

# Annex 15 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				
<b>0.</b>	<b>The project operation unit is established for making advanced plastic molds.</b>																
<b>0-1</b>	<b>Allocate necessary personnel planned.</b>																
0-1-1	Discuss the personnel plan.																
0-1-2	Make the personnel plan.																
0-1-3	Revise the personnel plan.																
<b>0-2</b>	<b>Formulate plans of activities.</b>																
0-2-1	Discuss the plans of activities.																
0-2-2	Make the plans of activities.																
0-2-3	Revise the plans of activities.																
<b>0-3</b>	<b>Make budget plans and execute it properly.</b>																
0-3-1	Discuss the budget plans.																
0-3-2	Make the budget plans.																
0-3-3	Revise the budget plans.																
<b>0-4</b>	<b>Establish and operate project management properly.</b>																
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.																
<b>1.</b>	<b>The necessary machinery and equipment are provided, installed, operated and maintained properly.</b>																
<b>1-1</b>	<b>Provide and install necessary machinery and equipment.</b>																
1-1-1	Installation and adjustment of machinery and equipment.																
<b>1-2</b>	<b>Operate and maintain machinery and equipment properly.</b>																
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.																
<b>2.</b>	<b>The project operation unit is established for making advanced plastic molds.</b>																
<b>2-1</b>	<b>Make technology transfer plan.</b>																
2-1-1	Make technology transfer plan.																
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.						....	....					-----	

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Calendar Year		2004										2005		
Japanese Fiscal Year		2004												
		4	5	6	7	8	9	10	11	12	1	2	3	
<b>4. Technical backup support services are implemented systematically.</b>														
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.	.....												
<b>5. Technical advisory services are implemented systematically.</b>														
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		
<b>6.</b>	<b>Interactions of the Project with private companies are strengthened.</b>														
<b>6-1</b>	<b>Make plans of PITAC promotions in private sector</b>														
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.														
<b>6-2</b>	<b>Implement the promotional activities.</b>														
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														
<b>6-3</b>	<b>Monitor and evaluate the reuslt of promotions.</b>														
6-3-1	Make questionnaire														
6-3-2	Hear the opinions of SMEs														
6-3-3	Evaluate the promotional activities.														

Annex 16 Annual Tentative Schedule of Implementation (ATSI)

PITAC-JICA Phase II Project  
October 13, 2004

Calendar Year  Japanese Fiscal Year (FY)	2004												2005				
	2004												1	2	3		
	4	5	6	7	8	9	10	11	12								
<b>Term of Technical Cooperation</b>	-----																
<b>The Japanese Side</b>																	
<b>I Dispatch of Mission Team</b>																	
(1) Mid-term Evaluation Team																	
<b>II Dispatch of Japanese Experts</b>																	
(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																	
<b>III Dispatch of Short Term Experts</b>																	
(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																	
<b>IV Dispatch of the C/P Training in Japan</b>																	
(1) Mold Design																	
(2) CAD/CAM																	
(3) Mold Processing & Assembly																	
(4) Plastic Injection Molding																	
<b>V Provision of Machinery &amp; Equipment</b>																	
(1) FY2004																	
-1 Arrival for Project Site																	
(1) FY2005																	
-1 Planning and Order																	
<b>VI Technical Exchange Program</b>																	
<b>The Pakistan Side</b>																	
<b>I Building &amp; Facilities</b>	-----																
<b>II Machinery &amp; Equipment</b>	-----																
<b>III Allocation of C/Ps &amp; Necessary Staff</b>	-----																
<b>IV Allocation of Budget</b>	-----																

Annex 17-1 Allocation of the C/P

October 13, 2004

Name of C/P	2002				2003				2004				2005				2006			
	2002				2003				2004				2005				2006			
	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 Cooperation	_____																			
Term of Technology Transfer	_____																			
<b>1 Administrative C/P</b>																				
<b>(1) Project Director (GM)</b>																				
Mr. Muhammad Akram Khan	_____				_____				_____				_____				_____			
Mr. Muhammad Alam Ch.	_____				_____				_____				_____				_____			
Mr. Ejaz Rasul Chaudhry	_____				_____				_____				_____				_____			
<b>(2) Project Manager</b>																				
Mr. Sarfraz Ahmad	_____				_____				_____				_____				_____			
<b>2. Technical C/P</b>																				
<b>(1) Mold Design</b>																				
Mr. Tariq Pervez	※				_____				_____				_____				_____			
Mr. Anwar Baig	_____				_____				_____				_____				_____			
<b>(2) CAD/CAM</b>																				
Mr. Shaib Rashid	※				_____				_____				_____				_____			
Mr. Raees Ahmad	_____				_____				_____				_____				_____			
Mr. Shahzad Ayub	_____				_____				_____				_____				_____			
Mr. Asad Ahmad	_____				_____				_____				_____				_____			
<b>(3) AMT</b>																				
1 Mr. Hayder Ali	※				_____				_____				_____				_____			
2 Mr. Irfan Jarral	_____				_____				_____				_____				_____			
3 Mr. Haseeb Ahmad	_____				_____				_____				_____				_____			
4 Mr. Asif Mansoor	_____				_____				_____				_____				_____			
5 Mr. Rashid Hussain Wasti	_____				_____				_____				_____				_____			
6 Mr. M. Latif	_____				_____				_____				_____				_____			

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

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

## 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	1 (Mechanical)	3 (Mech.)	7 (Mech.)
	i- Mold Making	1 (Mechanical)		
	ii- Injection Molding	1 (Mechanical)		
	iii- Coordinate Measuring M/c (CMM)	1 (Mechanical)		
5.	Maintenance (Computerized/Elect/Electr.)	1- (Elect./Electr.)	1- (Elect./Electr.)	1- (Elect./Electr.)
	<b>Total Required</b>	<b>11 (8 Mech. &amp; 1-Elect./Electr.)</b>	<b>8 (7 Mech. &amp; 1-Elect./Electr.)</b>	<b>12 (11 Mech. &amp; 1Elect./Electr.)</b>
	<b>Deployed</b>	<b>4</b>	<b>1</b>	<b>5</b>
	<b>Additional Required</b>	<b>7</b>	<b>7</b>	<b>7</b>
	<b>Total Additional Required</b>		<b>21</b>	

### 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.
<b>TOTAL</b>			<b>21</b>	

## Annex 18-1 List of Committee and Meeting

October 13, 2004

### *Tasks Force Committee And Meeting*

A Task Force Committee has been constituted for promoting the activities of the Project. It consists of the following members.

**(i) Committee Members From PITAC side**

1. Mr. Javed Iqbal Sheikh Chairman
2. Mr. Numan Siddiqi Member
3. Mr. Shakeel Chaudhry Member

**(ii) Committee Members From JICA Project side**

1. Mr. HIARO Tetsuya Advisor
2. Mr. YOSHIMATSU Hiroaki Advisor
3. Ms. Shazia Anjum Project Secretary
4. Mr. Haider Ali Member
5. Mr. Shoaib Rashid Member

### **Task Force Meeting.**

S.No	Subject	Date
1.	Task Force Meeting	29-04-2004
2.	Task Force Meeting	11-05-2004
3.	Task Force Meeting	24-05-2004
4.	Task Force Meeting	06-06-2004
5.	Task Force Meeting	16-06-2004
6.	Task Force Meeting	24-06-2004
7.	Task Force Meeting	07-07-2004
8.	Task Force Meeting	14-07-2004
9.	Task Force Meeting	28-07-2004
10.	Task Force Meeting	11-08-2004
11.	Task Force Meeting	03-09-2004

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2. **Project Inauguration Committee Members.**  
It consists of the following members.

- |    |                               |         |
|----|-------------------------------|---------|
| 1. | Mr. Haider Ali                | Member  |
| 2. | Mr. Muhammad Irfan Jarral     | Member  |
| 3. | Mr. Tariq Baig                | Member  |
| 4. | Mr. Syed Rashid Hussain Wasti | Member  |
| 5. | Mr. Raees Ahmad Rahi          | Member  |
| 6. | Mr. Haseeb Ahmad Malik        | Member  |
| *  | Mr. Ejaz Rasul Chaudhry       | Advisor |
| *  | Mr. Sarfraz Ahmed             | Advisor |
| *  | Mr. SASAGO Minoru             | Advisor |
| *  | Mr. YOSHIMATSU Hiroaki        | Advisor |
| *  | Mr. HIRAO Tetsuya             | Advisor |

**Inauguration Meeting**

The inauguration of the Project is going to be held on

S.No	Subject	Date
1.	Inauguration Ceremony	09-09-2004
2.	Inauguration Ceremony	17-09-2004

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h.

October 13, 2004  
Ms. Shazia

Annex -18-2

## List of 'Task Force' Meetings

Sr. No.	Date	Main Points of Discussion
1	29 <sup>th</sup> April, 2004	<ul style="list-style-type: none"><li>❖ PITAC's Training Courses</li><li>❖ JICA Project's Training Courses</li><li>❖ Target of 'Task Force'</li></ul>
2	11 <sup>th</sup> May, 2004	<ul style="list-style-type: none"><li>❖ Establishment of Training Courses with consultancy from PITAC's Training Courses.</li><li>❖ Visit to SMEDA for consultation of Courses.</li><li>❖ Total information and guide line from PITAC.</li></ul>
3	24 <sup>th</sup> May, 2004	<ul style="list-style-type: none"><li>❖ PITAC's Training Courses</li><li>❖ Courses numbers and duration</li><li>❖ Technical courses for Private Sectors as well as Govt. Sectors.</li></ul>
4	2 <sup>nd</sup> June, 2004	<ul style="list-style-type: none"><li>❖ Presentation of SMEDA Training Courses by Mr. Tariq Baig.</li><li>❖ Advertisement of JICA Project 's Training Course</li><li>❖ List of Private Sectors will be provided by PITAC side and rough idea of 'Training Need Assessment' (Questionnaire) will be prepared by JICA Project side</li><li>❖ Permanent schedule of meetings decided.</li></ul>
5	16 <sup>th</sup> June, 2004	<ul style="list-style-type: none"><li>❖ Evaluation of PITAC Training by 'Histogram'</li><li>❖ T.N.A(Questionnaire) from JICA Project's members</li><li>❖ List up 'Private Sectors' from PITAC's members</li></ul>
6	24 <sup>th</sup> June, 2004	<ul style="list-style-type: none"><li>❖ Mr. Sharif Hussain, the Chairman, resigned from leadership</li><li>❖ Mr. Javaid Iqbal Sh. Was nominated as the Chairman in place of Mr. Sharif Hussain</li></ul>
7	07 <sup>th</sup> July, 2004	<ul style="list-style-type: none"><li>❖ List of Plastic Mold Industries (Private Sectors) / Technical Training Institute for 'Questainnaires'.</li><li>❖ Training Need Assessment.</li><li>❖ Questionnaire will be revised.</li></ul>
8	14 <sup>th</sup> July, 2004	<ul style="list-style-type: none"><li>❖ Training Need Assessment revised.</li><li>❖ Covering letter revised.</li><li>❖ Dispatch of T.N.A and covering letter on 16<sup>th</sup> July, 2004.</li><li>❖ Evaluation of Private Sectors.</li><li>❖ Factory visits in Lahore.</li></ul>

9	28 <sup>th</sup> July, 2004	<ul style="list-style-type: none"> <li>❖ Suggestion form MOIP</li> <li>❖ Total record of T.N.A</li> <li>❖ Response received form Private Sectors</li> <li>❖ Telephone calls to Private Sectors for more response</li> <li>❖ Data Base for actual record</li> <li>❖ Management Study Trip (Tentative Schedule)</li> </ul>
10	11 <sup>th</sup> August, 2004	<ul style="list-style-type: none"> <li>❖ Reply (counted &amp; discussed) from Private Sectors</li> <li>❖ Revised list of Industries in Data Base</li> <li>❖ Visit of Private Sectors in Lahore</li> <li>❖ Teams deputed for visits</li> <li>❖ Copies of T.N.A reply form Private Sectors, copy of blank T.N.A, Application form for Advisory Service and JICA Project's pamphlet to factories</li> </ul>
11	3 <sup>rd</sup> September, 2004	<ul style="list-style-type: none"> <li>❖ Summary of T.N.A</li> <li>❖ Start visits in Lahore factories</li> <li>❖ Teams schedule for visits</li> <li>❖ Appointment for visits</li> </ul>

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**Annex 19 Number of Publicity (Brochures, Periodicals, etc.)**

October 13, 2004

**PUBLICITY**

No.	Subject	Delivery date	Total	Balance	Location
1	Brochures 1st version	July 2004	3,000	300	Project Office
2	Leaflet, Occupational Safety &	August 2004	700	236	Project Office
3	Leaflet, Latest Technology Seminar	Sep-04	700		Project Office

**EXHIBITION**

No.	Subject	Date	Participant	Brochure	Location
1	Nil				
2					
3					
4					

**TELEVISION, REDIO, NEWSPAPER, PUBLISH**

No.	Subject	Date	Location
1	Ad, Seminar for Occupational Safety & Health	August 8, 2004	Newspaper "The News" Lahore
2	Ad, Seminar for Occupational Safety & Health	August 14, 2004	Newspaper "DAWN" Lahore
3	Ad, Seminar for Latest Plastic Mold Technology	Sept. 12, 2004	Newspaper "DAWN" Lahore
4	Ad, Seminar for Latest Plastic Mold Technology	Sept. 12, 2004	Newspaper "Jung" Lahore
5	Ad, Seminar for Latest Plastic Mold Technology	Sept. 16, 2004	Newspaper "DAWN" Karachi
6	Ad, Seminar for Latest Plastic Mold Technology	Sept. 16, 2004	Newspaper "Jung" Karachi
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**Annex 20 List of Spare Part and Local Suppliers**

October 13, 2004

No.	Description	Qty.	Local Suppliers
1	Repair of IBM Intellistation display	3	InfoTech Pvt. Ltd.
2	Repair of IBM Intellistation Hard Drive	2	InfoTech Pvt. Ltd.
3	Repair of IBM Intellistation C/D Rom	4	InfoTech Pvt. Ltd.
4	Repair of IBM Intellistation Mother Board	2	InfoTech Pvt. Ltd.
5	Repair of IBM Intellistation Key Board	1	InfoTech Pvt. Ltd.
6	Re-Installation of Win.XP-Pro	1	InfoTech Pvt. Ltd.
7	Repair of Network Switch	1	InfoTech Pvt. Ltd.
8	Repair of Power Supply for IBM System	1	InfoTech Pvt. Ltd.
9	Repair of HP Laser-Jet 4200 Printer	1	Montana Computers System
10	Repair of IBM Intellistation Monitor 21"	1	InfoTech Pvt. Ltd.
11	Steel Material	1	TMT in Market
12	Resin Material	1	In Market
13	Nipple O-Ring etc. for Mold	1	In Market
14	Screw nut washer etc.	1	In Market
15	Hydraulic oil Caltex Rando HD 46	84Litter	Techno-Lubes Marketing
16	Grease Shell EPI	182 kg	Techno-Lubes Marketing
17	Hand tools (Gexagonal Allenkey, Air Duster etc.)	1 Unit	In Market
18	Rubber Hose	2	In Market
19	Lifting tools (Shakal Cup, I-Bolt)	1 Unit	In Market

Annex 21-1 Monitoring & Evaluation Sheet of Technology Transfer

Field: Mold Design - Group  
Expert in Charge: Mr. H. Yoshimatsu

Date:

	Subjects of TCP	Current Status [Current/(Target)]			Final Products
		Design A	Design B	Design C	
<b>I. MOLD DESIGN</b>					
1. <b>Basic Design</b>					
1) General Mechanical Drawing		3/(4)	2/(4)	2/(4)	Example: ● Design Lecture Manual (3) ● Drawing (10) ● Training Course (3) ● Backup Support Service (5) ● Advisory Service (5)
2) Property of Plastic					
3) Basic of Mold Material					
4) Basic of Machining					
5) Basic of Injection Molding					
2. <b>Mold Design for Injection Molding</b>					
1) <b>Basic Mold Design</b>					
(1) Basic Structure of Mold for Injection Molding					
(2) Function of Standard Parts for Injection Molding					
(3) Function of Mold Element for Injection Molding					
(4) Basic Structure of Sliding Parts for Undercut					
(5) Element of Injection Molding Component					
(6) Basic Procedure of Mold Design					
(7) Condition of Injection Molding					
(8) Drawing by AUTO CAD					
2) <b>Application of Mold Design</b>					
(1) Mold Design for Basic Structure					
(2) Component Design for Injection Molding					
(3) Design of Standard Part					
(4) Design of Sliding Parts for Undercut					
(5) Standardization of Mold Part					
(6) Mold Design (Trouble Shooting of Injection Mold)					
(7) Mold Design for Target Mold					
-1. Tray for Kitchen Cabinet					
-2. Front Light Body for Motorcycle					
-3. Mouse Cover (Upper & Lower Case)					
-4. Telephone Case (Upper Side)					
3 <b>Training Course</b>					
4 <b>Backup Support Service</b>					
5 <b>Advisory Service</b>					

Level=0: Technology transfer is not started

- 1: Counterpart personnel can perform the job under expert's instruction.
- 2: Counterpart personnel can perform the job with experts' advice.
- 3: Counterpart personnel can perform the job by themselves.
- 4: Counterpart personnel can instruct others.

Comments by Japanese Experts:

- Design A:
- Design B:
- Design C:

Monitoring & Evaluation Sheet of Technology Transfer  
Field: Measuring—Group  
Expert in Charge: Mr. H.Yoshimatsu

	Subjects of TCP	Current Status (Current/(Target))			Date:	Final Products
		Measuring A	Measuring B	Measuring C		
II. Measuring Method						
1 Operation of C.M.M.						
2 Backup Support Service						

Level=0: Technology transfer is not started

- 1: Counterpart personnel can perform the job under expert' instruction.
- 2: Counterpart personnel can perform the job with experts' advice.
- 3: Counterpart personnel can perform the job by themselves.
- 4: Counterpart personnel can instruct others.

Comments by Japanese Experts:

Measuring A:  
Measuring B:  
Measuring C:




**Annex 21-2 Monitoring & Evaluation Sheet of Technology Transfer**

Field: CAD/CAM NETWORK – Group  
Expert in Charge: Mr. K.Sawada

Subjects of TCP	Current Status [Current/(Target)]			Date:	Final Products
	CAD/CAM A	CAD/CAM B	CAD/CAM C		
<b>II. CAD/CAM NETWORK STATION</b>					
<b>1. CAD/CAM (General)</b>					
1) Installation & Adjustment of CAD/CAM SYSTEM	3/(4)	2/(4)	2/(4)		Example: ●Lecture Manual (3) ●CAD Data (5) ●CAM Data (10) ●Training Course (3). ●Backup Support Service(5) ●Advisory Service (5),
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					
<b>2. 3D CAD (Basic)</b>					
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					
<b>3. 3D CAD (Advanced)</b>					
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)					
<b>4. CAM (Basic)</b>					
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.	<b>CAM (Advanced)</b>			
1)	2D, 3D CAM			
2)	Building of Database ( Cutting Condition & Tool Property )			
3)	Installation of DNC System			
6.	<b>CAD/CAM (Advanced)</b>			
1)	CAD/CAM for Target Mold			
	-1. Tray for Kitchen Cabinet			
	-2. Front Light Body for Motorcycle			
	-3. Mouse Cover (Upper & Lower Case)			
	-4. Telephone Case (Upper Side)			
7.	<b>Training Course &amp; Seminar</b>			
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.	<b>Backup Support Service</b>			
1)	CAD Data Providing & Editing Service for Private Sector			
2)	CAM Data Providing & Editing Service for Private Sector			
3)	Providing Data Conversion Service for Private Sector (Polygon Mesh to surface			
9.	<b>Advisory Service</b>			
1)	Visit for Mold Making Company			

Level=0: Technology transfer is not started

- 1: Counterpart personnel can perform the job under expert' instruction.
- 2: Counterpart personnel can perform the job with experts' advice.
- 3: Counterpart personnel can perform the job by themselves.
- 4: Counterpart personnel can instruct others.

Comments by Japanese Experts:

- CAD/CAM A:
- CAD/CAM B:
- CAD/CAM C:



**Annex 21-3 Monitoring & Evaluation Sheet of Technology Transfer**

Field: Mold Processing—Group  
Expert in Charge: Mr. M.Ide

Subjects of TCP	Current Status [Current/(Target)]			Final Products
	Mold Processing A	Mold Processing B	Mold Processing C	
III. Mold Processing				
1. Basic of Machining				
1) Cutting of Theory	3/(4)	2/(4)	2/(4)	Example: ●Lecture Manual (3) ●Target Products (10) ●Training Course (3) ●Backup Support Service (5) ●Advisory Service (5).
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				
(2) EDM Wire-cut				
(3) EDM Shinker				
3) Grinding Machine (Surface Grinder, Tool Grinder)				
4) Mold Making Technology				
(1) Processing Condition				
(2) Manipulation of Tooling				
(3) Accuracy of the Processed Products				
5) Planning of Mold Making Process				
3. Measuring Method				
1) Operation of Measuring Equipment				
4. Maintenance & Trouble Shooting				
1) Maintenance of Facility				
2) Countermeasure of Trouble Shooting				
3) Installation of Machinery				
5. Mold Making (Advanced)				
Mold Making for Target Mold				
-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				
7. Backup Support Service				
8. Advisory Service				

Level=0: Technology transfer is not started  
 1: Counterpart personnel can perform the job under expert's instruction.  
 2: Counterpart personnel can perform the job with experts' advice.  
 3: Counterpart personnel can perform the job by themselves.  
 4: Counterpart personnel can instruct others.

Comments by Japanese Experts:  
 Mold Processing A:  
 Mold Processing B:  
 Mold Processing C:

Annex 21-4 Monitoring & Evaluation Sheet of Technology Transfer

Field: Mold Assembly & Trail Shot - Group

Expert in Charge: Mr. IDE

Date:

	Subjects	Current Status [Current/(Target)]			Final Products
		Mold Assembly & Trail Shot A	Mold Assembly & Trail Shot B	Mold Assembly & Trail Shot C	
IV.	Mold Assembly & Trail Shot				
1.	Finish of Mold				
1)	Fundamentals of finishing	3/(4)	2/(4)	2/(4)	Example: ●Lecture Manual (3) ●Maintenance Manual(5) ●Target Product (10) ●Training Course (3), ●Backup Support Service(5) ●Advisory Service (5).
2)	Mold Polishing				
2.	Mold Assembly				
1)	Procedure of Mold Assembly				
2)	Set-up for Mold Assembly & Adjustment				
3)	Final assembling and preparation				
3.	Injection Molding				
1)	Plastic Material for Molding				
2)	Procedure of Injection Molding				
3)	Operation of Injection Molding				
4)	Molding Problems and Solution				
4.	Maintenance & Trouble Shooting				
1)	Maintenance of Facility				
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				
	-3. Mouse Cover (Upper & Lower Case)				
	-4. Telephone Case (Upper Side)				
6.	Training Course				
7.	Backup Support Service				
8.	Advisory Service				

Level=0: Technology transfer is not started  
 1: Counterpart personnel can perform the job under expert' instruction.  
 2: Counterpart personnel can perform the job with experts' advice.  
 3: Counterpart personnel can perform the job by themselves.  
 4: Counterpart personnel can instruct others.

Comments by Japanese Experts:  
 Mold assembly & Trail Shot A:  
 Mold assembly & Trail Shot B:  
 Mold assembly & Trail Shot C:

Target Mold	2004										2005										2006									
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9						
Multi Purpose Tray	Cavity	MC	EV																											
	Core	MC	EV																											
	Mold Base	MC	EV	AS,TS	EV																									
Front Light Body for Motorcycle	Drawing	AD100	DD150	DD100																										
	Cavity	CC100	MC150	EDM150																										
	Electrode x 2		CC100	MC100																										
	Core		CC100	MC100	MC50	AS150	AS150	TS50	EV																					
	Mold Base		MC50	MC50																										
Mouse Cover	Slide Core x 5		MM150																											
	Drawing		AD50	DD150	DD50																									
	Cavity x 2		CC50	MC50	EDM50																									
	Electrode		CC50	MC50																										
	Core x 2		CC50	MC50																										
Telephone Case	Mold Base		MC50	MC50	AS150	TS50	EV																							
	Drawing		AD100	DD150	DD150																									
	Cavity		CC150	MC150	MC150	EDM150	AS50	AS200	TS100	EV																				
	Electrode		CC50	MC50																										
	Core		CC150	MC150	MC150	EDM50	MC150	MC150	EDM50	MC100																				
Technical Training Courses	Mold Design CAD/CAM																													
	Mold Processing																													
	Finish, Mold Assembly																													
	Injection																													
	Mold Design CAD/CAM																													
Backup Support Service	Mold Processing																													
	Finish, Mold Assembly																													
	Injection																													
	Mold Design CAD/CAM																													
	Mold Processing																													
Advisory Service	Finish, Mold Assembly																													
	Injection																													
	Mold Design CAD/CAM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
	Mold Processing	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						
	Finish, Mold Assembly	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*						

Final Evaluation M

PD:Product Drawing AD:Assembly Drawing DD:Detail Drawing CC:CAD/CAM Operation TS: Trial Shot  
 MC: Machining Center EDM: Electro Discharge Machine WC: Wire Cutt EDM AS: Assembly MM: Milling Machine

Technical Training Courses:  
 Seminars:  
 Backup Support Service: Mold Design (Ex. Drawings, CAD/CAM Data etc.), Prototype (Ex. Parts, Tools, Molded Product etc.) etc.  
 Advisory Service: Factory Visit & Advice etc.

Annex 21-6 Analysis of Target Molds

Field	Target Molds	Tray for Kitchen Cabinet			Flont Light Body for Motor cycle			Mouse Cover			Telephone Case						
		1st	2nd	Final	1st	2nd	Final	1st	2nd	Final	1st	2nd	Final				
Mold Design	Term of Evaluation																
	Tolerance of Dimension of Cavity and Core																
	Draft Angle																
	Weld Line Position																
	Specification of Injection Molding Machine																
	Material of Steel and Heat Treatment																
	Determination of Shrinkage																
	Ejection Method and Location																
	Cooling Method and Location																
	Strength of Mold Construction																
CAD/CAM	Treatment of Under-cut																
	Surface Roughness																
	Runner and Gate System																
	Cutting Speed																
	Surface Roughness																
	Accuracy																
	Accuracy of The Processed Products																
	Surface Roughness of The Processed Products																
	Treatment of Error of the Processed Product																
	Treatment of Error of Mold Design																
Mold Assembly	Measuring of Dimension and Recoding																
	Surface Roughness of Polished Surface																
	Equable Contact of Parting Surfaces																
	Movement of the Movable Construction																
	Accuracy of the Wall Thickness of Cavity																
	Treatment of Mold Processing Error																
	Treatment of Mold Designing Error																
	Molding Condition																
	Inspection and Correction																

\* Criterion for Evaluation

AA: 100% satisfied

A : 80% satisfied

B : 60% satisfied

C : 30% satisfied

D : 0% satisfied



Annex. 22 Progress Record of Completed Target Products

October 13, 2004

Target Product	Product design	Mold design	CAD/CAM	Processing	Assembly & Trial Shot
Kitchen Tray (modification) 160T → 350T	finished	finished	finished	finished	finished
Multi-Purpose Tray	finished	finished	finished	done 20%	not finished
Front Light Body (modification) 160T → 350T	finished	finished	finished	not finished	not finished
Front light body	done 20%	not finished	not finished	not finished	not finished
Mouse cover	not finished	not finished	not finished	not finished	not finished
Telephone Case	not finished	not finished	not finished	not finished	not finished

g.

## Annex23 List of Munnuals, Textbooks, and Materials Prepared by Japanese Side

October 13, 2004

No,	Title	Form	Remarks
<b>Mold Design</b>			
1	Technology Transfer Manual for Plastics Injection Molding	Soft, MS Word	SOKEIZAI CENTER
2	Duty of Mold Designer	Hard /Soft, PDF	Expert
3	How to try mold	Hard /Soft, PDF	Expert
4	Type of mold steels	Hard /Soft, PDF	Expert
5	Countermeasure for Variety of Molding Defect	Hard /Soft, PDF	Expert
6	Mold, Injection Machine, Product Specification Form	Hard /Soft, PDF	Expert
7	The Flow of Mold Making	Soft, MS Power Point	Expert
8	E-Trainer Basics of Injection Molding	Soft, CD	HITACHI ZOSEN
9	Face 2001~2003	Book	MISUMI
10	The Technical Specifications and Dimension Diagrams on the Prastics Injection Molding Machine	Book	Kanagata-Tsushin-Sya Company
11	Standard Mold Base	Book	Futaba
<b>Measuring metod</b>			
1	GEOPAK-WIN(CNC) Software Training Appendi	Manuals	MITUTOYO
2	GEOPAK-WIN Software Training	Manuals	MITUTOYO
<b>CAD/CAM</b>			
1	CADCEUS Operation Manual	PDF	NIHON UNISYS
2	CRAFTMILL Operation Manual	PDF	REALFACTORY
3	NEOSOLID Operation Manual	Book	COMPUTER ENGINEERING
4	POWERSHAPE Training Manual	MS WORD	DELCAM
5	POWERMILL Training Manual	MS WORD	DELCAM
6	MOLDMAKER Training Manual	MS WORD	DELCAM
7	PS-DRAFT Training Manual	MS WORD	DELCAM
8	PS-ASSEMBLY Training Manual	MS WORD	DELCAM
9	PS-ELECTRODE Training Manulal	MS WORD	DELCAM
10	CAD/CAM SYSTEM Introduction	POWERPOINT	Expert
11	Exercise for 3D Modeling	DATA-CD	Expert
12	Exercise for CAM	DATA-CD	Expert
13	Exercise for 3D Mold Design	DATA-CD	Expert
14	Products Drawing	Drawing	Expert
15	Tool Catalog	Book & CD	OSG HITACHI
<b>Mold Processing, Assembly &amp; Trial shot</b>			
1	Technology Transfer Manual for Plastics Injection Molding	Soft, MS Word	SOKEIZAI CENTER
2	Theory of Cutting	Hard /Soft, PDF	Expert
3	Theory of Electric Discharge Machining	Hard /Soft, PDF	Expert
4	Theory of Grinding	Hard /Soft, PDF	Expert
5	Theory of Measuring	Hard /Soft, PDF	Expert
6	Machining Center	Hard /Soft, PDF	Expert
7	Fundamentals of Finishing	Hard /Soft, PDF	Expert
8	Injection Molding	Hard /Soft, PDF	Expert
9	Mechanism of Mould	Hard /Soft, PDF	Expert
10	Role of Parts	Hard /Soft, PDF	Expert
11	CNC Milling	Soft, MS Power Point	MIRDC-JICA Project (Philippines)
12	Basic Machine Shop	Soft, MS Power Point	MIRDC-JICA Project (Philippines)

No,	Title	Form	Remarks
13	CNC EDM Wire Cut	Soft, MS Power Point	MIRDC-JICA Project (Philippines)
14	E-Trainer Basics of Injection Molding	Soft, CD	HITACHI ZOSEN
15	Machinery's Handbook 26	Book	Industrial Press
16	Technology of Machine Tools	Book	McGraw-Hill
17	Instruction Manual V33	Book	MAKINO
18	Instruction Manual EDGE 3	Book	MAKINO
19	Instruction Manual EU64	Book	MAKINO





**Annex 24 List of Manuals and Materials Prepared by Pakistan Side**

October 13, 2004

The PITAC side prepared the following Manual, Textbook

1. Briefing (Project Introduction)      Prepared by Mr. Shoaib Rashid
2. Drawing Completed                      Prepared by Mr. Tariq Baig
3. CAD/CAM Project Presentation      Prepared by Mr. Shoaib Rashid



**Annex-25 Progress & Record of Technical Training Courses & Seminars  
Conducted by the Project.**

October 13, 2004

S. No	Date	Executive Seminars	Participants
<b>Occupational Safety &amp; Health Seminar in Lahore</b>			
1	26/Aug/2004	PITAC C/Ps & Staff	106
2	27/Aug/2004	PITAC Management	12
3	30/Aug/2004	1 <sup>st</sup> Open Seminar	49
4	31/Aug/2004	PITAC C/Ps & Staff	57
5	01/Sep/2004	PITAC Management	09
6	02/Sep/2004	2 <sup>nd</sup> Open Seminar	51
7	01/Sep/2004	Special Seminar at PEL Ltd.	28
<b>Latest Technology Seminar in PTC Karachi</b>			
7	28/Sep/2004	Open House	102
<b>Latest Technology Seminar in PTC Lahore</b>			
8	29/Sep/2004	Open House	62
9	30/Sep/2004	Open House & Guest of Honor	100




## Annex 26-1 Progress & Record of Technical Information Conducted by the Project.

October 13, 2004

S. No.	Date	Factory	Purpose	Researchers
1	15/Oct/2002	Sayyed Bhais	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
2	16/Oct/2002	PVTC (Training Institute)	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
3	17/Oct/2002	Orb-Tech	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
4	18/Oct/2002	Thermosole	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
5	29/Oct/2002	PEL	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
6	1/Nov/2002	U.E.T	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
7	4/Nov/2002	Plasti-Kraft	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Sarfraz
8	5/Nov/2002	PECS	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
9	5/Nov/2002	Volta	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
10	5/Nov/2002	Mega Corp	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
11	12/Nov/2002	Honda Atlas Cars	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
12	13/Nov/2002	Thrmosole	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
13	18/Nov/2002	Techmen	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. Haseeb
14	07/Feb/2003	SanPak	Technology Information	Mr. YOSHIMATSU Mr. SAWADA, Mr. ISHIDA
15	20/Mar/2003	Pak Swiss	Technology Information	Mr. YOSHIMATSU, Mr. IDE Mr. SAWADA, Mr. ISHIDA
16	20/Mar/2003	PTC	Technology Information	Mr. YOSHIMATSU, Mr. IDE Mr. SAWADA, Mr. ISHIDA
17	21/Mar/2003	Omer Jibran	Technology Information	Mr. YOSHIMATSU, Mr. IDE Mr. SAWADA, Mr. ISHIDA
18	21/Mar/2003	Pak Suzuki	Technology Information	Mr. YOSHIMATSU, Mr. IDE Mr. SAWADA, Mr. ISHIDA
19	22/Mar/2003	Nam Engg.	Technology Information	Mr. YOSHIMATSU, Mr. IDE Mr. SAWADA, Mr. ISHIDA
20	16/Jun/2003	Orbit	Attend for Mold Trial	Mr. YOSHIMATSU Mr. IDE, Mr. Tariq
21	21/Aug/2003	Orbit	Technology Information	Mr. YOSHIMATSU Mr. Tariq
22	26/Sep/2003	Honda Atlas Cars	Technology Information	Mr. SASAGO, Mr. YOSHIMATSU Mr. IDE, Mr. SAWADA
23	30/Sep/2003	Honda Motorcycle	Technology Information	Mr. SASAGO, Mr. YOSHIMATSU Mr. IDE, Mr. SAWADA
24	26/Apr/2004	SanPak	Technology Information	Mr. HIRAO
25	02/Jul/2004	SPEL	Technology Information	Mr. SAWADA, Mr. Shoaib Mr. Shahzad, Mr. Raees




26	24/Aug/2004	Meraj Industries	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
27	24/Aug/2004	PEL	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
28	24/Aug/2004	Orbit	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
29	25/Aug/2004	SPEL	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
30	25/Aug/2004	Punjab University	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
31	25/Aug/2004	Honda Atlas Cars	Occupational Safety & Health	Mr. HIRAO, Mr. Miura, Mr. Hyder Ali
32	07/Sep/2004	Atlas Honda Cars	Training Need Assessment	Mr. YOSHIMATSU Mr. Javaid Iqbal, Mr. Tariq Baig
33	07/Sep/2004	Evergreen Plastic	Training Need Assessment	Mr. YOSHIMATSU Mr. Javaid Iqbal, Mr. Tariq Baig
34	07/Sep/2004	Meraj Industries	Training Need Assessment	Mr. YOSHIMATSU Mr. Javaid Iqbal, Mr. Tariq Baig
35	07/Sep/2004	Hawks Engg.	Training Need Assessment	Mr. Hyder Ali Mr. Altaf Mahmood, Mr. Iftekhhar
36	07/Sep/2004	M.Z. International	Training Need Assessment	Mr. Hyder Ali Mr. Altaf Mahmood, Mr. Iftekhhar
37	07/Sep/2004	Haier International	Training Need Assessment	Mr. Hyder Ali Mr. Altaf Mahmood, Mr. Iftekhhar
38	08/Sep/2004	Nam Engineering	Training Need Assessment	Mr. HIRAO, Mr. Shoaib Rashid Mr. Altaf Mahmood
39	08/Sep/2004	Rakson Engg.	Training Need Assessment	Mr. HIRAO, Mr. Shoaib Rashid Mr. Altaf Mahmood
40	09/Sep/2004	Orbit Industries	Training Need Assessment	Mr. YOSHIMATSU Mr. Javaid Iqbal, Mr. Tariq Baig
41	09/Sep/2004	Plastiform	Training Need Assessment	Mr. YOSHIMATSU Mr. Javaid Iqbal, Mr. Tariq Baig
42	09/Sep/2004	Quality Dies & Molds	Training Need Assessment	Mr. Hyder Ali Mr. Altaf Mahmood, Mr. Iftekhhar

**Annex 26-2 Record of Advisory Service Conducted by the Project** Oct. 13, 2004

S. No.	Date	Factory	Problem	Researchers
1	07/Nov/2002	Thermosole	The hot runner system has a lot of problems, because the hot runner system which they made by themselves, is used	Mr. YOSHIMATSU Mr. SAWADA
2	08/Nov/2002	SPEL	1-To be asked whether structure of the mold of door is all right or not. 2-Deformation of the lid of Taper-Ware 3-Breakage of door knob 4- Black Mark 5-White Mark	Mr. YOSHIMATSU Mr. SAWADA
3	30/Jan/2003	SPEL	1-Sink Mark on the back side of Door Handle(1) 2- Rust of Mold for Lamp Cover. 3-Flow Mark on Door handles(2) Surface of Fine Cut for Tire Wheel is not smooth and over cut occasionally.	Mr. YOSHIMATSU Mr. SAWADA
4	04/Feb/2003	SPEL	1-Diameter of holes drilled by boring bar is not accurate. 2-Insert bolts are set and remove in every injection cycle by hand that makes production time longer and costly. 3-Boundary part between parting surface and cavity manufactures is over cut with finish cut.	Mr. YOSHIMATSU Mr. SAWADA
5	18/Feb/2003	PEL	PLASTIC MOLD OF REFERIGERATOR CABINET BOTTOM 1-Total Injection/Feeding system improved. 2-Total Ejection system improved. 3-Total Cavity/Core design improved.	Mr. YOSHIMATSU Mr. SAWADA
6	18/Feb/2003	SPEL	1-Occasionally, shiny in welding area because of 2 gates. 2-Occasionally, flow mark near one gate.	Mr. YOSHIMATSU Mr. SAWADA
7	04/Mar/2003	Thermosole	1-CNC Machine processing problem. (surface is not smooth after fine processing by Machining Center) 2-Mold Design problem of Trimming Belt Cover. (the structure of 3-mold is not understood well)	Mr. YOSHIMATSU Mr. SAWADA
8	29/Apr/2003	SPEL	About Mold Design of Mirror Base. Angle of Slide Core is OK or not, no mold drawing.	Mr. YOSHIMATSU
9	07/May2003	Mega Corp	Help in standardization of Mold Base by providing with Mold Base Standard for example FUTABA Standard Mold Base.	Mr. YOSHIMATSU
10	29/May/2003	SPEL	About sink mark problem for Horn cover: Rib thickness (18.20) of new sample is bigger than one of original sample.. This is process mistake (EDM) Wall thickness is 2.8	Mr. YOSHIMATSU
11	22/Sep/2003	PECS	Operators want to change the single cavity mold to multi cavity molds. Die-cut problem Erect rate problem	Mr. YOSHIMATSU Mr. IDE Mr. SAWADA Mr. Tariq Baig
12	19/Feb/2004	PECS	1-Heat Source (Cavity of Heaters for PHENOL material) 2-Pressure(Range of pressure required for PHENOL material) 3-Weight for the mold 4-Can the weight of mold be reduced being placed in safety limits?	Mr. IDE Mr. Shoaib
13	2/Jul/2004	SPEL	About molding defect for the horn cover mold. 1-Sink Mark 2-Flow Mark	Mr. YOSHIMATSU Mr. Tariq Baig

Name of the Project	The Project on Balancing and Modernization of Workshop Facilities at PITAC, Lahore		
Duration of Cooperation	September 15, 2002 to September 14, 2006		
Study Team	Mid-term Evaluation Team		
Period of the Study	October 7 to October 15, 2004		
Division in Charge	Economic Development Division, SME Team	Staff in Charge	Mr. Yoshimura Etsuji

### I Activities and Contents of the Project

The activities and contents of the Project are shown in the following Charts for Project Planning and Management.

- 1 Project Design Matrix (PDM)
- 2 Plan of Operations (PO)
- 3 Annual Plan of Operations (APO)
- 4 Technical Cooperation Program (TCP)
- 5 Annual Technical Cooperation Program (ATCP)

### II Monitoring and Evaluation System

#### I Monitoring

The following monitoring is scheduled to be held during the cooperation period.

##### (1) Periodical Monitoring

The periodical monitoring is to be implemented, the contents of which are to be discussed on the occasion of regular meetings in the Project, such as Weekly Japanese Expert Meeting, and Monthly Joint Meeting by Chief Advisor, Project Coordinator, other experts as well as Pakistani Project Director, Project Manager and Technical C/P.

##### (2) Monitoring

Monitoring will be done every six (6) months by the Project. The results will be presented to the Joint Coordinating Committee (JCC) and distributed to the organizations concerned and/or personnel involved in the Project. JCC will be held in February and August.

#### 2 Evaluation

Final Evaluation of the Project will be conducted jointly by the two Governments through JICA and Pakistani authorities concerned during last six (6) months of the cooperation term in order to examine the level of achievement as stipulated in the R/D. JICA will dispatch the final evaluation team in the beginning of 2006. In any manner, any evaluation should be jointly implemented by both sides and the outcome should be submitted and reported at the JCC in the form of Joint Evaluation Report and are to be

signed by both sides.

## II Tentative Schedule for Monitoring and Evaluation

Date	Monitoring or/Evaluation and other related activities	In charge of Implementation	Reporting
March 2002	Signing of the R/D	Project Design Team Pakistani side	R/D, M/M
September 14, 2002	Commencement of the Project		
December 2003	Monitoring (1)	Japanese experts Pakistani C/P	Monitoring Report
June 2004	Monitoring (2)	Japanese experts Pakistani C/P	Monitoring Report
October 2004	Mid-term Evaluation	Mid-term evaluation Team Pakistani C/P To be confirmed by JCC members	M/M at JCC, Monitoring Report
December 2004	Monitoring (3)	Japanese experts Pakistan C/P To be confirmed by JCC members	M/M at JCC in February 2005, Monitoring Report
June 2005	Monitoring (4)	Japanese experts Pakistani C/P To be confirmed by JCC members	M/M at JCC in July 2005, Monitoring Report
December 2005	Monitoring (5)	Japanese experts Pakistani C/P To be confirmed by JCC members	M/M at JCC in February 2006, Monitoring Report
April 2006	Final Evaluation	Joint Final Evaluation Team	Final Evaluation Report M/M at JCC



#### IV Criteria and Item for Monitoring and Evaluation

##### 1 Criteria and Item for Monitoring

- (1) PDM (Project Design Matrix)
- (2) PO (Plan of Operations) and APO (Annual Plan of Operations)
- (3) TCP (Technical Cooperation Program) and ATCP (Annual Technical Cooperation Program)
- (4) Monitoring and Evaluation Sheet
- (5) Progress Report of Technical Cooperation Project
- (6) Others if necessary

If technology transfer does not progress as planned, the Project will study the interior/exterior factors to hamper, take necessary countermeasures and will revise the plan.

##### 2 Criteria and Item for Final Evaluation

Criteria and Item for Final evaluation will be prepared by the Project based on the Evaluation Grid.





**Achievement of Outputs (from Jan. 2004 to June 2004)** ("Output" must be the same as the description in PDM)

October 13, 2004

Outputs	Indicators	Targets in this term	Achievements in this term	Reasons if planned targets were not satisfied
0. The project operation unit is established for making advanced plastic settlement molds.	Number and capacity of staff, budget and settlement accounts, number of committees and meetings, number of cases in publicity.	Installation of Injection Machine & CMM. Recruit of Project Coordinator Implementation of Weekly expert meeting Approval of Revised PC-1	Injection machine and CMM have been installed. Project coordinator was dispatched in March 2004. Expert meeting has been held every week. Taskforce meetings for drawing up training courses are held biweekly since April 2004. Government of Pakistan does not accept this project's PC-1. Rs21 million was requested by PITAC, though, Rs14 million was arranged. Sufficient counterparts have not been arranged yet in this term.	Delay of input from Pakistan side. No Allocation of C/P No Local Cost Necessary countermeasures Negotiation with PITAC management for soonest allocation of funds. Negotiation through embassy Impact (expected/unexpected) The equipment is at risk due to the lack of Voltage Regulator, Rain and dust proof facilities.

**Progress of Activities for each Output (Output No. in the PDM and its description ; )**

Activities	Progress of activities						Problems in this term	Targets and activities in the next term (Targets)
	Planned	1	2	3	4	5		
0-1. Allocate necessary personnel as planned.	P A	1	2	3	4	5	6	Lack of counterparts for Mold Design and Mold Processing, Assembly and Trial Shot Sections.  The Government of Pakistan does not approve Revised PC-1 for the project so that there is no Local Fund to keep the delicate machinery and equipment in safe and good conditions.
0-2. Formulate plans of activities	P A	1	2	3	4	5	6	
0-3. Make budget plan and execute it properly.	P A	1	2	3	4	5	6	
0-4. Establish and operate project management system.	P A	1	2	3	4	5	6	
Progress of technology transfer to C/P								(Activities plan) 1) Allocate necessary counterparts 2) Improve the workshop environment 3) Manage taskforce well to set up the training courses for private industry.
Due to the lack of the number of counterparts and the delay of input from the Pakistan side, the technology transfer is delayed in the field of mold design and mold processing, assembly and trial shot sections. We need to compensate for the loss by recruiting new counterparts earlier.								

## Achievement of Outputs (from Jan.2004 to Jun.2004)

Design, QA/QC Section  
October 13, 2004

Outputs	Indicators	Target in this term	Achievements in this term	Reasons if planned targets wouldn't been satisfied
1. The necessary machinery and equipment are provided, installed, operating and maintained properly.	1-1.Contents and condition of machinery and equipment. 1-2.Route to get spare parts and situation to secure spare parts.	Installation of CMM promptly Operate and maintain CMM properly	CMM was installed by short term expert in April. 3 C/Ps of design, processing section had 4days practical training by the expert. CMM room is maintained room temperature ( $\pm 2^{\circ}\text{C}$ ), humidity(45~55%) by air conditioner. and blind of all window.	PITAC C/P engineer in charge of CMM is not confirmed. Air conditioner stopped working many times because of electricity problem.
2. Technical capability of the counterpart personnel (C/P) is upgraded.	2-1.Assessment by the Japanese experts. 2-2.Number and technical level of achieved target products. 2-3.Manuals, textbooks and developed.	To transfer the basic of mold design by lecture completely To transfer the technology by practical training	Lectures about the basic mold design have been delivered 18 times, total 30 hours. All of two C/Ps are attendant completely. 1.. Undercut Handling 2.Temperature Control 3.Defective Molding 4.Design Calculation Start for making new mold. (multi-purpose tray) Completed the product design in this term. Practical training : Injection molding Coordinate Measuring Machine Practical training in Japan Mr. Tariq Baig : (19.Jan.04~23.Mar.04) Mr. Anwar Baig : (30.May.04~8.Aug.04) Design and drawing for several kind of facilities in and out of factory.	We have not gotten new suitable C/Ps. No Engineer C/P in design section and QA/QC section.
3. Technical training courses and seminars are implemented systematically.	3-1.Number of training courses and their participants. 3-2.Number of training courses and their	Preparation of making plans and get needs survey by sending questionnaire to related sector.	We made the Task Force group joined by PITAC training center and project members. Task Force members prepared one sample of questionnaire private sector.	Not enough Engineer power Current C/P's grade up is first

	participants.				
4. Technical backup support services are implemented systematically.	4-1. Number of mold designs and their clients. 4-2. Number of implemented trial prototypes and their clients.	Preparation of making plans through company visit	1 design support by Mr. Tariq in PITTAC design office.	Not systematically because of not enough Engineer power, experience and knowledge . Current C/P's grade up is first	
5. Technical advisory services are implemented systematically.	5. Number of implemented technical advisory services and their clients.	Preparation of making plans through company visit	2 technical services for 2 clients (Pecs and SPEL) by Mr. Shoaib and Mr. Tariq.	Not systematically because of not enough Engineer power, experience and knowledge. Current C/P's grade up is first	

Annex 28-1B Progress of Activities for each Output (Jan. ~Jun.2004)

Design, QA/QC Section

October 13, 2004

Progress of Activities		Problems in this term						Target and Activities in next term
Activities	1	2	3	4	5	6	(Target)	
1-1. Provide and install necessary machinery and equipment.			→	→			To make clear how to take advantage of CMM. Suitable C/Ps have to be assigned to CMM section as soon as possible. (Action Plan) We have to start lecture and training for CMM immediately.	
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.			→	→			PITAC could not recruit new engineers in this term. PITAC C/Ps in this section were only 2 persons in this term, too. 1 C/P : Designer, A lot of experience for mold design 1 C/P : Technician, No experience for mold design. We need to make 2 deferent plans Construction of project site is not completed so, our drawings are not checked and evaluated by actual processing.	
2-2. Implement technology transfer to C/P following to Technology Transfer Plan.			→	→			Grade up technology of current C/Ps & new C/Ps. (Activities Plan) To transfer the basic of mold design completely To make a plan of next target mold To lecture repeatedly for C/P & new C/P.	
2-3. Monitor and evaluate the result of technology transfer to the C/P.			→	→				
3-1. Identify needs through company visits.			→	→			(Target) Preparation of the draft of teaching materials (Activities Plan) To study the result of needs survey of the company by Task Force questionnaire	
3-2. Make plans of technical training courses and seminars.			→	→				

<p>3-3. Develop training curricula and teaching materials.</p>	<p>↑</p>	<p>PITAC situation. It is very difficult to find the technical level of training course, because of mold market is very small and their own technology is different.</p>	<p>To collect survey of several companies by the questionnaire and visiting. To visit private company in Lahore and Karachi continuously with C/P as much as possible</p>
<p>3-4. Implement technical training courses and seminars.</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>To visit to study similar project case in Philippine and Thailand.</p>
<p>3-5. Monitor and evaluate the result of technical training courses and seminars.</p>	<p>↑</p>	<p>Almost of all visited advanced private companies have some complaint for PITAC because PITAC can not keep delivery date.</p>	<p>(Target) To understand the importance of confidence.</p>
<p>4-1. Identify needs through company visits.</p>	<p>↑</p>	<p>We have to recover these bad publicities.</p>	<p>To make system of technical back up support services</p>
<p>4-2. Make plans of technical backup support services.</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>(Activities Plan) To study needs from private companies</p>
<p>4-3. Implement technical backup support services.</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>To collect needs survey of several companies by the questionnaire and visiting.</p>
<p>4-4. Monitor and evaluate the result of technical backup support services.</p>	<p>↑</p>	<p>Almost of all required advices are injection molding trouble matters.</p>	<p>To visit private company in Lahore and Karachi continuously with C/P as much as possible</p>
<p>5-1. Identify needs through company visits.</p>	<p>↑</p>	<p>No body of PITAC members can advice about these field.</p>	<p>(Target) To make C/Ps have a lot of experience by the actual training.</p>
<p>5-2. Make plans of advisory services.</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>To make system of advisory services</p>
<p>5-3. Implement advisory services</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>(Activities Plan) To study needs from private company</p>
<p>5-4. Monitor and evaluate the result of advisory services.</p>	<p>↑</p>	<p>Not enough manpower and capability of C/Ps.</p>	<p>To visit private company in Lahore and Karachi continuously with C/Ps as much as possible</p>

Outputs	Indicators	Target in this term	Achievements in this term	Reasons if planned targets wouldn't been satisfied
0. The project operation unit is established for making advanced plastic molds.	0. Number and capacity of staff, budget and settlement accounts, number of committees and meetings, number of cases in publicity.	Four C/P's for CAD/CAM should be required.	Two more C/P's (totally four C/P's) have been arranged for CAD/CAM Training Course.	
1. The necessary machinery and equipment are provided, installed, operated and maintained properly.	1-1.Contents and condition of machinery and equipment. 1-2.Route to get spare parts and situation to secure spare parts.		Computers (12-set) have been installed and Network System has been completed in November 2003. Installation of CAD/CAM Software for Training Course (12-set) has been completed in December 2003.	
2. Technical capability of the counterpart personnel (C/P) is upgraded.	2-1.Assessment by the Japanese experts. 2-2.Number and technical level of achieved target products. 2-3.Manuals, textbooks and developed.	Standard Operation of Cadceus 3D Modeling (Sketch, Parametric, Data exchange, Mold Design). Standard Operation of CraftMill (3D-CAM). Exercise of Modeling with Cadceus. Standard Operation of Delcam Power Shape (3D-CAD for Training Course) Standard Operation of Delcam PowerMill Training Course)	Standard Operation of Cadceus 3D Modeling (Sketch, Parametric, Data exchange) are completed. Basic of Standard Operation of CraftMill (3D-CAM) is practiced. More than twenty exercise of modeling are practiced with Cadceus. Standard Operation of Delcam Power Shape (Wireframe ,Surface ,Solid ,Draft) are completed. Standard Operation of Delcam PowerMill (Rough Cutting , Finish Cutting) are completed. More than twenty exercise of modeling are practiced with Power Shape.	More initiative and understanding of the project activity is required for C/P's. More responsibility and concentration to the assignment is required for C/P's. Full engagement to Technical assignment is required for C/P's. (They spend a lot of their working time to administration job.) More application and dissection are required after understanding basic theory. Geometric and Algebraic capability of C/P's should be improved more.

		Exercise of Modeling with Power Shape		
3. Technical training courses and seminars are implemented systematically.	3-1.Number of training courses and their participants. 3-2.Number of training courses and their participants.	Preparation of training course.	Textbook of Power Shape and Power Mill for Basic Training Course are prepared.  Presentation of CAD/CAM Training Course is prepared.	More teaching skill is required.
4. Technical backup support services are implemented systematically.	4-1.Number of mold designs and their clients.  4-2. Number of implemented trial prototypes and their clients.	Preparation of backup support services.		More Presentation of the project activity is required.
5. Technical advisory services are implemented systematically.	5.Number of implemented technical advisory services and their clients.	Preparation through company visits.		C/P"s should be enough trained to give Technical Advisory service to Private Sector.



Annex 28-2B Progress of Activities for each Output

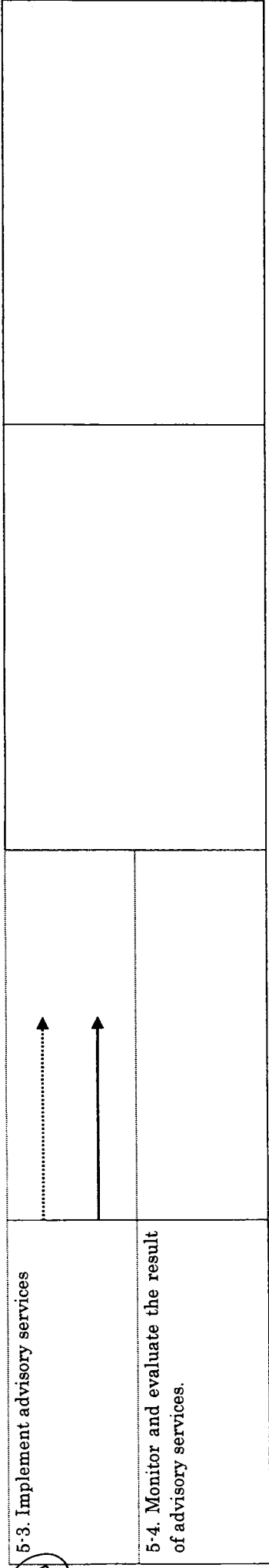
CAD/CAM Network

October 13, 2004

Progress of Activities		Problems in this term	Target and Activities in next term
Activities	9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12		
0-1. Allocate necessary personnel as planned.	<p>↑</p>	Two more C/P's (totally four C/P's) have been allocated for CAD/CAM Training Course in January in 2004 .	(Target)  (Activities Plan)
0-2. Formulate plans of activities.			(Target)  (Activities Plan)
0-3. Make budget plan and execute it properly.			(Target)  (Activities Plan)
0-4. Establish and operate project management system.			(Target)  (Activities Plan)
1-1. Provide and install necessary machinery and equipment.	<p>↑</p>	Computers (12-set) have been installed and Network System has been completed in November 2003.  Installation of CAD/CAM Software for Training Course (12-set) has been completed in December 2003.	(Target)  (Activities Plan)
1-2. Operate and maintain machinery and equipment properly.	<p>.....↑</p> <p>↑</p>	There are many electric power failures. Electric Voltage is not steady. There are only 6-UPS for CAD/CAM and 6 more are required.	(Target) To purchase enough UPS which are qualified.  (Activities Plan) To give more OJT Training of Computer System Maintenance

	9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12			(Target)
<p>2-1. Make Technology Transfer Plan. (Technical Cooperation Program (TCP), Annual Technical Cooperation Program (ATCP) etc.</p>		<p>Two more C/P's (totally four C/P's) have been allocated for CAD/CAM Training Course in January in 2004 .</p>	<p>C/P's should have more exercise of CAD/CAM.</p>	<p>C/P's should improve application and dissection in CAD/CAM.</p>
<p>2-2. Implement technology transfer to C/P following to Technology Transfer Plan.</p>	<p>..... ↑</p>	<p>Two C/P's who are allocated for Training Course have no experience of CAD/CAM Operation at this moment.</p>	<p>(Activities Plan)</p>	<p>More Technical Training and Exercise of CAD/CAM. (Cadceus, CraftMill, Power Shape, Power Mill)</p>
<p>2-3. Monitor and evaluate the result of technology transfer to the C/P's.</p>	<p>..... ↑</p>	<p>Other two C/P's who are allocated previously are required more capability of geometry. Though they had exercises of more than 20 Modeling.</p>	<p>More application and dissection are required after understanding basic theory.</p>	
<p>3-1. Identify needs through company visits.</p>	<p>..... ↑</p>	<p>Not enough Company Visits have been done by C/P's. Because C/P's who take care of Training Courses just started having CAD/CAM Training from January 2004.</p>	<p>(Target)</p>	<p>To study Needs and Technical level of Private Sector more.</p>
<p>3-2. Make plans of technical training courses and seminars.</p>	<p>..... ↑</p>	<p>It is all C/P's just can have CAD/CAM Training and exercise all the time.</p>	<p>To prepare and arrange Text Book and Curriculum of Training Course.</p>	<p>C/P's should improve their Teaching Skill.</p>
<p>3-3. Develop training curricula and teaching materials.</p>	<p>..... ↑</p>	<p>There is a little difficulty for C/P's to prepare plans of technical training course. Because C/P's have not had enough experience of Teaching.</p>	<p>(Activities Plan)</p>	<p>More Technical Training and Exercise of CAD/CAM. (Power Shape, Power Mill)</p>
<p>3-4. Implement technical training courses and seminars.</p>	<p>..... ↑</p>			<p>To give opportunity of Presentation regarding CAD/CAM Training Course that C/P's should give private sector.</p>

<p>3-5. Monitor and evaluate the result of technical training courses and seminars.</p>		
<p>4-1. Identify needs through company visits.</p>	<p>9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 .....↑</p> <p>↑</p>	<p>(Target) To study Needs and Technical Level of Private Sector more.</p>
<p>4-2. Make plans of technical backup support services.</p>	<p>.....↑</p> <p>↑</p>	<p>(Activities Plan) To visit Private Sector continuously with C/P's.</p>
<p>4-3. Implement technical backup support services.</p>		
<p>4-4. Monitor and evaluate the result of technical backup support services.</p>		
<p>5-1. Identify needs through company visits.</p>	<p>.....↑</p> <p>↑</p>	<p>(Target) To study Needs and Technical Level of Private Sector more.</p>
<p>5-2. Make plans of advisory services.</p>	<p>.....↑</p> <p>↑</p>	<p>(Activities Plan) To visit Private Sector continuously with C/P's.</p>



Annex 28-3A Achievement of Outputs (from January 2004 to June 2004)

Mold Processing, Assembly, and Trial Shot  
October 13, 2004

Outputs	Indicators	Target in this term	Achievements in this term	Reasons if planned targets wouldn't be satisfied
<p>1. The necessary machinery and equipment are provided, installed, operated and maintained properly.</p>	<p>1-1. Contents and condition of machinery and equipment. 1-2. Route to get spare parts and situation to secure spare parts.</p>	<p>Installation and adjustment of main machinery. Therefore, the installation engineer was dispatched.</p> <p>Arrangement of the environment in which the machinery is able to operate normally.</p> <p>To implement operational and periodical maintenance of machinery.</p> <p>Elaborate maintenance records and operational records for machinery.</p>	<p>Acceptance of injection molding system. However, there are some problems as follows. a. Deficiency of spare parts. (It is going to be sent from Japan in next term about the spare parts) b. Lacks consistency of injection molding machine and mold. (Mold is going to remodel in the next term. For remodel parts already arrived at the project. The consideration is necessary from now on about the reconstruction of the injection molding system.) The installation engineer was dispatched and injection molding machines were installed.</p> <p>Project site construction is almost finished. However, stability of power supply and dust proof arrangement are still insufficient. Arrangement of office equipments such as the locker and desk.</p> <p>In the present term, It was not carried out.</p>	<p>The installation work of small -hole EDM, grinding machine are not finished. Because of insufficiency of installation manuals and oil. However it is scheduled to finish installation work at the beginning of next term.</p> <p>We requested to PITAC to buy AVR for the machines to PITAC. Also, we consider that how to do about dust proof.</p> <p>We concentrated the construction of project site this term. Therefore, machines are going to real operate from next term. We are going to prepare various records in due order from operation possible machines.</p>
<p>2. Technical capability of the counterpart personnel (C/P) is upgraded.</p>	<p>2-1. Assessment by the Japanese experts. 2-2. Number and technical level of achieved target products.</p>	<p>Revise technology transfer plan.</p>	<p>In charge has revised TCP. Because, this section has occurred delay of one (1) year. This plan have premise which satisfy the requirements as followed. a. Early arrival at the post of successor of the expert. b. Qualified new staff is recruited for PITAC.</p>	<p>It really doesn't satisfy the preconditions which are in PDM, and the delay in 1 year resulted. It is very difficult to revise the TCP and PO. Because the precondition has not been achieved yet.</p>

<p>3. Technical training courses and seminars are implemented systematically.</p> <p>4. Technical back up support services are implemented systematically.</p>	<p>2-3.Manuals, textbooks and developed.</p>	<p>Implement technology transfer to C/P following the TCP.</p>	<p>Deliver lecture as following:</p> <ol style="list-style-type: none"> <li>1. Injection Molding</li> <li>2. Operation of Machining center</li> </ol> <p>Actual training(OJT) as following:</p> <ol style="list-style-type: none"> <li>1. Mold disassembly/assembly.</li> <li>2. Operation of injection molding machine.</li> <li>3. Operation of EDM</li> <li>4. Operation of machining center.</li> </ol> <p>-1 Setup of the workpiece and tools. * 1 to 3 are not systematically training. Main purpose is checking of machinery and facility.</p> <p>Training in Japan (2 C/P in this field) After returned, they held a seminar what they have studied in Japan for other C/Ps and Private sectors.</p> <p>The present term, It was not carried out.</p>	<p>The TCP is differing largely by reason of the above</p> <p>We concentrated construction of project site this term. And full time C/P are 4 persons only right now. After 2 C/Ps which training in Japan returned to the country, the Monitor and evaluate is start.</p>
<p>3.1.Number of training courses and their participants.</p> <p>3.2.Number of training courses and their participants.</p>	<p>3.1.Number of training courses and their participants.</p> <p>3.2.Number of training courses and their participants.</p>	<p>Monitoring and evaluation of the result of technology transfer to the C/P.</p>	<p>The task force for training course was established, to start the training course on January 2005. Its meetings are regularly holding.</p> <p>Making draft of 1week training curricula and teaching materials.</p>	<p>The difference in the technique level and machinery of the mold companies, need to be considered to which level, we put emphasis through the task force.</p>
<p>4. Technical back up support services are implemented systematically.</p>	<p>4-1.Number of mold designs and their clients.</p> <p>4-2. Number of implemented trial prototypes and their clients.</p>	<p>Make plans of technical backup support services.</p>	<p>At present it is not carried out.</p>	<p>The difference in the technique level and machinery of the mold companies, need to be considered to which level, we put emphasis through the task force.</p>

<p>5. Technical advisory services are implemented systematically.</p>	<p>5. Number of implemented technical advisory services and their clients.</p>	<p>Make plans of technical advisory services.</p>	<p>At present it is not carried out.</p>	<p>The difference in the technique level and machinery of the mold companies, need to be considered to which level, we put emphasis through the task force.</p>
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Annex 28-3B Progress of Activities for each Output

Mold Processing, Assembly, and Trial Shot

October 13, 2004

Progress of Activities		Progress of Activities						Problems in this term	Target and Activities in next term
Activities	1	2	3	4	5	6			
1-1. Provide and install necessary machinery and equipment.							Installation of Injection Molding System was carried out. However, installation of other machinery have not been done yet.	(Target) (Activities Plan) Installation of all the machinery promptly.	
1-2. Operate and maintain machinery and equipment properly.							In this term, the concentration was the construction of project site. Therefore, machineries are going to real operate from next term.	(Target) Operate and maintain machinery and equipment properly.  (Activities Plan) We are going to prepare various records in due order from operation possible machineries.	
2-1. Make Technology Transfer Plan. (Technical Cooperation Program (TCP), Annual Technical Cooperation Program (ATCP) etc.							Revised TCP only. It really doesn't satisfy the preconditions which are mentioned in PDM as the delay of 1 year.	(Target) (Activities Plan) Revise PO, APO, TCP, ATCP	
2-2. Implement technology transfer to C/P following to Technology Transfer Plan.							The lectures regarding general knowledge that were planned have almost finished. However, the practical training has not been started. These are the factors for delay in practical training. 1. The project site construction finished on end of march. 2. Personnel deficiency from the Pakistan side.	(Target) Making of the kitchen cabinet mold which is a target mold.  (Activities Plan) Basic operation of machinery. Making plan of the kitchen cabinet mold.	
2-3. Monitor and evaluate the result of technology transfer to the C/P.							In this term, the concentration was the construction of project site. And full time C/P are 4 persons only right now. The monitoring and evaluation will be started when 2 C/Ps, which are being trained in Japan, will come back.	(Target) Make monitoring and evaluation sheet.  (Activities Plan) Evaluate basic knowledge. Evaluate the mold that was produced.	



Activities	Progress of Activities						Problems in this term	Target and Activities in next term
	1	2	3	4	5	6		
3-1. Identify needs through company visits.							The difference in the technique level and machinery of the mold companies, need to be considered to which level, we put emphasis.	(Target) Investigation and analyzation of the needs of the private enterprise.  (Activities Plan) Implement investigation of private enterprise with the plan of the task force meeting.
3-2. Make plans of technical training courses and seminars.							The training course opening time is delayed substantially because the project site construction work was finished in march and deficiency of Pakistani C/Ps.	(Target) Make plans of technical training courses.  (Activities Plan) Meeting regarding training courses.
3-3. Develop training curricula and teaching materials.							The concrete schedule and contents are not completed. Therefore these are temporary only.	(Target) (Activities Plan) Develop training curricula and teaching materials in accordance with plan.
4-1. Identify needs through company visits.							The difference in the technique level and machinery of the mold companies, need to consider to which level of target we put emphasis.	(Target) Investigation and analyzation of the needs of the private enterprise.  (Activities Plan) Preparation of a concrete questionnaire.
5-1. Identify needs through company visits.							The difference in the technique level and machinery of the mold companies, need to consider to which level of target we put emphasis.	(Target) Investigation and analyzation of the needs of the private enterprise.  (Activities Plan) Preparation of a concrete questionnaire.

## Annex 29 List of Local Companies.(Lahore)

October 13, 2004

S/No.	Company Name	Company Director Name & Designation.	Company Address.	Company Tel. No.
1	SAYYED BHAIS	Waqar Ahmad General Manager.	Sayyed Bhaiss Ltd. 200km Ferozpur Road Lhr	042-7533864
2	PVTC	Sajid Naseer Khan General Manager.	98, A/B3, Gulberg3, Lhr	042-5872044-47
3	ORB TECH	Dawood Ahmad Chief Executive.	106-Sabzi Mandi, Iqbal Town, Multan Road Lhr.	042-5418028 024-5420247
4	SPEL	Abid Saleem Operation Manager.	127-S. S.I.E. Township Kot Lakhpat, Lhr.	042-5115506-7 042-5118507
5	THERMOSOLE	Sayyed Nabeel Hashmi Chief Executive.	140, Industrial Area Kot Lakhpat, Lhr 54770	042-5118512 042-5117859
6	PEL	Shahid Iqbal Assistant Manager Dies & Moulds	Pak Electron Limited. 14-km.Ferozpur Road, Lahore54760	042-5811951-59 042-510157
7	U.E.T	Amin Ahmad Director.	University of Engineering and Technology G.T Road Lhr.	042-6829244 042-6829270
8	PLASTICRAFT	Shahid Ishrat Chief Executive.	9, Aitchison Road, Lhr-53700	042-5427161 042-5415462
9	PECS	Abid Iqbal Director.	43-km, Multan Road, Managa Mandi. Lhr.	042-5871100-9 042-5877711-2
10	VOLTA	Gufran Ahmad. Manager Operations.	Plot#:35 Rashid Industrial Estate, 18km-Ferozpur Road Lhr.	042-5811921
11	MEGA CORP	Naeem Ahmad Khan Chief Executive.	112/14 Industrial Area Kot Lakhpat, Lhr.	042-5152101 042-5152690
12	HAWKS ENGINEERING	Shahid Naseem Managing Partner.	Plot No.9/C, Holiday Park, Mushrafabad, 5.5Km Raiwind Road.	042-5320625
13	THERMOSOLE	Malik Tanveer Ahmad Khan Manager Administration & QMR	82-Industrial Area, Kot Lakhpat. Lhr.	042-5110871 042-5123159
14	TECHMEN	Wasim Khaliq Muggo Chief Executive.	140, Industrial Area Kot Lakhpat, Lhr 54770	042-5118512 042-5117859
15	SPEL	Ehsan-ul-Haq Technology Support Engineer.	28-S, Industrial Area, Kot Lakhpat. Lhr.	042-5110871 042-5153494
16	SPEL	Iftekhar Ahmad Chief of Contact	28-S, Industrial Area, Kot Lakhpat. Lhr.	042-5115506-7 042-5118507

S/No.	Company Name	Company Director Name & Designation.	Company Address.	Company Tel. No.
17	SPEL	Saleem Chauhadry Finance Manager	28-S, Industrial Area, Kot Lakhpat. Lhr.	042-5115506-7 042-5118507
18	SPEL	Abid Iqbal Director.	28-S, Industrial Area, Kot Lakhpat. Lhr.	042-5115506-7 042-5118507
19	PEL	Homaeer Waheed General Manager Manufacturing.	Pak Electron Limited. 14-km. Ferozpur Road, Lahore54760	042-5115506-7 042-5118507
20	PAK SWISS	Sayed Nadeem Gohar Dies & Mould Design Incharge.	PCSIR Laboratories Campus Off University Road, Karachi75280	021-814962-3 021-4554951
21	P.T.C	Ahsan Siddiqi General Manager.	Plastic Technology Centre St-2/1, Sector 30, Korangi Industrial Area, P. O.Box 8297, Karachi74900	021-5063589 021-5068151
22	OMER JIBRAN	Zafar Hasan Director Technical.	DSU-10, Pakistan Steel, Downstream Industrial Estate, Bin Qasim, Karachi.	021-750777 021-750781
23	NAM ENGINEERING	Amin Ahmad Director.	Lahore: Link Bhogi Wal Band Road, Krol, Gahti Stop. Band Road, Lahore, P.O.Box 8033 Karachi: Plot No. A-125, Road No.2, S.I.T.E. Super Highway Scheme#:33 Karachi.	Lhr:042-6825168 042-6825168 Kar:0333-2127272
23	Meraj Industries, Ltd.	Tariq Mahmood Butt. Chief Executive.	14. Km Multan Road Lahore.	042-7511083
23	HOND ATLAS Cars. Ltd.	Mamoru Suwama President.	43-Km Multan Road Manga Mandi, Lahore.	042-5871100-9
23	PAK SUZUKI Motor Company.	KATSUICHIRO OHTA Executive/Director	DSU-13, Pakistan Steel Industries Estate, Bin Qasim, Karachi.	0201-750788-95 0201-750785
23	SANPAK	Yukishige Araki Chief Executive.	568-Block 3, Johar Town Lhr	042-5300744-46
23	Dawood YAMAHA Ltd.	Arif Dawood Chief Executive.	40-C, Block, VI, P.E.C.H.S Shahra-e-Faisal. Karachi-75400	021-4546777

**List of Attendance of the Mid-Term Joint Evaluation**

October 13, 2004

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 Industry and Production
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
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Technical Evaluation  
Ex-Professor,  
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Mr. Atsuhiko Hatakeyama  
Member of Technical Support Committee in Japan /  
Technical Transfer Planning  
Technical Advisor,  
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Ms. Chikako Yamauchi  
Member of Technical Support Committee in Japan /  
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.

### 3) 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

