

# **Final Evaluation**

## **Annexes**

**May 30, 2006**

The Project for Balancing and Modernization  
of Workshop Facilities  
At PITAC, Lahore

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May 30, 2006

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Evaluation Grid: the Project for Balancing and Modernization of Workshop Facilities in Pakistan

Project Achievements and Implementation Process

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks (+ positive factor; - negative factor; *neutral factor)
<b>A. Achievement of Overall Goal</b>				
A-1. Domestic plastic mould making industries are able to supply better quality moulds for plastic production in Pakistan.	<ul style="list-style-type: none"> <li>The number of orders of moulds at beneficiary plastic mould making companies.</li> <li>Rejection rates, defective rates, and complaints on the mouldings and moulds produced by project beneficiaries (direct and indirect), etc.</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> <li>Private firms</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<p>*All the efforts have been concentrated on the capacity development of PITAC including provision of relevant training courses, advisory services and back-up support services toward strengthening the technological capacity of private industries.</p> <p>*However, it is future tasks that the activity of the project widely contribute to the quality improvement of a domestic plastic mould.</p>
<b>B. Achievement of Project Purpose</b>				
B-1. Technical capability of PITAC is upgraded to extend technical services in the filed of plastic mould technology.	<ul style="list-style-type: none"> <li>Level of satisfaction of recent and former service beneficiaries</li> <li>Number of newly improved services and beneficiaries</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<p>+The technical transfer has been completed.</p> <p>+C/Ps have commenced managing training courses by themselves with minimal assistance of JICA experts.</p> <p>+The advisory service has been improved since June 2005 step by step and now the service is satisfying a company's needs.</p> <p>+The backup services have been initiated since October 2005 and now its system is further strengthened to satisfy the needs of companies.</p>
<b>C. Achievement of Project Output</b>				
C-0. The project operation unit is established for making advanced plastic moulds.	<ul style="list-style-type: none"> <li>Allocation of C/Ps</li> <li>Qualifications of C/Ps</li> <li>Budget and expenditure</li> <li>Frequency of committees and project management meetings</li> <li>Publicity of the Project</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<p>*The allocation of C/Ps was completed by January 2005.</p> <p>+The revised PC-I was approved and the budget has been executed as planned.</p> <p>+The sufficient project management has been ensured by maintaining the regular meetings among the staff concerned.</p> <p>+The information of the project is disseminated through the internet website.</p> <p>-Some C/Ps need the improvement of their technical and managerial capability.</p>
C-1. The necessary machinery and equipment are provided, installed, operated and maintained properly.	<ul style="list-style-type: none"> <li>List of equipment introduced</li> <li>Conditions of machinery and</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> </ul>	<p>*The machineries and equipment list provided by Japan and Pakistan as shown in Annex 8, 10.</p> <p>*The installation of machineries and equipment by both countries</p>

<p>C-2. Technical capability of the C/P personnel will be upgraded.</p>	<p>equipment</p> <ul style="list-style-type: none"> <li>Maintenance records</li> <li>Degree of improvement of knowledge and skill level of C/Ps</li> <li>The number and technical level of achieved target products</li> <li>Progress of the development of manuals, textbooks and training materials</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<p>was completed without any serious effects caused by delay of Pakistani side.</p> <ul style="list-style-type: none"> <li>The operation of machineries and equipment is interrupted by frequent power failures.</li> <li>The technical assessment of C/Ps as shown in Annex 25-1~25-6.</li> <li>The technical assessment of the target mould as shown in Annex 27.</li> <li>The result of the manuals, the textbooks, and the teaching materials as shown in Annex 29.</li> <li>The technical ability of C/Ps is satisfactory at a basic level.</li> <li>The C/P's technical capability has reached at the required level as far as solving the problems for the four target moulds.</li> <li>The development of manuals, textbooks, and teaching materials at all fields have been completed. The development of textbook in Urdu language has been commenced and elaborated.</li> </ul>
<p>C-3. Technical training courses and seminars are implemented systematically.</p>	<ul style="list-style-type: none"> <li>The number of implemented seminars, training courses and their participants</li> <li>Questionnaires collected from participants at the end of each course/seminar.</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>The 26 training courses in 18 subjects were carried out according to the annual program to accommodate 224 trainees between January 2005 and April 2006.</li> <li>The 13 out of 26 courses were conducted during evening time in order to meet a strong request of the private companies to accommodate 109 trainees.</li> <li>The course assessment by the trainees is very high.</li> <li>The five seminars, namely Occupational Safety and Health Seminar, Latest Mould Technology Seminar, TQC Seminar, Industrial Seminar (introduction of JICA project) and Seminar of 3D Modeling were executed in Lahore, Karachi and Gujranwala and the total number of participants has reached to 1,454.</li> <li>The seminar assessment by the participants is also very high.</li> <li>The content of the training courses and seminars need to further improvement in order to meet ever-changing needs of private sector</li> <li>The infrastructure for the training courses and seminars needs further consolidation, in particular for the stable power supply.</li> <li>As shown in Annex 32.</li> </ul>
<p>C-4. Technical backup support services are implemented systematically.</p>	<ul style="list-style-type: none"> <li>Number of mould designs and their clients</li> <li>Number of implemented trial prototypes and their clients</li> <li>Degree of satisfaction of clients with the quality of backup support services</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>Six requests were responded successfully out of 14 inquiries through the backup services.</li> <li>The C/Ps and JICA experts dealt with requests which were transferred to the JICA project, after the requests were registered through the normal procedures of PITAC, due to the complexity and nature of inquiries.</li> </ul>

<p>C-5. Advisory services are implemented systematically.</p>	<ul style="list-style-type: none"> <li>• Number of implemented technical advisory services and their clients</li> <li>• Degree of satisfaction of clients with the quality of advisory services</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> <li>• Review of materials</li> </ul>	<p>*As shown in Annex 33. +26 requests have been registered in advisory service. While more than half of the requests were completed, for others elaborated solutions were sent to the clients step by step. +While JICA experts assumed the main responsibility for the advisory services between November 2002 and July 2004, the transfer of these duties to the C/Ps was materialized concerning the model factories around June 2005. +JICA experts remain to be responsible for supporting the C/Ps with regard to the matters that exceed technical capabilities of the C/Ps.</p>
<p><b>D. Results of Input</b></p>				
<p>D-1. Inputs by the Japanese side</p>	<ul style="list-style-type: none"> <li>• Dispatch of long-term Experts</li> <li>• Dispatch of short-term Experts</li> <li>• C/P Training in Japan</li> <li>• Provision of machinery and equipment</li> <li>• Support of local cost</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Review of materials</li> <li>• Interview</li> </ul>	<p>*As shown in Annex 5~9. -The original plan of implementation needed to change due to the deterioration of security (i.e. , aftermath of the September 11, 2001) and the constraint of budget. -The assignment of JICA expert for the mould processing was not extended and the vacancy was not filled with a long-term assignment. *As alternative measures for the above, the short-term experts were assigned and the C/P training opportunities in Japan were created to substitute the absence of the experts required.</p>
<p>D-2. Inputs by the Pakistani side</p>	<ul style="list-style-type: none"> <li>• Building and facilities</li> <li>• Allocation of C/Ps</li> <li>• Local cost allocation</li> <li>• Provision of machinery and equipment and their maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Review of materials</li> <li>• Interview</li> </ul>	<p>*As shown in Annex 3-1,3-2, 10 and 19. -Due to the delay in approval of revised PC-I, the inputs by the Pakistani side delayed seriously, including the building construction and C/Ps recruitment.</p>
<p><b>E. Appropriateness of Implementation Process</b></p>				
<p>E-1. Monitoring plans and results</p>	<ul style="list-style-type: none"> <li>• Implementation process</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Review of materials</li> <li>• Interviews</li> </ul>	<p>*As shown in Annex 42. *The progress of the project activities was monitored jointly by both sides and the original plan was revised in accordance with necessities arisen.</p>
<p>E-2. Appropriateness of communication between Experts and C/P</p>	<ul style="list-style-type: none"> <li>• Communication situation</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Review of materials</li> <li>• Interviews</li> </ul>	<p>*As shown in Annex 22. +Since October 2004, the weekly meetings have been taking place in order for JICA experts and section heads of C/Ps to ascertain the progress and to discuss the problems on Wednesday. This</p>

				meeting arrangement enabled all members to establish and maintain common understanding of the project progress and critical issues, so that agreed solutions were reflected in the daily operations in the project.
E-3 Establishment of ownership of the Project	<ul style="list-style-type: none"> <li>Awareness and attitude of C/Ps</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> </ul>	<ul style="list-style-type: none"> <li>There are some C/Ps who contribute to the project in a pro-active manner.</li> <li>The significant positive changes are observed with regard to working attitude as well as sense of responsibility.</li> <li>The frequent turn-over of General Managers tarnished the ownership toward JICA project.</li> </ul>
E-4 Appropriateness of approaches/ methods of technology transfer	<ul style="list-style-type: none"> <li>Methodologies of technology transfer</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> </ul>	<ul style="list-style-type: none"> <li>As shown in Annex 25-1 ~25-6.</li> <li>The C/Ps' willingness and enthusiasm of making contribution to the project differ from one to another.</li> <li>JICA experts concentrated on guidance and training of 10 C/Ps who are senior already in office at the inception of the project. Those 10 senior C/Ps helped JICA experts in training other 20 C/Ps who were deployed for the project between November 2004 and January 2005.</li> <li>A comprehensive approach was taken in order for JICA experts to transfer basic technology as well as knowledge behind in order to promote C/Ps capability to expand the practical application.</li> <li>Occupational Safety and Health Committee and TQC Committee were established and the substantial improvement in quality control and safety awareness was achieved through 5S activity.</li> </ul>

### Five Evaluation Criteria: Relevance

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks
<b>1. Relevance</b>				
1-1. Relevance of Overall Goal to the government policies	<ul style="list-style-type: none"> <li>Three-year Rolling Plan</li> <li>Industrial policies</li> <li>Other related policies</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Industries and Production</li> <li>PITAC</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews</li> <li>Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>The promotion of SME is priority for the Pakistani Government's policy, 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 mould-making industries is indicated in "Strategy 2010 - Moulds &amp; Dies / Jig &amp; Fixtures". Moreover, the Project is budgeted in the framework of "Annual Plan 2004-05".</li> <li>It plans in the item of Skills Upgradation for Industrial Development according to Year Book 2004-2005 of Ministry of</li> </ul>



				<p>Industries and Production &amp; Special Initiatives (MoP&amp;SI) and Tools and Moulds &amp; Die Centre (TMD centre) are planned to Karachi and Gujranwala (north 100km of Lahore).                  The construction of facilities is begun in Karachi.                  *Pakistan Council for Scientific and Industrial Research (PCSI) is establishing Precision Mechanical &amp; Instrumentation Technology Centre-Lahore by the loan of China. The function is similar to Pak-Swiss Training Centre, and Dies and Mould Technology (4 years Diploma) is included.</p>
<p>1-2. Relevance of Overall Goal to the business needs</p>	<ul style="list-style-type: none"> <li>• Business needs for improvement of Pakistani plastic mould industries</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Industries and Production</li> <li>• PITAC</li> <li>• Experts</li> <li>• Private firms</li> <li>• Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>+The amount of plastic products is increasing every year and the amount of the imported mould is increasing concurrently. The mould product can be presumed to be an increase although all of them are not necessarily for plastic. (Needs Survey for Plastic Injection Mould Industry in Pakistan 2005).</li> <li>+The demand for a plastic metal mould has expanded from an increase of the production of household electric appliances and automotive parts industry.</li> </ul>
<p>1-3. Comparative advantage of Japan's assistance</p>	<ul style="list-style-type: none"> <li>• Counterparts' view on Japan's expertise in plastic mould industry</li> <li>• Similar activities by other agencies including donors</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> <li>• Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>+The C/Ps, PITAC and the industries trust and appreciate the plastic technology of Japan.</li> <li>+MoP&amp;SI establishes TDMC similar to PITAC, and it is under construction in Karachi, and the organization similar to Pak-Swiss Training Centre is being established in Lahore by PCSIR.</li> <li>+JICA has the experience of executing the project for the public organization strengthening that supports the mould industry of the developing country.</li> </ul>
<p>1-4. Relevance of Project Purpose to the government' business needs</p>	<ul style="list-style-type: none"> <li>• Activities of PITAC</li> <li>• Private sector's view on PITAC</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Industries and Production</li> <li>• PITAC</li> <li>• Experts</li> <li>• Private firms</li> <li>• Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>-The private sector was not fully satisfied with the services provided by PITAC, since PITAC was not having the required technology and know-how.</li> <li>+The competency of PITAC is in the process of improvement to meet the needs of private sector.</li> <li>+JICA cooperation has helped in strengthening the capacity of PITAC in this regard.</li> </ul>
<p>1-5 Consistency with Japan's aid policy to Pakistan</p>	<ul style="list-style-type: none"> <li>• Focal fields in Japan's aid policy/programs to Pakistan</li> </ul>	<ul style="list-style-type: none"> <li>• MOFA, Japan</li> </ul>	<ul style="list-style-type: none"> <li>• Review of materials</li> <li>• Interviews</li> </ul>	<ul style="list-style-type: none"> <li>+The promotion of the supporting industries including plastic mould making technology is one of the priority areas of the Japanese policy to Pakistan and other developing countries.</li> </ul>

**Five Evaluation Criteria: Effectiveness**

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks (+ positive factor; - negative factor; * neutral factor)
<b>2. Effectiveness</b>				
2-1. Achievement of Project Purpose	As described in B-1	As described in B-1	As described in B-1	As described in B-1
2-2. Contributing factors for the achievement of Project Purpose	<ul style="list-style-type: none"> <li>• PITAC's commitment in managing the project.</li> <li>• Capacity building of training courses</li> <li>• Development of equipment</li> <li>• Utilization of teaching material</li> <li>• Progress of teaching material development</li> <li>• Progress and results of publicity plans</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>+The basic technology has been transferred to C/Ps.</li> <li>+C/P can manage and organize the training course.</li> <li>+All machineries and equipment have been effectively used.</li> <li>+The development of teaching materials and textbooks are completed.</li> <li>+The homepage of the project is opened in the Internet, and it maintains it regularly.</li> </ul>
2-3. Negative factors against the achievement of Project Purpose	<ul style="list-style-type: none"> <li>• Status of the operation unit</li> <li>• Financial sources</li> <li>• Gaps between needs and the courses to be provided</li> <li>• Communication between Experts and C/Ps</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>-Frequent turn-over of the positions of General Manager has unfortunately resulted in that PITAC was unable to maintain management consistency and continuity.</li> <li>-Though the budget was secured under anticipatory approval, execution was not done promptly as was expected by the Project partly due to government procedures.</li> </ul>

### Five Evaluation Criteria: Efficiency

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks (+ positive factor: - negative factor: *neutral factor)
<b>3. Efficiency</b>				
3-1. Achievement of Project Output	As described in C-0 to C-5.	As described in C-0 to C-5.	As described in C-0 to C-5.	As described in C-0 to C-5.
3-2. Appropriateness of quality, quantity and timing of inputs				
3-2-1. Experts	<ul style="list-style-type: none"> <li>Number</li> <li>Expertise</li> <li>Timing of dispatch</li> <li>Duration of assignment</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The experts list as shown in Annex 5.</li> <li>+C/Ps are almost satisfied with expert's technical level.</li> <li>-Though the mould processing expert's successor was not deployed, some short-term experts were sent for the machining centre. In place of the short term expert for other related machineries, the training in Japan was held as alternatives.</li> </ul>
3-2-2. Machinery and equipment	<ul style="list-style-type: none"> <li>Categories</li> <li>Amount</li> <li>Timing of installation</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The machineries and equipment list as shown in Annex 8~10.</li> <li>+The number, kind of machineries and equipment, and the timing of input were proper for the technical transfer.</li> <li>-The procurement of machineries and equipment by Pakistani side was delayed.</li> </ul>
3-2-3. Training in Japan	<ul style="list-style-type: none"> <li>Number of trainees</li> <li>Contents of training</li> <li>Duration of training</li> <li>Timing of training</li> <li>Feedback</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The list of C/Ps that took training in Japan and the Philippines as shown in Annex 7.</li> <li>+Almost all C/Ps were satisfied with training in Japan and the Philippines, while some C/Ps wanted to study more.</li> <li>+They have made the best use of technology and know-how acquired in Japan.</li> </ul>
3-2-4. C/P allocation	<ul style="list-style-type: none"> <li>Number</li> <li>Ability</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>+Since October 2004, 20 new staffs have been employed accordingly, and they have been put in position.</li> <li>*There are some rooms for C/Ps to improve their technology, knowledge and attitude.</li> </ul>
3-2-5. Buildings and facilities	<ul style="list-style-type: none"> <li>Quality</li> <li>Size</li> <li>Convenience</li> <li>Current condition</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>-Since starting the project, it took for 8 months until the completion of the building construction, it took for 19 months until the completion of interior work and it took for 21 months until tentative use of the building.</li> <li>-Japan bore a part of the Pakistani side work due to the delay of securing of the budget and the lack of budget.</li> </ul>
3-2-6. Local cost	<ul style="list-style-type: none"> <li>Amount</li> <li>Breakdown of local costs</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>*The information about the budget allocation as shown in Annex 3-1~3-4.</li> </ul>

	<ul style="list-style-type: none"> <li>Timing</li> </ul>		<ul style="list-style-type: none"> <li>Review of materials</li> </ul>	<p>The budget execution was delayed, while the revised PC-I and budget were approved.</p>
3-3. Contribution to the efficiency of the Joint Coordination Committee (JCC)	<ul style="list-style-type: none"> <li>Activities</li> <li>Members of the Committee</li> <li>Topics Discussed and advice given</li> <li>Follow-ups taken</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*Details of JCC as shown in Annex 21.</li> <li>+JCC was held five times since August 2003.</li> <li>+Active discussion was conferred on and it was reflected in a part of the project.</li> </ul>
3-4. Cooperation with the other organizations	<ul style="list-style-type: none"> <li>Cooperation activities with other projects and related associations</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> <li>Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>+The meeting on PPMa and PAAPAM as the sub-committee of JCC was held six times since December 2004.</li> <li>+The model factories were selected as a result of the meeting of the sub-committee and the trial advisory service was started.</li> <li>+The sub-committee contributed to promote the training activities of the project.</li> </ul>

#### Five Evaluation Criteria: Impact

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks
<b>4. Impact</b>				(+ positive factor: - negative factor: *neutral factor)
4-1. Achievement of Overall Goal	As described in A-1	As described in A-1	As described in A-1	As described in A-1
4-2. Economic and financial impact	<ul style="list-style-type: none"> <li>Future prospects of development of Pakistani plastic mould making industries whose staff were trained at PITAC</li> <li>Unnecessary competition with the private sector when providing backup support services and advisory services</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> <li>Private firms</li> <li>Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>+There are many positive impacts deriving from the training courses completed (e.g. Salary increment, career development and promotion).</li> <li>+The instructors completed their courses at the project have commenced spill-over effects to their students in their technical fields.</li> <li>*There is room for advisory and back-up services to improve in order to meet the real needs of the private industries.</li> </ul>
4-3. Other impact	<ul style="list-style-type: none"> <li>Positive or negative impact arising from project activities, such as environmental, social, cultural, technological, and institutional impact.</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>+The negative impact from this project is not expected.</li> </ul>

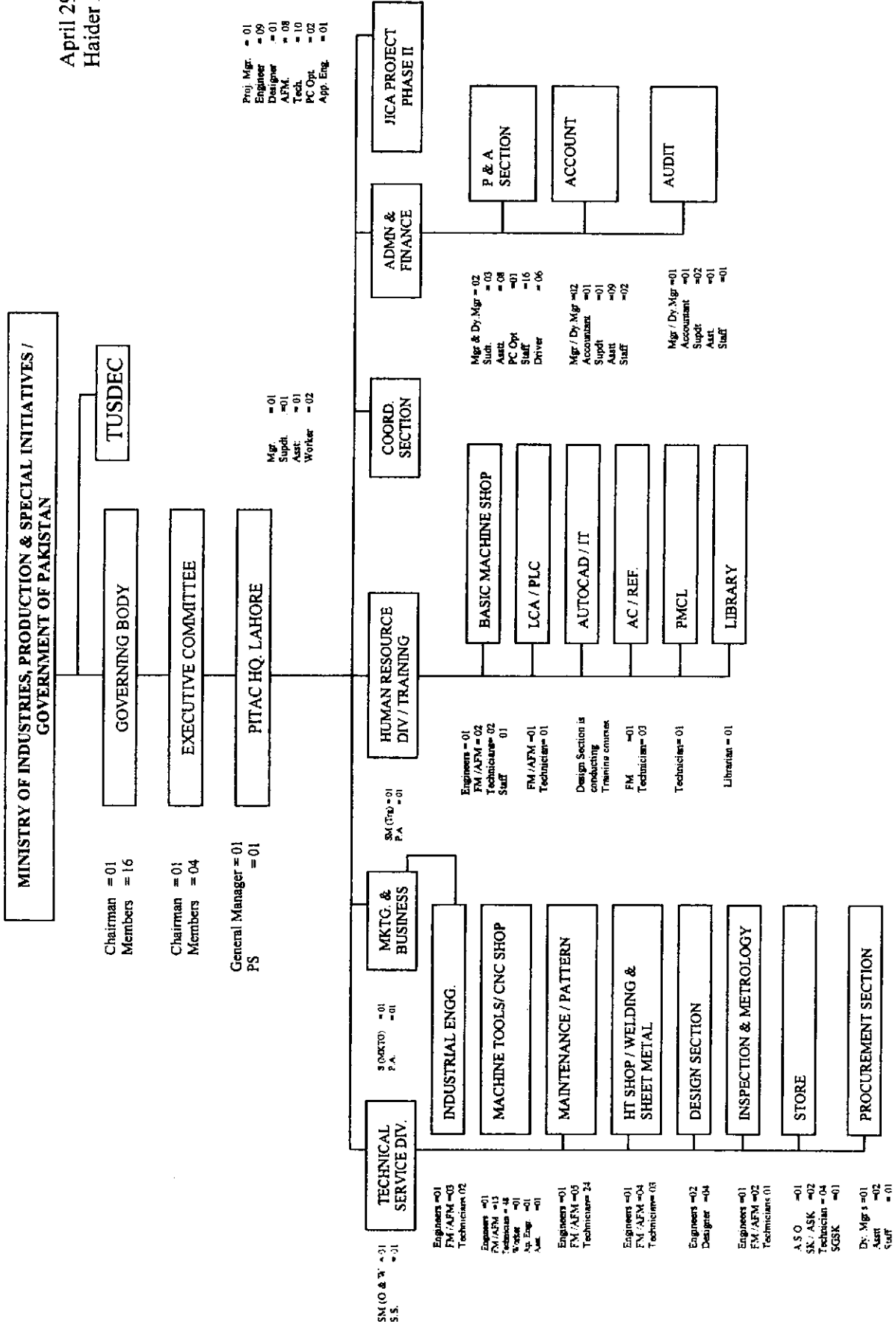
**Five Evaluation Criteria: Sustainability**

Evaluation Items	Necessary Information and Data	Sources	Means of Verification	Remarks (+ positive factor: - negative factor: *neutral factor)
<b>5. Sustainability</b>				
<b>5-1 Organizational and Financial Aspects</b>				
5-1-1. Operation and management system of the Project	<ul style="list-style-type: none"> <li>Composition of the operation unit</li> <li>PITAC's organizational chart</li> <li>PITAC's future plans</li> <li>Retaining of C/Ps</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The organization chart of PITAC as shown in Annex 2.</li> <li>+No C/Ps has resigned after the foreign training.</li> <li>-There is a serious concern to retain the capable C/Ps trained in Japan, as most C/Ps' contract period is just for two years. The measures need to be taken in order to ensure their permanent absorption into PITAC. Meanwhile, the service bond applied to PITAC staff for five years contradict with two-year contract in theory while there is no incidence of such contradiction so far.</li> <li>-In order to retain JICA-trained C/Ps, PITAC requests the submission of the training certificate. However, some C/Ps have not submitted it yet and PITAC suspends their salaries until the submission. Now, amicable solutions are sought out between PITAC management and C/Ps concerned.</li> </ul>
5-1-2. Financial condition of PITAC	<ul style="list-style-type: none"> <li>Budget allocation by the Pakistani Government</li> <li>Budget allocated to the operation unit</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The PITAC's budget allocation on the Project as shown in Annex 3-1~3-4, 4.</li> <li>*PITAC has made use of a few different kinds of budget (normal budget for recurrent costs, PC-1 for development purposes and special grants).</li> <li>-When approval of the revised PC-1 was delayed seriously, PITAC management and JICA team have made strenuous efforts vis-a-vis the Secretary of the Ministry to realize its approval. However, the funds were released under anticipatory approval around the end of fiscal year 2003-2004. This amounts unfortunately resulted in carrying-over to the next fiscal year because of the time constraint.</li> </ul>
5-1-3. PITAC's own income generation	<ul style="list-style-type: none"> <li>Condition of PITAC's current own revenue</li> <li>PITAC's future perspectives on financial management</li> </ul>	<ul style="list-style-type: none"> <li>PITAC</li> <li>Experts</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Questionnaires</li> <li>Review of materials</li> </ul>	<ul style="list-style-type: none"> <li>*The income of PITAC as shown in Annex 4.</li> <li>*The income of the project as shown in Annex 30.</li> <li>+The income generation activities are expanding so that PITAC own revenues are expected to increase.</li> </ul>
<b>5-2 Policy and Institutional Aspects</b>				

<p>5-2-1. National policy/programs on the promotion of plastic mould making industry</p>	<ul style="list-style-type: none"> <li>• Latest promotion plan/programs</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> <li>• Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	<p>*The establishment of Tools, Dies &amp; Moulds Centre in Karachi and Gujranwala by TUSDEC and the improvement of PITAC are specified in the article of Skills Upgradation for Industrial Development according to Year Book 2004-2005 of Ministry of Industries and Production &amp; Special Initiatives (MoIP&amp;SI).</p> <p>*There is no significant incidence of smuggling moulds and no related effect at all.</p>
<p>5-2-2. Status of smuggling of plastic moulds and the Government's countermeasures.</p>	<ul style="list-style-type: none"> <li>• Government policy</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> <li>• Related organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> </ul>	
<p>5-3. Technical Aspects</p>				
<p>5-3-1. Progress of technology transfer</p>	<ul style="list-style-type: none"> <li>• Technology level of C/Ps</li> <li>• Capacity of planning, implementing and evaluating PITAC services</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> <li>• Review of materials</li> </ul>	<p>*The technology transfer was executed mainly through the production of four target moulds.          +Furthermore, an additional mould is being processed by the C/Ps for their practical training.          +The training courses have been carried out in all sections.          +The system for back-up support services has been initiated and is in progress to meet the needs of private sector.</p>
<p>5-3-2. Maintenance and renewal of the machinery and equipment</p>	<ul style="list-style-type: none"> <li>• Maintenance plans including budget</li> <li>• C/Ps' capacity for maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• PITAC</li> <li>• Experts</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews</li> <li>• Questionnaires</li> <li>• Review of materials</li> </ul>	<p>+Preventive maintenance training was incorporated in the C/P training programs in Japan as well as in Pakistan.          -There is no local agent available to provide regular maintenance services for the machineries and equipment provided by the project.          -PITAC has not been authorized to import the spare parts directly from foreign countries. In order to use the local importers, PITAC is required to follow the open tender process for more than 40,000 rupees value.          -Very limited services for maintenances are available within reasonable costs.          -A regular maintenance in a productive manner has not been introduced yet.          +Every possible ways have been explored in the collaboration between JICA experts and C/Ps to cope with the maintenance issues.          -However, due to complexity of machineries and equipment and availability of repairing/maintenance services provided by the suppliers, workable repairing/maintenance system has not evolved in the project.          +A new project for PITAC is planned to aim at the transformation of PITAC into an organization capable of providing timely technical assistance in order to meet industry demands. In the PC-1</p>

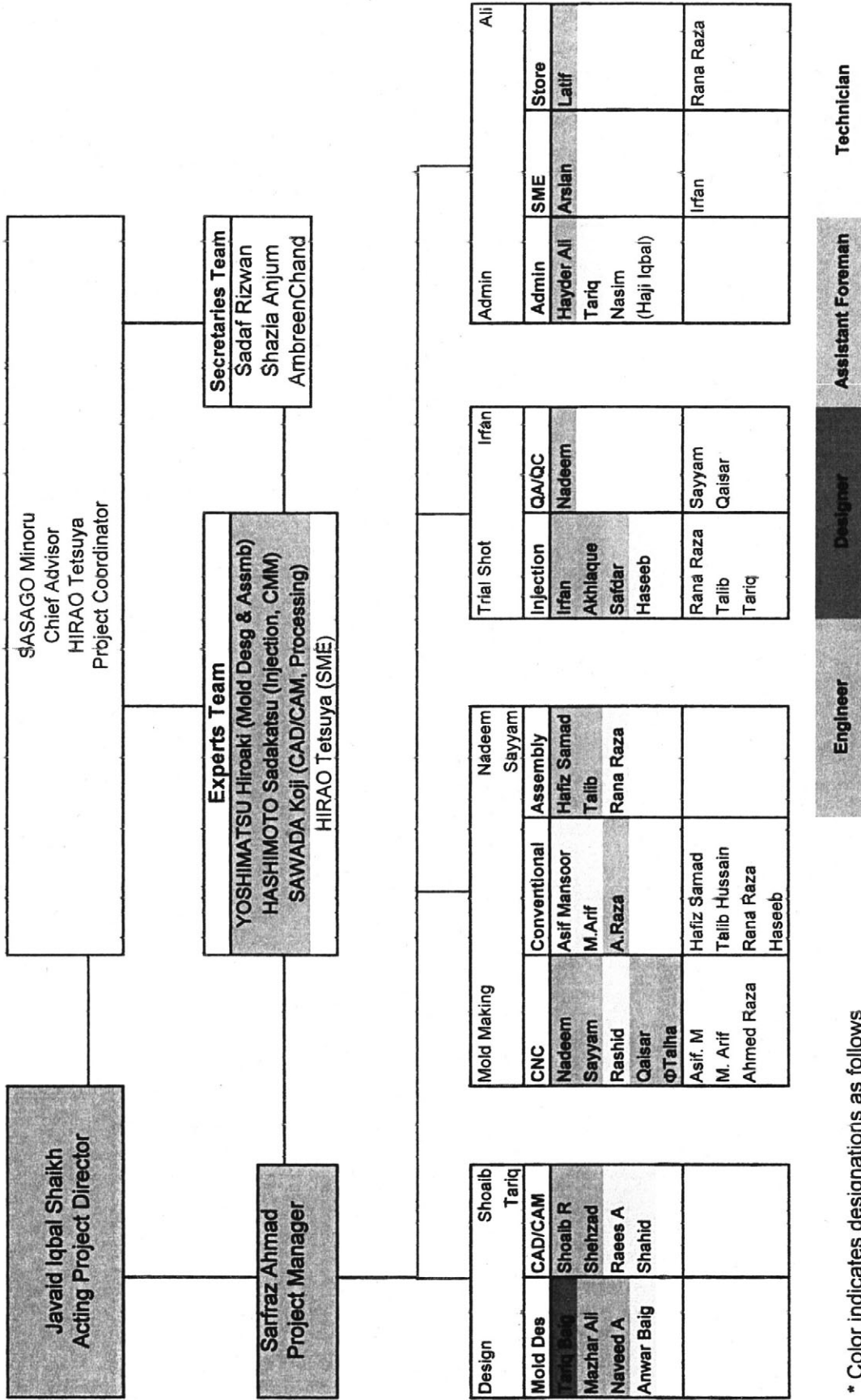
<p>for 'Modernization and Technology Upgradation of PITAC, Lahore'. PITAC is envisaged as a 'marketing centric' facility capable of satisfying its clients. The project cost amounts to 697 million Rs, in which major portion are for physical developments (machineries, equipment and buildings) and manpower development (training and salary improvement) is included. PITAC sections proposed for upgradation of machineries and equipment includes Design Section, Machine shop, Heat-Treatment, Surface Treatment, Inspection and Measurement and Low Cost Automation.</p>				
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April 29, 2006  
Haider Ali





## Project Organization Chart From March 2006



\* Color indicates designations as follows  
 Φ Means Apprentice Engineer of PITAC  
 ( ) Supporting Staff

Annex03-1

**Budget Allocation (Local Cost) for the Project, 2000-2006.**

F.Y.	Amount Allocated	Amount Released	Amount Utilized
2000-2001	4.200	3.570	3.570
2001-2002	2.000	2.000	2.000
2002-2003	2.780	2.780	2.780
2003-2004	14.092	14.092	* 2.387
2004-2005 *	21.092	16.080	13.411
2005-2006 **	5.294	9.098	9.098
Total			33.246

\* The remaining amount was surrendered for next F.Y. (i.e., 2004-2005)

\*\* As per Revised PC-1, the allocation for 2005-2006 was Rs. 5.294. However, Rs. 3.804 Million were requested to Planning Commission to be provided through Special Grant in order to meet the remaining implementation requirements of the Project, which was agreed & provided.

**Budget Allocation for the Project (Quarterly), 2005-2006.**

<b>F.Y. 2005-2006</b>	<b>Amount Allocated</b>	<b>Amount Released</b>	<b>Amount Utilized</b>
1 <sup>st</sup> Quarter	2.859	2.859	2.859
2 <sup>nd</sup> Quarter	1.310	1.310	1.310
3 <sup>rd</sup> Quarter	1.125	1.125	1.125
4 <sup>th</sup> Quarter	3.804	3.804	3.804
<b>Total</b>	<b>9.098</b>	<b>9.098</b>	<b>9.098</b>

*\*\* As per Revised PC-1, the allocation for 2005-2006 was Rs. 5.294. However, Rs. 3.804 Million were requested to Planning Commission to be provided through Special Grant in order to meet the remaining implementation requirements of the Project, which was agreed & provided.*

**Annex03-3**  
**PITAC**  
**BUDGET AND EXPENDITURE CONDITION**

April 24, 2006

Haider Ali

Major Head of Account	Budget Allocation	Expenditure	Budget Allocation	Expenditure
	2003-2004	2003-2004	2004-2005	2004-2005
01000 Pay of Officer	7,026,000	7,026,233	7,048,000	7,047,863
01200 Pay of Staff	11,690,000	11,689,653	11,496,000	11,496,375
02000 Regular Allowances	16,460,000	16,460,674	21,238,000	21,238,014
03000 Other Allowances	3,159,000	3,158,423	4,316,000	4,315,911
<b>Total Establishment Charges</b>	<b>38,335,000</b>	<b>38,334,983</b>	<b>44,098,000</b>	<b>44,098,163</b>
10000 Purchase of durable goods	26,000	25,248	21,000	20,744
40000 Repair & Maint. Of durable Goods & Works	328,000	327,580	596,000	595,507
50000 Commodities & Services	674,000	674,890	1,163,000	1,163,286
52000 Communication	3,000,000	299,888	356,000	356,471
53000 Utilization	2,963,000	2,962,914	3,247,000	3,247,096
58000 Rent Royalties Rates & Taxes	363,000	362,948	408,000	408,382
59000 Other Expenditures on condition & Services	206,000	206,129	469,000	468,690
60000 Transfer Payment (Pension)	2,069,000	2,069,088	16,127,000	16,126,954
80000 Loans & Repayments			300,000	300,000
90000 Misc. Expenditure	32,000	32,048	34,000	34,347
<b>Total Other Charges</b>	<b>6,961,000</b>	<b>6,960,732</b>	<b>22,721,000</b>	<b>22,721,477</b>
<b>Grand Total</b>	<b>45,296,000</b>	<b>45,295,715</b>	<b>66,819,000</b>	<b>66,819,639</b>
<b>Less Receipt of the Centre</b>	<b>4,196,000</b>	<b>4,195,715</b>	<b>2,819,000</b>	<b>2,819,639</b>
<b>Net Grant Charges</b>	<b>41,100,000</b>	<b>41,100,000</b>	<b>64,000,000</b>	<b>64,000,000</b>
<b>Expd Allocation</b>				

\* PITAC's fiscal year starts in July and ends in June.

## Annex04

REVENUE RECEIPT STATEMENT (1990-91 To 2004-2005)  
(Resource Generation)24-Apr-06  
Haider Ali

Sr. No.	Year	Production (Tool, Die n& special Parts) ND Technical Assistance Programme	Human Resource Development Training (Training & Special Training)	Information Technology (IT) Courses	Advisory / Consultancy & Misc. Activities	Total
1	1990-91	2,789,826.08	433,360.00		130,494.84	3,353,680.92
2	1991-92	3,029,983.36	819,046.00		136,449.04	3,985,478.40
3	1992-93	2,321,466.81	1,398,194.00		332,927.61	4,052,488.42
4	1993-94	2,856,097.71	1,219,439.07		101,826.25	4,177,363.03
5	1994-95	2,082,628.10	773,070.00		335,665.30	3,191,363.40
6	1995-96	2,808,169.11	1,470,827.75		68,196.80	4,347,193.66
7	1996-97	2,355,826.00	1,998,605.00		135,893.00	4,490,324.00
8	1997-98	2,297,209.53	1,660,497.39		246,293.08	4,204,000.00
9	1998-99	2,721,315.51	1,214,033.40		128,421.00	4,063,769.91
10	1999-2000	2,395,738.93	517,304.00		272,592.86	3,185,635.79
11	2000-2001	1,306,060.00	799,310.00		144,630.00	2,250,000.00
12	2001-2002	1,879,423.00	1,020,841.00		166,307.00	3,066,571.00
13	2002-2003	1,837,677.00	816,298.00	3,488,941.00	265,059.00	6,407,975.00
14	2003-2004	1,438,737.00	865,962.00	1,267,421.00	623,595.00	4,195,715.00
15	2004-2005	1,493,008.00	1,189,460.00	-	137,170.00	2,819,638.00
16 *	2005-2006	1,707,945.00	** 1,519,529.00	-	277,493.00	3,504,967.00

\* 2005-2006 is up to March 2006.

\*\* Training Revenue in 2005-2006 includes approx. Rs660,000 earned in the JICA-PITAC project.

Annex05 Japanese Experts

	2002		2003		2004		2005		2006	
	year	month	year	month	year	month	year	month	year	month
Term of Cooperation										
Term of Technology Transfer										
Long Term Experts										
Chief Advisor					Mr. SASAGO Minoru (May. 27, 2003 - Sep. 14, 2006)					
SME Promoter/Project Coordinator					Mr. HIRAO Ietsuya (Mar. 28, 2004 - Sep. 14, 2006)					
Mold Design					Mr. YOSHIMATSU Hiroaki (Sep. 17, 2002 - Sep. 14, 2006)					
CAD/CAM & 3D Mold Design					Mr. SAWADA Koii (Sep. 17, 2002 - Sep. 14, 2006)					
Mold Processing, Assembly & Trial Shot					Mr. IDE Masaki (Feb. 11, 2003 - Feb. 10, 2005)					
Mold Assembling and Trial Shot									Mr. HASHIMOTO Sedakatsu (Dec. 11, 2004 - Sep. 14, 2006)	
Short Term Experts										
1 Project Coordinator					Mr. ISHIDA Kazuki (Feb. 11, 2003 - May 31, 2003)					
2 Installation & Adjustment for Machining Center					Mr. KUSUNOKI Hideo (July 22, 2003 - July 30, 2003) Makino					
3 Installation & Adjustment of EDM					Mr. EGUCHI Hioaki (July 22, 2003 - Aug. 5, 2003) Makino Milling Machine Co.					
4 Installation & Adjustment for CAD/CAM					Mr. ITO Akio (Aug. 3, 2003 - Aug. 7, 2003) Makino Milling Machine Co.					
5 Installation, Plastic Injection Molding Machine					Mr. NOGUCHI Tsutomu (Apr. 11, 2004 - Apr. 20, 2004) Sumitomo Heavy Industries Ltd.					
6 Installation, Coordinate Measuring Machine					Mr. ONISHI Takakazu (Apr. 20, 2004 - Apr. 29, 2004) Mitutoyo					
8 Occupational Safety & Health Seminar (1)					Mr. MIURA Daizo (Aug. 22, 2004 - Sep. 3, 2004)					
9 Occupational Safety & Health Seminar (2)					Mr. MIURA Daizo (Aug. 21, 2005 - Sep. 3, 2005)					
10 Latest Plastic Mold & Molding Technology					Mr. FUKUSHIMA Yuichi (Sep. 26, 2004 - Oct. 2, 2004)					
11 Mold Finishing					Dr. SASAKI Tetsuo (Mar. 20, 2005 - Apr. 2, 2005)					



List of Mission Teams

Sr.	Name	Designation	Duration
<b>1st Basic Study (Fact Finding ) Team</b>			
1	Ms. KUWAJIMA Kyoko	Leader	April 1999
2	Mr. YAMASHITA Mitsuhiro	Technical Cooperation Policy	
3	Mr. KATO Yuzo	Technical Cooperation Program	
4	Mr. SHIRAI Kenji	CAD / CAM	
5	Mr. IDE Katsuhisa	Tool & Die Technology	
6	Mr. CHIJI Mashiro	Metal Working	
7	Ms. MITSUI Yuko	Cooperation Planning	
<b>2nd Preliminary Study Team</b>			
1	Ms. KUWAJIMA Kyoko	Leader	Oct. 29, 2000 - Nov. 22, 2000
2	Mr. MATSUURA Yoshikazu	Technical Transfer Program	
3	Mr. CHIJI Masahiro	Mold Technology	
4	Mr. HATAKEYAMA Atsuhiko	Equipment & Training Program	
5	Ms. OKAYAMA Asuka	Cooperation Planing	
<b>3rd Supplementary Study (Preparatory Study) Team</b>			
1	Mr. TOBITA Kenji	Leader	Oct. 29, 2000 - Nov. 22, 2000
2	Mr. CHIJI Masahiro	Technical Transfer Program	
3	Mr. OKAYAMA Asuka	Cooperation / Plan	
4	Mr. INADA Akihiro	Mold Technology	
5	Mr. WATANABE Makoto	Equipment (1)	
6	Mr. HORIKOSHI Futoshi	Equipment (2)	
<b>4th Implementation Study (Project Design) Team</b>			
1	Mr. HAYASHI Yoshinobu	Leader	Mar. 15, 2001 - Mar. 24, 2001
2	Mr. CHIJI Masahiro	Technical Transfer Program	
3	Mr. HATAKEYAMA Atsuhiko	Mold Technology	
4	Mr. YOSHIDA	Equipment & Training Planing	
5	Ms. OKAYAMA Asuka	Cooperation / Planing	
<b>5th Team (1st Consultation)</b>			
1	Mr. TAKAMA Hidetoshi	Leader	Mar. 24, 2002 - Apr. 03, 2002
2	Mr. HATAKEYAMA Atsuhiko	Mold Technology	
3	Mr. SAWADA Koji	Equipment & Training Planing	
4	Ms. OKAYAMA Asuka	Cooperation Planing	
<b>6th Team (2nd Consultation)</b>			
1	Mr. TAKIZAWA Koichi	Leader	Aug. 18, 2003 - Aug. 27, 2003
2	Mr. HAYASHIBE Yoshitomo	Mold Technology	
3	Mr. YAMADA Minoru	Cooperation Planing	
<b>7th Mid Term Evaluation Team</b>			
1	Mr. JURO Masayoshi	Leader	



<b>Sr.</b>	<b>Name</b>	<b>Designation</b>	<b>Duration</b>
2	Mr. HATAKEYAMA Atsuhiko	Technical Transfer Program	Oct. 3, 2004 - Oct. 16, 2004
3	Mr. SASAKI Tetsuo	Technical Evaluation	
4	Ms. YAMAUCHI Chikako	Training Planing	
5	Mr. YOSHIMURA Etsuji	Evaluation Management	
6	Mr. MORI Shinichi	Evaluation Analysis	
<b>8th Team (3rd Consultation)</b>			
1	Mr. SUGIHARA Toshio	Leader	Jun. 20, 2005 - Jul. 2, 2005
2	Dr. SASAKI Tetsuo	Mold Technology	
3	Mr. YOSHIMURA Etsuji	Cooperation Planning	
<b>9th Final Evaluation Team</b>			
1	Mr. NAKANO Takeshi	Leader	May. 21, 2006 - Jun. 1, 2006
2	Mr. YOSHIMURA Etsuji	Evaluation Management	
3	Dr. SASAKI Tetsuo	Technical Evaluation	
4	Ms. YAMAUCHI Chikako	Training Planing	
5	Mr. IKEDA Jun	Evaluation Management	

## List of Counterparts Trained Abroad

18-Apr-06  
Sadaf Rizwan

Name of Trainees	Place	Field	year				
			2002	2003	2004	2005	2006
Mr. M. Akram Khan	Japan	Project Management	Aug ~ Sep (1 Week)				
Mr. Sarfraz Ahmad	Japan	Assembling, Maintenance, Tryout	Aug ~ Jan (6 Month)				
Mr. Tariq Baig	Philippines	Plastic Injection Molding & Try - Shot			Jan ~ Mar (3 Month)		
Mr. Haider Ali	Philippines						
Mr. Shoaib Rashid	Philippines						
Mr. Tariq Baig	Japan	Plastic Injection Molding Mold Processing & Tryout					
Mr. Latif Awan	Japan						
Mr. Haseeb Ahmad	Japan						
Mr. Irfan Jarral	Japan						
Mr. Rashid Wasti	Japan	Plastic Injection Molding Mold Processing & Tryout					
Mr. Anwar Baig	Japan						
Mr. Rees Ahmad	Japan						
Mr. Javaid Shaikh	Japan						
Mr. Tariq Baig	Philippines & Thailand	Management Study					
Mr. Shoaib Rashid	Philippines & Thailand						
Mr. Nadeem Shahbaz	Philippines & Thailand						
Mr. Talib Hussain	Japan	QA, QC (CMM)					
Mr. Rana M. Raza	Japan	Mold Finishing & Assembly					
Mr. Qaiser Iqbal	Japan	Mold Processing (EDM)					
Mr. Safdar Yasin	Japan	Injection & Maint.					
Mr. Naveed Aslam	Japan	Design					
Mr. Mazhar Ali	Japan	CNC & Maint.					
Mr. Nadeem Shahid	Japan	CAD/CAM					
Mr. Shahzad Ayub	Japan	CNC & Maint					
Mr. Fakhr-e-Sayyam	Japan	CAD/CAM & Maint.					
Mr. Shahid Ahmad	Japan						

Total: 73 Man/Months

## List of Machinery and Equipment Provided by Japan

May 30, 2006

No	Equipment name	Manufacturer / Model	Qty.	Arrival Date	Use frequency, Maintenance condition								Remarks	
					Dec. 2003	Jun. 2004	Dec. 2004	Jun. 2005	Dec. 2005	Jun. 2006				
1	CAD/CAM Software													
		Nihon Unisys / CADCEUS	3	Feb. 2003	A	A	A	A	A	A	A	A	A	
		Realfactory / Craft Mill	3	Feb. 2003	A	A	A	A	A	A	A	A	A	
		Computer Engineering/Neo Solid	3	Feb. 2003	C	A	C	A	B	A	B	A	B	
2	Multimedia Projector	Panasonic / PT-LC56E	1	Feb. 2003	B	A	B	A	B	A	B	A	B	
3	Projection Screen	TOPEX / 6" x 6"	1	Mar. 2003	B	A	B	A	B	A	A	A	A	
4	Projection Screen	TOPEX / 8" x 8"	1	Mar. 2003	B	A	B	A	B	A	A	A	A	
5	Video Camera	SONY / DCR-TRV340	1	Mar. 2003	C	A	C	A	D	A	D	A	D	
6	Memory Stick for Video Camera	SONY / MSA-128A	1	Mar. 2003	C	A	C	A	D	A	D	A	D	
7	TV	Panasonic / TX-29P	1	Mar. 2003	D	A	D	A	C	A	C	A	C	
8	Video Deck	Panasonic / NV-HD640AM	1	Mar. 2003	D	A	D	A	C	A	C	A	C	
9	Photocopier	Canon / NP-6241	1	Mar. 2003	A	A	A	A	A	A	A	A	A	
10	FAX machine	Canon / B-155	1	Mar. 2003	A	A	A	A	A	A	A	A	A	
11	Scanner	HP / Scanjet 5550C	1	Mar. 2003	B	A	B	A	A	A	A	A	A	
12	Personal Computer													
	For CAD/CAM	IBM / Intellistation M Pro	6	Apr. 2003	A	A	A	A	A	A	A	A	A	
	For CAD/CAM	IBM / Intellistation M Pro	6	Aug. 2003	A	A	A	A	A	A	A	A	A	
	For CMM/CNC	IBM / Net Vista A30P	2	Apr. 2003	.	.	A/C	A	A	A	A	A	A	
	For Office Work	IBM / Net Vista A30P	2	Apr. 2003	A	A	A	A	A	A	A	A	A	
13	Laser Jet Printer	HP / 4200DTN, P/N Q2428A	1	May 2003	A	A	A	A	A	A	A	A	A	
14	Plotter	HP / 500PS P/N C7770C	1	May 2003	B	A	B	A	A	A	A	A	A	
		HP / P/N C7790B	1	May 2003	B	A	B	C	C	B	C	B	C	
15	CNC Vertical Machining Center	Makino / V33	1	May 2003	.	.	A	A	A	A	A	A	A	
16	Electric Discharge Machine (EDM)	Makino / EDGE 3	1	May 2003	.	.	B	A	B	A	B	A	B	
17	Wire cut EDM	Makino / EU64	1	May 2003	.	.	C	A	B	A	B	A	B	

No	Equipment name	Manufacturer / Model	Qty.	Arrival Date	Use Frequency, Maintenance condition												Remarks
					Dec. 2003	Jun. 2004	Dec. 2004	Jun. 2005	Dec. 2005	Jun. 2006							
18	Ultrasonic Polishing Machine	Japan Minitor / CM3021	1	May 2003	.	C	A	C	A	C	A	C	A				
19	Air Impact Wrench Set	Bessel / GT-P14J	3	May 2003	.	C	A	C	A	C	A	C	A				
20	Air Micro grinder	Bessel / GT-MG 55SR	3	May 2003	.	C	A	C	A	C	A	C	A				
21	Surface Plate	NABEYA / CP04545	3	May 2003	.	.	.	C	A	C	A	C	A				
22	Thickness Gauge	NAGAI / No.100MZ	10	May 2003	.	C	A	C	A	C	A	C	A				
23	CAD/CAM Software																
		DeICAM / Power Shape	12	Aug 2003	A	A	A	A	A	A	A	A	A				
		DeICAM / Power Mill	12	Aug 2003	A	A	A	A	A	A	A	A	A				
		DeICAM / Art Cam	1	Aug 2003	A	A	A	C	A	C	A	C	A				
		DeICAM / Copy Cad	1	Aug 2004	A	A	A	B	A	B	A	B	A				
		Autodesk / Auto CAD 2004	2	Jul 2003	A	A	A	A	A	A	A	A	A				
24	Tool Pre setter	MST / TVM3040-2-A63	1	Aug 2003	.	.	B	A	A	A	A	A	A				
25	Small Holed EDM Drilling	ASTEC / CDH-3AM	1	Aug 2003	.	.	.	.	C	A	C	A	C				
26	Surface Grinding Machine	Kuroda / GS-63PF	1	Aug 2003	.	.	.	.	B	A	A	A	A				
27	Drill Point Grinding Machine	Fujita / DG60B	1	Aug 2003	.	.	D	A	C	A	C	A	C				
28	Tool Grinding Machine	IIDA / GE-120S	1	Aug 2003	.	.	D	A	C	A	C	A	C				
29	Carbide Turning Tool Grinder	IIDA / BW-41	1	Aug 2003	.	.	D	A	C	A	C	A	C				
30	Welding Machine for Mold	JTE / YOZO-SYSTEM4	1	Aug 2003	.	.	.	.	E	A	E	A	E				
31	Coordinate Measuring Machine	Mitutoyo / Beyond-Crysta710	1	Aug 2003	.	.	C	A	B	A	B	A	A				
32	Injection Molding Machine 350t	SUMITOMO / SH350C	1	Aug 2003	.	.	B	A	C	A	B	A	B				
33	Injection Molding Machine 160t	SUMITOMO / SH160C	1	Aug 2003	.	.	B	A	C	A	C	C	B				
34	Cooler for Molding Machine	Kannetsu / WL-20	1	Aug 2003	.	.	B	A	C	A	C	A	B				
35	Mold Temperature for 350t	Matsui / MCF-150HX	1	Aug 2003	.	.	B	A	C	A	C	A	B				
36	Mold Temperature for 160t	Matsui / GMCH-J-55J	1	Aug 2003	.	.	B	A	C	A	C	A	B				
37	Drier of resin	Matsui / MJS-100J	1	Aug 2003	.	.	C	A	C	A	C	A	C				
38	Model Mold	Tray of Kitchen Cabinet	1	Sep 2003	C	A	C	A	C	A	C	A	C				

No	Equipment name	Manufacturer / Model	Qty	Arrival Date	Use frequency, Maintenance condition												Remarks
					Dec. 2003		Jun. 2004		Dec. 2004		Jun. 2005		Dec. 2005		Jun. 2006		
		Front Light Body of Motorcycle	1	Sep.2003	C	A	D	C	C	A	C	A	C	A	C	A	
		Mouse Cover (Upper and Lower)	1	Sep.2003	C	A	C	A	C	A	C	A	C	A	C	A	
		Telephone Upper case	1	Sep.2003	C	A	C	A	C	A	C	A	C	A	C	A	
39	Modeling machine	Roland MDX-20	1	Sep.2003	C	A	C	A	C	A	C	A	C	A	C	A	
40	Simulation Software																
		Broad Mine / TRYCUT2000	1	Sep.2003	B	A	A	A	A	A	A	A	A	A	A	A	
		System I / NC Viewer	1	Dec.2003	B	A	A	A	A	A	A	A	A	A	A	A	
41	Thermometer/Hygrometer	TESTO / 608-H1	3	Sep.2003	A	A	A	A	B	A	B	A	B	A	B	A	
42	Office Software																
		For Office Work	2	Sep.2003	A	A	A	A	A	A	A	A	A	A	A	A	
		For CAD/CAM	4	Nov.2003	A	A	A	A	A	A	A	A	A	A	A	A	

Use frequency : A-use daily B-use often (1-3 times/week) C-use only specific period D-use rarely(3-11times/year)  
E-not useable with specific reason

Maintenance condition : A-maintained well B-maintained good C-need maintenance to use D-not useable condition

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
I	For Machining Center					
1	Jigs					
	1) Machining Vise	Tsudakoma	VG-150	2	May. 2003	
	2) Edge Finder	Daishowa	ACCU-C10	1	May. 2003	
	3) Test Indicator	Mitsutoyo	513-415	1	May. 2003	
	4) Magnetic Stand	Mitsutoyo	7014	1	May. 2003	
	5) Tool-length Measuring	Daishowa	TM-100	1	May. 2003	
	6) Clamping Kit	SuperTool	S-1814	1	May. 2003	
	7) Parallel Block	ERON	01243, HP2	1	May. 2003	
			01245, HP4	1	May. 2003	
			01246, HP5	1	May. 2003	
			34596, HP34	1	May. 2003	
	8) Clamping Setup Kit	ERON	01056, CMM1814	2	May. 2003	
	9) T-Slot Nut & Standard Set	ERON	01142, TSM1814	1	May. 2003	
	10) Tooling Locker for NC5-63 & HSK63A		TLD106	1	May. 2003	
			Holder DC-C2	36	May. 2003	
2	Boring Tools					
	1) Boring Holder	MST	A63-MFA20-150	1	May. 2003	
			A63-MFA24-180	1	May. 2003	
			A63-MFA29-180	1	May. 2003	
			A63-MFA36-195	1	May. 2003	
			A63-MBH50-210	3	May. 2003	
			A63-MBH75-195	3	May. 2003	
			A63-MBH115-195	3	May. 2003	
			A63-MBH180-195	3	May. 2003	
	2) Insert	MST	TPA082-EA	5	May. 2003	
			TPA084-EA	5	May. 2003	
			TNB112-EA	3	May. 2003	
			TNB114-EA	3	May. 2003	
			TNB164-EA	6	May. 2003	
	3) Cartridge	MST	PTC10	3	May. 2003	
			PTC12	9	May. 2003	
3	Drilling, Reaming & Tapping Tools					
	1) Straight Shank Drill (SD)	KOBELCO	Φ 3.0	5	May. 2003	
			Φ 4.0	5	May. 2003	
			Φ 5.0	5	May. 2003	
			Φ 6.0	5	May. 2003	
			Φ 8.0	5	May. 2003	
			Φ 10.0	4	May. 2003	
			Φ 12.0	4	May. 2003	
	2) Straight Shank Drill (KSD)	KOBELCO	Φ 1.3	1	May. 2003	
			Φ 1.8	1	May. 2003	

Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
		Φ 2.3	1	May. 2003	
		Φ 2.8	1	May. 2003	
		Φ 3.3	1	May. 2003	
		Φ 3.8	1	May. 2003	
		Φ 4.3	1	May. 2003	
		Φ 4.8	1	May. 2003	
		Φ 5.3	1	May. 2003	
		Φ 5.8	1	May. 2003	
		Φ 6.3	1	May. 2003	
		Φ 6.8	1	May. 2003	
		Φ 7.3	1	May. 2003	
		Φ 7.8	1	May. 2003	
		Φ 8.3	1	May. 2003	
		Φ 8.8	1	May. 2003	
		Φ 9.3	1	May. 2003	
		Φ 9.8	1	May. 2003	
		Φ 10.3	1	May. 2003	
		Φ 10.8	1	May. 2003	
		Φ 11.3	1	May. 2003	
		Φ 11.8	1	May. 2003	
<b>3) Straight Shank Chucking Reams (SCR)</b>	<b>EIKO</b>	Φ 1.5	2	May. 2003	
		Φ 2.0	2	May. 2003	
		Φ 2.5	2	May. 2003	
		Φ 3.0	2	May. 2003	
		Φ 3.5	2	May. 2003	
		Φ 4.0	2	May. 2003	
		Φ 4.5	2	May. 2003	
		Φ 5.0	2	May. 2003	
		Φ 5.5	2	May. 2003	
		Φ 6.0	2	May. 2003	
		Φ 6.5	2	May. 2003	
		Φ 7.0	2	May. 2003	
		Φ 7.5	2	May. 2003	
		Φ 8.0	2	May. 2003	
		Φ 8.5	2	May. 2003	
		Φ 9.0	2	May. 2003	
		Φ 9.5	2	May. 2003	
		Φ 10.0	2	May. 2003	
		Φ 10.5	2	May. 2003	
		Φ 11.0	2	May. 2003	
		Φ 11.5	2	May. 2003	
		Φ 12.0	2	May. 2003	
<b>4) Carbide Broach Reamer</b>	<b>NIKKEN</b>	SX-2.0 Φ2.0mm	3	May. 2003	
		SX-3.0 Φ3.0mm	3	May. 2003	
		SX-4.0 Φ4.0mm	3	May. 2003	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
			SX-5.0 Φ5.0mm	3	May. 2003	
			SX-6.0 Φ6.0mm	3	May. 2003	
	5) Tap Holder	Kato	A63-HA412	2	May. 2003	
	6) Tap Collet	Kato	TC412-4	3	May. 2003	
			TC412-5	3	May. 2003	
			TC412-6	2	May. 2003	
			TC412-8	2	May. 2003	
			TC412-10	2	May. 2003	
			TC412-12	2	May. 2003	
	7) Spiral Fluted Taps (EX-SFT)	OSG	No.11544 M3x0.5	5	May. 2003	
			No.11556 M4x0.7	5	May. 2003	
			No.11571 M5x0.8	5	May. 2003	
			No.11583 M6x1.0	5	May. 2003	
			No.11601 M8x1.25	5	May. 2003	
			No.11621 M10x1.5	5	May. 2003	
			No.11650 M12x1.75	5	May. 2003	
4	Milling Tools (Face Milling)					
	1) Face Mill Arbor	MST	A63-FMA31.75-60	2	May. 2003	
	2) Face Mill	OSG	No.8004483 P5E43R-10007J	2	May. 2003	
	3) Insart	OSG	ODMT0605-ZZN-D57	5	May. 2003	
5	Milling Tools (Holder & Collets)					
	1) Holders	MST	A63-DTA7-105	8	May. 2003	
			A63-DTA12-120	8	May. 2003	
			A63-DTA12-180	5	May. 2003	
			A63-CTH10-90	8	May. 2003	
			A63-CTH10-150	5	May. 2003	
			A63-CTH20-90	8	May. 2003	
			A63-CTH20-150	5	May. 2003	
			A63-ART32-100	3	May. 2003	
	2) Collet for DTA7	MST	D7-1.5P	5	May. 2003	
			D7-2P	5	May. 2003	
			D7-2.5P	5	May. 2003	
			D7-3P	5	May. 2003	
			D7-4P	5	May. 2003	
			D7-5P	5	May. 2003	
			D7-6P	5	May. 2003	
			D7-7P	5	May. 2003	
	3) Collet for DTA12	MST	D12-4P	5	May. 2003	
			D12-6P	5	May. 2003	
			D12-8P	5	May. 2003	
			D12-10P	5	May. 2003	
			D12-12P	5	May. 2003	
			D12-13P	5	May. 2003	
	4) Collet for CTH10	MST	C10-3P	5	May. 2003	
			C10-4P	5	May. 2003	



	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
			C10-5P	5	May. 2003	
			C10-6P	5	May. 2003	
			C10-8P	5	May. 2003	
			C10-10P	5	May. 2003	
	5) Collet for CTH20	MST	C20-6P	5	May. 2003	
			C20-8P	5	May. 2003	
			C20-10P	5	May. 2003	
			C20-12P	5	May. 2003	
			C20-16P	5	May. 2003	
			C20-20P	5	May. 2003	
	6) Straight Collet	MST	S32-6	5	May. 2003	
			S32-8	5	May. 2003	
			S32-10	5	May. 2003	
			S32-12	5	May. 2003	
			S32-16	5	May. 2003	
			S32-20	5	May. 2003	
			S32-25	5	May. 2003	
	7) Open Ended Spanner	MST	F-38	2	May. 2003	
			F-45	2	May. 2003	
			FC-36	2	May. 2003	
			FC-50	3	May. 2003	
			FM-72	1	May. 2003	
6	Milling Tools (End mill)					
	1) Roughing End Mill (MRD)	KOBELCO	MRD800 8mm	5	May. 2003	
			MRD1200 12mm	5	May. 2003	
			MRD1600 16mm	5	May. 2003	
			MRD2000 20mm	5	May. 2003	
	2) Roughing End Mill (ESM-C Coat)	HITACHI	ESMQS6 6mm	5	May. 2003	
			ESMQS8 8mm	5	May. 2003	
			ESMQS10 10mm	5	May. 2003	
			ESMQS12 12mm	5	May. 2003	
			ESMQS16 16mm	5	May. 2003	
			ESMQS20 20mm	2	May. 2003	
			ESMQS30 30mm	1	May. 2003	
	3) Hss End Mill (2MSD)	KOBELCO	2MSD0600 6mm	5	May. 2003	
			2MSD0800 8mm	5	May. 2003	
			2MSD1000 10mm	5	May. 2003	
			2MSD1200 12mm	5	May. 2003	
			2MSD1600 16mm	5	May. 2003	
			2MSD2000 20mm	3	May. 2003	
	4) Hss End Mill (4MSD)	KOBELCO	4MSD0600 6mm	5	May. 2003	
			4MSD0800 8mm	5	May. 2003	
			4MSD1000 10mm	5	May. 2003	
			4MSD1200 12mm	5	May. 2003	
			4MSD1600 16mm	5	May. 2003	

Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
		4MSD2000 20mm	5	May. 2003	
5) Hss End Mill (4LSD)	KOBELCO	4LSD0600 6mm	5	May. 2003	
		4LSD0800 8mm	5	May. 2003	
		4LSD1000 10mm	5	May. 2003	
		4LSD1200 12mm	5	May. 2003	
		4LSD1600 16mm	5	May. 2003	
		4LSD2000 20mm	5	May. 2003	
6) Carbide End Mill (CEPR EPOCH)	HITACHI	CEPR4030 3mm	5	May. 2003	
		CEPR4040 4mm	5	May. 2003	
		CEPR4050 5mm	5	May. 2003	
		CEPR6060 6mm	5	May. 2003	
		CEPR6080 8mm	5	May. 2003	
		CEPR6100 10mm	5	May. 2003	
		CEPR6120 12mm	4	May. 2003	
		CEPR6200 20mm	2	May. 2003	
7) Carbide End Mill :2F with CR(FX-CR-MG-EDS)	OSG	8543831 3 x R0.2	5	May. 2003	
		8543845 4 x R1	5	May. 2003	
		8543855 5 x R1	5	May. 2003	
		8543865 6 x R1	5	May. 2003	
		8543885 8 x R1	5	May. 2003	
		8543907 10 x R1.5	5	May. 2003	
8) Carbide End Mill :6F with CR (FX-CR-EMS)	OSG	8545509 6 x R0.2	5	May. 2003	
		8545516 8 x R0.5	5	May. 2003	
		8545521 10 x R0.5	5	May. 2003	
		8545527 12 x R1	5	May. 2003	
9) Carbide End Mill :4F with CR (FXS-MFE)	OSG	8546103 10 x R0.5	5	May. 2003	
		8546105 10 x R1	5	May. 2003	
		8546123 12 x R0.5	5	May. 2003	
		8546145 14 x R1	5	May. 2003	
10) Ball-end (FX-MG-EBD)	OSG	8521030 R1.5 x 3	5	May. 2003	
		8521040 R2 x 4	5	May. 2003	
		8521060 R3 x 6	5	May. 2003	
		8521080 R4 x 8	5	May. 2003	
		8521100 R5 x 10	5	May. 2003	
		8521120 R6 x 12	5	May. 2003	
11) Ball-end (FXS-EBDS)	OSG	8518003 R1.5 x 3	5	May. 2003	
		8518004 R2 x 4	5	May. 2003	
		8518006 R3 x 6	5	May. 2003	
		8518008 R4 x 8	5	May. 2003	
		8518010 R5 x 10	5	May. 2003	
		8518012 R6 x 12	5	May. 2003	
12) Ball-end for Non-ferrous (CRN-EBD)	OSG	8503860 R3 x 6	5	May. 2003	
		8503880 R4 x 8	5	May. 2003	
		8503900 R5 x 10	5	May. 2003	
		8503920 R6 x 12	5	May. 2003	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	13) Rib Processing Ball-end (MRB-230)	NS TOOL	8-520-00501 R0.5 x 6mm	5	May. 2003	
			8-520-00502 R0.5 x 8mm	5	May. 2003	
			8-520-01001 R1 x 6mm	5	May. 2003	
			8-520-01004 R1 x 12mm	5	May. 2003	
			8-520-01006 R1 x 16mm	5	May. 2003	
			8-520-01503 R1.5 x 15mm	5	May. 2003	
			8-520-01506 R1.5 x 25mm	5	May. 2003	
			8-520-02003 R2 x 20mm	5	May. 2003	
			8-520-02004 R2 x 25mm	5	May. 2003	
	14) Rib Processing (MHR-230)	NS TOOL	8-200-05060 0.5 x 6mm	5	May. 2003	
			8-200-08080 0.8 x 8mm	5	May. 2003	
			8-200-08100 0.8 x 10mm	5	May. 2003	
	14) Rib Processing (MHR-430)	NS TOOL	8-210-01010 1 x 10mm	4	May. 2003	
			8-210-01210 1.2 x 10mm	4	May. 2003	
			8-210-01510 1.5 x 10mm	4	May. 2003	
			8-210-01816 1.8 x 16mm	4	May. 2003	
			8-210-02016 2 x 16mm	4	May. 2003	
			8-210-02020 2 x 20mm	4	May. 2003	
			8-210-03025 3 x 25mm	4	May. 2003	
			8-210-04025 4 x 25mm	4	May. 2003	
	15) Taper for Rib Processing (NRF-4)	NS TOOL	1-425-01036 1 x 2° x 8mm	5	May. 2003	
			1-425-01212 1.2 x 30° x 4mm	5	May. 2003	
	16) Taper for Rib Processing (FXS-RB-TPE)	OSG	8507522 1 x 1° x 8mm	4	May. 2003	
			8507845 1 x 3° x 8mm	4	May. 2003	
			8507542 1.5 x 1° x 8mm	4	May. 2003	
			8507855 1.5 x 3° x 12mm	4	May. 2003	
			8507573 2 x 1° x 10mm	4	May. 2003	
			8507870 2 x 3° x 16mm	4	May. 2003	
			8507597 3 x 1° x 25mm	4	May. 2003	
7	Machining Centre					
	1-2Flutes End Mills	OSG	FX-LS-MG-EBD R6x12	3	Mar. 2005	
	2-2Flutes End Mills	OSG	FX-LS-MG-EBD R3x6	2	Mar. 2005	
	3-2Flutes End Mills	OSG	FX-LS-MG-EBD R8x16	1	Mar. 2005	
8	Machine Vice	Trusco Nakayama		1	Aug. 2005	
9	1-Φ 20 TAC Mills Insert	Tungaloy	EX005020RS	1	Sep. 2005	
	2-TAC Mills Inserts	Tungaloy	WPMT05H315ZPR-ML AH120	30	Sep. 2005	
	3-Φ 20 TAC Mills Insert	Tungaloy	EXP06025RS	1	Sep. 2005	
	4-TAC Mills Inserts	Tungaloy	WPMT06X415ZPR-ML AH120	30	Sep. 2005	
	5-TAC Mills Inserts (Φ 20)	Tungaloy	EPS11020RL	1	Sep. 2005	
	6-Inserts	Tungaloy	ASTM11T316PDPR-MJ-NS740	30	Sep. 2005	
	1-TAC Mills Inserts(Φ 25)	Tungaloy	EPS11025RL	1	Nov. 2005	
	Machining Centre (ED05028-1CS)					
10	1-Alpha Ball Precision	Hitachi Tools	ABPF10S16L	1	Jan. 2006	
	2-TIP	Hitachi Tools	ZPFG100-PCA12M	10	Jan. 2006	
	3-Alpha Ball Precision	Hitachi Tools	ABPF12S16L	1	Jan. 2006	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	4-TIP	Hitachi Tools	ZPFG120:PCA12M	10	Jan. 2006	
	5-Alpha Ball Precision	Hitachi Tools	ABPF16S20	1	Jan. 2006	
	6-TIP	Hitachi Tools	ZPFG160:PCA12M	10	Jan. 2006	
	7-Taper End Mill	Hitachi Tools	YC4LTD0080T0100L06	5	Jan. 2006	
	8-Taper End Mill	Hitachi Tools	YC4LTD0100T0100L08	5	Jan. 2006	
	9-Taper End Mill	Hitachi Tools	YC4LTD0120T0100L10	5	Jan. 2006	
	10-Taper End Mill	Hitachi Tools	YC4LTD0150T0100L12	5	Jan. 2006	
	11-Straight End Mill	Hitachi Tools	YC4XLD0080N060	5	Jan. 2006	
	12-Straight End Mill	Hitachi Tools	YC4XLD0100N060	5	Jan. 2006	
	13-Straight End Mill	Hitachi Tools	YC4XLD0120N080	5	Jan. 2006	
	14-Straight End Mill	Hitachi Tools	YC4XLD0150N080	5	Jan. 2006	
	15-Straight End Mill	Hitachi Tools	YC4LTD0080T0030L08	5	Jan. 2006	
	16-Taper End Mill	Hitachi Tools	YC4LTD0100T0030L10	5	Jan. 2006	
	17-Taper End Mill	Hitachi Tools	YC4LTD0120T0030L12	5	Jan. 2006	
	18-Taper End Mill	Hitachi Tools	YC4LTD0150T0030L16	5	Jan. 2006	
	Machining Centre (ED06028-ICS)					
	1-System 1Protector for Software NC Viewer	Hitachi Tools		1	Jan. 2006	
11	Machining Centre					
	1-End Mills	Tungaloy	ESP1102RS	2	Apr. 2006	
	2-End Mills	Tungaloy	ESP11025RS	2	Apr. 2006	
	3-SHANK Drill	Hitachi Tools	SD0.8	10	Apr. 2006	
	4-SHANK Drill	Hitachi Tools	SD0.9	10	Apr. 2006	
	5-SHANK Drill	Hitachi Tools	SD1.0	10	Apr. 2006	
	6-SHANK Drill	Hitachi Tools	SD1.1	10	Apr. 2006	
	7-SHANK Drill	Hitachi Tools	SD1.5	10	Apr. 2006	
	8-Hand Reamer	Hitachi Tools	HR1.2	2	Apr. 2006	
	9-Hand Reamer	Hitachi Tools	HR1.6	2	Apr. 2006	
	10-Ball End Mill	OSG	CPM-EBD-R0.5	5	Apr. 2006	
	11-Ball End Mill	OSG	CPM-EBD-R0.75	5	Apr. 2006	
	12-Ball End Mill	OSG	CPM-EBD-R1.0	5	Apr. 2006	
	13-Ball End Mill	OSG	CPM-EBD-R1.5	5	Apr. 2006	
	14-Ball End Mill	OSG	CPM-EBD-R2.0	5	Apr. 2006	
	15-Scale Loupe	KEIYO	5055 10x with S200	2	Apr. 2006	
	16-Pocket Microscope	KEIYO	8040-25 25x	1	Apr. 2006	
	17-Ball End Mill	Nissin Tools	MSB230 R1.5	5	Apr. 2006	
	18-Ball End Mill	Nissin Tools	MSB230 R2.5	5	Apr. 2006	
	19-Ball End Mill	Nissin Tools	MSB230 R3.0	5	Apr. 2006	
	20-Ball End Mill	Nissin Tools	MSB230 R4.0	4	Apr. 2006	
	21-Ball End Mill	Nissin Tools	MSB230 R5.0	3	Apr. 2006	
	22-Ball End Mill	Nissin Tools	MSB230 R6.0	3	Apr. 2006	
			8507807 3 x 3" x 25mm	4	May. 2003	
12	Machining Center					

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	(1) End Mill	Micado	08-00521-00510	5	Feb. 2006	
	(2) End Mill	Micado	08-00520-20753	5	Feb. 2006	
	(3) End Mill	Micado	08-00521-01014	5	Feb. 2006	
	(4) End Mill	Micado	08-00520-11501	5	Feb. 2006	
	(5) End Mill	Micado	08-0021010300	5	Feb. 2006	
	(6) End Mill	Micado	08-0020-15450	5	Feb. 2006	
	(7) End Mill	Micado	08-00200-20600	5	Feb. 2006	
	(8) Taps	Micado	EX-SFT HSE 0H3 M16X2	5	Feb. 2006	
	(9) Milling Inser	Micado	WAP ODMT0605XXN-DXXN-D57	20	Feb. 2006	
	(10) End Mill	Micado	TA-MG-EBD M3.0	10	Feb. 2006	
	(11) End Mill	Micado	TA-MG-EBD M4	10	Feb. 2006	
	(12) End Mill	Micado	TA-MG-EBD M6.0	10	Feb. 2006	
	(13) End Mill	Micado	TA-MG-EBD MB	10	Feb. 2006	
	(14) End Mill	Micado	TA-MG-EBD M10	10	Feb. 2006	
	(15) End Mill	Micado	TA-MG-EBD M12	10	Feb. 2006	
	(16) End Mill	Micado	TA-MG-EDS-M3.0	10	Feb. 2006	
	(17) End Mill	Micado	TA-MG-EDS M4.0	10	Feb. 2006	
	(18) End Mill	Micado	TA-MG-EDS M6.0	10	Feb. 2006	
	(19) End Mill	Micado	TA-MG-EDS M8.0	10	Feb. 2006	
	(20) End Mill	Micado	TA-MGS-EDS M10	10	Feb. 2006	
	(21) End Mill	Micado	TA-MG-EDS M12.0	10	Feb. 2006	
	(22) End Mill	Micado	TA-MG-EMS M3	10	Feb. 2006	
	(23) End Mill	Micado	TA-MG-EMS M4.0	10	Feb. 2006	
	(24) End Mill	Micado	TA-MG-EMS M6.0	10	Feb. 2006	
	(25) End Mill	Micado	TA-MG-EMS M8.0	10	Feb. 2006	
	(26) End Mill	Micado	TA-MG-EMS M10.0	10	Feb. 2006	
	(27) End Mill	Micado	TA-MG-EMS M12.0	10	Feb. 2006	
	(28) Taps	Micado	EX-SFT HSE 0H3 M14X2	2	Feb. 2006	
13	Machining Centre					
	(1) P-2FLN406010M	Speed Tools	0.6mm*1.0*50L*2F*DL-10	5	Jan. 2006	
	(2) P-2FLN408010M	Speed Tools	0.8mm*1.0*4.0*50L*2F*DL-10	5	Jan. 2006	
	(3) P-2FLN401016M	Speed Tools	1.0mm*1.5*4.0*50L*2F*DL-16	5	Jan. 2006	
	(4) P-2FLN402020M	Speed Tools	2.0mm*3*4.0*50L*2F*DL-20	5	Jan. 2006	
	(5) P-2FLN406010N	Speed Tools	0.30R*1.0*4.0*50L*2F*DL-10	5	Jan. 2006	
	(6) Q-2FLB406010M	Speed Tools	0.30R*1.0*4.0*50L*2F*DL-10	5	Jan. 2006	
	(7) Q-2FLB408010M	Speed Tools	0.40R*1.0*4.0*50L*2F*DL-10	5	Jan. 2006	
	(8) Q-2FLB401016M	Speed Tools	0.5R*2.0*4.0*50L*2F*DL-16	5	Jan. 2006	
	(9) 6E1-0615F	Speed Tools	6.mm*7*6.0*75L*2F*R1.5*DL-20	10	Jan. 2006	
	(10) 6E1-0815F	Speed Tools	8.mm*9*8.0*100L*2F*R1.5*DL-28	10	Jan. 2006	
	(11) 6E1-1015F	Speed Tools	10.mm*11*10.0*100L*2F*R1.5*DL-31	10	Jan. 2006	
	(12) 6E1-1215F	Speed Tools	12.mm*13*12.0*100L*2F*R1.5*DL-37	10	Jan. 2006	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	(13) 6F1-0615F	Speed Tools	6.mm*7*6.0*75L*4F*R1.5*DL-20	10	Jan. 2006	
	(14) 6F1-0815F	Speed Tools	8.mm*9*8.0*100L*4F*R1.5*DL-28	10	Jan. 2006	
	(15) 6F1-1015F	Speed Tools	10.mm*11*10.0*100L*2F*R1.5*DL-31	10	Jan. 2006	
	(16) 6F1-1215F	Speed Tools	12.mm*13*12.0*100L*4F*R1.5*DL-37	10	Jan. 2006	
	(17) 611-0606F	Speed Tools	6.mm*15*6.0*50L*6F	10	Jan. 2006	
	(18) 611-0806F	Speed Tools	8.mm*20*8.0*60L*6F	10	Jan. 2006	
	(19) 611-1006F	Speed Tools	10.mm*25*10.0*75L*6F	10	Jan. 2006	
	(20) 611-1206F	Speed Tools	12.mm*30*12.0*75L*6F	10	Jan. 2006	
	(21) 611-1606F	Speed Tools	16.mm*45*16.0*100L*6F	6	Jan. 2006	
	(22) K-2FL3003M	Speed Tools	0.3.mm*1.0*3.0*50L*2F	5	Jan. 2006	
	(23) K-2FL3004M	Speed Tools	0.4.mm*1.0*3.0*50L*2F	5	Jan. 2006	
	(24) N-2FMB3003M	Speed Tools	0.15R*1.0*3.0*50L*2F	5	Jan. 2006	
	<b>II For EDM Machine</b>					
	1 Jigs					
	1) Tooling Holders	EROWA	ITS SET (ER-023239)	1	May. 2003	
	2) Universal Holder	EROWA	EUV-25	1	May. 2003	
	3) Test Block	EROWA	ER-8617	1	May. 2003	
	4) Electrode Holder	EROWA	Centering Plate 50:ER-009214	1	May. 2003	
			Centering Plate 100:ER-011599	2	May. 2003	
			Uni-plate:ER-010627	4	May. 2003	
			V-block Holder:ER-008458	3	May. 2003	
			Φ20 Adapter:ER-009235	3	May. 2003	
	2 Electrode					
	1) Cube Electrode		15mm	40	May. 2003	
	2) Cylinder Electrode		Φ15x70mm	40	May. 2003	
	<b>III For Wire-cut EDM Machine</b>					
	1 Jigs					
	1) Quick Chuck for Electrode Processing	EROWA	ER-022584	4	May. 2003	
	2 Wire Electrode	HITACHI	HBZ-20 5Kg/roll	19	May. 2003	
			HBZ-25 5Kg/roll	18	May. 2003	
	3 EDM Wire-Cut					
	1-Drive Unit	MAKINO	MSDA043AIM	1	Jan. 2006	
	<b>IV For Polishing (Ultrasonic Polishing Machine)</b>					
	1 Carbide Cutter Set	MINITOR	B3920	1	Mar. 2004	
			B3930	2	Mar. 2004	
			B3940	2	Mar. 2004	
	2 Whetstone					
	1)Whetstone with Axis Set	MINITOR	Blue set D7510	3	Mar. 2004	
			4mm set D7530	3	Mar. 2004	
			6mm set D7540	3	Mar. 2004	
			10mm set D7550	3	Mar. 2004	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	2)Rubber Whetstone with Axis Set	MINITOR	D3362	20	Mar. 2004	
			D3461	20	Mar. 2004	
			D3471	20	Mar. 2004	
	3)Stick Whetstone	YAMATO	YHB B46D No.400 (20pcs)	3	May. 2003	
			YTM M46D No.600 (20pcs)	3	May. 2003	
			YTM M46D No.800 (20pcs)	3	May. 2003	
		MISUMI	EDSC-100-6-3-240 (20pcs)	1	Mar. 2004	
			EDSC-100-6-3-400 (20pcs)	1	Mar. 2004	
			EDSC-100-13-3-240 (20pcs)	1	Mar. 2004	
			EDSC-100-13-3-400 (20pcs)	1	Mar. 2004	
	4) Square Prism Type	YAMATO	Alundam: 205x50x25mm	3	May. 2003	
	5) Hand Lapper	CRISTON	Y400F: 40x12mm (10pcs/box)	3	May. 2003	
	6)Ceramic Fiber Stick Whetstone	MISUMI	XBCHD-1-6-100	10	Mar. 2004	
			XBCHB-1-6-100	10	Mar. 2004	
			XBCHR-1-6-100	10	Mar. 2004	
3	Holder for Ultrasonic Polishing Machine					
	1)Stick Holder	MINITOR	F3401	10	Mar. 2004	
			F3402	10	Mar. 2004	
	2)Contract Tube	MINITOR	F3410	40	Mar. 2004	
			F3411	40	Mar. 2004	
4	File					
	1)Diamond File	GOEI	S type 8pcs Set	3	May. 2003	
			S type 12pcs Set	3	May. 2003	
	2)Diamond File for Ultrasonic	MINITOR	F4012	5	Mar. 2004	
			F3016	5	Mar. 2004	
5	Sandpaper	BELSTAR	DC-100 : No.100 (100pcs/box)	3	May. 2003	
			DC-120 : No.120 (100pcs/box)	3	May. 2003	
			DC-180 : No.180 (100pcs/box)	3	May. 2003	
			DC-240 : No.240 (100pcs/box)	3	May. 2003	
			DC-320 : No.320 (100pcs/box)	3	May. 2003	
			DC-400 : No.400 (100pcs/box)	3	May. 2003	
			DC-600 : No.600 (100pcs/box)	3	May. 2003	
			DC-800 : No.800 (100pcs/box)	3	May. 2003	
			DC-1000 : No.1000 (100pcs/box)	3	May. 2003	
			DC-1500 : No.1500 (100pcs/box)	3	May. 2003	
			DC-2000 : No.2000 (100pcs/box)	3	May. 2003	
6	Diamond Paste	CRISTON	CP060 No.2500 : 5g	3	May. 2003	
7	Felt Puff	JPTM	F3208 (5pcs/box)	3	May. 2003	
8	Tool Box	TOYO	F501	3	May. 2003	
9	Polishing					
	1-Grinding Stone	Iwase	3*6*150 #800	20	Mar. 2005	
	2-Grinding Stone	Iwase	3*6*150 #2000	20	Mar. 2005	
	3-Grinding Stone	Iwase	3*13*100 #1000	20	Mar. 2005	
	4-Grinding Stone	Iwase	3*13*100 #1500	20	Mar. 2005	
	5-Grinding Stone	Iwase	3*13*100 #2000	20	Mar. 2005	

	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
	6-Ceramic Grinding Stone	NIHON G.C	1*4*100 SW104 White	10	Mar. 2005	
	7-Ceramic Grinding Stone	NIHON G.C	1*4*100 SR104 Red	10	Mar. 2005	
	8-Ceramic Grinding Stone	NIHON G.C	1*4*100 SB104 Blue	10	Mar. 2005	
	9-Ceramic Grinding Stone	NIHON G.C	1*6*100 SR106 Red	10	Mar. 2005	
	10-Test Peace for Polishing Narrow Plane	NIHON G.C	NAK80	2	Mar. 2005	
	11-Test peace for Polishing Short stand Wall		NAK80	2	Mar. 2005	
	12-Test Peace for Polishing Narrow Plane		NAK80	2	Mar. 2005	
	13-Test Peace for Polishing Narrow Deep Slot		NAK80	2	Mar. 2005	
	14-Test Peace for Polishing Gently-Sloping Curved Surface		NAK80	2	Mar. 2005	
	15-Test Peace for Polishing Near Plane Safely		NAK80	2	Mar. 2005	
	16-Test Peace for Polishing Inside of Hole		NAK80	2	Mar. 2005	
	17-Test Peace for Polishing		#800 NAK80 HRC38	1	Mar. 2005	
	18-Test Peace for Polishing		NAK80HRC38	1	Mar. 2005	
	19-Test Peace for Polishing		#1200 NAK80 HRC38	1	Mar. 2005	
	20-Test Peace for Polishing		NAK80 HRC38	1	Mar. 2005	
	21-Test Peace for Polishing		#1200 NAK80 HRC38	1	Mar. 2005	
	22-Test Peace for Polishing		NAK80 HRC38	1	Mar. 2005	
	23-Test Peace for Polishing		#800 SATAVAX HRC33	1	Mar. 2005	
	1-Ceramic Grinding Stone	NIHON G.C	3.0x100SBD38 Blue	10	Mar. 2005	
	2-Ceramic Grinding Stone	NIHON G.C	3.0x100SBD38 Red	10	Mar. 2005	
	3-Tooling Dresser		160x40x100 DMW120	1	Mar. 2005	
	4-Files		200mm TSUBOSAN	1	Mar. 2005	
	5-Diamond Paste		#1000x4010L.PD010	1	Mar. 2005	
	6-Lentor		2K	1	Mar. 2005	
	7-Grinding Fluid		(1.8L)	1	Mar. 2005	
	8-Polishing Bar		10x10x250	5	Mar. 2005	
	9-Polishing Bar		10x20x250	5	Mar. 2005	
	10-Polishing Bar		Φ 2.5x50	3	Mar. 2005	
	11-Polishing Bar		Φ 4x50	3	Mar. 2005	
	12-Polishing Bar		1x8x170	5	Mar. 2005	
V	For Aeembling					
I	Socket Set for Socket Wrench					
	1) Socket	TONE	6mm :3S-06	3	May. 2003	
			8mm : 4S-08	3	May. 2003	
			10mm : 4S-10	3	May. 2003	
			12mm : 4S-12	3	May. 2003	
			14mm : 4S-14	3	May. 2003	
			17mm : 4S-17	3	May. 2003	
	2) Socket Adaptor	TONE	68	3	May. 2003	
2	Hexagon Socket Screw Keys Set	NJS	AXS 0810	3	May. 2003	
3	Open Ended Spanners	ASAHI	SMS 0800	3	May. 2003	



	Article	Manufacturer	Description	Qty.	Arrival Date	Remarks
4	Copper Hammer	OH	CO-15 : NO.1-1/2	3	May. 2003	
5	Shackles Hammer	OH	OS-40 : NO.2	3	May. 2003	
6	Tool Box	TOYO	LG-600	3	May. 2003	
VI	For Tool Presetter					
1	Dial Guage	MITSUTOYO	DG-1Z(1/100)	2	Aug. 2003	
			DG-2X(1/1000)	2	Aug. 2003	
VII	For Small Hole EDM					
1	BS Electrode	ASTECC	Φ 0.5	1	Aug. 2003	
			Φ 0.8	1	Aug. 2003	
			Φ 1.0	1	Aug. 2003	
			Φ 1.5	1	Aug. 2003	
			Φ 2.0	1	Aug. 2003	
VIII	Grinding Wheels					
1	Surface Grinder	Kure-Norton	WA46J	3	Aug. 2003	
2	Drill Point Grinder	FUJITA	DG50B/KE-46-1	6	Aug. 2003	
3	Tool Grinding Machine	KEIHIN	DW-4B/Diamond wheel	5	Aug. 2003	
			DW-4B/Borazon wheel	5	Aug. 2003	
4	Carbide Turning Tool Grinder	KEIHIN	DW-8	7	Aug. 2003	
			DW-9	7	Aug. 2003	

## List of Machinery & Equipment Provided by Pakistani

April 24, 2006  
Haider Ali

Sr.	Major Components	Achievements
<b>I</b>	<b><u>Mold Design &amp; CAD/CAM</u></b>	
	i. UPS Unit	16 Set 100%
	ii. Working Table	24 + 30 No. 100%
	iii. Meeting Table	02 No. 100%
	iv. Computer Chair	42 No. 100%
	v. Desk for Multimedia	01 No. 100%
	vi. Desk for Printer	01 No. 100%
	vii. Metallic Almirah	03 No. 100%
<b>II</b>	<b><u>Mold Processing</u></b>	
	i. AVR Unit	15 Set 100%
	ii. Vertical Milling Machine	02 No. 100%
	iii. Lathe Machines	02 No. 100%
	iv. Tool Locker	02 No. 100%
	v. Drilling Machine	01 No. 100%
	vi. Working Table	10 No. 100%
	vii. Chairs	04 No. 100%
	viii. Stocker	01 No. 100%
	ix. Miscellaneous Cutting Tools	--- 90%
	x. Fork-Lift	01 No. 100%
	xi. Trolley	05 No. 100%
	xii. Air Compressor	01 No. 100%
<b>III</b>	<b><u>Mold Assembly Injection Tryout</u></b>	
	i. Mold Assembly Bench	02 No. 100%
	ii. Mold Polishing Bench	02 No. 100%
	iii. Mold Rack	04 No. 100%
	iv. Overhead Crane (3 Tons)	01 No. 100%
	v. Portable Hoist (2 Tons)	01 No. 100%
<b>IV</b>	<b><u>Others:</u></b>	
	i. Computers (Desktop+Laptop)	2+2 No. 100%
	ii. Network Printer	01 No. 100%
	iii. Multi-media Projector	01 No. 100%
	iv. Air-Compressor	01 No. 100%
	v. Hanging of lights over machines	--- 100%
	vi. Installation of lights in Assembly & Injection molding	04 No. 100%

**Annex 11**  
**Expenses by the Japanese Side from JFY 1999 to JFY2006**

May 30, 2006  
 (Unit: Thousand Yen)

Japanese Fiscal Year	1999	2000	2001	2002	2003	2004	2005	2006 (Planned)	Total (1999 – 2006)
Dispatch of Experts				31,896	83,235	120,282	105,278	42,357	383,048
Acceptance of C/P in Japan				704*	2,065*	2,158*	49,563	0	54,490
Provision of Machinery and Equipment			800	151,387	166,728	7,062	17,447	1,000	344,424
Dispatch of Study Team	3,756	14,208	2,602		2,488	7,931	2,385	7,500	40,870
Total	3,756	14,208	3,402	183,987	254,516	137,433	174,673	50,857	822,832

Note: \*:Expenses for Acceptance of C/P excludes common expenses of training program.

Annex 12 Revised Project Design Matrix (PDM)

PITAC-JICA Project (May 30, 2006)  
Revised on Oct. 13, 2004

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

[Activities]	Inputs		a. C/P personnel remain at PITAC
	The Pakistan side	1. The Japanese side	
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	1. The Japanese side  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 13-1 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project  
May 29, 2006

Calendar Year	02		2003				2004				2005				2006	
	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	.....															
<b>I. MOLD DESIGN</b>																
1. Basic Design	.....															
2. Mold Design for Injection Molding																
1) Basic Mold Design																
(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) Application of Mold Design																
(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)	.....															
-5. Multi-purpose Stand	.....															
3. Training Course																
(1) Preparation of Curricula for Mold Design Training Course	.....															
(2) Preparation of Manuals & Materials for Mold Design Training Course	.....															
(3) Mold Design of Injection Molding	.....															
(4) Review of Mold Design of Injection Molding Training Course	.....															
4. Backup Support Service	.....															
5. Advisory Service	.....															
<b>II. Measuring Method</b>																
1) Operation of C.M.M.	.....															
2) Backup Support Service	.....															

Annex 13-2 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project  
May 30, 2006

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)									.....							







Annex 13-4 Technical Cooperation Program (TCP)

PITAC-JICA Phase II Project  
May 29, 2006

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)											.....				-----		
-5. Multi-purpose Stand															.....		
6. Training Course																	
1) Preparation of Training Course											.....				-----		
2) Finish, Mold Assembly & Injection Molding of Mold Training Course											.....				-----		
3) Review of Finish, Mold Assembly & Injection Molding of Mold Training Course											.....				-----		
4) Backup Support Service																	
8. Advisory Service			-----								.....				-----		



Annex 14 Plan of Operations (PO)

PITAC-JICA Phase II Project  
May 30, 2006

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
<b>Term of Technical Cooperation</b>	.....																
<b>0 The project operation unit is established for making advanced plastic molds.</b>	.....																
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.	.....																
<b>1 The necessary machinery and equipment are provided, installed, operated and maintained properly.</b>	.....																
1-1 Provide and install necessary machinery and equipment.	.....																
1-2 Operate and maintain machinery and equipment properly.	.....																
<b>2 Technical capability of the counterpart personnel (C/P) is upgraded.</b>	.....																
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.	.....																
<b>3 Technical training courses and seminars are implemented systematically.</b>	.....																
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.	.....																
<b>4 Technical backup support services are implemented systematically.</b>	.....																
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.	.....																



Annex 15 Tentative Schedule of Implementation (TSI)

PITAC-JICA Phase II Project  
May 30, 2006

Calendar Year	2002		2003				2004				2005				2006	
	Japanese Fiscal Year (FY)		2002		2003		2004		2005		2006		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															
<b>Term of Technical Cooperation</b>	.....															
<b>The Japanese Side</b>																
<b>I Dispatch of Mission Team</b>																
(1) Preliminary Study Team	▼FY2000, I															
(2) Preparatory Study Team	▼FY2000,III															
(3) Project Design Team	▼FY2000,IV															
(4) Project Consultation Team No. 1	▼FY2001,IV															
(5) Project Consultation Team No. 2	.....															
(6) Mid-term Evaluation Team	.....															
(7) Project Consultation Team No. 3	.....															
(8) Project Evaluation Team	.....															
<b>II Dispatch of Japanese Experts</b>																
(1) Chief Adviser	.....															
(2) Coordinator/SME Promoter	.....															
(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) Project Coordinator	.....															
(2) Installation & Adjustment for CAD/CAM Network	.....															
(3) Installation & Adjustment for Machining 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	.....															
(18) SME Consultation	.....															
(19) Management Capacity Development	.....															

Calendar Year	02		2003				2004				2005				2006	
	Japanese Fiscal Year (FY)		2002		2003		2004		2005		2005		2006			
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
<b>IV Dispatch of the C/P Training in Japan &amp; Philippines</b>																
(1) FY 2002																
-1 Project Management: Eng. Muhammad Akram Khan	—															
-2 Project Management: Eng. Sarfraz Ahmad	—															
(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)	
-4 Mold Processing (EDM)													—		(1)	
-5 Mold Finishing & Assembly													—		(2)	
-6 QA/QC													—		(1)	
(5) FY2005-2																
-1 Mold Design													(2)	—	.....	(1)
-2 CAD/CAM													(1)	—	.....	(1)
-3 Mold Processing, Assembly & Trial Shot															.....	(1)
-4 CMM															.....	(1)
-5 SME Promotion															.....	(1)
-6 CNC & Maintenance													(1)	—		
-7 Injection & Maintenance													(1)	—		
(6) FY2005-3																
-1 CAD/CAM & Maintenance															—	(1)
-2 CNC & Maintenance															—	(1)
(7) Dispatch of the C/P Training in Philippines																
-1 Mr. Muhammad Tariq Pervaiz	—															
-2 Eng. Hayder Ali	—															
-3 Mr. M. Shoaib Rashid	—															
<b>V Provision of Machinery &amp; Equipment</b>																
(1) FY 2002																
(2) FY 2003						▼	▼	▼								
(3) FY 2004																▼
(4) FY 2005																▼
(5) FY2006																
<b>VI Technical Exchange Program</b>																
(1) FY 2004															..	
															—	





Annex 16-1 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project  
May 29, 2006

Calendar Year	2006												2007		
	2006												1	2	3
Japanese Fiscal Year (FY)	4	5	6	7	8	9	10	11	12						
Term of Technical Cooperation	.....														
<b>I. MOLD DESIGN</b>															
<b>2. Mold Design for Injection Molding</b>															
1) Basic Mold Design															
(7) Condition of Injection Molding															
-1. Gate Location, Runner Layout	.....														
-2. Number of Cavity	.....														
(8) Drawing by Auto-CAD	.....														
2) Application of Mold Design															
(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)	.....					.....									
-5. Multi-purpose Stand	.....														
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) Review of Mold Design of Injection Molding Training Course	.....														
4. Backup Support Service															
(1) Mold Design for Mold															
5. Advisory Service															
(1) Visit for Mold Making Company	.....														
<b>II. Measuring Method</b>															
(1) Operation of C.M.M.	.....														
(2) Backup Support Service	.....														

Annex 16-2 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project  
May 30, 2006

Calendar Year	2006												2007		
	2006												1	2	3
	4	5	6	7	8	9	10	11	12						
Japanese Fiscal Year (FY)															
Term of Technical Cooperation	.....														
<b>III. CAD/CAM NETWORK STATION</b>															
<b>1. CAD/CAM (General)</b>															
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	.....														
<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															
<b>5. CAM (Advanced)</b>															
1) 2D, 3D CAM															
2) Building of Database (Cutting Condition & Tool Property)															
3) Installation of DNC System															
<b>6. CAD/CAM (Advanced)</b>															
1) CAD/CAM for Target Mold (Kitchen Tray)															
2) CAD/CAM for Target Mold (Front Light Cover)															
3) CAD/CAM for Target Mold (Mouse)															
4) CAD/CAM for Target Mold (Desktop Telephone)															







Annex 16-4 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project  
May 29, 2006

Calendar Year	2006												2007		
	2006												1	2	3
	4	5	6	7	8	9	10	11	12						
Japanese Fiscal Year (FY)															
Term of Technical Cooperation	.....														
<b>V. Mold Assembly &amp; Trial Shot</b>															
1. Finish of Mold															
2) Mold Polishing															
2. Mold Assembly															
2) Set-up for Mold Assembly & Adjustment															
3) Final Assembling & Preparation															
3. Injection Molding															
2) Procedure of Injection Molding															
(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															
5. Finish, Mold Assembly & Injection Molding (Advanced)															
1) Target Mold															
-3. Mouse Cover (Upper & Lower Case)															
-4. Telephone Case (Upper Side)															
-5. Multi-purpose Stand															
6. Training Course															
Preparation of Curricula for Finish, Mold Assembly & Injection Molding of Mold Training Course															
1) Preparation of Manuals & Materials for Finish, Mold Assembly & Injection Molding of Mold Training Course															
2) Finish, Mold Assembly & Injection Molding of Mold Training Course															
3) Backup Support Service															
1) Finish, Mold Assembly & Injection Molding of Mold															
8. Advisory Service															
1) Visit for Mold Making Company															

Annex 16-5 Annual Technical Cooperation Program (ATCP)

PITAC-JICA Phase II Project  
May 30, 2006

Calendar Year	2006												2007		
Japanese Fiscal Year (FY)	2006												1	2	3
	4	5	6	7	8	9	10	11	12						
Term of Technical Cooperation	.....														
<b>VI. SME Promotion</b>															
<b>1. Organize Seminars</b>															
1) Occupational Safety & Health															
2) Latest Technology															
3) Total Quality Control															
4) Industrial Summit (Project Tour)															
5) 3D Modeling Seminar															
6) Out of Lahore Seminar	.....														
7) CATIA Conversion Seminar		.....													
<b>2. Make Project Pamphlet</b>															
1) 1st issue															
2) 2nd issue															
3) 3rd issue															
4) 4th issue															
<b>3. Make Project Homepage</b>															
1) Develop Homepage															
2) Visit of Homepage expert															
3) Monthly Renewal	.....														
<b>4. Visit Private Factories &amp; Associations</b>															
1) Visit Factories	.....														
2) Visit Associations	.....														
3) Visit Educational Institutions.	.....														
4) Introduce the project services.	.....														
5) Collect the factory's basic data.	.....														
<b>5. Establish Data Base for SMEs</b>															
1) Make the format.															
2) Input Data on D/B.	.....														







Calendar Year		2006										2007		
Japanese Fiscal Year		2006												
		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.	.....												







## Annex 20 List of Committee & Meeting

April 24, 2006

Haider Ali

### 1- Weekly Meetings

Weekly meeting usually holds on Wednesday of each week at 1600 Hours in the Conference Hall No-1. The following are the members of the meeting:

No.	Position/Section	Main Responsible	Sub Responsible
1	Project Director	Mr. Javaid Iqbal Sheikh	-
2	Project Manager	Mr. Sarfraz Ahmad	-
3	Admin	Mr. Hayder Ali	-
4	SME Promotion	Mr. Arslan Anwar	-
5	Store	Mr. Latif Awan	Mr. Rana Raza
6	Mold Design	Mr. Tariq Baig	Mr. Naveed Shahid
7	CAD/CAM	Mr. Shoaib Rashid	Mr. Shahzad Ayub
8	CNC	Mr. Sayyam	Mr. Nadeem Shahid
9	Conventional /Assembly	Mr. Nadeem Shahid	Mr. Sayyam
10	Injection	Mr. Irfan Jarral	Mr. Akhlaq Ahmad
11	QA/QC	Mr. Nadeem Shahbaz	Mr. Irfan Jarral
12	Advisors	Japanese Experts	
13	Supporting Staff	Project Secretaries	

- Till 12<sup>th</sup> April 2006, 66 Weekly Meetings have been conducted and mainly, the following items remained on the agenda of the meeting:

- 1- Review of the activities completed in the last month and planning for the next.
- 2- Review the process of Technology Transfer in all areas.
- 3- Review of the Pending Matters
- 4- Status of Target Molds
- 5- Status of Training Courses
- 6- Procurement Status
- 7- Personnel Status
- 8- Others

## 2- Meetings of the Occupational Safety & Health Management (OSH) Committee

An OSH Committee has been constituted in the Project in order to promote the OSH awareness and to address the potential hazard(s) in the Project. The following are the members of OSH Committee.

The of meeting OSH

No.	Position/Section	Main Responsible
1	Chairman	Mr. Sarfraz Ahmad
2	Member	Mr. Hayder Ali
3	Member	Mr. Shoaib Rashid
4	Member	Mr. Irfan Jarral
5	Advisor	Mr. Hiraro Tetsuya

Committee usually holds once in a month. Till 31<sup>st</sup> March 2006, 16 meetings of the OSH committee have been held, detailed below:

Sr. No.	Subject	Date
1	1 <sup>st</sup> OSH Meeting	09-12-2004
2	2 <sup>nd</sup> OSH Meeting	27-01-2005
3	3 <sup>rd</sup> OSH Meeting	03-03-2005
4	4 <sup>th</sup> OSH Meeting	05-04-2005
5	5 <sup>th</sup> OSH Meeting	05-05-2005
6	6 <sup>th</sup> OSH Meeting	07-06-2005
7	7 <sup>th</sup> OSH Meeting	05-07-2005
8	8 <sup>th</sup> OSH Meeting	09-08-2005
9	9 <sup>th</sup> OSH Meeting	16-08-2005
10	10 <sup>th</sup> OSH Meeting	11-10-2005
11	11 <sup>th</sup> OSH Meeting	24-11-2005
12	12 <sup>th</sup> OSH Meeting	02-12-2005
13	13 <sup>th</sup> OSH Meeting	15-12-2005
14	14 <sup>th</sup> OSH Meeting	24-01-2006
15	15 <sup>th</sup> OSH Meeting	21-02-2006
16	16 <sup>th</sup> OSH Meeting	28-03-2006

### 3- Meetings of the Total Quality Control (TQC) Committee

A TQC Committee has been constituted in the Project in order to promote the TQC related activities with ultimate goal to achieve the 'ISO 9000 Certification'. The following are the members of OSH Committee.

No.	Position/Section	Main Responsible
1	Chairman	Mr. Sarfraz Ahmad
2	Member	Mr. Arslan Anwer
3	Member	Mr. Naveed Aslam Qureshi
4	Member	Mr. Irfan Jarral

The meeting of OSH Committee usually holds once in a month. Till 31<sup>st</sup> March 2006, 5 meetings of the TQC committee have been held, detailed below:

Sr. No.	Subject	Date
1	1 <sup>st</sup> TQC Meeting	20-10-2005
2	2 <sup>nd</sup> TQC Meeting	17-11-2005
3	3 <sup>rd</sup> TQC Meeting	12-12-2005
4	4 <sup>th</sup> TQC Meeting	16-01-2006
5	5 <sup>th</sup> TQC Meeting	30-03-2006



**JCC & JCC Sub-Committee Meetings**

<u>Date</u>	<u>Name of Meeting</u>
August 26, 2003	JCC Meeting No. 1
October 13, 2004	JCC Meeting No. 2
December 07, 2004	JCC Sub-Committee Meeting No. 1
January 06, 2005	JCC Sub-Committee Meeting No. 2
February 07, 2005	JCC Sub-Committee Meeting No. 3
March 17, 2005	JCC Sub-Committee Meeting No. 4
May 17, 2005	JCC Sub-Committee Meeting No. 5
July 23, 2005	JCC Meeting No. 3
October 18, 2005	JCC Sub-Committee Meeting No. 6
January 28, 2005	JCC Meeting No. 4

**List of Weekly Meetings**

No	Date	Main Points	Guest
1	21 October, 2004	.Regular Weekly& Monthly Meeting .Minor Staff .New Recruitment .Procurement and Construction .Orientation	
2	27 October,2004	.Accomodation of CounterParts .Schedual of Construction .Room Allocation for Experts & Engineers	
3	3 November, 2004	.New Project Staff .Equipment & Facilities .Seating Plan .Uniform .Occupational Health & Safety Followup .Pending Matter List of Mid-Term Evaluation Team. .Attendance of new Engineers in weekly meeting .Monthly Meeting will be in the middle of every month .Comprehensive Schedual & Booklet.	
4	10 November, 2004	.Participation of new Engineers in the Weekly Meeting .Bio- Data Forms .ID Cards .Working Group of Occupational Safety & Health .Status of Tender Items .SME C/P	
5	24 November, 2004	.Situation of Procurement Items .Latest situation of newly recruited staff .Visitor Manual .Review of pending items .Survey for CAD/CAM section	
6	1 December, 2004	.Procurement of Machinery and Equipment .Finalization of the visitor's manual .Placement of New Engineers .Pending Matters .Visit of CAD/CAM backup survey .Design of second target .Specification form for mould making	
7	8 December, 2004	.Latest Situation on Pending Matters	
8	15 December, 2004	.List Of Pending Matters .Replacement of New Engineers .Visitors Manual	
9	22 December, 2004	.Review of Pending Matters .Finalization of Visitors Manual .Placement of new Engineers .Training course	
10	29 December, 2004	.Training Courses .New Recruitment .Procurement and construction .Current status of multi purpose mold .Miscellaneous	
11	5 January, 2005	.Schedule of the inauguration ceremony .Pending matters .Training Courses	
12	13 January, 2005	.Inauguration Ceremony of JICA project phase-II	Mr.Haroon-ur-Rashid Mr.Moien Dar
13	26 January, 2005	.Review of the Process Technology Transfer .Mold Designing, CAD/CAM, Mold Processing Assembly/ Trial Shot and Maintenance, CMM, SME .Pending Matter .Schedule of Multi Purpose Tray Mold .Monthly Meeting	

No	Date	Main Points	Guest
14	2-Feb-05	.Review of Training and Development of Local Counterparts .Recruitment of New Engineer .Review of Pending Matters	
15	9-Feb-05	Review of the Process of Technology Transfer Review of Pending Matters Inquiry Received from Plastic Kraft	
16	16-Feb-05	Review of Technology Transfer Review of Pending Matters	
17	2-Mar-05	Review of February Activities Planning for March Review of Pending Matters	
18	9-Mar-05	Review the process of Technology Transfer Review of Pending Matters	
19	16-Mar-05	Review of Pending Matters Review of Completed Matters Technology Transfer	
20	30-Mar-05	List of Pending items List of Completed Items Status of Target Molds	
21	6-Apr-05	List of Pending items Major activities completed in March, 2005 Planning for major activities for the month of April,2005	Mr.TAKAHASHI Makoto
22	13-Apr-05	Review of Pending Matters List of Completed items Review of Technology transfer process	
23	27-Apr-05	Review of Pending Matters List of Completed items Review of Technology transfer process	
24	4-May-05	List of Completed items Review of Technology transfer process Problems encountered during the manufacturing of First Target Mold (i.e., Multipurpose Tray Mold) Major activities completed in April, 2005 Planning for major activities for the month of May,2005	
25	11-May-05	List of Completed items Planning of activities for the month of MAY, 2005 Review of Pending Matters	Mr.TAKAHASHI Makoto Mr.ISHIGAME Keiji Mr.Haroon-ur-Rashid
26	19-May-05	Review of Pending Matters Review of Technology transfer process Miscellaneous	
27	25-May-05	Review of Pending Matters Review of Technology transfer process	
28	30-May-05	Breakdown of Injection Molding Machine Model Factories Late Delivery of Gentry Crane Visit to Private Sector Problems of CMM machine Review of Pending Matters Weekly Progress Reports	Mr.MORI Schinichi Mr.ISHIGAME Keiji
29	8-Jun-05	Top Floor Maintenance Mold Polishing Training Course Repairing of SUMITOMO Machine JCC Meeting Review of Pending Matters Weekly Progress Reports Major activities completed in May, 2005 Planning for major activities for the month of June,2005	
30	15-Jun-05	CAD/CAM Evening Course Visit of Mr. SHIRAHIGE Engineer for SUMITOMO Machine Review of Pending Matters Weekly Progress Reports	Mr.MORI Schinichi

No	Date	Main Points	Guest
31	22-Jun-05	CAD/CAM Training Course Rules of overtime and incentive Review of Pending Matters Weekly Progress Reports	Mr.MORI Schinichi
32	29-Jun-05	Training Matters Newsletters Review of Pending Matters Weekly Progress Reports	Mr.MORI Schinichi
33	6-Jul-05	Vacant Position for supporting staff in SME Activities completed in the month of June,2005 Planning of activities for the month of July, 2005 Review of Pending Matters Weekly Progress Reports	Mr.MORI Schinichi
34	13-Jul-05	Closing Ceremony for CAD/CAM course Factories Visits Review of Pending Matters Weekly Progress Reports	
35	20-Jul-05	4th Target Mold Training Course of Injection Molding Section Project Website Review of Pending Matters Weekly Progress Reports	
36	3-Aug-05	Heat Treatment Data OSH Seminar Review of Pending Matters Weekly Progress Reports Activities completed in the month of July,2005 Planning of activities for the month of August, 2005	
37	17-Aug-05	Trainees to Japan Replacment of Fakhr-e-sayyam with Qaisar Iqbal Overtime of Counterparts Review of Pending Matters Weekly Progress Reports	
38	1-Sep-05	Newsletters Review of Pending Matters Activities completed in the month of August,2005 Planning of activities for the month of September, 2005	
39	7-Sep-05	CAD/CAM Training Course List of Pending items Weekly Progress Reports Newsletter	Mr.WADA Katsuyoshi
40	14-Sep-05	Mold Design Training Course Arrival of Mr.UEDA JICA Vice President Review of Pending Matters Weekly Progress Reports	
41	5-Oct-05	Model Factory TQC Training Activities completed in the month of September,2005 Planning of activities for the month of October, 2005 Review of Pending Matters Weekly Progress Reports	Mr.ISHIGAME Keiji
42	12-Oct-05	.Breakdown of Sub-Controller(AC-Servo Driver) .TQC Committee has been build .Quality Circles & Suggestion Team are under consideration .Weekly Progress Reports .Training Courses	
43	19-Oct-05	.Replacement of AVR .Purchasing of Tools for 4th Target Mold .5th Target Mold is under consideration .Implementation of MBO as regular activity of Project .Weekly Progress Reports	

No	Date	Main Points	Guest
44	26-Oct-05	.Training Courses .Problem in Machine Centre & Wirecut .Change of Working Hours after Eid .5th TargetMold under consideration .MBO and Self Control Sheets discussed thoroughly .Weekly Progress Reports .Meeting Memorandum at TUSDEC	
45	2-Nov-05	.Activities Completed in the month of October,2005 .Planning of Activites for the month of November,2005 .Standard Parts of 3rd Target Mold .4th JCC Meeting .Training in Japan .Weekly Progress Reports	Mr.ISHIGAME Keiji Mr.Haroon-ur-Rashid
46	10-Nov-05	.MBO Sheets under consideration .Presentation of the 1st Batch of Trainees from Japan .JCC meeting	
47	16-Nov-05	.Order for 12sets of AUTO CAD has been placed .Visit of Model Factory under consideration .Donation of 2500 Multipurpose Trays to Earth Quake Victims .Weekly Progress Reports	
48	23-Nov-05	.Inspection of Standard Mold Base Number 4 .Training Courses .Project Customer's Directory under consideration .Trip to Karachi for attending Exhibiton of MITUTOYO .Weekly Progress Reports	
49	30-Nov-05	.Procurement of Software for offering AutotCAD Course .Multipurpose Trays for Earth quake Victims .Preparation of Customers Directory .Training Schedules,Training Fee Survey .Weekly Progress Reports	
50	7-Dec-05	.Activities Completed in the month of November,2005 .Planing of Activites for the month of December,2005 .Training Courses and fee analysis .Tool Box meeting will be started .5th Target Mold will be used in closing ceremony as souvenir .Schedule for the fourth Target Mold .Weekly Progress reports. .List of Tools required in the project .List of Late Comers	
51	14-Dec-05	.Schedule of training courses .Visit to Model Factory .Format of Weekly Performance report .Drawing of Fourth Target Mold .Multipurpose trays for earth quake victims .Format for Tool Box Meeting .Weekly Progress reports	
52	21-Dec-05	.Standard Parts for 3rd Target mold .Training for Maintenance of CAD/CAM Computers .Advertisement of training courses in the newspaper .Multipurpose trays for earth quake victims .Weekly Progress reports	
53	28-Dec-05	.Quotation for Ejector Pins from NAM Engineering .Annual Maintenance Contract with Info Tech .Evaluation of Injection Molding Course .Tool Box Meeting .Weekly Progress Reports	
54	4-Jan-06	.Sudden Resignation of Dr. Farid Malik .Incentives for Trainees Miscellaneous .Activites completed in the month of December,2005 .Planing of Activities for the month of January,2006 .Weekly Progress Reports .New Mold Schedule Plan .Allocation of Incentives for Evening Courses .Evaluation Report of 3DCAD Training Course	Mr.Haroon-ur-Rashid

No	Date	Main Points	Guest
55	18-Jan-06	.Weekly Progress Reports .Procurement Procedure for the Tools Required in the Project .5th Target Mold .Training Courses	
56	25-Jan-06	.Transfer of Mr. Asad from PITAC-JICA Project to Insepction Section of PITAC .Weekly Progress Reports .Arrival of Mr. SHIRAHIGE	
57	1-Feb-06	.Weekly Progress Reports Training Courses .Training in Karachi .Activities Completed in the month of January,2006 .Planing of Activities for the month of February,2006	
58	22-Feb-06	.Weekly Progress Reports .Schedule for Purchase of Tools & Other Items .Planning Sheet of Industrial Summit .Procedures for Revision of Ongoing/Introduction of New Training Courses .Enquiry Recevied from M/S. Shield Cooperation, Karachi	
59	1-Mar-06	.Weekly Progress Reports .Activities Completed in the Month of February,2006 .Planing of Activities for the Month of March, 2006 .Annual Plan Training Courses .Machining Cost for Backup Support Services	
60	8-Mar-06	.Weekly Progress Reports .Tentative Schedule for the Mold of Teether .Backup Services .Training Feedback Form .Plastic Pipe Manufacturing Equipment List .List of Selected Companies for Training Courses	
61	15-Mar-06	.Weekly Progress Reports .List of Schools for Earthquake Victims .Increase in Working Hours	
62	22-Mar-06	.Weekly Progress Reports .3D Modeling Seminar at PITAC .Training Courses .List of C/Ps for Dual Shift .Design Standards & Standard Parameters for Parts List .New Mold Schedule Plan .Reorganization Proposal of Weekly Meeting	
63	29-Mar-06	.Weekly Progress Reports Over time Record for the Month of March .Design Standards Attendance Sheet for 3D Modeling Seminar	
64	3-Apr-06	.Tentative Schedule of 4th,5th,Target Mold & Shampoo Bottel Idea of change of Working Hours	
65	5-Apr-06	.Weekly Progress Reports .Activities Completed in the Month of March,2006 .Planing of Activities for the Month of April, 2006 .Detail of Additionally Required Expenditure During F.Y 2005-2006 .Design Standards .Telephone Case Mold Processing Schedule	Mr.Haroon-ur-Rashid
66			

**Annex23**

**Number of Publicity ( Brochures, Periodicals, etc)**

April 24, 2006  
Haider Ali

1	Newsletter	September 5, 2005	1
2	Project Website	Started Aug-05	1
3	Project website updation	Nov-05	1
		Dec-05	1
		Jan-06	1
		Feb-06	1
		Mar-06	1
		Apr-06	1
4	Industrial summit evaluation report	February 28, 2006	1
8	Seminar on CAD/CAM Trend & 3D Modeling	March 27, 2006	1
6	Customer's Directory 72 Companies		72
7	Training Course Booklet		180
	<b>Total</b>		<b>262</b>

## Annex 24

## List of Local Suppliers &amp; Vendors

May 30, 2006

No.	Description	Local Suppliers
1	Repair of IBM Intellistation display, Repair of IBM Intellistation Hard Drive, Repair of IBM Intellistation C/D Rom, Repair of IBM Intellistation Mother Board, Repair of IBM Intellistation Key Board, Re-Installation of Win.XP-Pro, Repair of Network Switch, Repair of Power Supply for IBM System, Repair of IBM Intellistation Monitor 21"	InfoTech Pvt. Ltd. 12-N, Gulberg II, Lahore Tel. 042-111-427-427, Fax. 042-5872265 Mr. S.M. Asghar Laiq Country Product Manager
2	Repair of HP Laser-Jet 4200 Printer	Montana Computers System 113-A, H-Block, Gulberg-III, Lahore Tel. 042-5858557, 042-5858612 Mr. Amir Ali Bajwa Manager Marketing
3	Steel Material	Gunj Buksh Traders 138-Shaheed Gunj Road (near railway station), LHE Tel. 7664305, 7651753 Fax. 7664306 Mr. Ejaz Iqbal
4	Resin Material, Nipple O-Ring etc. for Mold, Hand tools (Gexagonal Allenkey, Air Duster etc.), Rubber Hose, Screw nut washer etc., Lifting tools (Shakal Cup, I-Bolt)	Tariq Plastico 9-Ravi road, Near Baba Chatri Wala, (Minar-e-Pakistan)-Lahore Tel. 7722043-45, Fax. 7727123 Mr. Tariq Proprieter
5	Hydraulic oil Caltex Rando HD 46, Grease Shell EP1	Techno-Lubes Marketing 9-Brandreth Road, Lahore Tel. 042-7666909, 7631167 Fax. 042-7666909 Mr. Asif Izar Proprietor
6	Mitutoyo Measuring Tools	Superior Technology 2A-3, Shimla Complex-11 Durand Road Lahore Tel. 6300711, 630811 Mr. Tahir Shah Director



7	Mitutoyo Measuring Tools	Northern Mills Store 86-Railway Road, Lahore-7 Tel. 042-7641675, Fax. 7641674 Mr. Kamal Saeed Sales & Marketing Executive
8	Cutting Tools	Speed Tools Suit No. 416, Dashtyar Chamber Block 13-C, Gulshan-e-Iqbal Karachi Tel. 021-5828365, Fax. 021-4978593 Mr. Zeeshan Ullah Executive Manager
9	Cutting Tools	Micado Tools 40-C, Block-VI, P.E.C.H.S., Shahrah-e-Faisal-Karachi Tel. 021-4543991, Fax. 021-4546777 Mr. Yasir Saeed Assistant Manager
10	Network Maintenance	InfoTech Pvt. Ltd. 12-N, Gulberg II, Lahore Tel. 042-111-427-427, Fax. 042-5872265 Mr. S.M. Asghar Laiq Country Product Manager
11	Cuting Tools (Drill Reamer) for Conventional Machine	Northern Mills Store 86-Railway Road, Lahore-7 Tel. 042-7641675, Fax. 7641674 Mr. Kamal Saeed Sales & Marketing Executive
12	Standard Mold Base (FUTABA-Hong Kong)	Nam Engineering A, 125-S.I.T.E. Super High Way Scheme- 33, Karachi Tel. 021-6351492, Fax. 021-6351499 Mr. Amin Ahmad Director
13	Standard Mold Parts (E/P spring etc.) (MISUMI)	Nam Engineering A, 125-S.I.T.E. Super High Way Scheme- 33, Karachi Tel. 021-6351492, Fax. 021-6351499 Mr. Amin Ahmad Director

14	Uniform	Sketching Time Ferozpur Road, Naseer Abad, M-Block, Gulberg-III-Lahore Mr. Faisal John
15	Floor Repaint	ICI Paint P.O. Box 273 346-Ferozpur Road, Lahore Tel. 042-111-551-111, Fax. 5883229 Mr. Kamran Danishmand Industrial Projects Manager
16	Safety Shoes	Kotlay Enterprises Room No. 1, 1st Floor, Aslam Arcade, Upper Badar Cloth, 16-Mcleod Road-Lahore Tel. 042-7314287-88, Fax. 7225293 Mr. Mohammad Sohail
17	Printing Materials Calender Pamphlet	Puma Art Printers 14-Abbot Road, Chowk Safanwala, 2nd Floor, Qazi & Co. Lahore Tel. 042-6373701, Fax. 042-6305095 Mr. Syed Ishfaq Hussain, Director
18	Printing Materials Calender Pamphlet	Lion Press 12-B Hospital Road-Lahore Tel. 7310618, 7353087 Mr. Faraz Ahmad Director
19	Printing Materials Calender Pamphlet	Sthetics 1) 55-K, Commercial Area, Phase-1, DHA, Lahore 2) E-17, St. No. 6, Cavalry Grounds- Lahore Cantt. Tel. 042-5741837, Fax. 042-5741855 Mr. Amer Naveed Creative Director/CMO
20	Photocopy & Book Binding	Mirza Photocopy Center 2-Star Market, Wahdat Road, Lahore Tel. 042-5835983, 5839279 Mr. Jamshaid Alam Mirza Proprieter

21	Auto CAD	Engineering Systems Flat No. 1, 2nd Floor Auriga Extension, Main Market Gulberg-II, Lahore Col. Mohsin General Manager
22	Auto CAD	Geo Consult S-6, 38-C, 14th Commercial Street, Phase-II, Ext. D.H.A., Karachi-75500, Pakistan Tel. /Fax. 021-538-2658 Mr. Ayaz Khan Managing Partner
23	Mold Flow Plastic Advisor	Trojans No. 271, Street 55, F 11/4, Islamabad Tel. 051-2291442, Fax. 051-2291443 Mr. Sheikh Wajid Mahmood Marketing Manager
24	USB Memory Device	ICI Computers 47-LG, Hafeez Centre, Gulberg-II, Lahore Tel. 042-5759959, Fax. 042-5762659 Mr. Muhammad Latif Chief Executive