INTRODUCTION

The Korean Intellectual Property Office (KIPO) was designated as a Patent Cooperation Treaty (PCT) International Searching Authority (ISA) and International Preliminary Examining Authority (IPEA) at the General Assembly of the World Intellectual Property Organization (WIPO) in September 1997, and we started our operations as anISA /IPEA on December 1, 1999.

In 2004, we formed a PCT Quality Committee to effectively develop and plan appropriate activities for the quality management system (QMS), and we made annual plans to improve the quality of our activities as a PCT ISA/IPEA.

QUALITY MANAGEMENT SYSTEM

Establishment and maintenance of the QMS

The Authority should show that it has established and is maintaining, or is establishing, a QMS which:

(a) sets out basic requirements regarding resources, administrative procedures, feedback and communication channels required to underpin search and examination (S&E); and

(b) incorporates a quality assurance scheme for monitoring compliance with these basic requirements and with PCT/GL/ISPE.

The PCT Quality Committee consists of the KIPO deputy commissioner, the directors general of our four examination bureaus and six directors from the following major PCT-related teams: the Patent Policy Planning Team (working as a PCT Policy Quality Management (QM) Team), the Examination Review Team (working as a Quality Assurance QM Team), the Information Planning Team (working as an IT Resources QM Team), the International Application Team (working as an Administration and Communication Channel QM Team), the International Cooperation Team (working as an International Feedback QM Team), and the Human Resource Management Team (working as a Human Resources QM Team). The director of the PCT Policy QM Team is the leader of the six QM teams.

The deputy commissioner, who heads the PCT Quality Committee, is responsible for convening and chairing meetings every year to review the tasks of each team. The directors general of the four examination bureaus are responsible for suggesting projects and collecting and reporting on the opinions of examiners. Each of the six teams aims to develop and work on its own projects.

The main role of these meetings is to supervise the overall plans and performance of the relevant teams, to coordinate activities between the teams, and to conduct internal review of all the teams.

The detailed roles of the teams are as follows:

The Patent Policy Planning Team (i.e., the PCT Policy QM Team) establishes policies on PCT-related education and training for examiners, makes examination manuals, revises national PCT-related regulations, and manages the system of PCT specialists.

The Examination Review Team (i.e., the Quality Assurance QM Team) builds a system for reviewing the quality of PCT reports, conducts reviews, elicits feedback, and plans customer satisfaction surveys.

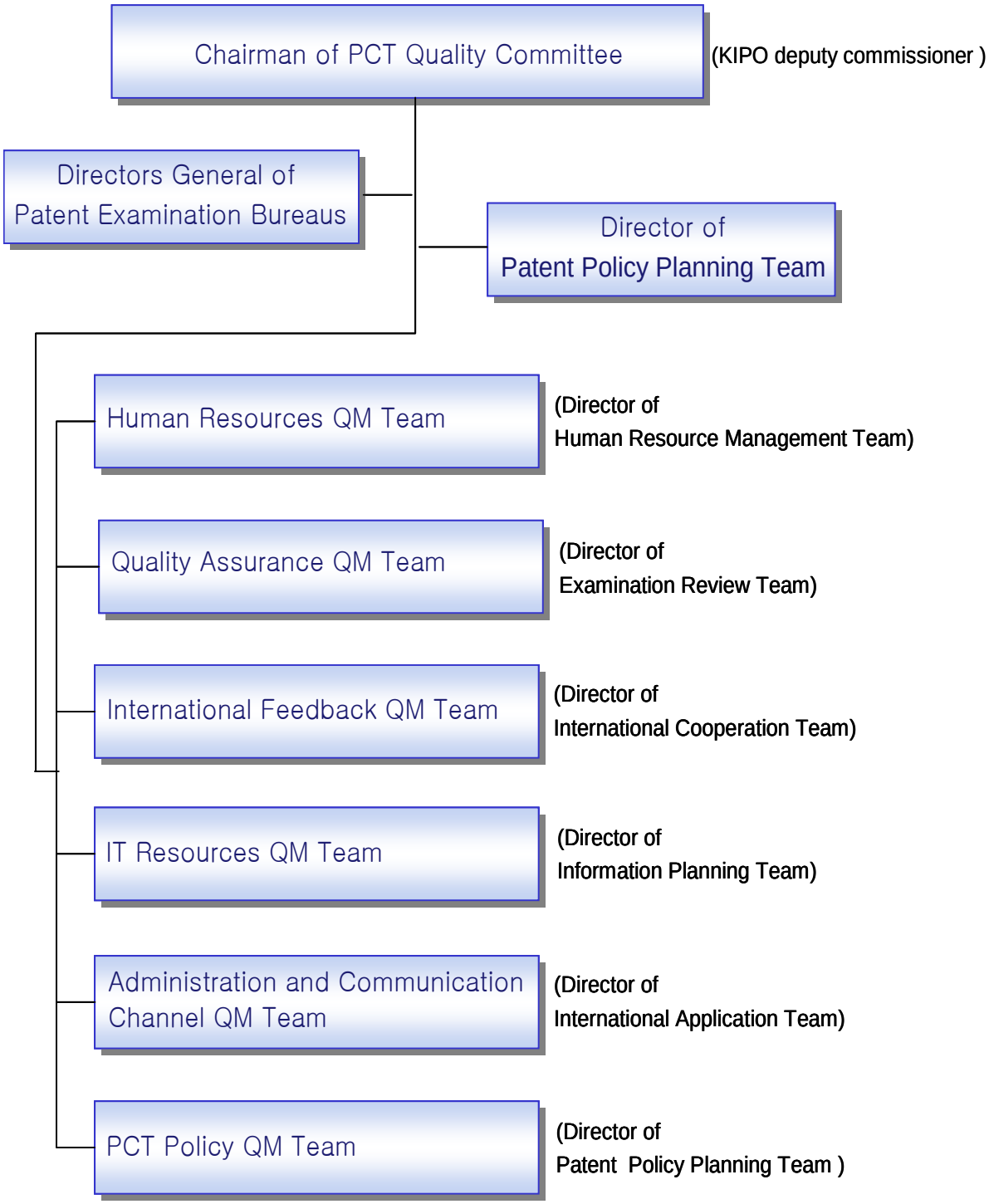
The Information Planning Team (i.e., the IT Resources QM Team) establishes the examination IT infrastructure, such as system development and database management.

The International Application Team (i.e., the Administration and Communication Channel QM Team) trains staff who are in charge of PCT-related public affairs, distributes guidelines for applicants, helps examiners to observe report deadlines, and fosters communication between examiners and applicants.

The International Cooperation Team (i.e., the International Feedback QM Team) monitors PCT-related public inquiries on KIPO's English Web site and fosters effective communication with other intellectual property offices.

The Human Resource Management Team (i.e., the Human Resources QM Team) establishes a human resources infrastructure for PCT examinations and PCT quality management.

Organigram of the PCT Quality Committee



Resources - infrastructure

Provide information about the infrastructure in place which ensures the following:

(a) Adequate quantity of search and examination (S&E) staff, including:

(i) means for matching the quantity of S&E staff to the inflow of work;

As of October 2006, the total number of patent examiners at KIPO was 759. Most examiners are engineering majors; 223 passed the national civil service examination in technology; 343 have a PhD. The current number of examiners reflects the 2005 recruitment of 186 examiners and the 2006 recruitment of another 50 examiners. The numbers were boosted to match the rising number of applications for each technical field. As the average degree of difficulty of a PCT examination is higher than that of a domestic application examination, PCT specialists are usually selected from our pool of senior examiners with good English competence and considerable examination experience

The PCT applications in Korea, which currently cover 360 among the 636 International Patent Classification (IPC) subclasses, are concentrated in the IT and chemistry fields. Whenever PCT applications are highly concentrated in a specific field, we designate additional PCT specialists from among our senior examiners who are in charge of domestic applications for that particular field.

KIPO has 30 examination teams and ninety examination sections; each section has seven to eight examiners, two to four of whom are PCT specialists. As of October 2006, we had 295 PCT specialists in charge of various tasks pertaining to international searches and international preliminary examinations, as well as examination tasks for domestic applications.

(ii) means for ensuring that recruited S&E staff have the necessary technical qualifications;

Besides our efforts to recruit capable examiners, we have intensified the continuing education of examiners in their respective fields of technology through specialized lectures and seminars. In 2006, for instance, we provided four outsourced

educational programs for examiners in the mechanical field and 15 programs for examiners in the chemistry field, especially the fields of biotechnology, nanotechnology, and drug technology. For the electric and electronics field including the IT field, we outsourced the education of examiners to a university, which, in 2006 presented tailored lectures to about 270 examiners in 27 technological fields, such as ubiquitous devices, home-networking and DMB(Digital Multimedia Broadcasting). Furthermore, examiners of the semiconductor field can take outsourced educational programs at four universities.

We also encourage examiners to continually learn state-of-the art knowledge in specialized fields of technology by inviting experts to give presentations on new technology at various seminars. In 2006, we held 103 seminars: that is, 29 in the mechanical field, 32 in the chemistry field, 26 in the electric and electronics field, and 16 in the information and communications field.

(iii) means for ensuring that S&E staff have language skills, or have access to supporting translation arrangements, as necessary to meet Rule 34.

To improve the language skills of examiners and to help examiners with international searches and international preliminary examinations, we have an in-house language program for English and Japanese and examiners also undertake language studies at various universities.

At present, we have four English language advisors who edit and correct the PCT examination reports of our examiners. We also plan to hire one more English advisor in 2007 because of the sharp increase in PCT applications. PCT examiners are obligatorily asked to consult with an English advisor regarding the written opinions and preliminary examination reports of their PCT examinations.

In addition, each examination bureau is using commercial translation software, which enables mutual translation between 11 languages, including English, French, German, and Spanish. The software is used for searches in special language materials and for preparing PCT reports.

(b) Adequate quantity and skills of administrative staff to support S&E.

The International Application Team, which consists of five formality examiners and four assistants, is responsible for tasks related to the international phase, such as international searches or international preliminary examinations.

These examiners all have more than three years experience at KIPO. One of the formality examiners has been engaged in PCT tasks for a long period and acts as a consultant and trainer of new formality examiners. They also constantly endeavor to improve their capacity by undertaking on-the job training and by participating in training programs offered by the International Intellectual Property Training Institute of KIPO.

(c) Provision of appropriate equipment and facilities to support S&E.

To support the search and examination process, we have six kinds of servers for the examination system and another four for the search system. Based on a gigabit Ethernet system, those servers are connected to examiners' personal computers for easy access to the search and examination systems.

Operating under the KIPOnet system, which was developed for our examination work, are our own PCT International Search System and the PCT International Preliminary Examination System, both of which help us fulfill our role as an ISA/IPEA. We also use the Patent and Utility Model Search System, which enables examiners to search for information on domestic and foreign patents. In addition, to enable examiners to search non-patent literature, we have a Non-patent Literature Search System and a Chemical Abstract Search System. Furthermore, we use various commercial search services on the Internet, such as sciencedirectory.com, delphion.com and stn.com.

Six staff members and five outsourced employees support the search and examination system by managing relevant data and by maintaining the international search and examination systems, as well as the hardware, security, and other relevant tasks. To operate the systems effectively and to support system management, IT consultants offer electronic support to each examination bureau.

(d) Provision of the minimum documentation supporting S&E, as referred to in Rule 34.

To provide basic information for the support of searches and examinations, we have documented the patents from 25 countries and organizations in the form of books, CD-ROMs, and databases. Moreover, we have 357 kinds of non-patent literature such as scientific journals, books, Web databases, and electronic journals. Our digital library has 100,000 volumes of relevant books that can be directly accessed. All these materials are available at any time to our examiners.

(e) Provision of up-to-date work manuals. These must include explanations of:

(i) quality criteria and standards;

(ii) descriptions of work procedures;

The formality examiners of the International Application Team worked together to publish the *PCT Formality Examination Manual*. To give examiners a better understanding of the examination process, this manual uses images and charts to describe all the steps of substantive tasks. Furthermore, the manual uses captured images of each step to explain all the processes in detail.

In October 2005, the Patent Examination Policy Team organized a special task force with seven examiners. The next year, in April 2006, the team published the *Manual for PCT International Search Reports and International Preliminary Examination Reports*, which includes report guidelines on topics such as the following: 'Invitation to pay additional fees and, where applicable, protest fees', 'International search reports', 'Declaration of the non-establishment of international search reports', 'Written opinions of an ISA', 'Written opinions of an IPEA', and 'International preliminary reports on patentability'.

The manual presents detailed work processes, contains PCT regulations and rules, and offers guidelines for PCT examinations related to specific processes. In particular, the manual details the mistakes that examiners frequently tend to make in their reports and gives various examples from other international authorities. The manual is used as the main textbook in training courses for PCT examiners.

(iii) instructions ensuring that the work procedures are adhered to.

Each item of the *Manual for PCT International Search Reports and International Preliminary Examination Reports* suggests specific articles and rules of the PCT Regulations, which examiners should consult when checking the criteria of a formality examination. Case studies are also provided for each item to prevent mistakes from occurring in the process of a task.

(f) Provision of an effective training and development program for all staff involved in S&E, including means to ensure the acquisition and maintenance of the necessary experience, skills and familiarity with work manuals.

Recognizing the importance of maintaining a high quality of PCT examinations, we have intensified our training and development program for PCT examiners. The International Intellectual Property Training Institute runs two main PCT-related training courses:

- Training Course for New Examiners, which provides basic training for newly appointed examiners
- PCT Examination Course, for designated and potential PCT examiners.

The PCT Examination Course uses the *Manual for PCT International Search Reports and International Preliminary Examination Reports* to cover the following subjects: an outline of PCT applications, on-the job training for writing PCT international search reports, written opinions, and international preliminary examination reports. In 2006, the institute offered this training course on three occasions, and each course had 40 trainees.

In addition, we provide examination-related training programs by holding seminars on the PCT system. We also established the KIPO Knowledge Management System, which not only enables PCT experts to answer questions related to PCT examinations but also keeps examiners informed of important changes in the PCT system.

(g) Continuously monitoring and identifying resources, other than staff, required to deal with demand and comply with quality standards for S&E.

To continually monitor and identify examination resources, we have undertaken the following activities in relation to the criteria for international searches and international preliminary examinations:

- Besides our on-line system that informs examiners of the due date of a report, we maintain a Self-Monitoring System. Through this system, a designated member of each examination bureau notifies examiners of the due date of PCT reports so that examiners can meet their deadlines.

- For the convenience of examiners, we reorganized the search system of KIPO so that examiners can easily search the non-patent PCT minimum documentation. We connected various search sites of non-patent documents to the KIPO search system and are endeavoring to improve the percentage of citations of non-patent documents by setting aside a budget for a paid search site, such as STN and IEEE.

- We have improved the working format of PCT reports in the on-line PCT examination system.

- We have also set up an on-line system for checking the accuracy of IPC of PCT reports. Because PCT reports are currently processed on a computer system, each item of the reports can be automatically checked for errors.

Administration - procedures

Provide information on those administrative procedures and control mechanisms which ensure the following:

(a) Timeliness of S&E and related functions, to quality standards in accordance with PCT/GL/ISPE.

Although the KIPOnet system automatically manages a variety of schedules for international search reports (ISRs) and international preliminary examination reports

(IPERs), the International Application Team also manages the due dates for each PCT application. This double checking raises the reliability in meeting deadlines. Furthermore, by connecting the observance of deadlines to the work performance of each examiner, we have increased the motivation of examiners to submit reports on time.

To make the process clearer, the International Application Team, which is in charge of dispatching ISRs and IPERs to WIPO and individual applicants, manages due dates for the preparation of such reports and informs examiners of missing reports. Moreover, the examination bureaus themselves notify the examiners of the due date ahead of particular deadlines.

(b) Coping with fluctuations in demand and backlog management.

Faced with a rising number of international searches and international preliminary examinations, the International Application Team analyzed which tasks were the most time-consuming and the results indicate that the slowest task is the process of converting paper documents into a digital form for the KIPOnet system. To solve this problem, some of the relevant tasks are allocated to the on-line administration center following discussion with the Information Management Team. As a result of procedural changes, the overall processing time has been reduced by more than 50%.

As the number of PCT applications increases, the Patent Examination Policy Team encourages the examination teams to designate more examiners as PCT specialists. The number of PCT specialists in 2004 was 130, but, by October 2006, the number had more than doubled to 295. Because PCT applications tend to be concentrated in some specific fields of technology, the examination teams that have a large volume of PCT applications are required to designate all senior examiners as PCT specialists. The PCT specialists put their priority on PCT examination tasks rather than on domestic patent applications. Moreover, because the number of PCT applications has increased by more than 20% a year since 2000, we are continually expanding the number of PCT specialists.

Quality Assurance Procedures

Provide information on procedures which ensure that S&E reports of a quality standard in accordance with PCT/GL/ISPE are issued. In particular, provide information on:

(a) Activities related to verification, validation and monitoring; as carried out in order to assess compliance of S&E work with PCT/GL/ISPE.

Before issuing an ISR or IPER, we use a reporting system in each examination bureau to ensure that our searches and examinations comply with the guidelines. After issuing an ISR or IPER, we conduct a quality review under the authority of the Examination Review Team.

The Examination Review Team has incorporated instructions on PCT examination reviews into the regulations for the quality review of examinations. The team also performed a quality review of ISRs and IPERs sampled in the second half of 2005 to check whether examiners collectively observe the regulations and examination guidelines of the PCT.

Besides the quality review of the Examination Review Team, the PCT examination quality was one of the selected items by which the Korean government evaluated KIPO in 2006. Furthermore, to further reduce the occurrence of errors in PCT examinations, we set new evaluation standards and evaluation targets for the PCT QMS. For this work, we established an ad hoc PCT Report Error Monitoring Group, comprised of 12 members from four different fields of technology (that is, three members from each examination bureau). On two occasions, this group reviewed 387 items pertaining to ISRs, IPERs, and written opinions and, during the review, the group checked the due date of PCT reports, as well as formal and basic mistakes in writing PCT reports, and the appropriateness of the logic and contents in the section titled *Box no. 5: Reasoned statement.* The group subsequently reported the results to the examiners.

(b) Processes for measuring, recording, monitoring and analysing performance of the QMS to assess its conformity with the requirements of Chapter 21 and, if applicable, any other normative reference for the QMS.

At the annual meeting of the PCT Quality Committee, which is chaired by the KIPO Deputy Commissioner, the achievements of the six QMS teams are measured and analyzed. The purpose of the analysis is to determine whether KIPO has met the requirements of recognized quality standards, such as the common quality framework stipulated in chapter 21 of the PCT Guidelines. The committee met once in 2004, twice in 2005, and once in 2006.

(c) Activities related to verifying the effectiveness of actions taken to deal with deficiencies, including:

(i) taken to eliminate, correct or authorise release of deficient S&E work which does not comply with the quality standards;

(ii) those actions taken to eliminate the causes of deficient S&E work and prevent the deficiencies from recurring.

At the annual meeting of the PCT Quality Committee, the committee members review and discuss two basic areas. Firstly, they review the QMS measurements in order to prevent a recurrence of inappropriate international searches or preliminary examinations that fail to meet quality standards; secondly, they review the effectiveness of QMS actions in order to remove the causes of defects in international searches and preliminary examinations.

(d) Activities ensuring the continuous improvement of established processes underpinning the issue of S&E reports.

At the annual meeting of the PCT Quality Committee, which is chaired by the KIPO deputy Commissioner, the committee members discuss and establish substantial and effective plans to improve the quality of PCT examinations. In 2006, the committee formulated the following objectives as a means of improving the existing process:

- to expand the number of PCT specialists in relation to the increase in PCT applications

- to hire an additional English adviser to help PCT examiners more easily write PCT examination reports
- to require newly appointed PCT examiners to undertake on-the job training, beginning in 2007
- to make the prior art search system more user-friendly by considering the opinions of examiners.

Feedback arrangements

Give information on arrangements to:

(a) Provide feedback to staff informing them of results of verification, validation and monitoring carried out in order to assess compliance of S&E work, so that:

(i) deficient S&E work is corrected;

(ii) corrective action, i.e. action necessary to prevent recurrence, is identified and implemented;

We analyze the results of reviews and determine the pattern and rate of examination errors. We then inform each examination bureau of the results to help them identify and implement corrective action.

(iii) best practice is identified, disseminated and adopted.

The Examination Review Team publishes an annual casebook on the results of examination reviews. The team plans to extend the scope of the casebook to include PCT examinations and to use the casebook as educational material for examiners.

Wider distribution and study of the annual casebook should help prevent the same faults from recurring and remove the causes of the faults.

(b) Accommodate prompt feedback from WIPO, designated and elected offices; so that potential systemic issues, e.g. recurring deficiencies of S&E work, as identified by these bodies, are evaluated and addressed.

The International Application Team exchanges e-mail with WIPO and each national patent office and promptly replies to their requests. After receiving an e-mail from another office regarding a potentially recurring error, the team requests fundamental improvement through the QMS system in KIPOnet and checks the corresponding measures.

Communication, Guidance and Responses to Users

Give information on arrangements to:

(a) Provide communication channels for dealing promptly with enquiries and enabling appropriate two-way communication between applicants and examiners.

All examiners must write their name and contact details on their reports so that applicants can contact them directly and easily .

KIPOnet also enables the public to make an on-line check on the identity of the relevant formality examiner and the substantial examiner of a particular application.

In addition, the Examiner Meeting System enables applicants to meet with examiners.

(b) Provide concise and comprehensive guidance and information to users (particularly unrepresented applicants) on the S&E process using the website of your Authority, guidance literature, and other means.

The International Application Team published the *PCT International Application Guide* to introduce international searches and international preliminary examinations, as well as the entire PCT system. The guidebook provides a good understanding of the procedures related to international searches and international preliminary examinations.

(*c*) *Monitor and react to user needs and feedback, including:*

(i) measuring user satisfaction and perception;

Every quarter we survey patent customer satisfaction, and in the third quarter of every year we measure the degree of satisfaction and the level of understanding of PCT users.

(ii) handling complaints;

The International Application Team meets with the Call Center and accepts applicants' complaints by listening to the opinion of specialized PCT counselors. The team also runs a training program for specialized PCT counselors.

In addition, the team offers appropriate guidance to specialized PCT counselors by enabling them to exchange e-mails with the formality examiners. Furthermore, to expedite the processing of documents, the team has set up a time limit for processing the main documents received.

(iii) correcting deficiencies identified by users;

Whenever the International Application Team receives an error notice from users, it requests the agencies that issued the notice to correct the error through the QMS. The team then resends the corrected documents to the applicants or relevant agencies.

(iv) taking corrective action, i.e. action to eliminate the cause of deficiencies, in response to recurring or systematic deficiencies identified by users,

After the International Application Team reviews whether deficiencies identified by users are recurrent, it take s action to enable the QMS to automatically detect the deficiencies so that the same deficiencies may not recur.

(v) taking preventive action, i.e. action to eliminate the cause of potential deficiencies, in response to potential deficiencies or problems identified by users;

The International Application Team takes preventive action to eliminate the cause of potential deficiencies. Before sending documents to relevant agencies, the team double-checks whether essential items are missing in ISRs and written opinions for ISA or IPEA reports made by examiners.

(vi) ensuring needs and legitimate expectations of users are met.

We endeavor to meet the needs and expectations of users by the following means: conducting a patent customer satisfaction survey; visiting various companies and offices to find out the problems that need to be addressed in patent administration; collecting innovative ideas and suggestions for improving our procedures; and meeting with other departments, such as the Call Center, to determine which regulations or systems need to be revised.

INTERNAL REVIEW

Chapter 21.10 specifies that, in addition to a "quality assurance system for checking and ensuring compliance with the requirements set out in its QMS" [c.f. Chapter 21.03, 21.07], "each Authority should establish its own internal review arrangements to determine the extent to which it has established a QMS based on the above model". This model is set out by Chapter 21 as a whole [c.f. Chapter 21.02]. Since a QMS which does not contain this provision for internal review would not meet the requirements of Chapter 21, the report under 21.17 should contain at least the information on the extent to which arrangements for internal review required by 21.10 are in place. These are:

The Authority should show that arrangements are in place to ensure that:

(a) An internal review is carried out to determine:

(i) the extent to which a QMS complying with the model of Chapter 21 has been established;

(ii) the extent to which the Authority complies with the requirements of its QMS;

(iii) the extent to which the Authority complies with PCT/GL/ISPE.

(b) The internal review demonstrates whether or not the requirements of the QMS and PCT/GL/ISPE are being applied consistently and effectively.

(c) The internal review takes place at least once a year.

At the annual meeting of the PCT Quality Committee, which is chaired by the KIPO deputy Commissioner, an internal review is conducted to determine the extent to which we comply with the requirements of our QMS and the extent to which we comply with PCT/GL/ISPE.

The internal review also demonstrates whether or not the requirements of the QMS and PCT/GL/ISPE are being applied consistently and effectively.

This meeting was held once in 2004, twice in 2005, and once in 2006.