

PA Consulting Group:

Quality Assurance of Search and Examination in the European Patent System.

20 May 2001

PA Consulting Group:

Quality Assurance of Search and Examination in the European Patent System.

20 May 2001

© PA Consulting Group 2001

Prepared for: Ministry of Trade and
Industry, Danish Patent and Trademark
Office

PA Consulting Group
Tuborg Boulevard 5
DK-2900 Hellerup
Tel: +45 39 25 50 00
Fax: +45 39 25 51 00
www.paconsulting.com

SUMMARY

The Danish Patent and Trademark Office (DKPTO) has asked us (PA Consulting Group) to undertake a study on the possibilities of designing, implementing and documenting a system for quality assurance of search and substantive examination work, in a way that expectedly would be satisfactory for the European Patent Office (EPO), should EPO decide to subcontract this type of work to DKPTO or other relevant National Patent Offices. We responded positively to this request based on our knowledge and experience about Total Quality Management including ISO 9000 certified or certifiable quality assurance systems.

In conclusion our opinion is that it would be an absolutely possible and sizeable task to establish a documented quality assurance system for search and examination work that would meet the standards and expectations of EPO.

Quality assurance of patent casework already exists, although it is only in few cases documented in such a way that a third party on that basis alone would rely on continuous deliveries of the right quality. Among these few cases are the Patent Offices in Australia and Slovenia that are ISO-9000 certified. A comprehensive quality management system is currently under development in the PCT Partnership between EPO, Sweden and Spain.

Subcontracting based on trust to documented quality assurance systems is widely used in many industries – for tangible as well as intangible products. Hence quality assurance per se is not an issue that should prevent a possible EPO subcontracting of search and/or examination casework.

Further to applying our relevant knowledge and experience to the preparation of the study we have discussed the issue with DKPTO, interviewed selected employees, observed the current processes in DKPTO, visited the Swedish Patent and Registration Office and studied immediate accessible relevant documents and information. This took place in the period of end April to mid May.

After a description of the principles of quality management systems in chapter 2, chapter 3 describes the main elements of the search and examination production processes. Chapter 4 then sketches out possibilities of establishing an objectively reliable quality management system for search and examination and chapter 5 describes some relevant current examples of quality assurance. In chapter 6 we conclude.

TABLE OF CONTENTS

Summary

1. **Introduction**
2. **The Quality Assurance Challenge**
 - 2.1 Quality Management Systems in General
 - 2.2 Formalised Quality Management System
3. **Search and Examination Work per se**
 - 3.1 The Search Process
 - 3.2 The Substantive Examination Process
4. **Quality Management system for search and examination work**
 - 4.1 Possible Elements for Assuring Quality of a Search
 - 4.2 Possible elements for Assuring Quality of a Substantive Examination
 - 4.3 Quality Management System in a Patent Office
 - 4.4 Quality Management System for EPO Subcontracting Arrangement
5. **Existing Models for Quality Assurance of Search and Examination Work and similar types of work**
 - 5.1 Quality Assurance International Searching Authorities
 - 5.2 Quality Assurance in the PCT-Partnership
 - 5.3 Other Examples of Quality Assurance Models within the Patent System
 - 5.4 Quality Assurance for Similar Work in other Industries
6. **Conclusion**

1. INTRODUCTION

The European Patent Office's (EPO) task is to grant European patents based on the patentability requirements under the European Patent Convention. The patentability requirements are novelty, inventive step and industrial applicability.

The patent procedure involves filing of the patent application, examination on filing and formalities examination, search and substantive examination. The grant procedure normally takes about 4 years. The two main elements in the grant procedure are the search and the substantive examination. The purpose of the search is to establish any so-called prior art, which is relevant for determining novelty and inventive step of the invention. The purpose of the substantive examination is to arrive at a conclusion on grant or rejection of an application based on the requirement for grant.

In the case that EPO would subcontract search and/or examination activities to one or more National Patent Offices (NPO's) the EPO has to be assured that the output from subcontractors is of the same quality as the casework carried out by EPO itself.

PA Consulting Group has been asked by the Danish Patent and Trademark Office (DKPTO) to assess the possibility of designing, implementing and documenting a quality management system for search and examination activities that expectedly would satisfy the requirements from EPO. PA responded positively to this request based on our knowledge and experience about Total Quality Management, including ISO 9000 certified or certifiable quality assurance systems. The assessment was then carried out in the period of end April to mid May.

Further to applying our relevant knowledge and experience we conducted the following activities to be able to make this assessment:

- Assessment of the search and substantive examination processes at the DKPTO
- Assessment of the quality system of the Swedish Patent and Registration Office (PRV) and the quality arrangements between the PRV and the EPO in the agreement to harmonise search activities as International Searching Authority in PCT-applications
- Assessment of the current quality assurance activities at the DKPTO
- Discussions with selected DKPTO staff
- Studies of immediately accessible relevant documentation and information

The memo discusses key elements in a possible documented quality assurance of search and substantive examination. It does not go into any discussion of other parts of the grant procedure, e.g. examination of formalities. The discussion is based on a description of the main elements of a search and a substantive examination process in DKPTO. It is throughout the memo assumed that the main elements in these processes are generic and can be applied by any Patent Office with a full service set up.

The content of the memo is the full responsibility of PA Consulting Group.

2. THE QUALITY ASSURANCE CHALLENGE

An important prerequisite for subcontracting on a continuous basis is that the subcontractor can rely on the supplier being able to provide products or services of the right quality. This calls for the supplier to be able to document that he is able to continuously control quality.

As the quality of many products/services can be difficult or impossible to measure when produced and as correction of errors or scrapping of defects are expensive, quality assurance must focus on process control in the organisation.

This has led to the formulation of an internationally recognised set of standards for a quality management system: the ISO-9000 series. Quality assurance, and in particular the ISO-9000 series, has been developed as an aid in contractual relations between customers and suppliers. Many organisations use this as the basis for their contractual agreements with respect to purchasing or outsourcing part of their activities.

This section will briefly describe the content of a quality management system using the ISO-9000 standards as building blocks.

2.1 QUALITY MANAGEMENT SYSTEMS IN GENERAL

Customers require products with characteristics that satisfy their needs and expectations. These needs and expectations are expressed in product requirements. The requirement may be specified contractually by the customer or may be determined by the organisation itself. Because customer needs and expectations and the technology change over time organisations are driven to continually improve their products and processes.

The quality management approach encourage organisations to analyse the requirements, define the processes that contribute to the achievement of a product which is acceptable to the customer, and keep these processes under control. A quality management system can provide the framework for continual improvement to assure the organisation and its customers that it is able to provide products that consistently conform to the requirements.

Quality assurance requires inspections or tests of the end product or service. However, inspection is often expensive and/or difficult. If a defect has been identified, the product usually has to be rejected or corrected. In complex production processes it is often expensive to correct a defect because the product is an output of several processes. Furthermore there may not be an exact yardstick for measuring the quality of the product or service, which makes it difficult or impossible to inspect the quality of the output.

Therefore it is often necessary to focus on methods to prevent defects in the production process, which implies focus on the processes that maximise the probability of good quality.

Figure 1. Model of process-based quality management system

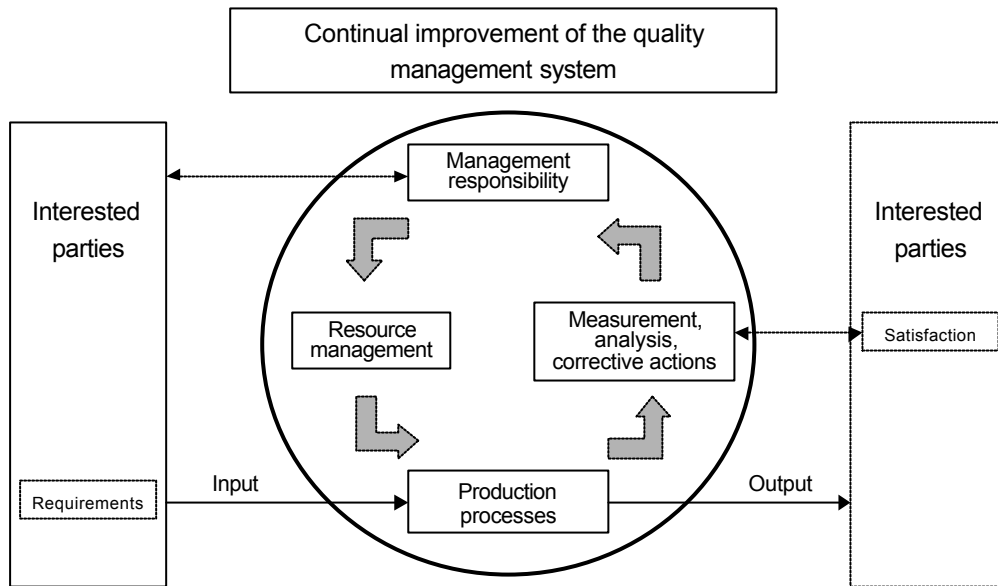


Figure 1 illustrates the process-based quality management system described in the ISO-9000 family of standards.

The process approach requires an organisation to identify, implement, manage and continually improve the effectiveness of the processes that are necessary for the quality management system, and to manage the interactions of these processes in order to achieve the organisation's quality specifications. This includes management responsibilities, which e.g. cover quality policy and specifications, responsibility and authority regarding quality matters, and review of the quality system.

Resource management covers relevant characteristics of human resources and technical tools. The human resource aspect covers e.g. education, experience, technical skills and language skills of the staff. Furthermore it covers training and development programmes e.g. introductory training, mandatory training programme and internal communication. Technical aspect covers e.g. equipment, IT systems and databases.

The quality management system is continuously improved based on the results of the monitoring of output, requirements from the customers and feed back from users of the end product.

It is important that there is an internal quality assurance unit, which is responsible for checking the quality management system in order to assure the customer and/or the organisation that the required processes are in place. External audits can be conducted by independent organisations. Such organisations can provide certification or registration of conformity with requirements.

2.2 FORMALISED QUALITY MANAGEMENT SYSTEM

Quality assurance requires in general that the organisation documents its procedures and organisation which constitute the organisations quality management system.

Documentation enables communication of intent and consistency of action. Documentation provide consistent information, both internally and externally, about the organisation's quality management system.

Each organisation determines the extent of documentation required. It depends among other things on the type of the organisation, the complexity and interaction of processes, the complexity of products, product requirements and to which extent it is necessary to demonstrate fulfilment of quality management system requirements.

Establishing a quality management system requires a clear description of the production processes that the quality management system addresses. Having established this, a model for how the quality of the product or service is assured can be developed, implemented and documented.

The quality system described in section 2.1 is documented in a quality manual. The quality manual documents among other things:

a. Management responsibility

- Quality policy and objectives: the management defines and documents its policy for quality including specific objectives
- Quality responsibility and authority: definition of responsibilities and authorities regarding quality matters (e.g. problem solving, corrective actions)
- Management review of the quality system (periodic review of the effectiveness of the quality system)

b. Resource management

- Selection (education, experience, skills, etc.)
- Training and development (introductory training, continuous training programme, etc.)
- Other human resource systems (appraisal system, good internal communication, etc.)
- Material resources (equipment, databases, hardware, etc.)
- Documentation change control (methods for assuring that all documentation is up-to-date and reviewed regularly)

c. Guidance and self-assessment

- Working procedures (guidelines, work instructions)
- Self-assessment (checklists, internal second opinion check, etc.)

d. Measurement and corrective action

- Quality checks (internal and external sample checks)
- Quality records (records of quality measurements like customer surveys, results of quality checks, analyses of quality trends, records of skills and training of personnel, etc.)
- Handling of complaints (systematic procedure for handling complaints and taking corrective actions)
- Corrective action (identification and follow-up of non-conformities, initiation of corrective actions)

e. Audits

- Internal quality audits (internal review of working methods on compliance with the quality system)
- External quality audits (audit by an external body)

3. SEARCH AND EXAMINATION WORK PER SE

This chapter describes the main elements in the search and examination carried out in DKPTO. In practice the search and examination processes interact in DKPTO. For the purpose of this memo the search and examination processes are described as two separate processes.

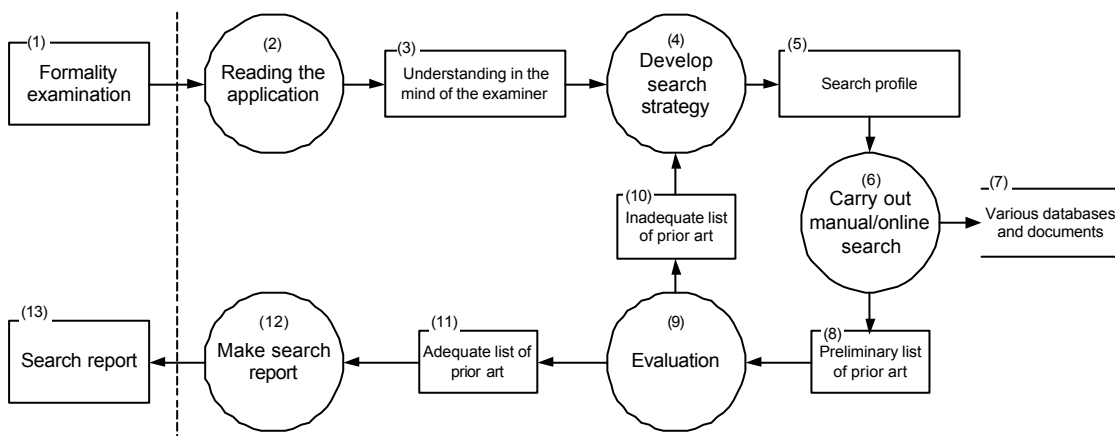
3.1 THE SEARCH PROCESS

The purpose of the search is to establish any so called prior art, which is relevant for determining novelty and inventive step of the invention.

The search is carried out in a search file comprising a comprehensive collection of earlier patent documents from a number of countries (issued patents as well as published patent applications) as well as certain non-patent literature. The search file is accessible manually in-house as paper documents and on-line as electronic documents in external databases.

The search product is a search report, which contains a list of relevant prior art and a brief assessment of its implications on patentability of the invention.

Figure 3. The search process



The main elements of a search process are shown in figure 3. It will be explained in more detail below by reference to the numbers of each element.

1. After filing, the application is checked for various formal requirements before it will proceed to search. The application is given a preliminary IPC-classification in order to assign an examiner to the further casework.
2. The examiner reads the application in order to understand it from a technical point of view.
3. Before the examiner can carry out a search, he must have a clear understanding of the invention from the point of view of patentability. He considers the prior art already mentioned by the applicant in the application and any other prior art he may know from experience. Furthermore, he considers any difference between the invention and the

prior art, and finally he tries to establish the technical effect, which the invention achieves over prior art due to the specific new features of the invention.

4. This basic understanding of the invention allows the examiner to define the subject and the scope of the search and to set a strategy for how he will search.

The examiner decides on the relevant class(es), group(s) and subgroup(s) of the classification systems as well as suitable search terms.

Based on his experience, the examiner considers how he should carry out the search in the most efficient way. He may start by a manual search, or he may start by an on-line search. He will also have to decide, in particular in the case of manual searches, the order in which he will search classes and countries. And he may even decide to restrict his search, if search reports from other authorities are already available. Precedence is given to the units in which the probability of finding relevant documents is highest.

5. The selected classification units and search terms comprise a search profile.
6. The examiner then carries out the search, directing his attention to novelty, inventive step and technological background of all or the significant patent claims.
7. The search is carried out electronically in patent databases (EPOQUE), other databases e.g. journals and/or as a manual search in patent documents.
8. As a result of the search, the examiner ends up with a preliminary list of prior art.
9. The examiner evaluates the result of his search. The primary purpose is to get a preliminary impression of the relevance of the retrieved documents and to limit the number of documents to a manageable size.

The examiner may decide to stop the search if documents have been found that clearly demonstrate lack of novelty of the claimed invention or if he based on judgement believes that the probability of finding further relevant documents is very little. It is very much up to his experience to exercise this discretion.

10. If the examiner believes that further search will result in better prior art, and the list of prior art therefore is inadequate, he reconsiders his search strategy and makes another search based on an improved search profile (4).
11. If the examiner is satisfied with the list of prior art the list is adequate.
12. If the list is adequate, the examiner goes on to draft the search report.
13. The search report contains a shortlist of the relevant prior art rated according to pertinence. Category X is prior art, which is considered damaging to novelty and inventive step of one or more claims. Category Y is prior art which taken in combination with other prior art is damaging to inventive step. Category A is prior art, which will not damage novelty or inventive step, but shows the state of the art closest to the invention.

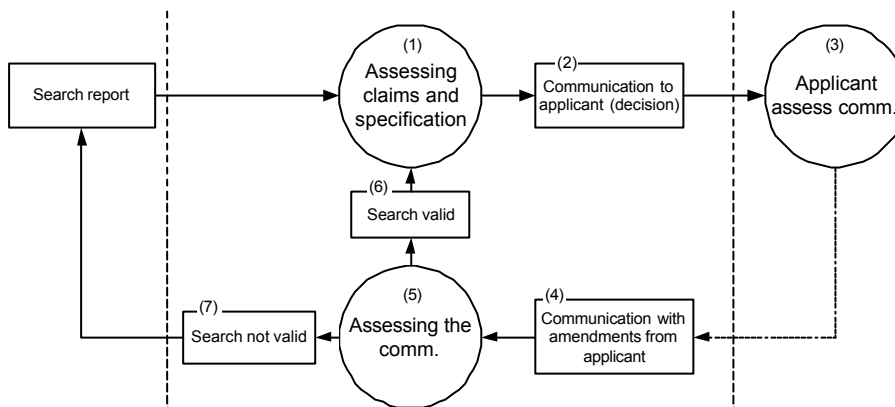
The search report also states, with reference to specific claims of the application, the examiner's reasons for citing a particular piece of prior art. Furthermore, the search report specifies the main features of the search profile (classes, countries whose documentation has been searched, databases etc).

3.2 THE SUBSTANTIVE EXAMINATION PROCESS

The purpose of the substantive examination is to arrive at a conclusion on granting or rejection of the application. During this process the claims and the patent specification may be amended (within certain limits) in order to meet the requirements for granting of the patent.

The examination product is one or more communications to the applicant, concluding in a final decision (which can be appealed).

Figure 4. The examination process



The main elements of the examination procedure are shown in figure 4 and will be explained below with reference to the numbers in the figure.

1. The examiner starts by scrutinizing the application and the prior art in order to arrive at as well founded opinion on the patentability of the invention defined in the claims. This includes issues like novelty, inventive step, unity of invention, support for the claimed scope, clarity etc.

Furthermore the patent specification is checked for a number of requirements like explanation of the invention (relevant prior art and the technical effect over prior art), support for the scope of the claims, clarity, mentioning of all independent claims, etc.

2. Based on the assessment, the examiner will draft a communication to the applicant. In rare cases this will be an acceptance for grant. In most cases, however, there are one or more objections, which will then be listed in the communication, usually together with some guidance as how to amend the application properly. The objections may range from more serious issues like lack of novelty or inventive step to more simple issues like a need for clarification. All objections must be reasoned and if necessary refer to specific articles or rules.

The first communication may, as mentioned, in rare cases be an acceptance for grant. A decision of refusal of the application may not be issued until the applicant has been given the opportunity to present his observations.

3. The applicant must within a certain time limit amend the application or at least argue against the objections of the examiner. He will therefore carefully assess the communication from the examiner.
4. The applicant forwards a communication to the examiner containing amendments and/or arguments.
5. The examiner assesses the communication from the applicant in order to make sure that the search is still covering the invention.
6. If the search is still valid, the examiner assesses the claims and/or the specification again and decides whether the amendments are allowable and whether his earlier objections are complied with.

The examiner then drafts a second communication. It is a target of DKPTO that the second (or in rare circumstances the third) communication must be a final decision.

7. In exceptional cases, even allowable amendments may change the focus of the invention to such a degree that the examiner finds it necessary to make a complementary search.

4. QUALITY MANAGEMENT SYSTEM FOR SEARCH AND EXAMINATION WORK

This chapter describes elements that can be applied in the European Patent system in order to assure the quality of search and substantive examination in an EPO subcontracting arrangement. The description is based on the general description of a quality management system in chapter 2.

Sections 4.1 and 4.2 cover possible elements of quality assurance for an individual search and examination process. Sections 4.3 and 4.4 cover possible management responsibility, measurement, corrective action and audit for the quality management system for an NPO and for an EPO subcontracting arrangement.

4.1 POSSIBLE ELEMENTS FOR ASSURING QUALITY OF A SEARCH

The workflow of a search is described in chapter 3. In the following the numbers refer to figure 3 in section 3.1.

2 & 3 The understanding of the application is a critical step for the quality of the search. It depends mainly on the intellectual capability and skills of the examiner. Formalisation of requirements for selection, training and development of each examiner can ensure the intellectual capability and skills. The requirements cover:

- a) Formalisation of education requirements
- b) Formalisation of language skills
- c) Formalisation of training programmes

The requirements to the education of the examiner can include a list of acceptable educational backgrounds, e.g. in this case acceptable high level technical backgrounds. The minimum language skills of an examiner should also be specified. The minimum language skills will among other things depend on the geographical origin of the applications the NPO will handle.

Each examiner should enter into a mandatory training programme. The training programme should partly be general partly specific for divisions of examiners working with the same IPC-classification. E.g. a training matrix could be developed, which ensures that all examiners are going through mandatory individual training programmes. A training matrix is common for comparable work in other industries.

Furthermore the quality depends on the experience of the examiner. In order to support each examiner, a forum for wider diffusion of experience within the patent office – or within a group of patent offices – could be put in place. An examiner could e.g. consult the forum to discuss complex cases for second opinions.

4 & 5 The quality of a search strategy mainly depends on the experience of the examiner (see 2 & 3). A guideline for setting up a search strategy can be put in place. The guideline could cover best practice models for search strategies including specifications of databases to use etc.

- 6 - 8 Another critical element for the quality of the search is the available patent documents and non-patent literature. Access to a minimum amount of documents should therefore be required. The minimum requirement depends on the classifications and countries the search should cover.

There should be a checklist for the minimum document requirement. Furthermore a document control system should be applied in the NPO, which ensures that the databases are fully updated and correct.

Guidelines for use of non-patent should also be made, e.g. use of the Internet to ensure that the information is correct and safe to use.

The documentation requirements can imply the use of specific hard- and/or software, which have to be accessible, e.g. access to the Internet. Specification for available soft- and/or hardware should be specified. E.g. access to EPOQUE is a vital requirement in carrying out a search within the European Patent system.

- 9 - 11 Evaluation and possible decision to amend the search depends mainly on the skills and experience of the examiner, which stresses the importance of the requirements for the examiner (see above).
- 12&13 Drafting a search report and rating the relevant prior art according to pertinence is also based on the examiner's skills. However the main elements included in the search should be traceable. This implies that the search report should cover consulted databases, search profile and time spent on the search.

4.2 POSSIBLE ELEMENTS FOR ASSURING QUALITY OF A SUBSTANTIVE EXAMINATION

The workflow of a substantive examination is described in section 3.2. In general the substantive examination process calls for the examiner to understand the patent legislation, to have minimum language skills and to have communication skills.

These skills can be ensured by the same main measures to the education, language skills and training of the examiner described in section 4.1 above. The actual content of these measures should naturally be directed to develop and maintain the specific skills required for carrying out a substantive examination.

In the following the numbers refer to figure 4 in section 3.2.

- 1&2 Assessing the claims and specifications is a critical step in the substantive examination, which mainly depends on the skills of the examiner. A checklist for this step could be drafted in order to ensure that all the issues are covered. In complex cases second opinions should be available. Furthermore, documentation change control is relevant. It has to be ensured that the examiners at all time are using the most recent version of the patent legislation and guidelines.
- 3 The interface with the applicant should to a wide extent be formalised by e.g. drafting standard letters and phrases. This will ensure a harmonisation of the communication.

4.3 QUALITY MANAGEMENT SYSTEM IN A PATENT OFFICE

The management should define the quality policy and objectives. Specific objectives could be documented, e.g. to carry out the search and examinations within the given time limits and with high technical insight.

A quality management system for controlling the quality assurance processes in the NPO should be established in order to ensure that the system is effective. This requires documentation of the processes and procedures to assure that information concerning quality issues is managed in an appropriate manner, e.g. all the examiners have to be informed about changes in procedures etc

The management of the NPO should perform internal audits on a regular basis to ensure that the system is well functioning and continuously improved.

The system has to be continuously monitored. The monitoring can e.g. be based on customer satisfaction surveys, sample checks or possible statistical checks.

There should be a system that handles corrective measures to ensure continuous improvement and adaptation of new internal/external demands. An element in improvement is a clear procedure for handling complaints and corrective actions if necessary.

In order to take corrective measures the result of the monitoring have to be recorded and analysed.

4.4 QUALITY MANAGEMENT SYSTEM FOR EPO SUBCONTRACTING ARRANGEMENT

The quality management system of each NPO participating in the EPO subcontracting agreement should be continuously monitored and adjusted accordingly.

For this purpose an international committee could be established to manage quality issues such as

- Monitoring the quality of the subcontracted casework based on defined quality standards
- Continuous development of common measures described in sections 4.1 and 4.2 to be implemented in the involved offices.

EPO and the NPO's in subcontracting arrangement should be members in the committee. Every NPO member should participate actively and have the responsibility to implement any changes in their office.

An independent audit body should continuously audit the quality systems in each NPO. It could either be done by an independent unit of the EPO or by a third party inspection or certification organisation. In case of the first option the independence of this EPO-unit should correspond to the independence of the Boards of Appeal. The second option is to involve a third party to check and (if this would be part of the arrangement) issue a certificate of conformance to requirements of the quality system of the NPO's involved.

The auditor is able to deprive any NPO of the certification of their quality system. Consequently, EPO can decide to terminate the co-operation with the NPO.

5. EXISTING MODELS FOR QUALITY ASSURANCE OF SEARCH AND EXAMINATION WORK AND SIMILAR TYPES OF WORK

This chapter describes some relevant existing practice of quality assurance of search. The description covers quality assurance within the PCT framework and elements of quality assurance for the PCT-partnership between EPO, The Swedish Patent and Registration Office and the Spanish Patent and Trademark Office.

Further quality assurance in a few other patent offices is described and quality assurance for similar types of work in other industries is mentioned.

5.1 QUALITY ASSURANCE INTERNATIONAL SEARCHING AUTHORITIES

Rule 36 of the Patent Cooperation Treaty (PCT) states the minimum requirements to become a designated International Searching Authority. These requirements should be considered an element of quality assurance of the International Searching Authority's organisation. The minimum requirements are:

1. The national office or intergovernmental organisation must have at least 100 full-time employees with sufficient technical qualifications to carry out searches;
2. The office or organisation must have in its possession, or have access to, at least the minimum documentation, properly arranged for search purposes, on paper, in micro-form or stored on electronic media;
3. The office or organisation must have a staff which is capable of searching the required technical fields and which has the language skills to understand at least the languages in which the minimum documentation is written or is translated.

The organisation is required to have at least 100 full-time employees, which in the PCT-framework is regarded as being the minimum number of employees required to build and maintain competencies to carry out searches in all classes of the classification.

Further a minimum documentation is defined that ensures that the searches cover all relevant documentation required to carry out a quality search.

The staff is required to have appropriate language skills in order to understand the documentation that is necessary to perform a search. Finally the technical skills of the examiner have to be appropriate. The appropriate technical knowledge is not defined in more detail, as PA understands it. The required language skills of an International Searching Authority are specified in the agreement with the International Bureau of the World Intellectual Property Organization under PCT and each International Searching Authority, see PCT Gazette No. 56/1997.

5.2 QUALITY ASSURANCE IN THE PCT-PARTNERSHIP

EPO, the Spanish Patent and Trademark Office and the Swedish Patent and Registration Office have in 1999 established a partnership for carrying out PCT-searches.

The purpose of the partnership is to improve the way they carry out the tasks incumbent on them as International Searching Authorities. This includes that the offices co-operate on matters concerning the implementation of the PCT in particular co-ordination as far as possible of their positions concerning matters to be dealt with under the PCT.

The three offices have established a Permanent Committee on Harmonisation of Search Activities, which to a large extent handles quality assurance issues. The committee has established five working groups that meet on a regular basis:

1. Search practice and procedure
2. Search tools and methods
3. Training and exchange of examiners
4. Quality measures and assurance; customer surveys
5. IS (Information System) co-ordination and implementation

The first working group identifies valid databases on the Internet that are safe to use as reference. Furthermore the working group covers development of methods for complicated searches, e.g. search for DNA sequences.

The second working group develops a standard search including hints and tips otherwise attained from experience or interaction with colleagues.

The first two working groups, hence, concern methods to reduce the uncertainty in a search.

The third working group for qualification and training of examiners is developing common guidelines for recruitment and training based on the practice of the three offices.

In Sweden the minimum requirement is a technical degree at university level. The applicant to a job as examiner must be able to understand and actively use Swedish, English and German and/or French. The applicant will receive language training in either German or French if necessary.

The new employees will receive an introduction course. Hereafter an assigned experienced examiner trains the new examiner. After about one year it is decided whether the examiner is qualified to carry out searches without direct supervision. The tutoring arrangement will continue until the examiner is considered ready to work on his own.

Furthermore, the working group covers arrangements allowing direct communication between examiners. The working group develops a framework for exchange of examiners on a regular basis and ad hoc search divisions among the three offices. The aim is mutual upgrading of examiners by exchanging hands-on experience within technical fields. The ad hoc search divisions typically exchange tips and methods for complex searches.

The working group for quality monitoring performs tests on the quality of searches. EPO makes statistical tests on searches based on number of citations in the search reports.

The data covers EPO and PCT searches. The tests are also carried out on PCT searches in the partnership on selected classifications.

EPO carries out surveys based on 100 random selected patent applications. The survey covers search as well as examination.

Furthermore any complaints on PCT-searches carried out within the partnership are reported to the group.

The last working group is envisaged to manage harmonisation and implementation of the information system. The work is ongoing depending on the demand from the other working group.

5.3 OTHER EXAMPLES OF QUALITY ASSURANCE MODELS WITHIN THE PATENT SYSTEM

Every Patent Office has implemented quality assurance elements. However the quality assurance element is not necessarily documented. The Australian and Slovenian Patent Offices are examples of patent organisations that have a fully documented quality management system. The quality management systems are even ISO-9000 certified.

DKPTO has entered a bilateral subcontracting arrangement with Turkey and Iceland for search and examination. There is no explicit model for quality assurance of the casework carried out by DKPTO on the behalf of Turkey and Iceland. However the arrangement with Turkey leaves it to the applicants to choose a preferred Patent Office to carry out the search from a list of several patent offices within the agreement. It must be assumed that quality is one element in the decision of choosing a patent office to carry out a search.

DKPTO has established a Quality Group for internal quality assurance. The purpose is to ensure that the casework are carried out in respect to prevailing legislation, to ensure that casework are harmonised across sections in DKPTO and finally to ensure that DKPTO is customer oriented.

The Quality Group's tasks are:

- Information on changes in guidelines/patent legislation
- Maintenance of the patent guidelines
- Holding relevant team meetings
- Improving efficiency and quality of novelty searches
- Participation in upgrading of examiners
- Acting as consultants in complex applications
- Carrying out quality checks

The Quality Group informs about changes in guidelines. The group updates the patent and user manuals on a continuous basis.

The group carries out ad hoc team meetings of relevant quality issues and participates in revision of guidelines.

New examiners have a 2 months mandatory training programme. After that they enter a tutoring programme, where they are supervised by an experienced examiner. After a period of 1 year the tutor and the quality group review the performance of the examiner. If they find the examiner competent he will be certified to grant patents. Thus the Quality Group ensures that the competence level at least fulfils a minimum requirement in all sections.

Finally the Quality Group monitors the quality level by carrying out quality checks. The group picks a random sample of search reports carried out by both DKPTO and EPO and compares the cited prior art documents.

5.4 QUALITY ASSURANCE FOR SIMILAR WORK IN OTHER INDUSTRIES

In almost all economic sectors the use of quality management systems and certification by independent organisations are widespread. Historically seen this trend has started in industry, but in the last decade the use has spread to the service industry, non-profit and government organisations.

Most relevant for the Quality Assurance of Search and Examination work the ISO-9000 series for internal quality management and for certification purposes is applied in knowledge based organisations in sectors like:

- Consultancy
- Law/accountancy firms
- Information technology
- Engineering services
- Architecture
- Education
- healthcare

In all these sectors the ISO-9000 standards have been successfully applied; the standards are regarded as very applicable. General experience is that special considerations have been given to education and experience of the knowledge workers, but also to relatively simple aspects like the use of checklists, the use of up-to-date databases and the following of standard procedures.

6. CONCLUSION

In conclusion our opinion is that it would be an absolutely possible and sizeable task to establish a documented quality assurance system for search and examination work that would meet the standards and expectations of EPO.

Quality assurance of patent casework already exists, although it is only in few cases documented in such a way that a third party on that basis alone would rely on continuous deliveries of the right quality. Among these few cases are the Patent Offices in Australia and Slovenia that are ISO-9000 certified. A comprehensive quality management system is currently under development in the PCT Partnership between EPO, Sweden and Spain.

Subcontracting based on trust to documented quality assurance systems is widely used in many industries – for tangible as well as intangible products. Hence quality assurance per se is not an issue that should prevent a possible EPO subcontracting of search and/or examination casework.

However there may be types of applications where a specific NPO does not have the volume to obtain and maintain sufficient qualifications to carry out search and/or examination. Subcontracting agreements for search and/or examination work should therefore if necessary be specific to classes or groups of the patent classification system.