No major change of the international standards on air navigation services is occurred.		

Version 2

Dated 1, Aug, 2014

Activities (Specific actions to produce each Output by use of Inputs)	Inputs		Pre-Conditions
	The Japanese Side	The DCA Side	- DCA implements the
Improvement of ATC and FIS Training	- Experts	- Counterpart Personnel	Project with sufficient
1-1. Review current training syllabus and training materials	Chief Advisor/Training Manager	- Support Staff	ownership.
1-2. Improve/develop training syllabus and training materials	ATC Training Specialist	- Project Office Space	
1-3. Conduct training of instructors	AIS/ACS Training Specialist	- Project Office Expenses	
1-4. Implement improved training courses	Electronic Maintenance Training Specialist	- Travel Expenses of	Pre-Conditions
1-5. Implement supervisor training	Electrical/ Mechanical Maintenance Training	Counterpart Personnel	- DCA secures budget
1-6. Conduct monitoring and evaluation of the trainings implemented	Specialist	within Malawi	necessary for preparation of
by the trained instructors	Others as necessary	- The others mentioned in	the Project Office and
1-7. Improve the training courses based on the results from the	- Training materials	Appendix1, II, 6, of R/D	allocation of counterpart
monitoring and evaluation	- Training equipment		personnel before the
Improvement of AIS and ACS Training	- Overseas training		commencement of the
Improvement of AIS and ACS Training 2-1. Review current training syllabus and training materials			Project.
2-2. Improve/develop training syllabus and training materials			- New trainees are recruited
2-3. Conduct training of instructors			as scheduled.
2-4. Implement improved training courses			
2-5. Implement supervisor/advanced/specialist training			
2-6. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
2-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electronic Engineering Training			
3-1. Review current training syllabus and training materials			
3-2. Improve/develop training syllabus and training materials			
3-3. Conduct training of instructors			
3-4. Implement improved training courses			
3-5. Implement equipment-specific training			
3-6. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
3-7. Improve the training courses based on the results from the			
monitoring and evaluation			
Improvement of Electrical/Mechanical Engineering Training			
4-1. Review current training syllabus and training materials			
4-2. Improve/develop training syllabus and training materials			
4-3. Conduct training of instructors			
4-4. Implement improved training courses			
4-5. Conduct monitoring and evaluation of the trainings implemented			
by the trained instructors			
4-6. Improve the training courses based on the results from the			
monitoring and evaluation			

#### Annex-2 Plan of Operation

Dreiset Title, The Dreiset for Conseity Developm	ant for		ention (	Comico	aa in tha Da													Dated 27, Jan, 2	itoring
Project Title: The Project for Capacity Developme Inputs from JICA	ent for	YY/MM '14				9 10		15/1 2	3	4 5	6 7	8 9 10	11 12	'16/1	2 3	4 5	Remarks	Issue	Solution
		Month 1	lst 2no	d 3rd	4th 5th	6th 7th	8th 9th 1	0th 11th	12th 1	3th 14th	15th 16th 1	7th 18th 19th	20th 21st	22nd	23rd 24th	25th 26th	Remarks	Issue	Solution
1. Expert Chief Advisor		- Plan																_	
	- I	Actual N Plan	<del></del>		(60)			(91)										_	
Deputy Chief Advisor/Capacity Development Specialist		Actual			(45)			(14)											
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training		ా <mark>Plan</mark> ⊐ Actual	┿╋╋		(52)		(45)										-		
Specialist - 1 Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training		+ Plan			(02)													_	
Specialist - 2 Communications, Navigation and Surveillance (CNS) Maintenance Training		– Actual م Plan	+++		(27)		(19)											_	
Specialist	_	-i Actual			(60)			(89)											
Electrical/Mechanical Maintenance Training Specialist		ې Plan ⊢ Actual					(30)										-		
Flight Procedure Design Specialist		⊢ Plan ⊢ Actual	Щ																
2. Training Equipment			+++																
PC-based Simulator Training System for Air Traffic Controllers		Plan	<u> </u>														_		
Computer Based Training (ATC)		Actual Plan					<b>A</b>											_	
		Actual Plan	<del>-      </del>															_	
Test Instrument and Equipment		Actual																	
Learning Aids and Office Equipment		Plan Actual															-		
3. Overseas Training																			
Team Resource Management Training		Plan Actual	++-			+											10 people		
Supervisory Management Training		Plan															4 people	1	
		Actual Plan	+++															-1	
Instructor Development Training		Actual	Щİ														4 people	4	
Advance Instructor Training		Plan Actual															4 people		
PANS/OPS Instrument Procedure Design – Conventional Flight Procedures		Plan Actual	HT														Change to training by JICA Expert in Malawi	1	
Aeronautical Cartography (Aeronautical Charts)		Plan															Change to training by JICA Expert in	1	
		Actual Plan	┿┿┿														Malawi Change to training by JICA Expert in		
Maintenance of Normarc ILS 7013B/7033B		Actual															Malawi		
Inputs from DCA			4/4 5 Ist 2nd	d 3rd	7 8 4th 5th	9 10 6th 7th		15/1 2 0th 11th	3 12th 1	4 5 3th 14th	6 7 15th 16th 17	8 9 10 7th 18th 19th	11 12 20th 21st		2 3 23rd 24th	4 5 25th 26th	Remarks	Issue	Solution
1. C/P Project Director, etc.																			
Project Director Mr. A. C. Mtilatila, Director of Civil Aviation, DC	A	Plan Actual	+++++											_			-		
Project Manager		Plan																	
Mr. A. G. Matiya, Deputy Director (Operations), DC Co-Project Manager		Actual Plan	+++															_	
Mr. S. Galafa, Principal, School of Aviation, DC	A	Actual Plan	<u> </u>															_	
Project Coordinator Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Divisio	n	Actual																	
Project Coordinator Mr. M.F.T. Bongwe, Chief telecommunications engineer, Operation Divisio		Plan Actual	┿┿╋┿														_		
ATC and FIS Training	<del>¨<mark></mark></del>	Plan																	
ATC and FIS Training Mr. S. Galafa, Principal lecturer of ATS, School of Aviation, DC AIS and ACS Training	A	Actual Plan																_	
Mr. R. Y. Malanga, Lecturer School of Aviation, DC	A	Actual																	
AIS and ACS Training Mr. S. Liundi, Lecturer School of Aviation, DC	A	Plan Actual															-		
Electrical Engineering (CNS) Training Mr. R. Kanunkha, Senior CNS Lecturer, School of Aviation, DC		Plan Actual	=														_		
Electrical Engineering (CNS) Training		Plan																_	
Mr. C. F. Betenigo, Electronics Engineer, Kl Electrical/ Mechanical Engineering Training		Actual Plan	HT														-	-1	
Mr. Mtonga, Electrical Engineer, Kl		Actual																	
2. Support Staff Instructor-1		Plan	┿╄╇															-	
Ms. L. Manondo, Air Traffic Controller, Kl		Actual															1	4	
ATC& Mr. D. Zamaele, Air Traffic Controller, Chileka Airpo	rt	Plan Actual	┿┼╂┿														-1		
FIS Instructor-3		Plan	田口														4	1	
Mr. F. Chisepeya, Air Traffic Controller, Kl Instructor-4		Actual Plan																4	
Mr. J. Kazito, Air Traffic Controller, Ki Instructor-1		Actual Plan	Щ															-1	
AIS&A Mr. R. Nkosi, Air Crew Briefing Officer, DCA HC	2	Actual															1	_	
CS Instructor-2 Mr. N. B. Kaliyasi, Communication Officer, KI		Plan Actual	++-																
CNS Electronic Engineering (CNS) Instructor		Plan															1	1	
Mr. S. Kunje, Electronics Engineer, Chileka Airpo	rt	Actual Plan	┿╋╇															-	
Mr. O. Yokonia, Electrical Engineer, Chileka Airpo		Actual	茸茸														1	4	
3. New Students to School of Aviation	┼┼┼┼┼	Plan	++++														+	-	
3-1 Air Traffic Controllers (12 students)		Actual	Щİ														1	4	
3-2 Flight Information Officers (8 students)		Plan Actual	++++														-1		
		Plan															4	7	
3-3 AIS Officers (10 students)		Actual						1 1 <b>i</b> 1 1 1 1								╉┼╪┼┼┼┼			
		Plan	TTT.																
3-4 Aeronautical Communications Officers (6 students)		Plan Actual															-	_	
		Plan Actual Plan ▲ Actual															Suspending by the human	-	

# Version 3 Dated 27, Jan, 2015

nputs from DCA		YY/M Mon		14/4 1st	2nd	3rd	4th	5th	6th	7th	11 8th	12 9th	'15/1 10th	11th	12th	n 131	th 14	th 15	th 16	6th 17	7th 18t	h 19th	20th	21st	22nd	23rd	-	4 5 5th 26t		Remarks			
		Pla		$\square$																H				<u>A</u>	$\square$		- F				_		
4-1 Update of Manual of Air Traffic Services		Actu	ual	Ħ		_								Цİ		TT.				Ħ							耳目		╡───		_		
		Actu																											1		_		
		Pla	- 1																														
		Actu Pla																															
5-2 ATC Simulator Room		Actu	ual																												_		
		Actu	ual																														
5-4 Electronic Training Laboratory		Pla Actu	an ual																														
Activities		YY/N		4/4	5	6	7	8	9	10	11	12	'15/1	2	3	4	-	5 6	6		89	10	11	12	'16/1	2	-	4 5		sible Organization	Achievemer	ts _	Issu
Sub-Activities utput 1-A: Improvement of Air Traffic Control Assistant/ Basic Course		Mon ing	nth	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	n 131	th 14	th 15	th 16	6th   17	7th 18t	h 19th	20th	21st	22nd	23rd	24th 2	5th 26t	h Japan	Malawi	7.0	Co	ounterm
1-A-1 Review current training syllabus/materials		Pla Actu	an Ual																														
		Pla	in																														
		Actu	an																														
		Actu Pla																															
		Actu Pla																															
		Actu	ual																										1		_		
1-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Pla Actu	ual																														
1-A-7 Improved training based on the result from the monitoring and evaluation		Pla Actu	an ual								╞╴																						
utput 1-B: Improvement of Aerodrome Control Training		Pla			111							1111					111									1111							
1-B-1 Review current training syllabus/materials		Actu	ual																										1				
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1-B-6 Conduct monitoring and evaluation of the trainings implemented by the training implemented by the		Actu Pla																															
trained instructors	++++	Actu Pla																															
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utput 1-C:         Improvement of Approach Control (Procedural) Training           1-C-1         Review current training syllabus/materials		Pla					T																										
		Actu Pla																															
1-C-2 Improve/develop training syllabus/materials		Actu Pla																															
		Actu	ual																														
1-C-4 Implement improved training courses		Pla Actu	ual																														
1-C-5 Implement supervisor training (Overseas training)		Pla Actu																															
1-C-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Pla	an Ual																														
1-C-7 Improved training based on the result from the monitoring and evaluation		Pla	an																														
utput 1-D: Improvement of Area Control (Procedural) Training			ual																														
1-D-1 Review current training syllabus/materials		Pla Actu																															
1-D-2 Improve/develop training syllabus/materials		Pla	an																														
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1-D-4 Implement improved training courses	$\left\{ \left\{ \right\} \right\}$	Actu Pla		$\square$										Ħ												$\square$	97	<del>A</del> H-					
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utput 1-E: Improvement of CNS/ATM Technology for ATC Training		Pla	an l	 																													
1-E-1 Improve/develop training materials		Actu	ual	Ħ																													
1-E-2 Conduct training of DCA staffs	$\parallel \parallel \mid$		ual																										-				
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1-E-4 Improved training based on the result from the monitoring and evaluation		Pla Actu		$\square$										Ħ		H				H								<u>A</u> H	+				
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1-E-7 Improved training based on the result from the monitoring and evaluation utput 1-F: Improvement of Aeronautical Cartography Training		Actu																											1				
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utput 1-G: Improvement of Flight Procedure Design (Conventional Flight	t Proc	edure) ·	Traini	ng																											in		
1-G-1 Conduct training of DCA staffs	ΠŤ	Pla Actu	an					TI	TT					•															<ul> <li>Change to tra</li> <li>Malawi</li> </ul>	ining by JICA Expert			

Activities	M	onth 1st	t 2nd	3rd	4th	5th 6	th 7th	8th	9th 10	)th 11th	12th 13	4 5 3th 14th	15th 16t	th 17th	18th 19t	h 20th 2	1st 22nd	23rd 24		5 th 26th	Japan	e Organization Malawi	Achievements	Issue & Countermeasure
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utput 2-B:         Improvement of Basic Aeronautical Communication Officer           2-B-1         Review current training syllabus/materials	P	an																						
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2-B-2 Improve/develop training syllabus/materials	A	tual an																						
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2-B-5       Implement supervisor/advanced/specialist training (Overseas training)       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors       Implement supervisor/advanced/specialist training implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation       Implement evaluation         ctivities       Implement of General Communication Maintenance for Electrace         3-A-1       Review current training syllabus/materials       Improve/develop training syllabus/materials         3-A-2       Improve/develop training syllabus/materials       Implement improved training courses         3-A-4       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-5       Implement improved training and evaluation of the trainings implemented by the trained instructors       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-5       Implement of Concept Courses for ILS/DVOR/DME/Rader       Implement training syllabus/materials         3-B-1       Review current training syllabus/materials       Implement training syllabus/materials         3-B-2       Improve/develop training syllabus/materials       Implement training syllabus/materials         3-B-2       Improve/develop training syllabus/materia	Ai P P P P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai P Ai Ai Ai P Ai Ai Ai P Ai Ai Ai P Ai Ai Ai Ai Ai P Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai	tual	-	-		÷		8th	9th 10	11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th			6 7 15th 161	8 17 17 17 17 17 17 17 17 17 17	•			2 3 23rd 24					Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         2-B-7       Improved training based on the result from the monitoring and evaluation         activities       Improved training based on the result from the monitoring and evaluation         activities       Improvement of General Communication Maintenance for Electrantic structures         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         utput 3-B:       Improvement of Concept Courses for ILS/DVOR/DME/Radar         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement improved training cou	A P A P P A P A P A A A P A A P A A P A A P A A P A A A A A A A A A A A A A	tual	-	-		÷		8th	9th 10	11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th			6 7 15th 161	8 th 17th	•			2 3 23rd 24					Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         2-B-7       Improved training based on the result from the monitoring and evaluation         Conduct monitoring and evaluation of the trainings implemented by the trained instructors       Implement evaluation         3-A-1       Review current training syllabus/materials       Improve/develop training syllabus/materials         3-A-2       Improve/develop training syllabus/materials       Implement improved training courses         3-A-4       Implement equipment specific training (Implement by 3-C、3-D、3-E)       Implement equipment specific training syllabus/materials         3-A-5       Implement equipment specific training syllabus/materials       Implemented by the trained instructors         3-A-5       Implement equipment specific training (Implement by 3-C、3-D、3-E)       Implemented by the training syllabus/materials       Implemented by the training syllabus/materials         3-B-1       Review current training syllabus/materials       Implement equipment syllabus/materials       Implement equipment syllabus/materials         3-B-2       Improve/develop training syllabus/materials       Implement equipment specific training (Implement by 3-C、3-D、3-E)       Implement improved training courses	Ai Ai P Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai	tual	-	-		÷		8th	9th 10	11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th           11th			6 7 15th 16t		•			2 3 23rd 24					Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)       Implement supervisor/advanced/specialist training implemented by the trained instructors       Implement supervisor/advanced/specialist training implemented by the trained instructors         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors       Implement improved training based on the result from the monitoring and evaluation       Implement improvement of General Communication Maintenance for Electrations         3-A-1       Review current training syllabus/materials       Implement improved training syllabus/materials       Implement improved training courses         3-A-3       Conduct training of instructors       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)       Implement improved training syllabus/materials       Implement improved training syllabus/materials         3-A-4       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)       Implement improved training syllabus/materials       Implement improved training syllabus/materials         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)       Implement training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implement improved training syllabus/materials       Implemen	A A A A A A A A A A A A A A A A A A A	tual	-	-		÷		8th	9th 10				6         7           15th         161           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1 <td></td> <td>•</td> <td></td> <td></td> <td>2 3 23rd 24</td> <td></td> <td></td> <td></td> <td></td> <td>Achievements Achievements</td> <td></td>		•			2 3 23rd 24					Achievements Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)       Implement supervisor/advanced/specialist training implemented by the trained instructors       Implement supervisor/advanced/specialist training implemented by the trained instructors         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors       Implement evaluation       Implemen	AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA P AA AA	tual	-	-		÷		8th	9th 10	11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th       11th <td></td> <td></td> <td>6 7 15th 161</td> <td>8 th 17th 8 17th 17th 17th</td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Achievements</td> <td></td>			6 7 15th 161	8 th 17th 8 17th 17th 17th	•								Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         2-B-7       Improved training based on the result from the monitoring and evaluation         activities       Improved training based on the result from the monitoring and evaluation         activities       Improvement of General Communication Maintenance for Electrantic Sub-Activities         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         utput 3-B:       Improvement of Concept Courses for ILS/DVOR/DME/Radar         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement improved training	Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai           P           Ai	tual	-	-		÷		8th	9th 10	111h       111h       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td>2 3 23rd 24</td> <td></td> <td></td> <td></td> <td></td> <td>Achievements</td> <td></td>					•			2 3 23rd 24					Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training syllabus/materials         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-4       Implement equipment specific training (Implement by 3-C、3-D、3-E)         3-A-5       Improved training based on the result from the monitoring and evaluation         utput 3-B:       Improvement of Concept Courses for ILS/DVOR/DME/Rader         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement devaluation of the trainings implemented by the trained instructors         3-B-3       Conduct training syllabus/materials         3-B-4       Implement specific training (Implement by 3-C、3-D、3-E)         3-B-5       Implement improved training courses	Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai	tual	-	-		÷		8th	9th 10	111h       111h       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td>2 3 23rd 24</td> <td></td> <td></td> <td></td> <td></td> <td>Achievements</td> <td></td>					•			2 3 23rd 24					Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training syllabus/materials         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-4       Implement equipment specific training (Implement by 3-C、3-D、3-E)         3-A-5       Improved training based on the result from the monitoring and evaluation         utput 3-B:       Improvement of Concept Courses for ILS/DVOR/DME/Rader         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement devaluation of the trainings implemented by the trained instructors         3-B-3       Conduct training syllabus/materials         3-B-4       Implement specific training (Implement by 3-C、3-D、3-E)         3-B-5       Implement improved training courses	Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai       P       Ai	tual	-	-		÷		8th	9th 10	111h       111h       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td>6         7           15th         161           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1<td>8         17th         8         17th         17th</td><td>•</td><td></td><td></td><td>2 3 23rd 24</td><td></td><td></td><td></td><td></td><td>Achievements Achievements</td><td></td></td>			6         7           15th         161           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1 <td>8         17th         8         17th         17th</td> <td>•</td> <td></td> <td></td> <td>2 3 23rd 24</td> <td></td> <td></td> <td></td> <td></td> <td>Achievements Achievements</td> <td></td>	8         17th         8         17th	•			2 3 23rd 24					Achievements Achievements	
2-B-5       Implement supervisor/advanced/specialist training (Overseas training)         2-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         2-B-7       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training based on the result from the monitoring and evaluation         Cotivities       Improved training syllabus/materials         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         utput 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Rader         3-B-1       Review current training syllabus/materials         3-B-2       Improved training courses         3-B-3       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         <	A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P       A       P <t< td=""><td>tual        </td><td>-</td><td>-</td><td></td><td>÷</td><td></td><td>8th</td><td>9th 10</td><td>111h       111h       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1   <td></td><td></td><td>6         7           15th         161           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1   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4-A-2 Improve/develop training syllabus/materials		Plan																													
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4-A-3 Conduct training of instructors		Plan																													
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4-A-4 Implement improved training courses		Plan																													
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#### To Chief Representative of JICA Malawi Office

#### **PROJECT MONITORING SHEET**

# Project Title: The Project for Capacity Development for Air Navigation Services

Version of the Sheet: Ver.2 (Term: 24th April 2014 – 20th May 2016)

Name: Hiroshi Mizumasa

Title: Chief Advisor

#### Submission Date: June 2015

#### I. Summary

#### 1. Progress

- 1-1. Progress of Inputs
- (1) Japanese Side
  - 1) Experts

Seven JICA experts were assigned according to the plan.

Mr. Hiroshi Mizumasa, Chief Advisor

Ms. Mie Nagayasu, Deputy Chief Advisor

Mr. Kiichiro Hirano, ATC & AIS Training Specialist - 1

Mr. Daniel Paul Diggins, ATC & AIS training Specialist - 2

Mr. Reynaldo Alido Batacan, CNS Maintenance Training Specialist

Mr. Kiyoshi Suzuki, E/M Maintenance Training Specialist

Ms. Yumi Hosoya, Flight Procedure Design Specialist

Details of their assignment are shown in the Plan of Operation (see Sheet-II "Plan of Operation").

#### 2) Training Equipment

The following training equipment was procured:

- a) Computer Based Training ATC (November 2014)
- b) Test Instrument and Equipment (December 2014)
- c) Learning Aids and Office Equipment (June 2014)
- d) PC-based Simulator Training System for Air Traffic Controllers (May 2015)
- (2) Malawi side
  - 1) Counterpart Personnel (C/P)

The following DCA Officials were assigned for effective and sound management of the Project (see also Sheet II "Plan of Operation").

[Counterpart Personnel]

Project Director (P/D):	Mr. A. C. Mtilatila, Director of Civil Aviation
Project Manager (P/M):	Mr. A. G. Matiya, Deputy Director (Operations)

Co-project Manager (Co-P/M): Mr. S. Galafa, Principal, School of Aviation

Project Coordinator:Mr. F. Kholowa, Chief Air Traffic Services Officer,<br/>Operation DivisionProject Coordinator:Mr. M.F.T. Bongwe, Chief Telecommunications<br/>Engineer, Operation Division

Trainers*: Mr. S. Galafa, Principal, School of Aviation [ATC & FIS Training Instructor]

Mr. R. Y. Malanga, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. S. Liundi, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. C. F. Betenigo, Telecommunications Engineer, KIA [Aeronautical Engineering (CNS) Training Instructor]

Mr. T. Mtonga, Electrical Engineer, KIA [Electrical/Mechanical Engineering Training Instructor]

#### 2) Support Staff

Eight instructors in total were assigned to the Project as support staff personnel:

[Support Staff]*

Ms. L. Manondo, ATC, KIA [ATC & FIS Training Instructor]

Mr. D. Zamaere, ATC, Chileka Airport [ATC & FIS Training Instructor]

Mr. F. Chisepeya, ATC, KIA [ATC & FIS Training Instructor]

Mr. J. Kazito, ATC, KIA [ATC & FIS Training Instructor]

Mr. R. Nkosi, Air Crew Briefing Officer, DCA [AIS & ACS Training Instructor]

Mr. N. B. Kaliyasi, Communication Officer, KIA [AIS & ACS Training Instructor]

Mr. F. N. Chisale, Electronics Engineer, KIA [Electronic Engineering (CNS) Training Instructor]

Mr. S. Kunje, Electronics Engineer, Chileka Airport [Electronic Engineering (CNS) Training Instructor]

Mr. O. Yokonia, Electrical Engineer, Chileka Airport [Electrical/Mechanical Engineering Training Instructor]

*Additional Support Staff under consideration.

#### 3) Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA.

#### 4) Project Office Expenses

Utility cost was paid by the Malawian side and DCA provided the following expenses for the project office as of June 2015.

a) Purchase of two desktop computers:	1,055,210 MWK
b) Purchase and installation of two split air conditioners:	989,114 MWK
c) Purchase and installation of air conditioners for ATC simulator room	862,100 MWK
d) Purchase of desks and chairs for training rooms	951,105 MWK
e) Advertising Cost	1,362,589 MWK

PM Form 3-1 Monitoring Sheet Summary

f) School of Aviation (CBT furniture, meals, and student allowances)	1,405,700 MWK
5) Travel Expenses for Counterpart Personnel within Malawi	
The travel expenses for C/P to travel outside the Lilongwe area provided by DCA	were as follows
(as of June 2015):	
a) Transport costs and subsistence allowances for students from Chileka	
(Team Resource Management Course/ from Chileka to Lilongwe)	76,000 MWK
b) Transport costs for Lilongwe students	
(Team Resource Management Course/ from Blantyre to Lilongwe)	70,000 MWK
c) Transport costs and subsistence allowances for students from outside Lilongwe	е
- Test Equipment, E & M	354,000 MWK
- Flight Procedure Design, General Communications	485,000 MWK

#### 1-2. Progress of Activities

- (1) Summary of Work Progress (June 2014 June 2015)
  - 1) Baseline Survey

The Project Team conducted the baseline survey on capacity of SOA which includes the capacities of ATM (ATC, FIS, AIS, ACS), Electronics Engineering (CNS), Electrical and Mechanical (E/M). The survey was conducted according to the ICAO's standard of assessing training organization.

#### 2) Review of the existing training materials

The Project Team, composed of JET members and the counterpart personnel (C/P), observed existing training syllabus and textbooks for all training courses conducted in SOA (see "Results of the PDM Activities", described below).

#### 3) Preparation of a work plan

The Project Team prepared a work plan describing the material development, instructor training, as well as the method and schedule for the implementation of 16 training courses, on which agreement was reached with the Malawian side.

4) Preparation of base materials for training courses

The Project Team is preparing training course materials which follows ICAO guideline.

#### 5) Procurement of equipment

The Project Team procured equipment necessary for operating the Project in line with the JICA equipment procurement guideline.

#### 6) Trainings at the School of Aviation (SOA) (as of June 2015)

The trainings for instructors which were held at the School of Aviation are as follows:

- a) Computer Based Training (ATC)
   Date: 24th November 2014 (1/2 day)
   No. of Participants: 6
- b) Test Equipment Course
   Date: 12th 23rd January 2015 (10 days)
   No. of Participants: 5
- c) Electrical & Mechanical Training
   Date: 20th 30th April 2015 (9 days)
   No. of Participants: 6
- d) Microsoft Office PC Training
   Date: 21st 24th April 2015 (4 days)
   No. of Participants: 5
- e) Flight Procedure Design Training
   Date: 5th 28th May 2015 (18 days)
   No. of Participants: 4
- f) General Communications Course
   Date: 18th May– 5th June 2015 (15 days)
   No. of Participants: 6
- g) Park Air T6 VHF Maintenance Course
   Date: 8th 19th June 2015 (10 days)
   No. of Participants: 6
- h) VOR/DVOR/DME/ILS/RADAR Concept Course
   Date: 22nd June 10th July 2015 (15 days)
   No. of Participants: 6
- i) ATC Simulator Operation Lecture
   Date: 25th 29th May 2015 (5 days)
   No. of Participants: 6
- j) 052 ATC Aerodrome Control Course
   Date: 3rd June 3rd July 2015 (23 days)
   No. of Participants: 5

A total of 55 participants is expect to complete trainings by the beginning of July 2015.

#### 7) Overseas Training

DCA officials participated or will be participating in the following four overseas trainings:

- a) Team Resource Management Course: 26th to 30th January 2015 <South Africa>*1
- b) Supervisory Management Course: 2nd to 27th February 2015 <Kenya>*²

A total of 12 participants completed overseas trainings as of June 2015.

- [Overseas Training Institutes]
- *1: Air Traffic and Navigation Services (ATNS) in Johannesburg, South Africa

- 4 -

*2: East African School of Aviation (EASA) in Nairobi, Kenya

#### 8) First JCC Meeting

The First JCC Meeting was held on 30th June 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, two officials from the JICA Malawi Office, and five members from the JICA Expert Team (hereinafter referred to as "JET") participated in the meeting. The JET Leader, Mr. Hiroshi Mizumasa presented a summary of the Project. The minutes of the meeting for implementation of the Project were signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Kazuhiko Tokuhashi, Resident Representative, JICA Malawi Office.

#### 9) Second JCC Meeting

The Second JCC Meeting was held on 1st August 2014. Five people from the DCA side including the Director, the Deputy Director and three other officials, one official from the JICA Malawi Office, and two members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Approval of the Work Plan
- b) Confirmation of the Instructor Nomination
- c) Approval of updated PDM
- d) Confirmation of expense for domestic training/counterparts works

The minutes of the meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroshi Mizumasa, the JET Leader.

#### 10) Third JCC Meeting

The Third JCC Meeting was held on 27th January 2015. Three people from the DCA side including the Deputy Director and two other officials, two officials from the JICA Malawi Office, and four members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Report on project progress and schedule
- b) Approval of the Monitoring Sheet ver.1
- c) Progress on new recruitment

The minutes of the meeting was signed between Mr. A. G. Matiya, DCA Deputy Director and Mr. Kazuhiko Tokuhashi, Chief Representative of the JICA Malawi Office.

#### (2) Results of the PDM Activities

Following is the summary of the Project activities having been conducted from June 2014 to June 2015. It is described according to the original PDM Activities.

# 1) Improvement of ATC and FIS Training

PDM Activities	Results
1-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
1-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
1-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015
1-4. Implement improved training courses	Base Material of ATC Basic Course 051 was provided by JET and it will be customized by SOA/DCA Instructor team. Trainings course of 052 Aerodrome will be conducted in June - July 2015.
1-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January and in Nairobi in February 2015.
1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	
1-7. Improve the training courses based on the results from the monitoring and evaluation	

# 2) Improvement of AIS and ACS Training

PDM Activities	Results
2-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
2-2. Improve/develop training syllabus and training materials	Two (AIS and ACS) training syllabuses and materials will be developed.
	Two Working Groups, consisting of 4 AIS and ACS officers, were established in May to draft the training syllabuses and training materials which will be due in October 2015. The Working Groups will collect and update relevant information, and customize the base materials to match with the Malawian context. The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
2-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and in October 2015.
2-4. Implement improved training courses	CBT training course was held in November 2014.
2-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January 2015 and in Nairobi in February 2015.
2-6. Conduct monitoring and evaluation of	
the trainings implemented by the trained instructors	
2-7. Improve the training courses based on the results from the monitoring and evaluation	

PDM Activities	Results
3-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
3-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
3-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015.
	Training course of test equipment for instructors was conducted in January 2015.
3-4. Implement improved training courses	Training courses of COM & VOR/DME are/will be conducted in May – July 2015.
3-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January and in Nairobi in February 2015.
3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the Test Equipment Training in January 2015.
3-7. Improve the training courses based on the results from the monitoring and evaluation	

## 3) Improvement of Electronic Engineering Training

## 4) Improvement of Electrical/Mechanical Engineering Training

PDM Activities	Results
4-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
4-2. Improve/develop training syllabus and training materials	Two training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
4-3. Conduct training of instructors	Overseas trainings will be conducted in Nairobi in August and October 2015.
4-4. Implement improved training courses	Training courses of E & M were conducted in April 2015.
4-5. Implement supervisor training	Supervisor trainings were conducted in Johannesburg in January 2015 and in Nairobi in February 2015
4-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the Electrical & Mechanical Training.
4-7. Improve the training courses based on the results from the monitoring and evaluation	

#### 1-3. Achievement of Output

Achievement of the Project outputs is observed according to the PDM indicators.

- Output 1 Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.
- Output 2 Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.
- Output 3 Training of Electronic Engineering is improved.
- Output 4 Training of Electrical/Mechanical Engineering (E/M Eng) is improved.

Indicators for the		Achievement as of June 2015
-Training syllabuses and training materials are improved or developed for the following number of courses:	ATC/FIS: 6 AIS/ACS: 2	<ol> <li>051: ATC Basic: 80%</li> <li>052: Aerodrome Control: 100%</li> <li>053: Approach Control: 60%</li> <li>055: Area Control: 30%</li> <li>CNS/ATM for ATC: 80%</li> <li>Flight Information Service: 50%</li> <li>AIS &amp; ACS (combined): 50%</li> </ol>
	Electronic Eng.: 6	<ol> <li>General Communication Equipment: 100%</li> <li>Navigation Concept Course: 90%</li> <li>Park Air VHF: 90%</li> <li>Normarc ILS: 70%</li> <li>Maru VOR/DME: 70%</li> <li>CNS/ATM: 80%</li> </ol>
	E/M Eng.: 2	<ol> <li>Theory of Airfield Lighting: 90%</li> <li>Theory of UPS: 90%</li> </ol>
-The following number of	Instructors: 10*1	
DCA officers successfully complete	ATC/FIS: 4*1	8 officers successfully completed "Team Resource Management Course" in South Africa.
supervisor/advanced/ specialist training:	AIS/ACS: 4*1	4 officers successfully completed "Supervisory Management Course" in Kenya.
	Aeronautical Cartography: 2* ²	
	PANS/OPS: 2*2	4 officers successfully completed "PANS/OPS Conventional Flight Procedure Design for Non-Precision Approach"
	ILS Maintenance: 4*2	

#### Achievement of Outputs

*1: Overseas trainings

*2: In-country trainings

#### 1-4. Achievement of the Project Purpose

Achievement of the Project purpose: "Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities." is observed according to the PDM indicators as follows:

Indicators for	the Project Purpose	Achievement as of June 2015
- The following number of	ATC/FIS: 6	0
instructors can conduct the	AIS/ACS: 4	0
improved/developed training courses (fulltime + part time)	Electronic Eng.: 4	0
	E/M Eng.: 4	0
- Comprehension test score of	Computer Based Training (CBT)	Not scored
trainees who receive the	(6 participants)	
improved/developed training courses exceeds at least 70%.	Test Equipment Course	87.1%
	(5 participants)	
	Electrical & Mechanical Training	93.7%
	(6 participants)	
	Microsoft Office PC Training	Not scored
	(5 participants)	
	Flight Procedure Design Training	80.0%
	(4 participants)	
	General Communications Course	89.6%
	(6 participants)	

#### Achievement of the Project Purpose

#### 1-5. Changes of Risks and Actions for Mitigation

No major changes were seen in the PDM Important Assumptions; therefore no special actions need to be taken. However, as for the Pre-conditions, new trainees were not recruited yet, which may affect the project outcomes.

(1) Pre-conditions

PDM Pre-conditions	Current Situations	Actions for Mitigation
1) DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project.	<ul> <li>Project office space was provided at the time of initiation of the work in Malawi in June 2014.</li> <li>Counterpart personnel (C/P) were allocated in the Project before the commencement of the project.</li> </ul>	<ul> <li>No special actions need to be taken.</li> </ul>
2) New trainees are recruited as scheduled.	<ul> <li>New trainees are not recruited since the initiation of the project in May 2014 to date.</li> <li>Recruitment of 24 new staff is in progress. They are planned to join DCA in August 2015.</li> </ul>	<ul> <li>JET requested DCA ensure the recruitment of new staff.</li> <li>Further 24 new staff has to be recruited to meet pre-condition of the Project.</li> </ul>

(2) Important Assumption when proceeding from Activities to Outputs

Important Assumption	Current Situations	Actions for mitigation
1) DCA implements the Project with sufficient ownership.	- DCA's ownership was seen.	<ul> <li>No special actions need to be taken.</li> </ul>

(3) Important Assumptions when proceeding from Outputs to the Project Purpose

Important Assumption	Current Situations	Actions for mitigation
1) No major change of the international standards on air navigation services occurred.	<ul> <li>No major changes were seen. It did not affect to the Project operation.</li> </ul>	<ul> <li>No special actions need to be taken.</li> </ul>

#### 1-6. Progress of Actions undertaken by JICA

No remarkable issues.

#### 1-7. Progress of Actions undertaken by the Government of Malawi

In May 2015, the Government of Malawi/DCA began procedures to recruit new students for ATC, Electronics Engineer, Electrical Engineer and Mechanical Engineer.

**1-8.** Progress of Environmental and Social Considerations (if applicable)

No remarkable issues.

- 1-9. Progress of Considerations on Gender/ Peace Building/ Poverty Reduction (if applicable) No remarkable issues.
- 1-10. Other remarks or issues related to the project (such as other projects of JICA, activities of counterparts, other donors, private sectors, NGOs, etc.)
  - (1) Project for the Improvement of Aviation Safety Oversight in Malawi by European Aviation Safety Agency (EASA)

EASA is currently assisting DCA and the Ministry of Transport and Public Works improving safety oversight capacity of civil aviation. There is no overlapping of activities between JICA project and EASA project.

- (2) Airport Safety and Security Equipment Project by European Investment Bank (EIB) EIB is funding the procurement of safety equipment such as fire trucks at Kamuzu International Airport. There is no overlapping of activities between JICA project and EIB project.
- (3) The Project for Expansion of the Terminal Building at Kamuzu International Airport by JICA JICA is currently conducting a Preparatory Survey for the project, which will include installation of the aircraft surveillance system. Current capacity development project will strengthen the foundation for the introduction of radar control services; however, does not include training for operation and maintenance of the aircraft surveillance system. DCA should plan capacity development for the radar control services if the project is realized.

#### 2. Delay of Work Schedule and/or Issues (if any)

#### 2-1. Detail

The project is on schedule; however, delay in recruitment of new staff would possibly affect the activities related to training of new staff under the Project.

#### 2-2. Cause of Delay

Recruiting process had been delayed due to lack of funds for recruitment on the part of the recruiting agencies.

#### 2-3. Actions to be taken

Recruitment process of the first 24 staff was initiated in mid-May 2015 and it is expected that new staff will join DCA in August 2015. Additional 24 staff has to be recruited to meet pre-condition of the Project.

#### 2-4. Roles of Responsible Persons/ Organization (JICA, Gov. of Malawi, etc.)

DCA and the Government of Malawi are responsible for recruitment of new staff.

#### 3. Modification of the Project Implementation Plan

#### 3-1. Plan of Operation (PO)

No major modification was made.

#### 3-2. Other Modifications on Detailed Implementation Plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)

Some changes to be made, mainly in "Objectively Verifiable Indicators", were discussed among DCA and JICA Team prior to the 4th JCC meeting as follows (*<u>underlined</u> = changes to be made);

1) Overall Goal

Define the Objectively Verifiable Indicator as "<u>The targeted number of trainees (serving officers and new staff) who will</u> successfully complete the improved/developed training courses <u>between 2016</u> and 2020 is at least 80".

#### 2) Project Purpose

Change minimum score of comprehension test from 80% to <u>70%</u> in accordance with international standard of ICAO.

Replace the Means of Verification "Terminal Evaluation Report" with "<u>Project Completion Report</u>". In addition, insert "<u>- Results of comprehension test score of trainees</u>".

#### 3) Outputs

Delete the Objectively Verifiable Indicator "Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 80%" as this indicator duplicates with that of the Project Purpose.

The revised PDM is attached as Project Monitoring Sheet I.

**4. Preparation of the Government of Malawi towards the completion of the Project** Not applicable.

# II. Project Monitoring Sheet I (PDM) & Sheet II (PO) (Version 2) as attached

#### **Project Design Matrix**

#### Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

#### Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers,

Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

#### Period of Project: 2 years (24/04/2014-20/05/2016)

Model Site:

			1		
Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal (Long-term objective) Training by the trained instructors is sustainably conducted for officers of air navigation services.	Number of officers who have successfully completed the improved/developed training courses for each year	- Training records			
Project Purpose (Objective at the end of the Project)					
Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities.	Number of instructors who can conduct the improved/developed training courses (fulltime + part time) ATC/FIS: 6 (1) AIS/ACS: 4 (2) Electronic Eng.: 4 (1) E/M Eng.: 2 (1) Number in () indicates current situation. - Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.	- Monitoring Sheet - Terminal Evaluation Report	<ul> <li>Trained counterpart personnel continue to be engaged in the activities of air navigation services.</li> <li>No major change in the national policy on air navigation services within the national plan/ strategy is occurred.</li> </ul>		
Outputs (Objectives to be realized by Activities to achieve the					
Project Purpose) 1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved. 2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved. 3. Training of Electronic Engineering is improved. 4. Training of Electrical/Mechanical Engineering (E/M Eng) is improved.	<ul> <li>Training syllabus and training materials are improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2</li> <li>The following number of DCA officers successfully complete supervisor/ advanced/specialist training: Instructors: 10 ATC/FIS: 4 AIS/ACS: 4 Aeronautical Cartography: 2 PANS/OPS: 2 ILS Maintenance: 4</li> <li>Comprehension test score of trainees who receive the improved/ developed training courses exceeds at least 80%.</li> </ul>	- Monitoring Sheet - Results of completion tests for supervisor/ advanced/specialist training courses	- No major change of the international standards on air navigation services is occurred.		

Version 2

Dated 1, Aug, 2014

	Inputs		Pre-Conditions
sectic actions to produce each output by use of inputs)	The Japanese Side	The DCA Side	- DCA implements the
tivities becific actions to produce each Output by use of Inputs) becific actions to produce each Output by use of Inputs) becific actions to produce each Output by use of Inputs) convertent of ATC and FIS Training Review current training syllabus and training materials Conduct training of instructors Implement supervisor training Conduct monitoring and evaluation of the trainings implemented the trained instructors Improve the training courses based on the results from the initoring and evaluation becoment of AIS and ACS Training Review current training syllabus and training materials Conduct training of instructors Implement supervisor/advanced/specialist training Conduct monitoring and evaluation of the trainings implemented the trained instructors Implement supervisor/advanced/specialist training Conduct monitoring and evaluation of the training simplemented the trained instructors Implement supervisor/advanced/specialist training Conduct monitoring and evaluation of the training simplemented the trained instructors Implement supervisor/advanced/specialist training Conduct monitoring and evaluation of the training materials Improve the training courses based on the results from the initoring and evaluation becoment of Electronic Engineering Training Conduct monitoring and evaluation of the training materials Implement improved training courses Implement equipment-specific training Conduct monitoring and evaluation of the trainings implemented the trained instructors Implement equipment-specific training Review current training syllabus and training materials Implement of Electrical/Mechanical Engineering Training Review current training syllabus and training materials Implement improved training courses Conduct training of instructors Implement improved training courses Conduct training of instructors Implement of Electrical/Mechanical Engineering Training Review current training syllabus and training materials Implement improved training courses Conduct training of instructors Implement improved training c	•	The DCA Side         - Counterpart Personnel         - Support Staff         - Project Office Space         - Project Office Expenses of         Counterpart Personnel         within Malawi         - The others mentioned in         Appendix1, II, 6, of R/D	Pre-Conditions - DCA implements the Project with sufficient ownership.  Pre-Conditions - DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project New trainees are recruited as scheduled.

#### Monitoring Sheet II Plan of Operation

Project Title: The Project for Capacity Development	<u>t for Air Navigati</u>	tion Service	<u>s in the Re</u>	epublic o	<u>f Malawi</u>												Moni	itoring
nputs from JICA	YY/MM '14/4 Month 1st	l 5 6 2nd 3rd	7 8 4th 5th	9 n 6th	10 11 7th 8th	12 '15/1 9th 10th	2 3 11th 12th	4 5 ( 13th 14th 15	6 7 th 16th	8 9 17th 18	9 10 3th 19th	11 20th	12 21st	'16/1         2         3           22nd         23rd         24th	4 5 n 25th 26th	Remarks	lssue	Solution
. Expert Chief Advisor	- Plan																	
	→ Actual N Plan		(60)	)		(	91)										-	
Deputy Chief Advisor/Capacity Development Specialist Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training	_່ Actual ອຸ Plan		(45)			(	14)										-	
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training	Actual		(52)			(45)											-	
Specialist - 2	- Actual		(27)		(19	))										-	_	
Communications, Navigation and Surveillance (CNS) Maintenance Training Specialist	ې Plan ط Actual		(60)	)			89)											
Electrical/Mechanical Maintenance Training Specialist	φ     Plan       □     Actual					(30):										-		
Flight Procedure Design Specialist	⊢ Plan ⊢ Actual															-		
. Training Equipment	Plan																-	
PC-based Simulator Training System for Air Traffic Controllers	Actual																-	
Computer Based Training (ATC)	Actual																_	
Test Instrument and Equipment	Actual																	
Learning Aids and Office Equipment	Plan Actual																	
. Overseas Training	Plan															10	-	
Team Resource Management Training	Actual Plan															10 people	-	
Supervisory Management Training	Actual															4 people	4	
Instructor Development Training	Actual															4 people	4	
Advance Instructor Training	Actual															4 people	4	
PANS/OPS Instrument Procedure Design - Conventional Flight Procedures	Plan Actual															Change to training by JICA Expert in Malawi (Move to Activity)	1	
Aeronautical Cartography (Aeronautical Charts)	Plan Actual															Change to training by JICA Expert in Malawi (Move to Activity)		
Maintenance of Normarc ILS 7013B/7033B	Plan Actual															Change to training by JICA Expert in Malawi (Move to Activity)		
nputs from DCA	YY/MM '14/4 Month 1st		7 8 4th 5th	9 1 6th	10 11 7th 8th	12 '15/1 9th 10th	2 3 11th 12th	4 5 0 13th 14th 15	5 7 th 16th	8 9 17th 18	9 10 th 19th	11 20th	12 21st	'16/1 2 3 22nd 23rd 24th	4 5 1 25th 26th	Remarks	Issue	Solution
. C/P Project Director, etc.			401 501									20(11	2130	22110 2310 240				
Project Director Mr. A. C. Mtilatila, Director of Civil Aviation, DCA	Plan Actual																	
Project Manager Mr. A. G. Matiya, Deputy Director (Operations), DCA	Plan Actual															-		
Co-Project Manager Mr. S. Galafa, Principal, School of Aviation, DCA	Plan Actual															-		
Project Coordinator Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division	Plan Actual																	
Project Coordinator Mr. M.F.T. Bongwe, Chief telecommunications engineer, Operation Division	Plan Actual																	
ATC and FIS Training Mr. S. Galafa, Principal lecturer of ATS, School of Aviation, DCA	Plan															-	-	
AIS and ACS Training	Plan																-	
Mr. R. Y. Malanga, Lecturer School of Aviation, DCA AIS and ACS Training																	-	
Mr. S. Liundi, Lecturer School of Aviation, DCA Electrical Engineering (CNS) Training	Plan																-	
Mr. R. Kanunkha, Senior CNS Lecturer, School of Aviation, DCA Electrical Engineering (CNS) Training	Actual Plan																-	
Mr. C. F. Betenigo, Electronics Engineer, KIA Electrical/ Mechanical Engineering Training	Actual Plan																-	
Mr. Mtonga, Electrical Engineer, KIA	Actual																-	
Instructor-1 Ms. L. Manondo, Air Traffic Controller, KIA	Plan Actual															-	1	
Instructor-2	Plan															-	1	
FIS Instructor-3	Actual Plan																1	
Mr. F. Chisepeya, Air Traffic Controller, KIA Instructor-4	Actual Plan																1	
Mr. J. Kazito, Air Traffic Controller, KIA Instructor-1	Actual Plan																1	
AIS& Mr. R. Nkosi, Air Crew Briefing Officer, DCA HQ. ACS Instructor-2	Actual Plan																	
Mr. N. B. Kaliyasi, Communication Officer, KIA Electronic Engineering (CNS) Instructor	Actual Plan																-	
CNS Mr. S. Kunje, Electronics Engineer, Chileka Airport Electronic Engieering (CNS) Instructor	Actual																4	
Mr. F. Nyanda Chisale, Electronics Engineer, KIA	Actual															1		
E/M Electrical/Mechanical Engineering Instructor Mr. O. Yokonia, Electrical Engineer, Chileka Airport	Plan Actual																1	
New Students to School of Aviation           3-1         Air Traffic Controllers (12 students)	Plan																1	
	Actual Plan																4	
3-2 Flight Information Officers (8 students)	Actual Plan																-	
3-3 AIS Officers (10 students)	Actual															-	4	
3-4 Aeronautical Communications Officers (6 students)	Actual															1	4	
3-5 Electronic Engineers (8 students)	Plan       Actual															Suspending by the human		
3-6 Electrical/Mechanical Engineers (2/2 students)	Plan       Actual															resource department	J	
Update of DCA Manuals and Procedures	Plan																-	
4-1 Update of Manual of Air Traffic Services	Actual															-	4	
4-2 Update of CNS Equipment Maintenance Procedures	Actual											╉╈╧╋				1		

# Version 4 Dated 5 June 2015

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D         Description         Descripi         Description         Descri	5-3 CBT Room																											
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10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2       10.2			P																									
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1-F-1 Conduct training of DCA staffs																												
	Output 1-F: Improvement of Aeronautical Cartography Training	 	P	lan																			<u></u>			by JICA Expert in		
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utput 1-G: Improvement of Flight Procedure Design (Conventional Flight Procedure) Training			P	lan																				M		by JICA Expert in		
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1-H-7         Improved training based on the result from the monitoring and evaluation		Actual Plan																								
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2-A-5 implement supervisor/advanced/specialist training (Overseas training)		Plan Actual																								
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2-A-7 Improved training based on the result from the monitoring and evaluation		Plan Actual																								
Output 2-B: Improvement of Basic Aeronautical Communication Office	<u>ər T</u> rai	nina																					[	[		
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2-B-4 Implement improved training courses		Plan Actual																								
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Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials		YY/MM '' Month Engineers Plan Actual Plan		5 2nd 3	6 Brd 4	7 4th 5	8 9 ith 6tl	-	11 8th	12 '15/ 9th 10th	1 2 1 11th 1	3 4 2th 13th	14th 15t		8 9 17th 18t	10 h 19th	11 20th 2	12 '16 21st 22	6/1 2 2nd 23r	3 d 24th	4 25th	-			Achievements	
Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials		YY/MM '' Month Engineers Plan Actual Plan Actual Blan		5 2nd 3	6 Brd 4	7 4th 5	8 9 ith 6ti	-		12 '15/ 9th 10th	1 2 1 11th 1	3 4 2th 13th			8 9 17th 18th	10 h 19th	11 20th 2	12 '16 21st 22	6/1 2 2nd 23r	3 d 24th	4 25th	-			Achievements	
Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors		YY/MM ' Month Engineers Plan Actual Plan Actual Plan Actual Plan Actual		5 2nd 3	6 Brd 2	7 4th 5	8 9 ith 6tl	-		12 '15/' 9th 10th		3 4 2th 13th	14th 15t		8 9 17th 18ti	10 h 19th	11 20th 2	12 '16 21st 22	6/1 2 2nd 23r	3 d 24th	4 25th	-			Achievements	
Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement environment specific training (Implement by 3-C, 3-D, 3-E)		YY/MM '' Month Engineers Plan : Actual Plan : Actual Plan : Actual Plan : Actual Plan : Plan :		5 2nd 3	6   3rd   4	7 4th 5	8 9 ith 6tl	-		12 '15/' 9th 10th		3 4 2th 13th	14th 15t		8 9 17th 18t	10 h 19th		12 '16 21st 22	6/1 2 2nd 23r	3 d 24th	4 25th	-			Achievements	
Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C、 3-D、 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the		YY/MM * Month Engineers Plan = Actual = Plan = Actual = Plan = Actual = Plan = Actual = Plan = Actual = Plan = Actual = Plan =		5 2nd 3			8 9 ith 6tl	-		12 '15/' 9th 10th		3 4 2th 13th	14th 15t		8 9 17th 18ti	10 h 19th	11 20th 2		6/1 2 nd 23r	3 d 24th	4 25th	-			Achievements	
Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C、3-D、3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors		YY/MM ' Month Engineers Plan Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan					8 9 ith 6ti	-		12 '15/' 9th 10th		3 4 2th 13th	14th 15t		8 9 17th 18t	10 h 19th	11 20th 2		6/1 2 23r	3 24th		-			Achievements	
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Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-A-7         Improved training based on the result from the monitoring and evaluation           Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar         3-B-1           3-B-2         Improve/develop training syllabus/materials           3-B-3         Conduct training of instructors           3-B-4         Improve/develop training syllabus/materials		YY/MM ' Month Engineers Plan Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan					8 9 ith 6ti 	-				3 4 2th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th	14th 15t		8 9 17th 18ti	10 h 19th						-			Achievements	
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Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Elect           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-A-7         Improved training based on the result from the monitoring and evaluation           Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Rader           3-B-1         Review current training syllabus/materials           3-B-2         Improve/develop training syllabus/materials           3-B-3         Conduct training of instructors           3-B-4         Implement improved training courses           3-B-5         Implement improved training courses           3-B-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-B-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-B-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-B-7         Implement training based on the		YY/MM ' Month Engineers Plan Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan Actual Plan					8 9 ith 6ti 	-				3 4 2th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th 13th	14th 15t		8         9           17th         18ti										Achievements	
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Sub-Activities         Output 3-A: Improvement of General Communication Maintenance for Elect         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Rader         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-4       Implement improved training courses         3-B-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-7       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-7       Imp		YY/MM         ''           Month         Engineers           Plan         i           Actual         Plan           Plan         i           Actual         Plan           Actual         Plan           Actual         Plan           Actual         Plan           Actual         Plan           Plan         i           Actual         Plan           Actual <t< th=""><th></th><th></th><th>6 Srd 3rd 4 4 4 4 4 4 4 4 4 4 4 4 4</th><th></th><th>8 9 ith 6tl</th><th>-</th><th></th><th></th><th></th><th></th><th>14th 15t</th><th></th><th></th><th>10 h 19th</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>Achievements</th><th></th></t<>			6 Srd 3rd 4 4 4 4 4 4 4 4 4 4 4 4 4		8 9 ith 6tl	-					14th 15t			10 h 19th									Achievements	
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## To Chief Representative of JICA Malawi Office

## **PROJECT MONITORING SHEET**

## Project Title: The Project for Capacity Development for Air Navigation Services

Version of the Sheet: Ver.3 (Term: 24th April 2014 – 20th May 2016)

Name: Hiroshi Mizumasa

Title: Chief Advisor

## Submission Date: Oct 2015

## I. Summary

## 1. Progress

- 1-1. Progress of Inputs
- (1) Japanese Side
  - 1) Experts

Seven JICA experts were assigned according to the plan.

Mr. Hiroshi Mizumasa, Chief Advisor

Ms. Mie Nagayasu, Deputy Chief Advisor

Mr. Kiichiro Hirano, ATC & AIS Training Specialist - 1

Mr. Daniel Paul Diggins, ATC & AIS Training Specialist - 2

Mr. Reynaldo Alido Batacan, CNS Maintenance Training Specialist

Mr. Kiyoshi Suzuki, E/M Maintenance Training Specialist

Ms. Yumi Hosoya, Flight Procedure Design Specialist

Details of their assignment are shown in the Plan of Operation (see Sheet-II "Plan of Operation").

## 2) Training Equipment

The following training equipment was procured:

a) Learning Aids and Office Equipment (June 2014)

- b) Computer Based Training ATC (November 2014)
- c) Test Instrument and Equipment (December 2014)
- d) PC-based Simulator Training System for Air Traffic Controllers (May 2015)
- (2) Malawi side
  - 1) Counterpart Personnel (C/P)

The following DCA Officials were assigned for effective and sound management of the Project (see also Sheet II "Plan of Operation").

[Counterpart Personnel]

Project Director (P/D): Mr. A. C. Mtilatila, Director of Civil Aviation

Project Manager (P/M): TBD (vacant as of October 2015)

*Co-project Manager (Mr. S. P. Galafa) will be acting as the Project Manager until the next person

is assigned.

Co-project Manager (Co-P/M): Mr. S. P. Galafa, Principal, School of Aviation Project Coordinator: Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division Project Coordinator: Mr. R. C. Kanunkha, Assistant Chief Aeronautical

hator: Mr. R. C. Kanunkha, Assistant Chief Aeronautical Telecommunications Engineer, Operation Division

Trainers: Mr. S. P. Galafa, Principal, School of Aviation [ATC & FIS Training Instructor]

Mr. R. Y. Malanga, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. S. Liundi, Lecturer School of Aviation [AIS & ACS Training Instructor]

Mr. C. F. Betenigo, Telecommunications Engineer, KIA [Aeronautical Engineering (CNS) Training Instructor]

Mr. T. Mtonga, Electrical Engineer, KIA [Electrical/Mechanical Engineering Training Instructor]

## 2) Support Staff

Eight instructors in total were assigned to the Project as support staff personnel:

## [Support Staff]

Ms. L. Manondo, ATC, KIA [ATC & FIS Training Instructor]

Mr. D. Zamaere, ATC, KIA [ATC & FIS Training Instructor]

Mr. F. Chisepeya, ATC, KIA [ATC & FIS Training Instructor]

Mr. J. Kazito, ATC, Chileka International Airport (CIA) [ATC & FIS Training Instructor]

Mr. R. Nkosi, Air Crew Briefing Officer, DCA [AIS & ACS Training Instructor]

Mr. N. B. Kaliyasi, Communication Officer, KIA [AIS & ACS Training Instructor]

Mr. F. N. Chisale, Electronics Engineer, KIA [Electronic Engineering (CNS) Training Instructor]

Mr. S. Kunje, Electronics Engineer, CIA [Electronic Engineering (CNS) Training Instructor]

Mr. O. Yokonia, Electrical Engineer, Chileka Airport [Electrical/Mechanical Engineering Training Instructor]

3) Project Office Space

Office space for the Project was provided in School of Aviation (SOA), DCA.

## 4) Project Office Expenses

Utility cost was paid by the Malawian side and DCA provided the following expenses for the project office as of Sept. 2015.

a) Purchase of two desktop computers:	1,055,000 MWK
b) Purchase and installation of two split air conditioners. (Project & CBT)	989,114 MWK
c) Purchase and installation of air conditioners for ATC simulator room	862,100 MWK
d) Purchase of desks and chairs for CNS Laboratory (May 2015)	951,105 MWK
e) Purchase of 2 desks and chairs for CBT. (May 2015)	477,000 MWK

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f) Advertising Cost	1,362,589 MWK
<ul> <li>g) Installing 2 security doors for equipment room</li> </ul>	70,000 MWK
h) Installing 4 Air-conditioner cages	90,000 MWK
i) Building material for class room	30,000 MWK
j) Labor charge for installation security items	43,000 MWK

5) Travel Expenses, Allowance and Ration for Counterpart Personnel within Malawi

The travel expenses, Subsistence Allowance for C/P to travel from outside the Lilongwe area provided by SOA and Ration for trainees at SOA were as follows (as of 30th Sept. 2015):

a)	CBT Training in (Nov. 2014)	75,000 MWK
b)	Test Equipment Training. (Jan.2015)	126,000 MWK
c)	Team Resource Management Course Internal Training. (Jan.2015)	146,000 MWK
d)	Electro-Mechanical Training. (May 2015)	515,100 MWK
e)	Microsoft Office PC Training. (May 2015)	60,000 MWK
f)	AIS & ACS Working Group. (May 2015)	90,000 MWK
g)	Flight Procedure Design Training. (May 2015)	602,000 MWK
h)	General Communication Training. (May 2015)	577,500 MWK
i)	ATC Aerodrome Control 052 Training. (Jun. 2015)	783,000 MWK
j)	Park-Air VHF Maintenance Training. (Jun. 2015)	466,000 MWK
k)	CVOR/DVOR/DME/ILS/RADAR Concept Training. (Jun. 2015)	703,100 MWK

## 1-2. Progress of Activities

- (1) Summary of Work Progress (June 2014 Sept. 2015)
  - 1) Baseline Survey

The Project Team conducted the baseline survey on capacity of SOA which includes the capacities of ATM (ATC, FIS, AIS, ACS), Electronics Engineering (CNS), Electrical and Mechanical (E/M). The survey was conducted according to the ICAO's standard of assessing training organization.

## 2) Review of the existing training materials

The Project Team, composed of JICA Expert Team (hereinafter referred to as "JET") members and the counterpart personnel (C/P), observed existing training syllabus and textbooks for all training courses conducted in SOA (see "Results of the PDM Activities", described below).

## 3) Preparation of a work plan

The Project Team prepared a work plan describing the material development, instructor training, as well as the method and schedule for the implementation of 16 training courses, on which agreement was reached with the Malawian side.

4) Preparation of base materials for training courses

The Project Team is preparing training course materials which follows ICAO guideline.

5) Procurement of equipment

The Project Team procured equipment necessary for operating the Project in line with the JICA equipment procurement guideline.

6) Trainings at the School of Aviation (SOA) (as of Sept. 2015)

The trainings for instructors which were held at the School of Aviation are as follows:

- a) Computer Based Training (ATC)
   Date: 24th November 2014 (1/2 day)
   No. of Participants: 6
- b) Test Equipment Course
   Date: 12th 23rd January 2015 (10 days)
   No. of Participants: 5
- c) Electrical & Mechanical Training
   Date: 20th 30th April 2015 (9 days)
   No. of Participants: 6
- d) Microsoft Office PC Training
   Date: 21st 24th April 2015 (4 days)
  - No. of Participants: 5
- e) Conventional Flight Procedure Design Training Date: 5th – 28th May 2015 (18 days) No. of Participants: 4
- f) General Communications Course
   Date: 18th May– 4th June 2015 (14 days)
   No. of Participants: 6
- g) ATC Simulator Maintenance Lecture
   Date: 19th 22nd May 2015 (4 days)
   No. of Participants: 2
- h) ATC Simulator Operation Lecture
   Date: 25th 29th May 2015 (5 days)
   No. of Participants: 6
- i) Park Air T6 VHF Maintenance Course
   Date: 8th 19th June 2015 (10 days)
   No. of Participants: 6
- j) DVOR/CVOR/DME/ILS/RADAR Concept Course
   Date: 22nd June 10th July 2015 (15 days)
   No. of Participants: 5
- k) 052 ATC Aerodrome Control Course

Date: 3rd June – 3rd July 2015 (23 days)

No. of Participants: 9

A total of 60 participants completed trainings as of 30th Sept. 2015.

## 7) Overseas Training

DCA officials participated or will be participating in the following four overseas trainings:

- a) Team Resource Management Course: 26th to 30th January 2015 <South Africa>*1
- b) Supervisory Management Course: 2nd to 27th February 2015 <Kenya>*²
- c) Instructor Development Course: 3rd to 21st August 2015 <Kenya>*²
- d) Advanced Instructors Training Course: 5th to 23rd October 2015 <Kenya>*²
- A total of 20 participants completed overseas trainings as of 30th Sept. 2015.

[Overseas Training Institutes]

- *1: Air Traffic and Navigation Services (ATNS) in Johannesburg, South Africa
- *2: East African School of Aviation (EASA) in Nairobi, Kenya

## 8) First JCC Meeting

The First JCC Meeting was held on 30th June 2014. Five people from the DCA side including the Director, the Deputy Director and other three officials, two officials from the JICA Malawi Office, and five members from the JET participated in the meeting. The JET Leader, Mr. Hiroshi Mizumasa presented a summary of the Project. The minutes of the meeting for implementation of the Project were signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Kazuhiko Tokuhashi, Resident Representative, JICA Malawi Office.

## 9) Second JCC Meeting

The Second JCC Meeting was held on 1st August 2014. Five people from the DCA side including the Director, the Deputy Director and three other officials, one official from the JICA Malawi Office, and two members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Approval of the Work Plan
- b) Confirmation of the Instructor Nomination
- c) Approval of updated PDM
- d) Confirmation of expense for domestic training/counterparts works

The minutes of the meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroshi Mizumasa, the JET Leader.

## 10) Third JCC Meeting

The Third JCC Meeting was held on 27th January 2015. Three people from the DCA side including the Deputy Director and two other officials, two officials from the JICA Malawi Office, and four members from the JET participated in the meeting. The issues discussed and agreed were as

## follows:

- a) Report on project progress and schedule
- b) Approval of the Monitoring Sheet ver.1
- c) Progress on new recruitment

The minutes of the meeting was signed between Mr. A. G. Matiya, DCA Deputy Director and Mr. Kazuhiko Tokuhashi, Chief Representative of the JICA Malawi Office.

## 11) Fourth JCC Meeting

The Forth JCC Meeting was held on 5th June 2015. Five people from the DCA side including the Director, Deputy Director and three other officials, two officials from the JICA Headquarters, two officials from the JICA Malawi Office, and four members from the JET participated in the meeting. The issues discussed and agreed were as follows:

- a) Report on project progress and schedule
- b) Activity Plan
- c) Approval of the Monitoring Sheet ver.2
- d) Progress on new recruitment

The minutes of the meeting was signed between Mr. Alfred C. Mtilatila, DCA Director and Mr. Hiroyuki Ueda, Senior Transport Sector Advisor, JICA Headquarters.

## (2) Results of the PDM Activities

Following is the summary of the Project activities having been conducted from June 2014 to Sept. 2015. It is described according to the original PDM Activities.

## 1) Improvement of ATC and FIS Training

PDM Activities	Results
1-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
1-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
1-3. Conduct training of instructors	Two trainings for ATC and FIS were conducted in May and June to July, 2015
1-4. Implement improved training courses	Conventional Flight Procedure Design Course was conducted in May, 2015. 052 Aerodrome Course was conducted in June - July 2015.
1-5. Implement supervisor training	Team Resource Management Course, Supervisory Management Course and Instructor Development Course were conducted in January, February, and August in 2015.

1-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the above mentioned courses and all the trainees obtained more than 70% in the comprehension test.
1-7. Improve the training courses based on the results from the monitoring and evaluation	

## 2) Improvement of AIS and ACS Training

PDM Activities	Results
2-1. Review current training syllabus and training materials	All the syllabuses were reviewed. Most of them were made in 1980s.
2-2. Improve/develop training syllabus and training materials	One combined AIS/ACS training syllabus and material will be developed.
	Two Working Groups, consisting of 4 AIS and ACS officers, were established in May to draft the training syllabuses and training materials.
	The progress of preparation of each material is shown in the following 1-3. Achievement of Output.
2-3. Conduct training of instructors	One training course was held in November, 2014.
2-4. Implement improved training courses	CBT training course was held in November 2014.
2-5. Implement supervisor/advanced/specialist training	Team Resource Management Course, Supervisory Management Course and Instructor Development Course were conducted in January, February, and August in 2015.
2-6. Conduct monitoring and evaluation of	
the trainings implemented by the trained instructors	
2-7. Improve the training courses based on the results from the monitoring and evaluation	

## 3) Improvement of Electronic Engineering Training

PDM Activities	Results
3-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
3-2. Improve/develop training syllabus and training materials	Six training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
3-3. Conduct training of instructors	Four trainings were conducted in January, May, June and July, 2015.
3-4. Implement improved training courses	Test Equipment Course was conducted in January 2015. General Communications Course was conducted in May-June, 2015.
3-5. Implement equipment-specific training	Park Air T6 VHF Radio Course was conducted in June, 2015. CVOR/DVOR/ILS/DME/RADAR Concept Course was conducted in June – July, 2015.

3-6. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the above mentioned courses and all the trainees obtained more than 70% in the comprehension test.
3-7. Improve the training courses based on the results from the monitoring and evaluation	

### 4) Improvement of Electrical/Mechanical Engineering Training

PDM Activities	Results
4-1. Review current training syllabus and training materials	All the syllabuses have been reviewed. Most of them were made in 1980s.
4-2. Improve/develop training syllabus and training materials	Two training syllabuses and materials will be developed. The progress of preparation of each material is shown in the following 1-3. Achievement of Output
4-3. Conduct training of instructors	One training course was conducted in April 2015.
4-4. Implement improved training courses	Training courses of E & M were conducted in April 2015.
4-5. Conduct monitoring and evaluation of the trainings implemented by the trained instructors	Evaluation of the training was made through the above mentioned courses and all the trainees obtained more than 70% in the comprehension test.
4-6. Improve the training courses based on the results from the monitoring and evaluation	

## 1-3. Achievement of Output

Achievement of the Project outputs is observed according to the PDM indicators.

Output 1 Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.

- Output 2 Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.
- Output 3 Training of Electronic Engineering is improved.
- Output 4 Training of Electrical/Mechanical Engineering (E/M Eng) is improved.

Indicators for the	PDM Outputs		Achievement as of 30 th Sept. 2015
-Training syllabuses and training materials are improved or developed for the following number of courses:	ATC/FIS: 6	1. 2. 3. 4. 5. 6.	051: ATC Basic: 80% 052: Aerodrome Control: 100% 053: Approach Control: 90% 055: Area Control: 60% CNS/ATM for ATC: 80% Flight Information Service: 60%
	AIS/ACS: 2	1.	AIS & ACS (combined): 60%
	Electronic Eng.: 6	1. 2. 3.	General Communication Equipment: 100% Navigation Concept Course: 100% Park Air VHF: 100%

## Achievement of Outputs

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		<ol> <li>4. Normarc ILS: 80%</li> <li>5. Maru VOR/DME: 80%</li> <li>6. CNS/ATM: 80%</li> </ol>	
	E/M Eng.: 2	<ol> <li>Theory of Airfield Lighting: 90%</li> <li>Theory of UPS: 90%</li> </ol>	
-The following number of DCA officers successfully complete supervisor/advanced/ specialist training:	Instructors: 10 ^{*1} ATC/FIS: 4 ^{*1} AIS/ACS: 4 ^{*1}	<ul> <li>8 officers successfully completed "Team Resource Management Course" in South Africa.</li> <li>4 officers successfully completed "Supervisory Management Course" in Kenya.</li> <li>8 officers successfully completed "Instructor Development Course" in Kenya.</li> </ul>	
	Aeronautical Cartography: 2* ²	To be held in November 2015.	
	PANS/OPS: 2* ²	4 officers successfully completed "PANS/OPS Conventional Flight Procedure Design for Non-Precision Approach"	
	ILS Maintenance: 4*2	To be held in February 2016.	

*1: Overseas trainings

*2: In-country trainings

## 1-4. Achievement of the Project Purpose

Achievement of the Project purpose: "Trainings for air navigation services are implemented to effectively utilize the improved air navigation facilities." is observed according to the PDM indicators as follows:

## Achievement of the Project Purpose

Indicators for the Project Purpose		Achievement as of 30 th Sept. 2015
- The following number of	ATC/FIS: 6	0
instructors can conduct the improved/developed training	AIS/ACS: 4	0
courses (fulltime + part time)	Electronic Eng.: 4	0
	E/M Eng.: 4	0
- Comprehension test score of trainees who receive the	Computer Based Training (CBT) (6 participants)	Not scored
improved/developed training courses exceeds at least 70%.	Test Equipment Course (5 trainees)	87.1%
courses exceeds at least 70%.	Electrical & Mechanical Training (6 trainees)	93.7%
	Flight Procedure Design Training (4 s)	80.0%
	General Communication Course (6 trainees)	89.6%
	Park Air T6 VHF Radio Course (6 trainees)	85.3%
	052 Aerodrome (5 trainees)	86.1%
	CVOR/DVOR/ILS/DME/RADAR Concept (5 trainees)	86.8%

## 1-5. Changes of Risks and Actions for Mitigation

No major changes were seen in the PDM Important Assumptions; therefore no special actions need to be taken. However, as for the Pre-conditions, new trainees were not recruited yet, which may affect the project outcomes.

### (1) Pre-conditions

PDM Pre-conditions	Current Situations	Actions for Mitigation
1) DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project.	<ul> <li>Project office space was provided at the time of initiation of the work in Malawi in June 2014.</li> <li>Counterpart personnel (C/P) were allocated in the Project before the commencement of the project.</li> </ul>	<ul> <li>No special actions need to be taken.</li> </ul>
2) New trainees are recruited as scheduled.	<ul> <li>-12 new staff for ATC were recruited in early October 2015.</li> <li>-Recruitment for 12 new staff for Engineer is in progress. They will join DCA by the end of October 2015.</li> </ul>	- No special actions need to be taken.

## (2) Important Assumption when proceeding from Activities to Outputs

Important Assumption	Current Situations	Actions for mitigation
1) DCA implements the Project with sufficient ownership.	- DCA's ownership was seen.	<ul> <li>No special actions need to be taken.</li> </ul>

## (3) Important Assumptions when proceeding from Outputs to the Project Purpose

Important Assumption	Current Situations	Actions for mitigation
1) No major change of the international standards on air navigation services occurred.	<ul> <li>No major changes were seen. It did not affect to the Project operation.</li> </ul>	<ul> <li>No special actions need to be taken.</li> </ul>

## 1-6. Progress of Actions undertaken by JICA

No remarkable issues.

## 1-7. Progress of Actions undertaken by the Government of Malawi

In May 2015, the Government of Malawi/DCA began procedures to recruit new students for ATC, Electronics Engineer, Electrical Engineer and Mechanical Engineer. New students for ATC will be selected and ATC training will start at SOA from October 2015. Recruitment for the new students for Engineer is still in progress. They will be selected and training will start by mid-November 2015.

## 1-8. Progress of Environmental and Social Considerations (if applicable)

No remarkable issues.

- **1-9.** Progress of Considerations on Gender/ Peace Building/ Poverty Reduction (if applicable) No remarkable issues.
- 1-10. Other remarks or issues related to the project (such as other projects of JICA, activities of counterparts, other donors, private sectors, NGOs, etc.)
  - (1) Project for the Improvement of Aviation Safety Oversight in Malawi by European Aviation Safety Agency (EASA)

EASA is currently assisting DCA and the Ministry of Transport and Public Works improving safety oversight capacity of civil aviation. There is no overlapping of activities between JICA project and EASA project.

- (2) Airport Safety and Security Equipment Project by European Investment Bank (EIB) EIB is funding the procurement of safety equipment such as fire trucks at Kamuzu International Airport. There is no overlapping of activities between JICA project and EIB project.
- (3) The Project for Expansion of the Terminal Building at Kamuzu International Airport by JICA Embassy of Japan in Malawi announced that the Japanese government will conclude Exchange of Note (EN) concerning "The Project for Expansion of the Terminal Building at Kamuzu International Airport" in November 2015.

This project will include installation of the aircraft surveillance system. Current capacity development project will strengthen the foundation for the introduction of radar control services; however, will not include training for operation and maintenance of the aircraft surveillance system. Therefore, DCA should plan means for capacity development for Radar Control services in near future.

## 2. Delay of Work Schedule and/or Issues (if any)

## 2-1. Detail

Despite a few months of delay, new staff for ATC will be recruited in early October 2015 and training will start from 12th October 2015. Other new staff for Engineer's recruitment is in progress and selection will be finalized and training will start by mid-November 2015.

## 2-2. Cause of Delay

Recruiting process had been delayed due to lack of funds for recruitment.

## 2-3. Actions to be taken

Project counterparts shall complete the remaining recruitment process within November 2015.

## 2-4. Roles of Responsible Persons/ Organization (JICA, Gov. of Malawi, etc.)

DCA and the Government of Malawi are responsible for recruitment of new staff.

## 3. Modification of the Project Implementation Plan

## 3-1. Plan of Operation (PO)

No major modification was made.

## 3-2. Other Modifications on Detailed Implementation Plan

(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of *R*/D and PDM, the team may propose the draft.)

Some changes made, mainly in "Objectively Verifiable Indicators", were discussed and agreed among DCA and JICA Team at the 4th JCC meeting which were as follows (*<u>underlined</u> = changes made).

## 1) Overall Goal

Define the Objectively Verifiable Indicator as "The targeted number of trainees (serving officers and new staff) who will successfully complete the improved/developed training courses between <u>2016</u> and <u>2020</u> is at least 80".

## 2) Project Purpose

Change minimum score of comprehension test from 80% to 70% in accordance with international standard of ICAO.

Replace the Means of Verification "Terminal Evaluation Report" with "Project Completion Report". In addition, insert "- Results of comprehension test score of trainees".

## 3) Outputs

Delete the Objectively Verifiable Indicator "Comprehension test score of trainees who receive the improved/developed training courses exceeds at least 80%" as this indicator duplicates with that of the Project Purpose.

The revised PDM is attached as Project Monitoring Sheet I.

**4.** Preparation of the Government of Malawi towards the completion of the Project Not applicable.

## II. Project Monitoring Sheet I (PDM) & Sheet II (PO) as attached

Outputs (Objectives to be realized by Activities to achieve the Project Purpose)           1. Training of Air Traffic Control (ATC) and Flight Information Services (FIS) is improved.           2. Training for Aeronautical Information Services (AIS) and Aeronautical Communication Services (ACS) is improved.           3. Training of Electronic Engineering is improved.           4. Training of Electrical/Mechanical Engineering (E/M Eng) is	improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6	<ul> <li>No major change of the international standards on air navigation services is occurred.</li> </ul>	
oject Purpose) Training of Air Traffic Control (ATC) and Flight Information Services IS) is improved. Training for Aeronautical Information Services (AIS) and pronautical Communication Services (ACS) is improved. Training of Electronic Engineering is improved.	improved or developed for the following number of courses: ATC/FIS: 6 AIS/ACS: 2 Electronic Eng.: 6 E/M Eng.: 2 - The following number of DCA officers successfully	international standards on air navigation services is occurred.	

#### Project Design Matrix

Means of Verification

- Training records

- Monitoring Sheet

Report

- Results of

-Project Completion

comprehension test

score of instructors

Important Assumption

Trained counterpart

air navigation services.

national policy on air

occurred.

personnel continue to be

engaged in the activities of

No major change in the

navigation services within

the national plan/ strategy is

**Objectively Verifiable Indicators** 

The following number of officers successfully

complete the improved/developed training courses

The following number of instructors can conduct

Comprehension test score of *instructors* exceeds

the improved/developed training courses (fulltime +

#### Project Title: The Project for Capacity Development for Air Navigation Services in the Republic of Malawi

Implementing Agency: DCA

Project Site: School of Aviation

Overall Goal (Long-term objective)

utilize the improved air navigation facilities.

of air navigation services.

#### Target Group: Air Traffic Controllers, Flight Information Officers, Aeronautical Information Services Officers, Aeronautical Communication Officers, Electronic Engineers and Electrical/Mechanical Engineers of DCA

#### Period of Project: 2 years (24/04/2014-20/05/2016)

Project Purpose (Objective at the end of the Project) Trainings for air navigation services are implemented to effectively

Narrative Summary

Training by the trained instructors is sustainably conducted for officers

Model Site:

by 2020 10 officers

part time)

at least 80%.

ATC/FIS: 6 (1)

AIS/ACS: 4 (2)

E/M Eng.: 2 (1)

Electronic Eng.: 4 (1)

Number in ( ) indicates current situation.

Version 3

Achievement

Dated 30 September 2015

Remarks

Activities	Inputs		Pre-Conditions
(Specific actions to produce each Output by use of Inputs)	The Japanese Side	The DCA Side	DCA implements the
Improvement of ATC and FIS Training 1-1. Review current training syllabus and training materials 1-2. Improve/develop training syllabus and training materials 1-3. Conduct training of instructors 1-4. Implement improved training courses 1-5. Implement supervisor training	The Japanese Side           - Experts           Chief Advisor/Training Manager           ATC Training Specialist           AIS/ACS Training Specialist           Electronic Maintenance Training Specialist           Electrical/ Mechanical Maintenance Training           Specialist           Others as necessary           - Training materials           - Training equipment           - Overseas training	The DCA Side - Counterpart Personnel - Support Staff - Project Office Space - Project Office Expenses of Counterpart Personnel within Malawi - The others mentioned in Appendix1, II, 6, of R/D	DCA implements the Project with sufficient ownership.     Pre-Conditions - DCA secures budget necessary for preparation of the Project Office and allocation of counterpart personnel before the commencement of the Project.     - New trainees are recruited as scheduled.

#### Monitoring Sheet II Plan of Operation

Project Title: The Project for Capacity Development for Air Navigat	ion Servic	oc in	the Denuk	blic of N			ig ene	et II Plai			<i>,</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,														Dated 30 Sept	tember 2015 Initoring
Inputs from JICA	YY/M	M '14/	/4 5 6	67	8	9		11 12			3 12th	4	5	6 7	7 8	9	10	11	12 '1	16/1	2 3		5 26th	Remarks	Issue	Solution
. Expert	Mont		t 2nd 3r	10 4th	5th	6th	7th	8th 9th	10th	11th	12th	13th /	4th 15	5th 16	5 m 17t	18th	19th	20th	21st 2	2nd 2	3rd 24th	h 25th	∠otn			
Chief Advisor	- Plan				(60)					(91)					(11	8)										
Deputy Chief Advisor/Capacity Development Specialist	Plan ⊣ Actua				(00)					(14)			(18)											-		
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist - 1	ې Plan ط Actua				(43)				(45)	(14)			(10)													
Air Traffic Controller (ATC), Aeronautical Information Service (AIS) Training Specialist - 2	+ Plan				(52)				(45)					(4	0)										_	
Communications, Navigation and Surveillance (CNS) Maintenance Training Specialist	ط <mark>Actua</mark> γ Plan			(27)				(19)					(8	54)											_	
	– Actua ₀ Plan				(60)					(89)					(70)								┼┼┼		_	
Electrical/Mechanical Maintenance Training Specialist	⊢ Actua			┝┼┼┼┼				(30)					(29)		┝┼┼┼										_	
Flight Procedure Design Specialist . Training Equipment	Actua	1											(30)	)												_
PC-based Simulator Training System for Air Traffic Controllers	Plan																								_	
Computer Based Training (ATC)	Plan																								_	
Test Instrument and Equipment	Actua																								_	
Learning Aids and Office Equipment	Actua Plan																								_	
. Overseas Training	Actua																									
Team Resource Management Training	Plan Actua		┽┽┽┽┽┥	╞┼┼┼┼																				8 instructors completed in Jan 2015		
Supervisory Management Training	Plan		┼┼┼┼┼┼	╞╪╪╪╪			╪╪╪╪╪	┇┋											┇┇┇					4 instructors completed in Feb 2015	1	
Instructor Development Training	Actua Plan Actua																							8 instructors completed in Aug 2015	1	
Advance Instructor Training	Plan																							Already arranged for 6 instructors	_	
nputs from DCA	Actua YY/M		4 5 6	6 7	8	9	10	11 12	'15/1	2	3	4	5	6 7	7 8	9	10	11	12 '1	16/1	2 3	4	5	scheduled in 5 - 23 Oct 2015 Remarks	Issue	Solution
	Mont	h 1st	t 2nd 3r	rd 4th	5th	6th	7th	8th 9th	10th	11th	12th	13th	4th 15	5th 16	5th 17t	h 18th	19th	20th	21st 2	2nd 2	3rd 24th	h 25th	26th	Remarks	13500	Colution
Project Director Mr. A. C. Mtilatila, Director of Civil Aviation, DCA	Plan																									
Project Manager (TBD. Vacant as of 30th September 2015) OUP roject manager (TBD. Vacant as of 30th September 2015)	Plan																							Changed from Mr. Matiya due to retirement in August 2015	_	
Co-Project Manager	Plan																							Acting also as the Project Manager until	1	
Mr. S. P. Galafa, Principal, School of Aviation, DCA Project Coordinator	Actua																							the next person is assigned.	_	
Mr. F. Kholowa, Chief Air Traffic Services Officer, Operation Division Project Coordinator	Actua Plan																							Changed from Mr. Bongwe due to	_	
Mr. R. Kanunkha, Assistant Chief Aeronautical Telecommunications Engineer (ACATE), Operation Division <u>ATC and FIS Training</u>	Actua Plan																						┼┼┼	personnel transfer in June 2015	_	
Mr. S. Galafa, Principal lecturer of ATS, School of Aviation, DCA AIS and ACS Training	Actua																								_	
Mr. R. Y. Malanga, Lecturer School of Aviation, DCA AIS and ACS Training	Actua	al																							_	
Mr. S. Liundi, Lecturer School of Aviation, DCA Aeronautical/Telecommuniction Engineering (CNS) Training	Actua	al																						Vacant due to personnel transfer after	_	
Mr. R. Kanunkha, Senior CNS Lecturer, School of Aviation, DCA	Actua	al																						July 2015	_	
Aeronautical/Telecommuniction Engineering (CNS) Training Mr. C. F. Betenigo, Electronics Engineer, KIA	Plan Actua	al																						1		
Electrical/ Mechanical Engineering Training Mr. Mtonga, Electrical Engineer, KIA	Actua	al																								
Instructor-1	Plan																								_	
Ms. L. Manondo, Air Traffic Controller, KIA Instructor-2	Actua																								_	
ATC& Mr. D. Zamaere, Air Traffic Controller, KIA FIS Instructor-3	Actua	al																						<u> </u>	-	
Mr. F. Chisepeya, Air Traffic Controller, KIA Instructor-4	Actua	al																						1	-	
Mr. J. Kazito, Air Traffic Controller, CIA Instructor-1	Actua	al																						1	4	
AIS& Mr. R. Nkosi, Air Crew Briefing Officer, DCA HQ.	Actua	al																						1	4	
ACS Instructor-2 Mr. N. B. Kaliyasi, Communication Officer, KIA	Actua	al																						1	4	
Electronic Engineering (CNS) Instructor CNS Electronics Engineer, Chileka Airport	Actua	al																						1	4	
Mr. F. Nyanda Chisale, Electronics Engineer, KIA		al																						1		
E/M Electrical/Mechanical Engineering Instructor Mr. O. Yokonia, Electrical Engineer, Chileka Airport	Plan Actua																						ШŦ	<u> </u>		
	Plan	$\Pi$										$+ \Pi$	+++												FIS, AIS and ACS	FIS will be integrated
3-1 Air Traffic Controllers (ATC) 12 students	Actua	al			ĦĦ	<b>FFF</b>				HH	HH													Due to restructuring of DCA, FIS ha been integrated into ATC.		into ATC.
3-2 Flight Information Service (FIS) 8 students	Actua	al																							financial reason.	merged to enhance and strengthen the A
3-3 Aeronautical Information Service (AIS) 10 students	Actua	al																						DCA will not recruit new students for	r	services system.
3-4 Aeronautical Communications (ACS) 6 students		al			╞╋																			AIS and ACS Officers.	Recruitment of CNS	
3-5 Electronics Engineers (CNS) 8 students	Actua	al																						1	and E&M students is delayed.	
3-6 Electrical/Mechanical (E&M) Engineers (2/2 students)																								4	uciayou.	and will be finalized
1 ·	Plan	1#			HĤ									$\square$	HH								$\square$	The project provided the latest document from	1	NUMERICIPI ZUTA
4-1 Update of Manual of Air Traffic Services	Actua	al				H H																			)	
4-2 Update of CNS Equipment Maintenance Procedures										_														Equipment & Maintenance Training.		

## <u>Version 5</u> Dated 30 September 2015

5. Project Office		<del></del>	<u></u>		1																				1		<b>1</b> 1
5-1 Project Office	┼┼┼┼┼	Plan																									
5-2 ATC Simulator Room	┼┼┼┼	Actu Plan																									
	┼┼┼┼┼	Actu																									
5-3 CBT Room		Actu	al																								
5-4 Electronic Training Laboratory																											
Activities			M '14/4	-	-	7	8 9	10			15/1 2							10				3		5		e Organization	Achievements
Sub-Activities Output 1-A: Improvement of Air Traffic Control Assistant/ Basic Course Training		Mont	n 1st	2nd	3rd	4tn 5	ith 6th	7th	8th	9tn 1	0th 11tl	n   12th	13th	14th 15	otn   16tr	1/th	18th	19th   2	20th 2	21st   22	na 23r	d 24th	1 251	1 26th	Japan	Malawi	Countermeasures
1-A-1 Review current training syllabus/materials		Plan Actu					╂╂╂																$\square$		JICA		Training materials to be used as a base for
1-A-2 Improve/develop training syllabus/materials		Plan																							JICA		developing basic Air Traffic Control Course
1-A-3 Conduct training of instructors	┼┼┼┼┼	Actu																							JICA	DCA	have been procured.
		Actu					╈╋																		JICA	DCA	The materials are being localized by JICA
1-A-4 Implement improved training courses		Actu																							JICA		Expert & SOA Instructors to suit
1-A-5 Implement supervisor training (Overseas training)		Actu	al																							DCA	Malawian context. The course based on
1-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Actu	al																							DCA	these materials will start from early
1-A-7 Improved training based on the result from the monitoring and evaluation		Plan Actu																								DCA	October 2015 for the new ATC students
Output 1-B: Improvement of Aerodrome Control Training	11111	Plan							1111					 11111					1111	11111	1111	11111					Training materials for
1-B-1 Review current training syllabus/materials		Actu	al																						JICA	<u> </u>	Aerodrome Control
1-B-2 Improve/develop training syllabus/materials		Plan Actu	al																						JICA		Training were developed by JICA
1-B-3 Conduct training of instructors		Plan Actu																							JICA	DCA	Expert.
1-B-4 Implement improved training courses		Plan Actu			HH				+++	++														HH	JICA	DCA	Training for instructors on Aerodrome Control
1-B-5 Implement supervisor training (Overseas training)		Plan																								DCA	course finished in July 2015.
1-B-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	┼┼┼┼┼	Actu																								DCA	l
	┼┼┼┼┼	Actu																									
1-B-7 Improved training based on the result from the monitoring and evaluation		Actu	al																							DCA	
Output 1-C: Improvement of Approach Control (Procedural) Training 1-C-1 Review current training syllabus/materials	ШШ	Plan										Щ					Щ					Щ			JICA		Training material for
1-C-2 Improve/develop training syllabus/materials	┼┼┼┼┼	Actu																							JICA		Approach Control Procedural Training is
		Actu																								501	being developed by JICA Expert and is
1-C-3 Conduct training of instructors	+++++	Actu	al																						JICA	DCA	almost finished.
1-C-4 Implement improved training courses		Actu	al																						JICA	DCA	This training will be conducted in February
1-C-5 Implement supervisor training (Overseas training)		Plan Actu																								DCA	2016 by DCA instructors with the
1-C-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan Actu																							_	DCA	support from JICA
1-C-7 Improved training based on the result from the monitoring and evaluation		Plan Actu					┝╋╋╋																		_	DCA	Expert.
Output 1-D: Improvement of Area Control (Procedural) Training	<u></u>											<u>.  </u>								<u> </u>				:   : : : 			
1-D-1 Review current training syllabus/materials		Plan Actu																							JICA		Training material for Area Control
1-D-2 Improve/develop training syllabus/materials		Plan Actu																							JICA		Procedural Training is being developed by
1-D-3 Conduct training of instructors																									JICA	DCA	JICA Expert.
1-D-4 Implement improved training courses	┼┼┼┼┼	Plan																							JICA	DCA	This training will be conducted in March
1-D-5 Implement supervisor training (Overseas training)	┼┼┼┼┼	Actu																								DCA	2016 by DCA instructors with the
	┼┼┼┼┼	Actu			HH	┝╋╋╋		++++	$+ \Pi$										+++	++++				┝┼┼┼┤			support from JICA
1-D-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	$\left  \right  \left  \right  \left  \right  \right $	Actu	al																						1	DCA	Expert.
1-D-7 Improved training based on the result from the monitoring and evaluation																										DCA	
Output 1-E: Improvement of CNS/ATM Technology for ATC Training	11111	Plan																							1104	+	Base material for
1-E-1 Improve/develop training materials	┼┼┼┼┼	Actu	al																					HH	JICA		CNS/ATM for ATC training is being
1-E-2 Conduct training of DCA staffs		Actu	al																						JICA	-	prepared by JICA Expert.
1-E-3 Conduct monitoring and evaluation of the trainings			al																						JICA	DCA	This training material is
1-E-4 Improved training based on the result from the monitoring and evaluation		Plan Actu																							JICA	DCA	being localized to suit
1-E-5 Implement supervisor training (Overseas training)		Plan Actu																		$\Pi$	+	$\square$				DCA	to Malawian context by DCA instructors & JICA
1-E-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan																							1	DCA	Expert.
1-E-7 Improved training based on the result from the monitoring and evaluation	┼┼┼┼┼	Plan																								DCA	
Output 1-F: Improvement of Aeronautical Cartography Training		Actu	al					1111										1111				<u>    </u>					Departure Procedure &
1-F-1 Conduct training of DCA staffs		Plan																							Malawi	g by JICA Expert in	Cartography will be conducted in November 2015.
	11111							1 1 1 1																			
Output 1-G: Improvement of Flight Procedure Design (Conventional Flight Procedure) Training	 	Plan									<del></del>	*****	_												Change to training	by JICA Expert in	Conventional Flight Procedure Design (Approach) training was

Image: product in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the stat																										
	Activities	-11111F				) 7 d 4th	8 5th														-				Achievements	Issue &
No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       No.       N	Output 1-H: Improvement of Flight Information Services Training			.3. 2					0.11			1201					1301	2001	2136	-2110 2	2411	2001 20	Japan			
	1-H-1 Review current training syllabus/materials																						JICA		ATC is under	
	1-H-2 Improve/develop training syllabus/materials																						JICA	DCA		1
	1-H-3 Conduct training of instructors		Plan																				IICA	DCA	developed as a part of	f
	1-H-4 Implement improved training courses																						1	DCA	by JICA Expert.	
	1-H-5 Implement supervisor training (Overseas training)		Plan																				JICA	DCA		
Image: Note:	1-H-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors		Plan																				JICA	DCA		
Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water <td>1-H-7 Improved training based on the result from the monitoring and evaluation</td> <td></td> <td>DCA</td> <td></td> <td></td>	1-H-7 Improved training based on the result from the monitoring and evaluation																							DCA		
Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water       Note water <td>Activities</td> <td></td> <td>Y/MM</td> <td>14/4</td> <td>5 6</td> <td>3 7</td> <td>8</td> <td>9 10</td> <td></td> <td>12 11</td> <td>V1 2</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>11</td> <td>12</td> <td>'16/1</td> <td>2 3</td> <td></td> <td>Responsib</td> <td>le Organization</td> <td></td> <td>Issue &amp;</td>	Activities		Y/MM	14/4	5 6	3 7	8	9 10		12 11	V1 2	3						11	12	'16/1	2 3		Responsib	le Organization		Issue &
		<u>-     </u>		-		d 4th	i 5th														3rd 24th				Achievements	Countermeasures
	Output 2-A: Improvement of Basic AIS Officer Training		Plan														•					1			Instructor training was	
1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	2-A-1 Review current training syllabus/materials																								carried out through	
30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30       30 <td< td=""><td>2-A-2 Improve/develop training syllabus/materials</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>JICA</td><td>DCA</td><td></td><td></td></td<>	2-A-2 Improve/develop training syllabus/materials																						JICA	DCA		
	2-A-3 Conduct training of instructors		Actual																				JICA	DCA	will be conducted in	
1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	2-A-4 Implement improved training courses																						JICA	DCA	November 2013.	
	2-A-5 Implement supervisor/advanced/specialist training (Overseas training)																							DCA		
	2-A-6 Conduct monitoring and evaluation of the trainings implemented by the trained instructors	╢║║	Plan Actual		HH				±₩										±₩				IICA	DCA		
	2-A-7 Improved training based on the result from the monitoring and evaluation																							DCA		
Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate              Rate	Ordenis 9 Dr. January among of Danis Association Community attack Officer Technic							- • • •																		
Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball       Ball	Output 2-B: Improvement of Basic Aeronautical Communication Officer Training 2-B-1 Review current training syllabus/materials																			Ш			JICA			1
bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       bit       b			Plan																			<u><u></u></u>		DCA	AIM training by the	
1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <th1< th="">         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1</th1<>																										-
213       3       3       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1																									will be conducted in	er
Base       Contraction       Bin			Actual Plan																						November 2015.	
Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math       Math																									_	
Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1       Image: 1 <th< td=""><td></td><td>A</td><td>Actual</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td></th<>		A	Actual																						_	
Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back definition         Back defin	2-B-7 Improved training based on the result from the monitoring and evaluation																							DCA		
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Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main       Main																									<ul> <li>Achievements</li> </ul>	
Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       Add       A	Sub-Activities	<u></u>	lonth	1st 2	nd 3r	d 4th	1 5th	6th 7th	h 8th	9th 10	th 11th	12th	13th 14t	h 15th	16th 1	7th 18th	19th	20th	21st [	zzna z	3rd 24th	25th 26	h Japan		Achievements	Countermeasures
A. A. Schlartning fullification       Part 1       Part 1 <td>Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials</td> <td></td> <td><u> </u></td> <td>1st 2</td> <td>nd 3r</td> <td>d 4th</td> <td>5th</td> <td>6th 7th</td> <td>h 8th</td> <td>9th 10</td> <td>th 11th</td> <td>12th</td> <td>13th   14t</td> <td>h 15th</td> <td>16th   1</td> <td>7th 18th</td> <td>19th</td> <td>20th</td> <td>21st   2</td> <td></td> <td>3rd 24th</td> <td>25th 26</td> <td></td> <td></td> <td>Training material was</td> <td>Carrying out exercise</td>	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials		<u> </u>	1st 2	nd 3r	d 4th	5th	6th 7th	h 8th	9th 10	th 11th	12th	13th   14t	h 15th	16th   1	7th 18th	19th	20th	21st   2		3rd 24th	25th 26			Training material was	Carrying out exercise
J.A.4       Impact lypic. Lypic. J. 16)       Impact lypic. Lypic. J. 16)       Impact lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypic. Lypi	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials		Plan Actual Plan	1st 2													19th	20th	21st 2		3rd 24th	25th 26	JICA		Training material was developed by JICA	Carrying out exercise with the equipment is difficult because the
A.A.       Test in the product spect s	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials	 A       	Plan Actual Plan Actual Plan																				JICA JICA		Training material was developed by JICA Expert. Training with the	Carrying out exercise with the equipment is difficult because the equipment is in operation.
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3-5-0       Conduct monitoring and evaluation       JIA       JIA <td>Sub-Activities         Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C、 3-D、 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement improved training courses</td> <td></td> <td>Plan Cuctual Plan /td> <td></td> <td>JICA JICA JICA JICA JICA JICA JICA JICA</td> <td>DCA DCA DCA DCA DCA DCA</td> <td>Training material was developed by JICA Expert. 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3-D-1       Improved develop training materials       Impro	Sub-Activities         Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improvement of Concept Courses for ILS/DVOR/DME/Radar         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement improved training courses         3-B-5       Implement specific training (Implement by 3-C, 3-D, 3-E)         3-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-5       Implement specific training (Implement by 3-C, 3-D, 3-E)         3-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-7       Improved training based on the result from the monitoring and evaluation         Output 3-C: Improvement of Maintenance Courses for Park Air VHF		Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan C																				JICA JICA JICA JICA JICA JICA JICA JICA	Malawi DCA DCA DCA DCA DCA DCA DCA DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert & DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert. Training using the material was developed by JICA Expert & DCA instructor	Carrying out exercise with the equipment is difficult because the equipment is in operation. There is no spare equipment for training Project used dummy transmitter & receiver which were provided I JICA.
3-D-2 Conduct training of DCA starts	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-A-7         Improved training based on the result from the monitoring and evaluation           Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar           3-B-1         Review current training syllabus/materials           3-B-2         Improve/develop training syllabus/materials           3-B-3         Conduct monitoring and evaluation of the training implemented by the trained instructors           3-B-4         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-B-5         Implement equipment specific training implemented by the trained instructors           3-B-7         Improved training based on the result from the monitoring and evaluation           Output 3-C: Improvement of Maintenance Courses for Park Air VHF           3-C-1         Improve/develop training materials           3-C-2 <td></td> <td>Plan Cotual Plan C</td> <td></td> <td>JICA JICA JICA JICA JICA JICA JICA JICA</td> <td>Malawi DCA DCA DCA DCA DCA DCA DCA DCA DCA DCA</td> <td>Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert &amp; DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert &amp; DCA instructor</td> <td>S</td>		Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan Cotual Plan C																				JICA JICA JICA JICA JICA JICA JICA JICA	Malawi DCA DCA DCA DCA DCA DCA DCA DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert & DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert & DCA instructor	S
3-D-3 Conduct monitoring and evaluation of the trainings DCA JICA expert in November 2015.	Sub-Activities         Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers         3-A-1       Review current training syllabus/materials         3-A-2       Improve/develop training syllabus/materials         3-A-3       Conduct training of instructors         3-A-4       Implement improved training courses         3-A-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-A-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-A-7       Improved training based on the result from the monitoring and evaluation         Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Redar         3-B-1       Review current training syllabus/materials         3-B-2       Improve/develop training syllabus/materials         3-B-3       Conduct training of instructors         3-B-4       Implement improved training courses         3-B-5       Implement equipment specific training (Implement by 3-C, 3-D, 3-E)         3-B-6       Conduct monitoring and evaluation of the trainings implemented by the trained instructors         3-B-7       Improved training based on the result from the monitoring and evaluation         Output 3-C: Improvement of Maintenance Courses for Park Air VHF         3-C-1       Improve/develop training materials         3-C-2       <		Plan																				JICA JICA JICA JICA JICA JICA JICA JICA	Malawi DCA DCA DCA DCA DCA DCA DCA DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert & DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert & DCA instructor	Carrying out exercise with the equipment is difficult because the equipment is in operation. There is no spare equipment for training Project used dummy transmitter & receiver which were provided t JICA.
	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-A-7         Improved training based on the result from the monitoring and evaluation           Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar           3-B-1         Review current training syllabus/materials           3-B-2         Improve/develop training syllabus/materials           3-B-3         Conduct monitoring and evaluation of the training implemented by the trained instructors           3-B-4         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-B-5         Implement equipment specific training implemented by the trained instructors           3-B-7         Implement of Maintenance Courses for Park Air VHF           3-C-1         Improved training based on the result from the monitoring and evaluation           Output 3-C: Improvement of Maintenance Courses for Park Air VHF		Plan Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual Cuctual C																				JICA JICA JICA JICA JICA JICA JICA JICA	Malawi DCA DCA DCA DCA DCA DCA DCA DCA DCA DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert & DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert & DCA instructor Training material was developed by JICA Expert & DCA instructor Training material was developed by JICA Expert and the training was conducted by DCC instructor and JICA Expert in June 2015.	Carrying out exercise with the equipment is difficult because the equipment is in operation. There is no spare equipment for training Project used dummy transmitter & receiver which were provided t JICA.
	Sub-Activities           Output 3-A: Improvement of General Communication Maintenance for Electronic Engineers           3-A-1         Review current training syllabus/materials           3-A-2         Improve/develop training syllabus/materials           3-A-3         Conduct training of instructors           3-A-4         Implement improved training courses           3-A-5         Implement equipment specific training (Implement by 3-C, 3-D, 3-E)           3-A-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-A-7         Improved training based on the result from the monitoring and evaluation           Output 3-B: Improvement of Concept Courses for ILS/DVOR/DME/Radar           3-B-1         Review current training syllabus/materials           3-B-2         Improve/develop training syllabus/materials           3-B-3         Conduct training of instructors           3-B-4         Implement improved training courses           3-B-5         Implement specific training (Implement by 3-C, 3-D, 3-E)           3-B-6         Conduct monitoring and evaluation of the trainings implemented by the trained instructors           3-B-7         Improved training based on the result from the monitoring and evaluation           Output 3-C: Improvement of Maintenance Courses for Park Air VHF           3-C-1         Improve/develop training materials		Plan   Cactual   Plan   Cactu																				JICA JICA JICA JICA JICA JICA JICA JICA	Malawi       DCA       DCA	Training material was developed by JICA Expert. Training with the material was conducted in January 2015 to the Electronics Engineers by JICA Expert & DCA instructor. Training material was developed by JICA Expert. Training using the material was conducted in June 2015 to the Electronics Engineer by JICA Expert & DCA instructor Training material was developed by JICA Expert & DCA instructor Training material was developed by JICA Expert and the training was conducted by DC/ instructor and JICA Expert in June 2015. Training material was developed by JICA Expert in June 2015.	Carrying out exercise with the equipment is difficult because the equipment is in operation. There is no spare equipment for training Project used dummy transmitter & receiver which were provided t JICA.

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B-E-1 Improve/develop training materials	ппп	Plan	ПП	ПП	$\square$				ПП									ПΠ		П				Ш		111	ПТ		$\Pi \Pi$		JICA	_		Training material is	
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3-E-3 Conduct monitoring and evaluation of the trainings		Actual	HH																										+++		-		DCA	instructor and JICA	
3-E-4 Improved training based on the result from the monitoring and evaluation		Plan																											ΠD				DCA	Expert in February 2016.	
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tput 3-F: Improvement of New CNS/ATM Technology for Electronic Engineer Training		Diam.	<del></del>																															Tasisian anatosist is	
3-F-1 Improve/develop training materials		Plan Actual		++++																						+++			+++		JICA			Training material is being developed by	
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3-F-2 Conduct training of DCA staffs		Actual	Ш																												JICA			training will be	
3-F-3 Conduct monitoring and evaluation of the trainings		Plan	μц						ĻЦ															ЦЦ					44				DCA	conducted by DCA instructor and JICA	
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tput 4-A: Improvement of Concept Courses for Airfield Lighting System																-																			
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1-A-2 Improve/develop training syllabus/materials		Actual	HH																										+++		JICA			was conducted by JICA	
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4-A-3 Conduct training of instructors		Actual	Ш																												JICA				
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1-A-6 Improved training based on the result from the monitoring and evaluation																									111	111			TT				DCA		
tput 4-B: Improvement of Concept Courses for Uninterrupted Power Supply System (UPSS)																																			
1-B-1 Review current training syllabus/materials		Plan	ДП																										ЩΡ		JICA			Training material was	
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4-B-3 Conduct training of instructors		Actual	<u>tt</u> t					tt						tit	111														ΠT		JICA				
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Set-up the Detailed Plan of Operation		Plan		╄╋	$\square$	++			ЩД			ЩД	$+\Pi$	ЦЦТ		$\Box$	μД	$\square$	ЦЦ	$\downarrow\downarrow\downarrow$		ЦЦ	$\downarrow$	ЦЦ	$\square$	ЦĮ	ЦĹ	ЦŪ	ЩĮ	$\square$	Щ —				
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Submission of Monitoring Sheet		Actual	┢┼┼┼	+++		+++	┽┼┼			++		++		+		$\vdash$	+++			+++							+++								
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## III. Attachment

Annex 1. Abbreviations

**Annex 2. Training Summary** 

- Annex 2-1. ATC 052 Aerodrome Training
- Annex 2-2. Basic Concept for Electrical & Mechanical Training
- Annex 2-3. Flight Procedure (Conventional) Design Training
- Annex 2-4. PC (Microsoft Office) Training
- Annex 2-5. General Communication Training
- Annex 2-6. DVOR/CVOR/DME/ILS/RADAR Concept Training
- Annex 2-7. Park Air VHF Radio Maintenance Training.

## Annex 1

## Abbreviations

- ATC : Air Traffic Control
- AIS : Aeronautical Information Service
- CNS: Communication Navigation Surveillance (Electronics Engineer)
- E/M: Electrical & Mechanical
- ACS: Aeronautical Communication Service
- FIS: Flight Information Service
- DCA: Department of Civil Aviation
- SOA: School of Aviation Malawi
- KIA: Kamuzu International Airport (Lilongwe)
- CIA: Chileka International Airport (Blantye)
- ICAO: International Civil Aviation Organization
- CVOR: Conventional VHF Omni Direction Ranging
- DVOR: Doppler VHF Omni Direction Ranging
- DME: Distance Measuring Equipment
- ILS: Instrument landing System
- CBT: Computer Based Training

### Training Course Summary

Course title:	ICAO 052 Aerodrome Control Course
Schedule:	$1^{st}$ June – $3^{rd}$ July 2015 (5 weeks)
Objective:	To improve ATC instructors' capacity to conduct training through the Aerodrome Control training based on ICAO 052 along with the use of ATC simulator system.

## Syllabus:

- 1. Aerodynamics
- 2. Aviation English
- 3. Search and Rescue
- 4. Aerodrome Control
- 5. Excise Aerodrome Control by Simulator

### Trainees/Instructors:

### [Trainees]

- 1. Mr. CLIFTON J. CHAMPHALE
- 2. Ms. JELIA KALINDA
- 3. Mr. PAUL HARRY LIZIMBA
- 4. Mr. JOSEPH GONANG'OMBE MOYO
- 5. Mr. ROBERT NKOSI

### [Instructors]

- 1. Mr. FREDERICK LYTON CHISEPEYA
- 2. Mr. SIDNEY PETER GALAFA
- 3. Ms. LINDA ANNIE MANONDO
- 4. Mr. DENNIS TELESPHORUS ZAMAERE

Kamuzu International Airport Kamuzu International Airport Kamuzu International Airport Mzuzu Airport DCA Headquarters

Kamuzu International Airport School of Aviation Kamuzu International Airport Chileka International Airport





### Training Course Summary

Basic Concept for Electrical & Mechanical Training Course title: Schedule: 20th - 30th April 2015 (2 weeks) Objective: To acquire knowledge on the basic principles (which are not confined to a certain manufacturer), structure, theoretical mechanism and operation minimum, and recovering priority based on ICAO operational standards for Air Field Lighting and UPS/Generator.

#### Syllabus:

#### **Diesel Engine Generator**

- 1. **DEGS Serviceability Checks DEGS** Manual and Automatic 2.
- Operation
- 3. AC Generator Serviceability Check
- 4. Diesel Engine Serviceability Check
- Control Cubicle Serviceability Check 5.
- 6. Troubleshooting (JOB-AIDS)

#### UPS

- Preparatory Checks and 1.
- Manual Operation
- Automatic Simulation and 2. Stopping
- 3. Physical and Electrical Checks
- 4. Troubleshooting (JOB-AIDS)

#### Air Field Lighting

- 1. Operational Concept
- Visual Effect 2.
- 3. Human Element
- 4. OPERATING
- REQUIREMENTS
- 5. Lighting Device

## [Trainees]

- 1. Ms. Catherine GIBSON
- 2. Mr. George MLENGANDALE
- 3. Mr. Thomson Precious Malumbo MTONGA
- 4. Mr. Charles Wilned NKOSI
- 5. Mr. Fletcher Misanjo Eneva PHUMISA
- 6. Mr. Oscar Alfred YOKONIA

Chileka International Airport Kamuzu International Airport Kamuzu International Airport Kamuzu International Airport Chileka International Airport Chileka International Airport





## Training Course Summary

Course title:	Conventional Flight Procedure Design (Non-Precision Approach) Course
Schedule:	$5^{\text{th}} - 28^{\text{th}}$ May 2015 (4 weeks)
Objective:	To acquire knowledge on basic flight procedure design based on non- precision approach by conventional navigation-aid targeting ATC and AIP officers.

## Syllabus:

- 1. Flight Procedure Design Concept
- 2. General Regulations (Conversion IAS to TAS, Truck Guidance, Minimum Separation, Fix Point Error, Circling Area)
- 3. Design of STAR by Conventional Navigation
- 4. Design of VOR Approach & NDB Approach
- 5. Design of Circling Approach Area
- 6. Design of Basic Circling Approach
- 7. Design of  $45^{\circ}/180^{\circ}$  turning
- 8. Design of MSA
- 9. Design & Evaluation of Visual Segment Surface

### Trainees:

1. Stephen Donald MKANDAWIRE International Airport Chief Air Traffic Controller, Kamuzu

- 2. Janet Tiyesie MPHANDE
- Air Traffic Controller, Kamuzu International Airport Air Traffic Controller, Chileka International
- Bosco Yokonia NG'OMA Airport
   Robert NKOSI
- Air Traffic Management, Department of Civil Aviation





## Training Course Summary

Course title: PC (Microsoft Office) Training Course

Schedule: 21st-24th April 2015 (4 days)

Objective: To improve computer literacy of the instructors at the School of Aviation and DCA officers.

Syllabus:

- 10. Using Computer & UPS devices
- 11. Microsoft Office Word
- 12. Microsoft Office Excel
- 13. Microsoft Office Power-Point

Trainees:

- 1. Mr. Fredrick L. CHISEPEYA
- 2. Mr. Nelson B. KALIASI
- 3. Mr. Steven M. S. LIUNDI
- 4. Mr. Rodrick Y. MALANGA
- 5. Ms. Linda Annie MANONDO

ATC, Kamuzu International Airport AIS, Kamuzu International Airport ACS, School of Aviation AIS, School of Aviation ATC, Kamuzu International





### Training Course Summary

Course Title:	General Communications Course
Schedule:	18 th May – 4 th June 2015 (3 weeks)
Objective:	To acquire theoretical and new knowledge of General Communication such as Radio, Telephone and Data Network.

Syllabus:

- 1. Introduction
- 2. Wire Technology
- 3. Data Communication
- 4. Digital Network
- 5. Fiber Optics
- 6. Multipoint Distribution System
- 7. Wireless Technology
- 8. Voice Communication System 3025 (Current System in Lilongwe Airport)

### Trainees:

- 1. Mr. EMMANUEL KEN CHAVULA
- 2. Mr. FREDERICK NYANDA CHISALE
- 3. Ms. SELLINA KHAILA
- 4. Mr. PATRICK MANJOMO
- 5. Mr. DEUS MALAIDZA
- 6. Mr. JONES G. F. NYIRENDA

E Chileka International Airport Kamuzu International Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport Karonga Airport





### Training Course Summary

## Course Title: DVOR/CVOR/DME/ILS/RADAR Concept Course

Schedule: 22nd June – 10th July 2015 (3 weeks)

Objective: To acquire knowledge on basic technical concept for the Communication, Navigation and Surveillance System in aviation engineering and to improve capacity of the current engineers.

Syllabus:

- 1. Introduction
- 2. DVOR/CVOR
- 3. DME
- 4. ILS
- 5. RADAR

## Trainees:

- 1. Mr. FREDERICK NYANDA CHISALE
- 2. Ms. SELLINA KHAILA
- 3. Mr. SPARROW RODNEY KUNJE
- 4. Mr. DEUS MALAIDZA
- 5. Mr. YONAM WILA LUKE SILUNGWE

Kamuzu International Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport Chileka International Airport





## Training Course Summary

Course title:	Park Air VHF Maintenance Course
Schedule:	8 th -19 th June 2015 (2 weeks)
Objective:	Study for maintenance technic of PARK-AIR T6 VHF RADIO SYSTEM which is installed Kamuzu International Airport.

Syllabus:

- 1. Introduction
- 2. T6 VHF Receiver
- 3. T6 VHF Transmitter

### Trainees:

- 1. Mr. MIKE CHAVULA
- 2. Mr. OSCAR PATANI CHIHANA
- 3. Mr. FREDERICK NYANDA CHISALE
- 4. Mr. LLOYD TIYEZGE GONDWE
- 5. Ms. SELLINA KHAILA
- 6. Mr. DEUS MALAIDZA

Chileka International Airport Mzuzu Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport





# **ANNEX 6**

# **Project Evaluation**

ANNEX 6-1: Evaluation Grid ANNEX 6-2: Questionnaire (blank) ANNEX 6-3: Summary of Answers to the Questionnaire ANNEX 6-4: Training Evaluation (blank)

ANNEX 6-1: Evaluation Grid Evaluation Grid: Terminal Evaluation Survev on the Project for Capacity Development for Air Navigat

w		Evaluation Question	Evolvotion Cuitorio / Motheod	Data Colloction Mathed
эI	Category	Item		Data Collection Method
		Is Project Purpose understood well by the personnel involved in the Project?	5-rank Self-Evaluation	Questionnaires to Experts & C/P
		Are roles of each counterparts/task force members mutually understood well?	5-rank Self-Evaluation	Questionnaires to Experts & C/P
	Ammonitorioso	Is involvement level of counterparts/task force members in the Project high?	5-rank Self-Evaluation	Questionnaires to Experts & C/P
ssəbor	Appropriateness of Project Management	Was there no problem in management of the Project (monitoring system, decision making process, functions of JICA Head Office and Malawi Office, communications within the Project members, etc.)	5-rank Self-Evaluation	Questionnaires to Experts & C/P
rq noit				
nenta	Appropriateness	Is the leadership of Activities being sifted from JICA Experts to the counterpart/task force members?	(Qualitative Evaluation: Transfer of Initiative)	Questionnaires to Experts & C/P
ıəlqml	or recrincat Transfer	Are the technologies being transferred to staff other than Taskforce members?	(Qualitative Evaluation: Technical Transfer)	Interview of C/P
	Influence Factors	What are factors that caused problems on conducting Activities?		
	to Project	What are factors that have positive or negative effect on achievement of Outputs?	(Qualitative Evaluation: Influence Factors) )	Interview of Experts & C/P
	umprementanon	Are there any changes on Important Assumptions?		
	Necessity of the Project	Do contents of the cooperation conform to the needs of School of Aviation Malawi?	(Qualitative Evaluation: Conformity)	Preliminary Evaluation by Joint Evaluators
aona	Priority of the	Do Project Purpose and Overall Goal conform to aviation policy and national development policy of Malawi?	(Qualitative Evaluation: Conformity)	Review of National Development Plan Preliminary Evaluation by Joint Evaluators
Rele <i>v</i>	rujeu	Do Project Purpose and Overall Goal conform to foreign aid policy of Japan?	(Qualitative Evaluation: Conformity	Review of Country Assistance Policy
	Appropriateness of Project	Were there advantages of cooperation by JICA? Are technologies/ experiences of Japan utilized?	(Qualitative Evaluation: Advantage, Utilization)	Interview of Experts & C/P
	Approach	Are there ripple effects to groups other than the Target Group?	(Qualitative Evaluation: Ripple Effect)	Interview of Experts & C/P
Effectivene ss	Appropriateness of Logic of PDM	Are Outputs in PDM necessary and sufficient for achieving Project Purpose? Are there any excess or deficiency of Important Assumptions from Outputs to Project Purpose? Will the assumptions be satisfied probably? Do Verifiable Indicators show achievement of Project Purpose appropriately? What are factors that hinder or contribute achievement of Project Purpose?	(Qualitative Evaluation: Logicality)	Questionnaires to the Project Preliminary Evaluation by Joint Evaluators
γοποίο	Appropriateness of Planned Activities	Is relationship between Activities and Outputs in PDM appropriate? Are there synergies from cooperation and/or coordination with other donors? Are there any excess or deficiency of Important Assumptions from Activities to Outputs? Are the assumptions satisfied? Do Verifiable Indicators show achievement of Outputs appropriately?	(Qualitative Evaluation: Appropriateness)	Questionnaires to the Project Preliminary Evaluation by Joint Evaluators
ΕΨ	Appropriateness of Planned Inputs	Are the Inputs from Japanese side appropriate? Are the Inputs from Malawi side appropriate?	5-rank Self-Evaluation	Questionnaires to Experts & C/P
	Appropriateness of Project Budget	Are there any cost overrun or significant unexpected expenses? Are Outputs commensurate with Inputs?	(Qualitative Evaluation: Comparison of Plan & Actual)	Review of Project Documents Questionnaires to the Project

w		Evaluation Question		
эìІ	Category	Item	Evaluation Criteria / Method	Data Collection Method
		Will Overall Goal be achieved as an effect of the Project?		
	Appropriateness of	Does Verifiable Indicator show achievement of Overall Goal appropriately?	(Qualitative Evaluation:	Questionnaires to the Project
Impact		Are there any excess or deficiency of Important Assumptions from Project Purpose to Overall Goal? Will the assumptions be satisfied probably?	Appropriateness)	Fremmary Evanation by Joint Evaluators
	Possible Other	Are positive effects other than Overall Goal assumed? Do exist?		Questionnaires to the Project
	Impacts	Are negative effects assumed? Do exist?	(Qualitative Evaluation: Ripple Effects)	Preliminary Evaluation by Joint Evaluators
	Continuity of Policy	Will the Government policy on strengthening of aviation safety be continued probably?	(Qualitative Evaluation: Policy Continuity)	Preliminary Evaluation by Joint Evaluators
	Stability and	Are organization structure and regular staff of DCA appropriate? Will it be possible to secure sufficient staff members for maintaining activities for strengthening of aviation safety?	(Qualitative Evaluation: Historic Change of Organization Structure and Number of Staff of SOA)	Questionnaires to the Project
Â	Organizations	Are organization structure and regular staff of SOA appropriate? Will it be possible to secure sufficient staff members for continuing training for strengthening of aviation safety?	(Qualitative Evaluation: Historic Change of Organization Structure and Number of Staff of SOA)	Questionnaires to the Project
tilidaniat	Sufficiency of	Will DCA be able to secure budget for operation and maintenance of the equipment procured by the Project?	(Qualitative Evaluation: DCA's Budget and Operation & Maintenance Costs of Procured Equipment)	Questionnaires to the Project
snS	Budget	Will SOA be able to secure budget required for strengthening of CNS instructors?	(Qualitative Evaluation: Number of Instructors and Budget for the last 5 years)	Questionnaires to the Project
	Appropriateness of Technology Used in the Project	Have the technology used in Activities/Outputs transferred appropriately to Counterpart personnel? Are they able to conduct by themselves?	5-rank Self-Evaluation	Questionnaires to Experts & C/P
	Negative Factors for Sustainability of the Project			Questionnaires to Experts & C/P

## Name:

Questionnaire 2016FEB v.1.0

### I. Implementation Process

- 1. Appropriateness of Project Management
  - A) Is Project Purpose understood well by the personnel involved in the Project?

$\leftarrow appropriate \qquad \qquad \text{inappropriate} \rightarrow$				
5	4	3	2	1

B) Are roles of each counterparts/task force members mutually understood well?

$\leftarrow appropriate \qquad \qquad \text{inappropriate} \rightarrow$					
5	4	3	2	1	

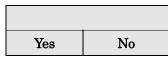
C) Is involvement level of counterparts/task force members in the Project high?

← appropriate inappropriate				
5	4	3	2	1

D) Was there no problem in management of the Project (monitoring system, decision making process, functions of JICA Head Office and JICA Malawi Office, communications within the Project members, etc.)

← appropria	$\leftarrow appropriate \qquad \qquad \text{inappropriate} \rightarrow$				
5	4	3	2	1	

- 2. Appropriateness of Technical Transfer
  - A) Is the leadership of Activities being sifted from JICA Experts to the counterpart/task force members?



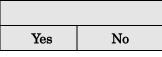
B) Are the technologies being transferred to staff other than Taskforce members?

Yes	No

- 3. Influence Factors to Project Implementation
  - A) What are factors that caused problems on conducting Activities?
  - B) What are factors that have positive or negative effect on achievement of Outputs?
  - C) Are there any changes on Important Assumptions?

#### **II.** Relevance

- 1. Appropriateness of Project Approach
  - A) Were there advantages of cooperation by JICA?



B) Are technologies/experiences of JICA Team utilized?



C) Are there ripple effects to groups other than the Target Group?

Yes	No

### **III. Efficiency**

- 1. Appropriateness of Planned Inputs
  - A) Are the Inputs from Japanese side appropriate?

← appropriate inappropriate				
5	4	3	2	1

B) Are the Inputs from Malawi side appropriate?

← appropriate inappropriate -				
5	4	3	2	1

### IV. Sustainability

- 1. Appropriateness of Technology Used in the Project
  - A) Have the technology used in Activities/Outputs transferred appropriately to Counterpart personnel? Are they able to conduct by themselves?

← appropriate inappropriate -				propriate $\rightarrow$
5	4	3	2	1

## **ANNEX 6-3 Summary of answers to the Questionnaire**

Questionnaire 2016FEB v.1.0

## I. Implementation Process

- 1. Appropriateness of Project Management
  - A) Is Project Purpose understood well by the personnel involved in the Project?

$\leftarrow appropriate \qquad \qquad inappropriate \rightarrow$				
5	4	3	2	1
7	8			

B) Are roles of each counterparts/task force members mutually understood well?

← appropria	ate		inap	ppropriate $\rightarrow$
5	4	3	2	1
10	3	1		

C) Is involvement level of counterparts/task force members in the Project high?

$\leftarrow appropriate \qquad inappropriate \rightarrow$				
5	4	3	2	1
6	8			

D) Was there no problem in management of the Project (monitoring system, decision making process, functions of JICA Head Office and JICA Malawi Office, communications within the Project members, etc.)

$\leftarrow appropriate \qquad \qquad inappropriate \rightarrow$				
5	4	3	2	1
4	6	2	1	

- 2. Appropriateness of Technical Transfer
  - A) Is the leadership of Activities being sifted from JICA Experts to the counterpart/task force members?

Yes	No
15	

B) Are the technologies being transferred to staff other than Taskforce members?

Yes	No
14	

- 3. Influence Factors to Project Implementation
  - A) What are factors that caused problems on conducting Activities?
- Low level of budget on Malawi side.
- Delay in recruitment of new staff has affected the implementation of the Project, as a result, some of the new staff will not be trained under the Project.
- Transport challenges on the part of DCA.

- Having some instructors stationed at Chileka is having a negative effect on implementation.
- In training programs, most instructors earmarked for the training did not do the training to the fullest. This comprised the standard in which the instruction should be done. Selection was not good. Some members will be retiring and hence waste of resources.
- Non-availability of laptops to participants.
- I think the Malawi side Failed to do their part most of the times like counterpart personnel from Chileka find problems when attending courses in Lilongwe due to financial constraints and in some occasions missed out on some activities due to same reasons-Finance.
- Communication breakdown sometimes participants to some other activities were informed very late-even being informed on the very day of activity commencement.
- Education background, age whereby old people who will be retiring soon were trained and there will be lack of continuity.
- Personal gains for some were given priority instead of achieving the institutional goal. Lack of ownership of the project by most Malawians.
- Lack of adequate resources on Malawian side: classrooms, e.g. CBT can only accommodate up to 6 attendance, hence causing a separation in conducting exercises with participants.
- Inadequate finding to the side of parent sector.
- Lack of selection criteria to the side of instructor to various training programs.
- No problems identified so far.
  - B) What are factors that have positive or negative effect on achievement of Outputs?
- Inadequate infrastructure and financial resources.
- Every program was done at the scheduled time and within the given period. Institution selected for external training were appropriate. Organization of the whole project with parallel organization structures on both the DCA side and the JICA side.
- Bureaucracy in the Government system has had a negative effect on the achievement of the outputs.
- Untimely availability of funds on the DCA side.
- Lack of physical presence of some instructors affecting implementation.
- The bringing in of a CNS expert (Mr. Batacan) helped a lot in the transfer of skills from an experienced instructor to the amateur ones (i.e. DCA side).
- Positive- JICA Team were cooperative. Equipment (especially visual aids) were relevant to the capacity development of instructors.
- Negative-There was passive response from the Malawian side. Mostly activities were done when JICA Team are in the country.
- On the Japanese side I would say they tried their best to meet their obligations like organizing courses, finding schools for counterpart instructors and funding these activities. But problems always arise on

the Malawi side in that they fail to fulfil their obligations maybe because our country is passing through difficult times financially.

- Low amount of external allowances to DCA instructors.
- On the positive side, punctuality by the JICA team installed discipline in all participants throughout.
- Education background, age, strategies have both positive and negative effects on achievement of outputs. If an institution has bad strategies and does not plan for the future, doesn't consider education background and age, achievement of outputs is not realized.
- Inadequate rooms to conduct classes at a single time is negative issue.
- Inadequate funding to conduct exercises which require intensive group participation and proper training for those conducting the instructions.
- Delay in executing some of project activities.
- Consistent communication between JICA and parent organization DCA.
- Good learning environment and skilled lecturers.

C) Are there any changes on Important Assumptions?

- No significant changes have been seen and recorded, and international standards and national policy are still within national strategy.
- No change in Important Assumptions. 5
- Assumptions like those on part of instructors being trained some were degree holders in education; it may be assumed that they know instruction techniques as such it seems mostly they were denied opportunities to be trained to the fullest.
- No I don't think there are any changes I think everything is in older apart from the shortfalls on the Malawi Government side.
- Importantly what was assumed has been greatly achieved and we wish such Projects be carried on time and again.
- There are changes on some important assumptions. For instance, the assumption that people will be paid to be a part of capacity building. However, some assumptions are just too rigid to be changed. There is still some resistance to change.
- Changes are there, e.g. Malawian Technical Team of the School are now able to apply the use of technical equipment, e.g. simulation exercise, CBT technical manual editing and updating and power point presentation plus many more.
- Such as assumption based on the issue that when the instructors had already basic academic qualifications which has not been changed.
- Logical framework tool was not available to most of project staff.

#### II. Relevance

- 1. Appropriateness of Project Approach
  - A) Were there advantages of cooperation by JICA?

Yes	No
15	

B) Are technologies/experiences of JICA Team utilized?

Yes	No
15	

C) Are there ripple effects to groups other than the Target Group?

Yes	No
12	2

#### **III.** Efficiency

- 1. Appropriateness of Planned Inputs
  - A) Are the Inputs from Japanese side appropriate?

$\leftarrow appropriate \qquad \qquad inappropriate \rightarrow$						
5	4	3	2	1		
11	4					

B) Are the Inputs from Malawi side appropriate?

$\leftarrow appropriate \qquad \qquad inappropriate \rightarrow$					
5	4	3	2	1	
5	6	2	2		

#### IV. Sustainability

- 1. Appropriateness of Technology Used in the Project
  - A) Have the technology used in Activities/Outputs transferred appropriately to Counterpart personnel? Are they able to conduct by themselves?

$\leftarrow$ appropriate inappropriate $\rightarrow$					
5	4	3	2	1	
8	5	1			

• Of course they are able to do so through the various indicators since other classes are still under way it somehow difficult to have any overall evaluation.

# **ANNEX 6-4 Training Evaluation (blank)**

	Training Evaluation Sheet	Date:
Name:		Age: years old
Job title:		Year of experience: years
E-mail:		_

1. Did you find the course objectives appropriate according to the needs of your country or organization?

← appropriate			ir	appropriate $\rightarrow$
5	4	3	2	1

If your answer is 1 or 2, what kind of improvement should be made?

- 2. Please write the most interesting topic in the training course.
- 3. Did the training meet your expectations?

$\leftarrow \text{ satisfied } \qquad \text{unsatisfied } \rightarrow$					
5	4	3	2	1	

If your answer is 1 or 2, please describe the reasons.

4. Do you find the skills and knowledge obtained through the training useful to your job?

$\leftarrow \text{ very useful } \qquad \text{not useful } \rightarrow$				
5	4	3	2	1

If your answer is 4 or 5, please describe how it applies to your job.

5. Any other comments or suggestions?

# ANNEX 7

# **Post-Project Monitoring Format**

# ANNEX 7

# Post-Project Monitoring Format to DCA and JICA Malawi Office the Project for Capacity Development for Air Navigation Services

1. Progress of Training for Air Navigation Services at SOA

Date of Report:

Year			No. of	2010	2017	2018	2019	2020
Field	Course		Trainees	2016	2017	2016	2019	2020
	053 Procedural Approach Control	Plan	12					
		Actual						
	055 Procedural Area Control	Plan	12					
ATC/FIS		Actual						
ATC/FIS	054A Radar Approach Control	Plan	31					
		Actual						
	054B Radar Area Control	Plan	31					
		Actual						
	AIM Integration	Plan	12					
		Actual						
AIS/ACS	Flight Data Processing	Plan	6					
AIS/ACS		Actual						
	AMHS	Plan	6					
		Actual						
	Basic ATSEP	Plan	10					
CNS		Actual						
& E/M	Radar Maintenance	Plan	25					
		Actual						
Others		Plan						
Others		Actual						
	Total	Plan	145					
	lotar	Actual						

# 2. Status of Maintenance of Major Equipment procured by the Project

	Equipment		Necessary Action if any
1	ATC Simulator		
2	5.0kVA UPS for ATC Simulator		
3	CBT System (6 sets of computers)		
4	2.5 kVA UPS for CBT System		
5	Test Equipment		
5-1	Oscilloscope (2)		
5-2	Digital Multimeter (4)		
5-3	Frequency Counter (2)		
5-4	Radio Frequency Wattmeter – Passage Type (2)		
5-5	Radio Frequency Wattmeter – Termination Type (2)		
5-6	Level Meter (2)		
5-7	Standard Signal Generator (2)		
5-8	Distortion Meter (2)		
5-9	Spectrum Analyzer (2)		
5-10	Directional Couplers (2)		
5-11	Low Frequency Variable Attenuator (2)		
5-12	Detector (2)		
5-13	LCR Meter (2)		
5-14	VHF Air Band Transceiver (2)		
5-15	Antenna for VHF Transceiver (2)		
5-16	General Receiver		
5-17	Antenna for General Receiver		
5-18	UPS (4)		
6	Multifunction Copier/Printer/Scanner		
7	Inkjet A3 Color Printer		
8	PC Projector (2)		
9	Notebook PC (4)		
10	40-inch LCD Monitor (2)		
11	3.5kVAUPS for Project Office		
12	Intrusion Detection System		

# ANNEX 8

**Training Course Summary** 

# **ANNEX 8 Training Course Summary**

# Training Course Summary

Course title: Team Resource Management [ATNS, South Africa]

Schedule:  $26^{\text{th}} \sim 30^{\text{th}}$  January 2015 (1 week)

Objectives: To create an awareness of human factors in Air Traffic Control and to develop the knowledge, skills and attitude of the participants to enable them to perform their functional duties with due consideration of the influence of human factors on aviation safety.

#### Syllabus:

- 1. Introduction to Team Resource Management (TRM)
- 2. Sensory-perceptual
- 3. Knowledge, ability, skill and error
- 4. Medical, physiological and psychological
- 5. Personality and attitude
- 6. Judgement and decision-making
- 7. Communication
- 8. Team work

8

- Mr. CLEMENT FREDSON BETENIGO (KIA)
- Mr. SIDNEY PETER GALAFA (SOA)
- Mr. JOHN COLLINS KALIWO (KIA)
- Mr. JIMMY HENDRIX DYSON KAZITO (KIA)
- Mr. HARRY HARRIS MASANGANO (CIA)
- Mr. THOMSON PRECIOUS MALUMBO MTONGA (KIA)
- Mr. OSCAR ALFRED YOKONIA (CIA)
- Mr. DENNIS TELESPHORUS ZAMAERE (CIA)



Front Row: T.P.M. Mtonga, J.H. Kazito, S.H. Motsogi, C.F. Betenigo, J.C. Kaliwo, O. Yokonia. Back Row: S.R. Maapola, M.J. Motubatse, N.C. Nofuma, R.G. Sibuyi, D.T. Zamaere, I. Joubert (Course Leader), J. Van Der Westhuizen (Instructor), K.I. Maubane, H.H. Masangano, M.P. Nkosi.



Supervisory Management Course [EASA, Kenya] Course title:

 $2^{nd} \sim 27^{th}$  February 2015 (3 weeks) Schedule:

Objectives:

- To perform first level supervisory duties/functions applicable in areas of operation;
  - To apply ethical principles to their professional situations;
  - To define organizational diversity and its link to organizational strength;
  - To communicate effectively in both written and verbal forms;

- To effectively articulate supervisory principles and concepts in problem identification and resolution.

#### Syllabus:

- 1. Making the Transition to First-Line Supervisor
- 2. Managing the New Workforce
- 3. Communication and Supervision
- 4. People Development
- 5. Performance Management
- 6. Team Development

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- 7. Getting the Work Done
- 8. Ensuring your Success

- Mr. MACLETCHER FRANCIS THOMAS BONGWE (DCA) Mr. SHADRECK ARTHUR CHIPINGA (KIA)
- Mr. RUTHERFORD CHAYIMA KANUNKHA (KIA)
- Mr. FRANCIS CHRISTOPHER ZENAS KHOLOWA (DCA)





Instructor Development Program [EASA, Kenya] Course title:

4th August ~ 21st August 2015 (3 weeks) Schedule:

**Objectives:** To enable one to become a confident and effective instructor.

Syllabus:

- 1. Orientation
- 2. Instructors roles and responsibilities
- 3. Principles of learning and instruction
- 4. How to organize a course
- 5. Preparation of Facilities
- 6. Overview of course development
- 7. Tests

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- 8. Effective training techniques
- 9. Managing individualized instruction
- 10. Conducting group discussion
- 11. Presenting materials and discussion
- 12. Assessment of performance
- 13. Feedback and schedule adjustment

#### Trainees:

- Mr. CLEMENT FREDSON BETENIGO (CNS, KIA)
- Mr. FREDRICK LYTON CHISEPEYA (ATC, KIA)
- Mr. NELSON KALIASI (ATC, KIA) Mr. SPARROW RODNEY KUNJE (CIA)
- Mr. STEVEN SAONEKA MISIEH LIUNDI (AIS/ACS, SOA) Mr. RODRICK YIMANI MALANGA (AIS/ACS, SOA)
- Mr. THOMSON PRECIOUS MALUMBO MTONGA (KIA)
- Mr. OSCAR ALFRED YOKONIA (CIA)

*There were 6 other Kenyan trainees in the course.



Course title: Advanced Instructor Training [EASA, Kenya]

5th October ~ 23rd October 2015 (3 weeks) Schedule:

**Objectives:** To carry out management activities related to training.

#### Syllabus:

- 1. Training Administration
- 2. Training Objectives
- 3. Evaluation of Training
- 4. Academic Counseling Interview
- 5. Student Performance Evaluation Interview
- 6. Professional Conduct Interview
- 7. Departure Interview
- 8. Overview of Trainairplus Training development process
- 9. Report Writing

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#### Trainees:

- Mr. CLEMENT FREDSON BETENIGO (CNS, KIA)
- Mr. SIDNEY PETER GALAFA (ATC, SOA)
- Mr. SPARROW RODNEY KUNJE (CIA) Ms. LINDA LOISE ANNIE MANONDO
- Mr. OSCAR ALFRED YOKONIA (CIA)
- Mr. DENNIS TELESPHOROUS ZAMAERE

*There were 4 other Kenyan trainees in the course.





Course title: Computer Based Training (CBT)

Schedule: 24th November 2014 (1 Day)

Objectives: To acquire basic knowledge on the Computer Based Training (CBT) software;

To familiarize with the CBT system and develop training exercises and exams.

#### Syllabus:

- 1. Introduction to Computer Based Training (CBT)
- 2. How to use CBT System Operation Manual
- 3. Developing exercises and exams

# Trainees:

6

Mr. CLEMENT FREDSON BETENIGO (KIA) Mr. SIDNEY PETER GALAFA (SOA) Mr. ESTONIC MALANGO KANYIMBO (SOA) Mr. JIMMY HENDRIX DYSON KAZITO (CIA) Mr. RODRICK MALANGA (SOA) Mr. STEVE M. S. LIUNDI (SOA)





Course title: Test Equipment Course	e
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 $12^{\text{th}} \sim 23^{\text{rd}}$  January 2015 (2 weeks) Schedule:

- Objectives: - To acquire basic knowledge on handling and maintaining the test equipment which are the basis for a sound airport operation;
  - To familiarize with the various equipment and to prevent damage from inappropriate maintenance.
  - To understand the requirements relating to various test equipment in communications technology.

Syllabus:

- 1. Introduction to Oscilloscope
- 2. Familiarization
- 3. Probes

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- 4. Voltage measurements
- 5. Time measurements
- 6. Phase measurements

- Mr. CLEMENT FREDSON BETENIGO (KIA) Mr. FREDERICK NYANDA CHISALE (KIA)
- Mr. ESTONIC MALANGO KANYIMBO (SOA) Mr. THOMSON PRECIOUS MTONGA (KIA) Mr. MZONDI NYIRENDA (KIA)





Course title: Basic Concept for Electrical & Mechanical Training

Schedule: 20th - 30th April 2015 (2 weeks)

Objective: To acquire knowledge on the basic principles (which are not confined to a certain manufacturer), structure, theoretical mechanism and operation minimum, and recovering priority based on ICAO operational standards for Air Field Lighting and UPS/Generator.

#### Syllabus:

Diesel Engine Generator

- 1. DEGS Serviceability Checks
- 2. DEGS Manual and Automatic Operation
- 3. AC Generator Serviceability Check
- 4. Diesel Engine Serviceability Check
- 5. Control Cubicle Serviceability Check
- 6. Troubleshooting (JOB-AIDS)
- UPS 1. Preparatory Checks and
- Manual Operation
   Automatic Simulation and
- Stopping 3. Physical and Electrical
- Checks 4. Troubleshooting (JOB-

AIDS)

- Air Field Lighting
- 1. Operational
- Concept
- 2. Visual Effect
- 3. Human Element
- 4. Operating Requirements
- 5. Lighting Device

# [Trainees]

- 1. Ms. Catherine GIBSON
- 2. Mr. George MLENGANDALE
- 3. Mr. Thomson Precious Malumbo MTONGA
- 4. Mr. Charles Wilned NKOSI
- 5. Mr. Fletcher Misanjo Eneya PHUMISA
- 6. Mr. Oscar Alfred YOKONIA

Chileka International Airport Kamuzu International Airport Kamuzu International Airport Kamuzu International Airport Chileka International Airport Chileka International Airport









Course title: Microsoft Office Training Course (Group 1)

Schedule: 21st-24th April 2015 (4 days)

Objective: To improve computer literacy of the instructors at the School of Aviation and DCA officers.

Syllabus:

- 1. Using Computer & UPS devices
- 2. Microsoft Office Word
- 3. Microsoft Office Excel
- 4. Microsoft Office Power-Point

# Trainees: 5

- 1. Mr. FREDRICK L. CHISEPEYA
- 2. Mr. NELSON B. KALIASI
- 3. Mr. STEVEN M. S. LIUNDI
- 4. Mr. RODRICK Y. MALANGA
- 5. Ms. LINDA ANNIE MANONDO

ATC, Kamuzu International Airport AIS, Kamuzu International Airport ACS, School of Aviation AIS, School of Aviation ATC, Kamuzu International





Course title : Conventional Flight Procedure Design (Non-Precision Approach) Course

Schedule: 5th – 28th May 2015 (4 weeks)

Objective: To acquire knowledge on basic flight procedure design based on non-precision approach by conventional navigation-aid targeting ATC and AIP officers.

# Syllabus:

- 1. Flight Procedure Design Concept
- General Regulations (Conversion IAS to TAS, Truck Guidance, Minimum Separation, Fix Point 2. Error, Circling Area)
- 3. Design of STAR by Conventional Navigation
- 4. Design of VOR Approach & NDB Approach
- 5. Design of Circling Approach Area
- 6. Design of Basic Circling Approach
- 7. Design of  $45^{\circ}$  /  $180^{\circ}$  turning
- 8. Design of MSA
- 9. Design & Evaluation of Visual Segment Surface

# Trainees:

- 1.
- 2.JANET TIYESIE MPHANDE

4

- 3. BOSCO YOKONIA NG'OMA
- 4. **ROBERT NKOSI**

STEPHEN DONALD MKANDAWIRE Chief Air Traffic Controller, Kamuzu International Airport Air Traffic Controller, Kamuzu International Airport Air Traffic Controller, Chileka International Airport Air Traffic Management, Department of Civil Aviation





Course Title:	General Communications Course
Schedule:	18 th May – 4 th June 2015 (3 weeks)
Objective:	To acquire theoretical and new knowledge of General Communication such as Radio, Telephone and Data Network.

Syllabus:

- 1. Introduction
- 2. Wire Technology
- 3. Data Communication
- 4. Digital Network
- 5. Fiber Optics
- 6. Multipoint Distribution System
- 7. Wireless Technology
- 8. Voice Communication System 3025 (Current System in Lilongwe Airport)

# Trainees:

- 1. Mr. EMMANUEL KEN CHAVULA
- 2. Mr. FREDERICK NYANDA CHISALE
- 3. Ms. SELLINA KHAILA

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- 4. Mr. PATRICK MANJOMO
- 5. Mr. DEUS MALAIDZA
- 6. Mr. JONES G. F. NYIRENDA

Chileka International Airport Kamuzu International Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport Karonga Airport



Course Title: Park Air VHF Maintenance Course

Schedule:  $8^{th} - 19^{th}$  June 2015 (2 weeks)

Objectives: To gain basic knowledge and to become able to describe and discuss basic multimode radio, transmitter, receiver, operations and preventive maintenance inspection.

# Syllabus:

- 1. Introduction
- 2. T6 Receiver
- 3. T6 Transmitter

# Trainees:

- 1. Mr. MIKECHAVULA
- 2. Mr. OSCAR PATANI CHIHANA
- 3. Mr. FREDERICK NYANDA CHISALE
- 4. Mr. LLOYD TIYEZGE GONDWE
- 5. Ms. SELLINA KHAILA
- 6. Mr. DEUS MALAIDZA

Chileka International Airport Mzuzu Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport Kamuzu International Airport







# Course title: ICAO 052 Aerodrome Control Course

Schedule:  $1^{st}$  June –  $3^{rd}$  July 2015 (5 weeks)

Objective: To improve ATC instructors' capacity to conduct training through the Aerodrome Control training based on ICAO 052 along with the use of ATC simulator system.

# Syllabus:

- 1. Aerodynamics
- 2. Aerodrome Control
- 3. Search and Rescue

# Trainees/Instructors: 9

# [Trainees]

- 1. CLIFTON J. CHAMPHALE
- 2. JELIA KALINDA
- 3. PAUL HARRY LIZIMBA
- 4. JOSEPH GONANG'OMBE MOYO
- 5. ROBERT NKOSI

#### [Instructors]

- 1. FREDERICK LYTON CHISEPEYA
- 2. SIDNEY PETER GALAFA
- 3. LINDA ANNIE MANONDO
- 4. DENNIS TELESPHORUS ZAMAERE

Kamuzu International Airport Kamuzu International Airport Kamuzu International Airport Mzuzu Airport DCA Headquarters

Kamuzu International Airport School of Aviation Kamuzu International Airport Chileka International Airport







# Course Title: DVOR/CVOR/DME/ILS/RADAR Concept Course

- Schedule:  $22^{nd}$  June  $10^{th}$  July 2015 (3 weeks)
- Objective: To acquire knowledge on basic technical concept for the Communication, Navigation and Surveillance System in aviation engineering and to improve capacity of the current engineers.

# Syllabus:

- 1. Introduction
- 2. DVOR/CVOR
- 3. DME
- 4. ILS
- 5. RADAR

# Trainees:

- 1. Mr. FREDERICK NYANDA CHISALE
- 2. Ms. SELLINA KHAILA

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- 3. Mr. SPARROW RODNEY KUNJE
- 4. Mr. DEUS MALAIDZA
- 5. Mr. YONAM WILA LUKE SILUNGWE

Kamuzu International Airport Kamuzu International Airport Chileka International Airport Kamuzu International Airport Chileka International Airport





Course title: ICAO 051 Basic ATC Course

Schedule: 12th October 2015 ~ 29th January 2016

Objective: To understand initial Basic Air Traffic Control for freshmen

#### Syllabus:

- 1. Introduction
- 2. Aviation law
- 3. Aerodrome
- 4. Flight Planning
- 5. Air Traffic Management
- 6. Meteorology
- 7. Navigation
- 8. Aircraft
- 9. Human Factor

#### Trainees (New Students)

- 1. Ms. STELLA P. E. CHIRWA
- 2. Ms. EDITH GAMALIEL
- 3. Mr. COSMAS N. JIMSON
- 4. Mr. MICHAEL KACHIGWADA
- 5. Ms. TOWERA E. KAMANGA
- 6. Ms. TAONA KANUNKHA
- 7. Mr. HENRY M. MAGOMBO
- 8. Mr. CHARLES M. MAJAWA
- 9. Mr. GODFREY J. MLENGA
- 10. Mr. HESTON MUNKHONDYA
- 11. Mr. WACKIE L. MWENELUPEMBE
- 12. Mr. AARON W. NDALEMA

Instructor Team

- 1. Daniel Diggins (JICA Exp.)
- 2. Sidney Galafa (SOA)
- 3. Fredrick Chisepeya (KIA)
- 4. Dennis Zamaere (KIA)
- 5. Linda Manondo (KIA)



Course title: NORMARC ILS Maintenance

26th October ~ 4th December 2015 (6 weeks) Schedule:

Objective: To understand maintenance of NORMARC ILS at Kamuzu International Airport (KIA)

Syllabus:

- 1. ILS Theory
- 2. Concept of NORMARC 7000
- 3. Operating Instruction
- 4. RMM Program
- 5. Transmitter Alignment
- 6. Transmitter Adjustment7. Localizer Antenna System
- 8. Glide Slope Antenna System
- 9. Monitor
- 10. Installation and Configuration
- 11. Preventive Maintenance

Trainees (Current Electronics Engineer):

- 1. Mr. FREDERICK NYANDA CHISALE (KIA)
- 2. Mr. ROBINSON CHIZIMU (KIA)
- 3. Mr. LLOYD TIYEZGE GONDWE (KIA)
- 4. Ms. SELLINA KHAILA (KIA)
- 5. Mr. DEUS MALAIDZA (KIA)
- 6. Mr. MZONDI M. NYIRENDA (KIA)



- Course title: Conventional Flight Procedure Design [Departure]
- Schedule:  $2^{nd}$  November ~  $26^{th}$  November 2015 (4 weeks)
- Objectives: To be able to apply the knowledge and skill in designing a non-precision approach procedure;

To understand how to and be able to apply the knowledge and skills in designing a departure procedure; and

To understand general knowledge and concepts of ILS approach procedure design.

#### Syllabus:

- 1. Reviewing the knowledge in designing non-precision approach procedures
- 2. General of departure procedures
- 3. Straight departure procedures
- 4. Turning departures (at designated fix)
- 5. Turning departures (at designated altitude)
- 6. ILS design general
- 7. Charting

- 1. Mr. STEPHEN DONALD MKANDAWIRE (KIA)
- 2. Ms. JANET TIYESIE MPHANDE (KIA)
- 3. Mr. BOSCO YOKONIA NG'OMA (CIA)
- 4. Mr. ROBERT NKOSI (DCA)







Course title:	Aeronautical Information Services (AIS) Course
Schedule:	[Group 1] 2 nd November ~ 13 th November 2015 (2 weeks)
	[Group 2] 16 th November~ 27 th November 2015 (2 weeks)
Objectives:	To refresh Aeronautical Communication Service (ACS) officers to new and existing procedures on Aeronautical Information Services (AIS);
	To familiarize the ACS officers with updated knowledge and modern equipment affiliated with AIS.
Syllabus: 1. F	Purpose of AIS

#### S

- 1. Purpose of AIS
- 2. Communications
- 3. Parts of a message
- 4. NOTAM
- 5. AIC
- 6. NOF
- 7. Flight Plan
- 8. FPL Associated messages
- 9. FLT Crew information
- 10. Movement & control messages/ATM messages
- 11. AFS-AFTN

#### Trainees:

[Group 1] Mr. INNOCENT F. CHIKAKUDA (KIA) Mr. Mc JONES KATHEWERA (Karonga) Mr. STEVEN M.S. LIUNDI (SOA) Mr. MALUMBO S. MHANGO (CIA) Ms. CATHERINE NAZOMBO (KIA) Mr. ANDREW SABUNI (KIA) Mr. LAZARUS G. ZGAMBO (Mzuzu)

[Group 2] Mr. M. K. BANDA (CIA) Mr. ALICK KACHINGWE (KIA) Mr. CHARLES M.C. KAMANGA (KIA) Mr. TAONA WISDOM MFUNI (KIA) Mr. WILLARD R. MIKA (Karonga) Mr. NATHAN KABIYA NDAU (Mzuzu)







- Course title: Microsoft Office Computer Training II
- Schedule: 1st December~3rd December 2015 (3 days)
- **Objectives:** To upgrade the level of computer literacy and presentation skills of the training instructors.

Syllabus:

- 1. Introduction to Word, Excel, Powerpoint
- 2. Presentation

- Mr. CLEMENT FREDSON BETENIGO (KIA)

- Mr. CLEMENT I RELISION BETEINISO (RIA) Ms. ELEMESS B. KAWERENGA (KIA) Mr. SPARROW RODNEY KUNJE (CIA) Mr. THOMSON PRECIOUS MALUMBO MTONGA (KIA) Mr. OSCAR ALFRED YOKONIA (CIA) Mr. DENNIS TELESPHORUS ZAMAERE (KIA)





Course title:	New CNS/ATM Training
Schedule:	$1^{st} \sim 12^{rh}$ February 2016 (2 weeks)

To upgrade the level of knowledge on the prerequisites, trends, and current status of **Objectives:** CNS/ATM concept development.

Syllabus:

- 1. ICAO CNS/ATM Concept
- 2. Institutional Aspects of CNS/ATM
- 3. Communication Technologies
- 4. Navigations Technologies
- 5. Surveillance Technologies
- 6. Operation in the CNS/ATM Environment
- 7. Implementation of the CNS/ATM Technologies
- 8. CNS/ATM Equipment

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- Mr. HARDWELL D.C. BANDA (KIA)
- Mr. CLEMENT FREDSON BETENIGO (KIA)
- Mr. SIDNEY PETER GALAFA (SOA)
- Mr. SIDIAE I TETEK OALATA (SOA) Ms. JELIA KALINDA (KIA) Mr. TIMOTHY ERNEST KAMANGA (KIA) Mr. ESTONIC MALANGO KANYIMBO (KIA) Mr. SPARROW RODNEY KUNJE (CIA)
- Mr. THOMSON PRECIOUS MALUMBÓ MTONGA (KIA)





Course title: Maru DVOR/DME Maintenance

Schedule: 15th February ~ 24th March 2016 (6 weeks)

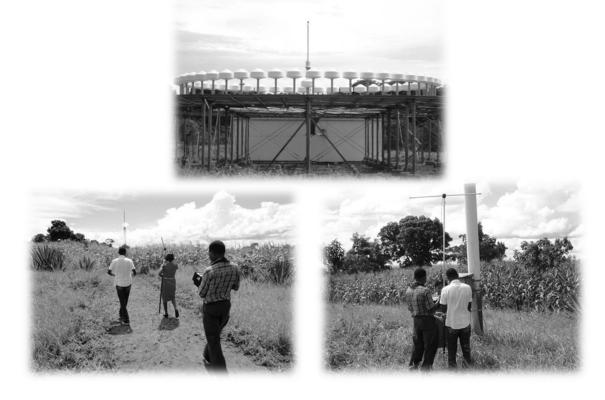
Objective: To understand the theory and various practices in maintaining Maru DVOR/DME.

#### Syllabus:

- 1. Maru DVOR 220 Theory and Introduction
- 2. Maru DVOR 220 Features/Characteristics
- 3. Maru DVOR 220 Monitor System
- 4. Maru DVOR 220 Laboratory 1 (Site Visit)
- 5. Maru DVOR 220 Transmitter System
- 6. Maru DVOR 220 Operations
- 7. Maru DVOR 220 Laboratory 2 (Site Visit)
- 8. Maru DVOR 220 Preventive Maintenance Inspection
- 9. Maru DVOR 220 Laboratory 3 (Site Visit)
- 10. Maru DVOR 220 Antenna System

- 1. Mr. EMMANUEL CHAVULA (CIA)
- 2. Mr. MIKE CHAVULA (CIA)
- 3. Mr. FREDERICK NYANDA CHISALE (KIA)
- 4. Mr. LLOYD TIYEZGE GONDWE (KIA)
- 5. Ms. SELLINA KHAILA (KIA)
- 6. Mr. DEUS MALAIDZA (KIA)

- 11. Maru DVOR 220 Laboratory 4 (Site Visit)
- 12. ICAO SARP's and Airborne Equipment
- 13. Maru DVOR 220 Corrective Maintenance
- 14. Maru DVOR 220 Corrective Maintenance Laboratory 5
- 15. Maru/Fernau DME 330 Introduction
- 16. Maru DME 330 Transponder/Monitor System
- 17. Maru DME 330 Transponder/Monitor Laboratory 6
- 18. Fernau DME 2020 Transponder/Monitor System
- 19. Maru/Fernau DME Corrective Maintenance
- 20. Maru/Fernau DME Corrective Maintenance Lab 7



# Course title: Microsoft Office Computer Training III

Schedule: 4th & 7th March 2016 (2 days)

Objectives: To upgrade the level of computer literacy and presentation skills of the training instructors.

Syllabus:

1. Introduction to Word, Excel, Powerpoint

2. Presentation

Trainees:

Mr. FREDERICK NYANDA CHISALE (KIA) Mr. LLOYD TIYEZGE GONDWE (KIA) Mr. ESTONIC MALANGO KANYIMBO (SOA) Mr. STEPHEN DONALD MKANDAWIRE (KIA) Ms. JANET TIYESIE MPHANDE (KIA) Mr. MZONDI M. NYIRENDA (KIA)





Course title: ICAO 052 Aerodrome Control (for ATC Freshmen)

Schedule: 1st February 2016 ~ May 2016 (planned as of April 2016)

Objective: To understand the basic theories and practice of Aerodrome Control.

Syllabus:

- 1. Aerodynamics
- 2. Aerodrome Control
- 3. Search and Rescue

#### Trainees (New Students)

- 1. Ms. STELLA P. E. CHIRWA
- 2. Ms. EDITH GAMALIEL
- 3. Mr. COSMAS N. JIMSON
- 4. Mr. MICHAEL KACHIGWADA
- 5. Ms. TOWERA E. KAMANGA
- 6. Ms. TAONA KANUNKHA
- 7. Mr. HENRY M. MAGOMBO
- 8. Mr. CHARLES M. MAJAWA
- 9. Mr. GODFREY J. MLENGA
- 10. Mr. HESTON MUNKHONDYA
- 11. Mr. WACKIE L. MWENELUPEMBE
- 12. Mr. AARON W. NDALEMA

Instructor Team

- 1. Daniel Diggins (JICA Expert)
- 2. Sidney Galafa (SOA)
- 3. Fredrick Chisepeya (KIA)
- 4. Dennis Zamaere (KIA)
- 5. Linda Manondo (KIA)



