# ANNEX I

## TERMINOLOGY

# TERMINOLOGY

Annex 1.2

## 1. INTRODUCTION

Some of the terms used in the ETSI Interim IPR Policy and in this Handbook, are either printed in capital letters, or have the initial letter thereof capitalised. Such terms are given a defined meaning in the ETSI Interim IPR Policy. Although, in many cases, it is possible to gain an approximate understanding of the meaning intended in the ETSI Interim IPR Policy, by giving such terms their normal meaning in the English language, this is not always the case.

If the ETSI Interim IPR Policy is read without reference to the defined terms, the reader should realise that he is deriving an approximate meaning which, in some cases, may be misleading.

## 2. "AFFILIATE"

Companies may own and control other companies, or be owned, or controlled, by other companies. The ownership chains which can exist within large corporate groups can be extremely complex. The ETSI Interim IPR Policy is intended to bind all companies linked to a Member of ETSI by a chain of control. Companies linked in this manner are referred to as AFFILIATEs. A parent company in the USA is thus an AFFILIATE of its European subsidiary. However, the ETSI Interim IPR Policy is primarily concerned with the licensing of IPRs within ETSI's sphere of influence and not the USA, so this relationship has no implications with regard to US patents or other US IPRs. It does, however, imply that licences be available in respect of European patents and European IPRs which are owned by, for example, the US parent.

There are three situations which can result in a company being regarded as an AFFILIATE of a Member of ETSI, namely where:

- the AFFILIATE company owns a Member of ETSI, i.e. the Member of ETSI is a subsidiary of the AFFILIATE;

- the AFFILIATE company is owned by a Member of ETSI, i.e. the AFFILIATE is a subsidiary of the Member of ETSI; and

- the AFFILIATE company and a Member of ETSI are both owned by the same company, i.e. both AFFILIATE and the Member of ETSI are subsidiaries of the same (holding) company.

Although the definition of AFFILIATEs has been explained with reference to companies, it is equally applicable to other legal entities, for example a partnership might own a company, in which case partnership and company would be AFFILIATEs.

It is not only ownership which can establish AFFILIATE status, but also the

ability to control another entity, e.g. by the ability to appoint directors to a companies board. Nor is it necessary for a company to own 100% of another for AFFILIATE status to be established, an ownership stake of more than 50% is sufficient. Furthermore, the ownership, or control, does not have to be direct, an indirect relationship can also establish AFFILIATE status.

Many telecommunications operators are, or have until recently been, owned by governments. A government may own many diverse organizations, and if special provision is not made for the case in which a Member of ETSI is owned by a government, all such organizations would be regarded as AFFILIATEs of that Member of ETSI. For example, if a PTT, or telecommunications authority, is government owned, a national airline, or health authority, might be regarded as an AFFILIATE of the PTT. For this reason, an entity will not be regarded as an AFFILIATE of a Member of ETSI merely because that entity and the Member of ETSI are both owned, or controlled, by the same state, or an entity which operates under "public law".

To illustrate how the definition of AFFILIATE works, consider seven companies, 'A', 'B', 'C', 'D', 'E', 'F' and 'G'. 'A' is a holding company which owns 100% of 'B', 70% of 'C' and 10% of 'D'; 'E' is a 100% owned subsidiary of 'C' and 'C' owns 51% of 'F'; 'B' owns 49% of 'G' and 'D' owns 51% of 'G'. 'B' is obviously an AFFILIATE of 'A,' and vice versa. Because 'A' owns more than 50% of 'C', 'A' and 'C' are also AFFILIATEs. 'D' however, is not an AFFILIATE of 'A', but is an AFFILIATE of 'G'. 'E' is of course a wholly owned subsidiary of 'C' and therefore an AFFILIATE of 'C' and indirectly an AFFILIATE of 'A' and therefore 'B'. 'A' owns 49% of 'G' via 'B' and 5.1% of 'G' via 'D', making a total holding of 54.1%, and therefore 'G' is an AFFILIATE of 'A'. Of the seven companies six are AFFILIATEs of each other and the seventh 'D' is only an AFFILIATE of 'G'.

In conclusion two entities are AFFILIATEs of each other if:

- they are under common ownership, or control; or
- one company owns, or controls the other; and
- common ownership, or control is not established via a public entity such as a government.

## 3. "COMMITTEE"

Development of the technical specifications for ETSI STANDARDs is carried out by a variety of committees and working groups which operate under the auspices of ETSI. The members of these bodies are drawn from the membership of ETSI. The term COMMITTEE is intended to include all such bodies, or working parties, and in particular includes:

- Technical Committees (TCs);

- Sub-Technical Committees (STCs);
- Project teams; and
- Rapporteur groups.

## 4. "CONFIDENTIAL INFORMATION"

Employees of Members of ETSI may, in their capacity as COMMITTEE members receive certain information in confidence - see Clause 10 of the ETSI IPR Policy.

In general, information disclosed to ETSI COMMITTEEs, and the proceedings of those COMMITTEEs, is regarded as non-confidential. However, if documentary information is first disclosed to the Chairman of an ETSI COMMITTEE, and he agrees that the information should be treated as confidential, then that information will be regarded as confidential, provided that:

- the information is in written, or other tangible form, for example, on a floppy disc; and
- identified as confidential in writing.

Information, which is orally disclosed, or is not clearly indicated as confidential, will not be regarded as confidential.

If a member of a Technical Committee wishes to disclose information, to that Committee, which is confidential, he must first discuss the matter with the Chairman of the Technical Committee and secure his agreement that the information be treated as confidential. The information can then be disclosed, to the members of that Committee, in confidence, provided the information is in a tangible form and clearly marked as confidential. Any member of the Committee, who does not wish to receive Confidential Information, is then in a position to avoid receiving it.

## 5. "EQUIPMENT"

This term is used to describe hardware which conforms to an ETSI STANDARD. It includes both systems and devices.

To qualify as EQUIPMENT, a system, or device, must **fully** conform with a STANDARD. Where a system includes software, or components, which are specified in a STANDARD, these must also comply with the STANDARD, if the system is to fall within the definition. If the specification of a system, or device, conflicts with a STANDARD specification in any respect, it cannot be regarded as falling within the definition of EQUIPMENT.

## 6. "METHODS"

ETSI STANDARDs, of course, can apply not only to hardware, but to methods, processes and operations as well. The term METHODS is used to describe a method, or operation, which fully conforms to a STANDARD. The term applies to both methods of operating telecommunications equipment, and methods of manufacturing equipment, or devices. If the specification of a method, or process, conflicts with a STANDARD specification in any respect, it cannot be regarded as falling within the definition of METHODS.

The terms METHODS and EQUIPMENT are invariably used together in the ETSI Interim IPR Policy. Between them the two terms are intended to apply to anything, whether hardware, software, operation, or method of manufacture which conforms to an ETSI STANDARD.

## 7. "ESSENTIAL"

The definition of ESSENTIAL is perhaps the most important of all the definitions in the ETSI Interim IPR Policy. Its meaning determines whether, or not, a Member of ETSI is obliged to disclose the existence of a particular IPR. Although the definition is expressed in relative terms, its precise meaning will emerge through custom and practice. It is, however, possible to set bounds on what will, or will not, fall within the meaning of ESSENTIAL IPR. Expressed at its simplest level, an IPR is ESSENTIAL to a STANDARD if a licence is required to avoid STANDARD-compliant EQUIPMENT, or METHODS, infringing that IPR. The definition goes further than this, however, and specifies certain factors which can, and cannot, be taken into account in determining whether an IPR is ESSENTIAL. It also specifies the date which is relevant to the determination of ESSENTIALITY.

The requirement that an IPR is ESSENTIAL is neither so narrow as to be limited only to those IPRs which are, on a strict legal interpretation, unavoidably infringed by EQUIPMENT (which conforms to a STANDARD) unless licensed, nor is the requirement so broad as to embrace all IPRs which are relevant to a STANDARD.

For an IPR to be ESSENTIAL with regard to a particular STANDARD, it must be impossible to avoid infringement of that IPR (unless licensed) "on technical grounds but not commercial grounds". The determination of whether an IPR is ESSENTIAL to a STANDARD must take into account "normal technical practice and the state of the art generally available" when a STANDARD is made. An IPR is not to be regarded as ESSENTIAL on merely commercial grounds. In other words, an IPR is not ESSENTIAL just because avoiding infringement of that IPR increases the costs of making STANDARD-compliant EQUIPMENT, or using STANDARD-compliant METHODs.

In considering whether an IPR is ESSENTIAL, a distinction should be drawn

between IPRs, such as patents, or utility models, which confer an absolute monopoly and IPRs such as copyrights, mask works and design rights, which require an act of copying for infringement to occur. Copyrights and similar IPRs can, because infringement only occurs where there is copying, only be ESSENTIAL if the work protected by the IPR has been deliberately incorporated into the text of a STANDARD.

Infringement of an IPR only occurs if the infringer performs certain acts in relation to the work protected by the IPR. These acts depend on the IPR at issue. However, for an IPR to be ESSENTIAL, it must be capable of blocking, in the absence of a licence, at least one of the following acts:

- making EQUIPMENT;
- selling EQUIPMENT;
- leasing EQUIPMENT;
- disposing of EQUIPMENT;
- repairing EQUIPMENT;
- using EQUIPMENT;
- operating EQUIPMENT;
- using METHODs; and
- operating METHODS.

The foregoing list, which is based on the acts which result in patent infringement, appears at first sight, to be comprehensive, but it does not include, for example, copying, or translating, which are acts restricted by copyrights.

The date at which the judgement on whether an IPR is ESSENTIAL, or not, must be made is the date of standardization. This is of some significance, since the factors affecting the determination of ESSENTIALITY, such as the state of the art and normal technical practice will vary with time.

### 7.1 Examples

The following examples illustrate the manner in which Essentiality of a patent may be determined:

(i). A STANDARD can be implemented by two known solutions, 'A' and 'B'. A patent exists which covers solution 'B'. Use of solution 'A' entails a price penalty of 15%. In this case the patent is not ESSENTIAL, even if the only commercially viable solution is 'B'.

(ii). The only way of avoiding infringement of a patent and complying with a STANDARD is to employ very old thermionic valve technology. In this case the patent is ESSENTIAL, because it is not normal technical practice to use thermionic valves (in the application in question).

(iii). A STANDARD can be implemented by using a known, but patented, solution 'A'. An experimental and untested solution 'B' exists, which has not been patented and is not subject to any other IPRs. The patent covering solution 'A' is ESSENTIAL, because solution 'B' does not form part of the state of the art generally available. Even if solution 'B' is shown to be a technically practical solution, within 6 months of the date of adoption of the STANDARD, the patent is ESSENTIAL provided that, at the date of standardization, solution 'B' was an unproven solution.

In some cases, where there are several technical solutions which can be used to achieve compliance with a given STANDARD, it may be that all available solutions are covered by IPRs. When such a case occurs, all the IPRs are regarded as ESSENTIAL, even though infringement of an individual IPR can be avoided whilst still complying with the STANDARD. For example consider a STANDARD which can be implemented by the use of solutions 'A', 'B', 'C' and 'D'. Solutions 'A' and 'B' are covered by patent 'X', solution 'C' is covered by patent 'Y' and solution 'D' is covered by patent 'Z'. In this case patents 'X', 'Y' and 'Z' are all ESSENTIAL.

## 7.2 Summary

- An ESSENTIAL IPR is an IPR which has the potential to block a STANDARD;
- ESSENTIALITY must be judged on technical grounds alone;
- In judging ESSENTIALITY commercial grounds must not be taken into account;
- The state of the art generally available and normal technical practice can be taken into account in judging ESSENTIALITY;
- Technical issues must be determined by the state of technical progress at the date of standardization;
- A STANDARD will be blocked, and an IPR will be ESSENTIAL, if certain acts can be restricted in relation to EQUIPMENT, or METHODS, by the IPR; and
- Where a STANDARD is potentially blocked by the combined effect of several IPRs, all those IPRs are ESSENTIAL.

## 8. "IPR"

IPRs, or intellectual property rights, are legally enforceable rights which give their owner a monopoly in the performance of certain acts. They are intended to protect the intellectual effort invested in the creation of inventions, works of literature, designs and trade reputation.

IPRs include: patents, copyright, trade marks, registered designs, mask works and design rights. For the purposes of the ETSI Interim IPR Policy, IPRs are defined as those IPRs which are conferred by statute law i.e. are codified in a legal system.

Trade marks and rights in trading reputation are excluded from the definition.

Many would argue that trade secrets and confidential information could never be regarded as IPRs, even so, the definition of IPR in the ETSI Interim IPR Policy makes it absolutely clear that these are excluded from the definition of the term IPR. Applications for patents, and other IPRs, are also regarded as an IPR within the definition, even if an IPR has not actually been granted.

To sum up:

- For the purposes of the ETSI Interim IPR Policy, the following are IPRs:
  - patents and applications therefor;
  - utility models, petty patents and applications therefor;
  - registered designs and applications therefor;
  - artistic, literary and other copyrights, including copyright in computer programs;
  - design rights (UK);
  - mask works;
- For the purposes of the ETSI Interim IPR Policy, the following are not IPRs:
  - trade marks, registered or unregistered;
  - rights relating to get-up, i.e. the appearance or packaging of an article in a way designed to associate that article with a particular trader;
  - rights arising out of the law of unfair competition;

- trade secrets; and
- confidential information.

## 9. "MANUFACTURE"

This term means the act of producing EQUIPMENT, i.e. producing any system, or device, fully conforming to a STANDARD.

In addition, the licensing provisions of the ETSI Interim IPR Policy state that MANUFACTURE includes the right to make, or have made anywhere, customised components and sub-systems to the licensee's own design for use in MANUFACTURE.

## 10. "MEMBER"

ETSI has two classes of member, namely, member and associate member. There are differences in the rights acquired by each class of member, but for the purposes of the ETSI Interim IPR Policy both classes of member have the same rights and obligations and are referred to as MEMBERs.

## 11. "POLICY"

This term is used to describe the Interim IPR Policy adopted by ETSI at the 21st General Assembly.

## 12. "STANDARD"

All of the technical specifications which ETSI produces, adopts and makes available to all MEMBERs and which relate to, and define the required characteristics of, a service, or a product, or a method of operation, or use of a product, are covered by this definition and are each referred to as a STANDARD, i.e. an ETS, an I-ETS, a NET, or a CTR (which is derived from an ETS, I-ETS, or TBR). This is irrespective of whether the STANDARD is a draft, or the related technical specification has completed the required STANDARDs approval procedures.

A STANDARD includes all the options listed in its technical specification. Thus, if an IPR is ESSENTIAL to one of several alternative options specified in a STANDARD, it is ESSENTIAL to the STANDARD as a whole, notwithstanding the fact that it is possible to comply with the STANDARD without using a specified option.

The date on which a STANDARD is considered to be adopted by ETSI is the date on which the related technical specification is made available to all MEMBERs

and not the date on which it completes the STANDARDs approval procedures.

It should be noted that the date on which:

- a STANDARD is considered to be adopted by ETSI; and
- Members of ETSI have to make licences available under their IPRs that are ESSENTIAL to the STANDARD,

is the date on which the related technical specification is:

- made available to all MEMBERs; and not
- the date on which it completes the STANDARDs approval procedures.

It should also be noted that any standard, or any part of a STANDARD, not made by ETSI, which is referred to in an ETSI STANDARD, is specifically excluded from the definition and thereby falls outside the provisions of the ETSI Interim IPR Policy.

# ANNEX II

## IP AND IPRs

Annex 2.2

## 1. INTRODUCTION

This Annex II, of the N&M Handbook, provides an introduction to intellectual property rights (IPRs), and outlines the concept of monopoly and the difference between intellectual property (IP) and IPR.

The different types of IPR which are available for the protection of innovation and other IP, are described, as are other matters concerning the ownership, and territorial extent, of IPRs.

The types of IPR, available for the protection of IP, changes with time. For example, a few years ago mask works and unregistered design rights did not exist. At the present time, there is no special IPR available for the protection of databases, although discussions are currently taking place, at European Commission level, concerning the need for a 'sui generis' right for the protection of databases.

Some of the currently available IPRs, for example, trade marks and plant variety protection, are not of any significance to telecommunications standardization, although trade marks may have a part to play in the commercial exploitation of Standard-compliant products/systems.

Thus, in this Annex II, emphasis is placed on patents, because of their particular importance to the standardization process in telecommunications.

A brief outline is given, in this Annex II, of the international patent conventions and, in particular, the Paris Convention, the Patent Cooperation Treaty, and the European Patent Convention which created a European patent system in 1978.

The European Patent Convention is of particular importance when considering the linkage between European standards, ETSI and the licensing of Essential IPRs, such as patents, that are granted in those countries in which an ETSI Standard has been, or is intended to be, implemented. These countries will, for most ETSI Standards, be predominantly European countries.

Other matters covered, by this Annex II, are IPR infringement and validity issues, the enforceability and commercial exploitation of IPRs, and the licensing and transferability of IP/IPRs.

A more detailed introduction to the principles and practices of licensing is given in Annex XII to this Handbook.

## 2. CONCEPT OF MONOPOLY

A 'monopoly', in relation to an IPR, is the sole power, or privilege, of dealing in anything, to which the monopoly relates, i.e. the exclusive right to make, use, sell,

supply, or work, anything covered by the monopoly.

The scope, duration and territorial extent of a 'monopoly' are usually limited, particularly in relation to IPRs. In the case of a patent, the 'monopoly' is granted by the state, for a limited period of time, in return for the owner of the patent, disclosing to the general public, sufficient details of the claimed invention to enable a person skilled in the art to practise the invention.

Thus, a 'monopoly', as applied to an IPR, means that the IPR owner has an exclusive right, in relation to the subject matter covered by the right, and can prevent others from exploiting that right without permission.

## 2.1 Patents

In the case of a patent, the scope of the 'monopoly' is determined by the claims of the patent which define the invention covered by the patent in a clear, precise and concise manner. The patent claims delineate the monopoly, i.e. the claims define the precise boundaries of the subject matter of the patent, within which the proprietor of the patent, or a licensee, is entitled to operate, to the exclusion of all others.

A patent 'monopoly' is, therefore, negative in character in that it confers, upon the owner of the patent, the right to prevent others from doing that which is the subject of the patent claims.

A 'monopoly', as applied to a patent, is not only limited to the claimed subject matter, but is also limited territorially, and to a specific period of time. In fact, all IPR monopolies are limited, both by territory and time.

Generally speaking, the territorial extent of a patent monopoly is limited to the territorial boundaries of the country, in respect of which the patent has been granted. However, in some countries, the monopoly conferred by a patent, extends beyond the national boundaries to the dependent states, or countries, of the country concerned.

This extension of the patent monopoly may:

- be automatic; or
- require the completion, by the owner of the patent, of certain formalities; and
- involve the payment of a fee.

It should be noted that the owner of an IPR monopoly, particularly a patent monopoly, has no legitimate right to impose restrictions beyond its territorial, or temporal limits.

Annex 2.4

## 2.2 Copyright

The protection afforded by copyright, in the UK and elsewhere, is acquired automatically, i.e. at the time of creation and without formality, and is subject to national laws. This form of protection extends to works, for example, computer programs, which are of significance to telecommunications standardization.

Furthermore, international copyrights automatically subsist, without formality, in works that are first published in a country that is party to the Berne Union - there is no requirement concerning registration of the work, or the application of a copyright notice to the work.

All major developed countries, including the USA, UK and other European countries, are party to the Berne Union, and also to the Universal Copyright Convention (UCC).

In order to obtain copyright protection in the countries which are party to the UCC, but not covered by the Berne Union, it is necessary to comply with certain formalities.

## 3. INTELLECTUAL PROPERTY AND INTELLECTUAL PROPERTY RIGHTS

An intellectual property (IP) is an intangible asset resulting from intellectual activity in the fields of, inter alia, technology, commerce, literature and art. It comes into existence at the date of creation but it may not become exclusive to the creator, or someone deriving title from that creator, unless certain formalities are complied with. Such formalities will be subsequently outlined in relation to the different types of IP.

Examples of such a property are inventions, designs, trade marks, software or computer programs, mask works, engineering drawings, written reports or similar, confidential information, know-how and trade secrets.

The rights subsisting in, or created by, such a property, and for which an application for protection may have to be filed, are known as 'intellectual property rights'.

## 4. TYPES OF INTELLECTUAL PROPERTY RIGHT

The different types of IPR, by means of which innovation and other intellectual property (IP) may be protected, which are of significance to the ETSI IPR Policy and thereby to ETSI Standards, include:

- Patents, including Petty Patents and Utility Models;

- Registered Designs;
- Mask Works;
- Copyright/Unregistered Designs; and
- Confidentiality.

Other IPRs which are specifically excluded by the definition for 'IPR' in the Annex to the ETSI IPR Policy, and which will not, therefore, be covered by this Annex II, are:

- trade marks;
- get-up;
- confidential information; and
- trade secrets, or the like.

## 4.1 Patents

### 4.1.1 Introduction

A patent which is personal property, is a statutory monopoly granted by a governmental body of a country, or state, in which the patent will have effect and be enforceable at law.

The patent confers on the owner, i.e. the patentee, the right to prevent others from exploiting the patented invention, as defined by the claims of the patent, for a number of years. It will usually enable the patentee, and/or licensees, to exploit the patented invention, for their own benefit, to the exclusion of all others, for the term of the patent. It does not, however, necessarily avoid conflict with other rights.

#### (a) Why have patents ?

Patents encourage inventors to disclose their inventions, to the general public, in return for monopoly rights, thereby encouraging the dissemination of technical knowledge.

Patents also serve to promote the economic growth of industry by encouraging investment in research and development.

The fruits of investment in research and development, if patented, are safeguarded by the monopoly rights conferred by the patent which can be enforced by the patentee against any infringers.

After the expiration of the patent term, or if the patent is allowed to lapse, for example, by the non-payment of renewal fees, the invention, covered by the claims of the patent, becomes public property.

**(b) What is protected by patents?**

A patent is granted for an invention which, as will be subsequently outlined, must satisfy certain conditions, such as novelty, inventive step and industrial applicability.

**(c) How are patents obtained?**

In order to obtain a patent for an invention, it is necessary to file a patent application, in the prescribed form, together with the appropriate fees, at the Patent Office concerned.

### 4.1.2 Extent of Monopoly

The monopoly rights conferred by a patent are, as stated above, effective in the country where the patent is granted. If the monopoly right is to be extended to other countries, patents must be obtained in the countries concerned.

### 4.1.3 Territorial extension of patent rights

The international patent conventions, that is the International Convention for the Protection of Industrial Property ('Paris Convention'), the European Patent Convention (EPC) and the Patent Cooperation Treaty (PCT) provide the means for extending national patent rights to other countries. The filing of a 'convention' patent application, corresponding to the basic national application, pursuant to the Paris Convention, the EPC, or the PCT, within 12 months of the date of filing of the basic national application, will secure, for the convention application, a filing date corresponding to that of the basic application.

This date is known as the convention 'priority date' which effectively links national patent applications into 'patent families'.

### 4.1.4 Requirements for Patentability

In most countries, including the UK and Europe, for an invention to be patentable, it must satisfy the following conditions:

- the invention must be new, i.e. have novelty;
- the invention must involve an inventive step, i.e. it must not be obvious to persons skilled in the technical field to which the invention relates; and

- the invention must be capable of industrial application.

Furthermore, in the UK and Europe, the patentability of the invention must not be specifically excluded by the provisions of the law. For example, the patenting of computer programs, mathematical methods and schemes for performing mental acts, or doing business, are specifically excluded in the UK, Europe and most other countries.

### 4.1.5 Offensive, immoral, or anti-social behaviour

Patents will not be granted in the UK for inventions which could be expected to encourage such behaviour.

### 4.1.6 Novelty

In the UK, novelty must be absolute, i.e. there is no limitation on the prior art, in terms of where, or when, it was made available to the public. In other words, the prior art comprises all matter (whether a product, a process, information about either, or anything else) which, before the priority date of an invention, has been made available to the public, anywhere, and in any way, i.e. by written, or oral, description, by use, or in any other way.

It is important, therefore, to ensure that inventions, or subject matter protectable by a registered design, are not disclosed to third parties until after an application has been filed to protect the invention, or design. Any disclosure to a third party, before filing, other than in confidence, would normally render invalid any subsequently filed patent, or design, application.

Prior secret use is not destructive of novelty in the UK and the prior secret user acquires a prescriptive right to continue his former activities, but the patent is enforceable against third parties. Thus, any activities which were started before the date of, and which would be infringements of, a patent, can be continued after the grant of a patent. However, if such activities cease and are then recommenced, or if such activities are expanded commercially, then this may give rise to patent infringement.

### 4.1.7 Form of Patent Application

The filing of a patent application for the protection of an invention must be effected in a prescribed manner, as dictated by the patent laws and rules of the country concerned, and involves the payment of a fee.

The patent application must disclose the invention in a clear and complete manner, and provide sufficient detail to enable the invention to be performed by a person skilled in the art concerned. In particular, the patent application, includes, inter alia, a patent specification containing:

- title of the invention;
- details of the background and prior art to which the invention relates;
- a statement of invention;
- details of any drawings required to support, or supplement, the description of the invention;
- a detailed description of the invention;
- a claim, or claims, which define the monopoly being sought; and
- an abstract of the invention.

### 4.1.8 Patent specification

The patent specification, which must be preceded by a meaningful title for the invention, usually commences with a brief description of the background and prior art to which the invention relates and makes specific reference to any relevant prior art document(s), that is articles, documents, patent specifications, or similar, published prior to the application, or priority date, whichever is the earlier, of the patent in suit.

It is the usual practice to outline, in fairly broad terms, the shortcomings, or disadvantages, of the prior art which are overcome and/or avoided by the invention as claimed. This section of the description usually includes an outline of the purposes the invention serves. Sentences usually start:

'It is an object of the invention to ...'.

This feature of a patent specification is almost always included in US patents and frequently in European patents, because practice indicates that the USA and European Patent Offices seem to prefer the claimed invention to be presented as a solution to a problem that the present state of the art has not solved, or overcome. This is not an absolute requirement.

It is usual for the next section of the description to consist of at least one statement of invention, known as a 'consistory clause', which corresponds exactly with at least some of the claims. It is not a statutory requirement to provide such a clause, but the inclusion of a consistory clause, or clauses, provides support in the description for the claims of the patent. It may also provide an appropriate linkage, or introduction, to the preferred embodiment(s) of the claimed invention which form(s) the next section of the description. In any case, it is, by long tradition, regarded as good practice.

The description of the preferred embodiment(s) of the invention, as illustrated in any drawings, must be clear and complete enough to enable a person skilled in the

art, to which the claimed invention relates, to be able to practise the invention.

**(a) Who is 'a person skilled in the art' ?**

A hypothetical person often equated to an unimaginative engineer with the sum total of man's knowledge at his, or her, fingertips.

It would seem from the relevant case law on this subject that persons skilled in the art are 'persons having a reasonably competent knowledge of what was known, before the priority date, on the subject to which his (the proprietor's) patent relates, and having reasonable competent skill in doing what was then known'.

Thus, the construction of the specification must be such that it can be understood by a person skilled in the art who will, in general, be presumed to be of no more than average competence in relation to the subject matter of the specification.

In carrying out the invention in accordance with the instructions given in the specification, the person skilled in the art should not be expected to exercise any inventive skill, although that person may be expected to exercise individual judgement, or perform non-inventive tasks, or experiments in order to achieve the desired result.

### 4.1.9 Drawings

If drawings are included, to illustrate the preferred embodiments of the invention, then a brief description of the drawings will precede the description of the preferred embodiment(s).

### 4.1.10 Claims

The claims form the next section of the description and they are, from the legal standpoint, the most important part of the description.

The claims must define the invention, for which protection has been obtained, or is being sought, in a clear, precise and concise manner, with the object of limiting the monopoly to that which is patentable. Furthermore, the claims must be supported by the description and relate to a single invention, or a number of inventions having a common inventive concept.

The claims of most telecommunications patents can be divided into three distinct classes, namely:

- product (of a process) claims;
- process or method claims; and
- apparatus or device claims.

Any one, or combination, of these different classes of claim may be included as independent claims in a single patent.

Thus a patent may have:

- an independent claim for a product, together with an independent claim for a method specially adapted for the manufacture of the product and an independent claim for a device and/or apparatus that makes use of the product; or

- an independent claim for a product, together with an independent claim for a method specially adapted for the manufacture of the product and an independent claim for an apparatus or other means specially adapted for carrying out the method; or

- an independent claim for a method, together with an independent claim for an apparatus or other means specially adapted for carrying out the method.

Apart from the independent claims, the specification may include a number of dependent claims which refer back to, and further restrict, a preceding claim.

In some countries, for example the UK, multiple dependent claims are allowed, but in others, for example, the USA, only certain claim combinations are permitted.

It is not permitted in the USA, for example, for a multiple dependent claim to refer back to another multiple dependent claim.

When more than one claim is included they are usually arranged in order of diminishing scope in which the first (independent) claim is the broadest.

In some countries, such as the UK, the last claim in the series is the omnibus claim which refers back to the drawings, or is limited to the specific embodiment(s) described in the specification. Such claims are not allowed in most other countries, including the USA and Japan. Omnibus claims may occasionally be permitted by the EPO, where they are deemed absolutely necessary to the adequate definition of an invention.

Another form of claim that is allowable in the UK, but is not necessarily permitted by the EPO, is a 'product-by-process' claim, i.e the end product of a patentable process. Provided the process is novel and inventive, an inventor is entitled, in the UK, to include a claim, in the patent application, directed to a product resulting from the process, irrespective of whether, or not, the product, per se, is known.

In the EPO, 'product-by-process' claims are only allowed if the product, per se, is distinguishable from known products, and cannot be defined by reference to its

composition, structure, or other criteria, because, the process claim automatically covers products produced by that process.

As to the form of the claims, there are no specific rules in a number of countries, including the UK, but the European Patent Office (EPO) usually require each independent claim to be in the so called 'characterising' form. The EPO may also require the inclusion of reference numerals to identify each element, or combination of elements, of the claim.

With the EPO arrangement, the claim is divided into two parts by the phrase 'characterised in that', or 'characterised by'. This is based on the practice in Germany and Holland. The first part of the claim comprises the claimed features that are shown in combination in the most relevant single item of the prior art. The other part of the claim comprises the novel features of the claimed invention.

In the USA, the claims are usually of the so called 'combination' type wherein each claim must directly and positively define all the elements of the claimed combination by specifically itemising each element and their co-relation. Reference cannot be made to elements which have not previously been itemised. Intangible elements, such as holes, may only be mentioned indirectly.

It will be directly evident from the foregoing that drafting and interpreting claims is a skilled task that is best left to patent practitioners.

### 4.1.11 Abstract

This is the final part of the patent specification. It commences with the title of the invention and contains a concise summary of the subject matter covered by the specification. In particular, the summary gives an indication of the technical field to which the invention relates, an outline of the technical problem the invention is intended to solve and the manner in which the invention solves the problem. The provision of an abstract is a formal matter and does not influence validity, or interpretation.

### 4.1.12 International Conventions, Filing Routes and Priorities

The international conventions relating to patents are as follows:

- the Convention for the International Protection of Industrial Property (the 'Paris Convention');
- the European Patent Convention (EPC) which effectively unified the European patent systems in 1978;
- the Patent Cooperation Treaty (PCT) of 1970; and

- the Community Patent Convention (CPC).

### (a) Paris Convention

This convention, which was signed in Paris in 1883, and revised on a number of occasions by conventions amending and extending its provisions, establishes common rules for the protection of industrial property, including patents, which each member country is obliged to follow in order to benefit from its provisions.

In essence, each member country is obliged to extend, as regards the protection of patents and other industrial property, to nationals of other countries the same protection for patents it affords to its own nationals.

The filing of a first application for a patent in one member country gives the applicant a right to file corresponding patent applications in other member countries, and to claim priority to the date of filing the first application, provided the corresponding applications, that is the second applications, are filed within 12 months of the date of filing the first application. As, and when, the corresponding patent applications are filed, they will be subject to the national patent laws and rules of the countries concerned.

The Patent Office of each of the countries where a convention application has been filed, will require the filing of a certified copy of the basic national application on which the convention application is based. If the basic application is in a different language to that used by the Patent Office of any one, or more, of the countries where applications have been filed, then each Patent Office concerned will require a verified, or certified, translation of the certified copy in an official language of the Patent Office.

### (b) EPC

Most of the European countries have enacted legislation giving effect to this convention, which provides a patent system that enables a single patent application to be filed at the European Patent Office (EPO) designating one, or more, of a number of the countries which have ratified the EPC. The EPO has branches at The Hague and in Munich.

The single application is prosecuted through the EPO until a patent is finally granted. The granted patent has the same effect as a bundle of national patents in those states belonging to the EPC which were designated when the application was filed. However, before the individual patents, within the bundle, have any effect, they must be converted to national patents.

At the present time, there are 16 countries (Contracting States) that have ratified the EPC. These countries are Austria, Belgium, Denmark, France, Germany, Greece, Italy, Ireland, Luxembourg, Monaco, Netherlands, Portugal, Spain, Sweden, Switzerland (with Liechtenstein) and the United Kingdom.

It should be noted that Switzerland and Liechtenstein count as one country for the purposes of the EPC.

It should also be noted that the EPO is not an organisation of the European Economic Community (EEC) and the member states of the EEC do not correspond exactly with those belonging to the EPC. For example, Switzerland and Liechtenstein are members of the EPC, but are not members of the EEC.

Most of the developed countries are party to the Paris Convention and it is, therefore, possible to file, within the twelve months convention period, a patent application in any one, or more, of these countries claiming priority from an EPC application and/or a European national application.

**(i) Advantages of the EPC**

The benefits that are obtained by the filing of an EPC application, rather than the filing of separate national applications in each country, via the respective national patent office, are:

- only one patent application has to be filed and prosecuted in order to obtain protection in a number of countries; this is clearly more convenient and gives rise to a saving in time and expenditure;

- the patent application may be filed, and prosecuted, in English, French, or German, at the option of the applicant; translations from the selected language into the other languages is, however, required as, and when, a European patent is granted;

- provided that protection is required in at least three, or possibly four, of the designated states, then the initial filing costs are generally less than those for separate national applications in each of the designated states.

**(ii) Disadvantages of the EPC**

The major disadvantage of filing an EPC application is that if the application is rejected during prosecution, or is successfully opposed, within 9 months of grant, then all rights are lost in all of the designated states.

Thus, if the protection of an invention in the country of origin is of importance to an applicant, it is prudent for the applicant to file a national application independently of the EPC application. This enables the applicant to prosecute the national application independently of, but in parallel with, the corresponding EPC application.

An EPC application may claim priority, under the Paris Convention, from a national patent application, or from an earlier European application. This means that

the EPC application must be filed within 12 months of the date of filing the application from which priority is being claimed.

**(c) PCT**

The main objective of this Treaty is to simplify, and minimise the cost of, obtaining patent protection in a number of countries. The PCT is not intended to diminish, in any way, the rights afforded by the Paris Convention.

Since 1978, it has been possible, in the UK, to file a single 'international patent application' under the provisions of the PCT and to designate in the application countries subscribing to the PCT, including EEC countries, where patents are required.

In general, the applicant named in a PCT application must be either a national, or resident, of a country that is party to the PCT.

A PCT application must be filed at one of the designated offices and, in most cases, these are the national Patent Office of the countries concerned.

It is also possible to file a European patent application through the PCT route.

The Paris Convention and the PCT cover all of the industrialised countries, but the countries covered by the EPC are limited to the countries given above.

**(d) CPC**

The signatories of this convention, which is an agreement within the Paris Convention, are the member states of the European Economic Community (EEC). The CPC, which was signed in 1975, is still not in force, and is unlikely to be in the near future.

The main objective of the CPC is the creation of a Community Patent System which will assist the free movement of patented goods within the EEC, by removing artificial barriers, created by the territorial nature of national patents.

In accordance with the provisions of the CPC, the designation of an EEC country in an EPC application would be deemed to be a designation of all EEC countries. In the event that the EPC application proceeds to grant, one of the bundle of patents will be a CPC patent covering the whole of the EEC.

The intention is that a CPC patent will have equal effect in all EEC countries and can only be granted, revoked, assigned, or abandoned for the whole of the EEC, and not for any one, or more, of the individual countries of the EEC.

The provisions of the CPC are such that a national patent of an EEC country will be ineffective to the extent that it covers the same invention as a CPC patent, and

that CPC patent infringement actions will be heard by the national courts.

### 4.1.13 Prosecution Procedures

#### (a) EPC

The filing of an EPC application requires the payment of a filing fee, a search fee and a designation fee for each of the countries named in the application. These fees must be paid within one year of the priority date, or within one month of the filing date, whichever is the later.

The countries in which protection is required must be designated at the time of filing the EPC application. Whilst it is possible to cancel designations, it is not normally possible to add other countries after the application has been filed. If, however, a particular country has been omitted by mistake, then it may be possible to add it later, provided that:

- the omission is not merely the result of a change of mind of the applicant;
- it can be shown, to the satisfaction of the EPO, that the applicants had always intended that the omitted country should have been designated at the time of filing the application (the provision of a convincing argument may prove difficult, but it may be sufficient to show that it is a long-standing practice of the applicant to designate the country concerned as part of a foreign filing portfolio for particular classes of inventions).

For reasons of national security, it is usually a requirement of the national laws of EPC member countries, including the UK, that the initial filing of an EPC application should be made at the Patent Office of the country of residence of the applicant.

The application, as filed, is sent to the EPO Branch at The Hague for examination as to formal requirements and a novelty search, which must be requested at the time of filing. The EPO undertakes a novelty search which is carried out on a database that includes patent and other literature. On completion of the search, the EPO sends a search report to the applicant which includes details of any relevant literature, patent specifications, or similar, found during the search, together with details of the members of the same patent family, that is foreign equivalent patents, if any, of the cited patent specifications.

The search report also gives an indication of the relevance of the cited documents to the claimed invention, by placing the cited documents into different categories.

#### (b) UK

The UK novelty search report provides similar information to the EPO search

report except that the categorisation of the cited documents is slightly different and more specific.

It is not intended to enter into a detailed discussion, as to the manner in which each of the various categories of document are identified, and/or should be treated by the applicant, save to say that the question whether, or not, a particular document anticipates a claim of the application in suit, i.e it destroys the novelty of the claim, is applied quite strictly. In order to succeed, it must be shown, by the Examiner, that there is an exact correspondence between the features of the claimed invention and that which is disclosed by the cited document. If any one of the features of the claimed invention is not disclosed by the citation, then the cited document does not destroy the novelty of the claim.

### (c) Stages of the Prosecution Process in Europe

The various stages of the prosecution process in Europe are outlined in the following sections (i) to (ix):

### (i) Publication

All patent applications filed in any one of the countries party to the EPC, including EPC applications, are laid open to public inspection about 18 months after the priority date (or the filing date if no priority is claimed).

If a search report, in respect of the application, is available at the publication date, then it is published with the application, and the document, as published, is given a publication number.

In the EPO, the publication numbers for applications including a search report have a suffix A1. If a search report is not available for any reason, for example, because of a backlog of searches at the EPO, then the EPC application will be published without the search report, and will be given a publication number with a suffix A2. As, and when, the search report on an EPC application becomes available, after the expiration of the 18 months period, it will be published and allocated a suffix A3.

The main reason for the introduction of the early publication procedure in Europe was, apart from the unification of the European patent systems, to enable third parties to be made aware of the inventions in respect of which applicants were seeking protection. This is of tremendous value to industry because it gives companies an early indication of:

- the research and development (R&D) activities of their competitors;
- the direction in which their competitors' products are being developed;

- whether, or not, their own activities are likely to infringe patents that may eventually be granted to others.

Publication also enables companies to give a better focus to their own research and development activities and may influence them to seek licences from potential patent owners, rather than spend their own money on 're-inventing the wheel'.

The results of the initial, or preliminary, search also enable an applicant to make a decision on whether, or not, it is worthwhile proceeding with a patent application and whether corresponding foreign patent applications should be filed.

If it is decided to go ahead with the application for the patent, then a full examination, called 'a substantive examination', into the question of inventiveness and patentability must be requested.

**(ii) Substantive Examination**

A request for substantive examination must be filed in respect of an EPC application and a UK application.

A request for substantive examination of an EPC application must be filed, together with the prescribed fee, within 6 months of the date of publication of the EPO search report. The 6 months time limit runs from the publication date of the A1, or A3, document (see above for details), but not the A2 document, because this document is, as stated above, published without a search report.

In the UK, a request for substantive examination must be filed, with the prescribed fee, within six months from the date of publication of the application.

The purpose of the substantive examination in the EPC and the UK is to determine whether the application complies with the requirements of the EPC, or the UK Patents Act and Rules, regarding patentability and other matters. Purely formal matters are dealt with during the initial examination which immediately follows the filing of the application.

For EPC applications, the substantive examination phase of the prosecution process is carried out by the Munich branch of the EPO. During this phase, an Examining Division of the EPO considers the patentability of the invention with reference to the documents cited in the EPO Search Report and any additional prior art which may have subsequently been found by the EPO.

As, and when, the Examination Division completes this task, the applicant is sent an official communication setting out any objections that may have been raised by the Examiner, and the applicant is set a time limit for filing a response to the communication. This time limit, which is not governed by the provisions of the EPC, is usually of the order of two to six months, depending on the nature of the objections

raised by the Examiner. There is no set time limit for the substantive examination phase of the prosecution process but, in practice, a final decision is usually arrived at by the Examination Division after two, or three, official communications.

### (iii) Appeals

If the final decision of the Examination Division is to refuse the application for a European patent, then an appeal can be filed with a Board of Appeal situated at the EPO. There is, however, no provision permitting an appeal to be filed with an outside body, or a national court. If the appeal relates to a legal question which is of wider relevance than to the application in suit, then the Board of Appeal may ask an Enlarged Board of Appeal for a ruling.

### (iv) Grant

If the final decision of the Examination Division is the grant of a European patent, then the applicant is notified of the decision and is given an opportunity to approve the text of the patent that will finally be granted. If the applicant agrees with the final text and pays the grant and printing fees, the patent is granted and published with a patent number bearing the suffix B1.

### (v) Opposition

After the notice of grant of a European patent is published in the Official Bulletin of the EPO, the application is open to opposition for a period of 9 months. During this time, third parties may object to the grant of the patent. If the application is opposed, then this gives rise to opposition procedures involving the Opposition Division of the EPO, the applicant and the opponent.

Thus, the opposition procedure gives any third party who believes that an EPC patent should not be granted, in the form in which it has been published, the opportunity to invalidate the patent in all of the designated countries.

Once the opposition period has expired, any third party, wishing to revoke the European patent, must initiate revocation proceedings in each of the countries in which the patent has been confirmed, in accordance with relevant national procedures.

### (vi) National Phase

After grant of a European patent, the patent enters the national phase which involves each of the countries designated in the application. The formalities that have to be complied with by the applicant, in each country, differ. Most countries require a translation of the specification to be filed at the national Patent Office, within a prescribed period of time, and the payment of the prescribed fees. The major costs of entering the national phase are the translation costs. These costs will, therefore, be dependent not only on the length of the patent specification, but also on the countries

that have been designated. For example, if the designations include France, Belgium, Switzerland and Luxembourg, then a single translation into French can be used for all four countries.

The choice of designated countries, in which the national phase is instigated, is at the sole discretion of the applicant, but it should be noted that the European patent is only enforceable in those countries in which the applicant has complied with the national phase formalities.

**(vii) National Treatment**

When the European patent enters the national phase, it is subject to the national law of the country concerned.

**(viii) Renewal Fees**

Two years after filing an EPC application, annual renewal fees must be paid to renew the application for a third year, and then again for subsequent years whilst the application is pending. When a patent is granted and proceeds to the national phase, national provisions regarding renewal fees apply.

**(ix) Rights afforded by grant**

As, and when, a European patent is granted, the patentee may, in some countries, claim damages for infringing acts committed after the date of publication of the application, providing that a translation of the claims of the patent has been made available. The provisions which apply depend on the country concerned.

**(c) PCT**

The PCT system provides for a single worldwide search, but thereafter, in contradistinction to the European Patents System, the application is examined for patentability by the respective national Patent Offices of the countries designated in the application.

Thus, the grant, or refusal, of patents in the designated countries is dependent upon the requirements of each country with regard to inventiveness, patentability and other stipulations.

The PCT application and the results of the search are published, and are sent to the Patent Offices of each of the countries designated in the application.

An applicant wishing to proceed with a PCT application, in each of the designated states, must send the application to the Patent Offices of each of the designated states, within 20 months of the date of filing the PCT application. The PCT filing date will, thereafter, be treated as the priority date of each of the PCT national

phase applications.

The 20 months period may be extended to 25 months if a worldwide preliminary examination is requested by an applicant, pursuant to Chapter II of the PCT. The purpose of this examination is to formulate a preliminary and non-binding opinion as to whether the invention covered by the claims of the PCT application is:

- novel;
- involves an inventive step, i.e. is not obvious to those persons skilled in the particular field to which the invention relates; and
- capable of industrial application.

Chapter II is not applicable to all countries party to the PCT, but is applicable in the UK, in accordance with the provisions of the 1977 Act.

The translations for PCT applications, into the languages required by the Patent Offices of the designated countries, are not required until the application enters the national phase and is filed at the respective Patent Offices.

### 4.1.14 Types of Patent, Extensions, Conversions and Registrations

In accordance with the provisions of the Paris Convention, it is possible to obtain protection for inventions by way of national patents in all of the major developed countries of the world. In pursuance of these provisions of the Paris Convention, some countries provide for the following forms of protection:

- Petty Patents;
- Utility Models;
- Gebrauchsmuster; available in Germany only.

The foregoing forms of protection are available in a relatively small number of countries, the most important being Germany (Gebrauchsmuster) and Japan (Utility Model). Other notable countries in which this form of protection can be obtained are Australia, Italy, Portugal and Spain.

As is the case with patents, the terms of protection for petty patents, utility models and the like, vary from country to country.

#### (a) Petty patents

The scope of protection of a petty patent is generally narrower than that of a patent, but broader than that of a registered design.

A petty patent can, therefore, provide the means for bridging the gap between patents and designs.

This form of patent protection is available in Australia where there is no limitation to the field of the invention and no inherent need to claim more narrowly than for a corresponding standard patent application.

The requirements and procedures for obtaining a petty patent in Australia are, subject to a number of exceptions, exactly the same as those for obtaining a full patent for an invention. For example, only a single claim can be submitted and the term of the petty patent is one year only, from the date of grant, with the possibility of a single extension of up to five years, giving a total term of six years.

Third parties have the right to notify the Australian Patent Office of relevant matters within eleven months of the grant of the petty patent. The Commissioner is required to consider the material in question in reaching a decision to grant, or refuse, the application for extension of the term by a further five years.

There are, however, no annuities, or examination fees, and the Australian Patent Office is obliged to examine the application only for formal matters. A substantive examination may be undertaken, but only at the option of the Australian Patent Office. There is a requirement for inventiveness. Examination, moreover, is expedited in an attempt to enable petty patents to be granted at publication.

The only means in Australia of deriving a petty patent, from a patent, is by filing a divisional application.

Petty patents can also be converted into patents of invention through divisional applications.

It is important to note that should the longer term of protection afforded by a standard Australian patent be required, as well as the relatively early availability but shorter term of the petty patent, there are some possible legal hazards. More particularly, the co-existence of two patents may require the patentee to surrender the petty patent to enable the standard patent to issue, thus producing a gap in the protection.

**(b) Gebrauchsmuster**

An important feature of this form of protection in Germany, is that it is possible to simultaneously file a patent application and a Gebrauchsmuster application relating to the same subject matter. The Gebrauchsmuster and the patent can exist side-by-side.

The Gebrauchsmuster is registered without examination and affords a means of obtaining early protection for an invention. In case of infringement before the grant

of a patent, the Gebrauchsmuster enables an infringement action to be started and, on grant, the patent litigated.

A further important feature of the German system is that the subject matter of a national, European, or international, patent application designating Germany, can be converted into a Gebrauchsmuster application, claiming the priority date of the earlier application if, say, the application is rejected, or opposed.

This form of protection is, for the foregoing reasons, used fairly extensively by German industry and foreign nationals.

**(c) Utility Model**

In Japan, the difference between a utility model and a patent is, as a result of the law introduced in 1960, a matter of degree only. Thus, the extent of the rights given by this form of protection are only slightly inferior to those given by a patent.

The novelty requirements and examination are the same for both patents and utility models, but the degree of technical advance required for a utility model is less than that required for a patent.

An advantage of the Japanese system is that a patent application can be converted into a utility model application in the course of examination.

Thus, if a notice of rejection is issued, in respect of a patent application, because of insufficient inventive height, then, provided that the applicant can show some degree of technical advance, the application can be converted into a utility model application, within a limited but extendable period of time, from the date of the Examiner's first notice of rejection.

Furthermore, if the examination of corresponding foreign applications gives rise to prior art that renders the inventive height insufficient for the successful prosecution of a co-pending patent application in Japan, then that Japanese application can be converted to a utility model application, within a specified period of time from the filing date of the patent application.

The foregoing features of the Japanese system enable an applicant to obtain at least some degree of protection for an invention and, in some instances, provide the means to pursue infringers at an early date.

### 4.1.15 Territorial extension of patent rights

Countries which automatically extend patent protection beyond their own territorial boundaries include Australia, Denmark, France, Hong Kong, Italy, Netherlands, New Zealand, Portugal, Spain, Switzerland, United Kingdom (UK) and United States of America (USA). In some of these countries, the automatic extension

does not apply to patents that have been granted under the European Patent System.

Examples:

- UK patents automatically extend to the Isle of Man. In addition, UK patents, but not necessarily European patents (UK), also automatically extend to the British India Ocean Territory, Botswana and Swaziland.

- Danish patents, but not European patents (DK), automatically extend to Faroe Island, and Greenland.

- Dutch patents, but not European patents (NL), automatically extend to Netherlands Antilles and Aruba.

- Italian patents automatically extend to San Marino and Swiss patents automatically extend to Liechtenstein.

- USA patent protection, which includes Alaska and Hawaii as states, automatically extends to Puerto Rico, Guam, Virgin Islands, Eastern Samoa and the Panama Canal Zone. However, in order to secure protection in Puerto Rico, Guam and Virgin Islands, it would be advisable to file a certified copy of the USA patent in each of these countries.

**(a) Registration, or Confirmation**

A large number of countries, including Hong Kong, Guernsey and Jersey permit the registration, or confirmation, of foreign patents, provided it is effected within a given period of time following the grant of the foreign patent concerned.

The related formalities and time periods for obtaining registration, or confirmation, vary from country to country.

The country of origin of the foreign patent is not of any relevance in some countries but, in others, the country of origin is limited to one country only. For example, with the countries referred to above, the country of origin is limited to the UK. Furthermore, with these countries, whilst the facility extends to UK patents, it may not necessarily extend to European patents (UK).

**(b) Cautionary Notices**

In a number of countries, for example, Afghanistan, Oman, Ethiopia et al, which have no formal patent system as such, it is still possible to obtain some degree of protection for inventions by the periodic publication, say every two years, of a Cautionary Notice in a local newspaper, or journal.

If further, more detailed, information is required in respect of the foregoing

patent protection, then an IPR adviser should be consulted.

### 4.1.16 Validity and Revocation

The validity of a patent can be contested at any time and, in general, the law provides for the revocation of patents, in one form or other, if the patent is found to be invalid.

The validity of a patent may be contested by a defendant in an infringement action. The grounds on which an invalidity claim can be made, in the UK, and on the basis of which a UK patent may be revoked, are:

- the invention is not a patentable invention;
- the patent was granted to a person who is not entitled to be granted that patent;
- the clarity, and completeness, of the disclosure of the invention in the patent specification, is insufficient to enable a person skilled in the art to practise the invention;
- the matter disclosed in the patent specification extends beyond that disclosed in the application (as filed) on the basis of which the patent has been granted;
- the protection conferred by the patent has been extended by an amendment which should not have been allowed.

The validity of a patent can, therefore, be contested on the grounds that the claimed invention:

- is not new, i.e. it lacks novelty as indicated by the state of the art at the date of filing the application, or its priority date, whichever is the earlier; or
- does not involve an inventive step, i.e. it would be obvious to a person skilled in the art to which the invention relates, taking account of what was known at the date of filing the application, or its priority date, whichever is the earlier; or
- is not capable of industrial application.

The identification of the prior art, relevant to the foregoing matters, would be effected by undertaking a subject-matter search, in a manner outlined in Annex XIII of the Handbook.

The other grounds, on which the validity of a patent may be contested, will be a matter of collecting the necessary evidence, which will vary on a case-by-case basis. It is not the purpose of this Annex II to speculate as to what evidence will, or will not,

be of significance, but merely to outline the provisions for the revocation of a patent.

### 4.1.17 Patent Infringement

The direct infringement of a patent is the making, selling, using, or possession of that which is defined by the claims of the patent, without the permission of the proprietor.

The extent, or scope, of protection afforded by a patent, or an application for a patent, is determined by the claims of the patent. In other words, the extent of the protection afforded by a patent should be taken to be that which is specified in the claims, as interpreted by the description and any drawings contained in the specification.

Under UK law, a person would be held to infringe a patent for an invention if, while the patent is in force, that person does any of the following things in the UK, in relation to the invention, without the consent of the proprietor of the patent:

- in the case of a patented process:
  - uses the process;
  - offers the process for use in the UK knowing, or it being obvious, that such use would be an infringement of the patent.
- in the case of patented products, or products obtained directly by means of the patented process:
  - makes the product;
  - disposes of the product;
  - offers to dispose of the product;
  - uses the product;
  - imports the product;
  - keeps the product, whether for disposal or otherwise (this prevents export).

A patent for an invention is also infringed if, while the patent is in force and without the consent of the proprietor, a person:

- supplies;

- offers to supply in the UK;

an essential element of the invention which is not a staple commercial product. This is known as 'contributory infringement'.

The expression 'staple commercial product' is not defined in the UK Act or Rules, but it is usually construed to mean a generally available raw material or product, or a commercially available commodity having a number of uses, at least some of which would not be an infringement of the claims of the patent in suit.

Contributory infringement applies only to infringing acts committed in the UK, i.e. the essential element is being supplied, or offered, with a view to putting the patented invention into effect in the UK.

### 4.1.18 Ownership

#### (a) Employee inventions

The UK Patents Act 1977 includes provisions relating to the ownership of inventions made by employees.

In general, inventions made by employees, in the normal course of their duties for their employers, belong to the employer. In most other cases, the invention belongs to the employee, who may be encouraged to disclose the invention to the employer, with a view to the assignment, or licensing, of the invention to the employer, if so requested by the employer, on terms to be mutually agreed between the employee and employer.

#### (b) Inventors' rights and rewards

In those cases where the invention belongs to the employer and the employer takes out a patent application to protect the invention, the employee/inventor can claim compensation from the employer in respect of the patented invention if he, or she, can show that the patent has been of 'outstanding value' to the employer.

It should be noted that it is the patent and not the invention which must be of 'outstanding value'. How the expression 'outstanding value' will be interpreted in practice and what levels of compensation will be paid to employees, have yet to be clarified by the Courts.

#### (c) Service agreements

Company service agreements usually include provisions relating to the ownership of inventions made by employees, and take account of the national law on the subject.

### (d) Actions to be taken by employers

With employed inventors, a view should be taken on ownership of an invention, as between employer and employee, before a patent application is filed, and the inventor(s) should be notified accordingly.

For the purposes of putting on record information that may be required for determining employee/inventor compensation, if such a claim is made by an employee, a record should be kept of the circumstances under which the invention was made, together with the status, salary and other terms and conditions under which the inventor(s) is employed.

### (e) Registration of patent rights

The laws of most countries, including the UK, have provisions relating to the registration of patent rights and, in particular, the effect of non-registration of such rights on infringement proceedings.

When, as a result of a transaction, instrument, or event, a person becomes:

- the proprietor; or
- one of the proprietors; or
- an exclusive licensee;

of a UK patent and the patent is subsequently infringed, he, or she, will not be awarded damages if the infringement occurs before the transaction, instrument, or event, is registered unless:

- the transaction, instrument, or event, is registered within a period of six months beginning with its date, or it was not practicable to effect registration before the end of that period, but registration was in fact effected as soon as practicable thereafter.

### (f) Assignment and licensing

A patent, or an application for a patent, is personal property and may, therefore, together with the rights subsisting therein, be assigned, or mortgaged, like any other personal property.

A licence may be granted under a patent, or a patent application, for the exploitation of the invention covered by the patent, or application.

In addition, a licence may provide for the grant of a sub-licence thereunder and for the licence, or sub-licence, to be assigned, or mortgaged.

The licensing of patents is covered, in detail, in Annex XII of the Handbook.

An assignment, or mortgage, must be in writing and must be signed by, or on behalf of, the parties to the transaction, or the transaction will be void.

**(g) Jointly owned rights**

Where a patent, or a patent application, is jointly owned, it may not be assigned, mortgaged, or licensed without the consent of all of the joint owners.

To be effective, all of the foregoing transactions should be registered, as outlined in the preceding sub-section.

### 4.1.19 Enforcement

**(a) Infringement action**

Such actions cannot be commenced until after the patent has been granted, but damages may be claimed for infringements that took place after the date of publication of the patent application.

Thus, the proprietor of a published application in the UK has, from the date of publication to the date of grant, the same rights as would have applied if the patent had been granted on the date of publication of the application. This includes the right to institute proceedings and claim damages for infringements committed after the date of publication. However, as stated above, infringement proceedings cannot be commenced until after the patent has been granted and, in order to succeed, the proprietor must show that the acts complained of are an infringement, not only of the claims of the granted patent, but also of the claims contained in the application for the patent, as published.

These provisions apply not only to UK patent applications, but also to applications for European patents (UK), international applications (UK) and international applications for a European Patent (UK), that is European PCT applications.

**(b) Infringement proceedings**

In the UK, proceedings for the infringement of a patent may be brought in the High Court, or a Patent County Court. There is an appeal, as of right, to the Court of Appeal from decisions of the High Court and then, with leave, to the House of Lords.

In the UK, the proprietor of the infringed patent, and any other person that is the infringer, may, by agreement with each other, refer the question of infringement of the patent to the comptroller. However, if the comptroller decides that it would be more appropriate for the matter to be dealt with by the court, then he, or she, may

decline to deal with the action. In such a case, the court will have jurisdiction to determine the matter.

### (c) Defences

Apart from a counterclaim that the actions complained of by the owner of a patent are not an infringement of the patent in suit, a legitimate defence in infringement proceedings is to counterclaim, whenever possible, for the revocation of the patent on the grounds, inter alia, that the patent is invalid. In many European countries revocation and infringement are dealt with separately by different courts, whereas in the UK a revocation action and infringement action can be heard together before the same court.

See Section 4.1.16 of this Annex II concerning the issues of validity and revocation.

### (d) Innocent infringer

In proceedings for infringement of a patent, an award of damages, or an account of profits, cannot be made against an innocent infringer, that is a person who can be proven to have been, at the date of the infringement, unaware and with no reasonable grounds for supposing that the patent in suit existed. The onus is on the infringer to prove innocence.

### (e) Marking

The marking of patented products with the word 'patented' is insufficient to avoid a claim of 'innocent infringement'. To be successful, the marking must include the patent number.

### (f) Terms of protection

The term of protection for a patent in the UK, and countries signatory to the EPC, is 20 years from the date of filing the application for the patent.

Other countries have different patent terms and have different start dates for the term. For example, in the USA, patents in force on 8th June 1995, or based on an application filed in the USA on, or before, 7th June 1995, will have a term of 20 years from the date of filing, or 17 years from the date of issue, whichever is the later. Patents issued on the basis of an application filed in the USA on, or after, 8th June 1995, will have a term of 20 years from the date of filing.

### (g) Renewal fees

In most countries renewal fees must be paid, at prescribed intervals, in order to keep a patent in force.

In the UK, a renewal fee must be paid for a further year after the expiration of the fourth, or any succeeding, year from the date of filing the patent application. There is normally a period of grace, which is not the same for all countries, for the payment of renewal fees. Any late payment of renewal fees usually requires the payment of a fine, in addition to the renewal fee, and this fine increases with time.

The fees that are payable for the renewal of a patent are increased each year, or other renewal period. One of the main reasons for this, apart from boosting the income of the Patent Offices concerned, is to discourage patent owners from maintaining monopolies in which they no longer have any interest.

If a patent is allowed to lapse, through non-payment of a renewal fee, then the patent becomes public property and can be exploited by third parties without reference to the patentee.

### (h) Compulsory Licensing

An application for the grant of a compulsory licence, under a UK patent, can be made, by any person, at any time after the expiration of three years from the date of grant of the patent.

In order to succeed, an applicant must show that there has been an abuse of the monopoly rights.

An application for a compulsory licence can be based on any one, or more, of the following grounds:

- where the patented invention is capable of being commercially worked in the UK, but is:
    - not being so worked, or not being worked to the fullest extent that is reasonably practicable;
    - being prevented, or hindered, from being so worked:
        - in the case of a patented product, by importation of the product;
        - in the case of a patented process, by the importation of a product obtained directly by means of the process, or to which the process relates;
- where the demand for the patented product in the UK is not being met on reasonable grounds, or is being met to a substantial extent by importation;
- that by reason of the refusal to grant a licence, or a licence on reasonable terms:

- an export market for patented products manufactured in the UK is not being met;

- the working, or efficient working, in the UK, of any other patented invention which makes a substantial contribution to the state of the art is being prevented, or hindered;

- the establishment or development of commercial or industrial activities in the UK is unfairly prejudiced.

In addition, an application for a compulsory licence can be made if the conditions imposed by the proprietor of a patent on:

- the grant of a patent; or

- the disposal, or use, of a patented product; or

- the use of a patented process;

are such that the manufacture, use, or disposal, of material not protected by the patent, or the establishment, or development, of commercial activities in the UK, is unfairly prejudiced.

If the comptroller of patents is satisfied that any of the foregoing grounds are established, he, or she, may order the grant of a licence to the applicant on such terms as he, or she, thinks fit.

### (i) Refusal

If it appears to the comptroller that the time which has elapsed since the grant of a patent is insufficient to enable the invention to be worked, he, or she, may, by order, adjourn an application for a licence based on non-working, for such a period as will, in his, or her, opinion, give sufficient time for the invention to be worked.

An application for a compulsory licence under a patent can be made by the holder of a licence under the patent. It should be noted that such a licensee cannot be stopped by any terms of the licence, or otherwise, from raising any of the grounds, referred to above, in the application for a compulsory licence.

It may be advantageous for an existing licensee to apply for a compulsory licence, because the comptroller may grant such licences on more favourable terms than the existing licence.

### (j) Restrictive Contract Conditions

The patent laws of most countries, including the UK, have provisions relating

to the use of certain restrictive contract conditions.

In the UK, any condition, or term, of a contract for the supply of a patented product will be void insofar as it purports, as a condition of supply of the patented product:

- to require the recipient to acquire from the supplier, or licensor, anything other than the patented product;

- to prohibit the use of articles not supplied by the supplier, or licensor.

These provisions also apply to any condition, or term, of:

- a licence to work a patented invention;

- a contract relating to the supply of, or the licence to work, a patented invention.

However, a condition, or term, of a contract or licence, will not be void by virtue of these conditions if:

- the supplier, or licensor, is willing at the time of making the contract to supply the product, or grant a licence to work the invention on reasonable terms, without the above-mentioned conditions;

- the person supplied, or the licensee, is given the option of terminating the contract within three months.

The existence of any of the contract provisions outlined above in relation to a patent, or the product covered by the patent, can be used as a defence in infringement proceedings in respect of the patent.

### 4.1.20 Software Patents

#### (a) Introduction

It is not in dispute that computer programs are considered to be literary works and are, therefore, protected by copyright. However, it is a common misconception that software related inventions cannot be protected by patents. Whilst some software related inventions are statute barred, for example, computer programs used to implement business schemes, most software related inventions are not statute barred.

Software and, in particular, computer programs, are at the heart of the majority of present day telecommunications products and services, and are, therefore, of relevance to ETSI. In many cases, the software aspects of telecommunications services and equipment are central to technical realisations and commercial success.

The new telecommunications technologies which are being standardized by ETSI, require a massive investment in software development. The basic hardware, from which most telecommunications products and systems are constructed, are standard modules configured in different ways to meet a particular requirement, or service. The innovative aspects of such products, or systems, and the related telecommunications services, are the computer programs which are developed to meet a customer requirement, or service, or to effect more efficient use, or maintenance, of the existing infrastructure.

It should be noted that the exclusion of computer programs, as patentable inventions, applies only to the extent that a patent, or patent application, relates to a computer program, as such.

The classes of statute barred inventions are narrowly interpreted so that, for example, it is possible to protect computer programs, i.e. software, by patenting the underlying method, for example, a method for the operation of a telecommunications product, or system, on which the program is based.

Software related inventions are, therefore, treated in the same way as any other invention and, provided they meet the criteria for patentability, they are patentable. There are, however, various ways of presenting software related inventions in a patent application that assist the grant of a patent.

**(b) Definition of software inventions**

A computer program can be regarded as a mere list of instructions which will be performed by a machine. Viewed in this way, a computer program is no more than a list of words, or symbols, and as such is protected by copyright, rather than by patents. However, this is a very narrow view of a computer program. Underlying any list of instructions is a strategy, or method, which is carried out by following the instructions. In general, methods are patentable.

If a software invention is to be patented, it should be presented as a method, or product. It is not helpful to think of software, or computer related inventions, as computer programs. Success in protecting this type of invention depends on the way it is analysed and presented.

Software inventions can arise in diverse areas and diverse technologies. Examples of software related inventions, for which patents have been granted, are listed in 4.1.18 (c) below.

To be patentable, a software related invention must meet the same criteria for patentability as any other invention, namely, the invention must be new and non-obvious.

Many software related inventions, in the field of telecommunications, are

connected with the interaction between hardware and software. They may, for example, relate to a new way of operating known equipment. Such inventions are invariably patentable.

The dividing line between software, firmware, and hardware is blurred, and it is not helpful to try and classify inventions in these terms. However, where an invention can be implemented in either a hardware form, or a software form, it is important to describe both implementations, even if the hardware version of the invention is unlikely to be used.

In some cases, a software invention may relate to a signalling protocol, or signal structure. Electrical and electromagnetic signals can be regarded as products. Although such signals are intangible, patents can be, and have been, granted for electric signals.

Many companies have a vested interest in limiting the patentability of software related inventions. Do not listen to the views of other companies, or organisations, on the patentability of software, seek advice from a patent attorney. This is especially important in international fora such as ETSI.

### (c) Some examples of software related inventions

The idea that software related inventions are unpatentable can easily be seen to be incorrect by considering some of the software related inventions for which patents have been granted.

Examples of patented software related inventions are listed below.

(a) Cyclic error detecting and correcting codes and methods of encoding and decoding such codes.

(b) Low disparity codes for the transmission of signals over optical communications links.

(c) Selection of a function by use of menus and a moveable screen cursor.

(d) Data compression techniques for expanding the storage capacity of a hard disc.

(e) A method of enhancing the quality of a digitally stored image.

(f) Controlling operation of an X-ray machine by means of a computer controlled method.

(g) Computer controlled operation of a data processing network.

(h) A colour TV signal.

(i) A method of controlling the display of messages.

(j) A method of transforming printer control codes.

(k) An improved method of entering rotation angles into a computer graphics system.

(l) A data transmission format.

(m) A method of controlling the operation of a stored program control telephone exchange.

The inventions listed above have a number of features in common:

- they were analysed and viewed as products and/or methods;
- they all have a technical effect, that is to say, they can be shown to influence the physical world in some way; or
- they are designed to achieve a technical objective, rather than a commercial, or aesthetic, objective.

It would be possible to quote many more examples of software related inventions that have been patented, but space does not permit this to be done in this Handbook.

**(d) Patentability of a software related inventions**

A new telecommunications service, for example, can be realised, using existing computer controlled telecommunications products, and/or systems, through the creation, and use, of a computer program, the underlying operational method of which is novel, inventive and directed to the new service. In other words, a known programmed computer, or system, which utilises a software related patentable invention to operate in a particular manner.

In order for patent protection to be obtained for the operation of a computer, or system, in accordance with a computer program, it is helpful if a technical effect can be demonstrated. The invention covered by the patent claims can then be directed to that technical effect and drafted so that the other criteria for patentability are satisfied.

The nature of the technical effect must be such that it gives rise to a 'physical change' in, or to, a 'physical entity' which need not necessarily be a solid object. For example, the 'physical entity' could be the 'mode of operation' of a telecommunications subscriber apparatus, or a communications system, which is subject to changes, or variations, under the control of a computer program, that result in a novel and

inventive technical effect. Patents have been granted for technical effects which are as intangible as an improvement in image quality.

Thus, an invention relating, for example, to a telecommunications service, product, or system, which is controlled, or generated, by a computer program will be patentable, provided it satisfies the criteria for patentability.

### (e) Emphasizing patentable features of software inventions

It is relatively easy to express, as a patentable invention, the underlying method of a software related invention, in relation, for example, to a telecommunications product, service, or system.

The need for, or advantages conferred by, the software related invention and the problem(s) it overcomes can be explained so that they support the innovative nature of the invention. In addition, a functional description of the manner in which the software operates, in relation to the telecommunications service, product, system, or method, can be presented as a new and non-obvious solution to that problem. In particular, the identities of the individual software entities, and their relationship with the inventive aspects of the telecommunications service, product, or method, can be presented as a new and non-obvious solution to the problem(s) the invention seeks to solve.

It should be noted that a patentable invention can arise in:

- the identification, or specification of a problem;
- a new and non-obvious combination of known entities, whether they be software modules, method steps, or components; and
- a new way of operating a known equipment, or system.

In many case, it will be advantageous to explain the advantages that the software related invention will have for subscribers/users. Furthermore, it will also be necessary to provide a description of how the software related service, product, or system, can be provided, even if the solution described is obvious, once the problem has been recognised.

The invention can be specified, in a patent application as a set of functionally interacting units, "means for ...", in patents jargon. Such functional units can frequently be regarded as either hardware units, method steps, or software modules.

### (f) Position in Europe

In the European Patent Office, the patentability of computer programs depends on technical effect and a computer program only becomes 'technically meaningful'

when it is used in combination with a computer, the operation of which it is intended to control.

Thus, an invention relating to telecommunications apparatus, or a communications system, controlled by a computer program cannot be considered to be directed to a computer program as such, and should, therefore, be patentable, provided it is directed to a technical effect and satisfies the criteria for patentability.

**(g) Position in the USA**

In the USA, it is possible to obtain patent protection for 'computer program' related inventions, such as a programmed computer, or a computer-controlled process or apparatus, because such inventions are not considered to relate to the computer programs, as such.

The position in the USA concerning the protection of computer programs is becoming more relaxed in that patents are being granted for algorithms without the need to identify a 'technical effect'.

Software related inventions refused patent protection in Europe may succeed in USA. The USA approach to the patentability of software related inventions is generally more liberal than the European approach.

### 4.1.21 Exhaustion of Rights

A doctrine has been developed by the European Court of Justice (ECJ) -- Centrafarm v. Stirling Drug; Centrafarm v. Winthrop [1974] ECR 1147; [1974] 2 CMLR 480; [1975] FRS 55 (ECJ) -- whereby the first sale of a product by the owner of the patent for the product, or by someone else with the explicit consent of the patent owner, 'exhausts' all rights in the product, as such.

This is known as the 'exhaustion of rights' doctrine and means that parallel imports of a patented product cannot be prevented by a parallel patent when that product is first put on the market in the EEC by the owner of the patent, or with the owner's consent.

However, in the case of Pharmon v. Hoechst [1984] ECR 2281; [1985] 3 CMLR 775; [1986 FSR 108 (ECJ)], where the first sale of a patented product arose under a UK compulsory licence, the product was held not to have been put on the market, with the consent of the patent owner, and that, as a consequence of this, an infringement action could be brought under a parallel patent for importation.

### 4.1.22 Information searching

Patents are an excellent source of technological information. Furthermore, because of the legal requirement that details of inventions be disclosed as part of the

patenting process, the Patent Office Library in London has a very large database, now amounting to millions of UK and foreign patents. Similar databases are maintained by the national Patent Offices of other European countries.

Patent specifications are classified and indexed according to the technology to which they relate and it is, therefore, possible to locate patents relevant to a particular area of technology, or to locate patents owned by a given company. These facilities make it possible for companies to keep abreast of the technological developments of their competitors.

There are a number of patent databases other than those maintained by the national Patent Offices, that are readily accessible, on line, for the retrieval of information regarding patents. Full details of such databases can be obtained from an IPR adviser.

For further, more detailed, information on patent searching, see Annex XIII to this Handbook.

### 4.1.23 Territorial Nature of Patents

As stated above:

- a patent has effect only in the country of grant;
- an International Patent Convention allows the applicant for a national patent in a large number of countries, including all European countries, to file corresponding foreign patent applications for the same invention, within one year of the date of filing the national patent application, without loss of priority.

This arrangement provides time for an applicant to make a decision regarding the countries, if any, in which corresponding foreign applications should be filed.

In making foreign filing decisions, consideration should be given to those countries in which:

- there is a requirement for an indigenous manufacturing capability for the invention;
- the applicant for the patent already has, or intends to establish, a manufacturing capability for the invention;
- there is an existing, or potential, market for the invention;
- there is a requirement to block manufacture, or use, of the invention by competitors;

- there are licensing possibilities, or existing licensing obligations.

In addition to the foregoing foreign filing considerations, the following matters should also be considered:

- the cost of obtaining foreign patent protection, as against the likely advantages of having patents;

- the inventive height of the invention: national patent law and practice, in respect of inventiveness, differ considerably throughout the world, and this will undoubtedly be the determining factor as to whether, or not, patent protection can be obtained for the invention;

- the effectiveness of patents, as and when granted, in the countries concerned.

It should not be overlooked that the patenting of inventions in a number of countries can be expensive. Nevertheless, it is vital for those companies that have lucrative export markets for patentable products, or systems, which have a life expectancy of some years, to protect these markets by obtaining patents for the systems, or products: the cost of obtaining the patents being viewed realistically against the income resulting from such markets.

### 4.1.24 Protection of Research and Development

It will be directly evident, from the foregoing, that patents provide an indispensable means of protecting the results of research and development (R&D).

A review of the Report and Accounts of major multi-national companies will show that these companies spend large amounts of money on R&D.

It is obvious that the useful end results emanating from this R&D expenditure will form the foundations on which the future of these companies will be based. These foundations consist of the future products of the companies which should have been developed to meet the needs of the markets served by them. It follows that enthusiasm for R&D would soon be lost if the useful end results were to become freely available to competitors. This would occur if the companies decided to publish, rather than to protect, the results of their R&D.

It has been estimated that companies spend approximately 2% of their R&D expenditure on patenting.

Such patenting should certainly protect that part of the R&D work that is of immediate use to the company, or at least has some immediate commercial potential. As a rough guide, it has been estimated that, in the electrical/electronic industries, about 25% of all R&D work will usually have commercial potential and that only about 10% of the R&D work is used commercially.

It should be remembered that published patents play an important role, in R&D, as a valuable source of technical information. Bearing in mind the time, expertise and money that is spent on work forming the subject of patents, the technical information made available to R&D personnel should, for the avoidance of abortive work etc., be invaluable in their own research endeavours.

## 4.2 Registered Designs

From the point of view of the registered design system, a 'design' can be defined as the features of shape, configuration, ornament, or pattern applied to an article by any industrial process which, in the finished article, appeal to, and are judged by, the eye.

A design does not, however, include:

- a method, or principle, of construction;
- features of shape, or configuration, of an article which:
  - are dictated solely by the function which the article has to perform;
  - are dependent upon the appearance of another article of which the article is intended, by the author of the design, to form an integral part.

A Registered Design is a form of protection for industrially applied designs and this, or similar, protection is obtainable in various countries throughout the world, including the UK.

### 4.2.1 What protection does a Registered Design give?

A registered design affords the proprietor exclusive rights in the particular design for which registration has been obtained.

Thus, a registered design is granted in respect of a design applied to articles by any industrial process for imparting to the article new, or original, features of shape, configuration, ornament, or pattern.

In the UK, the features of the design, as applied to an article, must have 'eye appeal', in other words, registered designs in the UK protect the aesthetic elements of a product and not the technical elements.

### 4.2.2 Novelty

A design, for which registration is being sought, must not have been known prior to the date of application for registration, that is the design must have novelty.

In the UK, a design will not be regarded as new if it is the same as, or differs in only immaterial details from, a design published in the UK in respect of the same, or any other article, prior to the date of the application for registration.

### 4.2.3 Term of protection

The term of protection for registered designs, in the UK, is 25 years from the date of registration.

### 4.2.4 Convention applications

As is the case with patents, it is possible to file overseas applications, under the Paris convention, and to claim convention 'priority' from a basic national application. Such applications must be filed within 6 months of the date of filing the basic national application.

## 4.3 Mask Works

The design of, for example, large scale integrated circuits (LSIs) is embodied in the photolithographic masks used in their manufacture. These masks determine the topographic structure of the LSI.

### 4.3.1 What are mask works?

Mask works are used to define the topographies of semiconductor chip products and may be protected by registration in a number of European countries, the United States and Japan.

### 4.3.2 Rights available in the UK

In the UK, the protection of semiconductor products, that is semiconductor 'chips' and semiconductor topographies, or 'mask works', is effected by the Copyright, Designs and Patents Act, 1988 ('the 1988 Act') as modified by the Design Right (Semiconductor Topographies) Regulation 1989 ('the 1989 Act') which came into force on 1 August 1989.

### 4.3.3 Definitions

'Semiconductive product' means an article:

- the purpose, or one of the purposes, of which is the performance of an electronic function;
- which consists of two, or more, layers;
  - at least one of which is composed of semiconducting material;

- in, or upon, one, or more, of which is fixed a pattern appertaining to that, or another, function.

'Semiconductor topography' means a design, within the meaning of Section 213 (2) of the 1988 Act, which is a design of either of the following:

- the pattern fixed, or intended to be fixed, in or upon:
  - a layer of a semiconductor product;
  - a layer of material in the course of, and for the purpose of, the manufacture of a semiconductor product;
- the arrangement of the pattern fixed, or intended to be fixed, in, or upon, the layers of a semiconductor product in relation to one another.

### 4.3.4 Ownership

In the case of a topography created in the course of employment, or pursuant to a commission, the owner of the topography right is the employer of the creator, or the commissioner, as the case may be, unless there is a contract to the contrary.

It is, therefore, important for a company involved in the design and use of mask works to ensure that:

- all new, or original, mask works are considered for registration;
- the terms and conditions of all commissions and/or contractual arrangements, issued by the company to a third party for the creation of topographical designs, are such that the ownership of all topographic rights, in the commissioned design, belongs to the company;
- the third party, or any other party, that may be involved is prepared to give certain undertakings to the company.

These undertakings would be:

- to disclose any prior right of which he, or she, is, or becomes, aware may be an infringement risk to the company when carrying out the commission;
- to provide, on request, any necessary assistance, documentation, samples etc. that may be required to enable the company to effect registration of the rights;
- without the express written permission of the company, not to use the mask works for the benefit of anyone, other than the company, and not to sell semiconductor products, incorporating the topography right, to anyone other

than the company.

### 4.3.5 Term of protection

In those European Member States where protection is automatically obtained, for example, in the UK, the exclusive right comes into existence when the topography is:

- first fixed, or encoded; or

- commercially exploited anywhere in the world, i.e. is sold, rented, leased, or distributed by any other commercial method, or is offered for any of these purposes.

In those European Member States where registration is a condition for the coming into existence of the exclusive rights, such exclusive rights will come into force on the earlier of the following dates:

- the date when the topography is first commercially exploited anywhere in the world;

- the date when an application, or registration, has been filed, in due form.

In the UK, and other non-registration countries, the exclusive right comes to an end 10 years from the end of the calender year in which the topography is first commercially exploited anywhere in the world.

In those countries where registration is a requirement, the exclusive right comes to an end 10 years from the end of the calender year in which:

- the topography is first commercially exploited anywhere in the world;

- the application for registration has been filed, in due form;

whichever is the earlier.

Where a topography has not been commercially exploited, anywhere in the world, within a period of 15 years from its first fixation, or encoding, any exclusive rights in existence, pursuant to the provisions outlined above, shall come to an end and no new exclusive rights shall come into existence unless, in those Member States where registration is a requirement, an application for registration, in due form, has been filed, within the 15 year period.

### 4.3.6 Licences of right

Licences of right for the last five years of an unregistered design right are not

available for semiconductor topographies.

### 4.3.7 Infringement

The owner of the design right, in a design, has the exclusive right to reproduce the design by:

- making articles to the design;
- making a design document recording the design for the purpose of enabling the design to be made.

#### (a) Exclusions

It is not an infringement of the design right to reproduce the design:

- privately for non-commercial purposes;
- for 'reverse engineering'.

### 4.3.8 Rights Available in Europe and Elsewhere

As stated above, the layout of semiconductor products is protected in a number of other countries, either automatically (for example Sweden) or by registration of the topography (mask work) with a government organisation (for example USA, Japan, Holland, West Germany and France).

In some countries, the rights are available only to nationals of the country, or of those specific countries giving reciprocity of protection.

In those countries where a registration system is in force, an application to register must, as is stated below for the USA, be filed within two years of first commercial use.

#### (a) USA

In the USA, protection is obtained by means of The Semiconductor Chip Protection Act of 1984, Title III of H.R. 6163, which was signed into law by President Reagan on 9 November, 1984. This Act provided for the first time, a clear legal protection for 'mask works' and the semiconductor chip products in which they are embodied.

In the USA, a mask work is defined as a series of related images, however fixed, or encoded, having, or representing, the predetermined three-dimensional pattern of metallic, insulating, or semiconductor material, present, or removed from the layers of a semiconductor chip product; and in which series the relation of the images

to one another is that each image has the pattern of the surface of one form of the semiconductor chip product.

The effective day of the US Act is 1 July 1983, that is mask works embodied in chips first exploited after this date are protected, subject only to limited rights to sell off existing stocks of copied chips manufactured before the effective date, whereas no protection is afforded to mask works embodied in chips that were first exploited commercially prior to this date.

In the USA, the period of protection is 10 years from the date of registration under the Act, or the date on which the mask work is first commercially exploited anywhere in the world, whichever occurs first.

In the USA, protection terminates if an application for registration is not made within two years of the date the mask work is first exploited anywhere in the world.

### 4.4 Copyright/Unregistered Design Rights

Copyright is the right of the creator of an original work to prevent others from making copies, or adaptations, of the work. The standard of 'originality' varies from country to country. In Germany, it is high, in the UK, where copyright is regarded as protecting the 'skill and labour' of the creator of the work, it is low.

Copyright normally belongs to the creator of the work or, where the creator is employed, to the employer.

Copyright normally lasts for 70 years after the death of the creator. As a consequence of this, copyright protection can be extremely important in that it is likely to provide protection for considerably longer than any other intellectual property right.

The international copyright conventions are the Berne Copyright Convention and the Universal Copyright Convention (UCC).

In accordance with the provisions of the Berne Convention, international copyrights automatically subsist, without formality, in works that are first published in a country that is party to the Berne Union: there is no requirement concerning registration of the work, or the application of a copyright notice to the work.

In order to obtain copyright protection in the countries which are party to the UCC, but not covered by the Berne Convention, it is necessary to comply with certain formalities: for example, copyright must be claimed from first publication by a three element notice applied to the copyright work giving the name of the proprietor, the year of first publication and the letter 'c' in a circle ©. In addition, as a preliminary to the institution of proceedings for infringement, it is necessary for the claim to copyright to be entered in a national copyright register. In the USA, which is party to the UCC and, fairly recently, to the Berne Convention, damages for copyright infringement can

only be claimed from the date on which the copyright work concerned is registered.

All major developed countries, including the USA, UK and other European countries, are party to the Berne Convention and the UCC.

In the UK, copyright protection is conferred automatically upon certain literary and artistic works such as company reports, sales and advertising literature, product manuals, information recorded on tape, or film, and computer programs.

It should be noted that copyright in common law countries, such as the UK, is based on fundamentally different principles to copyright in Roman law countries. In the latter countries, copyright is intended to protect the expression of the author's personality in a work, while in the latter it is the skill and labour devoted to creation of the work that is protected. In practice, the principle distinction that arises from this difference lies in the degree of artistic expression that must be present in a work before it can enjoy copyright protection. This has given rise to serious difficulties in the harmonisation of European copyright laws, particularly with regard to the application of copyright law to the protection of computer programs.

In the UK, the industrial application of designs derived from artistic works which are capable of being registered by the owner of the copyright subsisting in the artistic work, limits the copyright protection for such works to 25 years. This period runs from the date on which the industrially-applied products are first sold, let for hire, or offered for sale, or hire. Computer programs are protected as literary works and enjoy a much longer period of protection.

If the industrial application is not undertaken, then the period of protection for the copyright subsisting in the artistic work will be 70 years after the death of the creator of the work.

Novel industrial designs having features of shape and configuration that do not meet the requirements for registration in the UK, as outlined above, may be automatically protected as unregistered designs.

Unregistered design protection expires 10 years from the end of the year in which products made to the design are first sold, or hired, subject to an overall limit of 15 years from the end of the year in which the design was first recorded in a material form.

The requirements for protection are that:

- the design has been recorded in a design document; or
- an article has been made to the design; and
- the design does not subsist in features of shape and configuration of a product

which:

- enable the product to be connected to, or placed in, around, or against another product so that either of the products may perform its function;

- are dependent upon the appearance of another product of which the product is intended to form an integral part.

Where both copyright and an unregistered design right subsist in a design, anything done which infringes the copyright in the design does not infringe the unregistered design right.

Licences in respect of the unregistered design right are available as of right to third parties in the last five years of the design right term.

### 4.4.1 Copyright Marking

Although, as stated above, copyright in the UK, and for that matter most other European countries, is normally acquired automatically, it is important for companies to ensure that such protection is maximized in accordance with the provisions of the Universal Copyright Convention (UCC) and/or the Berne Convention. In order to benefit from the reciprocal copyright protection provided by the UCC and Berne, in all countries party to these conventions, it would be advisable to mark appropriately all copyright material with a copyright legend. The legend to be used depends on whether the copyright material has been 'published'.

There are no specific marking provisions in the Berne Convention, but for 'published' documents, the UCC requires a three element legend, namely © followed by the name of the copyright owner and the year of first publication.

Example:

© N & M Consultancy Limited 1995. All rights reserved.

It should be noted that modified forms of the symbol ©, for example, (c) or [c], or {c}, or 'C' alone, are not acceptable.

For unpublished copyrighted works, a suitable legend would be:

'This is an unpublished work the copyright in which vests in. . . (insert the name of copyright owner) . . .. All rights reserved'.

It would also be appropriate to mark the printouts of copyrighted information, stored in computer data bases and the like, with a copyright legend.

'Published' means that copies of the work have been:

- issued to the general public, for example, in advertising literature;

- supplied to third parties without any restrictions having been placed on the recipient concerning disclosure and use, i.e. without a confidentiality agreement.

Thus, documents, or any other copyright works, which are only available for use by in-house personnel are not 'published' and will not become 'published' even if they are supplied to others under a licence, or confidentiality agreement.

It is always advisable to retain, or store, the masters of all copyright works, appropriately marked with a copyright legend, because such masters may be required for the settlement of disputes, or infringement actions, and, in particular, to prove title to the copyright work.

It should be noted that copyright protection does not extend to the use, or disclosure, of the information content, as such, of the copyright work.

In view of this, it is always advisable to include the following text, immediately following the copyright legend for 'published' documents in publications, such as advertising brochures for products, or services:

> 'This publication provides outline information only which, unless agreed in writing by the Company, may not be used, applied, or reproduced, for any purpose, or form part of any order, or contract, or be regarded as a representation relating to the products, or services, concerned. The company reserves the right to alter without notice the specification, design, price, or conditions of supply, of any product, or service'.

For unpublished works, an appropriate text to follow the copyright legend would be as follows:

> 'The information contained herein is the property of . . .(insert name of copyright owner) and is supplied without liability for errors or omissions. No part may be reproduced, or used, except as authorised by contract, or other written permission. The copyright and the foregoing restrictions on reproduction and use extend to all media in which the information may be embodied'.

However, if such use, or disclosure, cannot be effected without copying a substantial part of the copyright work, then such use, or disclosure, without the consent of the copyright owner, will be an infringement of the work. 'Substantial', as applied to copyright infringement, is used qualitatively rather that quantitatively: it is used to indicate the value of what has been taken by the infringer, rather than how much has been taken.

Whilst it is not compulsory to register copyright works in the USA, damages for copyright infringement can only be claimed from the date on which the copyright work

is in fact registered.

This does not necessarily mean that all copyright works should be automatically registered in the USA. This must be left entirely to the discretion of the copyright owner. However, for most major companies having fairly extensive portfolios of copyright works, registration would prove to be a very expensive exercise. One possible course of action is to seek registration in the USA as, and when, infringement of a copyright work is suspected, but before taking any action.

Furthermore, in the USA, 'reverse engineering' is permitted in respect of copyright works, including mask works.

As with mask works, particular care is needed when copyright works, such as computer programs, are commissioned from third parties, for example, a software house.

In the absence of an agreement to the contrary, the copyright subsisting in such works automatically belongs to the creator, that is the software house. It is, therefore, very important to ensure that, whenever copyright works are commissioned from third parties, the contract conditions for such commissions include provisions relating to mask work and/or copyright ownership.

It is important to note that copyright infringement may not only involve punitive damages but also an order for delivery up, or destruction, of the infringing copies. It is, therefore, important for companies to ensure that due regard is given by their employees to the copyright works of third parties, because infringement actions can be expensive, not only in terms of cost, but also in damaged reputations and wasted executive resources.

### 4.5 Moral Rights

Moral Rights which are also known as Droit de Suite, or Author's Rights, have always been part of the copyright laws of most European countries, although such rights were not part of the copyright law of the UK until the enactment of the Copyright Designs and Patents Act 1988 (the 1988 Act).

The Moral Right provisions of the 1988 Act bring UK law into line with the rest of Europe, and give the following rights to the creator of a copyright work (other than type faces and computer programs):

- the right to be identified as the author of the work, but only if that right is asserted;

- the right to object to unjustifiable modification of the work, i.e. additions, deletions, or alterations; reasonable modifications which are not prejudicial to the owner, or the reputation of the author, would probably be held to be

justifiable. This provision does not apply to copyright works produced by an employee in the course of his employment.

The most important aspects of the foregoing provisions, for companies, are the problems that may arise if the author of a commissioned copyright work (who is, therefore, not an employee) objects to the work being modified. It is unlikely that the exercise of the right by such an author, to be named as author, will give rise to any serious problems. However, both rights can be waived by the author. It would, therefore, be good practice for companies who employ consultants to ensure that the terms and conditions of their consultancy agreements, third party development contracts, or similar, cover both the transfer of ownership of the resulting property rights, and contain a waiver of any right to be named as author, or to object to modifications.

In addition, the 1988 Act gives a person the right not to have copyright works erroneously attributed to him, or her.

### 4.6 Confidentiality

Innovation, or technical knowledge and expertise, that is not protected by patents, or has not been so protected for some reason, may constitute know-how which can be protected by contract, or by a relationship of confidentiality.

This form of protection is such that any disclosure of the know-how to others could constitute a breach of contract, or confidence, actionable in law.

Know-how which is not covered by the definition for 'IPR' in the ETSI Interim IPR Policy, is not a genuine 'right' but is a most valuable asset. It is the accumulated expertise in the design, manufacturing and selling of a company's products, and technology that cannot always be protected by patents, or other IPRs. If it is not so protected, its value is entirely dependent on secrecy, or confidentiality.

In this connection, it should be noted that in those cases where it is not directly evident from the product that it was produced by a new patentable manufacturing method, or process, it may be advisable not to patent such a method, or process, but to keep it confidential, because infringement of the patent will be difficult to detect, or prove.

### 4.7 Licensing

Innovation and other intellectual material, whether covered, or not, by way of patents, registered designs, trade marks, copyright, or other protection, may be exploited by the beneficial owner, and the owner may grant licences to others for the exploitation of the innovation.

It will be seen from Annex XII to this Handbook, which sets out the principles

and practices of licensing, that licences may be exclusive (excluding the owner too), sole, or non-exclusive, and are normally granted in return for payment, by the licensee, of a lump sum and/or royalties based on the number of licensed products manufactured and/or sold by the licensee.

It will also be seen from Annex XII that licences may advantageously be granted for software, whereby control over its use, security and confidentiality can be achieved.

## 5. SUMMARY

It will be evident from the foregoing that patents, registered designs and, in some countries mask works, are intellectual property rights that have to be acquired by the filing of an application with a competent authority, that such rights are only valid in the countries where protection has been obtained, and that the rights obtained give rise to a statutory monopoly that is a valuable asset to the owner of the right.

Unrestricted disclosure of an invention, or design, prior to the date of application for protection is destructive of novelty and, in most cases, prevents protection from being obtained.

Copyright is not a true 'monopoly'. It gives protection only in respect of unauthorised copying of the form, but not the information content, of the copyright work: it does not prevent use of the underlying ideas of the copyright work.

Because of the limited protection afforded by copyright, patent protection should be sought, whenever possible, for software-based inventions, because an ever-increasing proportion of investment in research and development is spent on software development. Thus, the cost involved in the development of software is very high, and increasing, whereas the cost of reproduction of the software, once developed, is very low, a matter of a few pence. For these reasons, all software developments should be the subject of regular reviews, in association with an IPR adviser, for patentable subject matter.

The importance to be attached to the ownership of IP cannot be over-emphasised and it is, therefore, in the best interests of all companies to ensure that:

- contracts of employment include provisions whereby ownership of the IP generated by employee inventors vests in the employer.

- the terms and conditions of all development contracts with third parties address the issue of IPR ownership, and ensure, as a minimum, that the IPR resulting from the development work can be used, at least for the purposes for which the contract was issued; the main aim should, however, be to secure, whenever

possible, the ownership of the resulting IPR.

In the UK, and elsewhere, certain classes of matter are not regarded as an invention and are, therefore, not patentable. For example, computer programs used to implement business schemes are not patentability. However, a use, or application, of the excluded matter, for example a computer program, could be considered to be an invention, if the other conditions for patentability are satisfied.

# ANNEX III

## THE STANDARDIZATION PROCESS

Annex 3.2

# THE STANDARDIZATION PROCESS

## 1. INTRODUCTION

The ETSI Interim IPR Policy requires that Standards be investigated to determine:

- whether, or not, IPRs, particularly patents, exist which are Essential; and
- if such IPRs do exist, whether, or not, they are available for license.

The primary object is to ensure that Standards are not adopted by ETSI which are subject to IPRs that are not available for license under terms and conditions which enable those Standards to be used.

However, the ETSI Interim IPR Policy is silent on the timing of IPR investigations. Clearly, such investigations should, if possible, be carried out in good time to prevent a Standard which is blocked by IPRs, being formally approved by ETSI.

In this Annex, the standardization process is briefly reviewed with the object of highlighting those points in the process where IPR investigations should be initiated.

The timing of IPR investigations, principally patent searches, will be determined by:

- availability of sufficiently detailed technical information to enable a patent investigation to be carried out;
- avoidance of unnecessary work on a blocked standard; and
- the need to obtain information on the availability of licences before a standard is approved.

## 2. TYPES OF STANDARD

The ETSI Interim IPR Policy defines a Standard in the following terms:

*"STANDARD" shall mean any standard adopted by ETSI including options therein or amended versions and shall include European Telecommunications Standards (ETSs), interim ETSs (I-ETSs) and parts of Normes Européennes des Télécommunications (NETs), Common Technical Regulation (CTRs) which are taken from ETS, I-ETS or Technical Basis for Regulation (TBR), and including drafts of any of the foregoing, the technical specifications of which are available to all MEMBERS, but not including any standards, or parts thereof, not made by ETSI.*

*The date on which a STANDARD is considered to be adopted by ETSI for the purposes of this POLICY shall be the date on which the technical specification of that STANDARD was available to all MEMBERS.*

This definition covers very nearly all the outputs produced by ETSI's Technical Committees. However, not all such outputs will need IPR investigations. The following reasons can be used to justify a decision not to conduct IPR investigations:

- the work item is either:
  - unlikely to result in an approved Standard; and
  - the technical content of the Standard is unlikely to be incorporated in a Standard at some future date;
- the technical content of the Standard is more than 20 years old; or
- the technical content is inherently unpatentable (professional advice should be sought before relying on this ground for not searching).

In general, where a work item results in a deliverable that incorporates recent technical solutions and which is, or may be built into, a Standard specification, it is likely that patent searching will be necessary.

The various types of ETSI work item are now briefly reviewed from the point of view of patents searching:

- European Telecommunications Standard (ETS) - ETSs will normally require patent searching;
- Interim European Telecommunications Standard (I-ETS) - I-ETSs will normally require patent searching;
- Europäische Norm / Vornorm (EN / ENV) - an ETSI Standard which will become a deliverable for CEN, or CENELEC - ENs and ENVs will normally require patent searching;
- ETSI Technical Report (ETR) - a pre-standardization study that will not contain requirements, but may contain recommendations - careful consideration should be given to the need for patent searches;
- Technical Committee Technical Report (TC-TR) - TC working document that will not be published, but which is binding on a TC and its STCs - patent searching will not usually be necessary, but common sense judgements should be made in this respect;

- Technical Committee Reference Technical Report (TCR-TR) - TC working document that will not be published, but which is binding on all TCs - patent searching will not usually be necessary, but common sense judgements should be made in this respect;

- Candidate Norme Européenne de Télécommunication (NET) - Standard mandated under Directive 86/361/EEC, now superseded - patent searching must always be considered;

- Technical Basis for Regulation (TBR) - Standard mandated under Directive 91/263/EEC, cites requirement to operate to available Standards, but does not itself contain technical details, cited Standards are in effect mandatory - patent searching must always be considered for all Standards cited in a TBR - Standards should not be included in a TBR unless it can be demonstrated that all reasonable steps have been taken to identify relevant Essential IPRs and ensure that licences will available in respect of such IPRs;

- Technical Specification (TS) - no longer relevant;

- Functional Specification (FS) - no final information available on this type of work item;

- International Standards Profile (ISP) - a standards profile on which no final information is available;

- Miscellaneous Item (MI) - a work item in which no deliverable document will be produced falling under any of the above classifications - patent searching will not usually be necessary, but common sense judgements should be made in this respect.

## 3. THE STANDARDIZATION PROCESS

The standardization process (see Figure 1 of this Annex III) can be broken down into three stages, namely:

- drafting, in which a document containing the Standard's technical specification and requirements will be produced;

- formal approval procedure, including public enquiry and voting; and

- national transposition, in which the ETSI Standard is converted into a set of national standards.

In general, IPR investigations, including determination of the availability of

licences must be completed before the start of the approval procedure.

### 3.1 Drafting Phase

The drafting phase commences with the creation of a work item by an STC, or TC. The key steps in this process are illustrated in Figure 2 of this Annex III, from which it will be seen that the nature of a particular work item, e.g. TBR, ETR, etc., may affect the procedural steps in the drafting stage. In addition, two accelerated procedures may be adopted for standardization, namely:

- unified approval procedure (UAP); or
- accelerated unified approval procedure (AUAP).

It will also be noted that, where the work item is processed using the "normal" procedure, TA adoption of the work item into the ETSI work programme can occur at any time up to STC approval of the first draft. In other words, an STC should not approve a first draft for a Standard until the corresponding work item has been adopted into the ETSI work programme. For other procedures, the work item must be adopted onto the ETSI work programme before work commences on the work item.

From the point of view of IPR investigations, the following key points can be identified as common to all procedures:

- adoption on to the ETSI work program;
- start of work;
- completion of the scope text and table of contents (ToC);
- completion of first draft;
- STC approval;
- TC approval; and
- start of the formal approval process.

The broad technical field of standardization should be known with reasonable precision by the time the scope text has been completed and the standard should have achieved a degree of technical stability by the time the draft standard has achieved STC approval.

IPR investigations should be complete before the start of the formal approval process.

Annex 3.6

### 3.2 Approval Phase

The formal approval process is illustrated in Figure 3 of this Annex III. From the point of view of IPR investigations, it is not of great significance, since IPR investigations should be completed by the time the formal approval procedure starts.

The following key steps can be identified in the normal formal approval procedure:

- public enquiry;
- TC review following public enquiry
- voting; and
- publication.

Both UAP and AUAP procedures are shortened by the omission of a public enquiry and TC review.

However, it should be noted that Members of ETSI must have the results of IPR investigations before they are asked to vote on a Standard. If this is not the case, Members of ETSI will, in effect, be making a decision on the adoption of a Standard without the necessary commercial information to allow them to make an informed opinion.

### 3.3 National Transposition

During the national transposition stage, a Standard which has passed the ETSI formal approval stage, is converted into a set of national standards - see Figure 1. It should be noted that the final stage of the process is withdrawal of national equivalent standards. By the time an ETSI Standard has reached the national transposition stage, it is really to late to conduct any IPR investigations. At this stage it is to be hoped that no Essential IPRs will come to light which block implementation of the Standard.

## 4. SCOPE STATEMENTS

If ETSI and its Members are to be in a position to conduct IPR investigations aimed at the identification of Essential, or potentially Essential, IPRs, the individual items, making up the ETSI work programme, must be defined with sufficient detail to enable IPR searches to be performed.

Unless the individual items which make up the ETSI work programme, are defined in a manner which enables the conduct of IPR searches, particularly patent

searches, ETSI cannot be said to have exercised reasonable diligence to ensure that its Standards are not blocked by IPRs. It therefore follows that unless the definitions of individual items in the work programme are adequate, from the point of view of patent searching, ETSI has failed to take at least one necessary step to ensure that its Standards are universally available for use, as required by the EC.

To meet the requirement that work items be defined in a manner which facilitates patent searching, the definition of a work item must satisfy the following criteria, namely:

- its precise scope must be defined, in other words, the limits of the technical study which will lead to elaboration of a Standard, must be set with some reasonable precision;

- milestones to be achieved in the course of the work to be performed must be included;

- the target date for the elaboration of the Standard to which the work item relates must be included; and

- the definition must be such as to enable the relevance of IPRs to the work programme item to be determined.

In terms of an IPR investigation, defining the precise scope of a work item means that:

- the work item is defined in such a way that it is searchable; and

- the list of patents which are judged potentially Essential to a work item, as a result of considering the search results, is not excessively long.

For a scope statement to be precisely defined, it must be possible to assign a patent classification code(s) to the scope statement, and derive a search statement from the scope statement. The assignment of an International Patent Classification (IPC) code(s) to a scope statement is prime facie evidence that it is capable of being searched. Whether, or not, the results of such a search will give a realistically analyzable list of patents is another matter. However, use of the International Patent Classification system is by no means easy and requires some degree of specialist training. For ETSI's purposes, a keyword classification system is used as an alternative to the IPC.

The need to conduct patent searches dictates the minimum form of definition required for work items. However, consideration should be given to the value of state of the art patent searches, because of the inherent value such searches may have in determining the best solutions for a Standards problem. The use of patent searching, in appropriate cases, can save considerable investment in 're-inventing the wheel'.

Annex 3.8

The procedures used to define the ETSI work programme and the form of the definition used are intended to:

- have a minimum affect on the work of the Technical Committees (TCs) and Sub-Technical Committees (STCs), unless the affect is demonstrably beneficial to the primary object of those committees, namely to create Standards;

- be cheap to implement; and

- be capable of verification, that is to say, it is easy to demonstrate whether, or not, the definitions of work programme items permits the conduct of adequate patent searches.

The primary requirement of the definition, from the point of view of patent searching, is that the definition should be such as to enable a reasonable search statement to be prepared, and classification codes for the search selected. By defining the broad field of the Standard, for example, digital radio cellular telephony, the search field can be immediately focused on a relatively narrow area of telecommunications. This is of primary importance in determining whether, or not, any system patents are relevant to the Standard.

However, a Standard may include features, such as the use of smart cards, or definitions of an air interface, or signalling protocols, for which searches would have to be directed outside the broad field of the Standard. It is, therefore, of importance to list all features which are likely to be defined in the final Standard. It is not, however, necessary to define precisely what form those features will take, although the more detail the better. For each feature that is listed in the broad field definition, there should be enough information provided to enable:

- the selection of a limited number of patent classification codes for defining the scope of search (the statement must enable the majority of classification codes to be eliminated);

- preparation of a statement, along the lines of a patent claim, that enables the searcher to eliminate the majority of documents bearing the classification codes.

If a Standard is expected to meet certain technical, or commercial criteria, this information may well be of assistance in the preparation of search statements. In particular, information on the basis of the Standard, or the technology to be employed, for example, the Standard is to based on ISO Standard xxx, or the Standard will employ technology owned by Company XYZ Inc., will be invaluable.

Ideally, the definitions of work items for the ETSI work programme should be prepared without the assistance of a patents specialist. However, advice can be

obtained from the ETSI Secretariat, or N&M Consultancy Limited. If it is intended to commission state of the art searches, a searchable definition must be available, well in advance of the start date for work on the item in question, if the results are to influence the technical decisions made by the ETSI TCs and STCs engaged on the work.

It may of course be that the definition of a work item will be modified as a result of a patent search. This in turn will also require reformulation of the definitions appearing in the ETSI work programme.

Any definition of a work item must not impose restraints on the R&D performed in relation to that work item. However, it is important that, when the R&D relating to a particular work item strays outside the original definitions, this fact is reported, so that the definition of the work item in question can be revised.

### 4.1 Summary

The definition of a work item for the preparation of a Standard must satisfy the following criteria:

- the definition of scope must be searchable, and will preferably include:
  - a broad technical field statement (this should create few difficulties);
  - a description of any broad system concepts which are new, that is to say are less than 20 years old;
  - a list of features which the Standard will define, or on which the Standard will place limitations;
  - a technical description of each feature listed, in broad terms; and
  - a list of any criteria which the Standard must satisfy;
- milestones; and
- target dates for meeting those milestones.

However, in order to enable meaningful patent investigations to be carried out by ETSI Members, the scope statement for the work items must be sufficiently precise, technically, and must contain the necessary information on milestones and target dates for the completion of the various stages of the standardization process.

In practice, the search statement should be prepared along the lines of a patent claim having a scope that clearly defines the feature(s) of the work item to be searched.

Annex 3.10

Ultimately, it is the ETSI membership who provide the manpower for ETSI's TCs and STCs who are responsible for ensuring that the scope statements of work items comply with the criteria imposed by possible need for the conduct of patent searches. However, ETSI's Committee Chairmen and ETSI's Secretariat should ensure, wherever possible that, on reaching milestone 2, the scope statement is sufficiently clearly defined to enable a meaningful search statement to be formulated.

## 5. TIMING OF IPR INVESTIGATIONS

If IPRs exist which block a Standard, it is vital that these be discovered at an early stage in the standardization process. This cannot be done if the work items in the ETSI work programme are defined in a manner which makes patent searching difficult, or impossible. It is not simply the requirement to determine whether, or not, a Standard is blocked by IPRs which dictates the need for adequate definition of items in the ETSI work programme, but the need to make effective commercial use of the information which is publicly available on IPRs. State of the art searches can save substantial time and money by preventing a research team reinventing the wheel.

IPR searches need to be directed to those IPRs which are Essential, (as defined in the ETSI Interim IPR Policy), to the Standard expected to arise from an item on the ETSI work programme. To be Essential to a Standard, an IPR must be such that infringement of that IPR cannot be avoided when implementing the Standard. IPRs which are of primary interest in this context are patents and patent applications. The scope of protection conferred by a patent is such that unintentional infringement can easily occur. Most other forms of IPR which may be Essential to a Standard, require acts of copying before infringement occurs. Good housekeeping will ensure that such IPRs are known, and that licences are available, in accordance with the ETSI Interim IPR Policy, when such IPRs are Essential to a Standard.

As will be seen from this Annex III, and Annex XIII (Patent Searching) to this Manual, the search strategies for Essential IPRs involve an indirect approach to the discovery of Essential IPRs, based on the techniques used for product clearance searching.

It is unlikely that all work items will have a scope statement which is adequate for the purposes of IPR searching by the time a work item is submitted for Technical Assembly approval.

There is clearly a need to determine whether, or not, the scope statement meets the criteria needed for the conduct of meaningful patent searches, while not putting undue pressure on TCs and STCs to produce scope statements for work items which comply with these criteria.

The ETSI Secretariat are responsible for ensuring that the scope statements of work items comply with the criteria imposed by the need to conduct meaningful

patent searches - see Section 6 of this Annex III.

The timing and nature of IPR investigations is a critical issue for resolution by ETSI Technical Committees. There may be real advantages to be gained from the conduct of state of the art searches before work starts on a Standard, regardless of whether, or not, a scope statement and Table of Contents exists for the Standard. The primary object of conducting a state of the art search is to assist with the formulation of a preferred technical line of development, either by obtaining information on the best available technical solutions for a particular standardization problem, or by revealing solutions which are not subject to patent protection. While a state of the art search will reveal a wealth of technical data, it should be recognised that analysing that data can pose a significant work load. There is little point in conducting a state of the art search after the start of work on a Standard, unless the Standard in its existing form is known to be blocked by an IPR and an alternative IPR free standardization solution must be found. It is emphasised that state of the art searches are not conducted with the object of identifying Essential patents, but rather as a means of cataloguing known technical information on a particular field together with key patents relating to that field.

Ideally, searches aimed at disclosing Essential IPRs should be carried out as early as possible in the standardization process. However, it is not practical to conduct such searches until a reasonably precise scope statement and Table of Contents exists for a Standard. It should always be possible to conduct such searches before a work item is formally adopted onto the ETSI work programme. A case can be argued that a standard specification will not be sufficiently stable to support a sensible patents search, for Essential patents, until completion of the first draft of a Standard. However, it is difficult to imagine any circumstances which would justify postponing searches for Essential patents until after STC approval of a Standard.

The formal approval procedure allows comments to be made on the technical specification of a Standard and includes a voting procedure on the adoption of a Standard. Some indication of the existence of Essential IPRs, together with their availability under licence, should be available before a Standard goes to public enquiry. This enables interested parties to comment on the Standard in the light of potential costs from licences for Essential IPRs. For example, if a proposed Standard is subject to several Essential patents, an interested party might wish to point out that an alternative solution is believed to be free of IPR problems.

Any changes made to a Standard specification in the TC review, following public enquiry, may result in a need for further IPR searches. This is a matter which will require professional advice.

However many searches are conducted in an attempt to fully reveal the IPR situation affecting a particular Standard, there will always be the possibility of an Essential IPR coming to light after completion of the formal approval procedure, or

even after completion of national transposition. Hopefully such IPRs will not be owned by ETSI Members in view of the disclosure requirements set out in Section 4 of the ETSI Interim IPR Policy, although the waiver set out in Section 4.2 should be noted.

One situation which may lead to conducting searches on approved Standards, is the preparation of a TBR. In the course of work on a TBR it may well be discovered that an approved Standard is to be incorporated into a TBR on which an IPR search has not been conducted. In these circumstances it is vital that serious consideration be given to the conduct of IPR searches.

## 6. OBLIGATIONS AND LIABILITY

Neither ETSI, nor its Members, are obliged by the ETSI Interim IPR Policy to conduct searches for Essential IPRs, unless requested so to do by the EC. However, ETSI does have a responsibility to conduct its affairs in a way which facilitates the conduct of IPR searches, particularly patent searches.

Since ETSI is responsible for the preparation and definition of the work programme for the standardization process, it must be ETSI's responsibility to ensure that the items contained in the work programme are adequately defined, for the purposes of ensuring that adequate patent searches can be conducted. It also follows from this that ETSI should be in a position to demonstrate that the work programme is adequately defined if a dispute arises. In other words, the initial onus of proof for the adequacy of the definition, of items contained in the ETSI work programme, rests with ETSI. Of course, it will be relatively easy to discharge the onus of proof and thereby transfer it to the other party (in a dispute), provided the definition of the item in question is, in fact, adequate.

Because an adequate definition of items in the ETSI work programme determines whether, or not, it is possible to conduct meaningful patent searches, and the results of these searches may in turn determine whether, or not, a Standard is blocked by patents, it can be expected that the adequacy of these definitions will be the subject of dispute. If such a dispute arises, ETSI will almost certainly have to become a party to the dispute, since it is ETSI that has the responsibility for preparing the work programme. A crucial question is: 'Who has the onus of proof for establishing that the definition of an item in the ETSI work programme satisfies the minimum criteria for the conduct of a meaningful patent search?'. The only reasonable answer must be ETSI, since:

- ETSI has the responsibility for compiling the work programme;
- only ETSI has the power to determine whether, or not, a definition satisfies the minimum criteria for the conduct of patent searches, before its inclusion in the work programme; and

- only ETSI is in a position to mitigate a situation in which the definition of an item in the work programme is inadequate.

In an actual dispute, how would the onus of proof be discharged by ETSI? In practice, as dispute resolution proceeds, the onus of proof would pass between the parties, as evidence is introduced by the parties to the dispute.

A typical disputes procedure might run as follows:

- 'A' alleges that an item in the ETSI work programme is not adequately defined, setting out his reasons for believing this to be so;

- ETSI files a counter statement to the effect that the item in question is adequately defined, together with an affidavit from a patent specialist stating that a patent search could be conducted on the basis of the definition: this shifts the burden of proof to 'A';

- 'A' files an affidavit from a patent expert stating that he would be unable to conduct a patent search on the basis of the definition of the work item in question: this shifts the burden of proof back to ETSI;

- ETSI now instructs its patent expert to conduct a patents search, explaining how the search statements etc. employed were derived from the definition of the item in the work programme: if the patent expert is successful, the evidence is available for decision by the tribunal judging the dispute.

It is always going to be easier to prove that a successful search can be conducted, than to prove that it cannot be conducted. In the final analysis the best test of whether, or not, the definition of a work item in the ETSI work programme is adequate is to determine whether, or not, a successful search can be conducted on the basis of the definition. In this context a successful search is one that determines with reasonable precision whether, or not, there exists any patents Essential to a Standard based on the work item. If there is considerable ambiguity as to whether, or not, a large number of patents are Essential to the Standard, then the definition is probably inadequate.

Annex 3.14

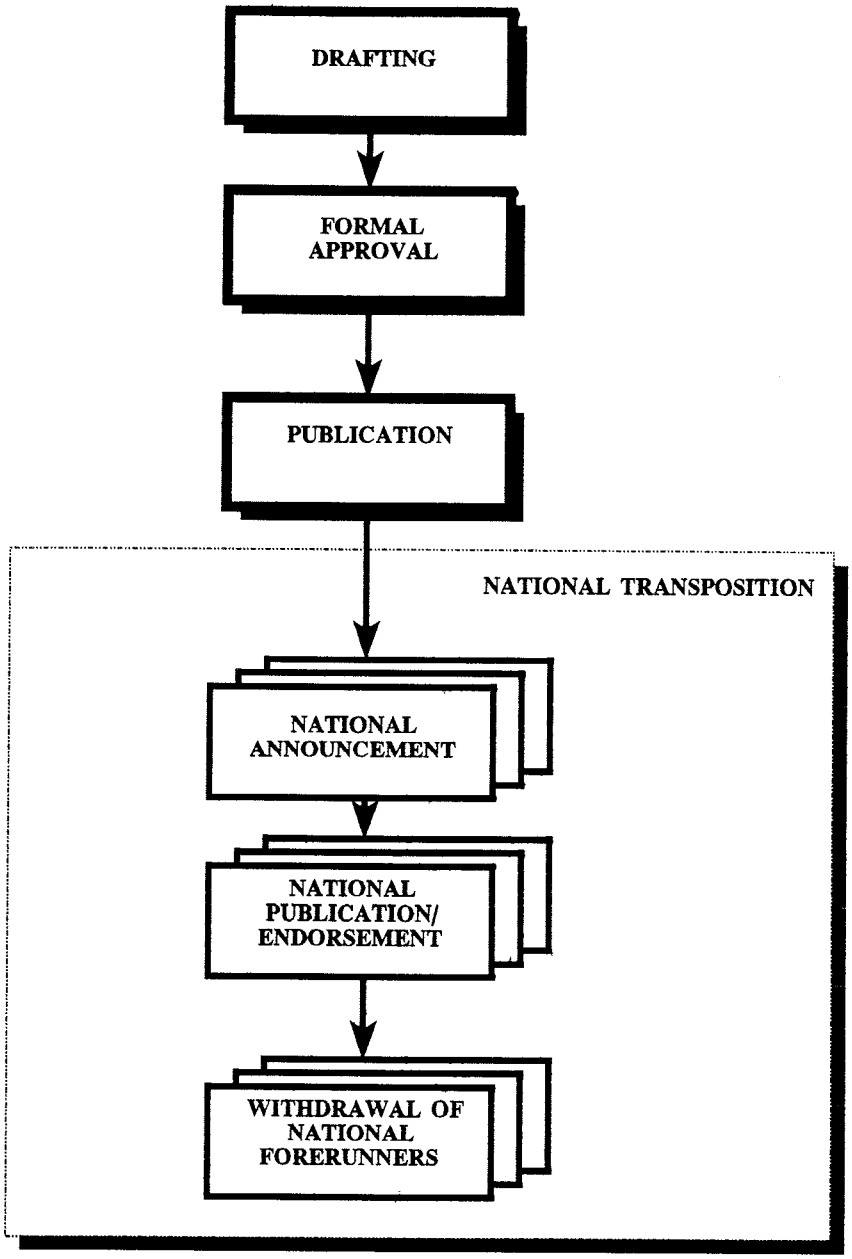


**FIGURE 1: OVERVIEW OF STANDARDIZATION PROCESS AND NATIONAL TRANSPOSITION**

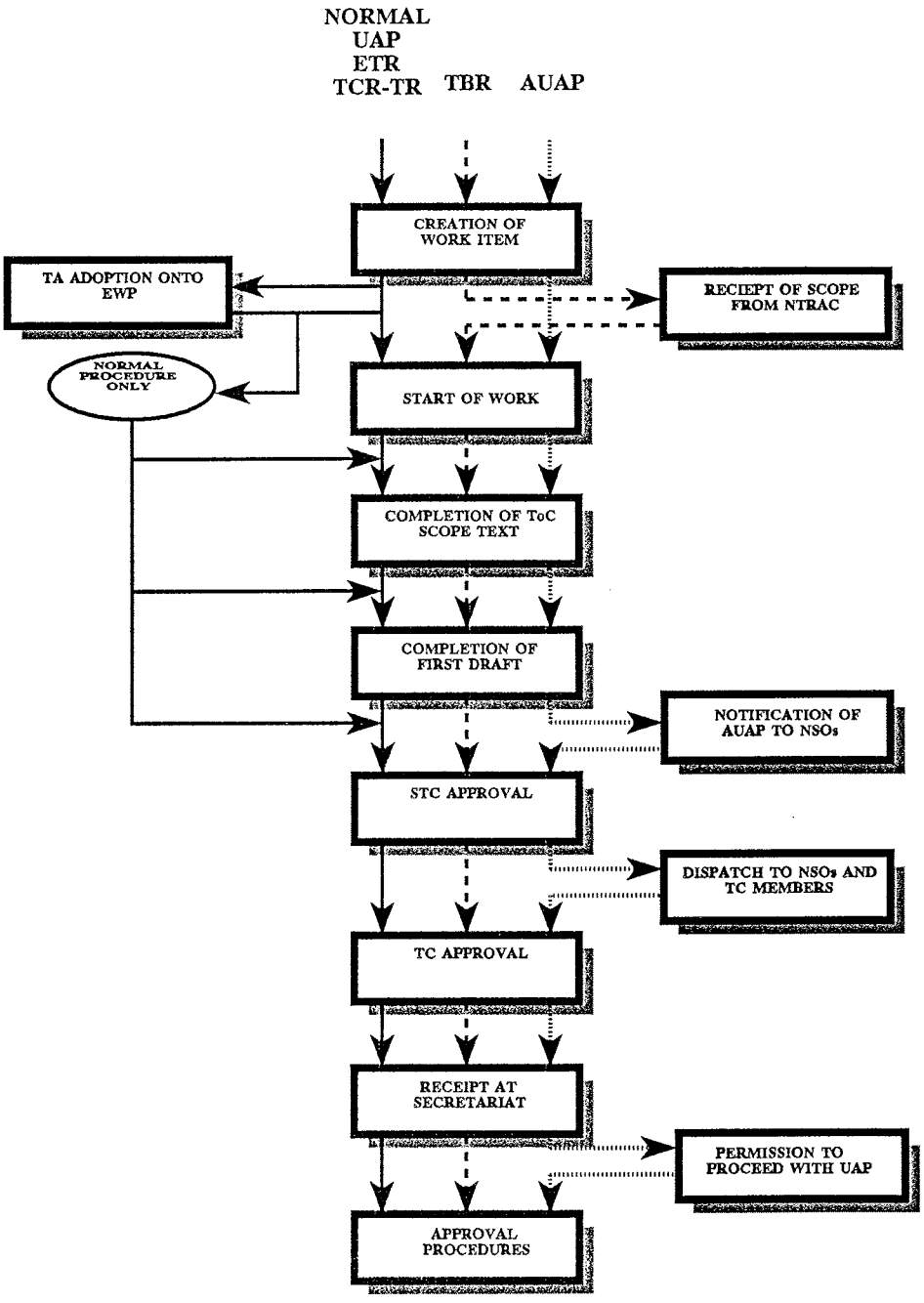


**FIGURE 2: ETSI STANDARDS - DRAFTING PHASE**

Annex 3.16

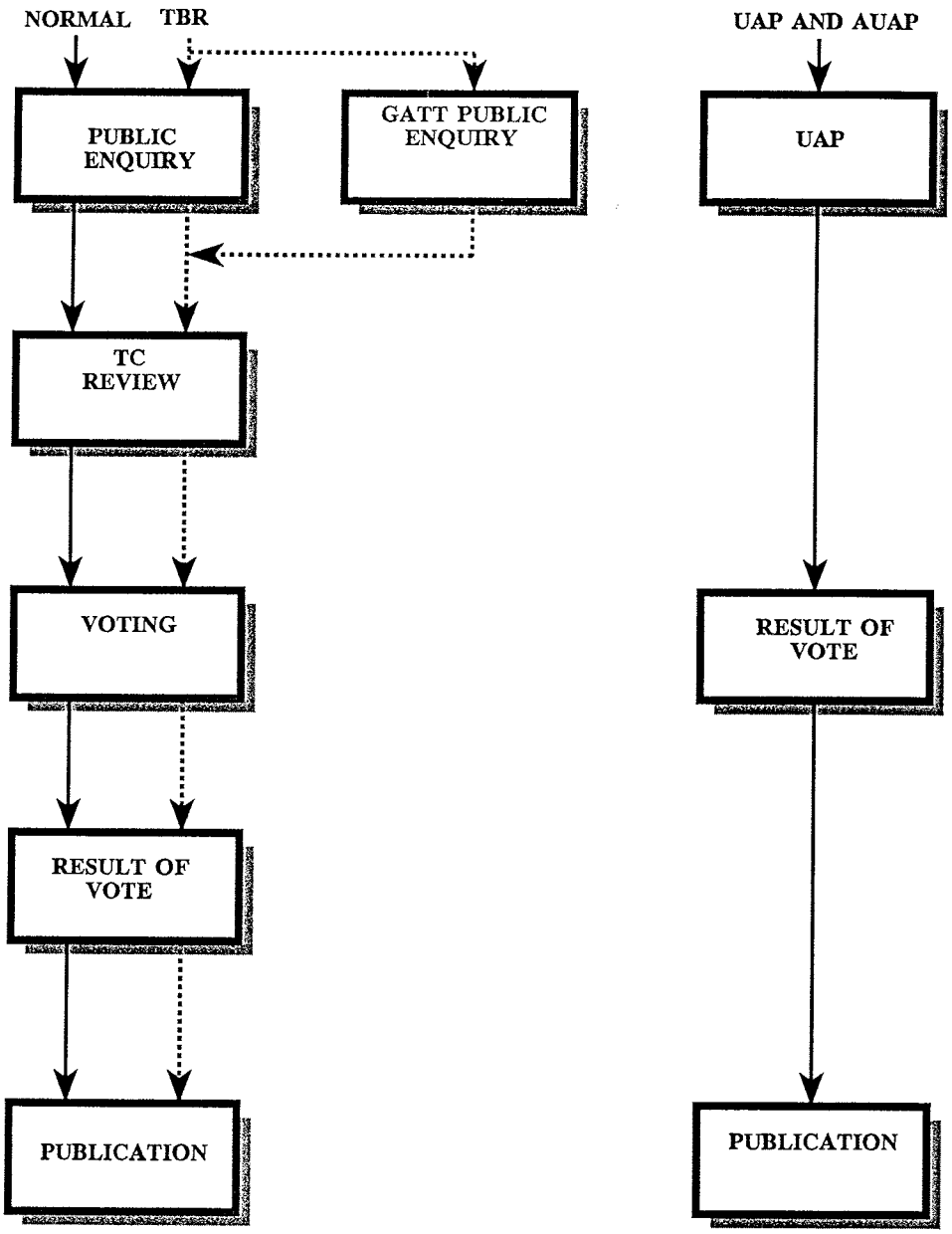


FIGURE 3: FORMAL APPROVAL PROCEDURES