MINUTES OF MEETING
BETWEEN THE JAPANESE MID-TERM EVALUATION TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ISLAMIC REPUBLIC OF PAKISTAN ON THE JAPANESE TECHNICAL COOPERATION ON THE PROJECT FOR BALANCING AND MODERNIZATION OF WORKSHOP FACILITIES AT PAKISTAN INDUSTRIAL TECHNICAL ASSISTANCE CENTRE (PITAC) - LAHORE

The Project Mid-term Evaluation Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Masayoshi Juro visited the Islamic Republic of Pakistan from October 3, 2004 for the purpose of conducting mid-term evaluation through discussing with the Pakistani authorities concerned the current situation and future direction of the ongoing Project for Balancing and Modernization of Workshop Facilities at Pakistan Industrial Technical Assistance Centre (hereinafter referred to as "the Project").

As a result of the discussions, both sides came to share a common understanding concerning the matters referred to in the document attached hereto.

Lahore, October 13, 2004

Mr. Masayoshi Juro
Leader
Mid-term Evaluation Team
Japan International Cooperation Agency
Japan

Mr. Fazal-i-Qadar
Joint Secretary (P & I)
Ministry of Industry and Production
Islamic Republic of Pakistan

Mr. Minoru Sasago
Chief Advisor
Project for Balancing and Modernization of Facilities at PITAC

Mr. Ejaz Rasul Chaudhry
General Manager
Pakistan Industrial Technical Assistance Centre
Islamic Republic of Pakistan

ATTACHED DOCUMENT

I Purposes of the Mid-term Evaluation Team

The Team explained the purposes of its visit to Pakistan as follows:

-to confirm the current situation of the Project through site observation and interviews with the counterpart personnel of PITAC (hereinafter referred to as "the C/P") and the Japanese experts;
-to exchange opinions on various concerns arising from daily project operation;
-to study performance and achievement of the Project by collecting data and information on the verifiable indicators defined in the Project Design Matrix (hereinafter referred to as "PDM") as well as other relevant data and information in accordance with the five criteria, i.e. relevance, effectiveness, efficiency, impact and sustainability;
-based on this, to form a consensus on the future direction of the project activities in the remaining cooperation period; and
-to collect additional information related to PITAC.

II Tables for Project Management

Taking the recent progress of the technical cooperation into account, both sides acknowledged the revised version of tables for Project management (i.e. PDM, PO, TCP, TSI etc.) as shown in Annexes 1 - 7.

It was confirmed that these tables should be utilized as useful tools for daily monitoring of the project activities; the C/Ps and the Japanese experts should continuously fill in the tables and, as necessity arises, the format of the tables itself could flexibly be revised in response to changes in various factors surrounding the Project.

III Inputs from the Japanese Side

1 Experts

(1) Long-term experts

It was confirmed that five long-term experts, Chief Advisor, Coordinator/SME Promoter and three technical experts in the fields of CAD/CAM network system, mold technology, and mold processing, assembly, and trial shot, had already been dispatched.

The Team informed that a long-term expert in the fields of mold assembly and trial shot would be dispatched to replace the expert in the fields of mold processing, assembly, and trial shot by the end of December 2004. JICA will endeavor to dispatch another long-term expert to cover mold processing. However, if an appropriate expert is not found, this field will be covered by short-term experts.

(2) Short-term experts

The seminar on Occupational Safety & Health held by a short-term expert in August/September in 2004 was successful, attracting many participants from the private sector. The Team emphasized that PITAC should follow up his suggestions, i.e. disseminating the knowledge to the private sector.

2 Equipment

JICA completed procurement of all items of the equipment listed in the Minutes of Meetings attached with the original Record of Discussions (hereinafter referred to as "the R/D") signed on March 21, 2001.

The combination of injection molding machines (350ton and 160ton) and four model molds (kitchen cabinet tray, front light body of motorcycle, mouse cover, and telephone upper-case) was modified from the initial plan (350ton: telephone upper-case, 160ton: the others) as a result of the trial shot. Both sides confirmed that this change of combination does not hinder technical transfer.

IV Inputs from the Pakistani Side

1 Budget

The Pakistani side explained that the budget allocated for the Project was increased from Rs. 8.35 million to Rs. 29.442 million owing to the revision of PC-I. The recent positions of PITAC's project budget and overall budget are shown in Annex 8.

2 Workshop construction

The Team pointed out that the delay in the implementation of the Project including technical transfer was mostly caused by the delay in the construction of the workshop. In order to accelerate the implementation of the Project, JICA was obliged to finance the workshop construction in place of PITAC in March 2004. The Team also pointed out that the overhead crane in the workshop have not yet been installed, although it was PITAC's obligation. It was confirmed that PITAC would install an overhead crane by the end of December 2004.

The Team also requested that PITAC take necessary measures for dust and water proof arrangement in Workshop in order to protect the equipment. It was confirmed that PITAC would take provisional measures within one month before full-scale measures are taken within three months.

3 Machinery and equipment

Provision of machinery and equipment from the Pakistani side has only partially completed, owing to the delay in local cost financing and the tendering process. It was confirmed that Pakistani side would procure the above-mentioned machinery and equipment by the end of 2004.

4 C/P assignment

The list of the C/P currently assigned to the Project is shown in Annex 9. Pakistani side confirmed that Project Director and Project Manager would be more proactively involved in the Project and newly recruited twenty C/Ps would be deployed to the Project by the end of October 2004 (Annex 10).

5 Support by the Ministry of Industry and Production

It was agreed that the Ministry of Industry and Production would provide utmost support to the Project in order to ensure its sustainability, i.e. allocating budget for the maintenance of machinery and equipment and retaining the newly recruited staff within the Project after the Project period.

V Project Activities

Operation and maintenance of the equipment

It was confirmed that an action plan for the establishment of the maintenance system would be

prepared and implemented by the Project and the activities would be continued onward after the completion of the Project.

VI Measures for Ensuring the Achievement of the Project Purpose

1 General

It was agreed that in order to strengthen the Project's linkage with the private sector, the Project would designate a staff with engineering background in this area. It was also confirmed that Japanese experts and C/Ps would frequently visit private companies to identify the private sector's needs, find potential customers, and strengthen the relationships with the plastic mold-making industries.

2 Training courses

It was agreed that Japanese experts and C/Ps would prepare detailed schedules for each of the training courses, based on which preparation activities would be initiated.

3 Technical backup support services and advisory services

It was agreed that Experts and C/Ps would visit and interview potential beneficiaries/companies, to extend backup support services and advisory services and that CAD/CAM section would start contacting private industries to identify their specific needs, explaining what services the Project can provide, and taking up orders if necessary conditions are met.

VII Modification of PDM

The indicators of the Overall Goal described in the current PDM do not necessarily reflect the direct impact of the Project. Therefore, verifiable indicators for the Overall Goal were modified to "Increase of orders of plastic molds at beneficiary plastic mold making companies", and "Rejection rates, defective rates, and complaints on the moldings and molds produced by project beneficiaries (direct and indirect)". While conducting follow-up activities to beneficiary companies, the Project will collect data for these indicators.

In addition, a new project component "Interactions of the Project with private companies are strengthened." was added to outputs and related activities were included in the PDM.

VIII Cooperation Process

1 Project staff meetings

It was confirmed that joint project staff meetings would be periodically conducted by Pakistani and Japanese sides.

2 Joint Coordinating Committee meetings

It was confirmed that in future the Joint Coordinating Committee meetings (JCC) would be held at least twice a year as stipulated in the R/D with the participation of stakeholders, for the purpose of not only reporting but also improving the quality of the Project.

3 Monitoring reports

It was confirmed that the Japanese experts and C/Ps would monitor the project activities every six months and record the progress as a Monitoring report.

4 Monitoring/Evaluation sheets (for technical transfer)

The Team explained that the monitoring/evaluation sheets should be used for measuring the progress of technology transfer, although the format of the sheets has not yet been prepared. The Pakistani side fully understood the importance of periodic monitoring and thus it was confirmed that once the format was prepared and approved by the C/Ps, the Project would start using it.

5 Public Relations

It was confirmed that public relations were essential in attracting private companies as customers and that appropriate tools such as periodic issuance of newsletters would be developed and continuously used.

6 Schedule of Final Evaluation

The Team explained that the final evaluation team for the Project was scheduled to be dispatched in JFY 2006. Both sides agreed that JICA would inform PITAC of the specific schedule of this mission well in advance so that the latter could initiate preparation work early enough.

IX Other Issues

Inauguration of the Project

It was confirmed that project inauguration, originally scheduled on 1st October 2004 but postponed, would be conducted by the end of 2004 with the attendance of the representatives from the Ministry of Industry and Production.

List of Annexes

1	Project Design Matrix (PDM)
2-1	Technical Cooperation Program (TCP) Mold Design
2-2	Technical Cooperation Program (TCP) CAD/CAM Network Station
2-3	Technical Cooperation Program (TCP) Mold Processing
2-4	Technical Cooperation Program (TCP) Mold Assembly & Trial Shot
2-5	Technical Cooperation Program (TCP) SME Promotion
3	Plan of Operations (PO)
4	Tentative Schedule of Implementation (TSI)
5-1	ATCP for JFY 2004 Mold Design
5-2	ATCP for JFY 2004 CAD/CAM Network Station
5-3	ATCP for JFY 2004 Mold Processing
5-4	ATCP for JFY 2004 Mold Assembly & Trial Shot
5-5	ATCP for JFY 2004 SME Promotion
6	APO for JFY 2004
7	ATSI for JFY 2004
8-1	Budget Allocation (Local Cost) for the Project 2000-2004
8-2	Budget Allocation for the Project (Quarterly)
8-3	Budget & Expenditure Position 2003-2004
8-4	Budget Statement Account, Generated Income of PITAC, 2003-2004
9	Allocation of the C/P and Staff for the Project
10	Allocation of New C/P and Staff for the Project
11	List of Attendance

Annex 1 Revised Project Design Matrix (PDM)

PITAC-JICA Project (Oct. 13, 2004)

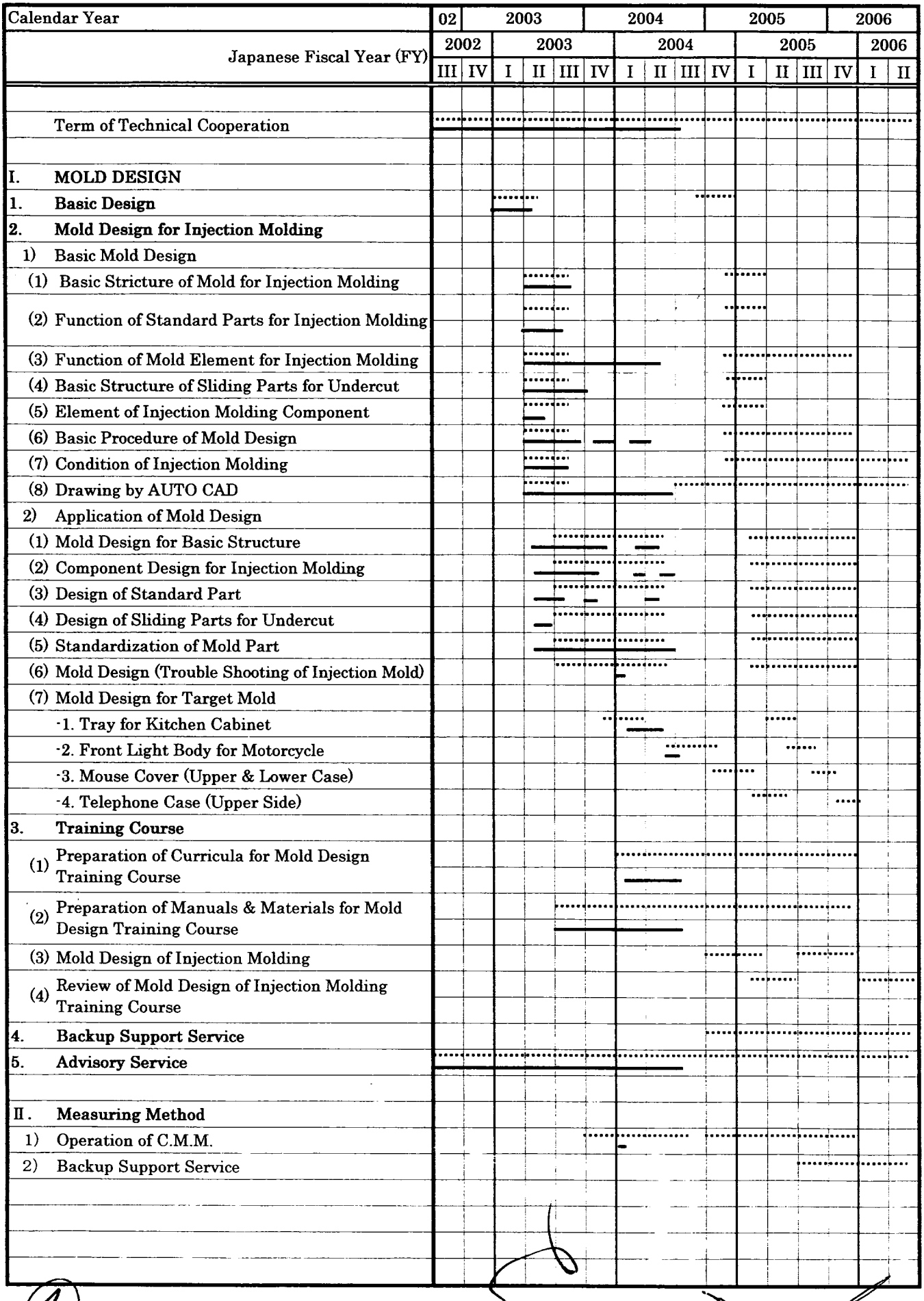
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
[Overall Goal] Domestic plastic mold making industries are able to supply better quality molds for plastic production in Pakistan.	1. Increase of orders of plastic molds at beneficiary plastic mold making companies 2. Rejection rates, defective rates, and complaints on the moldings and molds produced by project beneficiaries (direct and indirect)	1-1. Industrial statistics 1-2. Survey report of PITAC 2. Survey report of PITAC 3. Survey report of PITAC	a. There is no drastic change in the policy of Pakistan government regarding engineering sectors. b. Demand for plastic industry from assembly industry continues to be stable. c. Linkage between assembly industry and plastic mold industry is enhanced. d. A quality requirement for plastic products becomes higher in the industries.
[Project Purpose] Technical Capability of PITAC is upgraded to extend technical services in the field of plastic mold technology.	1. Level of satisfaction of recent and former service beneficiaries. 2. Number of newly improved services and beneficiaries.	1,2 Records of questionnaires to participants of all training courses Questionnaires to and interviews with beneficiary companies and industrial associations	a. Pakistan plastic mold industries utilize the technology obtained from PITAC. b. Demand for quality mold form plastic industry is increasing in trend. c. Plastic materials and mold materials are supplied within Pakistan.
[Outputs of the Project] 0. The project operation unit is established for making advanced plastic molds. 1. The necessary machinery and equipment are provided, installed, operated and maintained properly. 2. Technical capability of the counterpart personnel (hereinafter referred to as 'C/P') is upgraded. 3. Technical training courses and seminars are implemented systematically. 4. Technical backup support services are implemented systematically. 5. Advisory services are implemented systematically. 6. Interactions of the Project with private companies are strengthened.	0. Number and capacity of staff, budget and settlement accounts, number of committees and meetings, number of cases in publicity. 1-1. Contents and condition of machinery and equipment. 1-2. Route to get spare parts and situation to secure spare parts. 2-1. Assessment by the Japanese experts. 2-2. Number and technical level of achieved target products. 2-3. Manuals, textbooks and developed. 3-1. Number of training courses 3-2. Number of training course participants. 4-1. Number of mold designs and their clients. 4-2. Number of implemented trial prototypes and their clients. 5. Number of implemented technical advisory services and their clients. 6-1 Number of customers 6-2 Number of companies on data base	0. Organization chart, Administration record, Accounting record, Personnel record 1-1. Property record Operation & Maintenance record 1-2. Spare parts list Suppliers list 2-1, 2-2, 2-3 Record of PITAC 3,4,5, 6 Record of PITAC	a. Trained C/P's remain at PITAC.

[Activities]	Inputs		
	The Pakistan side	1. The Japanese side	a. C/P personnel remain at PITAC
0-1. Allocate necessary personnel as planned. 0-2. Formulate plans of activities. 0-3. Make budget plan and execute it properly. 0-4. Establish and operate project management system. 1-1. Provide and install necessary machinery and equipment. 1-2. Operate and maintain machinery and equipment properly. 2-1. Make Technology Transfer Plan. (Technical Cooperation Program (TCP), Annual Technical Cooperation Program (ATCP) etc. 2-2. Implement technology transfer to C/P following to Technology Transfer Plan. 2-3. Monitor and evaluate the result of technology transfer to the C/P. 3-1. Identify needs through company visits. 3-2. Make plans of technical training courses and seminars. 3-3. Develop training curricula and teaching materials. 3-4. Implement technical training courses and seminars. 3-5. Monitor and evaluate the result of technical training courses and seminars. 4-1. Identify needs through company visits. 4-2. Make plans of technical backup support services. 4-3. Implement technical backup support services. 4-4. Monitor and evaluate the result of technical backup support services. 5-1. Identify needs through company visits. 5-2. Make plans of advisory services. 5-3. Implement advisory services 5-4. Monitor and evaluate the result of advisory services. 6-1 Make plans of promotion in the private sector to increase the Project's exposure and improve the quality of services. 6-2 Implement the promotional activities. (company visits, seminars, pamphlets, homepages, and data base) 6-3 Monitor and evaluate the results of the promotional activities.	1. Provision and Maintenance of Building and Facilities. 2. Allocation of C/P and Administrative Personnel (1) Administrative C/P (2) Technical C/P (3) Administrative Staff (4) Supporting Staff a. Secretary b. Driver c. Other necessary staff upon request by the Japanese experts 3. Provision of machinery & Equipment and their Maintenance 4. Local Cost Necessary budget for the implementation of the project	2. Dispatch of Japanese Experts (1) Long-term Experts (2) Short-term Experts Appropriate number of short-term experts will be dispatched as necessity arises. 3. C/P Training in Japan A certain number (0-3 persons) of the C/P yearly 4. Provision of Machinery and Equipment 4. Supporting Local Cost	[Preconditions] a. Construction and refurbishment of building and facilities for the project is complete. b. Qualified new staff is recruited for PITAC.

Annex 2-1 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project

October 13, 2004



Annex 2-2 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	02	2003				2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
Term of Technical Cooperation																
Ⅲ. CAD/CAM NETWORK STATION																
1. CAD/CAM (General)																
1) Installation & Adjustment of CAD/CAM SYSTEM																
2) Selection of CAD/CAM SYSTEM for Training Course																
3) Observation of the present situation of CAD/CAM Technology in Pakistan																
4) Preparation of materials for Technology Transfer of CAD/CAM																
5) Administration & Maintenance of CAD/CAM SYSTEM																
2. 3D CAD (Basic)																
1) 3D CAD SYSTEM																
2) Wire Frame																
3) Surface																
4) Solid																
5) Conversion 3D Modeling to 2D Drawing																
6) Data Exchange																
7) Sketch & Parametric																
8) Mold Design																
3. 3D CAD (Advanced)																
1) Component Modeling																
2) Modeling for Injection Molding																
3) Cavity/Core Separation																
4) Modeling for machine Processing																
5) Edit of 3D CAD Data (Topology Geometry)																
6) Mold Design																
7) Building of Database (Mold Base Standard Parts)																
4. CAM (Basic)																
1) 2D CAM (Drilling, Side, Slot, Pocket, etc.)																
2) 3D CAM																
3) End mill (Cutting Condition & Tool Property)																
4) NC Program & Post for CAM																
5) Simulation for CAM																
5. CAM (Advanced)																
1) 2D, 3D CAM																
2) Building of Database (Cutting Condition &Tool Property)																
3) Installation of DNC System																
6. CAD/CAM (Advanced)																
1) CAD／CAM for Target Mold (Kitchen Tray)																
2) CAD／CAM for Target Mold (Front Light Cover)																

Calendar Year	02	2003				2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
3) CAD／CAM for Target Mold (Mouse)																
4) CAD／CAM for Target Mold (Desltop Telephone)																
7. Training Course & Seminar																
1) Exercise of CAD (POWER SHAPE & Mold Maker) for Training Course																
2) Exercise of CAM (POWER MILL) for Training Course																
3) Preparation of Manuals & Materials for CAD/CAM Training Course																
4) CAD/CAM (Basic Training Course)																
5) CAD/CAM (Advanced Training Course)																
6) Seminar for CAD/CAM																
8. Backup Support Service																
1) Survey of needs from Mold Making Company																
2) Provide 3D CAD/CAM DATA for Mold Making Companies. (it depends on nees by survey.)																
9. Advisory Service																
1) Visit for Mold making Company																
2) CAD/CAM Seminar for Mold making Company																

Annex 2-3 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	02	2003					2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
Term of Technical Cooperation																
IV. Mold Processing																
1. Basic of Machining																
2. Operation of Mold Making Machine																
3. Measuring Method																
4. Maintenance, Trouble Shooting & Installation of Machinery																
5. Mold Making (Advanced)																
-1. Tray for Kitchen Cabinet																
-2. Front Light Body for Motorcycle																
-3. Mouse Cover (Upper & Lower Case)																
-4. Telephone Case (Upper Side)																
6. Training Course																
1) 2) Preparation of Training Course																
3) Mold Processing Training Course																
4) Review of Mold Processing Training Course																
7. Backup Support Service																
8. Advisory Service																

Annex 2-4 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	02	2003				2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
Term of Technical Cooperation																
V. Mold Assembly & Trial Shot																
1. Finish of Mold																
2. Mold Assembly																
3. Injection Molding																
4. Maintenance, Trouble Shooting & Installation of Machinery																
5 Finish, Mold Assembly & Injection Molding (Advanced)																
-1. Tray for Kitchen Cabinet																
-2. Front Light Body for Motorcycle																
-3. Mouse Cover (Upper & Lower Case)																
-4. Telephone Case (Upper Side)																
6. Training Course																
1) 2) Preparation of Training Course																
3) Finish, Mold Assembly & Injection Molding of Mold Training Course																
4) Review of Finish, Mold Assembly & Injection Molding of Mold Training Course																
7. Backup Support Service																
8. Advisory Service																

Annex 2-5 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	02	2003					2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
Term of Technical Cooperation																
VI. SME Promotion																
1. Organize Seminars																
1) Ocuupational Safety & Health																
2) Latest Technology																
3) Total Quality Control																
2. Make Project Pamphlet																
1) 1st issue																
2) 2nd issue																
3) 3rd issue																
4) 4th issue																
3. Make Project Homepage																
1) Develop Homepage																
2) Visit of Homepage expert																
3) Bi-weekly Renewal																
4. Visit Private Factories & Associations																
1) Visit Factories																
2) Visit Associations																
3) Visit Educational Institutions.																
4) Introduce the project services.																
5) Collect the factory's basic data.																
5. Establish Data Base for SMEs																
1) Make the format.																
2) Input Data on D/B.																

Annex 3 Plan of Operations (PO)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year		2002			2003				2004				2005				2006	
Japanese Fiscal Year		2002			2003				2004				2005				2006	
		II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
	Term of Technical Cooperation																	
0	**The project operation unit is established for making advanced plastic molds.**																	
0-1	Allocate necessary personnel planned.																	
0-2	Formulate plans of activities.																	
0-3	Make budget plans and execute it properly.																	
0-4	Establish and operate project management system.																	
1	**The necessary machinery and equipment are provided, installed, operated and maintained properly.**																	
1-1	Provide and install necessary machinery and equipment.																	
1-2	Operate and maintain machinery and equipment properly.																	
2	**Technical capability of the counterpart personnel (C/P) is upgraded.**																	
2-1	Make technology transfer plan.																	
2-2	Implement technology transfer to C/P following to technology transfer plan.																	
2-3	Monitor and evaluate the result of technology transfer to the C/P.																	
3	**Technical training courses and seminars are implemented systematically.**																	
3-1	Identify needs through company visits.																	
3-2	Make plans of technical training courses and seminars.																	
3-3	Develop training curricula and teaching materials.																	
3-4	Implement technical training courses and seminars.																	
3-5	Monitor and evaluate the result of technical training courses and seminars.																	
4	**Technical backup support services are implemented systematically.**																	
4-1	Identify needs through company visits.																	
4-2	Make plans of technical backup support services.																	
4-3	Implement technical backup support services.																	
4-4	Monitor and evaluate the result of technical backup support services.																	

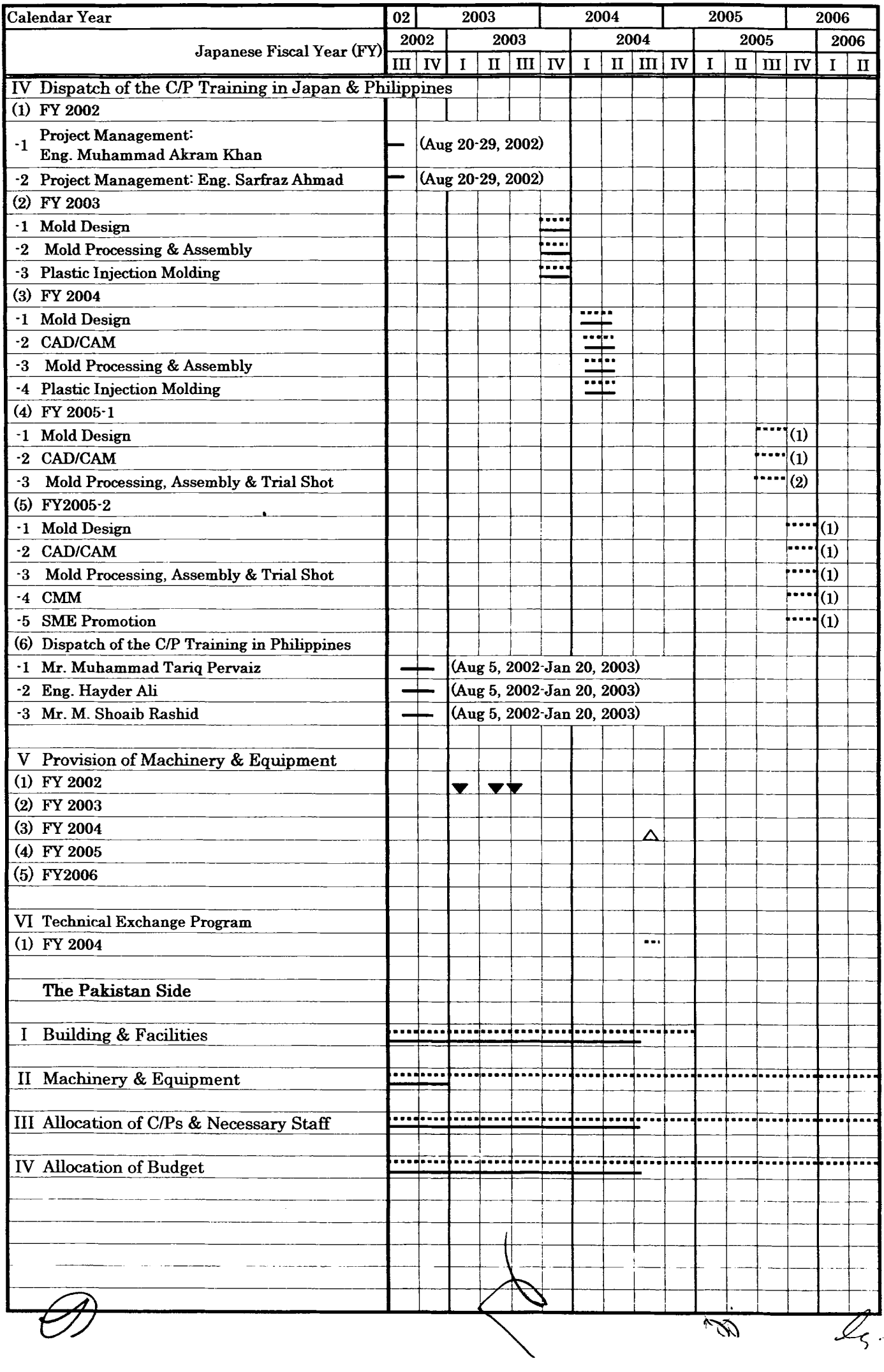
Calendar Year		2002			2003				2004				2005				2006	
Japanese Fiscal Year		2002			2003				2004				2005				2006	
		II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
5	**Technical advisory services are implemented systematically.**																	
5-1	Identify needs through company visits.																	
5-2	Make plans of technical advisory services.																	
5-3	Implement technical advisory services.																	
5-4	Monitor and evaluate the result of technical advisory services.																	
6	**Interactions of the Project with private companies are strengthened.**																	
6-1	Make plans of PITAC promotions in private sector																	
6-2	Implement the promotions.																	
6-3	Monitor and evaluate the reuslt of promotions.																	

Annex 4 Tentative Schedule of Implementation (TSI)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	02		2003				2004				2005				2006	
Japanese Fiscal Year (FY)	2002		2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
	▼FY2000 IV:Signing of the R/D ▼FY2002 I:Amendment of the R/D ▼ FY2003 IV:Revise of the R/D															
Term of Technical Cooperation																
The Japanese Side																
I Dispatch of Mission Team																
(1) Preliminary Study Team	▼FY2000, I															
(2) Preparatory Study Team	▼FY2000,III															
(3) Project Design Team	▼FY2000,IV															
(4) Project Consultation Team																
(5) Mid-term Evaluation Team																
(6) Project Evaluation Team																
II Dispatch of Japanese Experts																
(1) Chief Adviser																
(2) Coordinator/SME Promotion																
(3) Mold Technology																
(4) CAD/CAM Network System																
(5) Mold Processing、Assembly & Trial Shot																
(6) Mold Processing																
(7) Assembly & Trial Shot																
III Dispatch of Short Term Experts																
(1) Project Coordinator																
(2) Installation & Adjustment for CAD/CAM Network																
(3) Installation & Adjustment for Marching Center																
(4) Installation & Adjustment for EDM																
(5) Installation & Adjustment for Coordinate Measuring Machine (CMM)																
(6) Installation & Adjustment for Injection Molding																
(7) Occupational Safety & Health																
(8) Seminar Lecturer for the Latest Technology																
(9) Techniques of CMM																
(10) Precision Injection Molding																
(11) Mold Assembly & Finishing																
(12) Machinery Operation and Management (Machining Center)																
(13) Machinery Operation and Management (EDM)																
(14) Processing Design & Management																
(15) Total Quality Control																
(16) Maintenance of Injection Molding Machine																
(17) Maintenance of Machinery																


Calendar Year
02
2003
2004
2005
2006
Japanese Fiscal Year (FY)
2002
2003
2004
2005
2006
III IV I II III IV I II III IV I II III IV I II
IV Dispatch of the C/P Training in Japan & Philippines
(1) FY 2002
-1 Project Management: Eng. Muhammad Akram Khan
(Aug 20-29, 2002)
-2 Project Management: Eng. Sarfraz Ahmad
(Aug 20-29, 2002)
(2) FY 2003
-1 Mold Design
-2 Mold Processing & Assembly
-3 Plastic Injection Molding
(3) FY 2004
-1 Mold Design
-2 CAD/CAM
-3 Mold Processing & Assembly
-4 Plastic Injection Molding
(4) FY 2005-1
-1 Mold Design
(1)
-2 CAD/CAM
(1)
-3 Mold Processing, Assembly & Trial Shot
(2)
(5) FY2005-2
-1 Mold Design
(1)
-2 CAD/CAM
(1)
-3 Mold Processing, Assembly & Trial Shot
(1)
-4 CMM
(1)
-5 SME Promotion
(1)
(6) Dispatch of the C/P Training in Philippines
-1 Mr. Muhammad Tariq Pervaiz
(Aug 5, 2002-Jan 20, 2003)
-2 Eng. Hayder Ali
(Aug 5, 2002-Jan 20, 2003)
-3 Mr. M. Shoaib Rashid
(Aug 5, 2002-Jan 20, 2003)
V Provision of Machinery & Equipment
(1) FY 2002
(2) FY 2003
(3) FY 2004
(4) FY 2005
(5) FY2006
VI Technical Exchange Program
(1) FY 2004
The Pakistan Side
I Building & Facilities
II Machinery & Equipment
III Allocation of C/Ps & Necessary Staff
IV Allocation of Budget

Annex 5-1 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation	———	———	———	———	———	———	———	·····	·····	·····	·····	·····
I. MOLD DESIGN												
1. Basic Design												
1) General Mechanical Drawing												
(1) Third Angle Projection Method									·····	·····	·····	·····
(2) Using Method According to Kind of Line									·····	·····	·····	·····
2) Property of Plastic												
(1) Property of Injection Molding Resin									·····	·····	·····	·····
(2) Condition of Injection Molding									·····	·····	·····	·····
3) Basic of Mold Material												
(1) Property of Steel for Plastic Mold									·····	·····	·····	·····
4) Basic of Machining												
(1) Function & Variety of Machining									·····	·····	·····	·····
(2) Basic of Cutting									·····	·····	·····	·····
5) Basic of Injection Molding												
(1) Principle of Injection Molding									·····	·····	·····	·····
(2) Function of Injection Molding Machine									·····	·····	·····	·····
2. Mold Design for Injection Molding												
1) Basic Mold Design												
(1) Basic Structure of Mold for Injection Molding												
-1. Hot Runner, Cold Runner											·····	·····
-2. 2-Plate Mold, 3-Plate Mold											·····	·····
-3. Standard Mold Base											·····	·····
(2) Function of Mold Element for Injection Molding												
-1. Guide Pin, Locate Ring, Sprue Bush, etc.											·····	·····
-2. Return Pin, Ejector Pin, Spring, etc.											·····	·····
(3) Function of Mold Element for Injection Molding												
-1. Kind of Runner and Gate											·····	·····
-2. Mold Temperature Control System											·····	·····
-3. Ejector System											·····	·····
(4) Basic Structure of Sliding Parts for Undercut												
-1. Slide Core, Loose Core etc.											·····	·····
(5) Element of Injection Molding Component												
-1. Parting Line, Boss, Lib etc.											·····	·····
(6) Basic Procedure of Mold Design												
-1. Product Specification (Size, Thickness, etc.)											·····	·····
-2. Mold Specification (Shrinkage, Draft angle)											·····	·····
-3 Injection Machine Specification											·····	·····
(7) Condition of Injection Molding												
-1. Gate Location, Runner Layout											·····	·····
-2. Number of Cavity											·····	·····
(8) Drawing by Auto-CAD	———	———	———	———	———	———	·····	·····	·····	·····	·····	·····
2) Application of Mold Design												

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
(1) Mold Design for Basic Structure												
(2) Component Design for Injection Molding												
-1. Quality of Injection												
-2. Mold Draft Angle												
-3. Shrinkage												
-4. Parting Line												
(3) Design for Standard Part												
-1. Guide Pin, Locate Ring etc.												
(4) Design of Sliding Parts for Undercut												
(5) Standardization of Mold Part												
(6) Trouble Shooting of Injection Mold												
(7) Mold Design for Target Mold												
-1. Tray for Kitchen Cabinet (Multi-Purpose)												
-2. Front Light Body for Motorcycle												
-3. Mouse Cover (Upper & Lower Case)												
-4. Telephone Case (Upper Side)												
3. **Training Course**												
(1) Preparation of Carricula for Mold Design Training Course												
(2) Preparation of Manuals & Materials for Mold Design of Injection Molding Training Course												
(3) Mold Design of Injection Molding												
4. **Backup Support Service**												
(1) Mold Design for Mold												
5. **Advisory Service**												
(1) Visit for Mold Making Company												
II. **Measuring Method**												
1) Operation of C.M.M.												

Annex 5-2 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation												
III. CAD/CAM NETWORK STATION												
1. CAD/CAM (General)												
1) Installation & Adjustment of CAD/CAM SYSTEM												
2) Selection of CAD/CAM SYSTEM for Training Course												
3) Observation of the present situation of CAD/CAM Technology in Pakistan												
4) Preparation of materials for Technology Transfer of CAD/CAM												
5) Administration & Maintenance of CAD/CAM SYSTEM												
2. 3D CAD (Basic)												
1) 3D CAD SYSTEM												
2) Wire Frame												
3) Surface												
4) Solid												
5) Conversion 3D Modeling to 2D Drawing												
6) Data Exchange												
7) Sketch & Parametric												
8) Mold Design												
3. 3D CAD (Advanced)												
1) Component Modeling												
2) Modeling for Injection Molding												
3) Cavity/Core Separation												
4) Modeling for machine Processing												
5) Edit of 3D CAD Data (Topology Geometry)												
6) Mold Design												
7) Building of Database (Mold Base Standard Parts)												
4. CAM (Basic)												
1) 2D CAM (Drilling, Side, Slot, Pocket, etc.)												
2) 3D CAM												
3) End mill (Cutting Condition & Tool Property)												
4) NC Program & Post for CAM												
5) Simulation for CAM												
5. CAM (Advanced)												
1) 2D, 3D CAM												
2) Building of Database (Cutting Condition &Tool Property)												
3) Installation of DNC System												
6. CAD/CAM (Advanced)												
1) CAD／CAM for Target Mold (Kitchen Tray)												
2) CAD／CAM for Target Mold (Front Light Cover)												

Calendar Year		2004								2005		
Japanese Fiscal Year (FY)		2004										
		4	5	6	7	8	9	10	11	12	1	2	3
3)	CAD／CAM for Target Mold (Mouse)												
4)	CAD／CAM for Target Mold (Desltop Telephone)												
7.	**Training Course & Seminar**												
1)	Exercise of CAD (POWER SHAPE & Mold Maker) for Training Course												
2)	Exercise of CAM (POWER MILL) for Training Course												
3)	Preparation of Manuals & Materials for CAD/CAM Training Course												
4)	CAD/CAM (Basic Training Course)												
5)	CAD/CAM (Advanced Training Course)												
6)	Seminar for CAD/CAM												
8.	**Support Service**												
1)	Survey of needs from Mold Making Company												
2)	Provide 3D CAD/CAM DATA for Mold Making Companies. (it depends on nees by survey.)												
9.	**Advisory Service**												
1)	Visit for Mold making Company												
2)	CAD/CAM Seminar for Mold making Company												

Annex 5-3 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation												
IV. Mold Processing												
1. Basic of Machining												
1) Cutting of Theory												
2) Electric Discharge Machining of Theory												
3) Grinding of Theory												
4) Measuring of Theory												
2. Operation of Mold Making Machine												
1) Conventional Machine												
2) CNC Machine												
(1) Machining Center												
-1. NC Programming												
-2. Operation												
(2) EDM Wire-cut												
(3) EDM Shinker												
-1. CNC EDM Machine												
-2. Small Hole EDM Drilling Machine												
3) Grinding Machine												
-1. Surface Grinding Machine												
-2. Drill Grinding Machine												
-3. Tool Grinding Machine												
-4. Carbide Turning Tool Grinding Machine												
4) Mold Making Technology												
(1) Processing Condition												
-1. Milling												
-2. EDM (Wire-cut & Shinker)												
(2) Manipulation of Tooling												
-1. Tool Presetter												
-2. Tooling System for EDM												
(3) Accuracy of the Processed Products												
5) Planning of Mold Making Process												
3. Measuring Method												
1) Operation of General Instrument												
4. Maintenance & Trouble Shooting												
1) Maintenance of Facilities												
2) Countermeasure of Trouble Shooting												
3) Installation of Machinery												
5. Mold Making (Advanced)												
1) Mold Making for Target Mold												
-1. Tray for Kitchen Cabinet												
-2. Front Light Body for Motorcycle												
6. Training Course												
1) Preparation of Curricula for Mold Processing Training Course												
2) Preparation of Manuals & Materials for Mold Processing Training Course												

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
3) Mold Processing Training Course												
7. Backup Support Service												
1) Mold Making of Mold										.....		
8. Advisory Service												
1) Visit for Mold Making Company	.....									.....		

Annex 5-4 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
	═══	═══	═══	═══	═══	═══	═══					
V. Mold Assembly & Trial Shot												
1. Finish of Mold												
1) Fundamentals of Finishing								·····				
2) Mold Polishing									·····	·····	·····	·····
2. Mold Assembly												
1) Procedure of Mold Assembly												
(1) Mechanism of Mold								·····				
(2) Role of Parts									·····			
(3) Procedures up to Assembly of Product Parts									·····			
2) Set-up for Mold Assembly & Adjustment	·····	·····	·····	·····	·····	·····	·····	·····	·····			
	═══	═══	═══	═══	═══	═══	═══					
3) Final Assembling & Preparation										·····	·····	·····
3. Injection Molding												
1) Plastic Material for Molding									·····			
2) Procedure of Injection Molding												
(1) Mechanical Structure of Molding Machine										·····		
(2) Operation of Injection Molding										·····		
3) Operation of Injection Molding	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
	═══	═══	═══	═══	═══	═══	═══					
4) Molding Problems & Solution								·····	·····	·····	·····	·····
4. Maintenance & Trouble Shooting												
1) Maintenance of Facilities		·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
		═══	═══	═══	═══	═══	═══					
2) Maintenance of Mold	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
	═══	═══	═══	═══	═══	═══	═══					
3) Countermeasure of Trouble Shooting									·····	·····	·····	·····
4) Installation of Injection Machine	····											
	═══											
5 Finish, Mold Assembly & Injection Molding (Advanced)												
1) Target Mold												
-1. Tray for Kitchen Cabinet									·····	·····	·····	·····
-2. Front Light Body for Motorcycle												·····
6. Training Course												
1) Preparation of Curricula for Finish, Mold Assembly & Injection Molding of Mold Training Course									·····	·····	·····	·····
2) Preparation of Manuals & Materials for Finish, Mold Assembly & Injection Molding of Mold Training Course									·····	·····	·····	·····
3) Finish, Mold Assembly & Injection Molding of Mold Training Course												
7. Backup Support Service												
1) Finish, Mold Assembly & Injection Molding of Mold										·····	·····	·····
8. Advisory Service												
1) Visit for Mold Making Company	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
	═══	═══	═══	═══	═══	═══	═══					

Annex 5-5 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation												
VI. SME Promotion												
1. Organize Seminars												
1) Ocuupational Safety & Health												
2) Latest Technology												
3) Total Quality Control												
2. Make Project Pamphlet												
1) 1st issue												
2) 2nd issue												
3) 3rd issue												
4) 4th issue												
3. Make Project Homepage												
1) Develop Homepage												
2) Visit of Homepage expert												
3) Bi-weekly Renewal												
4. Visit Private Factories & Associations												
1) Visit Factories												
2) Visit Associations												
3) Visit Educational Institutions.												
4) Introduce the project services.												
5) Collect the factory's basic data.												
5. Establish Data Base for SMEs												
1) Make the format.												
2) Input Data on D/B.												

Annex 6 Annual Plan of Operation (APO)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year		2004									2005		
	Japanese Fiscal Year	2004											
		4	5	6	7	8	9	10	11	12	1	2	3
0.	**The project operation unit is established for making advanced plastic molds.**												
0-1	**Allocate necessary personnel planned.**												
0-1-1	Discuss the personnel plan.	·····	·····	·····	·····	·····	———	·····					
0-1-2	Make the personnel plan.							———	·····	·····			
0-1-3	Revise the personnel plan.										·····	·····	
0-2	**Formulate plans of activities.**												
0-2-1	Discuss the plans of activities.				·····	·····	·····	·····					
0-2-2	Make the plans of activities.						·····	·····	·····				
0-2-3	Revise the plans of activities.										·····		
0-3	**Make budget plans and execute it properly.**												
0-3-1	Discuss the budget plans.							·····	·····				
0-3-2	Make the budget plans.							·····	·····				
0-3-3	Revise the budget plans.										·····		
0-4	**Establish and operate project management properly.**												
0-4-1	Discuss in the management meeting.	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
0-4-2	Discuss in the JICA Expert meeting.	·····	———	———	———	———	———	·····	·····	·····	·····	·····	·····
0-4-3	Obtain the JCC's concerned.							·····				·····	
0-4-4	Discuss in the management & consulting team.							·····					
1.	**The necessary machinery and equipment are provided, installed, operated and maintained properly.**												
1-1	**Provide and install necessary machinery and equipment.**												
1-1-1	Installation and adjustment of machinery and equipment.	·····	———							·····			
1-2	**Operate and maintain machinery and equipment properly.**												
1-2-1	Implement periodical maintenance.	·····	———	———	———	———	———	·····	·····	·····	·····	·····	·····
1-2-2	Implement operation of machinery and equipment.	·····	———	———	———	———	———	·····	·····	·····	·····	·····	·····
1-2-3	Elaborate maintenance records for machinery and equipment.	·····	———	———	———	———	———	·····	·····	·····	·····	·····	·····
1-2-4	Elaborate operation records for machinery and equipment.	·····	———	———	———	———	———	·····	·····	·····	·····	·····	·····
2.	**The project operation unit is established for making advanced plastic molds.**												
2-1	**Make technology transfer plan.**												
2-1-1	Make technology transfer plan.	(it already done by IV, 2002.)											
2-1-2	Revise technology transfer plan						———				·····		

Calendar Year		2004									2005		
Japanese Fiscal Year		2004											
		4	5	6	7	8	9	10	11	12	1	2	3
2-2	**Implement technology transfer to C/P following to technology to the C/P.**												
2-2-1	As shown in ATCP.												
2-3	**Monitor and evaluate the result of technology transfer to the C/P.**												
2-3-1	Implement JCC meeting.												
2-3-2	Make monitoring and evaluation sheet.												
2-3-3	Develop the method of monitoring and evaluation to C/P.												
2-3-4	Implement monitoring and evaluation to C/P.												
2-3-5	Analysis the result of monitoring and evaluation.												
3.	**Technical training courses and seminars are implemented systematically.**												
3-1	**Identify needs through company visits.**												
3-1-1	Make the form for company visits.	(it already done by III, 2002.)											
3-1-2	Make plans of company visits.												
3-1-3	Implement company visits.												
3-1-4	Make the result of company visits following to the form.												
3-2	**Make plans of technical training courses and seminars.**												
3-2-1	Make plans of technical training courses and seminars.												
3-2-2	Revise plans of technical training courses and seminars.												
3-3	**Develop training curricula and teaching materials.**												
3-3-1	Make plans of developing training curricula and teaching materials.												
3-3-2	Collect some information for developing training curricula and teaching materials.												
3-3-3	Make training curricula.												
3-3-4	Make teaching materials.												
3-3-5	Revise training curricula and teaching materials.												
3-4	**Implement technical training courses and seminars.**												
3-4-1	Implement technical training courses and seminars systematically.												
3-5	**Monitor and evaluate the result of technical training courses and seminars.**												
3-5-1	Monitor the technical training courses and seminars.												
3-5-2	Evaluate trainers.												
3-5-3	Evaluate trainees.												
3-5-4	Analysis the result of technical training courses and seminars.												
3-5-5	Make plans of 2nd technical training courses and seminars.												

Calendar Year		2004									2005		
Japanese Fiscal Year		2004											
		4	5	6	7	8	9	10	11	12	1	2	3
4.	**Technical backup support services are implemented systematically.**												
4-1	**Identify needs through company visits.**												
4-1-1	Make the form for company visits.	(it already done by III, 2002.)											
4-1-2	Make plans of company visits.												
4-1-3	Implement of company visits.												
4-1-4	Make the result of company visits following to the form.												
4-2	**Make plans of technical backup support services.**												
4-2-1	Make application form for technical backup support services.	Finished											
4-2-2	Make plans of technical backup support services.												
4-2-3	Revise plans of technical backup support services.												
4-3	**Implement technical backup support services.**												
4-4	**Monitor and evaluate the result of technical backup support services.**												
5.	**Technical advisory services are implemented systematically.**												
5-1	**Identify needs through company visits.**												
5-1-1	Make project pamphlet.												
5-1-2	Make the form for company visits.	(it already done by III, 2002.)											
5-1-3	Make plans of company visits.												
5-1-4	Implement of company visits.												
5-1-5	Make the result of company visits following to the form.												
5-2	**Make plans of technical advisory services.**												
5-2-1	Make plans of technical advisory services.												
5-2-2	Revise plans of technical advisory services.												
5-3	**Implement technical advisory services.**												
5-4	**Monitor and evaluate the result of technical advisory services.**												

Calendar Year		2004									2005		
Japanese Fiscal Year		2004											
		4	5	6	7	8	9	10	11	12	1	2	3
6.	**Interactions of the Project with private companies are strengthened.**												
6-1	**Make plans of PITAC promotions in private sector**												
6-1-3	Make plans of company visits.												
6-1-4	Implement of company visits.												
6-1-5	Make the result of company visits following to the form.												
6-2	**Implement the promotional activities.**												
6-2-1	Make plans of promotions.												
6-2-2	Arrange seminars.												
6-2-3	Make pamphlets.												
6-2-4	Make calenders												
6-2-5	Make giveway goods												
6-2-6	Make homepages												
6-2-7	Make Data Bases for companies												
6-2-8	Arrange study tours												
6-3	**Monitor and evaluate the reuslt of promotions.**												
6-3-1	Make questionnaire												
6-3-2	Hear the opinions of SMEs												
6-3-3	Evaluate the promotional activities.												

Annex 7 Annual Tentative Schedule of Implementation (ATSI)

PITAC-JICA Phase II Project

October 13, 2004

Calendar Year	2004									2005		
Japanese Fiscal Year (FY)	2004											
	4	5	6	7	8	9	10	11	12	1	2	3
Term of Technical Cooperation												
The Japanese Side												
I Dispatch of Mission Team												
(1) Mid-term Evaluation Team												
II Dispatch of Japanese Experts												
(1) Chief Adviser												
(2) Coordinator/SME Promotion												
(3) Mold Technology												
(4) CAD/CAM Network System												
(5) Mold Processing, Assembly & Trial Shot												
III Dispatch of Short Term Experts												
(1) Installation & Adjustment for Coordinate Measuring Machine												
(2) Installation & Adjustment for Injection Molding												
(3) Occupational Safety & Health												
(4) Seminar Lecturer for the Latest Technology												
(5) Techniques of CMM												
(6) Precision Injection Molding												
(7) Mold Assembly & Finishing												
IV Dispatch of the C/P Training in Japan												
(1) Mold Design												
(2) CAD/CAM												
(3) Mold Processing & Assembly												
(4) Plastic Injection Molding												
V Provision of Machinery & Equipment												
(1) FY2004												
-1 Arrival for Project Site								△				
(1) FY2005												
-1 Planning and Order												
VI Technical Exchange Program												
The Pakistan Side												
I Building & Facilities												
II Machinery & Equipment												
III Allocation of C/Ps & Necessary Staff												
IV Allocation of Budget												

Annex 8-1
Budget Allocation (Local Cost) for the Project

October 13, 2004

Budget Allocation (Rs. Million)		
Financial Year	**Date of**	
	Financial Allocation	**Funds Released**
2000-01	**4.20**	**3.57**
2001-02	**2.00**	**2.00**
2002-03	**2.78**	**2.78**
2003-04	**14.092**	**2.387 ***
2004-05	**18.705**	**–**

(*) The remaining amount of Rs. 11,705/- Million surrounded for Relocation in the next financial year.

Annex 8-2

Budget Allocation (2004-05)

October 13, 2004

Budget Allocation (Rs. in Millions)							
Financial Year	**Local**	**FFC**	**Total**	**Quarterly Financial Allocation**			
				1st Quarter	*2nd Quarter*	*3rd Quarter*	*4th Quarter*
2004-05	18.705	--	18.705	14.330	1.750	1.875	0.75

Annex 8-3

PAKISTAN INDUSTRIAL TECHNICAL ASSISTANCE CENTRE (PITAC) LAHORE

BUDGET & EXPENDITURE POSITION DURING THE YEAR

October 13, 2004

Major Head of Account	Budget Allocation 2003-2004	Expenditure 2003-2004	Budget Allocation 2004-2005
01000 Pay of Officer	7,026,000.00	7,026,232.93	8,616,000.00
01200 Pay of Staff	11,690,000.00	11,689,653.31	12,630,000.00
02000 Regular Allowances	16,460,000.00	16,460,674.02	19,841,000.00
03000 Other Allowances	3,159,000.00	3,158,422.61	4,368,000.00
Total Establishment Charges	38,335,000.00	38,334,982.87	45,455,000.00
10000 Purchase of Durable goods	26,000.00	25,247.50	362,000.00
40000 Repair & Maint. of durable Goods & Works	328,000.00	327,580.00	73,000.00
50000 Commodities & Services	674,000.00	674,889.63	831,000.00
52000 Communication	300,000.00	299,888.00	466,000.00
53000 Utilities	2,963,000.00	2,962,914.37	4,150,000.00
58000 Rent Royalties Rates & Taxes	363,000.00	362,947.50	420,000.00
59000 Other Expenditure on Commodities & Servi	206,000.00	206,129.13	471,000.00
60000 Transfer Payment (Pension)	2,069,000.00	2,069,088.00	14,765,000.00
80000 Loans & Repayments			300,000.00
90000 Misc. Expenditure	32,000.00	32,048.00	50,000.00
Total Other Charges:	6,961,000.00	6,960,732.13	22,545,000.00
Grand Total:	45,296,000.00	45,295,715.00	68,000,000.00
Less Receipt of the Centre	4,196,000.00	4,195,715.00	4,000,000.00
NET GRANT-IN-AID:	41,100,000.00	41,100,000.00	64,000,000.00
Expd. Allocation			

Annex 8-4

Budget Statement Account, Generated Income of PITAC, 2003-2004 (July 2003-June 2004)

October 13, 2004

Expenditure	Estimated	Actual (B)	(B)/ A	Income	Estimated (a)	Actual(b)	(B)/ (A)
Personal Expense	40,404,000	40,404,071	100%	Training	870,000	865,962	99.5%
Utilities	2,963,000	2,962,914	100%	Advisory & Consultancy Service	623,000	623,595	100.1%
Office Consumable	974,000	974,778	100%	IT Center	1,270,000	1,267,421	99.8%
Furniture & Office	-	-		Production (Die & Mold Service)	1,439,000	1,438,737	99.9%
Maintenance	328,000	327,580	100%	Others			
				Total Receipt	4,202,000	4,195,715	99.85%
Others	627,000	626,372	100%	Govt.grant in Aid	41,100,000	41,100,000	100%
Total	45,296,000	45,295,715			45,302,000	45,295,715	99.9%

Annex 9 Allocation of the C/P

October 13, 2004

Calender Year	2002				2003				2004				2005				2006			
JFY	2002				2003				2004				2005				2006			
Name of C/P	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3
Term of Technical Cooperatio																				
Term of Technology Transfer																				
1 Administrative C/P																				
(1) Project Director (GM)																				
Mr. Muhammad Akram Khan	02/09-'03/'08																			
Mr. Muhammad Alam Ch.					03/09-'04/03															
Mr. Ejaz Rasul Chaudhry									04/03-											
(2) Project Manager																				
Mr. Sarfraz Ahmad	02/09-																			
2. Technical C/P																				
(1) Mold Design																				
Mr. Tariq Pervez	※				03/06-															
Mr. Anwar Baig					03/06															
(2) CAD/CAM																				
Mr. Shaib Rashid	※				03/03-															
Mr. Raees Ahmad					03/03-															
Mr. Shahzad Ayub									04/01-											
Mr. Asad Ahmad									04/01-											
(3) AMT																				
1 Mr. Hayder Ali	※				03/03-															
2 Mr. Irfan Jarral									03/11-											
3 Mr. Haseeb Ahmad					03/03-															
4 Mr. Asif Mansoor					03/03-															
5 Mr. Rashid Hussain Wasti					03/03-															
6 Mr. M. Latif					03/03-															

※ : Counterpart Training in Philippines (Aug. 5, '02-Jan. 20, '03)

: No Counterpart from Sept. '02-Feb. '03

Annex-10

October 13, 2004

Allocation of New C/P & staff for the project

Total Manpower Requirement for the Project

Sr.No	Field of Technology Transfer	Required Full Time Local Counterparts		
		Engineers	**Diploma Holder**	**Technicians**
1.	Project Manager	1 (Mechanical)	-	-
2.	Mold Design	3 (Mechanical)	1 (Mechanical)	1 (Mechanical)
3.	CAD/CAM	2 (Mechanical)	1 (Mechanical)	1 (Mechanical)
4.	Mold Manufacture i- Mold Making ii- Injection Molding iii- Coordinate Measuring M/c (CMM)	1 (Mechanical) 1 (Mechanical) 1 (Mechanical) 1 (Mechanical)	 3 (Mech.) 1 (Mech.) 1 (Mech.)	 7 (Mech.) 2 (Mech.)
5.	Maintenance (Computerized/Elect/Electr.)	1- (Elect./Electr.)	1- (Elect./Electr.)	1- (Elect./Electr.)
	Total Required	**11 (8 Mech. & 1-Elect./Electr.)**	**8 (7 Mech. & 1-Elect./Electr.)**	**12 (11 Mech. & 1Elect./Electr.)**
	Deployed	**4**	**1**	**5**
	Additional Required	7	7	7
Total Additional Required		**21**		

Additional Manpower Required for the Project

Sr. No.	Position	Designation / BPS	Number	Job Description / Assignment to be given
1.	Engineers	Senior Manager (Project) BPS-19	1	To manage the overall processes of Mold Designing, Manufacturing, Tryout and Maintenance.
		Manager (Tech.) BPS-18	2	To manage the overall technical aspects of Mold Designing and Manufacturing.
		Dy. Manager (Tech.) BPS-17	4	To assist the Manager in the successful running of the respective section/technical activity.
2.	Diploma Holders	Assistant Foreman BPS-13	7	To adequately handle, operate and maintain sophisticated Machines/Equipment.
3.	Technicians	Technicians BPS-9	7	To adequately handle, operate and maintain sophisticated Machines/Equipment.
TOTAL			**21**	

Annex 11

List of Attendance

1) Pakistani Side

Mr. Ejaz Rasul Chaudhry	Project Director/ General Manager, PITAC
Mr. Sarfraz Ahmad	Project Manager/ Manager Technical, PITAC
Mr. Javaid Iqbal Shaikh	Sr. Manager O&W, PITAC
Mr. Riaz Mahmood	Manager Accounts PITAC
Mr. Hashim Hussain	Assistant Chief Ministry of Industry and Production
Mr. M. Shamim Wazir	Assistant Chief Economic Affairs Division Ministry of Industry and Production
Mr. Muhammand Akram	Managing Partner HAWKS ENGINEERING
Mr. Abid Iqbal	Chief Executive PECS Industries Ltd.

2) Japanese Side

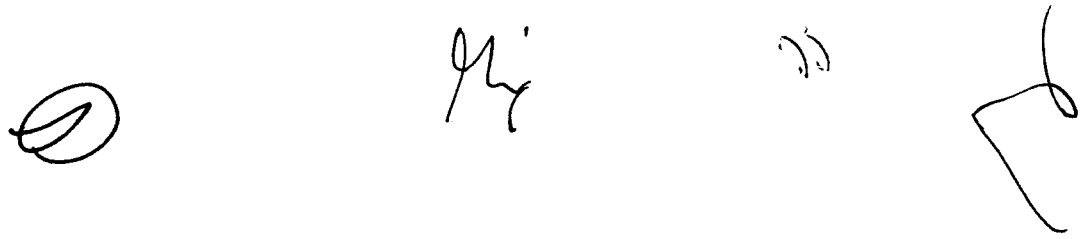
Mid-term Evaluation Team

Mr. Masayoshi Juro	Team Leader Senior Assistant to the Director General, Economic Development Department, JICA
Dr. Tetsuo Sasaki	Technical Evaluation Ex-Professor, Department of Mechanical Engineering, Nippon Institute of Technology
Mr. Atsuhiko Hatakeyama	Technical Transfer Planning Technical Advisor, The Material Process Technology Center

Ms. Chikako Yamauchi	Training Planning Chief, Operation Department The Material Process Technology Center
Mr. Etsuji Yoshimura	Evaluation Management Staff, Small and Medium Enterprise Team, Economic Development Department, JICA
Mr. Shinichi Mori	Evaluation Analysis President, International Management Group, Inc.

Japanese Experts

Mr. Minoru Sasago	Chief Advisor
Mr. Tetsuya Hirao	Project Coordinator/SEM Promoter
Mr. Hiroaki Yoshimatsu	Expert, Mold Design
Mr. Koji Sawada	Expert, CAD/CAM Network
Mr. Masaki Ide	Expert, Mold Processing, Assembly and Trial Shot



THE MID-TERM EVALUATION REPORT FOR THE PROJECT FOR BALANCING AND MODERNIZATION OF WORKSHOP FACILITIES IN ISLAMIC REPUBLIC OF PAKISTAN

LAHORE, 13 OCTOBER 2004

Mr. Masayoshi Juro
Leader
Japanese Evaluation Team
Japan International Cooperation Agency
Japan

Mr. Ejaz Rasul Chaudhry
Leader
Pakistani Evaluation Team
Project Director /
General Manager, PITAC

TABLE OF CONTENTS

1. Evaluation of the Project

1-1. Method of Evaluation

The Pakistani and Japanese teams jointly evaluated the Project for Balancing and Modernization of Workshop Facilities (hereinafter referred to as "the Project") based on the Project Design Matrix (hereinafter referred to as "PDM") agreed upon by both sides as a basis of evaluation.

Performance of the Project was studied based on the verifiable indicators identified in the PDM and other relevant information collected before and during the visit of the evaluation teams.

Both teams jointly conducted evaluation on the five (5) criteria, namely relevance, effectiveness, efficiency, impact and sustainability, the contents of which are stated below.

1-1-1. Criteria of Evaluation

The evaluation was conducted based on the following five criteria, which are the major points of consideration when assessing the value of development of projects.

1) Relevance

Relevance refers to validity of the purpose and the overall goal of the project in connection with the development policy of the Government as well as the needs of beneficiaries.

2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the project have been achieved as planned, and examines if the benefit was brought about as a result of the project.

3) Efficiency

Efficiency refers to the productivity of the implementation process, examining if the input of the project was efficiently convert into the output.

4) Impact

Impact refers to direct and indirect, positive and negative impact caused by implementing the project, including the extent to which the overall goal has been/is expected to be attained.

5) Sustainability

Sustainability refers to the extent to which the country can further develop the project, and the benefits generated by the project can be sustained under the country's policies, technology, systems and financial state.

1-1-2. Sources of Information

The following sources of information were used in this evaluation study:

1) Documents agreed by both sides prior to and/or during the course of the Project implementation including:

- Record of Discussions (R/D)
- Minutes of Meeting (M/M)
- Project Design Matrix (PDM)
- Plan of Operations (PO)
- Technical Cooperation Program (TCP)
- Tentative Schedule of Implementation (TSI)
- Others

2) Records of inputs from both sides and activities of the Project;

3) Data and statistics which indicate the degree of achievement of the outputs, which are the results of the Project, and the project purpose; and

4) Interviews with and questionnaires to the Project's counterpart personnel (hereinafter referred to as "C/P"), the Japanese experts, clients and personnel in related organizations.

1-2. Members of Evaluation Teams

1) Pakistani Team

Mr. Ejaz Rasul Chaudhry	Project Director/ General Manager, PITAC
Mr. Sarfraz Ahmad	Project Manager/ Manager Technical, PITAC
Mr. Javaid Iqbal Shaikh	Sr. Manager O&W, PITAC
Mr. Riaz Mahmood	Manager Accounts PITAC
Mr. Hashim Hussain	Assistant Chief

	Ministry of Industry and Production
Mr. M. Shamim Wazir	Assistant Chief Economic Affairs Division Ministry of Finance, Economic Affairs, and Statistics
Mr. Muhammand Akram	Managing Partner HAWKS ENGINEERING
Mr. Abid Iqbal	Chief Executive PECS Industries Ltd.

2) Japanese Team

Mr. Masayoshi Juro	Team Leader Senior Assistant to the Director General, Economic Development Department, JICA
Dr. Tetsuo Sasaki	Technical Evaluation Ex-Professor, Department of Mechanical Engineering, Nippon Institute of Technology
Mr. Atsuhiko Hatakeyama	Technical Transfer Planning Technical Advisor, The Material Process Technology Center
Ms. Chikako Yamauchi	Training Planning Chief, Operation Department The Material Process Technology Center
Mr. Etsuji Yoshimura	Evaluation Management Staff, Small and Medium Enterprise Team, Economic Development Department, JICA
Mr. Shinichi Mori	Evaluation Analysis President, International Management Group, Inc.

2. Outline of the Project

2-1. Background of the Project

The Government of Pakistan had managed to enhance the engineering sector in view of the importance of balanced development of industries including agriculture, the leading industry of the country. In line with this policy, the Government of Japan supported the implementation of a three-year project for the Modernization of the Manufacturing Process of Mold and Die in the Pakistan Industrial Technical Assistance Centre (PITAC) from September 1982 to October 1985. The Government of Japan also provided After-care Cooperation to PITAC from 1994 to 1995. Utilizing the machinery and equipment as well as the transferred technology, PITAC has conducted a variety of technical services to the private sector.

After the above-mentioned cooperation projects, PITAC came to receive strong demands from the private sector for higher-level technical services and renewal of machinery. Concomitantly, the Government of Pakistan intended to enhance the supporting industry by giving priority to the promotion of small and medium enterprises as well as to domestic parts and components industries. Under these circumstances, Japan and Pakistan agreed that project-type cooperation aiming at upgrading plastic mold making industries through the strengthening of PITAC would be implemented through the Japan International Cooperation Agency (JICA).

2-2. Project Design Matrix (PDM)

The PDM is attached as Annex 10. The PDM has 3 major items called overall goal, project purpose, and outputs of the Project.

1) Overall Goal: The goal ultimately achieved by the contribution of the project purpose

The Overall Goal of the Project
Domestic plastic mold making industries are able to supply better quality molds for plastic production in Pakistan.

2) Project Purpose: The purpose achieved by the direct contribution of the project outputs by the end of the project period

The Project Purpose
Technical capability of PITAC is upgraded to extend technical services in the filed of plastic mold technology.

3) Outputs: The outputs brought about by the results of the project activities

The Outputs of the Project

Output 0:	The Project operation unit is established for making advanced plastic molds.
Output 1:	The necessary machinery and equipment are provided, installed, operated and maintained properly.
Output 2:	Technical capability of the C/P is upgraded.
Output 3:	Technical training courses and seminars are implemented systematically.
Output 4:	Technical backup support services are implemented systematically.
Output 5:	Advisory services are implemented systematically.

4) Activities: The activities are being implemented by the long-term and short-term experts in cooperation with the C/Ps in the Project

The Activities of the Project

Activity 0-1:	Allocate necessary personnel as planned.
Activity 0-2:	Formulate plans of activities.
Activity 0-3:	Make budget and execute properly.
Activity 0-4:	Establish and operate a project management system.
Activity 1-1:	Provide and install necessary machinery and equipment.
Activity 1-2:	Operate and maintain machinery and equipment properly.
Activity 2-1:	Make Technology Transfer Plan (Technical Cooperation Program (TCP), Annual Technical Cooperation Program (ATCP), etc.).
Activity 2-2:	Implement technology transfer to C/Ps in accordance with Technology Transfer Plan.
Activity 2-3:	Monitor and evaluate the results of technology transfer to C/Ps.
Activity 3-1:	Identify needs through company visits.
Activity 3-2:	Make plans of technical training courses and seminars.
Activity 3-3:	Develop training curricula and teaching materials.
Activity 3-4:	Implement technical training courses and seminars.
Activity 3-5:	Monitor and evaluate the result of technical training courses and seminars.
Activity 4-1:	Identify needs through company visits.
Activity 4-2:	Make plans of technical backup support services.
Activity 4-3:	Implement technical backup support services.
Activity 4-4:	Monitor and evaluate the result of technical backup support services.
Activity 5-1:	Identify needs through company visits.
Activity 5-2:	Make plans of advisory services.
Activity 5-3:	Implement advisory services.

Activity 5-4: Monitor and evaluate the result of advisory services.

2-3. Technical Cooperation Program (TCP) of the Project

The outline of the Project is shown in the TCP (Annex 11). The technology transfer of the Project consists of five major parts. The cooperation period, targeted organization and terms of technical cooperation are as follows:

Project period: 4 years
Targeted Organization: PITAC
Terms of Technical Cooperation

1. Mold Design
   1-1. Basic Design
   1-2. Mold Design for Injection Molding
   1-3. Training Course
   1-4. Backup Support Service
   1-5. Advisory Service
   1-6. Measuring Method
2. CAD/CAM Network Station
   2-1. CAD/CAM (General)
   2-2. 3D CAD (Basic)
   2-3. 3D CAD (Advanced)
   2-4. CAM (Basic)
   2-5. CAM (Advanced)
   2-6. CAD/CAM (Advanced)
   2-7. Training Course & Seminar
   2-8. Backup Support Service
   2-9. Advisory Service
3. Mold Processing
   3-1. Basic of Machining
   3-2. Operation of Mold Making Machine
   3-3. Measuring Method
   3-4. Maintenance, Trouble Shooting & Installation of Machinery
   3-5. Mold Making (Advanced)
   3-6. Training Course
   3-7. Backup Support Service
   3-8. Advisory Service
4. Mold Assembly & Trial Shot
   4-1. Finish of Mold
   4-2. Mold Assembly

4-3. Injection Molding
4-4. Maintenance, Trouble Shooting & Installation of Machinery
4-5. Finish, Mold Assembly & Injection Molding (Advanced)
4-6. Training Course
4-7. Backup Support Service
4-8. Advisory Service

5. SME Promotion
5-1. Organizing Seminars
5-2. Making Project Pamphlet
5-3. Making Project Homepage
5-4. Visiting Private Factories & Associations
5-5. Establishing Data Base for SMEs

3. Achievement of the Project

3-1. Results of the Inputs

The progress of each activity has been significantly delayed because of the delay in the deployment of C/Ps and in the construction activities, which are caused by (1) the delay in local cost financing and (2) the lengthy documentation and formalities of procurement procedures of the Pakistani Government. As a result, the Plan of Operation must have been drastically modified (PO: Annex 12).

In Pakistan, the local cost financing of each donor-funded project is carried out based on PC-I. Since the former PC-I for the Project did not reflect the actual local fund needs, its revision was required. The decision making process within the Government of Pakistan to revise PC-I took a considerable time and the revised PC-I was approved only in July 2004.

Since PITAC is a public entity, it has to follow the Pakistani Government's regulations in construction of buildings and procurement of equipment. The construction of the Project buildings has been carried out by a public body, whose implementing capacity is considerably weak. As a result, the construction of the workshop has been significantly delayed.

PITAC's own procurement procedures are also lengthy. The purchase of items exceeding Rs. 20,000 needs General Manager's approval. Competitive bidding is required for all the goods and services exceeding Rs. 40,000. Although strict procedures are necessary to ensure accountability and transparency, PITAC has difficulties in responding to the private sector's needs.

3-2. Achievement of the Outputs

Most of the expected outputs have not yet been achieved because of the significant delay in inputs of the Pakistani side.

The Project operation unit has not practically taken shape due to the lack of C/Ps. Only a project manager and 12 C/Ps have been engaged in the Project, while 20 newly recruited staff will be deployed to the Project in the second half of October 2004. The construction of the workshop and the procurement and installation of local machinery and equipment are about to complete only at the time of the mid-term evaluation. In other words, the preconditions of the Project "Construction and refurbishment of buildings and facilities for the project is complete" and "Qualified new staff is recruited by PITAC" have been barely fulfilled at the current stage. Although the task force for the preparation of training courses is holding meetings fortnightly,

Project staff meetings have not been jointly conducted by Pakistani and Japanese sides, showing that the "project management unit" has not been formed in real terms.

Most of necessary machinery and equipment to be provided by JICA have been procured and installed on schedule, although there are some problems with the matching of molds and injection molding machinery and the installation of small-hole EDM. On the other hand, provision of machinery and equipment from the Pakistani side has only partially completed, due to the delay in local cost financing and PITAC's documentation and procurement procedures. The major problems to be solved are: procurement of AVRs, dust and water proof arrangement and the installation of an overhead crane and conventional machinery.

According to the assessment by both Experts and C/Ps, progress is perceived in C/Ps' technical capacity, especially in mold design and CAD/CAM. Delay in technical transfer is observed in mold processing due to the delay in the installation of facilities. However, since no objective monitoring indicators or targets have been set up, the degree of the progress of technical transfer cannot be evaluated at the time of mid-term evaluation.

No training courses have been conducted due to the delay in technical transfer. A task force was formed in April 2004 for the planning of training courses and meetings are being held frequently. Seven seminars were held at PITAC Lahore on "Occupational Safety and Health" in August and September 2004, while three seminars were held on "Latest Plastic Mold and Molding Technologies" at Karachi and Lahore in September 2004. Chief executives of the member companies of Plastic Parts Manufacturing Association (PPMA) and Pakistan Association of Automotive Parts and Manufacturers (PAAPAM) also attended these seminars. These seminars have been overall successful.

No technical backup support services have been conducted, because of the delay in technical transfer. Needs assessment in this area has not been conducted.

Thirteen advisory services have been provided to four enterprises. Due to the delay in the deployment of qualified C/Ps, C/Ps joined three of the thirteen company visits.

3-3. Achievement of the Project Purpose

The Project Purpose "Technical capability of PITAC is upgraded to extend technical services in the filed of plastic mold technology" has not yet been achieved, since the Project has been significantly delayed and the C/Ps are not ready to provide services.

3-4. Achievement of the Overall Goal

Since the Project has not yet provided its services to the private sector, the overall goal has not yet been achieved.

4. Implementation Process of the Project

Effectiveness of the Project has also been hindered by the factors other than the local cost and construction/procurement issues. In spite of the agreement in the last JCC meeting dated August 26, 2003, the monitoring system that should show the milestones or targets of technical transfer has not been established.

5. Results of Evaluation by Five Criteria

5-1 Relevance

The Project is relevant to the policies of the Pakistani Government as well as the needs of the private sector, and consistent with the cooperation policy of the Japanese Government.

The Overall Goal of the Project is consistent with the Pakistani Government's development policy. The promotion of small- and medium-sized enterprises is priority for the Pakistani Government, which is indicated in "*Ten Year Perspective Development Plan 2001-11*" and "*Three Year Development Program 2001-04*". The Government's strategy for the promotion of plastic mold-making industries is indicated in "*Strategy 2010 – Molds & Dies / Jig & Fixtures*". Moreover, the Project is budgeted in the framework of "*Annual Plan 2004-05*".

The Project Purpose and the Overall Goal are also consistent with the needs of the private sector because the demand of plastic molds is rapidly growing as the domestic production of electric appliances and automotive parts is increasing. Pakistani plastic industries prefer using domestically produced molds that use relatively cheap materials, since the production scale is not large in Pakistan.

Promotion of supporting industries including plastic mold making industries is one of the focal areas in Japan's cooperation policy to Pakistan. JICA's involvement in the Project is also justifiable since JICA has experiences in the implementation of the projects for the strengthening of technical skills of public entities that support mold-making industries in developing countries.

The advantage of PITAC as the executing agency of the Project has also been confirmed. PITAC is the only appropriate organization in Pakistan that can acquire and disseminate advanced techniques to private industries in plastic mold production.

5-2 Effectiveness

The Project Purpose has not yet been achieved due to the delay in the implementation. The major reasons are: lack of local funds, failure in placement of required human resources for the Project, and the dependence of the Project on the outside departments/agencies such as Public Works Department. All of these hindered the smooth technology transfer aimed by the Project.

When the Project was initiated in September 2002, PITAC could not assign the number of personnel prescribed in the R/D. It could not either place a sufficient number of qualified staff from within PITAC or recruit and assign new staff because of the limitation of the conditional approval of the PC-I.

Moreover, the Project was obliged to move forward simultaneously with all the cumbersome preparatory construction and renovation work to fulfill the preconditions. This task has given a significant burden both on the Japanese Experts and Pakistani C/Ps. Among others, they have been exhausted with the administrative work for the revision of PC-I, the interactions with external agencies and the documentation and procurement procedures within PITAC, hindering joint efforts in establishing an effective management structure within the Project.

5-3 Efficiency

The Project started although the preconditions have not been fulfilled. This has caused inefficiency of the Project; inputs have not effectively converted into outputs. When the first Japanese Experts were sent in September 2002, they did not have any C/Ps for half a year. Even afterwards, a sufficient number of C/Ps have not been deployed for the Project because of the lack of local funds, making already-made inputs (Experts, machinery and equipment) quite inefficient.

The Revised PC-I for the Project was not approved until July 2004. As a result, the Project has been significantly delayed as no local funds were available to complete the prerequisites for the commissioning of the machinery.

Training in the Philippines and Japan was overall successful. However, since the targets for C/P training, either within PITAC or overseas, have not been clearly set up and agreed upon between Experts and C/Ps, some mismatches between the Experts' and C/Ps' expectations are

observed on training subjects.

As part of the "model factories" scheme, which was recommended by the Project Consultation Team dispatched in August 2003, the Experts and C/Ps have paid frequent visits to several companies and provided advisory services. The concept of model factories will be elaborated as required. The process of the preparation of monitoring reports and monitoring/evaluation sheets is currently discussed between the Experts and C/Ps, although it is behind schedule.

Joint Coordinating Committee (JCC) has not been held since August 2003 in spite of the recommendation of the last Project Consultation Team.

5-4 Impact

Since the project purpose has not been achieved, no economic or financial impact is observed. No negative impact is foreseeable.

5-5 Sustainability

Judging from the performance of the Project up until now, it is premature to say that the Project is sustainable at this moment for the following reasons:

Technical Aspect:

Training in CAD/CAM and mold design sections is going rather smoothly and it is expected that C/Ps will be technically ready to provide basic and advance training courses to outside trainees by the end of the Project. Furthermore, as 20 newly recruited C/Ps will be deployed to all the fields of technical transfer, the prospect of sustainability has been raised, although the schedule of the implementation has been delayed.

Systematic maintenance activities have not been introduced, while no maintenance plans have been prepared and no maintenance staff has been trained in the project. Therefore, there is a concern that machinery and equipment will not be properly maintained after the completion of the project due to unavailability of an appropriate maintenance system in PITAC.

Organizational Aspect:

The evaluation teams have concluded that the Project's managerial and administrative capacity has not been fully developed. This is mostly because the Project's staff has been struggling to fulfill the preconditions of the Project, not having been able to spend time to establish a sound

management structure within the Project.

According to PITAC's management, PITAC is committed to achieving operational efficiency and enhancing customer satisfaction of the Project by introducing the mind-set similar to that of the private sector. And upon necessity, the PITAC will deploy professional staff in this required area. The management of PITAC, in its future planning, also intends to introduce a favorable remuneration system in order to retain highly qualified staff. However, these are discussed only as ideas and no strategy or concrete action plans to achieve this goal have been developed, nor have any initiatives been actually taken. So far, only a task force to prepare training courses has been established.

Financial Aspect:

Most of the local costs of the Project are so far financed from PC-I, namely, development budget of the Pakistani central government. Since it is not currently financed from PITAC's regular budget, a new financial source must be identified by the end of the Project, including PITAC's regular recurrent budget, in order to finance the maintenance costs of the machinery and equipment as well as the salary of 20 newly recruited staff (they are currently planned to be employed on a two-year contract basis). The discussion on the future budget must be conducted between PITAC and the Ministry of Industry and Production.

6. Conclusion

After two years have passed since the beginning of the Project, the Project has barely fulfilled its preconditions and practically little concrete results have yet been achieved. Strong commitment and concerted efforts of both Japanese Experts and Pakistani C/Ps are needed to move forward the Project. Among others, the management of the Project should work out and implement an overall strategy and action plan to establish a sound and effective management structure within the Project in order to ensure the sustainability of the Project.

7. Recommendations

Taking the above analysis into consideration, the Mid-term Evaluation Team recommends the following for the development of the Project:

1) The Project's objective is to provide training, backup support and advisory services to plastic mold-making industries. The Project must "deliver" these services to its customers; simply obtaining techniques is by no means sufficient to meet this objective. For this purpose, the Project must establish a structure to market itself to the

industries, keep close contact with its customers, collect trainees and take orders properly, carry out the intended assignments on schedule, and conduct follow-up activities to further improve the quality of services. Self-sustainability of the Project should be sought in order to reduce the dependency on outside departments/agencies that could increase uncertainties, slow the delivery of the services, and lead to a loss of customers' trust.

2) Among others, the linkage between PITAC and private industries is weak, in spite of the fact that PITAC's mission is to support the private sector in technical areas. The Project should keep a strong linkage with plastic mold-making industries. The customers' needs can only be envisioned by frequent interactions with them. The Project should assign a staff with engineering background in this key area. This staff will become the contact point with the Project's customers, and will conduct public relations activities by setting up the targets and their monitoring system. It is also imperative that Experts and C/Ps, including the Project Manger and Chief Advisor, frequently visit the customers in order to physically feel their needs and reflect them into management.

3) In order to conduct training courses smoothly and effectively, detailed schedules must be established for each of the training courses, based on which preparation activities should be carried out.

4) Experts and C/Ps should visit and interview potential beneficiaries/companies, to extend backup support services and advisory services. Since technical capacity of some of the C/Ps in CAD/CAM section has been built up to provide backup support, it is recommended that CAD/CAM section start contacting private industries to identify their specific needs, explaining what services the Project can provide, and taking up orders if necessary conditions are met.

5) The Project should organize "seminars" to address general/specific problems of private plastic mold making and molding industries.

6) The Project will be able to generate its own revenues from training courses, backup support services and advisory services and use them to maintain its machinery and equipment. The market rates could be introduced for the fees for backup support and advisory services.