

## **Minutes of The Taskforce-1 Meeting for “The Project for Capacity Development in Air Traffic Services” in Tajikistan**

**Dushanbe, 16 May 2018**

The 17<sup>th</sup> TF-1 Meeting for “The Project for Capacity Development in Air Traffic Services” (hereinafter “the Project”) was held at 09:00-11:00 on 16 May 2018 at Tower Simulator room.

Mr. Watanabe (Chief Advisor), Mr. Payrav (sub-leader TF-1), Mr. Ulugbek (sub-leader TF-2) attended this meeting.

This meeting was the reporting opportunity of implemented TF-1 activities by Expert and coordinate next mission schedule by TF accordance with the Sub-activity list and AWP.

### **I. Activity of both side from 3<sup>rd</sup> May to 16<sup>th</sup> May 2018**

During this period, the expert and Taskforce 1 team led by Mr. Payrav had a series of discussions and exchanged information on possible technical assistance to the Training on Air Traffic Control Officer part of the Project for Capacity Development of TAN.

- (1) The JICA expert has worked on the schedule as Attachment-1, Main activity as follow:
  1. To attend JCC/3 and explained TF-1 activities in 2017
  2. To conduct W/S confirmation for result 1-4
  3. To observe and evaluate CP exercise.
  4. To monitor Hazard Map for Dushanbe airport
  5. To conduct F/U ATS capacity calculation method
  6. To observe OJT-Instructor’s training
  7. To conduct W/S examination system development
- (2) W/S confirmation for result 1-4
  1. This activity started at 08:00 on 4 May.
  2. Originally, we were planning to consider by receiving explanations with members of the review WG. However, it cannot be adjusted, and Mr. Payrav (TF-1 sub-leader) explained about TAN’s decision at his office.
  3. In the table compiled beforehand, the answer was described for each expert’s recommendation, and it was a conclusion in TAN at the present time.
  4. Regarding landing clearance, the reorganization and the change of the operation manual shall be made by one month before when the new tower is completed.
  5. Regarding light gun, it will be installed at four airports by September 2018.
  6. Since TOPSKY is planning to use electronic flight progress strips, a special training on electronic strips may be necessary when training new system introduction.
  7. Regarding the operation of follow-me-car, as DIA is managing it, TAN is requesting improvement of operation to ensure safety.
  8. As for improving the operation manual, we will improve on the TAN side regarding deletion and correction of the separation concerning VFR, and TAN will prepare the draft and proceed with CAA until November 2018.
  9. The draft of the operation manual was to prepare by 15 May and send it by e-mail to the expert.
  10. Most of the expert's recommendation has been accepted. However, since it is just a planning, monitoring is still necessary in the future.
- (3) CP exercise
  1. Mr. Bakhtiyor Sheraliev briefed the outline of CP exercise and explained about its importance and necessity of preparation. He also explained the scenario of the exercise and the roles of the participants at the exercise. Expert took part as the evaluator.
  2. As observers (about 15 people) came more than we expected, we quickly changed the place from the classroom to the big hall at training center. It can be said that this shows a high interest in CP.

3. CP Exercise began at 9:30 with message of “ATS Center in Dushanbe Airport is on Fire”. The participants of the exercise made a report, gave information and made coordination according to the practiced scenario.
  4. The time seems to be taken to confirm the scenario, and it seems that preparation was not enough.
  5. As the scenario was advanced in Russian language, expert did not know the details of the exchanges information between participants. However, expert had an English version scenario, the flow of the exercise could easily be imagined.
  6. After the CP Exercise, we have the discussion regarding CP exercise and CP.
  7. TF-2 leader asked the expert's comment for the exercise, expert mentioned that it is necessary to build ATS's backup system like in Japan.
  8. Through this Exercise, participants gained a deeper understanding of each other's relationships and work to do at the time of Contingency.
  9. Mr. Shambiev made some comments on CP Exercise:
    - Alerting and information about Fire was not ensured from other sources, it would be better to clarify it.
    - CNS Dep. of TAN should be prepared better for such contingencies
    - , because the exercise identified weaknesses of CNS equipment in ATS Center.
    - He suggested to invite specialists from MET staff, all supervisors, controllers and fire security dep. of TAN, which were not invited for the exercise.
    - To put in place the possibility of providing Radar service from Kulyab or Bokhtar Airports.
    - To use HF frequency instead 133.1 is not the best option, better to use secondary TWR or Supervisors car.
  10. Mr. Watanabe gave additional information about the practice in Japan, they transfer control to another ACC which has back-up system, and TAN should implement the procedure to provide Radar service in Dushanbe FIR from back-up facility.
  11. Mr. Olowoyey:
    - Clarified the fire alerting system of ATS Center in TAN. If everyone will be evacuated, what system is used in TAN for alerting.
    - Asked about the person in charge to initiate CP. TAN explained that Supervisor of Dushanbe airport is responsible for that.
  12. The exercise was done successfully.
    - Participants have a good experience for contingency situation.
    - They recognized that ‘what shall we do?’, ‘How to cope with?’, ‘How to contact with aircraft?’.
    - TAN carried out its own at all the stages of CP exercise from the preparation.
    - It is also meaningful to have many observers participate.
- (4) Monitoring Hazard Map
1. Expert checked hazard maps of three airports: RTDD, RTDL, RTDK.

Hazard listed below is as follows.

RTDD;

- Water Well behind the Stand
- Main TWY M is passing from TWY A to TWY E (hot spot)
- Taxiing of AN-28 from Stand A1 (hot spot)
- Bird ingestion/strike
- Lightning of B11 (not enough brightness)
- Bad radio communication
- Pedestrians
- Not allowed to use TWY B and TWY C at the same time
- crack of the concrete
- RWY lights different position (60m RWY wide/but lighting position is along with 45m wide)

RTDL; (Two groups created hazard maps)

Group № 1

- Lack of illumination in parking stands A-1,2,3
- No RWY Holding Position Marking on TWY A and F
- TWY B is temporary closed

- The lack of a pedestrian crossing for personnel from the gate (checkpoint) No. 1
- The fence became old at north of the RWY08
- TWY F is closed
- Trees in TWY E block the view of the tower
- Fence is near residential area (hazard of the Unlawful Interference)
- Flooding of the RWY
- Birds activity close to the RWY08
- Dogs in the vicinity of the fuel storage

#### Group № 2

- Damaged surface of the end the RWY-26, TWY A, stand A-1 and part of the stand A-2
- Inconsistency to the ICAO standards of the light-signal system on the TWY B (the signboard is at the lower level than taxiway) pilot cannot see.
- The roof of the aerodrome service building block the view of Tower
- Flooding of the RWY 08
- Animals (dogs) coming in from the fuel storage area
- Birds activity close to the RWY-08
- Trees are too close to the fences (high possibility of the Unlawful Interference)

#### RTDK;

- Old fence of the airport perimeter (barbed wire) - west north
- Lack of lighting in parking stands C-10
- Birds activity close to the RWY13
- Both sides of the runway covered concrete, are not asphalted
- Height of light-signal system (0.2 m above the runway surface level)
- Crossing the runway (for Navigation maintenance)

2. Experts asked questions about each hazard and changed the expression in English after understanding the contents.
3. The hazard map created is handwritten based. It is necessary to show it to the people concerned in an easy-to-understand manner by putting a picture in a form like RTDD. Three airport RSTs did a good job.
4. The expert checked the hazard map of the three airports and confirmed its effectiveness. Use the organized hazard map to safely carry out the operation of those airports.

#### (5) F/U ATS capacity calculation method

##### 1. Day1 (7 May)

- Expert started at training center at 8 o'clock and discuss about today's schedule to Mr. Payrav (Head of ATC).
- He said that participants in the W/S for calculating the control processing capacity value, Radar position is a member of Capacity WG, the others join TAN as two newcomers who have just acquired Tower and ACC certification. Other member cannot attend the W/S because of shit working. New commers seem to have been chosen because they can speak English well.
- Expert explained how to calculate the control processing capacity value using the method of calculation in Japan.
- Member of WG was explanations for the second time, so expert felt that their understanding was quick.
- The newcomers seemed to be difficult to understand because they had little experience in ATC operation.
- After completing a brief explanation, we reviewed "the answer to the question "from TAN's WG during February to March 2018.
- Expert thought this review was important for a better understanding of the method in Japan.
- In particular, as to the occurrence frequency of control events, expert have repeatedly asked how to obtain the value from TAN, so expert carefully explained to understand it.
- From the afternoon, control processing capacity value is actually calculated.
- The calculation method was specifically described. TAN prepared three PCs for calculation

exercise.

- Expert put Excel files in PCs and asked each to calculate based on the data used last time.
- Expert carefully explained each work for calculation.
- Two newcomers were accustomed to the operation of the PC, and it was possible to enter the calculation work immediately with a little advice.
- Members of WG seemed not used to PC too much, it took quite a while but eventually he could be completed calculation.

## 2. Day2 (8 May)

- The purpose of the W/S is to teach the calculation of the control processing capacity value to the ACC controllers (member of capacity WG) so that they can calculate themselves.
- They participated in the previous W/S, so expert omitted first explanation and decided to explain the specific calculation method directly.
- In the initial plan expert asked two newcomers to tell them (this way is deeper understanding for them), but it seemed that it did not work out well. Therefore, experts decided to teach himself.
- Since two Excel files were manipulated and entered, at first, they were puzzled, but once they learned the operation they were able to work smoothly afterwards.
- They have asked many times whether "Is this actual data?". In each case, since this data was prepared for exercises to the last, expert advised them to "just put it!".
- Technical transfer to the ACC controller was completed and confirmed that they fully understood the Japanese calculation method.
- In the afternoon, expert explained the Runway Capacity calculation as planned.
- Mr. Payrav participated and understood the Sliding Scale well.
- When applying the Radar separation (10 Km) of the TAN to the departing aircraft's Allowance, it will be 45 seconds becomes 75 seconds.
- We try to enter that data into the Excel table as a trial, so the number of aircraft by combination all come out automatically.
- Mr. Payrav said that "This excel matrix is doing very well."
- From now on, it is necessary to examine how to take a safety buffer (departure and arrival), how to survey the runway occupation time, and so on.

## 3. Day3 (10 May)

- Firstly, we considered whether ACC 's Procedure controller(PC) and Radar controller(RC)' s task could be separated.
- We checked each task and confirmed it. Although RC and PC are closely related in business, we concluded that we would calculate the workload using only Radar controller's task (including system input).
- Next, regarding difficulty index, management decided to use the table created in consideration with WG.
- In addition, the air traffic controller collects the data in the same way as before.
- The survey forms will be created reflecting these conclusions. Mr. Payrav said that the survey will start from tomorrow.
- This calculation method only calculates the workload for each operation type. When finally giving out the number of processing aircrafts per hour, it is necessary to calculate the operation ratio in advance.
- From the afternoon, expert explained about RWY Capacity with Mr. Firuz and Mr. Payrav. They understood the basic idea of Sliding Scale in Japan.
- When reviewing the previous data for runway capacity, it turns out that there is an aircraft that takes time to RESPONSE of the departure aircraft at RWY 27 at Dushanbe Airport.
- Initially, we thought that we should survey only Runway Occupancy Time (arrival and departure). However, in the next survey, we also need to consider the characteristics of each runway. The RESPONSE time was reflected in the survey forms.

- Expert sent the necessary documents for calculation such as updated survey forms, detailed calculation method, and Excel table to Mr. Darvon and Mr. Payrav.
  - We were completed the W/S on Runway capacity calculation.
4. Expert gave the certificate to 5 participants for ATS capacity calculation.

(6) Observation OJT-I training

1. Four OJT-I participated the session. Expert cannot do observation in the control room today because of training schedule.
2. Expert explained the prepared checklist of OJT-I training for each item and confirmed whether it is being implemented. Only the item "ask to the evaluation of other instructors" is not implemented. It is one to one training in TAN, therefore it is not to ask to the evaluation of other instructors. All other items were carried out.
3. Expert confirmed the current implementation situation of OJT-I training in 2018. Mr. Gulomjon and Mr. Hotamjon have trainees as OJT Phase. Expert decided to observe Gulomjon's OJT training on Saturday 12 May. Furthermore, expert will observe Hotamjon's OJT training on Monday 14 May.
4. The expert sent the checklist for OJT-I training to the participants. Mr. Shuhrat will translate it into Russian and plans to use it for future training.
5. Mr. Payrav will send updated OJT-I Annual training plan 2018 to the expert.

6. <Observation 1> 12 May 2018

- When the expert reconfirmed the annual OJT-I training plan, it turned out that Mr. Gulomjon (OJT-I) is carrying out training on Saturday, expert decided to observe by going to the training center.
- Expert observed the OJT-I training at control room for 1 hour from 9 o'clock to 10 o'clock.
- Mr. Abdurahmon (trainee) copies the operation manual, necessary regulations (especially control interval), SID / STAR etc., fills in necessary notes on his notebook, and learns them. These must be prepared as trainees before OJT.
- If there is no traffic for radar control, Mr. Gulomjon ask the trainee and confirm whether he has the necessary knowledge.
- At this time, he asked "What will happen to departure / arrival aircraft from RWY 09 at Dushanbe Airport if the Shooting airspace used by the military?". In this case neither departure nor arrival can be done.
- Mr. Abdurahmon has been 12 years since obtaining the APP qualifications, and he is familiar with the work of the adjacent Radar position. However, the required training time is the same. He will complete training in May.

7. Observing the OJT-I training at control room, expert confirmed that the training based on ICAO standards is being implemented.

8. <observation 2 > 14 May 2018

- Expert observed Mr. Hotamjon's OJT-I training at the control room from 8: 00 to 9: 00.
- Expert confirmed the materials prepared by the trainee because there is no traffic.
- The trainee himself explained to the expert about the contents. It was described in his notebook considerably in detail. For example, in addition to the height of the mountain handwritten, its safety altitude was also listed. In addition, visual approach diagram of VFR aircraft was described.
- Basically, the operation manual is described by extracting each item. It is a way to remember in this way. Almost training has been completed and he is waiting for final approval from FDDG.
- Trainee is continuing his studies in regard to what seems to be less satisfactory.
- Mr. Hotamjon was carrying out training based on training in Malaysia and expert training. Expert checked this with the prepared checklist.

(7) Examination system development

1. W/S on the examination system development was held from 09:00.
2. Mr. Hotamjon, Mr. Gulomjon and Mr. Mansur were participated.
3. The expert explained the training system in Japan. the number of controllers was so large that it seemed not to be able to make an image of the training room well compared with TAN.
4. They seemed not believe that five newcomers were placed every four months, and 11 instructors

in Tokyo ACC.

5. After explaining the Japanese examination system, expert proposed 4 recommendations such as (1) implementing the written exam (2) determining the passing line (3) placing the instructor in the training room (4) revising the necessary rules. We discussed the recommendation.
6. As for the written examination, it is not done with TAN, but they are carrying out the test using the PC, and the score is calculated and displayed automatically when the exam is over.
7. Passing lines are set according to qualification acquisition status. Finally, FDDG decides that.
8. As for the placement of instructors, there is no need additional instructor because there is not much trainee at present time. However, in order to maintain the level of ICAO standards, it is necessary to arrange one dairy-working instructor to teach theoretical training.
9. Expert held W/S for Mr. Shuhrat who could not participate yesterday.
10. Expert explained the training system and examination system in Japan. Finally, Expert asked for opinions on the Recommendation.
11. He said that the examination of the theoretical training is still done by PC, and no written exam is done. In the PC exam, the passing line is 75% in the first certification, 80% in the second and 95% or more in the third. The passing line is set according to experience. Also, card type examination is carried out, questions are written in the card turned inside out, and the trainee answers this. It seems to be something like a game sense test.
12. He also agreed to arrange the daily-work instructor newly at the training center.
13. Regarding the passing line, since it is not described in the training manual, it is necessary to specify it in some document.
14. Expert consider training manual in TAN to amend if necessary.

## II. Next dispatch of the expert

- (1) Experts proposed tentatively that the next dispatch of expert will be as follow;  
/In November 2018: Mr. WATANABE (Chief Advisor)
- (2) TF-1 agreed the schedule of the next dispatch.

As a result of the activity, both sides confirmed the matters referred to in the documents attached hereto

Dushanbe, Tajikistan  
16 May 2018

Mr. Khusenov PAYRAV  
Head of ATC  
Sub-Leader of Task force 1  
SUE "Tajikairnavigation"

Mr. Hideo WATANABE  
Chief Advisor  
JICA Expert team of the project  
Japan International Cooperation Agency

- Attachment-1: TF-1 & 2 Activity Plan**
- Attachment-2: The activities report (2-1~2-6)**
- Attachment-3: Calculation detail procedure**
- Attachment-4: Examination system development in TAN**
- Attachment-5: MVA MAP development**
- Attachment-6: Checklist for OJT-I training**



## Minutes of the eighteen Taskforce-1 Meeting (TF1M/18) for “The Project for Capacity Development in Air Traffic Services” in Tajikistan Dushanbe, 8 June 2018

1. The TF1M/18 for “The Project for Capacity Development in Air Traffic Services” (hereinafter “the Project”) was held at 11:00-14:00 on 8 June 2018 in the PM Room.
2. Project Manager organized this meeting, Mr. Khusenov (TF1 Sub-leader), Mr. Ulugbeck and PC participated. Mr. Shambiev and Mr. Rajabov partly attended.
3. The purpose of this meeting was clarifying TF1 activities in the last May and confirm the commitments on TF1M/17 for ensuring actual outcomes of activities 1-4 and 1-5 by the technical view point, prior to the Management’s decision making.
4. The meeting confirmed the situation of those TF1 activities as below.

a) 1-4 (General part of the Operation Manual Review)  
 Since the higher regulations should be revised by CAA before drafting the Operation Manuals by TAN for proceeding 1-4 activities, there were misunderstandings of the descriptions on the deadline of OM drafting as 15 May in 1., (2), 9 in the MM of TF1M/17. The meeting confirmed that Mr. Khusenov will make an official request letter to CAA for revising descriptions about separation issues by 15 September prior to draft the operation manuals by TAN for the items of #6, #7, #8 and #9.

The meeting confirmed that Mr. Khusenov will coordinate to send TAN’s official notification letter on the issue of the Follow-Me-Car to DIA by 15 June.

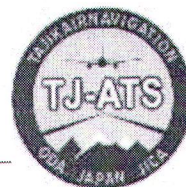
b) 1-4 (Signal Lamp / Item #3)  
 Prior to the meeting, Mr. Shambiev had confirmed that it isn’t necessary to revise the operation manuals for introducing this equipment for four airports, TAN must follow the ICAO documents for using this. Mr. Shambiev had instructed Mr. Rajabov to investigate the availability and a price for the equipment and he ordered Mr. Mansuri to start the AD simulator trainings with using newly made radio failure scenarios.

c) 1-4 (MVA Chart/Map development / item #16)  
 The meeting set the TAN’s internal definitions as below.  
 - MVA Chart: Segmentation chart with the figures of minimum vectoring altitude. (in MASTER Display)  
 - MVA Map: Overlay the MVA chart on the 60km radius WGS-84 topographical map. (paper base)

The meeting also confirmed that it is difficult to use the ordinal technical instructions for MVA Chart/Map as it is, because of WAM and SSR are using in Tajikistan’s airspace instead of traditional ASR and ARSR.

The meeting had discussed technical things as table below.

Items	Discussion and conclusion
1 Required MVA Chart/Map	The meeting decided to make the MVA Chart/Map for the UTDD approach area only. TF1/3 will decide that TAN is in need of MVA Chart/Map for En-route or not.
2 MVA Chart/Map Cover range	MVA Chart coverage will be 60km from RWY center, same as WGS-84 1/200,000 Map by FAZO. It is not equal as SSR or WAM coverage area from the center of radar site.
3 Existing Caution Line	TF1/3 decided to keep the existing caution lines in Valzob area (FL180-190) as it is. PC is asking Experts for the technical advice of this segmentation.
4 Technical requirements	Mr. Payrav will consult Experts about segmentations, clearance and other technical issues. PC is asking Experts to provide samples for dividing segments.
5 Clearance in approach area	ATC-1 Expert advised that it is better to use 2,000ft even approach area. PM and TF1/3 are confirming the ICAO Annex-4, Doc8168 and Doc8697.
6 Type of Outcomes	The meeting decided two outcomes as below. 1) MVA Chart layer in MASTER display 2) MVA Map in paper. (TAN will provide this for airlines after confirming fusibility of outcomes.)
7 Approval, AIP and others	DDG will approve the MVA Chart/Map as internal reference.
8 User trainings and O/M change	ATC-1 Expert confirmed that it is no need to conduct the training for using MVA Chart/Map, and no need to change the operation manuals, too.
9 Consider the error of surveillance	PC is asking Expert about more detail of this considerations in WAM+SSR environment.
10 Annual inspection	ATC-1 Expert confirmed that newly constructed obstacles should be
11. Responsibility and Deadline	TF1 and 3 are going to assign the responsibility and set the deadline at next TF1/3 meeting.



gb) 1-4 (ATS Capacity Assessment Methodology)

Mr. Payrav recognized that five participants those who had attended workshop in 7, 8 and 10 May obtained a certificate as only "attendance" without achievement test. In this regard, the description of "they fully understood the Japanese calculation method" in MM of TF1M/17 is not certain at this moment. He had orally ordered all ATC to obtain the six days data on ATC (UTDD and ACC) and AD (only runway capacity) from 5<sup>th</sup> June (They couldn't start it from 11 May) using Excel formats, but satisfactory data was not available yet.

In accordance with situation above, he revised survey schedule for the time being as below.

11 June: All ATC shift teams will submit the raw data to TF1 management.

12 June: Start calculation by 5 participants using Expert provided Excel forms. (report to the next TF1M)

13 June: Send filled excel forms to ATC-1 Expert.

29 June: Obtain the results (UTDD, ACC and AD(RWY)) by Japanese methodologies.

Mr. Payrav maintained that the meaning of the "AD capacity" is only "RWY capacity", because of Expert supposed that the RWY capacity will be a bottle-neck of whole AD capacity as usual. PM commented that parking spots and boarding bridges will be saturated in the both of theoretical and practical estimation of AD capacity assessment before theoretical RWY capacity in our case, and it is not difficult to obtain the only theoretical figures (e.g. 30 arrivals/hours) without considering actual limitations. The meeting reminded that the practical capacity in a single runway using mix mode modeling is expected by the result figure of this AD capacity part.

PM remind that DDG and TF1 management intended to verify the result above by the Ru/Uz assessment methodology, because those are new and closer than Japanese one which had objective of obtaining parameter for ATFM system in 1993 by DORA and Modified MBB.

PC commented that it is better to complete on-going surveys and calculations by Expert introduced Japanese methodology with customizing it for TAN's situation first, then discuss how to verify the figures by using Ru/Uz or other various methodologies.

The meeting recognized that reducing further ATC's workload on survey and allocate those CP resources for finalizing other 1-4 activities is important, because the initial objective of this assessments doesn't have actual needs, since TAN doesn't have a plan for expanding ATC capacity for the time being and DIA also has a surplus of AD capacity at this moment.

c) 1-5 (Outcome of Observation on OJT-I)

Mr. Payrav will confirm Mr. Shuhrat a progress of 1, (6),4 in TF1M/17 MM (Check list translation into Russian and utilization) and report it at next TF1 meeting. He also promised that updated OJT-I annual training plan in 2018 will be sent to Expert by next TF1 meeting.

d) 1-5 (Outcome of Examination System Development)

PM mentioned that the objective of this activity was to improve TAN's examination system to be ICAO standard and quality by TF1. For clarifying what examination system was developed or how improved it by two days activity in May, the meeting asked Mr. Payrav as a TF1 Sub-leader to confirm Mr. Shufrat or Mr. Mansuri the progress of two things below in accordance of descriptions (7),12-13 in TF1M/17 MM by next TF1 meeting.

-Progress of assignment of daily-work insulator(?) in the training center. (by when by who?)

-Specific descriptions of existing "passing line" (75, 80, 95%) into some documents. (by when by who?)

5. Project is planning to have next TF1 meeting with TF3 in 12 June with DDG and TAN managements for confirming all remaining TF1 activities with FPD team and TF3 management.

Dushanbe, 8 June 2018

P. Khuseinov  
TF1 Sub-leader  
TAJIKAIRNAVIGATION

B. Sheraliyev  
Project Manager  
TAJIKAIRNAVIGATION

Attachment-A: MM on TF1M/17 (without attachments.)

Attachment-B: Summary on 1-4 activities (No change form TF1M/16)





attacher - A

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This meeting was the reporting opportunity of implemented TF-1 activities by Expert and coordinate next mission schedule by TF accordance with the Sub-activity list and AWP.

### I. Activity of both side from 3<sup>rd</sup> May to 16<sup>th</sup> May 2018

During this period, the expert and Taskforce 1 team led by Mr. Payrav had a series of discussions and exchanged information on possible technical assistance to the Training on Air Traffic Control Officer part of the Project for Capacity Development of TAN.

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  - CNS Dep. of TAN should be prepared better for such contingencies
  - , because the exercise identified weaknesses of CNS equipment in ATS Center.
  - He suggested to invite specialists from MET staff, all supervisors, controllers and fire security dep. of TAN, which were not invited for the exercise.
  - To put in place the possibility of providing Radar service from Kulyab or Bokhtar Airports.
  - To use HF frequency instead 133.1 is not the best option, better to use secondary TWR or Supervisors car.
10. Mr. Watanabe gave additional information about the practice in Japan, they transfer control to another ACC which has back-up system, and TAN should implement the procedure to provide Radar service in Dushanbe FIR from back-up facility.
11. Mr. Olowoyey:
  - Clarified the fire alerting system of ATS Center in TAN. If everyone will be evacuated, what system is used in TAN for alerting.
  - Asked about the person in charge to initiate CP. TAN explained that Supervisor of Dushanbe airport is responsible for that.
12. The exercise was done successfully.
  - Participants have a good experience for contingency situation.
  - They recognized that 'what shall we do?', 'How to cope with?', 'How to contact with aircraft?'
  - TAN carried out its own at all the stages of CP exercise from the preparation.
  - It is also meaningful to have many observers participate.

#### (4) Monitoring Hazard Map

1. Expert checked hazard maps of three airports: RTDD, RTDL, RTDK.

Hazard listed below is as follows.

##### RTDD;

- Water Well behind the Stand
- Main TWY M is passing from TWY A to TWY E (hot spot)
- Taxiing of AN-28 from Stand A1 (hot spot)
- Bird ingestion/strike
- Lightning of B11 (not enough brightness)
- Bad radio communication
- Pedestrians
- Not allowed to use TWY B and TWY C at the same time
- crack of the concrete
- RWY lights different position (60m RWY wide/but lighting position is along with 45m wide)

##### RTDL; (Two groups created hazard maps)

###### Group № 1

- Lack of illumination in parking stands A-1,2,3
- No RWY Holding Position Marking on TWY A and F
- TWY B is temporary closed

- The lack of a pedestrian crossing for personnel from the gate (checkpoint) No. 1
- The fence became old at north of the RWY08
- TWY F is closed
- Trees in TWY E block the view of the tower
- Fence is near residential area (hazard of the Unlawful Interference)
- Flooding of the RWY
- Birds activity close to the RWY08
- Dogs in the vicinity of the fuel storage

#### Group № 2

- Damaged surface of the end the RWY-26, TWY A, stand A-1 and part of the stand A-2
- Inconsistency to the ICAO standards of the light-signal system on the TWY B (the signboard is at the lower level than taxiway) pilot cannot see.
- The roof of the aerodrome service building block the view of Tower
- Flooding of the RWY 08
- Animals (dogs) coming in from the fuel storage area
- Birds activity close to the RWY-08
- Trees are too close to the fences (high possibility of the Unlawful Interference)

#### RTDK;

- Old fence of the airport perimeter (barbed wire) - west north
- Lack of lighting in parking stands C-10
- Birds activity close to the RWY13
- Both sides of the runway covered concrete, are not asphalted
- Hight of light-signal system (0.2 m above the runway surface level)
- Crossing the runway (for Navigation maintenance)

2. Experts asked questions about each hazard and changed the expression in English after understanding the contents.
3. The hazard map created is handwritten based. It is necessary to show it to the people concerned in an easy-to-understand manner by putting a picture in a form like RTDD. Three airport RSTs did a good job.
4. The expert checked the hazard map of the three airports and confirmed its effectiveness. Use the organized hazard map to safely carry out the operation of those airports.

#### (5) F/U ATS capacity calculation method

##### 1. Day1 (7 May)

- Expert started at training center at 8 o'clock and discuss about today's schedule to Mr. Payrav (Head of ATC).
- He said that participants in the W/S for calculating the control processing capacity value, Radar position is a member of Capacity WG, the others join TAN as two newcomers who have just acquired Tower and ACC certification. Other member cannot attend the W/S because of shit working. New commers seem to have been chosen because they can speak English well.
- Expert explained how to calculate the control processing capacity value using the method of calculation in Japan.
- Member of WG was explanations for the second time, so expert felt that their understanding was quick.
- The newcomers seemed to be difficult to understand because they had little experience in ATC operation.
- After completing a brief explanation, we reviewed "the answer to the question "from TAN's WG during February to March 2018.
- Expert thought this review was important for a better understanding of the method in Japan.
- In particular, as to the occurrence frequency of control events, expert have repeatedly asked how to obtain the value from TAN, so expert carefully explained to understand it.
- From the afternoon, control processing capacity value is actually calculated.
- **The calculation method was specifically described.** TAN prepared three PCs for calculation

exercise.

- Expert put Excel files in PCs and asked each to calculate based on the data used last time.
- Expert carefully explained each work for calculation.
- Two newcomers were accustomed to the operation of the PC, and it was possible to enter the calculation work immediately with a little advice.
- Members of WG seemed not used to PC too much, it took quite a while but eventually he could be completed calculation.

## 2. Day2 (8 May)

- The purpose of the W/S is to teach the calculation of the control processing capacity value to the ACC controllers (member of capacity WG) so that they can calculate themselves.
- They participated in the previous W/S, so expert omitted first explanation and decided to explain the specific calculation method directly.
- In the initial plan expert asked two newcomers to tell them (this way is deeper understanding for them), but it seemed that it did not work out well. Therefore, experts decided to teach himself.
- Since two Excel files were manipulated and entered, at first, they were puzzled, but once they learned the operation they were able to work smoothly afterwards.
- They have asked many times whether "Is this actual data?". In each case, since this data was prepared for exercises to the last, expert advised them to "just put it!".
- Technical transfer to the ACC controller was completed and confirmed that **they fully understood the Japanese calculation method.**
- In the afternoon, expert explained the Runway Capacity calculation as planned.
- Mr. Payrav participated and understood the Sliding Scale well.
- When applying the Radar separation (10 Km) of the TAN to the departing aircraft's Allowance, it will be 45 seconds becomes 75 seconds.
- We try to enter that data into the Excel table as a trial, so the number of aircraft by combination all come out automatically.
- **Mr. Payrav said that "This excel matrix is doing very well."**
- From now on, it is necessary to examine how to take a safety buffer (departure and arrival), how to survey the runway occupation time, and so on.

## 3. Day3 (10 May)

- Firstly, we considered whether ACC 's Procedure controller(PC) and Radar controller(RC)' s task could be separated.
- We checked each task and confirmed it. Although RC and PC are closely related in business, we concluded that we would calculate the workload using only Radar controller's task (including system input).
- Next, regarding difficulty index, management decided to use the table created in consideration with WG.
- In addition, the air traffic controller collects the data in the same way as before.
- The survey forms will be created reflecting these conclusions. **Mr. Payrav said that the survey will start from tomorrow.**
- This calculation method only calculates the workload for each operation type. When finally giving out the number of processing aircrafts per hour, it is necessary to calculate the operation ratio in advance.
- From the afternoon, expert explained about RWY Capacity with Mr. Firuz and Mr. Payrav. They understood the basic idea of Sliding Scale in Japan.
- When reviewing the previous data for runway capacity, it turns out that there is an aircraft that takes time to RESPONSE of the departure aircraft at RWY 27 at Dushanbe Airport.
- Initially, we thought that we should survey only Runway Occupancy Time (arrival and departure). However, in the next survey, we also need to consider the characteristics of each runway. The RESPONSE time was reflected in the survey forms.

- Expert sent the necessary documents for calculation such as **updated survey forms, detailed calculation method,** and **Excel table** to Mr. Darvon and Mr. Payrav.
- We were completed the W/S on Runway capacity calculation.

**4. Expert gave the certificate to 5 participants for ATS capacity calculation.**

(6) Observation OJT-I training

1. Four OJT-I participated the session. Expert cannot do observation in the control room today because of training schedule.
2. Expert explained the prepared checklist of OJT-I training for each item and confirmed whether it is being implemented. Only the item "ask to the evaluation of other instructors" is not implemented. It is one to one training in TAN, therefore it is not to ask to the evaluation of other instructors. All other items were carried out.
3. Expert confirmed the current implementation situation of OJT-I training in 2018. Mr. Gulomjon and Mr. Hotamjon have trainees as OJT Phase. Expert decided to observe Gulomjon's OJT training on Saturday 12 May. Furthermore, expert will observe Hotamjon's OJT training on Monday 14 May.

4. The expert sent the checklist for OJT-I training to the participants. **Mr. Shuhrat will translate it into Russian and plans to use it for future training.**

**5. Mr. Payrav will send updated OJT-I Annual training plan 2018 to the expert.**

6. <Observation 1> 12 May 2018

- When the expert reconfirmed the annual OJT-I training plan, it turned out that Mr. Gulomjon (OJT-I) is carrying out training on Saturday, expert decided to observe by going to the training center.
- Expert observed the OJT-I training at control room for 1 hour from 9 o'clock to 10 o'clock.
- Mr. Abdurahmon (trainee) copies the operation manual, necessary regulations (especially control interval), SID / STAR etc., fills in necessary notes on his notebook, and learns them. These must be prepared as trainees before OJT.
- If there is no traffic for radar control, Mr. Gulomjon ask the trainee and confirm whether he has the necessary knowledge.
- At this time, he asked "What will happen to departure / arrival aircraft from RWY 09 at Dushanbe Airport if the Shooting airspace used by the military?". In this case neither departure nor arrival can be done.
- Mr. Abdurahmon has been 12 years since obtaining the APP qualifications, and he is familiar with the work of the adjacent Radar position. However, the required training time is the same. He will complete training in May.

7. Observing the OJT-I training at control room, expert confirmed that the training based on ICAO standards is being implemented.

8. <observation 2 > 14 May 2018

- Expert observed Mr. Hotamjon's OJT-I training at the control room from 8: 00 to 9: 00.
- Expert confirmed the materials prepared by the trainee because there is no traffic.
- The trainee himself explained to the expert about the contents. It was described in his notebook considerably in detail. For example, in addition to the height of the mountain handwritten, its safety altitude was also listed. In addition, visual approach diagram of VFR aircraft was described.
- Basically, the operation manual is described by extracting each item. It is a way to remember in this way. Almost training has been completed and he is waiting for final approval from FDDG.
- Trainee is continuing his studies in regard to what seems to be less satisfactory.
- Mr. Hotamjon was carrying out training based on training in Malaysia and expert training. Expert checked this with the prepared checklist.

(7) Examination system development

1. W/S on the examination system development was held from 09:00.
2. Mr. Hotamjon, Mr. Gulomjon and Mr. Mansur were participated.
3. The expert explained the training system in Japan. the number of controllers was so large that it seemed not to be able to make an image of the training room well compared with TAN.
4. They seemed not believe that five newcomers were placed every four months, and 11 instructors

in Tokyo ACC.

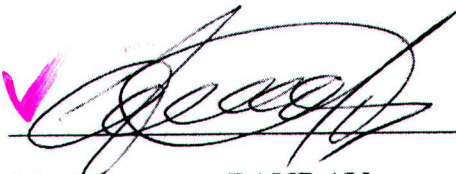
5. After explaining the Japanese examination system, expert proposed 4 recommendations such as (1) implementing the written exam (2) determining the passing line (3) placing the instructor in the training room (4) revising the necessary rules. We discussed the recommendation.
6. As for the written examination, it is not done with TAN, but they are carrying out the test using the PC, and the score is calculated and displayed automatically when the exam is over.
7. Passing lines are set according to qualification acquisition status. Finally, FDDG decides that.
8. As for the placement of instructors, there is no need additional instructor because there is not much trainee at present time. However, in order to maintain the level of ICAO standards, it is necessary to arrange one dairy-working instructor to teach theoretical training.
9. Expert held W/S for Mr. Shuhrat who could not participate yesterday.
10. Expert explained the training system and examination system in Japan. Finally, Expert asked for opinions on the Recommendation.
11. He said that the examination of the theoretical training is still done by PC, and no written exam is done. In the PC exam, the passing line is 75% in the first certification, 80% in the second and 95% or more in the third. The passing line is set according to experience. Also, card type examination is carried out, questions are written in the card turned inside out, and the trainee answers this. It seems to be something like a game sense test.
12. He also agreed to arrange the daily-work instructor newly at the training center.
13. Regarding the passing line, since it is not described in the training manual, it is necessary to specify it in some document.
14. Expert consider training manual in TAN to amend if necessary.

## II. Next dispatch of the expert

- (1) Experts proposed tentatively that the next dispatch of expert will be as follow;  
/In November 2018: Mr. WATANABE (Chief Advisor)
- (2) TF-1 agreed the schedule of the next dispatch.

As a result of the activity, both sides confirmed the matters referred to in the documents attached hereto

Dushanbe, Tajikistan  
16 May 2018



Mr. Khusenov PAYRAV  
Head of ATC  
Sub-Leader of Task force 1  
SUE "Tajikairnavigation"



Mr. Hideo WATANABE  
Chief Advisor  
JICA Expert team of the project  
Japan International Cooperation Agency

- Attachment-1: TF-1 & 2 Activity Plan
- Attachment-2: The activities report (2-1~2-6)
- Attachment-3: Calculation detail procedure
- Attachment-4: Examination system development in TAN
- Attachment-5: MVA MAP development
- Attachment-6: Checklist for OJT-I training

**Summary on Activity 1-4 (20180424)**

	ATC-1 Expert's Recommendations in 20181/23&2/2 (TF1M/13)	Yoshida			Watanabe		Effectuated Manuals		External Audits Findings				TF1 MAva Findings			W/G & Safety found	
		2017/2/8 +2/10 mail	2017/8/14 compere	2017/10/9 observe	18/1/15 analysis	UTDD	Others Airports	USOAP 2008/7	EANPG 2011/10	ICVM1 2015/6	ICVM2 2016/10	Group1 2016/7	Group 2 2016/10	MAva-I 2017/8			
1	Landing clearance Proc (Change an organization)			Yes	Yes	4D 4.5.3									Yes	To prepare revised manuals by one month before new ATC tower operation.	
2	Same frequency issue (Separate radio channel)				Yes	4D 1.4 6D 1.6									Yes	To prepare revised manuals by one month before new ATC tower operation.	
3	Light Gun (Should introduce it)	Introduce Light gun		Yes	Yes			1-7-10		ANS 1) -e)		Yes	Yes		Yes	Accepted (Buy 4 sets by end of Sep 2018)	
4	Follow-me-car operation (Return original proc)			Yes	Yes	4D 4.5.1&3										TAN will notice DIA Expert's finding. (by the end of May 2018)	
5	Low intensity of Air traffic (No Recommendation)					14D 1.9	10H 1.9								Yes	N/A Need ATS Capacity Assessment Survey.	
6	Separation VFR (5.2.1) (Revise 300m to 150m)				Yes	6D 5.2.1						Yes	Yes		Yes	Accepted (TAN will make proposal to CAA for changing it by Nov 2018)	
7	Sepa VFR (5.2.1.2&2.3) (Delete Sentence)		Yes		Yes	6/8/14D	8/10H									Accepted (TAN will make proposal to CAA for changing it by Nov 2018)	
8	IFR Lateral separation (Add Doc 4444 5.4.1)	Cross B/ Lateral S	Yes		Yes	6/8/14D	8/10H					Yes	Yes			Accepted (TAN will make proposal to CAA for changing it by Nov 2018)	
9	Separation VFR (5.2.3.2) (Delete Sentence)		Yes		Yes	6/8/14D	8/10H									Accepted (TAN will make proposal to CAA for changing it by Nov 2018)	
10	Transfer control altitude (Change Radar part)														Yes	To prepare revised manuals by one month before new ATC tower operation.	
11	Introducing FPS (Not Necessary)	Introduce FPS			Yes							Yes (eFSP)	Yes (eFSP)	Yes 4.13.3.1		Accepted → But TOPSKY has eFPS (No need to do anything)	
12	Radar Handover (No Problem / No need)	Rader ID Hand-off			Yes											Accepted (No need to do anything)	
13	Speed control (No Problem / No need)	Speed Adjust		(Yes)	Yes								Yes	Yes 4.6.3.5		Accepted (No need to do anything)	
14	STCA (No Problem / No need)				Yes			1-7-10							Yes	MASTER has STCA function, but no procedure. (If no need, OK)	
15	MSAW (Necessary to describe)				Yes			1-7-10							Yes	MASTER function is not fulfilled. No procedure, but improve S/W first.	
16	MVA Map (Need to create map)				Yes				Chart							TAN will order to make new one to TF3. (by the end of Nov 2018)	
a	Already Complied ICAO (No Findings)				17 Jan e-mail	N/A	except. 8H/10H									Accepted (No need to do anything for 3 airports)	
b	Non-efficient Handovers (Introduce full OLDI?)				New Proposal in 28 Feb 2018											N/A Need Coordination with UZ, AF, KG	

Discussed TF1 in Dushanbe: 2/27, 3/6, 3/12, 4/9  
 Discussed TF1 in Hojand: 4/17  
 TAN's final decision: 4/24 in TF1M/16

*Handwritten signature*