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## **Foreword to the fourth edition**

This fourth edition of the "Case Law of the Boards of Appeal of the European Patent Office" updates the publication to the end of December 2001, whereby for the second half of 2001 mainly decisions which are scheduled for publication in the OJ EPO have been taken into account.

The same proven format has been used: dividing the case law into topics, then illustrating each by short summaries of selected decisions. Many chapters have been thoroughly revised, to give a full picture of the actual case law whilst keeping the publication to a manageable size.

The aim of the book is to help users pinpoint the decisions they need. No summary, however careful, can replace study of the actual decision. Nearly all DG 3's decisions are now available (in the language of proceedings) in the CD-ROM ESPACE-Legal series or in Internet; those published in the Official Journal can also be read in translation in the other two EPO official languages.

My special thanks go to the members of our Legal Research department who with great commitment have updated the text and revised the comprehensive index and table of cases. They go also to the EPO Language Service, without whose energetic co-operation simultaneous publication in our three official languages would not have been possible. Lastly, I wish to thank all the other EPO staff who have helped produce the present publication.

This latest report on the case law of the EPO boards of appeal will be a mine of information for everyone concerned with European patent law.

Peter Messerli  
Chairman of the Enlarged Board of Appeal  
Vice-President Directorate-General 3



## Reader's Guide

### 1. Abbreviations

Art.	Article of the European Patent Convention
BIfPMZ	(Blatt für Patent-, Muster- und Zeichenwesen)
Budapest Treaty	Budapest Treaty on the International Recognition of the Deposit of Microorganisms
CAFC	US Court of Appeal for the Federal Circuit
Contracting States	Contracting States to the European Patent Convention
Corr.	corrigendum
EC	European Community
EPC	European Patent Convention
<i>epi</i>	European Patent Institute (Institute of Professional Representatives before the EPO)
EPO	European Patent Office
EQE	European Qualifying Examination
Guidelines	Guidelines for Examination in the European Patent Office
IP	Implementing provisions to the REE
IPEA	International Preliminary Examining Authority
IRB	International Patent Institute
IRPI	French Institute for research into intellectual property
ISA	International Searching Authority
OJ	Official Journal of the EPO
Paris Convention	Paris Convention for the Protection of Industrial Property
PatG	Patent law (Patentgesetz)
PCT	Patent Cooperation Treaty
PIBD	Bulletin on intellectual property (Propriété industrielle Bulletin Documentaire)
R.	Rule of the Implementing Regulations to the EPC
RDR	Regulation on discipline for professional representatives
REE	Regulation on the European qualifying examination for professional representatives
rev.	revised
RFees	Rules relating to Fees
RPBA	Rule of procedures of the Boards of Appeal
RPC	Reports of Patent Design and Trademark cases
TRIPS	Agreement on Trade-related Aspects of Intellectual Property Rights
UPOV	International Union for the protection of new varieties of plants
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization

## 2. Citations

(a) The articles and rules of the EPC referred to are in the version valid at the time the decision was given.

(b) The Official Journal of the EPO is cited as OJ, followed by the year of publication and page number (eg OJ 1993, 408).

(c) If a decision of a Board of Appeal has been **published** in the OJ the reference is given.

If a decision has **not** been **published** in the OJ, normally only the case number is cited.

In the table of cases, the bibliographic data of all cited decisions (ie reference number, the Board which took the decision, the date of the decision, and - where applicable - the citation in the OJ) are listed.

(d) The citation "**Special edition of the Official Journal 1999 - Case Law**", for example, refers to the Board's case law 1998, published as an OJ supplement in 1999).

## 3. Case numbers

The case numbers comprise a **letter** followed by a sequence of **numbers**:

G Decisions of the Enlarged Board

J Decisions of the Legal Board

T Decisions of a Technical Board

W Decisions of a Technical Board on protests under R. 40.2 or 68.3 PCT

D Decisions of the Disciplinary Board

The number before the oblique is a **serial number**, allocated by chronological order of receipt in DG 3. The two numbers after the oblique indicate the **year of receipt** of the appeal in DG3.

**Headnotes of decisions to be published in the OJ and which became available after final editing of the main text (only in the language of proceedings).**

**T 9/00** - 3.3.2 (18 December 2001)

Headnote:

Legt eine (juristische) Person durch zwei verschiedene Schriftsätze Einspruch gegen ein erteiltes Patent ein, so erlangt sie nur einmal die Rechtsstellung als Einspruchspartei, auch wenn beide Schriftsätze die Voraussetzungen der Art. 99 (1) EPÜ und der R. 55 EPÜ erfüllen (siehe Gründe 2.cc).

Begründet der zuletzt gestellte Einspruch dieser Person keine Änderung des rechtlichen Rahmens im Einspruchsverfahren gegenüber dem zuerst gestellten Einspruch, so ist der später gestellte Einspruch mangels allgemeinen Rechtsschutzbedürfnisses unzulässig.

Ein allgemeines Rechtsschutzbedürfnis kann für den zuletzt gestellten Einspruch nicht daraus abgeleitet werden, daß er einem anderen Geschäftsbereich zugeordnet wird als der zuerst eingelegte Einspruch und nur dieser Geschäftsbereich an einen Dritten übertragen wird.

Ist der Gegenstand eines Einspruchs zwei verschiedenen Geschäftsbereichen des Unternehmens der Einsprechenden zugeordnet, wie im vorliegenden Fall, kann die Parteistellung der Einsprechenden nur durch Übertragung beider Geschäftsbereiche oder des gesamten Unternehmens auf einen Dritten übergehen.

**T 789/96** - 3.4.1 ( 23 August 2001)

Headnote:

Est dépourvue de caractère thérapeutique au sens de l'art. 52(4) CBE une méthode appliquée au corps humain ou animal qui implique l'utilisation d'un stimulateur cardiaque produisant des effets thérapeutiques, dès lors que l'invention consiste à perfectionner ladite méthode, mais que le perfectionnement n'a pas pour effet de prévenir ou de traiter un état pathologique.

**T 323/97** - 3.3.6 (17 September 2001)

Headnote:

I. An amendment to a patent by the introduction of a "negative" technical feature into a claim resulting in the exclusion of certain embodiments is, regardless of the name "disclaimer", none the less an amendment governed by Art. 123(2) and (3) EPC (point 2.2 of the Reasons for the Decision).

II. Re: Admissibility of disclaimers (point 2.3 to 2.5 of the Reasons for the Decision).

**G 3/99** (18. Februar 2002)

Leitsätze:

1. An opposition filed in common by two or more persons, which otherwise meets the requirements of Art. 99 EPC and R. 1 and 55 EPC, is admissible on payment of only one opposition fee.
2. If the opposing party consists of a plurality of persons, an appeal must be filed by the common representative under R. 100 EPC. Where the appeal is filed by a non-entitled person, the Board of Appeal shall consider it not to be duly signed and consequently invite the common representative to sign it within a given time limit. The non-entitled person who filed the appeal shall be informed of this invitation. If the previous common representative is no longer participating in the proceedings, a new common representative shall be determined pursuant to R. 100 EPC.
3. In order to safeguard the rights of the patent proprietor and in the interests of procedural efficiency, it has to be clear throughout the procedure who belongs to the group of common opponents or common appellants. If either a common opponent or appellant (including the common representative) intends to withdraw from the proceedings, the EPO shall be notified accordingly by the common representative or by a new common representative determined under R. 100(1) EPC in order for the withdrawal to take effect.

## **I. PATENTABILITY**

European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.

### **A. Patentable inventions**

Art. 52(2) EPC contains a non-exhaustive list of things which shall not be regarded as inventions. It will be noted that the exclusions on this list are all either abstract (eg discoveries, scientific theories etc.) or non-technical (eg aesthetic creations or presentations of information). Art. 52(4) EPC provides that methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body shall not be regarded as inventions which are susceptible of industrial application.

#### **1. Technical nature of an invention**

An invention must have a technical character. In particular, this requirement is not met if the patent application or the patent relates to mathematical methods, rules and methods for performing mental acts or doing business, presentation of information or computer programs **as such** (see Art. 52(2), (3) EPC).

To assess the latter criterion a number of decisions have adopted the approach that an invention has a technical character if it provides a technical contribution to the art in a field not excluded from patentability under Art. 52(2) EPC (**T 121/85, T 38/86** (OJ 1990, 384), **T 95/86, T 603/89** (OJ 1992, 230), **T 71/91, T 236/91, T 833/91, T 77/92**).

However, recent decisions considered this approach not to be appropriate to assess whether or not an invention has technical character.

In **T 931/95** (OJ 2001, 441) the board stated that there was no basis in the EPC for distinguishing between "new features" of an invention and features of that invention which are known from the prior art when examining whether the invention concerned may be considered to be an invention within the meaning of Art. 52(1) EPC. Thus there was no basis in the EPC for applying the so-called contribution approach for this purpose. Indeed, this approach confused the requirement of "invention" with the requirements of "novelty" and "inventive step". Already in **T 1173/97** (OJ 1999, 609) it was held that determining the technical contribution an invention achieved with respect to the prior art was more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Art. 52(2) and (3) EPC.

According to **T 931/95**, criteria to decide whether or not the requirement of technical character or technicality was fulfilled by an invention as claimed may be a technical effect achieved by the invention (eg the "further technical effect" of a computer program within the meaning of **T 1173/97**, OJ 1999, 609 - see below I.A.1.1), or the fact that technical considerations were required to carry out the invention (cf. **T 769/92**, OJ 1995, 525 - see below I.A.1.4). On the

other hand, the mere occurrence of technical features in a claim did thus not turn the subject-matter of the claim into an invention within the meaning of Art. 52(1) EPC. Such an approach would be too formalistic and would not take due account of the term "invention".

### **1.1 Computer-implemented inventions**

The Guidelines for Examination in the European Patent Office (as revised in 2001) now use the term computer-implemented inventions to indicate claims which involve computers, computer networks or other conventional programmable apparatus whereby prima facie the novel features of the claimed invention are realised by means of a program or programs. The non-patentability of computer programs **as such** does not preclude the patenting of computer-implemented inventions. If the claimed subject-matter has a technical character it is not excluded from patentability by the provisions of Art. 52(2) and (3) EPC. Even after the criticism against the "contribution approach" for assessment of the technicality of an invention the case law starting with **T 208/84** (OJ 1987, 14) remains the basis for EPO practice with regard to computer-implemented inventions.

**T 208/84** (OJ 1987, 14) set out the principles governing the patentability of computer-related inventions. Even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method **as such**. A claim directed to a technical process carried out under the control of a program (whether by means of hardware or software) cannot be regarded as relating to a computer program **as such**. A claim which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program **as such**.

The next leading case, decision **T 26/86** (OJ 1988, 19), examined whether an X-ray apparatus incorporating a data processing unit operating in accordance with a routine was patentable. The board considered that the claim related neither to a computer program on its own and divorced from any technical application, nor to a computer program in the form of a recording on a data carrier, nor to a known, general purpose computer in combination with a computer program. It found instead that the routine in accordance with which the X-ray apparatus operated produced a technical effect, ie it controlled the X-ray tubes so that by establishing a certain parameter priority, optimum exposure was combined with adequate protection against overloading of the X-ray tubes.

The invention was therefore patentable irrespective of whether or not the X-ray apparatus without this computer program formed part of the state of the art. The board held that an invention must be assessed as a whole. If it made use of both technical and non-technical means, the use of non-technical means did not detract from the technical character of the overall teaching. The EPC does not prohibit the patenting of inventions consisting of a mix of technical and non-technical elements.

The board therefore regarded it as unnecessary to weigh up the technical and non-technical features in a claim in order to decide whether it related to a computer program as such. If the invention defined in the claim used technical means, its patentability was not ruled out by Art.



52(2)(c) and (3) EPC and it could be protected if it met the requirements of Art. 52 to 57 EPC.

In **T 209/91** the board upheld the principle formulated in **T 26/86** (OJ 1988, 19) that the patentability of an invention making use of both technical and non-technical features could not be ruled out a priori. A claim must be assessed as a whole; the fact that it included non-technical features did not detract from the technical character of the overall teaching, provided these features also helped to bring about the technical effect.

In **T 6/83** (OJ 1990, 5) the board found that an invention relating to the co-ordination and control of the internal communication between programs and data files held at different processors in a data processing system having a plurality of interconnected data processors in a telecommunications network, the features of which were not concerned with the nature of the data and the way in which a particular application program operated on them, was to be regarded as solving a problem which was essentially technical. The control program was therefore comparable to the conventional operating programs required for any computer to coordinate its internal basic functions and thereby permit the running of a number of programs for specific applications. Such an invention was to be regarded as solving a problem which was essentially technical and thus an invention within the meaning of Art. 52(1) EPC.

In **T 158/88** (OJ 1991, 566) the board stated that a method for the display of characters (eg Arabic characters) in a particular preset shape chosen from several possible character shapes did not in essence describe a technical method of operating a data processing system and its visual display unit, but an idea for a program. A computer program did not become part of a technical operating method if the teaching claimed was confined to changing data and did not trigger any effect over and above mere data processing. When examining whether the method in question served to solve a technical problem which could make the program defined in the claim patentable as part of a teaching on technical operations, the board came to the conclusion that where the data to be processed according to a claimed method represented neither operating parameters nor a device, nor had a physical or technical effect on the way the device worked, and no technical problem was solved by the claimed method, the invention defined in the claim did not make use of any technical means and in accordance with Art. 52(2)(c) and (3) EPC could not be regarded as a patentable invention within the meaning of Art. 52(1) EPC.

In **T 769/92** (OJ 1995, 525) the board held that an invention comprising functional features implemented by software (computer programs) was not excluded from patentability under Art. 52(2)(c) and (3) EPC if technical considerations concerning particulars of the solution of the problem the invention solved were required in order to carry out that same invention. Such technical considerations lent a technical nature to the invention in that they implied a technical problem to be solved by (implicit) technical features. An invention of this kind was considered not to pertain to a computer program as such under Art. 52(3) EPC. The decision set out that non-exclusion from patentability could not be destroyed by an additional feature which as such would itself be excluded, as in the present case features referring to management systems and methods which might fall under the "methods for doing business" excluded from patentability under Art. 52(2)(c) and (3) EPC.

In **T 59/93** a method for entering a rotation angle value into an interactive graphic system was claimed. This method, implemented on a programm-controlled computer, its operator being the user, allowed the rotation of displayed graphic objects with increased accuracy. The board held that the method claim defined, by the steps the method comprised, the functional features of said system. These features were neither regarded as relating to mathematical methods as such (the calculating steps were considered to be only means used within the overall method), nor as claims to computer programs as such (the operation of the system, in its use under the control of such programs, brought about technical effects which solved a problem which was to be regarded as involving technical considerations), nor as relating to the presentation of information as such (the excluded subject-matter was not claimed as such, but was only a tool for implementing certain steps of the method claimed as a whole). The board held that methods comprising excluded features, but nevertheless solving a technical problem and bringing about technical effects, were to be considered as making a technical contribution to the art.

In **T 953/94**, claim 1 of the main request related to a method of generating with a digital computer a data analysis of the cyclical behaviour of a curve represented by a plurality of plots relating two parameters to one another. The board held that such a method could not be regarded as a patentable invention, because an analysis of the cyclical behaviour of a curve was clearly a mathematical method excluded as such from patentability. The reference to a digital computer only had the effect of indicating that the claimed method was carried out with the aid of a computer, ie a programmable general-purpose computer, functioning under the control of a program excluded as such from patentability. The fact that the description disclosed examples in both non-technical and technical fields confirmed that the problem solved by the claimed mathematical method was independent of any field of application and could thus lie, in the case at issue, only in the mathematical and not in a technical field.

The fifth auxiliary request read as follows: "A method of controlling a physical process based on analysing a functional relationship between two parameters of the physical process comprising the steps of: measuring the values of the two parameters, and generating with a digital computer a data analysis of the cyclical behaviour of a curve represented by a plurality of plots relating the two parameters to one another, ..." The last feature was worded as follows: "(h) extending the range of said one parameter in accordance with the data generated for displaying on a visual display unit the prolongation of said curve for use in the control of said physical process."

The board emphasised that claim 1 of the fifth auxiliary request was not excluded from patentability only because of the insertion of the expression "for use in the control of said physical process". Contrary to the decision of the opposition division the board decided that this wording limited the claim in a technical sense. Claim 1 no longer referred to the mere possibility of using the mathematical method in a technical or physical process. It was agreed that if the expression "for use" were understood as merely indicating that the claimed extension of the range of a parameter for displaying the prolongation of the curve would be "suitable" for use in the process control, such an interpretation might cast doubt on the effectiveness of the limitation of the claim. However, in conjunction with the expressly intended restriction of the claimed method to a "method of controlling a physical process" the word "for", in the board's view, could no longer be interpreted as merely meaning "suitable"

but as "used to control a physical process". The board concluded that the subject-matter of the fifth auxiliary request in its proper interpretation was not excluded from patentability.

In **T 1173/97** (OJ 1999, 609) and **T 935/97** the board of appeal examined the patentability of computer program products. The claims rejected by the examining division were directed, i. a., to computer program products directly loadable into the internal memory of a digital computer or stored on a computer usable medium or to a computer readable medium, having a program recorded thereon. The board pointed out that the only relevant source of substantive patent law was the EPC. However, the recent developments in the U.S. and Japan relating to patent protection for computer program products (although the legal situation in these countries differed greatly from that under the EPC) and the TRIPS agreement (even though this treaty was not directly applicable to the EPC) represented a useful interpretation of modern trends and might contribute to a world-wide harmonisation of patent law.

The board started from the assumption that for an invention to be patentable under the EPC it must have a technical character. Programs for computers could be considered as patentable inventions if they have a technical character. Their technical character could not however be acknowledged for the sole reason that programs cause physical modifications of the hardware (eg electrical currents) deriving from the execution of the program instructions. A technical character might however be found in further effects deriving from the execution by the hardware of the instructions given by the computer program: Where these further effects had a technical character or where they cause the software to solve a technical problem, an invention which brought about such an effect might be considered an invention, which could, in principle, be the subject-matter of a patent.

However, every computer program product only produced and showed in physical reality an effect if the program concerned was made to run on a computer. The computer program product itself only possessed the "potential" to produce also a "further" technical effect. As the board saw no good reason for distinguishing between a direct technical effect and the potential to produce a technical effect it held that a computer program product having this potential to cause a predetermined further technical effect was, in principle, not excluded from patentability under Art. 52(2)(3) EPC. Thus, a computer program claimed by itself was not excluded from patentability if the program, when running on a computer or loaded into a computer, brought about, or was capable of bringing about, a technical effect which went beyond the "normal" physical interactions between the program (software) and the computer (hardware) on which it was run. The board has not yet decided how such a claim is to be formulated.

In **T 513/98** the invention addressed the problem of making it possible to use the mailer stations having computer controllable databases interconnected, by a communication link, with a computerized central data station in a more efficient and economical manner. The problem arose in the use of a system which was technical per se and thus not excluded from patentability (Art. 52(2) and (3) EPC). Even if the new features of the system did not change the hardware of the known system, the required software changes would nevertheless cause the system to be technically different with respect to the dividing, storing and transmitting of mail handling data. Moreover, the board pointed out that, although these changes might be

essentially inspired by methods for doing business, they nevertheless involved technical considerations relating to the field of mailing, such as the overall operation of the interconnected system, the provision of storage area for mail handling categories, the prevention of unauthorized access to the categories and the transmission of information from these categories. Therefore, these features had to be considered as technical features in the meaning of R. 29(1) EPC which contributed to solving a problem arising in mailing systems and which for these reasons, could not be disregarded when judging inventive step (see also **T 769/92**, OJ 1995, 525, point 3.3 and **T 1173/97**, OJ 1999, 609, points 7.4 and 8).

## **1.2 Word-processing**

Decision **T 115/85** (OJ 1990, 30) related to a method for displaying one of a set of predetermined messages comprising a phrase made up of a number of words, each message indicating a specific event which might occur in the input-output device of a word processing system which also included a keyboard, a display and a memory.

The board observed that giving visual indications automatically about conditions prevailing in an apparatus or a system was basically a technical problem. The application proposed a solution to such a technical problem involving the use of a computer program and certain tables stored in a memory. It adopted the principle laid down in decision **T 208/84** (see also I.A.1.1): an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. However, it did not follow from this that conversely a computer program could under all circumstances be considered as constituting technical means. In the case in question the subject-matter of the claim, phrased in functional terms, was not barred from protection by Art. 52(2) EPC and Art. 52(3) EPC.

In **T 22/85** (OJ 1990, 12) the same board had to decide on the patentability of a method for automatically abstracting and storing an input document in an information storage and retrieval system and a corresponding method for retrieving a document from the system. The board observed that the described method fell within the category of activities defined in Art. 52(2)(c) EPC. It considered that the mere setting out of the sequence of steps necessary to perform the activity in terms of functions or functional means to be realised with the aid of conventional computer hardware elements did not import any technical considerations and could therefore neither lend a technical character to the activity nor to the claimed subject-matter considered as a whole, any more than solving a mathematical equation could be regarded as a technical activity when a conventional calculation machine is used.

In **T 38/86** (OJ 1990, 384) the board first of all had to assess the patentability of a method for automatically detecting and replacing linguistic expressions which exceeded a predetermined understandability level in a list of linguistic expressions. The board was of the opinion that a person who wished to carry out such a task using his skills and judgment would perform purely mental acts within the meaning of Art. 52(2)(c) EPC; the schemes, rules and methods used in performing such mental acts are not inventions within the meaning of Art. 52(1) EPC. The board stated that the use of technical means for carrying out a method, partly or entirely without human intervention, which, if performed by a human being, would require him to

perform mental acts, may, having regard to Art. 52(3) EPC, render such a method a technical process or method and therefore an invention within the meaning of Art. 52(1) EPC. Since patentability is excluded only to the extent to which the patent application relates to excluded subject-matter or activities as such, it appeared to be the intention of the EPC to permit patenting in those cases in which the invention involves a contribution to the art in a field not excluded from patentability. In the case in point this condition was not satisfied: once the steps of the method for performing the mental acts in question had been defined, the implementation of the technical means to be used in those steps involved no more than the straightforward application of conventional techniques and had therefore to be considered obvious to a person skilled in the art. In the case of a claim for an apparatus (here, a word processing system) for carrying out a method which did not specify any technical features beyond those already comprised in a claim pertaining to said method and furthermore did not define the apparatus in terms of its physical structure, but only in functional terms corresponding to the steps of that method, the board stated that the claimed apparatus did not contribute anything more to the art than the method. Thus, in spite of the fact that the claim was formulated in a different category, in such cases, if the method was excluded from patentability, so was the apparatus.

Decision **T 38/86** was confirmed by decision **T 121/85**. The claims related to word processing carried out by a word processing system including a processor controlled by a computer program. The board concluded that nothing in the disclosure pointed to a contribution, such as a program, going beyond the fields of linguistics and computer functioning directly derived from the linguistic rules to be applied (the applicant had claimed software solutions to the linguistic problem of checking the spelling of a word). Thus the claim was excluded from patentability under Art. 52(2)(c) and (3) EPC.

The patentability of computer-related inventions was again considered in decision **T 95/86**. The applicant had claimed a method of text editing. The board found the activity of editing a text to be principally concerned with its linguistic and layout features. The editing of a text as such - even performed with the aid of a machine - therefore fell within the category of schemes, rules and methods for performing mental acts which under Art. 52(2)(c) and (3) EPC are not patentable. The board took the view that the mere setting out of the sequence of steps necessary to perform an activity - excluded as such from patentability - did not import any technical considerations, even if those steps were described as functions or functional means to be implemented with the aid of conventional computer hardware elements.

In **T 110/90** (OJ 1994, 557) the invention was for a method of transforming a first editable document form prepared using a batch word processing system into a second editable document form for use on an interactive or batch word processing system. Following **T 163/85** (OJ 1990, 379) the board found that control items (eg printer control items) included in a text represented in the form of digital data were characteristic of the word-processing system in which they occurred in that they were characteristic of the technical internal working of that system. Such control items therefore represented technical features of the word-processing system in which they occurred. Consequently, transforming control items which represented technical features belonging to one word-processing system into those belonging to another word-processing system constituted a method of a technical nature.

In **T 71/91** the board considered the patentability of an electronic document system consisting of a plurality of processors or workstations which received and transmitted documents in the form of a data stream. The data represented both the contents of a document and information on the kind of processing to be performed relative to it. If a processor detected processing information which it was not capable of performing, that information was not merely ignored but was stored in a memory and retrieved when the data stream was transmitted to another processor. The data stream was thus reconstituted and the transmitted data was substantially the same as the received data, no information having been lost. The board held, following **T 38/86** (OJ 1990, 384), that it was clear that the claimed subject-matter made a contribution to the art in a field not excluded from patentability. The board also pointed out that in an analogous case, **T 110/90** (OJ 1994, 557), the "control of hardware such as a printer" was held not to be excluded under Art. 52(2)(c) EPC since it was not concerned with "the linguistic meaning of words of the text". Similarly, in the case before the board, the data to be processed was also distinct from the content of the document itself.

The interrelationship of excluded and non-excluded features was considered in **T 236/91**. Following **T 208/84** (OJ 1987, 14), **T 38/86** (OJ 1990, 384) and **T 26/86** (OJ 1988, 19), the board reiterated that while the EPC does not prohibit the patenting of inventions consisting of a mix of excluded and non-excluded features, and since patentability is excluded only to the extent to which the patent application relates to excluded subject-matter or activities as such, it appeared to be the intention of the EPC to permit patenting (only) in those cases in which the invention involved a contribution to the art in a field not excluded from patentability.

Applying this to the present case, the board found that even after the claimed computer had been found not to be obvious, it had still to be decided whether or not a technical contribution to the art had been made by the non-obvious feature or features of that computer. The gist of the claimed invention, in the board's view, could be seen in the fact that a sentence in natural language was parsed not only after it had been entered completely into the computer, but, on the contrary, step by step after each word or phrase had been entered, and that depending on the result of this parsing, a new menu presenting only a selection, namely, a selection which could not be predefined by the designer of the computer, of possible continuations of the sentence was created. In this sense, the internal working of the computer as claimed was not conventional and should, in the opinion of the board, be regarded as a technical effect.

### **1.3 Presentations of information**

In **T 163/85** (OJ 1990, 379), regarding a colour television signal characterised by technical features of the system in which it occurred, the board considered it appropriate to distinguish between two kinds of information when discussing its presentation; according to this distinction, a TV system solely characterised by the information per se, eg moving pictures modulated on a standard TV signal, might fall under the exclusion of Art. 52(2)(d) and (3) EPC, but not a TV signal defined in terms which inherently comprised the technical features of the TV system in which it occurred; as the list of exclusions from patentability summed up in Art. 52(2) in conjunction with Art. 52(3) EPC was not exhaustive in view of the phrase "in particular" in the first line of paragraph 2, the exclusion might arguably be generalised to subject-matter which was essentially abstract in character, non-physical and therefore not

characterised by technical features within the meaning of R. 29(1) EPC.

In **T 603/89** (OJ 1992, 230) the invention consisted of an apparatus for and a method of learning how to play a keyboard instrument, with numbers corresponding to notes on a sheet of music appearing on the keys too. The technical feature claimed was the marking of the keys. Patentability was ruled out by Art. 52(2)(c) and (d) EPC. Since the key markings were merely known technical features, the contribution made by the claimed invention to the working of the teaching apparatus lay solely in the content of the information displayed, not in the apparatus itself. The invention was not based on a technical problem, but on an improvement to a teaching method, which was equivalent to an improvement to a method for performing mental acts.

In **T 77/92**, the invention concerned a method of selecting, in emergency situations, the correct patient treatment values, namely drug dosage, defibrillation technique energy and/or apparatus size. The method comprised measuring the body length of the emergency patient using a particular tape and rapidly selecting the said correct patient treatment values without the exercise of clinical expertise, calculation or reference to other data sources. The particular tape used had increments of heel-to-crown length, each increment bearing indications of the correct treatment value appropriate to that increment and predetermined by a co-relation between the measured heel-to-crown height of a patient and a correct treatment value. According to the established case law, for an invention not to be excluded from patentability, the board in **T 77/92** had to consider whether the subject-matter claimed, which had to be assessed as a whole, was technical in character or provided a technical contribution to the prior art, i.e. a contribution in a field not excluded from patentability. After having defined the prior art, the board concluded that the decision under appeal did not adequately evaluate the co-relation between the heel-to-crown length of a patient and each of the treatment values provided on the measuring tape. This co-relation between the measured length and the information on the tape measure resulted in the tape used in the claimed methods becoming a new gauge for directly measuring the patient treatment values, just as an altimeter is obtained merely by replacing the scale of a pressure gauge with a scale indicating altitude. Such a new gauge for directly measuring the patient treatment values was clearly technical in character.

Further to **T 115/85** (see p. 6) the board ruled in **T 362/90** that automatic visual display of the conditions prevailing or desirable in an apparatus or system was basically a technical problem. A claim directed to a device displaying (especially in heavy goods vehicles) both the gear in use and (by evaluating signals about engine performance) the best gear to be in was not unpatentable under Art. 52(2)(d) EPC even if it did involve non-technical features relating to the presentation of information.

In **T 790/92** the board considered **T 115/85** (OJ 1990, 30) where it was held that displaying messages indicating a specific event which might occur in the device in a processing system was basically a technical problem because it involved the internal functioning of a device. In the present case, however, the board stated that it was not such a technical "event" or "condition" concerning the functioning of a device and therefore posing a technical problem which would give rise to a message, but a discrepancy between the information presented by the chart and the information the chart was normally intended to present. The board held

that such a discrepancy between normal and modified presentations of information could not be considered as being of a technical nature.

In **T 887/92** one of the objects of the invention was to render the usual HELP facility provided with many computer programs more user-friendly. The claimed method involved the steps of (1) determining what commands were valid as the next command by an analysis of the current state of the process task being performed by the system at the time the help request was issued, (2) displaying a help panel containing only these commands, (3) positioning a "selection" cursor to the line of a displayed command, and (4) executing the command selected by pressing the "enter" key. The board held that giving visual indications automatically about conditions prevailing in an apparatus or system was basically a technical problem. Thus, the displaying of only valid commands in the help panel had technical character because it clearly reflected the status or condition of the system. The computer program on which step (1) relied was considered to constitute a technical means for carrying out the invention.

In **T 599/93** a configuration for simultaneously displaying several images on one (computer) screen was claimed. The screen was divided into four sections, for example by means of one horizontal and one vertical demarcation line. The size of the sections could be altered by moving a setting mark located at the intersection of the demarcation lines. The surfaces of the setting mark located inside the windows could each be selected separately to indicate particular contents of the window concerned, eg by a change of colour, even if the window in question was not, or not fully, visible at the time.

The board was of the view that imparting information on events in a screen window by changing the colour of the relevant surface of the setting mark was not of a technical nature (no information was given for example on the operating status of the claimed configuration), but merely drew the user's attention to particular contents of the relevant images and thus served to present information within the meaning of Art. 52(2)(d) EPC. This feature could not therefore contribute to inventive step.

In **T 1194/97** (OJ 2000, 525) the patent application concerned a two-part picture retrieval system comprising a record carrier and a read device, ie two separate but cooperative articles which may be sold separately, but each of which was specially adapted to implement complementary aspects of the same inventive idea. Claim 1 was directed to the system while claim 4 sought to protect the record carrier per se. In accordance with a standard claiming practice with inventions of this kind - colloquially referred to as "bow and arrow" or "plug and socket" inventions - the record carrier of claim 4 was specified as being "for use in the system as claimed in claim 1".

The examining division had interpreted claim 4 as specifying a known record carrier having data stored thereon, said data having no unambiguous technical function, and had concluded, with reference to Art. 52(2)(d) EPC, that "for the purposes of assessing the technical merits of the record carrier, what is stored on the record carrier is effectively a mere presentation of information". The board regarded the examining division's interpretation of claim 4 as a misconstruction of the effect of the "for use" phrase. It pointed out that, on a proper construction of this phrase the record carrier of claim 4 had technical functional



features - line numbers, coded picture lines and addresses and synchronisations - which were adapted to cooperate with corresponding means in the read device to provide a picture retrieval system.

Applying and extending the ratio decidendi of **T 163/85** by analogy, the board held that the record carrier of claim 4 was not excluded by Art. 52(2)(d) and (3) EPC, since it had functional data recorded thereon, in particular a data structure of picture line synchronisations, line numbers and addresses. In order to lend additional support to its view in relation to a data structure product, the board also referred to decision **T 1173/97** (OJ 1999, 609) and, in particular, to the observation made in that decision at point 9.4 of the reasons to the effect that the predetermined potential technical effect of a program recorded on a carrier could endow such a product with technical character sufficient to overcome the exclusions under Art. 52(2) and (3) EPC.

In addition, the board pointed out that the passage in the Guidelines for examination at the EPO (version before September 2001) at C-IV, 2.3 under the heading "Presentations of information" extended unduly the exclusion from patentability contained in Art. 52(2)(d) and (3) EPC, insofar as it did not distinguish between presentations of information which were characterised by cognitive content and recordings of information which comprised functional data as explained under points 3.3 to 3.6 of the decision. The passage concerned reads as follows: "Any representation (sic) of information characterised solely by the content is not patentable and the examples given there of excluded matter including magnetic computer tapes characterised by the data or programs recorded".

#### **1.4 Methods for doing business**

A computer manufacturer applied to patent a method for operating an electronic self-service machine (eg cash dispenser which could be accessed using any machine-readable card. A prospective user first had to insert such a card to enable its identification data to be stored; he then keyed in credit information about himself on to an "electronic application form", thereby permitting a decision to be taken on whether to authorise him as a user. Once authorised, he could access the system using that same card. In **T 854/90** (OJ 1993, 669) the board ruled that this was not patentable - parts of the method claimed were merely instructions for using the machine, and although technical components were used this did not alter the fact that what was being claimed was a method for doing business as such.

In **T 636/88** claim 1 was for a method of distributing material transported in bulk by ship: on the quayside a weighing and bagging apparatus was mounted which could be shipped in standard containers and was used to unload and bag the material before moving on to the next port. The other claims were directed to the bagging apparatus itself.

The opponent argued that the patent proprietor's commercial success derived merely from a method for doing business within the meaning of Art. 52(2)(c) EPC, namely contract bagging of bulk material in a manner permitting offloading at ports (eg in developing countries) which did not have any bagging plant on site. The board however took the view that the method claimed clearly did have technical character, involving as it did the use of technical equipment (bagging apparatus) to achieve a technical end (the production of

sealed, weighted bags of the material in question). It also necessitated the use of bagging apparatus which had no counterpart in the prior art.

In **T 769/92** (OJ 1995, 525) the applicant claimed a computer system for plural types of independent management including at least financial and inventory management and a method for operating said system. Data for the various types of management which could be performed independently from each other with this system could be inputted using a single "transfer slip", in the form of an image displayed on the screen of the display unit of the computer system, for example.

Although financial and inventory management would generally fall under "doing business", the board held that the invention was not excluded from patentability under Art. 52(2)(c) and (3) EPC. In its view the particular kinds of management mentioned were not decisive; the fact that they were of different "specific" types to be performed "independently" of each other was found to be important. The application contained the teaching to provide, in the memory unit of the computer system, certain files and processing means for storing and further processing the data entered and causing the processing unit to perform these functions. The implementation of this teaching required the application of technical considerations. In the board's view the non-exclusion from patentability also applied to inventions where technical considerations were applied concerning particulars of their implementation. The very need for such technical considerations implied the occurrence of an at least implicit technical problem to be solved and at least implicit technical features solving this problem.

Furthermore, the provision of the single transfer slip required the application of technical considerations. This "user interface" implied that, in effect, independent financial and inventory management systems were combined by a common input device allowing data entered for use in one of the said systems also to be used, if required, in the other system. The implementation of such an interface in the claimed computer system was not merely an act of programming, but rather concerned a stage of activities involving technical considerations to be carried out before programming could start.

In the view of the board, restricting the application to financial and inventory management did not give rise to an objection under Art. 52(2)(c) EPC. By this restriction, the claimed subject-matter only gained, in addition to the combination of features which were not excluded from patentability, a further feature which, as such, would be excluded. However, it was established board of appeal practice to allow patentability for a mix of technical and non-technical features.

In **T 1002/92** (OJ 1995, 605) a system was claimed for determining the queue sequence for serving customers at a plurality of service points. The system gave the customer the possibility of selecting one particular service point; it comprised, in particular, a turn-number allocating unit, terminals for each service point, an information unit which indicated the particular turn-number and the particular free service point to the customer.

The board held that the wording of the claim left no doubt that protection was sought for a three-dimensional object with certain capacities: The claim defined a technical item clearly belonging to the category of an apparatus with constructional components which were

characterised in terms of their functions. Summarising, the board took the view that the claim was directed to an apparatus which comprised, inter alia, computer hardware operating according to a particular computer program. The program-determined output signal of the hardware was used for an automatic control of the operation of another system component (the information unit) and thus solved a problem which was completely of a technical nature. Moreover, the fact that one of the practical applications of the system concerned the service of customers via "business equipment" did not mean that the claimed subject matter must be equated with a method for doing business as such.

In **T 931/95** (OJ 2001, 441) the board addressed the patentability of inventions relating to business methods. It reaffirmed that Art. 52(2) and (3) EPC were to be understood as implying a "requirement of technical character" or "technicality" which is to be fulfilled by an invention as claimed in order to be patentable. Thus an invention may be an invention within the meaning of Art. 52(1) EPC if for example a technical effect is achieved by the invention or if technical considerations are required to carry out the invention. The board also referred to **T 1173/97** (OJ 1999, 609) where it had decided that a computer program product that had technical character was not a computer program as such and was, therefore, not excluded from patentability but represented a patentable invention.

In the present case, Claim 1 of the main request was directed to a method for controlling a pension benefits program by administering at least one subscriber employer account. The board stated that if the method was technical or, in other words, had a technical character, it still might be a method for doing business, but not a method for doing business as such. However, all the features of Claim 1, ie the individual steps defining the claimed method, were steps of processing and producing information having purely administrative, actuarial and/or financial character. Processing and producing such information were typical steps of business and economic methods. Thus the invention as claimed did not go beyond a method of doing business as such and was excluded from patentability under Art. 52(2)(c) EPC in combination with Art. 52(3) EPC.

The board added that the individual steps defining the claimed method amounted to no more than the general teaching to use data processing means for processing or providing information of purely administrative, actuarial and/or financial character, the purpose of each single step and of the method as a whole being a purely economic one. Using technical means for a purely non-technical purpose and/or for processing purely non-technical information did not necessarily confer technical character to any such individual steps of use or to the method as a whole. The mere occurrence of technical features in a claim did not turn the subject-matter of the claim into an invention within the meaning of Art. 52(1) EPC.

In the present case the board reviewed several other decisions including **T 208/84** (OJ 1987, 14) pointing out that the then claimed method for digitally processing images was considered to be a technical process essentially for the reason that it was carried out on a physical entity. The method produced a technical result by applying particular digital image processing methods for example for enhancing and restoring images. In **T 769/92** (OJ 1995, 525) the method for operating a general-purpose computer management system had technical character because it implied a need for technical considerations when carrying out that invention. A technical invention could not lose its technical character, because it was used

for a non-technical purpose like, eg, financial management. The purpose of such a method and of its individual steps remained a technical one, namely operating a technical system and in **T 1002/92** (OJ 1995, 605) the system for determining the queue sequence for serving customers at a plurality of service points was decided to be a three-dimensional apparatus and, therefore, clearly technical in nature.

With respect to the appellant's first auxiliary request seeking protection for an apparatus for controlling a pension benefits system, the board held that a computer system suitably programmed for use in particular field, even if that was the field of business and economy had the character of a concrete apparatus. An apparatus constituting a physical entity or concrete product suitable for performing or supporting an economic activity, was an invention within the meaning of Art. 52(1) EPC.

In **T 27/97** the appellant/opponent interpreted the claim to mean that its subject-matter, despite the statement that a method for use in electronic systems was involved, was confined to purely intellectual methods and thus excluded by Art. 52(2)(c) EPC. The board disagreed, ruling that according to Claim 1 the application claimed a method, for use in electronic systems, of encrypting or decrypting a message (represented in the form of a digital word using RSA-type public-key algorithms). So the invention was clearly a method in the computer and telecommunications field and thus not excluded under Art. 52(2) and (3) EPC even if based on an abstract algorithm or mathematical method.

### **1.5 Aesthetic creations**

In **T 686/90** the board was called upon to decide whether the feature "work of art in the style of stained glass" meant that it was excluded from patentability under Art. 52(2)(b) EPC. The board held that functional information referring to general aesthetic creations did not define an aesthetic creation as such, at least provided that and insofar as such information adequately identified technical features of the subject-matter of the claim. Since an aesthetic creation (not formally specified) as the stated purpose, together with the other features, adequately defined a technical subject-matter in the claim, there was no aesthetic creation as such. For this reason there could be no objection to the claim under Art. 52(2)(b) EPC on the basis of Art. 52(3) EPC.

In **T 962/91**, on the other hand, the board held that the practical problem underlying the invention - as disclosed - involved concealing irregularities occurring in the outer region and detracting from the appearance of the information carrier by means of matting in such a way that these so-called errors were not apparent to the observer. The board agreed with the examining division that errors of this kind in no way impair the technical operation of the information carrier. This meant that the use of the matting as claimed for the purpose of concealing errors was not designed to solve a technical problem but was confined to the attainment of an aesthetic effect.

In decision **T 119/88** (OJ 1990, 395) the subject-matter of the application in question related to a flexible disk jacket made of a plastic sheet presenting to the outside world a surface colour of a certain minimum light intensity. The board first of all stated that the feature of having a specific colour as such did not constitute a technical feature indicating that an object

or device was entirely or partly covered by that colour; however, the board did not rule out the possibility that this did not hold in all circumstances. The feature taken by itself might not seem to reveal any technical aspect, but its technical or non-technical character could be decided by the effect it brought about after being added to an object which did not comprise the feature before. In the case in point, the board concluded that the alleged resistance to fingerprints was a purely aesthetic effect which contributed nothing technical to the invention concerned (Art. 52(2)(b) EPC) and the advantage of easy classification by colour represented a non-technical effect in the form of a presentation of information. As such it was excluded from patentability under Art. 52(2)(d) and (3) EPC.

### **1.6 Lack of technical character in general**

As already stressed in previous decisions, an invention must be technical in character, ie it must solve a technical problem to be patentable under Art. 52 EPC (see also supra I.A.1.).

**T 51/84** (OJ 1986,226) concerned a process for protecting sound-recording carriers against counterfeiting by applying a coded distinctive mark. The board held that this process came under the heading of matter excluded from patentability by Art. 52(2)(c) and (3) EPC because the claim focused solely on procedural steps which could be carried out by a person in whatever way he chose, and did not indicate or presuppose technical means for carrying them out.

In **T 222/89** the board found that where the sole characterising feature lacked causal significance for achieving the invention claimed, it did not constitute patentable technical teaching. The board thus followed **T 192/82** (OJ 1984, 415) which had ruled that the amending feature must not only characterise the invention, ie distinguish it from the prior art, but also - if the invention consists of altering known subject-matter to enhance its known effect - make a causal contribution to improving that effect. In the claim for optimising the design of a piston drive, the board considered the sole characterising feature not to be a technical feature which caused the improvement, but rather a description of the desired configuration in geometric terms since the optimisation would require design ideas other than the teaching as per the claim.

In some decisions, the boards came to the conclusion on the facts that no technical contribution had been made to the state of the art:

In **T 833/91** the board stated that all the different matters or activities listed in Art. 52(2) EPC seemed to have in common the fact that they implied something non-technical and, secondly, that from Art. 52(3) EPC it would appear to be the EPC's intention to permit patenting (only) in those cases in which the invention involves some contribution to the art in a field not excluded from patentability. The board thus concluded that, in accordance with the consistent case law of the Boards of Appeal, it could be said that the technical contribution to the art rendering a claimed invention an invention within the meaning of Art. 52(1) EPC and thus patentable, might lie either in the problem underlying, and solved by, the claimed invention, or in the means constituting the solution of the underlying problem, or in the effects achieved in the solution of the underlying problem. In the case in point the claimed invention concerned the designing or developing of application (or user) programs for computers, ie it addressed

a program designer or programmer. The board pointed out that programs for computers as such were expressly excluded from patentability and a programmer's activity would involve performing mental acts and therefore also fell within the exclusions under Art. 52(2)(c) EPC. Furthermore, displaying data was presentation of information and thus excluded by Art. 52(2)(d) EPC. The board held that the contribution to the state of the art made by the invention was not technical, that the subject-matter did not make any contribution to the art in a field not excluded from patentability and was not therefore to be regarded as an "invention" within the meaning of Art. 52(1) EPC.

In **T 204/93**, the claimed invention related to the art of generating "concrete" software programs (ie those written in a particular programming language). These "concrete" software programs were generated from supplied "generic" specifications, which were program components or modules written in a more generally usable language, so they had to be "translated" before insertion into the "concrete" program. The principle of using named program modules, stored elsewhere, in a computer program to be generated, resembled, except for the level of language used, the well-known calling-up of stored sub-routines in main programs. As far as the claimed subject-matter was concerned, the board did not dispute that it would improve the efficiency of the programmer. However, this did not mean that the computer would work in an essentially new way from a technical point of view.

Computer programs were not patentable irrespective of their content, ie even if that content happened to be such as to make it useful, when run, for controlling a technical process. Similarly, a programmer's activity of programming, would, as a mental act, not be patentable, irrespective of whether the resulting program could be used to control a technical process. Finally, automating that activity, in a way which did not involve any unconventional means, would not render that programming method patentable either, irrespective of the content of the resulting program.

In **T 453/91** the product claim directed to a VLSI-chip was held novel and inventive. The method also claimed for physical VLSI-chip design, however, was rejected because these claims only referred to the individual steps of designing such a chip and therefore could be interpreted as merely delivering a "design" in the form of an image of something which did not exist in the real world and which might or might not become a real object. The result of the method would not necessarily be a "physical entity" in the sense of decision **T 208/84** (OJ 1987, 14). The board, however, allowed method claims which contained not only the steps of chip designing but also the feature "materially producing the chip so designed". This claim was considered to be clearly restricted to a process of manufacturing a real (physical) object having technical features and thus to a technical process.

## **2. Medical methods**

### **2.1 Introduction**

Art. 52(4) EPC states that methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body are not to be regarded as inventions which are susceptible of industrial application. The wording of Art. 52(4) EPC implicitly recognises that such methods are susceptible of industrial application

as a matter of reality, but provides that they "shall not be regarded as" inventions which are susceptible of industrial application, by way of legal fiction. In other words, for the particular methods defined in Art. 52(4) EPC, Art. 52(4) EPC takes precedence over Art. 57 EPC (**T 116/85**, OJ 1989, 13).

The methods set out in Art. 52(4) EPC are excluded from patentability as a matter of policy. This exclusion is not a new provision under the EPC. Before the EPC came into force, such methods were excluded from patentability under the national laws of many European countries. The policy behind the exclusion of such methods was clearly to ensure that those who carry out such methods as part of the medical treatment of humans or the veterinary treatment of animals should not be inhibited by patents (see **T 116/85** (OJ 1989, 13), **T 82/93** (OJ 1996, 274)).

According to **G 5/83** (OJ 1985, 64) the intention of Art. 52(4) EPC was only to prevent non-commercial and non-industrial medical and veterinary activities from being restrained by patent rights (see **T 245/87**, OJ 1989, 171). In **T 385/86** (OJ 1988, 308) the board stated that Art. 52(4) EPC, first sentence, represented an exception to the general obligation to patent inventions. Like any exclusion clause, Art. 52(4) EPC, first sentence, had to be **narrowly construed**, and should not apply to treatments which were not therapeutic in character (see **T 144/83**, OJ 1986, 301), or did not constitute a surgical or diagnostic method - a fact underscored by the statement in the second sentence that the exclusion from patentability did not apply to products for use in such methods.

## **2.2 Allowability of claims under Article 52(4) EPC**

### **2.2.1 General remarks**

The recent case law of the boards of appeal concerning inventions excluded by Art. 52(4) EPC has made it clear that the exclusion of one feature under Art. 52(4) EPC is sufficient to exclude the whole claim from patentability. It is important to draw a clear distinction between this principle and the established case law under Art. 52(2) and (3) EPC concerning the patentability of a mix of technical and non-technical features because the reasons for exclusion from patentability of medical methods and of the subject-matter under Art. 52(2) and (3) EPC are different. Art. 52(4) EPC prevents the methods specified from being patented, even though otherwise they might be considered as inventions susceptible of industrial application as required by Art. 52(1) EPC. By way of contrast, Art. 52(2) and (3) EPC is based on the assumption that only technical inventions can be protected by patents and, consequently, excludes subject-matter and activities without technical character (see **T 116/85** (OJ 1989, 13), **T 769/92** (OJ 1995, 525 Headnote 2)).

To answer the question whether a method claim is allowable under Art. 52(4) EPC, it is necessary to ascertain, according to the jurisprudence of the boards of appeal, whether none of the steps of the method fall under the prohibition of Art. 52(4) EPC (**T 820/92**, OJ 1995, 113) or in other words, whether there is any disclosure of a method falling under the prohibition of the said provision. If so, such a method cannot be subject-matter or part of the subject-matter covered by a method claim (**T 438/91**). A claim is not allowable if it includes at least one feature defining a physical activity or action which constitutes a method for

treatment of the human body by therapy (**T 82/93**, OJ 1996, 274). Here, the purpose of the claimed subject-matter and inevitable effect of the feature under consideration is the most relevant criterion (**T 329/94**, OJ 1998, 241).

#### 2.2.2 Multi-step methods and Art. 52(4) EPC

In **T 820/92** (OJ 1995, 113) a claimed invention consisting of a contraceptive method involving a concurrent therapeutic step was refused by the examining division on the grounds that the claims did not comply with the requirements of Art. 57 EPC. In an official communication pursuant to Art. 110(2) EPC the board stated that consideration had to be given to the question of whether the combination of a contraceptive method with a therapeutic method was excluded from patentability under Art. 52(4) EPC. The appellant argued that therapy was not the subject of the claims, and that in particular the method claims were directed to the prevention of pregnancy and not to a therapeutic application, so that no exclusion under Art. 52(4) EPC should apply.

The board observed that while the treatment of the female mammal with a given effective amount of an LHRH composition was carried out to produce the desired contraceptive effect, the concurrent treatment with the oestrogenic and progestational steroids was carried out not to produce any contraceptive effect but as a prophylactic treatment to avoid the consequences for health which would otherwise occur as a result of the use of the LHRH composition. The latter step, therefore, was a treatment by therapy within the meaning of Art. 52(4) EPC. The board noted that in the case of a method involving the administration of two or more substances, the question for the purposes of Art. 52(4) EPC was not whether the main or even the only reason for carrying out the whole of the claimed method was non-therapeutic. Rather, a method claim fell under the prohibition of Art. 52(4) EPC merely if the purpose of the administration of one of the substances was a treatment by therapy, and the administration of this substance was a feature of the claim (see also **T 1077/93**).

In **T 82/93** (OJ 1996, 274) the board, after making it clear that claims including both features relating to physical activities and features relating to physical entities were also possible, held that under Art. 52(4) EPC a claim was not allowable if it included at least one feature defining a physical activity or action (eg a method step) which constituted a "method for treatment of the human body by therapy".

In **T 182/90** (OJ 1994, 641), method claims were allowed even though one step of the method included a **surgical step** on a living animal. But they were allowed on the basis that the method used in that case consciously ended in the laboratory animal's death, and this prevented the surgical step from being considered unpatentable treatment by surgery. The board stated that normally the presence of a surgical step in a multi-step method for treatment on the human or animal body confers a surgical character on that method, which would bring it within the prohibition of Art. 52(4) EPC.

In **T 385/86** (OJ 1988, 308) the board held that the only **diagnostic methods** to be excluded from patent protection were those whose results immediately made it possible to decide on a particular course of medical treatment. This meant that to answer the question whether a method was a diagnostic method for the purposes of Art. 52(4) EPC, first sentence, it was



necessary to ascertain whether the method claimed contained all the steps involved in reaching a medical diagnosis. Methods providing only **interim results** were thus not diagnostic methods in the meaning of Art. 52(4) EPC, first sentence, even if they could be utilised in making a diagnosis.

### 2.2.3 Therapeutical or technical purpose of a feature

In **T 82/93** (OJ 1996, 274) the opponent had argued that the claimed method was a method of treating the human body by therapy, which, pursuant to Art. 52(4) EPC, was to be regarded as not susceptible of industrial application and therefore not patentable. The opposition division in its decision rejected this objection on the grounds that the defined method of operating a pacer included steps which necessarily implied that an algorithm was implemented in the pacer and used to control the pacing rate. Since such control of the pacing rate was "a technical operation performed on a technical object", the opposition division held that the claimed method could not be considered as a method for treatment of the human body by therapy within the meaning of Art. 52(4) EPC, and that it was a method which was susceptible of industrial application within the meaning of Art. 57 EPC. The board noted that whether or not the claim included features directed to "a technical operation performed on a technical object" was legally irrelevant to the application of Art. 52(4) EPC. In fact, a claim could contain nothing but technical features directed to a technical operation performed on a technical object and a subsequent technical operation performed on a human or animal body, but such a claim would be unallowable under Art. 52(4) EPC if it defined a method for treatment of such a body by therapy or surgery.

In **T 245/87** (OJ 1989, 171) claim 1 sought protection inter alia for a method in which an electrically conductive liquid containing a drug such as insulin was introduced into the body through the pump of an implantable device for controlled drug administration. The application was refused by the examining division on the basis of Art. 52(4) EPC. The board held that the steps described in claim 1, even when applied to an implanted device for controlled drug administration, only involved measuring the volume of the drug solution flowing into the body per unit of time. The flow itself was not affected. These steps might therefore be performed without any medical knowledge and had no therapeutic effect whatsoever in themselves. The doctor was in no way hindered in exercising his professional skills, ie preventing, curing or alleviating illness. The board ruled that a method did not fall within the scope of Art. 52(4) EPC, first sentence, if there was no functional relationship, and hence no physical causality, between operations effected using a therapeutic apparatus and the therapeutic effect produced on the organism by that apparatus.

In **T 329/94** (OJ 1998, 241) the object of claim 12 was principally a method for facilitating sustained venous blood flow to a blood extraction point located in the vein of a human upper limb by alerting the blood donor to help in maintaining the desired blood flow through a selective automated tactile stimulus. The board firstly noted that in the light of established EPO practice it was appropriate to refuse protection for a blood extraction method considered per se, since otherwise a large part of medical activities would be hampered. However, it made it clear that in determining whether the features under consideration constituted a medical method, the purpose of the claimed subject-matter was to be defined in accordance with the patent application, as understood in the light of the description and drawings (Art. 69

EPC and the Protocol thereto). In the board's view, it mattered little whether the measure was performed by a medical practitioner or another person having medical knowledge or under the supervision of such a person (see also **T 24/91**, OJ 1995, 512). This sole criterion was not sufficient to decide whether the method step was objectionable under Art. 52(4) EPC, though the medical competence of the practitioner could be, at first sight, a useful indication. Much more important was the **purpose** and inevitable **effect** of the feature under consideration. The board observed that if the claimed subject-matter was actually confined to operating an apparatus for performing a method with the **technical aim** of facilitating blood flow towards a blood extraction point, the operating method had no therapeutic purpose or effect and, therefore, was not excluded from patentability.

In deciding the case, the board observed that method claim 12 relating to operating a blood extraction assist apparatus conferred protection which was already covered by the scope of the device claim 1 directed to said apparatus; thus its subject-matter was covered by the exception provided for in Art. 52(4) EPC, second sentence. Should, nevertheless, claim 12 be regarded as a plain method claim, the object of this claim was merely to give the donor an order, in the form of a stimulus, to operate the apparatus, so as to facilitate blood flow through the blood extraction point. The method did not produce any therapeutic or prophylactic effect on the donor himself, that is with a view to maintaining or restoring his health by preventing or curing diseases. It was of **merely technical nature**, with the **sole aim** of improving the efficiency of taking blood from a donor. Claim 12 therefore did not fall within the ambit of subject-matter excluded under Art. 52(4) EPC .

#### 2.2.4 Medical character of the excluded methods

As seen above, whether a measure was performed by a medical practitioner or another person having medical knowledge or under the supervision of such a person is not sufficient to decide whether the method step is objectionable under Art. 52(4) EPC (see **T 24/91** (OJ 1995, 512) and **T 329/94** (OJ 1998, 241)). The medical competence of the practitioner could, however, be a useful **indication**.

In **T 385/86** (OJ 1988, 308) the board examined whether the claims defined methods which could not be considered susceptible of industrial application because they could only be carried out by a doctor in the exercise of his healing skills. The board came to the conclusion that a person skilled in nuclear spin resonance spectroscopy could implement the measures claimed in a commercial laboratory environment without specialist medical knowledge or skills. The board found that the various steps for which protection was sought did not include any measures having the character of medical treatment or requiring a doctor to carry them out. In fact it was a technician who, using the method claimed, was able, quite independently, to produce a working basis for the doctor's subsequent activity of diagnosis.

In **T 400/87** the board observed that the effects of the continuous static magnetic field and the magnetic gradient fields which were applied according to claim 1 did not, as far as was known, have any harmful side-effects on living matter. The claimed method could therefore be implemented without specialist medical knowledge or skills.

In **T 426/89** (OJ 1992, 172) the board came to the conclusion that Art. 52(4) EPC did not

prejudice the patentability of claims relating to a product, namely a pacemaker for arresting a tachycardia. The board could not agree with the appellants' argument that enforcement of the rights ensuing from these claims could hinder a doctor from programming a legitimately acquired freely programmable pacemaker so as to perform the claimed steps of the method and could thus restrict him inadmissibly in the exercise of his professional skills. The programming of a pacemaker was no more than an act performed on an apparatus. And although that act could be performed by a doctor in the exercise of his professional skills, it did not constitute direct treatment by therapy of the human or animal body, which alone was excepted from patentability by Art. 52(4) EPC. Equally, every valid patent for a product for the treatment by therapy of the human or animal body could prejudice the manufacture of this product by a doctor without automatically constituting an inadmissible restriction on the exercise of his professional skills.

In **T 24/91** (OJ 1995, 512) the board considered whether or not the claimed invention, involving a process for reprofiling the anterior curvature of a synthetic lenticule, secured to the cornea of the human eye for correcting vision, by ablating (ie removing) with a laser portions of said lenticule, represented a method for treatment of the human body by surgery or therapy within the meaning of Art. 52(4) EPC, first sentence. The board stated that a method for treatment of the human body could normally be said to fall within the exclusion of Art. 52(4) EPC, first sentence, at least in those cases where, in view of the **health risk** connected with such a treatment, it had to be performed by, or under the supervision of a physician. The board noted that the claimed process was and had to be carried out by the ophthalmologist or ophthalmic surgeon himself, or at least under his supervision, so that the claimed process did fall under the exclusion of Art. 52(4) EPC. Directing the laser beam to the lenticule bore the serious risk of damaging the neighbouring tissue of the eye, and the physician was bound to exercise extreme care both during the medical treatment and during the use of medical-technical apparatus and was responsible for the surveillance of his medical and non-medical staff. The board further stated that the lenticule having been secured to the cornea of the eye, was a real implant, in contrast to, for example, an arm or leg prosthesis. Therefore, the claimed process represented a treatment by therapy.

In **T 655/92** (OJ 1998, 17) the board stated that the patentability of a diagnostic method depended on the nature of the diagnostic method itself. Thus, it was legitimate not to derive the character of a medical diagnostic activity from its diagnostic purpose when such a method comprised steps which as a whole were non-medical (see eg **T 385/86**, OJ 1988, 308). However, the diagnostic character of a process, within the meaning of Art. 52(4) EPC, could be recognised in that such a process for which protection was sought did include **essential steps** which were to be implemented by medical staff or under the responsibility of a doctor (see also **T 469/94**).

#### 2.2.5. The exclusion of industrial applicability under Article 52(4) EPC

The methods set out in Art. 52(4) EPC are excluded from patentability, even though such methods are capable of being applied industrially, as a matter of policy. In contrast, the subject-matters which are set out in Art. 52(2) EPC are excluded primarily because they have traditionally been regarded within national patent laws as more in the nature of ideas than industrial manufactures. The difference in wording between paragraphs (2) and (4) of Art. 52

EPC results from the nature of the subject-matters that are being excluded from patentability in the respective paragraphs (**T 116/85**, OJ 1989, 13).

In **T 116/85** (OJ 1989, 13) the board held that under the proper interpretation of Art. 52 EPC and Art. 57 EPC in their context, even though the therapeutic treatment of animals is commonly an aspect of agriculture, and agricultural methods in general are potentially patentable subject-matter, nevertheless the particular methods of treatment of animals defined in Art. 52(4) EPC are excluded from patentability. For the particular methods of treatment of animals defined in Art. 52(4) EPC, the prohibition against patentability set out in Art. 52(4) EPC takes precedence over Art. 57 EPC. If a claimed method requires the treatment of an animal body by therapy, it is a method which falls within the prohibition on patentability set out in Art. 52(4) EPC. It is not possible as a matter of law to draw a distinction between such a method as carried out by a farmer and the same method as carried out by a veterinarian, and to say that the method when carried out by a farmer is an industrial activity and therefore patentable under Art. 57 EPC, and when carried out by a veterinarian is a therapeutic treatment not patentable under Art. 52(4) EPC. Nor is it possible as a matter of law to distinguish between the use of such a method for the treatment of ectoparasites and endoparasites.

In **T 1165/97** the board examined whether the exclusion of industrial applicability under Art. 52(4) EPC applied in a method of using a vaginal discharge collector. The board came to the conclusion that the mere placement in and collection of the discharge device in the vaginal canal of a female, even if performed by a medically trained person or a doctor, was not a method of treatment of the human or animal body by surgery or therapy. A prerequisite therefor was the act of surgery or the curative or preventive treatment of illness or the alleviation of the symptoms of pain and suffering, which was not the case with the method of the invention. Neither was there the necessity of particular medical skills in positioning and removing the discharge collector, as these actions were identical to the placement and removal of a contraceptive device such as a pessary, which is performed by women themselves. Neither was there a case of a diagnostic method practised on the human or animal body, since that exclusion only applies to diagnostic methods of which the results make it directly possible to decide on a particular course of medical treatment. To fall under this exclusion the method claimed should contain all the steps involved in reaching a medical diagnosis.

## **2.3 Therapeutic methods**

### **2.3.1 Meaning of "therapy"**

The first definition of the term was given in **T 144/83** (OJ 1986, 301). According to this decision therapy relates to the treatment of a disease in general or to a curative treatment in the narrow sense as well as the alleviation of the symptoms of pain and suffering.

It is established case law that a prophylactic treatment, aimed at maintaining health by preventing ill effects that would otherwise arise, amounts to a method for treatment by therapy as referred to in Art. 52(4) EPC, and that therapy is not limited to treatments which restore health by curing diseases which have already arisen (see eg, **G 5/83**, OJ 1985, 64). Both

prophylactic and curative methods of treating disease are covered by the word therapy, since both are directed to the maintenance or restoration of health (T 19/86 (OJ 1989, 24), T 290/86 (OJ 1992, 414), T 438/91, T 820/92 (OJ 1995, 113)).

In T 81/84 (OJ 1988, 207) the question arose whether or not the character of menstrual discomfort manifesting itself for instance in intense headaches and other painful symptoms was such that its treatment should fall under the category of therapeutic treatment. The board found that the concept of therapy should **not** be confined **narrowly**. There were many chemical agents which were used by physicians to relieve pain, discomfort and incapacity. Although at least some of such and similar experiences might have been caused by natural circumstances (eg menstruation, pregnancy or age, etc.) or by a reaction to situations in the human environment (eg atmospheric conditions provoking tiredness, headaches, etc.), these overlapped with and were often indistinguishable from symptoms of a disease or an injury. The board noted that it would be impossible and undesirable to distinguish between basic and symptomatic therapy, ie healing or cure and **mere relief**. The use of medicaments might be called for whenever the human body was suffering from a disease, illness, pain or discomfort or incapacity, and the administration thereof could provide or contribute to either full or partial healing, or relief or restoration of fitness. The board concluded that **irrespective of the origin** of pain, discomfort or incapacity, its relief, by the administration of an appropriate agent, was to be construed as therapy or therapeutic use within the meaning of Art. 52(4) EPC.

In T 24/91 (OJ 1995, 512) the board observed that the term "therapy" was not restricted to curing a disease and removing its causes. Rather, this term covered any treatment which was designed to cure, alleviate, remove or lessen the symptoms of, or prevent or reduce the possibility of contracting any disorder or malfunction of the human or animal body. The board found that the claimed process removed, **by treatment of the patient's eye**, the symptoms of myopia, hyperopia and astigmatism and was therefore a therapeutic treatment.

According to decision T 774/89 the purpose of therapy was invariably to restore the organism from a pathological to its original condition, or to prevent pathology in the first place whereas a non-therapeutic improvement of performance took as its starting point a normal state (to be defined).

In T 469/94 the board observed that the patentability of the subject matter depended on the **nature** of the treatment. The question at issue was whether increasing the acetylcholine level in the brain and tissue and thereby reducing the perception of fatigue in a person about to participate in major exercise or having completed major exercise counts as therapeutic or non-therapeutic treatment of the human body. The board noted that the condition of fatigue induced by the performance of exercises was a transitory physiological condition caused by natural circumstances and removable by simple rest. Simple training was generally known to retard the perception of fatigue. Pain or serious suffering did not appear to be manifestations of fatigue, which therefore was not comparable with the pathological state typical of a disease or an injury. The board observed that the treatment for reducing the perception of fatigue was not even comparable with the relief of pain, discomfort and incapacity (see T 81/84, OJ 1988, 207).

In **T 74/93** (OJ 1995, 712) the claimed invention related to alicyclic compounds and their contraceptive use. The product claims and a claim for the process of preparation of a contraceptive composition by formulating the claimed compounds with a non-toxic carrier were not objected to. However, the application was refused by the examining division because claim 5, which was directed to the use of a contraceptive composition (eg a cream) comprising these compounds for applying to the cervix of a female capable of conception, was not susceptible of industrial application as required by Art. 57 EPC in so far as the compound was to be applied to the cervix of a human female.

The board took the view that a method of contraception was not excluded per se from patentability under the aspects of industrial application as stipulated in Art. 57 EPC and Art. 52(4) EPC, first sentence. Pregnancy was not an illness and therefore its prevention was not in general therapy according to Art. 52(4) EPC (for a specific case see **T 820/92**, OJ 1995, 113). It seems to have been widely accepted in the contracting states that such methods may be susceptible of industrial application (Schering AG's appl. (1971) R.P.C. 337 (P.A.T.); Bruchhausen in Benkard, 9th ed. 1993, 5 PatG, point 13; Cour d'appel de Paris, 24 septembre 1984, PIBD 1984 III, 251). However, it was not sufficient for such methods to be susceptible of industrial application in general. Rather, the invention as claimed in the specific case had to fulfil the requirement of Art. 57 EPC (see Chapter E. on the requirement of industrial applicability under Art. 57 EPC).

In **T 241/95** (OJ 2001, 103) the board held that the selective occupation of a hormone receptor could not be considered as a therapeutic application; the discovery that a substance selectively binds the serotonin receptor, even if representing an important piece of scientific knowledge, still needs to find a practical application as a defined, real treatment of any pathological condition to make a technical contribution to the art and to be considered as an invention eligible for patent protection.

### 2.3.2 Methods with both therapeutic and non-therapeutic indications

Whether or not a claimed invention is excluded from patentability under Art. 52(4) EPC may depend upon the wording of the claim in question.

In **T 820/92** (OJ 1995, 113) the board had to decide whether a claimed non-therapeutic treatment comprising a patentable step and an inevitable therapeutic step was non-patentable in its entirety by virtue of Art. 52(4) EPC. It was stated however that exclusion from patentability under Art. 52(4) EPC could not be prevented by a purely **formal rewording** of the claim to qualify the purpose of the process, in its indivisible entirety, as non-therapeutic. A further, different consideration has been made by the boards of appeal, that is, whether the non-therapeutic effect according to the application in question is **distinguishable** from the therapeutic effect or, on the contrary, whether it is inextricably linked to said therapeutic effect. In the latter situation, the claim would necessarily include a therapeutic treatment as well and would be excluded from patentability in its entirety by virtue of Art. 52(4) EPC as already set out in equivalent cases such as decisions **T 290/86** (OJ 1992, 414), **T 780/89** (OJ 1993, 440) or **T 1077/93**.

(a) Inevitable and inextricably linked therapeutic effect of the claimed method.

In **T 116/85** (OJ 1989, 13) the board observed that when the method at issue is applied to individual animals it had the nature of veterinary treatment, and when applied to herds of animals it also had the nature of an industrial activity. The board went on to say that there was no doubt that the rearing of livestock such as herds of pigs was a farming activity, and that farming was in the broad sense a part of agriculture and therefore in turn an industrial activity for the purposes of the EPC. Thus it was easy, as such, to draw a distinction between individual veterinary treatment on the one hand and large-scale treatment activities normally carried out by a farmer on the other hand - as was put forward by the appellant. Nevertheless, if the method defined in the claims covered both forms of activity, the drawing of such a distinction would not help the appellant's case. The board made it clear that any therapeutical treatment of a farm animal could also be considered as an industrial activity, in so far as farming was clearly an industrial activity, and the medical treatment of disease in both individual farm animals and herds of farm animals was intended to increase the efficiency of such industrial activity. To prevent the death of a farmyard pig from disease by a medical treatment, or to cure it of a disease by such a treatment and thus to increase its yield of meat, was in each case both an industrial activity and a therapeutic treatment. It was therefore clear that the therapeutic treatment of animals was commonly an aspect of agriculture. The board held that a claimed method was excluded from patentability within the meaning of Art. 52(4) EPC, if it rendered the therapeutic treatment of animals necessary, even though the therapeutic treatment of animals was commonly an aspect of agriculture, and agricultural methods were in general potentially patentable subject-matter. Here, the board, however, did not consider it possible as a matter of law to draw a distinction between such a method as carried out by a farmer and the same method when carried out by a veterinarian, and to say that the method, when carried out by a farmer, was an industrial activity and, when carried out by a veterinarian, was a therapeutic treatment not patentable under Art. 52(4) EPC.

According to **T 780/89** (OJ 1993, 440) the secondary effect of a therapeutic treatment did not render it patentable. The claim in question related to a method of general immunostimulation for animals. The applicant argued, inter alia, that this served to increase meat production and that the method was therefore not being used as a means of therapy. However, the board regarded the effect of increasing meat production as a consequence of the improvement in the animals' health. Moreover, the general stimulation of the immune system was integrally linked to the specific prophylactic function of safeguarding against particular infections.

In **T 438/91** the patentee contended that the main purpose of the claimed process was to increase the weight of the animals which effect was separable from the effect of prevention or cure of scours. This latter was merely a beneficial side effect. It was necessary to decide whether or not a method for breeding domestic animals in claims 1 and 2 related to a therapeutic or prophylactic treatment. The board noted that two effects were observed as a result of the breeding method claimed: (a) the remedying of scours and, (b) a weight increase in the animals being bred. The board found that, in the light of the patent disclosure, the two effects were linked by the single action of feeding the animals, and that the intention was to obtain both effects at the same time in animals suffering from scours (treatment by therapy) and to prevent the latter complaint in those animals which did not already have it (treatment by prophylaxis). In conclusion, the board was of the opinion that the subject-matter of claims 1 and 2 related to a therapeutic or prophylactic treatment of domestic animals and thus fell within the prohibition on patentability set out in Art. 52(4) EPC.

In **T 290/86** (OJ 1992, 414), no method claim was considered allowable because the disclosed method of eliminating plaque inevitably had the therapeutic effect of preventing caries and periodontal disease, and so fell under the prohibition of Art. 52(4) EPC, irrespective of the fact that the removal of plaque could also have the cosmetic effect of improving the appearance of the teeth. The board took the view that whether or not a claimed invention was excluded from patentability under Art. 52(4) EPC depended in particular on the wording of the claim in question. If the claimed invention was not directed solely to a cosmetic effect, but was also **necessarily defining** a treatment of the human body by therapy as well, such a claim was excluded from patentability (decision **T 144/83** (OJ 1986, 301) distinguished). The board held that if the claimed use of a chemical product **inevitably always had a therapeutic effect** as well as a cosmetic effect the invention as claimed necessarily defined a treatment of the human body by therapy and was not patentable.

In **T 1077/93** the opposition division had concluded that the claimed invention was not a non-patentable therapeutic method within the meaning of Art. 52(4) EPC, but a cosmetic treatment. Claims 1 and 11 related to the use of the cupric complex of 3,5-Diisopropyl salicylic acid (referred to in the following as CuDIPS) as a cosmetic product or in a cosmetic composition, and to a cosmetic treatment process, based on the use of this complex, for the protection of the human epidermis. The purpose of the patented composition was to protect the human epidermis against ultraviolet radiation: notably, to reduce the intensity of erythema, recognised as the most spectacular form of damage to the skin by sunlight, and of skin-level cellular changes such as the formation of degenerated and necrotised keratinocytes, generally known by the term "sunburn cells (SBC)". The appellant lodged an appeal against this decision of the opposition division. In its ruling, the board cited the point, already explored in **T 820/92** (OJ 1995, 113) (see above), that exclusion from patentability under Art. 52(4) EPC could not be prevented by a purely formal rewording of the claim to qualify the purpose of the process, in its indivisible entirety, as non-therapeutic. The board took the view that the examination as to patentability of claims 1 and 11 necessitated an examination of the mechanism by which CuDIPS acted, and of the relationship between all its effects. The board concluded that at least part of the protective effect did not derive from a simple filtering at the level of the skin surface, but rather from an interaction with the cellular mechanisms in the epidermis, with the purpose of preventing a pathological state (erythema); therefore the process had a genuine therapeutic effect.

(b) Therapeutic and non-therapeutic effects distinguishable

In **T 144/83** (OJ 1986, 301) the board accepted the patentability of a claim worded in such a way that it clearly sought protection for a method of treating the human body for cosmetic purposes but not for the therapeutic application which was also possible. The board pointed out that the language of the claim in question "clearly covers a method of cosmetic use and is unrelated to the therapy of a human or animal body in the ordinary sense. This was because loss of weight, like gain of weight, is normally not dictated as a desirable effect by medical considerations at all". On the facts of the case, the board considered that it might be **difficult to distinguish** between loss of weight to improve bodily appearance (cosmetic treatment) and loss of weight to treat obesity (therapeutic treatment), but that this should not be allowed to work to the disadvantage of an applicant who, according to the **wording of his claim**, sought patent **protection for cosmetic treatment** but not for the therapeutic treatment



as such. Therefore, the board held that the fact that a chemical product had both a cosmetic and a therapeutic effect when used to treat the human or animal body did not render the cosmetic treatment unpatentable (see reasons, 4). Art. 52(4) EPC was to be construed narrowly so that it did not disadvantage an applicant seeking patent protection for the cosmetic treatment only.

In **T 36/83** (OJ 1986, 295) the description expressly disclosed **two very different** properties of a compound used in the treatment of comedones, ie its anti-bacterial and its hygienic action. The application showed that pharmaceutical and cosmetic preparations could have very similar, if not identical, forms. The distinction was clearly set out in the description as filed. The board decided that the cosmetic application of a product which also had a therapeutic use was patentable, since the applicants had **only claimed** in respect of "use as a cosmetic product". The use of the term "cosmetic" was held to be sufficiently precise, although the cosmetic treatment according to the application might also **incidentally** involve a medical treatment.

In **T 584/88**, claim 1 was directed to the use of a substance to manufacture a means for the treatment by therapy of unhealthy snoring, and claim 15 to the use of the substance against irritating snoring. Claim 1, by describing the snoring as "damaging to health", ensured that it only covered use of the substance to manufacture means serving to treat symptoms of morbidity. Claim 15 covered only irritating as opposed to morbid snoring; this use could not therefore be considered a method for treatment by therapy. The board allowed both claims: snoring was generally considered irritating rather than morbid, but some medical specialists had warned that frequent loud snoring was unhealthy. If so, then combating snoring was a preventive (prophylactic) method for treatment by therapy; otherwise it was more comparable with cosmetic treatment of the human body. The dividing line between irritating and unhealthy snoring was difficult to draw. The board, following **T 36/83** (OJ 1986, 295) and **T 144/83** (OJ 1986, 301), therefore decided to allow both types of claim together.

In **T 774/89**, cited above, the board accepted the patentability of using a medication to increase milk production in cows, because it was evident that the success of the treatment did not depend on the animals' state of health, and the insertion in the claim of the term "non-therapeutic" served as a **disclaimer**, excluding the therapeutic effects of the medication.

In **T 469/94** it had to be ascertained whether the non-therapeutic effect according to the application at issue was distinguishable from the therapeutic effect of choline. The board found that the two effects of choline were not inseparably linked or correlated but, on the contrary, were readily distinguishable because they involved **groups of persons** (or patients) undoubtedly distinct. The one consisted of patients known to have a muscular disease, muscular injury or epilepsy, whereas the second comprised healthy persons who would receive no therapeutic benefit from the treatment. Moreover, the times necessary for appreciating the different effects (days for the therapeutic effect and minutes or hours for the non-therapeutic effect) would appear to be so different that no unwanted overlap of the treatment could occur. Therefore, the board held that the claim in question was directed to a non-therapeutic method.

## **2.4 Surgical methods**

In **T 182/90** (OJ 1994, 641) the application at issue related to a method for measuring the blood flow of a laboratory animal. The method comprised steps clearly representing surgical treatment and the step of sacrificing the animal involved. The board stated that the presence of a surgical step in a multi-step method for treatment of the human or animal body would normally confer a surgical character on that method. In this case, however, it took the view that the method, which consciously ended in the laboratory animal's death, could not be regarded as a method for the treatment of an animal by surgery.

The board pointed out that when interpreting Art. 52(4) EPC, it is decisive to know what is to be understood, in the medical and legal usage of the language, by the expression "treatment of the human or animal body by surgery". The board observed that the term "surgery" appears to be inconsistent with the fact that in today's medical and legal linguistic usage, the non-curative treatments such as cosmetic treatment, the termination of pregnancy, castration, sterilisation, artificial insemination, embryo transplants, treatments for experimental and research purposes and the removal of organs, skin or bone marrow from a living donor are, if carried out by surgery, regarded as surgical treatments. The board observed that the term "treatment by surgery" had undergone a change in meaning insofar as it nowadays may also comprise particular treatments which are not directed to the health of the human or animal body. In the board's view, however, the semantic change in the terminology could not extend so far that the opposite of the original meaning fell within its scope: a method involving the deliberate killing of a laboratory animal was not in the nature of a method of surgical treatment. It was noted that the Guidelines (see C-IV, 4.3) stated that the term "surgery" defined the **nature** of the treatment rather than its **purpose**. The board, however, observed that this might **not** be true in all cases. The board held that a method which included a surgical step practised on a living animal and the additional step of sacrificing the animal, which step was necessary to carry out the method, could not be regarded **in its entirety** as a method for treatment of an animal by surgery within the meaning of Art. 52(4) EPC (see **T 329/94**, OJ 1998, 241, above).

In **T 35/99** (OJ 2000, 447) the board held that, in contrast to procedures whose end result was the death of the living being "under treatment", either deliberately or incidentally (eg the slaughter of animals or methods for measuring biological functions of an animal which comprised the sacrificing of said animal, cf. **T 182/90**, OJ 1994, 641), those physical interventions on the human or animal body which, whatever their specific purpose, gave priority to maintaining the life or health of the body on which they were performed, were "in their nature" methods for treatment by surgery within the meaning of Art. 52(4) EPC. The terms "treatment" and "surgery" in Art. 52(4) EPC could not be considered as constituting two distinct requirements for the exclusion provided therein. The exclusion encompassed any surgical activity, irrespective of whether it was carried out alone or in combination with other medical or non-medical measures.

In **T 775/97** the applicants submitted a claim directed to the use of a (known) device for the manufacture of a device, which use involved a surgical method step; they submitted a further claim directed to a device defined by a construction only arrived at in the human or animal body following a surgical method step.

The board observed that such claims were actually directed to a surgical method. The use of a known material as, so to say, starting material for a medical activity, was quite different from the use of a known composition for manufacturing a medicament, which was an industrial process. Thus, as regards the exclusion under Art. 52(4) EPC, no analogy could be drawn between the use of materials or devices in a surgical method and the second medical use of substances or compositions patentable with the claim format allowed by **G 5/83**. Therefore, the board held that no European patent could be granted with claims directed to a new and even possibly inventive way of using materials or devices, in particular endoprotheses, involving treatment by surgery. This was equally true for product claims defined by a construction only arrived at in the human or animal body following a surgical method step.

## **2.5 Diagnostic methods**

Under Art. 52(4) EPC diagnostic methods practised on the human or animal body are also excluded from patentability.

In **T 208/83** the board explained that its understanding was that a diagnostic method ought always to contain **a reference** to the diagnosis to be made. Accordingly, a diagnostic method included not only the method of analysis enabling a specific result to be achieved but also the diagnosis constituting the result of the analysis. Since the claimed process quite simply did not include any reference to the diagnosis as the result of an analysis, it could not relate to a diagnostic method within the meaning of Art. 52(4) EPC (see **T 61/83**, **T 18/84** and **T 45/84**).

In **T 385/86** (OJ 1988, 308) the board ruled that the only diagnostic methods to be excluded from patent protection were those providing results which immediately **enabled** a decision to be taken on a particular line of medical treatment, ie methods containing all the steps required to make a medical diagnosis. Methods providing only **interim results** were thus not diagnostic methods within the meaning of Art. 52(4) EPC, first sentence, even if they could be utilised in making a diagnosis.

The board ruled that where the facts showed a particular subject-matter to be covered by the first sentence of Art. 52(4) EPC, both the **examination** (measurement of actual value) and the **establishing of symptoms** on the basis of the examination results - ie the deviation measured from the norm - had to be carried out on a living human or animal body.

The board indicated that the systematic list of the steps leading to a diagnosis contained in the relevant literature included:

- recording the case history, observing, palpating and auscultating various parts of the body and carrying out numerous medical and technical examinations and tests (the examination and data gathering phases);
- comparing the test data with normal values, recording any significant deviation (symptom) and,

- attributing the deviation to a particular clinical picture (deductive medical decision phase)

The board pointed out that even **if only one** of the last three steps was lacking, there was no diagnostic method but at best a method of data acquisition or data processing that could be used in a diagnostic method. The board also stated that the practice of a diagnostic method on the human or animal body within the meaning of Art. 52(4) EPC, first sentence, presupposed that even a deviation from a norm that must be regarded as a symptom was directly discernible on the body itself. Typical examples of such methods were, in the board's opinion, an allergy test in which the abnormal deviation could be detected from a change to the skin; a method for determining the patency of a body duct whereby liquid was injected into the uterus with a catheter and the pressure build-up in the uterus observed; a method in which scarlet-fever spots were directly observed or photographed; or an endoscopic examination carried out to ascertain liver damage.

The board further observed that it was not sufficient simply that an investigation into the state of a human or animal body be carried out for medical purposes. The condition ascertained must of itself demonstrate the pathological deviation. A measurement of blood pressure is an absolute value which only revealed any irregularity when compared with a norm. It was only the comparison and the explicit indication of how great the deviation must be to be characteristic of a particular disease or group of diseases that made the measuring method a diagnostic one. Thus a radiographic examination with X-rays did not make the internal condition discernible on the body itself but only on a screen after the X-ray quanta had been converted into visible fluorescent light outside the body. And even then a pathological condition could only be ascertained when the density structure was compared with normal values.

In the case at issue the invention was concerned with a method for determining chemical and/or physical conditions inside a living animal or human body using magnetic resonance. The board had to determine whether the temperature measured as claimed in claim 1 or the pH value measured as claimed in claim 2 was directly readable from parts of the body. It found that the measures described in independent claims 1 and 2 resulted in a measured value only visible outside the body in the high-resolution resonance spectrum that appeared on a screen or plotter page in the final stage of the diagnostic apparatus. The data on temperature and pH value thus obtained were therefore visible on a data carrier detached from the body only after further technical measures which took place outside the body. Any further step, which as a result of comparison with a norm revealed an abnormal deviation, did not require the patient's presence. The board therefore held that neither the features described in claim 1 nor those in claim 2 defined a method "practised on the human body" (confirmed in **T 83/87, T 400/87**).

In **T 775/92** each independent claim contained the following introductory clause: "A method for providing bone densities ... for the evaluation of an X-ray photograph of a bone, comprising the steps of: ...". The board discussed whether a diagnostic method had thereby been claimed. It took the view that the expression "evaluation of an X-ray photograph" in the said paragraphs was so vague and general that it could also cover diagnosis. The expression could be interpreted as meaning that the final data distributions of bone densities according to the claimed steps were evaluated by a doctor, for example, by comparing these

distributions with model distributions in order to find out the status of a client with regard to ageing or bone diseases. Such an evaluation would not only provide interim results, but would also localise a deviation from a particular clinical picture and thus allow the doctor to start medical treatment. Such an interpretation meant that the subject-matter of all the claims would qualify as diagnostic methods, thus falling within the field identified by Art. 52(4) EPC.

In **T 530/93** the board confirmed the established case law of the EPO boards of appeal and found that methods which only comprised the data-gathering phase of a diagnosis and only provided interim results which would require a further step in order to attribute the data to a particular clinical picture, were not diagnostic methods within the meaning of Art. 52(4) EPC. The method according to claim 1 corresponded to this definition and was therefore not excluded from patentability under Art. 52(4) EPC.

In **T 964/99** the board held that Art. 52(4) EPC was meant to exclude from patent protection all methods practised on the human or animal body which relate to diagnosis or which are of value for the purposes of diagnosis. The board found that the taking of a body sample for the purpose of a medical examination belongs to a fundamental diagnostic activity, regardless of the technical means used. Thus, the claimed step of sampling a substance related to diagnosis and constituted in this context an essential diagnostic measure practised on the living human or animal body. The board noted that it was immaterial that the claimed methods could be performed by the patient himself and that their execution would not have a significant impact on the body or involve a serious health risk. What was decisive was the fact that all method claims on file comprised the step of taking a body sample for the purpose of diagnosis and that such a step was to be regarded as an essential activity pertaining to diagnosis and practised on the living body.

The board noted that the appellant's view that the case law on diagnostic methods had consistently adopted a restrictive interpretation of **T 385/86** was not correct (see for instance **T 329/94** and **T 655/92**). The board pointed out that the restrictive interpretation of the patent exemption for diagnostic methods adopted by **T 385/86** amounted to setting a different standard for diagnostic methods than that established for methods of surgery or therapy, the latter being excluded from patent protection if they comprised only a single step of a surgical or therapeutic nature (see for instance **T 35/99** (OJ 2000, 447) and **T 82/93** (OJ 1996, 274)). In the board's view, the expression "diagnostic methods practised on the human or animal body" in Art. 52(4) EPC should not be considered to relate to methods containing all the steps involved in reaching a medical diagnosis.

## **2.6 Products for use in medical methods**

Art. 52(4) EPC expressly allows the patenting of products for use in methods for the treatment of the human or animal body by surgery or therapy and in diagnostic methods (Art. 52(4) EPC, second sentence).

In **T 712/93** the claim at issue was concerned with an apparatus for use as the socket portion of a prosthetic ball and socket joint. The respondent argued in the oral proceedings before the board of appeal that the claim did not comply with Art. 52(4) EPC, since these claims contained a method step for treatment of the human body by surgery which step depended

on the professional decision by a surgeon. It contended that a claim was not allowable if it included at least one feature defining a physical activity or action which constituted a method for treatment of the human body. The board noted that the claim was directed to an apparatus, which was defined partly by functional features. This way of defining the scope of protection was allowable in so far as it had met the conditions under the EPC and was necessary in order to give the applicant adequate protection. The board found that the fact that some features were functional did not in itself transform the claim into a method claim. Consequently the claim complied with Art. 52(4) EPC, second sentence.

## **B. Exceptions to patentability**

### **1. Introduction**

Art. 53 EPC defines the exceptions to patentability as follows:

- (a) inventions the publication or exploitation of which would be contrary to 'ordre public' or morality, provided that the exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States; and
- (b) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision does not apply to microbiological processes or the products thereof.

The new R. 23b to 23e EPC concerning biotechnological inventions came into force on 1.9.1999 (OJ 1999, 437 ff). These give guidance on the definition of certain terms and provide that the relevant provisions of the EPC shall be applied and interpreted in accordance with the provisions of these rules. Directive 98/44/EC of 6.7.1998 (OJ 1999, 101) on the legal protection of biotechnological inventions shall also be used as a supplementary means of interpretation.

The case law indicates that any exceptions to patentability must be narrowly construed (in respect of Art. 53(a) EPC, see **T 356/93** (OJ 1995, 545); in respect of Art. 53(b) EPC, see **T 320/87** (OJ 1990, 71) and **T 19/90** (OJ 1990, 476)). The latter decision also stated that the object and purpose of the law ("ratio legis") was not merely a matter of the legislators' intention at the time when the law was adopted, but also of their presumed intention in the light of changes in circumstances which had taken place since then.

Living matter is not generally excluded from patentability under the EPC. Referring to Art. 53(b) EPC, the board in **T 49/83** (OJ 1984, 112) stated that no general exclusion of inventions in the sphere of animate nature could be inferred from the EPC. It was held in **T 356/93** (OJ 1995,545) that seeds and plants per se should not constitute an exception to patentability under Art. 53(a) EPC merely because they represented 'living' matter, or on the ground that plant genetic resources should remain the 'common heritage of mankind'. Furthermore, according to **T 19/90**, the exception to patentability under Art. 53(b) EPC applies to certain categories of animals but not to animals as such.

The Enlarged Board stated in **G 1/98** (OJ 2000, 111) that a claim wherein specific plant varieties are not individually claimed is not excluded from patentability under Art. 53(b) EPC,

even though it may embrace plant varieties.

## **2. Inventions contrary to "ordre public"**

The first decision to deal with ethical issues under Art. 53(a) EPC was **T 19/90**. The claims concerned a transgenic non-human mammalian animal whose germ cells and somatic cells contain in the genome an activated oncogene which increases the probability of neoplasm development in the animal, and a method for producing such an animal. The board held that there were compelling reasons to consider the provisions of Art. 53(a) EPC in relation to the question of patentability. As this had not been done at the level of the first instance, the board remitted the case to the examining division with the instruction to carry out a careful weighing up of the suffering of animals and possible risks to the environment on the one hand, and the invention's usefulness to mankind on the other, before deciding whether to grant or refuse the patent application. In its decision (OJ 1992, 588) the examining division finally granted the patent. Oppositions have since been filed and are still pending before the opposition division.

The Implementing Regulations have been amended since this decision. New R. 23d EPC provides that patents shall not be granted in respect of biotechnological inventions which concern processes for modifying the genetic identity of animals which are likely to cause them suffering without any substantial medical benefit to man or animal, and also animals resulting from such processes.

The issue of morality was again raised in **T 356/93** (OJ 1995, 545). The object of the invention was plants and seeds resistant to a particular class of herbicides so that they could be selectively protected against weeds and fungal diseases. This was achieved by stably integrating into the genome of the plants a heterologous DNA encoding a protein capable of inactivating or neutralising the herbicides. The patent was opposed under Art. 53(a) EPC, in particular on the grounds that the exploitation of the invention was likely to cause serious damage to the environment.

The board acknowledged that it might be difficult to judge whether or not a claimed subject-matter was contrary to "ordre public" or morality, but that nonetheless, the provisions of Art. 53(a) EPC could not be disregarded. Each particular case had to be considered on its merits.

The board defined the concept of "**ordre public**" as covering the protection of public security and the physical integrity of individuals as part of society. It also encompassed the protection of the environment. Accordingly, inventions the exploitation of which was likely to seriously prejudice the environment were to be excluded from patentability as being contrary to "ordre public".

The concept of **morality** was related to the belief that some behaviour was right and acceptable whereas other behaviour was wrong, this belief being founded on the totality of the accepted norms which were deeply rooted in a particular culture. For the purposes of the EPC, the culture in question was the culture inherent in European society and civilisation. Accordingly, inventions the exploitation of which was not in conformity with the conventionally accepted standards of conduct pertaining to this culture were to be excluded from

patentability as being contrary to morality.

Thus, the question to be decided in respect of Art. 53(a) EPC was whether the exploitation of any of the claimed subject-matter was likely to seriously prejudice the environment or whether it related to a misuse or destructive use of plant biotechnological techniques.

In the view of the board, the revocation of a patent under Art. 53(a) EPC on the grounds that the exploitation of the invention would seriously prejudice the environment presupposed that the threat to the environment be sufficiently substantiated at the time the decision to revoke the patent was taken by the EPO.

In the specific case the board held that, although the documents submitted by the appellant (opponent) provided evidence of possible hazards from the application of genetic engineering techniques to plants, they did not lead to the definite conclusion that the exploitation of any of the claimed subject-matter would seriously prejudice the environment.

Moreover, the board found that none of the claims related to subject-matter which could lead to a misuse or destructive use of plant biotechnological techniques because they concerned activities (production of plants and seeds, protection of plants from weeds or fungal diseases) and products (plant cells, plants, seeds) which could not be considered to be wrong as such in the light of the conventionally accepted standards of conduct of European culture. Plant biotechnology per se could not be regarded as being more contrary to public morality than traditional selective breeding.

For these reasons, the board concluded that Art. 53(a) EPC did not constitute a bar to patentability in this particular case.

### **3. Patentability of plants and plant varieties**

According to Art. 53(b) EPC, a patent shall not be granted if the claimed subject-matter is directed to plant varieties. In the absence of the identification of a specific plant variety in a product claim, the subject-matter of the claimed invention is not directed to a plant variety or varieties within the meaning of Art. 53(b) EPC. Thus, a patent shall not be granted for a single plant variety but can be granted if varieties may fall within the scope of the claims. If plant varieties are individually claimed, they are not patentable, irrespective of how they were made (**G 1/98** (OJ 2000, 111)). The term 'plant variety' is now defined in the new R. 23b (4) EPC as:

"any plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant variety are fully met, can be:  
(a) defined by the expression of the characteristics that results from a given genotype or combination of genotypes,  
(b) distinguished from any other plant grouping by the expression of at least one of the said characteristics, and  
(c) considered as a unit with regard to its suitability for being propagated unchanged."

The Enlarged Board came to the conclusion in **G 1/98** that a correct interpretation of Art. 53(b) EPC does not exclude the granting of patents for transgenic plants, where specific plant



varieties are not identified, even if the claims embraced inter alia plant varieties. The Enlarged Board took the view that Art. 53(b) EPC defined the borderline between patent protection and plant variety protection. The extent of the exclusion for patents was the obverse of the availability of plant variety rights. Since plant variety rights were only granted for specific plant varieties and not for technical teachings which could be implemented in an indefinite number of plant varieties, it was not sufficient for the exclusion from patent protection in Art. 53(b) EPC to apply that one or more plant varieties were embraced or might be embraced by the claims of the patent application.

The Enlarged Board further held that Art. 64(2) EPC should not be taken into consideration when a claim to a process for the production of a plant variety is examined, in conformity with the established case law according to which the protection conferred by a process patent is extended to the products obtained directly by the process, even if the products are not patentable per se (see II.B.6.1 and 6.2).

Finally, the Enlarged Board held that the exception to patentability in Art. 53(b) EPC, 1st half-sentence, applies to plant varieties irrespective of the way in which they were produced. Therefore, plant varieties containing genes introduced into an ancestral plant by recombinant gene technology are excluded from patentability. The underlying reason for this is that the exclusion in Art. 53(b) EPC was made to serve the purpose of excluding from patentability subject-matter which is eligible for protection under the plant breeders' rights system. It does not make any difference for the requirements under the UPOV Convention or under the Regulation on Plant Variety Rights, whether a variety is obtained by traditional breeding techniques or genetic engineering. This meant that the term 'plant variety' was appropriate for defining the borderline between patent protection and plant breeders' rights protection irrespective of the origin of the variety. The argument that the legislator of the EPC did not envisage the possibility of genetically modified plant varieties and for this reason could not have had the intention of excluding them from patentability could not be accepted - laws are not restricted in their application to situations known to the legislator.

The earlier decisions on this issue are now mainly of historical interest:

**T 49/83** (OJ 1984, 112) first defined the term 'plant varieties' as a multiplicity of plants which were largely the same in their characteristics and remained the same within specific tolerances after every propagation cycle. Following on from this, the board in **T 320/87** (OJ 1990, 71) concluded that hybrid seed and plants, lacking stability in some trait of the whole generation population, could not be classified as plant varieties within the meaning of Art. 53(b) EPC.

In **T 356/93** (OJ 1995, 545) the board held that plant cells as such, which modern technology allows to culture much like bacteria and yeasts, could not be considered to fall under the definition of a plant or of a plant variety. This was confirmed by **G 1/98**, which stated that plant cells should be treated like microorganisms.

However, the board's conclusion in **T 356/93** that a product claim which embraced within its subject-matter "plant varieties" was not patentable under Art. 53(b) EPC, first half-sentence, was overruled by **G 1/98**.

#### **4. Patentability of animals and animal varieties**

The board of appeal has asserted the general principle that the exception to patentability under Art. 53(b) EPC applies to certain categories of animals, but not to animals as such (T 19/90 OJ 1990, 476).

In interpreting the term "animal varieties" the board in this decision emphasised the narrow interpretation to be given to the provisions of Art. 53(b) EPC. Bearing in mind that for animals - unlike plant varieties - no other industrial property right was available, the board decided that the exception to patentability under Art. 53(b) EPC applied to certain categories of animals but not to animals as such. It thus constituted no bar to patentability for subject-matter which was not covered by any of the terms "animal varieties", "races animales" or "Tierarten".

In the same decision the board stated that under Art. 53(b) EPC, the general principle of patentability contained in Art. 52(1) EPC was restored for inventions involving microbiological processes and the products of such processes. The bar on patenting under Art. 53(b) EPC, first half-sentence, does not extend to the products of a micro-biological process which are patentable under Art. 53 (b) EPC, second half-sentence. Thus patents were held to be grantable for animals produced by a microbiological process, although this term was not defined.

#### **5. Essentially biological processes**

Processes for the production of plants or animals are not patentable if they are essentially biological processes. Non-essentially biological processes, on the other hand, are patentable.

According to decision T 320/87 (OJ 1990, 71), whether or not a (non-microbiological) process was to be considered as "essentially biological" within the meaning of Art. 53(b) EPC had to be judged on the basis of the essence of the invention, taking into account the totality of human intervention and its impact on the result achieved. The necessity for human intervention alone was not a sufficient criterion for its not being "essentially biological". Human interference might only mean that the process was not a "purely biological" process, without contributing anything beyond a trivial level. It was further not a matter simply of whether such intervention was of a quantitative or qualitative character.

In this particular case, it was concluded that the claimed processes for the preparation of hybrid plants did not constitute an exception to patentability because they represented an essential modification of known biological and classical breeders' processes, and the efficiency and high yield associated with the product showed important technological character.

In T 19/90 the board agreed that the process claims for the production of transgenic non-human mammals through chromosomal incorporation of an activated oncogene sequence into the genome of the non-human mammal did not involve an "essentially biological process" within the meaning of Art. 53(b) EPC. The product claim for the genetically-manipulated animal included descendants not directly genetically manipulated themselves but produced by the essentially biological process of sexual reproduction. The board held that this was a

product claim defined in terms of the process by which it was produced and that a product-by-process claim remains a product claim irrespective of the process it refers to.

In **T 356/93** (OJ 1995, 545) the board had to decide on a process for producing plants which comprised transforming plant cells or tissue with recombinant DNA and subsequently regenerating and replicating the plants or seeds. Following **T 320/87**, the board held that the process as a whole was not "essentially biological" within the meaning of Art. 53(b) EPC, because the transformation step, regardless of whether or not its performance depended on chance, was an essential technical step which had a decisive impact on the desired final result and could not occur without human intervention.

The Implementing Regulations have been amended since these decisions were handed down. New R. 23b(5) EPC now states that a process for the production of plants or animals is essentially biological if it consists entirely of natural phenomena such as crossing or selection.

## **6. Microbiological processes and the products thereof**

In **T 356/93** (OJ 1995, 545) the board referred to **T 19/90** (OJ 1990, 476), which held that animal varieties were patentable if they were the product of a microbiological process within the meaning of Art. 53(b), second half-sentence, EPC, and concluded that this principle applied *mutatis mutandis* to plant varieties. The board then defined the term "micro-organism" as including not only bacteria and yeasts, but also fungi, algae, protozoa and human, animal and plant cells, ie all generally unicellular organisms with dimensions beneath the limits of vision which can be propagated and manipulated in a laboratory, including plasmids and viruses.

Accordingly, the board interpreted the term "microbiological" as qualifying technical activities in which direct use was made of micro-organisms. These included not only traditional fermentation and biotransformation processes, but also the manipulation of micro-organisms by genetic engineering or fusion techniques, the production or modification of products in recombinant systems, etc., ie briefly all activities in which an integrated use is made of biochemical and microbiological techniques, including genetic and chemical engineering techniques, in order to exploit the capacities of microbes and cultured cells.

The board thus defined the concept of "microbiological processes" under Art. 53(b) EPC as processes in which micro-organisms are used to make or modify products or in which new micro-organisms are developed for specific uses. The concept of "the products thereof" encompassed, in the board's view, products which were made or modified by micro-organisms as well as new micro-organisms as such.

Although the Enlarged Board confirmed in **G 1/98** (OJ 2000, 111) the above definition of "microorganism", it went on to say that processes of genetic engineering are not identical with microbiological processes. The term microbiological processes in Art. 53(b) EPC was used as synonymous with processes using micro-organisms. Micro-organisms are different from the parts of living beings used for the genetic modification of plants. To treat genetically-modified plants as products of microbiological processes within the meaning of

Art. 53(b), second half-sentence, EPC, would disregard the purpose of the exclusion of plant varieties in Art. 53(b) EPC, ie excluding from patentability subject-matter which was eligible for protection under the plant breeders' rights system. Therefore, the Enlarged Board took the view that it did not make any difference for the requirements under the UPOV Convention or under the Regulation on Plant Variety Rights, how a variety was obtained. Whether a plant variety was the result of traditional breeding techniques, or whether genetic engineering was used to obtain a distinct plant grouping, did not matter. This meant that the term "plant variety" was appropriate for defining the borderline between patent protection and plant breeders' rights protection irrespective of the origin of the variety.

Examining the patentability of the then claimed plant grouping, in **T 356/93** the board also addressed the issue whether **multi-step processes** for producing plants which include at least one microbiological process step (eg the transformation of cells with recombinant DNA) as a whole could be considered to represent "microbiological processes" within the meaning of Art. 53(b) EPC, second half-sentence, and whether, owing to this, the products of such processes (eg plants) might be regarded as being "the products thereof" for the purposes of this provision.

The board held that "technical processes including a microbiological step" could not simply be equated with "microbiological processes". Nor could the resulting final products of such a process (eg plant varieties) be defined as "products of a microbiological process" within the meaning of the said provision.

The particular plant claimed was produced by a multi-step process which, in addition to the initial microbiological process step of transforming plant cells or tissue with recombinant DNA, comprised the step of regenerating plants from the transformed plant cells or tissue and the step of reproducing the plant material. The board held that the plant was not the product of a microbiological process. Although the initial microbiological process step undoubtedly had a decisive impact on the final result because by virtue of this step the plant acquired its characterising feature which was transmitted throughout generations, the claimed plant was not merely the result of this (microbiological) initial step. The subsequent steps of regenerating and reproducing the plants had an important added value and contributed, although in a different manner, to the final result as well.

The board therefore concluded that, regardless of the decisive impact that the microbiological process step had on the final result, the multi-step process whereby the claimed plant was produced was not a microbiological process within the meaning of Art. 53(b) EPC, second half-sentence, and that, accordingly, such a plant could not be considered to be "the product of a microbiological process".

New R. 23b(6) EPC defines a "microbiological process" as any process involving or performed upon or resulting in microbiological material. The boards have not yet issued a decision interpreting this definition.

## **C. Novelty**

An invention can be patented only if it is new. An invention shall be considered to be new if it does not form part of the state of the art. The purpose of Art. 54(1) EPC is to prevent the state of the art being patented again (T 12/81, OJ 1982, 296; T 198/84, OJ 1985, 209).

The first step in deciding whether an invention is new is to define the prior art, the relevant part of that art, and the content of that relevant art. The next is to compare the invention with the prior art thus defined, and see whether the invention differs from it. If it does, the invention is novel.

### **1. Defining the state of the art**

Under Art. 54(2) EPC, the state of the art comprises everything made available to the public by means of a written or oral description, by use, or in any other way, **before** the filing or priority date of the European patent application.

#### **1.1 Relevant point in time**

An application with the same filing or priority date as the application to be examined is not part of the state of the art (see T 123/82).

According to the boards' established case law, the prior art's content is to be interpreted in the manner in which it would have been understood by the skilled person at the time it was made available. In particular, for ascertaining the disclosure of a document forming part of the state of the art within the meaning of Art. 54(2) EPC, the relevant date is that of publication. Interpreting a document using knowledge which only became available to the relevant experts between the publication date of the cited prior art and the filing or priority date of the application to be examined or the patent in dispute is an inventive-step issue, not a novelty one (see T 205/91, T 965/92, T 590/94). In T 74/90 the board did however consider how a skilled person would have understood a citation on the filing date of the patent in suit. It concluded that this disclosure did not comprise a possible interpretation which, because of technical prejudice, such a person would have considered unperformable on the filing date.

#### **1.2 European prior rights**

Under Art. 54(3) and (4) EPC the state of the art comprises the content of other European applications filed earlier than, but published under Art. 93 on or after the date of filing of the application being examined, to the extent that the earlier and later applications validly (R. 23a) EPC designate the same state or states.

In J 5/81 (OJ 1982, 155) the board held that a published European patent application became part of the state of the art under Art. 54(3) EPC, with retroactive effect as from its filing date or priority date, for assessing applications filed after that filing date or priority date but prior to its publication, but that this should only apply if such a "prior application" was still in existence at the time of publication.

In **T 447/92** the whole contents of an earlier document within the meaning of Art. 54(3) and (4) EPC had to be considered as forming part of the state of the art as far as novelty was concerned. The board pointed out that the boards of appeal had consistently applied a very restrictive interpretation of disclosure in order to reduce the risk of self-collision. To do otherwise would, in the board's view, undesirably undermine the exclusion from consideration of documents within the meaning of Art. 54 EPC when deciding whether there had been an inventive step under Art. 56 EPC, second sentence.

### **1.3 PCT applications as state of the art**

An international application not yet published and for which the EPO is a designated Office is considered as comprised in the state of the art in accordance with Art. 54(3) EPC ie with effect from its filing or priority date, as soon as it has been filed at the EPO in an official language and the national fee has been paid (Art. 158(2) and (3) EPC).

In **T 404/93** the European patent application was limited to the contracting states IT, NL and SE in view of an earlier international application, published after the filing date of the former. The board noted that the earlier PCT application had mentioned several EPC contracting states, including IT, NL and SE, as being designated for a European patent. However, when the earlier application had entered the European phase, no designation fees had been paid for IT, NL and SE. Accordingly, the board found that the earlier international application was not comprised in the state of the art under Art. 54(3) EPC for IT, NL and SE (see also **T 623/93**).

In **T 622/91** the respondent (patent proprietor) requested that the decision under appeal be set aside and the patent maintained for all designated contracting states. Two earlier international applications and the European patent had designated the contracting state FR. The board noted that the requirements of Art. 158(2) EPC were fulfilled, and considered the international applications as comprised in the state of the art relevant to the patent in suit in accordance with Art. 54(3) EPC and Art. 158(1) EPC. The board went on to examine claim 1 of the main request and found that the earlier application was novelty-destroying in so far as the same contracting state FR was designated.

### **1.4 Excluded national prior rights**

In **T 550/88** (OJ 1992, 117) (see p. 473) the board made it clear that, on the proper interpretation of Art. 54(3) EPC, prior national rights were not comprised in the state of the art. As to the references to Part VIII of the EPC made by the appellants, the board found that they rather confirmed that the effect of a prior national right upon a European patent was a matter purely for national law, whereas the effect of a prior European application upon a European patent was specifically provided for in Art. 54(3) EPC (which might also be a ground for revocation under national laws by virtue of Art. 138(1)(a) EPC). In other words, the combined effect of Art. 138(1) EPC and Art. 139 EPC was to provide an additional possible ground for revocation under national laws based upon the existence of a prior national right, which was not available under Art. 54 EPC.

In the board's view, it was clear that the wording of Art. 54(3) EPC was intended deliberately

to exclude national applications from having the prior art effect therein stated in respect of a European patent. At the time the EPC had entered into force it had still been uncertain whether the national laws of contracting states would include the same prior right effect as set out in Art. 54(3) EPC. Even now, the national law in Switzerland provided for a different prior right effect ("prior claim") from that set out in Art. 54(3) EPC ("whole contents"). The omission of prior national rights from Art. 54(3) EPC had been made in the context of such international uncertainty. The board went on to note that if Art. 54(3) EPC were to include prior national rights, the result would be a legal inconsistency particularly so far as Switzerland was concerned, having regard to Art. 139(2) EPC: in an opposition to a European patent before the EPO in which a national prior right was relied upon under Art. 54(3) EPC, the conflict would be resolved in accordance with the "whole contents" system of Art. 54(3) EPC, whereas in revocation proceedings under national law in Switzerland in respect of the European patent the same conflict would be resolved pursuant to Art. 139(2) EPC in accordance with the prior claim system (Art. 7a. Swiss Patent Act).

### **1.5 Article 55 EPC**

Art. 55 EPC specifies two instances in which a prior disclosure of the invention is not to be taken into consideration as part of the state of the art under Art. 54 EPC: if it was due to, or in consequence of (a) an evident abuse in relation to the applicant or his legal predecessor, or (b) the fact that the applicant or his legal predecessor had displayed the invention at an official international exhibition.

In joined cases **G 3/98** (OJ 2001, 62) and **G 2/99** (OJ 2001, 83), the Enlarged Board ruled that for calculating the six-month period under Art. 55(1) EPC the relevant date is that of the actual filing of the European patent application, not the priority date.

In **T 173/83** (OJ 1987, 465) the board ruled that within the meaning of Art. 55(1)(a) EPC, there would be evident abuse if it emerged clearly and unquestionably that a third party had not been authorised to communicate to other persons the information received. Thus there was abuse not only when there was the intention to harm, but also when a third party acted in such a way as to risk causing harm to the inventor, or when this third party failed to honour the declaration of mutual trust linking him to the inventor.

In **T 585/92** (OJ 1996, 129) a patent application had been filed in Brazil on 14.7.1976 and originally claimed priority from several GB applications, the earliest having a filing date of 15.7.1975. Under Brazilian patent law, it would have been due for publication on 16.8.1977. However, the applicant abandoned all the claimed priorities, which ought to have delayed the publication for a further twelve months. Notwithstanding this abandonment of priority, the application was erroneously published before the priority date of the patent in suit. The board found that where a patent application was published early by a government agency as a result of an error, this was not of necessity an abuse in relation to the applicant within the meaning of Art. 55(1)(a) EPC, however unfortunate and detrimental its consequences might turn out to be. In order to determine whether there was an abuse in the sense of Art. 55(1)(a) EPC, the state of mind of the "abuser" was of importance. The published Brazilian application was considered to form part of the state of the art.

In **T 436/92** the board found that deliberate intention to harm the other party would constitute evident abuse, as probably also would knowledge of the possibility of harm resulting from a planned breach of such confidentiality. The state of mind of the "abuser" was of central importance (confirming **T 585/92**). The board held that the appellant had not proven, on the balance of probability, that the publications had occurred in violation of the tacitly agreed confidentiality. In other words, the publication was not an evident abuse within the meaning of Art. 55(1) EPC.

### **1.6 Availability to the public**

The state of the art comprises what has been made available to the public.

Board of appeal case law has it that the theoretical possibility of having access to information renders it available to the public (**T 444/88**), whatever the means by which the invention was made accessible, and - in the case of prior use - irrespective of whether there were particular reasons for analysing the product (**G 1/92**, OJ 1993, 27). This decision supersedes **T 93/89** (OJ 1992, 718), **T 114/90** and **T 62/87** on this point. It is not relevant, as a matter of law, whether on that date a member of the public actually saw the document or knew that it was available (**T 381/87**, OJ 1990, 213).

Particular problems may arise, depending on how the information is made available.

#### 1.6.1 Publication

In **T 611/95** a research institute known in the field was in possession of a **report** anticipating the invention, which anyone could view at the institute or order from it on request. Two papers published prior to the priority date referred to this report and indicated where it could be obtained.

In the board's view, the report was therefore publicly available. As far as availability to the public was concerned, the institute was not to be equated with a library, but the information in the documents had indicated to experts in the field that anyone could inspect or order the report there. It was thus available to the public.

In **T 842/91** the subject-matter of the claimed invention was included in a **book** to be published. Shortly before the priority date, the patent proprietor gave permission to the publisher to disclose the contents of the book as follows "... I hereby grant the book's publisher unrestricted rights of publication and waive any claims arising therefrom". Moreover, the opponent claimed that as a seminar including the subject-matter had been given shortly after the priority date, it was possible that the article had been distributed before the priority date. The board held that although the patent proprietor had clearly given the publisher permission to make the claimed subject-matter available to the public, this could not of itself amount to actually making it available. Nor could it be assumed merely from the permission given or the date of the seminar that copies had in fact been made available before the priority date.

In **T 37/96** the board had to decide on the public availability of some prior-art documents. Two



of them were **typical company papers**.

The board held that unlike scientific or technical journals, such papers could not be assumed to have automatically made their way to the public. On the contrary, whether they had indeed been available to the public on a given date depended on the particular circumstances and the evidence available.

**T 877/98** raised the question whether a **German patent** had become publicly available upon notification of the grant decision if the application had not been published previously.

The board took the view that the patent had not become available until publication of grant in the patent bulletin; only from that point on was the file open for inspection. It thus endorsed the view of the German Federal Patents Court (decision of 23.12.1994, 4W(pat)41/94, BIfPMZ 1995, 324).

In **T 165/96**, technical information about a feature of the invention had been disclosed, prior to the date of filing of the European patent application in question, in an insert in a **minor small-ads newspaper** (circulation: 24 000) distributed in the suburbs of Copenhagen.

The patent proprietor argued that in view of the newspaper's limited circulation and readership ("man on the street" in suburban Copenhagen) the information in question had effectively remained confidential and could not be regarded as forming part of the state of the art within the meaning of Art. 54(2) EPC; the document should therefore not be admitted in the appeal proceedings. He also felt that scientific or technical information published before filing in a non-technical or non-scientific context outside the scope of the art concerned, and with no references or distinguishing features enabling it to be found again afterwards, should not be regarded as directly available to the public without undue burden as per **G 1/92**.

The board ruled that, pace the patentee, publication in such a manner fulfilled the necessary and sufficient conditions for citing a disclosure against the patent. Information was "available" once people could theoretically become aware of it. A publication did not have to fulfil any specific criteria of form or layout in order to qualify as a citable disclosure.

On the "undue burden" argument, the board noted that the patentee's interpretation would introduce into the consideration of novelty precisely that subjective element which in **G 1/92** the Enlarged Board had sought to exclude. That argument was therefore not valid.

#### 1.6.2 Abstracts of documents

In **T 160/92** (OJ 1995, 35) the appellant objected to the fact that the examining division had based its judgment on whether the claimed subject-matter involved an inventive step on an **abstract of a Japanese patent document** without introducing the original document and citing specific passages from it. With respect to the question of citability of an abstract, the board held that the teaching of a previously published abstract of a Japanese patent document, considered per se without its corresponding original document, formed prima facie part of the prior art and might be legitimately cited as such if nothing on the file pointed to its invalidity. The party intending to contest the validity of said teaching on the basis of the

original document's teaching had the burden of proof. As to whether or not citing the abstract, without the original document from which it was taken, was permissible or constituted a procedural violation, the board noted that it had to be considered whether the statement based on such an abstract alone could be regarded as reasoned within the meaning of R. 51(3) EPC and R. 68(2) EPC. In the case in question, the abstract provided certain information and, for the skilled reader, there was no indication that such information was invalid. The examining division's line of reasoning was complete and understandable.

In **T 243/96**, it was established that the abstract of a document on whose basis the application in suit was refused is an independent part of the prior art in its own right. However, in view of the inadequacy of this disclosure, and the divergent views on how the abstract should be interpreted, the board decided to introduce the full document into the appeal proceedings in the form of its English translation, it being understood that the full document took precedence over the abstract.

#### 1.6.3 Repetition of oral disclosures

Where a written disclosure was published which was based on an oral disclosure at a public conference held some years earlier, it could not as a rule be assumed that the written disclosure was identical to the oral disclosure. Additional circumstances had to be put forward and proven to justify that conclusion (**T 153/88**). In **T 86/95**, the board assumed that the disclosures were identical since it was highly unlikely that the speaker would have passed over such a salient feature at the conference.

In **T 348/94** the board confirmed that a written publication allegedly based on a paper previously read at a public meeting held some time earlier (in this case ten months) could not be assumed to be identical to what was orally disclosed, and might contain additional information. As to the extent of the oral disclosure, the burden of proof remained with the opponent.

#### 1.6.4 Prior use

In **T 84/83** a new type of wide-angle mirror had been fitted to a **motor vehicle for demonstration** purposes for at least six months. The board held this to constitute prior public use as during such a time the vehicle could be expected to be parked on public highways and hence open to inspection by third parties.

In **T 245/88** several **vaporisers** had been installed in a fenced-off **area of a shipyard**. The public did not have unrestricted access to this area. The board was of the view that the vaporisers had not been made available to the public.

In **T 327/92**, the patentee claimed an expanded film laminate characterised by the feature that it be expanded by monoaxially drawing it. The product of the process of a citation comprised a laminate which was stretched in one direction and then, within a short time, further stretched at right angles to this direction; in this process a monoaxially stretched laminate existed, at least, for 60 seconds. The board held that the **intermediate product** which existed only for some 60 seconds before being further processed destroyed the

novelty of the patentee's claim because it met all technical characteristics required by the claim. It allowed, however, a claim directed to a not yet disclosed use of the monoaxially stretched laminate.

For the preconditions for claiming prior use, see p. 358 and p. 473 ff.

#### 1.6.5 Biological material

In the field of microbiology, in **T 576/91** the board conceded that an unwritten rule may exist within the scientific community whereby biological material referred to in a scientific publication can be freely exchanged. However, this does not amount to an obligation, so that any biological material which is the subject of a publication can be considered as being publicly available. The board further stated that if contractual obligations between parties resulted in access to biological material being deliberately restricted to a group of persons bound either by a research contract or a licence, it could not be concluded that this material had been made "available to the public" under the terms of Art. 54(2) EPC. In **T 128/92** the board stated that for a complex biochemical to be made available to the public, the minimum that would seem to be required for publication was a notice to those in the field that samples of the biochemical could be obtained on request, and clear evidence of exactly what the biochemical was.

#### 1.6.6 The concept of "the public"

Over the years, the boards have arrived at a clear definition of "the public". Information is said to be "available" to the public if only a single member of the public is in a position to gain access to it and understand it, and if there is no obligation to maintain secrecy.

This was the opinion in **T 482/89** (OJ 1992, 646), where the board said that a single sale was sufficient to render the article sold available to the public within the meaning of Art. 54(2) EPC provided the buyer was not bound by an obligation to maintain secrecy. It was not necessary to prove that others also had knowledge of the relevant article.

The sale of an object to a single customer who is not obliged to maintain secrecy renders the invention public, even where the object is to be used in a prototype, which is itself to be kept confidential until it is mass produced (**T 1022/99**)

Parties sometimes try to argue that information was not publicly available because the person who received it was **not skilled in the art**.

In the opinion of the board this was the case when the article was sold to a man not skilled in the art (likewise **T 482/89** (OJ 1992, 646), **T 953/90**, **T 969/90** and **T 462/91**). In **T 809/95**, the board did not accept the argument by the patentee that his invention (used in bottle-making) had not been disclosed through a test because although the participants had taken home bottles made using the invention they were not specialists in the field concerned. According to the board, the word "public" in Art. 54(2) EPC did not necessarily mean the skilled person (see also **T 482/89**, OJ 1992, 646). Furthermore, the bottles' inventive features were obvious, and could be appreciated without technical knowledge.

In **T 165/96**, the board held that "the public" within the meaning of Art. 54(2) EPC did not presuppose a minimum number of people or specific educational qualifications; the residents of a Copenhagen suburb sufficed.

The word "public" in Art. 54(2) EPC does not necessarily refer to the man in the street according to **T 877/90** and **T 406/92**: a disclosure before a skilled person makes it "public" in the sense that the skilled person is able to understand the disclosure and is potentially able to distribute it further to other skilled members of the public (see also **T 838/97**).

Another argument sometimes used is that information was given only to a **limited circle of people** and therefore not publicly available.

In the opinion of the board the information is publicly available where it was made available to a limited circle of people (**T 877/90** - congress; **T 228/91** - course; **T 292/93** - demonstration for potential customers conducted on the premises of a company with close links to the opponent).

In **T 398/90** a marine engine installed in a ship was held to have been known to the engine room crew and hence to have been made available to the public.

On the other hand, in **T 300/86**, the board took the view that the fact that the report of the invention was passed on to a large, but limited, circle of persons did not of itself make the document available to the public if all the recipients of the document were bound to secrecy, and there was nothing to indicate that the recipients broke their pledge of secrecy.

In **T 1085/92** the board ruled that a company's own staff could not normally be equated with "the public" within the meaning of Art. 54(2) EPC.

**T 11/99** too confirmed that information was publicly available even if only a single member of the public could obtain and understand it, and was not bound to secrecy. The respondent had argued that 8 700 members of a Japanese society of chemical engineers was not "the public" in Japanese terms.

#### 1.6.7 Obligation to maintain secrecy

If the person who was able to gain knowledge of the invention was under an obligation to maintain secrecy, the invention cannot be said to have been made available to the public, provided the person did not breach that obligation.

If the obligation to maintain secrecy stems from an express agreement that has been observed, the information has not been made available to the public. Less clear cut are cases of tacit secrecy agreements, or where the obligation to maintain secrecy stems from the circumstances. There is considerable case law on this point.

(a) Distribution of prospectuses, technical descriptions, etc

In **T 173/83** (OJ 1987, 465) and **T 958/91** the board held that a technical description sent out

to clients could not be regarded as secret information.

(b) Displaying the invention

**T 87/90** dealt with a case where there had been unrestricted access to a sheetfed offset printing press featuring an integrated coating unit awaiting delivery to a customer in the assembly shop of the manufacturer. The invention related to the coating unit. The press was noticed by chance by another client inspecting a press ordered for his company. Although he was not given a working demonstration of the coating unit, all the details were explained to him. In the light of experience the board took the line that a company's commercial interest in obtaining follow-up orders outweighed any considerations of secrecy and that this therefore amounted to prior public use.

In **T 1085/92** a brush holder had been manufactured by a third party on behalf of the appellants on the basis of drawings provided by the appellants and then fitted in an assembly line owned by the appellants to which visitors to the company had had access. It could not be ascertained whether in this case there had been an express secrecy agreement, although a note did exist prohibiting the release of the drawings. The board took the view that where such contractual relations and development agreements existed a secrecy agreement could be assumed to exist. Fitting the device in the assembly line did not make the invention evident to visitors, so anticipatory prior public use could not be said to exist (see also **T 365/93**).

(c) Sub-contracting

In **T 830/90** (OJ 1994, 713) the actions constituting prior use were based on meetings between the shipyard commissioned to build a new ship and two rival sub-contractors, namely the patent proprietors and the opponents. The meetings involved the submission of quotations to the shipyard. The drawings shown during the meeting bore clearly visible stamps referring to Sections 18-20 of the German law prohibiting unfair competition and Section 823 of the German Civil Code (liability for damages on the grounds of actionable tort). The witnesses had stated that for them confidentiality had been a matter of course. Faced with these facts the board took the view that a confidentiality agreement had - at least implicitly - been reached. This was perfectly sufficient. Furthermore, in line with general experience, it had to be assumed that such an agreement would be observed at least as long as there was a common concern for secrecy. Such concern would last at least for the period required to safeguard the interests of the business partners. These interests might, for example, include the co-operation phase in which there was still no protection in law, or in which there was still joint further development of the new mechanism.

In **T 799/91** the opponents asserted that the subject-matter claimed had been in prior public use in that its manufacture had been "sub-contracted out" to a third company. According to the board the third company was not simply any third party because the opponents' decision to place an order was based on a relationship of trust. The board therefore saw no indication of there having been prior public use, nor could the claim have been substantiated by the testimony of any witness.

(d) Demonstrating products for presentation purposes

In **T 634/91** the claimed prior public use consisted of the presentation of a circular saw at an opponent's place of business during a meeting between the patent proprietor and a potential buyer. Without elucidating further, but referring to the decision in **T 830/90** (OJ 1994, 713), the board held that such talks constituted a tacit understanding to maintain secrecy.

In **T 292/93**, the board ruled that a demonstration conducted for a small group of potential customers on the premises of a company with close links to the opponent was inconsistent with the existence of an obligation to maintain secrecy.

In case **T 478/99** a demonstration was made by two potential clients. It could not be proven that a confidentiality agreement existed. The board held that the sole absence of an explicit request of confidentiality was not sufficient for concluding that there was no confidentiality because secrecy may result from an ethical conduct of the employees of big companies like the two clients in question. Consequently, the board considered the alleged public prior use not to be proven.

In **T 823/93**, the opponent had sold a company a packaging apparatus with characteristics similar to the patented apparatus. Delivery had been made after the patent's date of priority, but the apparatus had been presented to the company's employees prior to that date. The packaging apparatus had been developed on the basis of an order from the client. The order did not relate to a finished product but to a complex system needing to be adapted to the purchaser's requirements. The apparatus had been developed as the solution to a specific technical problem envisaged by the client himself. The question was whether the client had required the employees to whom the apparatus had been presented to treat the presentation as confidential.

According to the board, the development of a new apparatus is usually kept secret from competitors. In the case at issue, the development of the apparatus had to be regarded as the result of co-operation between the opponent and the client. The board therefore took the view that, on the basis of these facts, it could be assumed that none of the parties had an interest in disclosing any information about the apparatus and it was likely that the technical reports exchanged between the parties were tacitly required to be treated as confidential. The board also held that the general conditions of business, which had become the conditions of contract and required the plans, designs and other documents to be handled confidentially, also extended to verbal information and details given during the presentation of the apparatus. In these circumstances, the board decided that the employees to whom the apparatus had been presented could not be considered as members of the public within the meaning of Art. 54(2) EPC.

(e) Presenting the product in writing

In **T 887/90**, the alleged prior public use hinged on the submission of two quotations, each of which had involved a series of technical discussions with the potential customers. The quotations had not been for finished products, but for systems requiring adjustments to the clients' requirements. The drawings, without which the quotations would have been

meaningless, bore clear references to Section 18 of the German law prohibiting unfair competition which had been noted by the clients. The board took the line that an obligation to maintain secrecy was clear from the circumstances. The recipients of the quotations had no discernible reason for passing on the contents of the quotation to third parties and hence for choosing to ignore the references on the drawings. Simply to claim that no mention had been made of any obligation to maintain secrecy was insufficient to invalidate the assumption that there had been an implicit agreement to maintain secrecy. Nor was the fact that sales representatives had also been present enough to prove the contrary.

In **T 541/92** a sub-contractor had given sketches of a device to their client. In the board's view this constituted an obligation to maintain secrecy. It was standard practice for clients and their subcontractors to keep their projects secret, and allegations to the contrary required convincing proof.

In **T 1076/93** the opponents had, without there having been an explicit agreement to maintain secrecy, offered an apparatus which caused the subject-matter of the invention to lack novelty and had provided drawings to a weapons manufacturer. The board held that the prior use did not cause lack of novelty because a variety of circumstances pointed to there having been an obligation to maintain secrecy. According to the board discretion was generally acknowledged to be the rule on the premises of such companies. The business contacts between the opponents and the weapons manufacturer were restricted to specific individuals. Furthermore, aside from the discretion commonly observed in this branch of industry, almost all the papers used by staff at the company in question bore warnings about the need for confidentiality. It had been demonstrated that this company did not as a matter of principle allow the details of quotations to be passed on to third parties.

In **T 818/93** the relevant prior art document was a declaration made by the inventor before the USPTO, plus Exhibits 1 and 4 mentioned therein. Several companies had been contacted in an (unsuccessful) attempt to interest them in developing and funding research into the intraluminal graft outlined in Exhibit 1. Exhibit 4 had been sent to the inventor's superior, a professor at the University of Texas Health Science Center at San Antonio, after which discussions had been held with him and a research assistant at this university with a view to obtaining the necessary equipment for carrying out the research and fabrication and for testing the graft. In the board's judgment, all these steps and approaches had been taken within the context of business relationships which were necessary to bring the project to a successful conclusion. Such negotiations were confidential by nature in view of the comparable interests of the parties involved and implied a secrecy agreement. In the board's view and contrary to the respondent's assertion, a written agreement was not necessary to rule out any involvement of a third party so that, in the case at issue, implicit confidentiality had not been breached by the meetings and negotiations prior to the filing date of the contested patent.

In **T 480/95** the document relied upon by the opposition division as a prepublication decisive for the evaluation of inventive step was a letter from the opponent to a customer written in connection with a contractual relationship between the two firms. In this letter the opponent gave advice as to the way in which a certain programmed memory solved specific processing problems. The board considered this letter to be a typical example of correspondence

between contracting firms, which was confidential by its very nature.

(f) Making available for test purposes

A product made available for test purposes is to be treated as confidential. Sale of the product in a limited quantity is regarded as sale for test purposes, if the product is normally sold in large quantities (see **T 221/91**, **T 267/91** and **T 782/92**).

In **T 602/91** the opponents had conducted an experiment using the patent proprietors'/'respondents' invention before the priority date at which at least two employees of the appellant company had been present. That there had been no express agreement and secrecy was undisputed. Nor, in the board's view, had there been any tacit agreement either, as the two parties had not concluded a development agreement or entered into any other contractual relations that would indicate either of them having had any particular interest in a secrecy agreement. Furthermore, a single case of co-operation between a manufacturer and a potential end-user of the product was not sufficient to assume that a tacit agreement on secrecy had been entered into. Good relations alone were not enough for a tacit agreement to develop, particularly as in this case the appellants had a financial interest in disclosing the invention to the respondents' competitors.

In case **T 809/95** the granted patent was inter alia for a plastic bottle whose special features related to its foldability. One of the opponents alleged two cases of prior use. One of these had occurred in connection with a "market test" performed by a market research company on behalf of the third party to gauge the market for such bottles. The patent proprietor claimed that both prior uses had been subject to confidentiality rules.

As far as the prior use through market research was concerned, the board held that the very fact that the third party had chosen a test variant allowing the test participants to take the bottles home indicated that it attached no particular value to confidentiality in the patent sense. Nor was there any circumstantial obligation to maintain secrecy since the market research institute did not employ or have a business relationship with the test persons. Allowing the bottles to be taken home and used freely was rather evidence against any obligation to maintain confidentiality.

In **T 1054/92** of 20 June 1996, the opponent had alleged and proved that the claimed invention, an absorbent structure for diapers, had been tested in public tests carried out by several hundred members of the public at several places in the USA over several weeks. The appellant (patent proprietor) had admitted not being certain that the tests were confidential but he was of the opinion that it was up to the respondent to prove without doubt that there was no bar of confidentiality. In the absence of such proof, the board should find on the balance of probabilities that the tests were confidential. The board was convinced in the light of common experience that it was very unlikely that these tests had been kept confidential, particularly since some of the used diapers had not been returned to the appellant. The board confirmed, against the opinion of the appellant, that the burden of proof for the existence of a secrecy agreement was on the patent proprietor. Since he could not prove the existence of secrecy agreements with the participants in these tests, the board found that they were not confidential.



(g) Conferences

In **T 739/92** an oral description of the invention had been given in a conference. The question was whether the participants at this conference were bound to secrecy and could therefore not be seen as the public within the meaning of Art. 54(2) EPC. The list of participants showed that the conference was open to every specialist active in the relevant field. The participants were not prohibited from disseminating oral information from the conference, or from publishing information from it provided that they omitted any reference to the conference. Recording the lectures on tape, etc. and photographing slide material were prohibited. Guests were not permitted to attend the conference lectures and discussions. The board held that under these conditions the participants at this conference were to be regarded as normal members of the public since there was no secrecy agreement. In contrast to the situation in **T 300/86**, the participants were not licensees of the organisers, nor subject to a blanket contractual prohibition from communicating the information they obtained to third parties.

In **T 202/97** the board held that a draft standard sent together with an agenda to the members of an international standards working party as part of the preparations for a meeting on standards was not normally confidential and was thus available to the public. Even though only a particular group of persons had been invited to take part in the meeting on standards, it was the task of a standards committee to draw up proposals for standards which had been agreed on on as broad a basis as possible with the experts in the field, and which were based on the current state of developments. This task precluded any obligation to maintain confidentiality.

In **T 838/97** the invention was presented orally at a conference attended by about 100 of the most renowned experts in the respective technical field including potential rivals. The participants were explicitly instructed that information presented at the conference was not to be used without the specific authorisation of the individual who made the contribution. The board considered that the participants were bound by a confidentiality agreement and thus the invention was not to be considered to be part of the state of the art.

(h) Joint venture agreement

A joint venture agreement obliges the parties to secrecy even without an explicit clause to that effect (**T 472/92**).

**1.7 Issues of proof**

1.7.1 Nature of the evidence

In **T 611/97** the appellant/opponent had listed various gun alignment systems which he alleged had been made available to the public in various ways (through being advertised, manufactured or sold, or through the distribution of catalogues).

The board stated that it was immediately obvious that a variety of actions, eg describing the system in a catalogue and selling it, usually meant that a different product was made available to the public. A person skilled in the art could, for example, dismantle and analyse

a system which had been made unrestrictedly available to the public by being sold in order to obtain technical information not necessarily contained in the catalogue. The alleged availability of a product based on the distribution of catalogues and the alleged sale of a system described in such catalogues therefore represented different cases of availability, each of which had to be proved separately.

#### 1.7.2 Burden of proof

Where lack of novelty is alleged, the burden of proof invariably lies with the party claiming that the information in question was made available to the public before the relevant date (see, for example **T 193/84**, **T 73/86**, **T 162/87**, **T 293/87**, **T 381/87** (OJ 1990, 213), **T 245/88** and **T 82/90**).

According to **T 766/91** (point 8.1) and **T 919/97** (point 4.4), evidence of general technical knowledge need be submitted only if the latter's existence is disputed.

In **T 743/89**, however, the board applied the principle of prima facie evidence. Here, it had been proved that a leaflet disclosing the invention had been printed seven months before the date of priority, but it was uncertain when the leaflet had been distributed. The board took the view that, although the date of distribution could no longer be ascertained, it was reasonable in any event to assume that distribution had occurred within the seven-month period. The respondents contended that this was not the case, but the board considered this assertion to be so lacking in plausibility that it placed the onus of proof on the respondents.

In decisions **T 73/86**, **T 162/87**, **T 293/87**, **T 708/89**, **T 82/90**, **T 600/90**, **T 267/91**, **T 782/92** and **T 34/94** the boards assumed that all the circumstances surrounding prior use must be proved by the party raising the objection.

In **T 326/93**, the board held that in assessing public prior use the burden of proof lay with the opponent, who had to show, on the balance of probabilities, firstly that the invention had been publicly demonstrated before the priority date and secondly that the skilled person would have drawn the necessary teaching from the demonstration (see also **T 472/92**, OJ 1998, 161, **T 750/94**, OJ 1998, 32 and **T 848/94**).

Ruling on an objection of prior public use in **T 221/91** the board took the line that it was for the patent proprietors to prove the existence of an obligation to maintain secrecy when the opponents had proved that the invention had been made available to the public and the patent proprietors had claimed the existence of a secrecy agreement (see also **T 969/90** and **T 1054/92** of 20.6.1996).

In **T 901/95** the board decided that merely claiming that generating equipment was installed into ships at three different **shipyards** and thus available to the public was not enough to demonstrate its obvious prior use. Shipyards were normally considered restricted areas and thus not open to the general public. This applied all the more to installations built into ships in the yards. Nor could the possibility be excluded that shipyards' business partners might secure their common interests through explicit or tacit secrecy agreements, in the absence of other protection. In the case in point, it was also questionable whether the relevant process

steps and the functional arrangement of the switching means were apparent from merely looking at built-in apparatus; nor was it certain when the generating installations had become operational.

Both parties dispensed with oral proceedings and no witnesses were heard; the board did not in these circumstances consider the alleged public prior use.

In **T 887/90** the obligation to maintain secrecy was derived from the circumstances. In this case the board's view was that the onus for proving the contrary lay entirely with the opponents. See also **T 541/92** and the chapter VI.J. "Law of evidence".

In **T 472/92** (OJ 1998, 161) the board ruled that the existence of a joint venture agreement implied an obligation to maintain secrecy.

#### 1.7.3 Standard of proof

In **T 48/96** the board stated that, in order to prove the allegation that a particular apparatus described in a catalogue had been available to the public before the priority date, it was not sufficient to show that the catalogue had been published on time, because a mere indication in a catalogue did not constitute absolute proof that the described product had in fact been available to anybody.

In **T 77/94**, the board decided that the argument that a publicity notice's date of issue was necessarily immediately after its date of printing (because such notices were only produced in order to be issued) was merely a supposition which required confirmation; in reality, things were often different.

In **T 729/91**, one relevant document was an issue of a monthly periodical, intended for hoteliers and caterers and which could be bought in South Africa. In accordance with the evidence brought forward in the case, a copy of this periodical was received by a particular library on 9.8.1984, ie before the priority date (13.8.1984) of the patent in suit. The librarian stated that publications were "generally available to the public as of the date of receipt". There was no absolute certainty that this was the case with the publication in question. The board was of the opinion that the EPO must decide what happened having regard to the available evidence on the balance of probabilities, ie it must decide what was more likely than not to have happened. In the present case, it was, in the board's view, clearly much more likely that the publication was available to the public as from the date of receipt. In the absence of evidence to the contrary, the board accepted that what in fact happened was what the librarian stated would "generally" happen. So the publication was considered to have been made available to the public before the priority date.

For more details regarding proof in connection with public prior use, see also chapter VI.J. on "Law of evidence".

#### 1.7.4 Obligation of the EPO to examine of its own motion

A number of cases of alleged prior use called upon the boards to define the extent of the

EPO's obligation under Art. 114 EPC to examine of its own motion. In these cases either the opposition had been withdrawn at the appeals stage and establishing prior public use had proved difficult, or the alleged prior use had not been substantiated.

In **T 129/88** (OJ 1993, 598) the board took the view that the EPO's obligation to examine matters of its own motion did not extend as far as investigating an allegation of prior public use, where the party formerly making the allegation had withdrawn from proceedings, and it was difficult to establish the facts without its co-operation. See also **T 830/90** (OJ 1994, 713), **T 887/90** and **T 420/91**.

In **T 582/90** the board ruled that an objection of prior public use had to be examined if it appeared to be relevant, even if it had not been sufficiently substantiated.

## **2. Determining the content of the relevant prior art**

After establishing what information forms the state of the art, the next step is to determine its technical content and whether that content is apparent.

The consistent view in the case law is that for an invention to lack novelty its subject-matter must be clearly and directly derivable from the prior art (see eg **T 465/92**, OJ 1996, 32; **T 511/92**) and all its features - not just the essential ones - must be known from the prior art (**T 411/98**). The disclosure is determined by what knowledge and understanding can and may be expected of the average skilled person in the technical field in question (**T 164/92**, OJ 1995, 305 Corr. OJ 1995, 387; **T 582/93**).

Determining the information content means interpreting what the state of the art comprises. The boards have laid down certain principles to be observed in this process.

### **2.1 General rules of interpretation**

In **T 600/95**, the board held that the interpretation of the technical disclosure contained in a given document does not normally depend on the **purpose** it serves, be it as representing state of the art, priority document or the application as filed.

In **T 312/94**, the board held that it was a general legal rule for the interpretation of any document, in particular a patent application or patent, in order to determine its true meaning and thus its content and disclosure, that no part of such a document should be construed in isolation from the remainder of the document: on the contrary, each part of such a document had to be construed in the **context of the contents of the document as a whole**. Thus, even though a part of a document appeared to have a particular meaning when interpreted literally and in isolation from the remainder of the document, the true meaning of that part of the document could be different having regard to the remainder of the document.

In **T 969/92** the board decided that in order to determine what had been made available to the public, not only the main claim but also the remainder of a **patent document** had to be carefully considered for guidance as to what had really been taught in the prior document, ie its real express and implicit information content.

### I.C.2. Determining the content of the relevant prior art

In **T 158/96**, in the examining division's opinion the use of the compound "sertraline" for the manufacture of a medicament to treat obsessive-compulsive disorder (OCD) was not novel with regard to a document disclosing that sertraline was undergoing clinical trials for OCD shortly before the priority date. The examining division stressed that, for the purposes of patent disclosure, it was common practice to accept any pharmacological test as the disclosure of a medical use, as long as this test was commonly accepted as an indicator of potential therapeutic utility.

The board did not share the examining division's conclusion in the case at issue. For a prior-art document to be recognised as prejudicial to the novelty of a claimed subject-matter, the information conveyed by this document could not be interpreted on the basis of rules, which, though normally valid, did not necessarily apply to the specific situation and therefore might lead to **speculative conclusions**.

The information in a citation that a medicament was undergoing a clinical phase evaluation for a specific therapeutic application was not prejudicial to the novelty of a claim directed to the same therapeutic application of the same medicament if such information was plausibly contradicted by the circumstances and if the content of said citation did not allow any conclusion to be drawn with regard to the actual existence of a therapeutic effect or any pharmacological effect which directly and unambiguously underlay the claimed therapeutic application.

In **T 943/93** the board held that a **hypothetical possibility** of operating within the claimed region per se was legally not sufficient to deprive this region of novelty, particularly if the skilled person had no technical motive and thus no practical necessity to work within this region.

In **T 378/94** the board ruled that facts which could be inferred from a source of information only by a process that could be described as "**obverse inference**" were not immediately recognisable. A subject-matter could be regarded as having been disclosed by a specific information source only if it could be directly and unambiguously inferred from that source. The board also found that other embodiments too came under the general concept mentioned above. It then went on to explain the relationship between the scope of protection of the claims and their disclosure. The board was of the opinion that the scope of protection of a patent claim giving the technical features of an invention, which claim consisted of one or several concepts serving mostly to generalise one or several specific examples disclosed in the description and drawings, could not be equated with the disclosure resulting directly from the wording of that claim. The scope of protection was connected with the extent of the concept or concepts defined in the claim, ie with the totality of every individual subject-matter showing all the features of such concept(s), whereas the disclosure was connected with the content of such concept(s), ie with the totality of features that made it possible to group together at an intellectual level each individual subject-matter. If a claim dealt with general concepts, it disclosed only these general concepts and not all the specific examples that came under these general concepts.

Decisive for novelty in **T 464/94** was a citation disclosing a preliminary test to transform plant protoplasts with selective markers. The opposition division had considered it probable that

this document anticipated the patent in dispute.

In the board's view, it was not justifiable to decide whether a document was prejudicial to novelty on the **basis of probability**. When a patent was revoked for lack of novelty, the department concerned had to be sure, having taken all the facts and arguments put forward during the proceedings into consideration, that the revocation was justified. If in doubt, further evidence had to be adduced, otherwise the patent could not be revoked for lack of novelty.

In **T 233/90**, the board took the view that in a case where a document comprised in the state of the art under Art. 54(3) EPC referred to "**a usual manner**" of preparing a product, it was permissible to use documents of reference such as handbooks, encyclopaedias or dictionaries in order to determine what the skilled person would have understood by such a reference on the effective date of the prior document.

## **2.2 Combinations within a prior art document**

In **T 305/87** (OJ 1991, 429) the board considered it expedient to state that in order to assess novelty it was not sufficient to limit oneself to the contents of a single document taken as a whole but rather it was necessary to consider separately each entity described therein. The subject-matter of the patent under appeal was a shear. The opponents maintained that the features, taken as a whole, of two shears which were disclosed in a catalogue, had to be regarded as a single state of the art because those shears were described in one and the same technical context and in one and the same document. They argued that, when taken as a whole, this set of known features anticipated the invention. The board, however, made it clear that it was not permissible to combine **separate items belonging to different embodiments** described in one and the same document merely because they were disclosed in that one document, unless of course such combination had been specifically suggested there. The two shears known from the catalogue were therefore definitely two separate entities forming two independent bases for comparison which ought to be considered in isolation when assessing novelty, and it was not admissible to piece together artificially a more relevant state of the art from features belonging to one or both of these entities, even if they were both disclosed in one and the same document (see **T 901/90**, **T 931/92** and **T 739/93**).

In **T 332/87** the board held that when examining novelty, different passages of one document might be combined provided that there were no reasons which would prevent a skilled person from making such a combination. In general, the technical **teaching of examples** might be combined with that disclosed elsewhere in the same document, eg in the description of a patent document, provided that the example concerned was indeed representative of or in line with the general technical teaching disclosed in the respective document. In the case at issue, the board concluded that a particular composition in an example was not in agreement with the general technical teaching of the prior art document and that in view of this discrepancy the skilled person would not have combined the said disclosure with this example.

In **T 42/92** it was explained, in accordance with the boards' established case law, that a republished patent specification formed part of the state of the art under Art. 54(2) EPC only

as regards those elements which the person skilled in the relevant art would incontestably infer from the document as a whole. The disclosure of a prior-art patent specification did not however cover combinations of individual features arising from **reference back to the claims** if those features were claimed separately for patent-law considerations and combining them was not supported by the description, or even - as here - was at odds with the embodiments described.

In view of the objection as to lack of novelty, the question to be answered in decision **T 610/95** was whether or not the proposed solution in the patent was derivable directly and unambiguously from the disclosure of citation (2), which contained **cross-references** to the entire content of **three patent specifications** without giving priority to any of these references. Each of these references offered a plurality of different options for preparing pressure-sensitive layers of medical dressings.

The board held that, under these circumstances, it could not be said that the use of the specific product acting as pressure-sensitive material in the claimed invention was directly and unambiguously derivable from the wholly general reference to the three different prior documents quoted in citation (2) and had therefore already been made available to the public.

### **2.3 Taking implicit features into account**

In **T 6/80** (OJ 1981, 434) the board found that where a further functional attribute of an element of a **device** disclosed in a document was immediately apparent to a person skilled in the art reading the document, such attribute formed part of the state of the art with regard to that device.

Any prior-art disclosure is novelty-destroying if the subject-matter claimed can be inferred directly and unequivocally from that disclosure, including features which for the skilled person are implicit in what is explicitly disclosed (see **T 677/91**, **T 465/92** (OJ 1996, 32) and **T 511/92**).

In **T 666/89** (OJ 1993, 495) the term "available" clearly went beyond literal or diagrammatical description, and implied the communication, express or implicit, of technical information by other means as well. One example of the available **information content of a document** extending beyond this literal descriptive or diagrammatical content was the case where the carrying out of a **process**, specifically or literally described in a prior art document, **inevitably resulted in a product** not so described. In such a case, the board stated, the prior art document would deprive a claim covering such a product of novelty. It was thus content, express and implied, rather than mere form, that was decisive for the issue of novelty in general, and "selection" novelty in particular (see **T 793/93**).

In **T 518/91** the board held that the logical interpretation by a skilled person of technical facts explicitly stated in a prior document - in particular the definition beyond the explicit disclosure of the document of features of the prior art described in general terms - was not part of the technical teaching implicitly derivable from the document, which the skilled person would automatically infer, if it contradicted other explicit technical information in the otherwise consistent overall disclosure of the document.

In **T 624/91** it was held that exact **disclosures for alloy compositions** in the state of the art had to be interpreted as average or nominal values within a small range in view of known fluctuations in reproducibility and in analytical results, unless there was evidence available to the contrary. The board pointed out that whenever a metallurgist aimed at producing an alloy in accordance with a given nominal composition, the composition of the final product would deviate somewhat from this target or even be undefined within certain narrow limits. The metallurgical production process was not ideally reproducible and the actual composition of different batches aiming at the same nominal composition would be spread over a certain area around this target. Consequently, the nominal composition of a cited alloy not only disclosed the composition as a specific point which nobody would be able to realise in practice, but also a certain range around this average or nominal composition into which the majority of the analyses of those alloys fell which had been prepared aiming at the nominal composition and using the care usual in this art when producing and analysing an alloy.

In **T 71/93** it was held that a feature not explicitly mentioned in a prior art document, even though generally known to help overcome a drawback usual in the same technical field, could not be considered implicitly disclosed if it were not directly derivable from the prior art document that the drawback was considered unacceptable and/or if other solutions were proposed for overcoming the drawback.

In decisions **T 572/88** and **T 763/89** the boards warned against using the concept of "implicit prior description" in such a way that considerations relevant to the evaluation of inventive step were transferred to the assessment of novelty. A fair assessment of an invention's patentability called for a clear distinction between novelty and inventive step. In decision **T 763/89**, for example, the opponent could not claim "implicit prior description" for a material with exactly three layers, as claimed in the disputed patent, on the grounds that a skilled person, aware of the considerable outlay required for further sub-layers and the limited improvement in the quality of the image they bring, would have understood the wording of the claim, which set no upper limit for the number of layers, to be virtually synonymous with "two or three layers". To do so would be to adduce a typical criterion for the evaluation of inventive step.

In **T 71/93** the board held that an "implicit prior description" of a feature could not be based on the grounds that a person skilled in the art would have been aware of some disadvantages and of the lack of other forms of improvement related to a feature, since this was a criterion for the evaluation of inventive step.

#### **2.4. Taking intrinsic features into account**

In **T 59/87** (OJ 1991, 561) the respondent had contended that a particular document inherently disclosed the claimed invention and was thus destructive of novelty. However, the board stressed that in **G 2/88** (OJ 1990, 93; Corr. 469) it was emphasised that the question to be decided was what had been made available to the public, not what might have been inherent in what was made available to the public. Furthermore, when considering how far the teaching in a written description also made the inevitable result of carrying out such teaching available to the public, in each case "a line must be drawn between what is in fact made available and what remains hidden or otherwise has not been made available". Thus,



the board decided that whether a previously undisclosed technical effect, which in fact inevitably occurred when a previously disclosed technical teaching in a written description was carried out, had been made available to the public by reason of the teaching in the written description was a question of fact which had to be decided in the context of each individual case.

**G 1/92** (OJ 1993, 277) further stipulated that a commercially available product did not per se implicitly disclose anything beyond its composition or internal structure. Other characteristics, which were only revealed when the product was exposed to interaction with specifically chosen outside conditions in order to provide a particular effect or result, or to discover potential results or capabilities, therefore pointed beyond the product per se as they were dependent on deliberate choices being made and thus could not be considered as already having been made available to the public.

Further to this decision, the board held in **T 977/93** (OJ 2001, 84) that a product made available to the public was not reproducible within the meaning of **G 1/92**, and thus did not belong to the state of the art, if the skilled person could not establish identity of the reproduced product with the commercially available one because the intrinsic and extrinsic features of the product were not accessible and there was a high probability of variation upon reproduction.

## **2.5 Taking equivalents into account**

The case law of the boards of appeal is based on a narrow concept of novelty, ie the disclosure of a prior document does not include equivalents of the features which are explicitly or implicitly disclosed; equivalents can only be taken into account when it comes to considering inventive step (see **T 517/90**). This narrow concept of novelty, which excludes equivalents, is of particular importance for the application of Art. 54(3) EPC. In **T 167/84** (OJ 1987, 369) the board commented that conflicting applications within the meaning of Art. 54(3) EPC were included in the state of the art solely from the point of view of novelty, but were considered in the light of their "whole contents". In order to mitigate the harsh effects of the "whole contents approach", its application was confined to novelty (see Art. 56 EPC, second sentence). Further, in order to reduce the risk of "self-collision", it had always been considered justified to adopt a strict approach to novelty. For this reason C-IV, 7.2 of the Guidelines expressly stated that "when considering novelty, it is not correct to interpret the teaching of a document as embracing well-known equivalents which are not disclosed in the document; this is a matter of obviousness". Accordingly, the board held that the "whole contents" of an earlier document did not also comprise features which were equivalents of features in the later document (see also **T 928/93**).

## **2.6 Taking drawings into account**

In **T 896/92** the board emphasised that in accordance with **T 169/83** (OJ 1985, 193) further conditions were required as to the disclosure of a feature shown solely in a drawing. In this respect, not only should the structure of the feature be shown sufficiently clearly in the drawing, but also the technical function achieved should be derivable (see also **T 241/88**).

In **T 204/83** (OJ 1985, 310) the board held that features shown solely in a drawing formed part of the state of the art when a person skilled in that art was able, in the absence of any other description, to derive a technical teaching from them. Dimensions obtained merely by measuring a diagrammatic representation in a document did not, however, form part of the disclosure (see **T 857/91** and **T 272/92**).

In **T 56/87** (OJ 1990, 188) the board held that a technical feature which was derived from or based on dimensions obtained from a diagrammatic representation and which technically contradicted the teaching of the description, did not form part of the disclosure of a document.

## **2.7 Taking examples into account**

In **T 12/81** (OJ 1982, 296) the board held that the teaching of a cited document was not confined to the detailed information given in the examples of how the invention was carried out but embraced any information in the claims and description enabling a person skilled in the art to carry out the invention (see also **T 562/90**). In **T 424/86** the board stated that the disclosure of a document was not to be construed only on the basis of the examples thereof; rather, the entire document had to be taken into consideration (see also **T 373/95**). In **T 68/93** the board stated that it was not allowable to take a particular example out of context. In **T 12/90**, the board decided that the disclosure in a prior document likely to affect the novelty of a claim was not necessarily limited to the specific working examples but also comprised any reproducible technical teaching described in the document (see also **T 247/91** and **T 658/91** ).

In **T 290/86** (OJ 1992, 414) the board decided that what was "made available to the public" by specific detailed examples included in a document was not necessarily limited to the exact details of such specific examples but depended in each case upon the technical teaching which was "made available" to a skilled reader. The amendment of a claim by including a disclaimer in respect of such specific detailed examples could not render the claim novel.

In **T 365/89** the board held that Art. 54(1) EPC did not require that a technical teaching had to be disclosed in detail, eg by working examples. Thus, the presence or absence of such more detailed information did not influence the answer to the question whether or not the relevant disclosure in a particular document belonged to the state of the art.

In **T 666/89** (OJ 1993, 495) the respondent argued that the examples of a particular prior art document lay outside the scope of a particular claim and that the generic disclosure therein could not be held to be an anticipation of this claim. As a result, only the examples of a document should be regarded as state of the art. The board stated that the respondent had ignored the established jurisprudence of the boards of appeal, according to which it was necessary to consider the whole content of a citation when deciding the question of novelty. In applying this principle, the evaluation was therefore not to be confined merely to a comparison of the claimed subject-matter with the examples of a citation, but had to extend to all the information contained in the earlier document.

## **2.8 Assessment of prior uses**

Several decisions have concerned the information content of prior uses.

In **T 245/88** two vaporisers had been installed in a fenced-off area of a shipyard. As far as the opportunity to view these vaporisers from outside the fence was concerned, the board was not convinced that a person skilled in the art, without the knowledge of the subject-matter claimed in the contested patent, would have recognised the teaching it contained and the problem it sought to solve, or that he would have detected the claimed spacing ratio among the many dimensions and dimension ratios which could be derived from a multi-tube vaporiser.

In **T 363/90** a machine fitted with a sheet feeder corresponding to the claimed invention had been exhibited and demonstrated at trade fairs. The board concluded that, under the circumstances, it was impossible for the skilled person to recognise - or to infer on the basis of further information - the technical features and the functions of the exhibited sheet feeder to an extent which would have enabled him to copy its design, let alone develop it further (see also **T 461/88** (OJ 1993, 295).

In **T 87/90** the features and functions of a press that had been open to view were ruled to have been made available to the public because full details of the press had been given and information material distributed.

In **T 208/88** (OJ 1992, 22) the board held that an effect (in this case, growth regulation) not previously described, but actually occurring during the execution of a known teaching (in this case, use as a fungicide) and intended as the basis of a use invention, had in any event not been made available to the public if it was not revealed so clearly during such execution as to disclose the invention's essential character, at least potentially, to an unlimited number of skilled persons.

In many cases the ability to recognise a technical teaching such as the internal structure or composition of a product in prior use presupposes analysis of the product embodying this technical teaching. Whether it is technically feasible to analyse a product that is available on the open market is an issue that the boards have considered on a number of occasions.

In **T 461/88** (OJ 1993, 295) the board ruled that a control program stored on a microchip had not been made available to the public if the analysis of the program would require an expenditure of effort on a scale which could only be reckoned in man-years and if, for economic reasons, it was highly improbable that the sole purchaser of the machine controlled by the program had carried out such an analysis (see also the similar ruling in **T 969/90** *obiter dictum*).

In **T 390/88** the board rejected the argument that a film had not been made available to the public because its existence had only been announced at a press conference three weeks before the priority date, and hence it would have been impossible in that short time for a person skilled in the art to determine the film's composition.

In **T 406/86** (OJ 1989, 302) the composition of a product that had been commercially available before the priority date was held to have become part of the state of the art because it could be analysed without undue burden. In **T 969/90** and **T 953/90** the board had ruled that the internal structure of a product in prior use had been made available to the public because a skilled person relying on the normal means of investigation available to him would have been able to analyse the product.

In **G 1/92** (OJ 1993, 277) already mentioned above the Enlarged Board of Appeal held that, "Where it is possible for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art."

In **T 952/92** (OJ 1995, 755) the board held that prior use of a product provided access to what the skilled person would be able to ascertain from that product by means of known analytical techniques. Whether such an analysis could be performed without undue burden was irrelevant to the question of whether the composition of a product had been made available to the public. In giving its reasons the board stated that the original English of **G 1/92** (OJ 1993, 277) was not entirely clear in terms of grammar, since the phrase "without undue burden" could qualify just the reproduction of the product, or both the discovery of its composition or internal structure and its reproduction. The reference to "without undue burden" was not strictly necessary in order to provide an answer to the referred questions and could not therefore have been intended to alter or add to the existing law concerning what constitutes "the state of the art". Reproducing a product "without undue burden" was a problem associated with Art. 83. Furthermore, to apply the concept of "undue burden" would introduce a subjective element into the determination of novelty, something which the Enlarged Board had specifically sought to reject in **G 1/92**.

A further question considered by the board was whether, if the composition of a product in prior use was to be "made available", a complete analysis of such product had to be possible, so that, as submitted by the patent proprietor, such product could have been exactly reproduced. In the board's view, a claimed invention was anticipated by the prior use of the product, if an analysis of a product using available analytical techniques was such as to inform the skilled person of an embodiment of the product which fell within the claim of the patent.

In **T 472/92**, the problem to be solved by the subject-matter of the patent in suit was the provision of a laminate suitable for the fabrication of sleeves which could be heat-shrunk onto bottles, where the outer surface of the laminate should have a good printability. This problem was solved, according to the patent in suit, by the use of polystyrene. A further element of the solution was the manufacture of the two layer laminate by coextrusion. The appellant/opponent contended that coextruded polystyrene laminates had been delivered to a customer and that a skilled person would have been aware of their good printability and encouraged to replace, in the laminates known in the state of the art, the ethylene polymer composition based non-cellular layer by a non-foam layer made of polystyrene. The board referred to **G 1/92** point 3 and concluded that the printability characteristic of the material was not a property that became available to the public by their mere delivery, since this was clearly an extrinsic characteristic requiring interaction with specifically chosen outside

conditions. Thus, such characteristic could not be considered as already having been made available to the public (see also **T 267/92**).

In case **T 301/94**, the patent concerned green glass bottles with a high filtering power for ultraviolet light and having a defined composition. It was proved that bottles with the claimed characteristics had been sold and delivered by the respondents (opponents) to a customer before the priority date. The appellants contended that the bottles produced of glass of said composition by the respondents had not been made available to the public, inter alia for the following reasons:

1) the sulphide concentration of the glass was a secret or a "hidden" feature within the meaning of decisions **G 1/92** and **G 2/88**, since it was not common general knowledge at the priority date that a green glass having a high UV absorption might contain a very low amount of sulphides. Thus, when analysing such a glass the skilled person would not have paid attention to the sulphide concentration, high sulphide concentrations being known only in connection with amber glass; 2) a skilled person would not have been able on the basis of what was generally known on the priority date to reproduce the green glass without undue burden because a tremendous number of experiments would have been necessary to find out the temperature and the reducing conditions leading to the desired optical properties by continuous production in an industrial plant.

The board held that the optical parameters represented intrinsic characteristics of the glass composition and not characteristics depending on a particular use or application of the glass. The situation considered by the Enlarged Board in decision **G 2/88** was different from that of the case on issue, since it concerned a claim relating to a new use of a known compound reflecting a newly discovered technical effect and not a claim to the compound itself. It was the new technical effect which constituted a hidden or secret feature, not the composition itself or one component thereof. Furthermore, the board held that the appellants in fact introduced an additional requirement for the chemical composition to be available to the public, ie that the skilled person should be able to recognize a priori, on the basis of the common general knowledge at the priority date, which components the commercially available product might contain and in which amounts. Such an additional requirement would not be in agreement with the essence of opinion **G 1/92**, where only analysability and reproducibility of the commercially available product were required for its chemical composition to be state of the art. Furthermore, the board held that the skilled person would have been able to reproduce the green glass without undue burden and that this was sufficient to meet the requirement of reproducibility set out in **G 1/92**. What was required in **G 1/92** was not that continuous production on an industrial scale be possible without undue burden, but that a skilled person be able to prepare the product without undue burden on the basis of his general technical knowledge and knowing the composition or internal structure of the product, whatever the scale of production (laboratory, pilot or industrial scale).

In **T 515/98** the invention related to an epilation device. The proceedings involved inter alia a claim of prior use.

The board ruled that any prior use had to be considered as a whole, just as parts of a prior-art document could not be taken out of context so as to arrive at different technical information

from its teaching as a whole. Here too, certain components regarded as essential to a device's basic design for normal use as intended by the manufacturer could not be omitted.

In the present case, the prior-use epilation device - as even the appellant/opponent conceded - exhibited all the features of Claim 1 only if certain essential components were omitted, thus changing the kinematics of its operating elements.

In the board's view, the appellant thus implicitly acknowledged that the device as marketed was not identical with that according to the invention; what was identical with the latter was a modified version, newly constructed using only some of the original components, so that the epilation elements in the two versions differed as regards both structure and kinematics. Since, in order to move from the prior-use device to the one according to the invention, the skilled person had to perform several acts (dismantling the marketed device, omitting components, partial reconstruction) which would not arise from normal use of the device on sale, the subject-matter of Claim 1 was not directly and unambiguously derivable from the prior teaching.

## **2.9 Broad claims**

In **T 607/93** the board decided that when novelty and inventive step were being assessed, there was no reason for using the description to interpret an excessively broad claim more narrowly if it was a question not of understanding concepts that required explanation but rather of examining an excessively broad request in relation to the state of the art.

## **2.10 Mistakes in a disclosure**

Mistakes in a document do not in themselves constitute prior art such as to prevent grant of a patent.

In **T 77/87** (OJ 1990, 280) the abstract published in the journal "Chemical Abstracts" did not correctly reproduce the original paper. The board stated that the original document was the primary source of what had been made available as a technical teaching. Where there was a substantial inconsistency between the original document and its abstract, it was clearly the disclosure of the original document that had to prevail. The disclosure in the original document provided the strongest evidence as to what had been made available to the skilled person. When it was clear from related, contemporaneously available evidence that the literal disclosure of a document was erroneous and did not represent the intended technical reality, such an erroneous disclosure should not be considered part of the state of the art.

In **T 591/90** a prior document again contained mistakes. The board distinguished this case from **T 77/87** (OJ 1990, 280), which had concerned a special case, and took the view that a document normally formed part of the prior art even if its disclosure was deficient. In evaluating such a disclosure it was to be assumed however that the skilled reader was mainly "interested in technical reality". Using his general technical knowledge and consulting the reference literature, he could see at once that the information in question was not correct. It could be assumed that a skilled person would try to correct recognisable errors, but not that he would take the deficient disclosure as pointing the way towards a solution to an existing

technical problem.

In **T 412/91** the board took the view, having regard to Art. 54 EPC, that the incorrect teaching of document (1) was not comprised in the state of the art. It stated that, in principle, what constituted the disclosure of a prior art document was governed not merely by the words actually used in its disclosure, but also by what the publication revealed to the skilled person as a matter of technical reality. If a statement was plainly wrong, whether because of its inherent improbability or because other material showed that it was wrong, then - although published - it did not form part of the state of the art. Conversely, if the skilled person could not see the statement was wrong, then it did form part of the prior art.

In **T 89/87** the board found that "0.005 mm" (= 5 nm) was a misprint contained in the prior document and that only "0.0005 mm" (= 0.5 nm) was correct. The board stated that the correction was such that the skilled reader would be expected to make it as a matter of course.

### **2.11 Accidental disclosure**

In **T 161/82** (OJ 1984, 551) the board found that the prior art document was concerned with the solution of a problem totally different from that stated in the application at issue and concluded that in cases where an anticipation was of a chance nature, in that what was disclosed in a prior document could accidentally fall within the wording of a claim to be examined for novelty without there being a common technical problem, a particularly careful comparison had to be made between what could fairly be considered to fall within the wording of the claim and what was effectively shown in the document (see also **T 986/91**).

In **T 601/92** a radial ventilator was claimed, characterised in that the ventilator wheels were mounted on the ventilator shaft and offset against each other in such a way that the spokes of one ventilator wheel, viewed in the direction of the axle, were arranged opposite the gaps between the spokes of the other ventilator wheel. The prior art comprised fans, during the assembly of which no attention was paid to the angle of rotation of the spokes of the two ventilator wheels in relation to each other. The probability that such fans, which coincidentally had the spoke arrangement claimed, had been sold was extremely high. The board held that this was evidence of an anticipatory prior use of the claimed product, stating that in the case of anticipation of a chance nature where there was no common technical problem, particular care had to be taken when considering what could be deemed to be part of the claim and what was derived from the prior publication. In contrast to **T 161/82** (OJ 1984, 551), in which the claimed subject-matter was also structurally the same as the prior subject-matter, but had a different function, there was no recognisable difference in function in this case. **T 208/88** (OJ 1992, 22) was not comparable since in the present case a product was claimed and not a new possible use for a known substance based on a previously unknown effect or function of that substance. The auxiliary request related to a process for manufacturing low-noise radial ventilators, characterised in that the ventilator wheels were systematically mounted on the ventilator shaft and offset against each other in such a way that the spokes of one ventilator wheel, viewed in the direction of the axle, were arranged opposite the gaps between the spokes of the other ventilator wheel. In the board's view this claim was clearly delimited from the prior art by the feature "systematically". This feature clearly referred to a

procedural step and could acquire significance as a substantial distinguishing feature vis-à-vis the prior art only within a process claim. The fact that the claim for a manufacturing process contained predominantly product features was a logical consequence of the close connection between product and process and did not prevent the claim from being allowed.

In **T 608/96**, the board ruled that a disclosure was "accidentally novelty-destroying" if it would not be considered by the skilled person faced with the problem underlying the application or patent, whether because it belonged to a distant technical field or because its subject-matter suggested it would not help solve the problem. This also meant that a disclosure was "accidentally novelty-destroying" only if completely irrelevant for assessing inventive step.

## **2.12 Reproducibility of the content of the disclosure**

A disclosure is novelty-destroying only if the teaching it contains is reproducible.

In **T 206/83** (OJ 1987, 5), in particular, it was found that a document (in this case a copending European application) did not effectively disclose a chemical compound, even though it stated the structure and the steps by which it was produced, if the skilled person was unable to find out from the document or from common general knowledge how to obtain the required starting materials or intermediates. Information which could only be obtained after a comprehensive search was not to be regarded as part of common general knowledge. This need for an enabling disclosure was also in conformity with the principle expressed in Art. 83 EPC for patent applications which had, accordingly, to "disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art". The requirements as to the sufficiency of disclosure were, therefore, identical in all these instances.

For selection inventions (see p.72 et seq.) the requirement of a reproducible disclosure also plays a significant role. In **T 26/85** (OJ 1990, 22) the board pointed out that anything comprised in the state of the art could only be regarded as having been made available to the public in so far as the information given to the person skilled in the art was sufficient to enable him to practise the technical teaching which was the subject of the disclosure, taking into account also the general knowledge in the field to be expected of him. In this particular case, the ranges of a certain parameter as defined in the claim fell within the broader ranges stated for the same parameter in a prior art document. According to the above-mentioned conclusion, the board considered that a realistic approach when assessing the novelty of the invention under examination over the prior art in a case where overlapping ranges of a certain parameter existed would be to consider whether the person skilled in the art would, in the light of the technical facts, seriously contemplate applying the technical teachings of the prior art document in the range of overlap; if it could be fairly assumed that this would be the case, it had to be concluded that no novelty existed. Such was not the case in the matter under consideration, since there existed in the prior art a reasoned statement clearly dissuading the person skilled in the art from using the range under a certain value, and the range of overlaps was under this value; the claimed range was therefore considered novel.

In **T 447/92** the board held that the cited document did not disclose when or how far a movable piece in the claimed invention (an air circuit breaker) moved, or the way in which it



worked to prevent the spring-back of a lever. No relative movement was described or shown in the drawings and it was a matter of conjecture as to the manner in which the relevant parts co-operated. The board found that it might have been obvious to a skilled person that the notch could co-operate with the shaft in the manner defined in the claims of the patent in suit, but that this only meant that the disclosure took him close enough to do the rest himself. It did not mean that the document took the skilled person all the way to the present invention. Thus, the features of the air circuit breaker according to claim 1 of the application were not unambiguously derivable from the drawings of an earlier European patent application.

In **T 310/88** the board of appeal had to consider a discrepancy between what actually happened in practice when carrying out a technical teaching in a prior document according to the letter of its description, and what this prior document said would happen. According to the description in the prior document a particular component was not present, whereas the presence of this component was essential for the later invention. However, in practice, when following the teaching of the prior document literally, this component would be present. The board held that the invention was novel over the prior document because the latter did not contain a sufficiently clear teaching for that conclusion not to be reached. The skilled person, by following the document's teaching, was led in a direction clearly pointing him away from the claimed subject-matter because it stated that the composition obtained did not comprise a component contained in the claimed compound. The subject-matter was new even if by reproducing the examples described in the prior document a skilled person would inevitably obtain a composition corresponding to the composition claimed and comprising the specific component. According to the board, the teaching of the prior document had to be interpreted as meaning that further steps would be needed to eliminate the additional component.

In **T 491/99**, the board held that an earlier patent using terminology which at first sight was suggestive of the product invention claimed was not in fact a prejudicial disclosure if a skilled person could actually make the product in question only later, from the process and machine described for the first time in the European patent in suit.

### **3. Ascertaining differences**

Once the state of the art has been established using the criteria described above, and its content has been determined, the final step is to ascertain whether the invention in question differs from the prior art.

#### **3.1 Comparing each individual item from the prior art**

When the invention is compared for novelty purposes with the state of the art as determined applying the criteria described above, this must be done only on the basis of each element of prior art taken as a whole (see **T 153/85**, OJ 1988, 1; **T 124/87**, OJ 1989, 491; **T 233/90**; **T 904/91**).

If however there is a specific reference in one prior document (the "primary document") to a second prior document, when construing the primary document (ie determining what it means to the skilled person) the presence of such a specific reference may necessitate part or all of the disclosure of the second document being considered as part of the disclosure of the

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primary document (see **T 153/85**, OJ 1988, 1; **T 645/91**; **T 942/91**; **T 422/92**; **T 239/94**).

In **T 291/85** (OJ 1988, 302) the board noted that the disclosure in a prior publication always included not only what it presented as the teaching of the invention but also what it referred to as the prior art. In the board's view, however, when examining for novelty, to read into an account of the state of the art couched in very general terms specific details of the inventive teaching of the same document was permissible only where a person skilled in the art would in fact have made this combination when reading this document. This would, for instance, be the case if a source were to be cited for the prior art described and a specific, relevant disclosure could be derived from the original document, or if the description of the prior art referred directly to the appropriate passage in the description of the invention. Combining a specific feature from the description with the general description of the prior art in this way might in certain circumstances be obvious to a skilled person merely in the light of his general technical knowledge. In the absence of such or similar circumstances, however, one could not, in the board's view, assume that a skilled person would necessarily have derived from the document a teaching based on a combination of this kind. Thus, the board concluded that if a citation gave detailed information about a further development of a prior art described only in very general terms without quoting a specific source, it was not permissible in examining for novelty to combine these general statements with the specific statements made solely in order to explain the said development unless a person skilled in the art would have made the combination when reading the citation.

In **T 288/90** the appellants contended that the alleged invention lacked novelty on the basis of a document (I), read either on its own or in association with a document (12) treated as being representative of the general technical knowledge of the skilled reader of document (I). The board regarded document (12) per se as fairly representative of the general technical knowledge available at the relevant time, as it was published only fifteen months before the application date of document (I). The board observed that, although for the purposes of assessing novelty it was not normally legitimate to read two documents together, nevertheless, when interpreting a single document, it was necessary to read it having the general technical knowledge in mind, and for this purpose to look at representative technical literature as an aid to the correct interpretation of any particular term of art encountered.

In **T 866/93** the board had to decide whether the invention was anticipated by Document 1. The section of Document 1 relating to the prior art which the invention sought to improve on made reference to another document (Document 16) which was not cited in the descriptive part of the claimed invention.

The board held that, whilst the actual contents of a document (the "primary" document) might encompass the contents of another document (the "secondary" document), any reference in the primary document to the secondary document nevertheless had to be made in the appropriate context.

In decision **T 56/87** (OJ 1990, 188) the board emphasised that the technical disclosure in a document should be considered in its entirety, as it would be by a person skilled in the art, and that there could be no justification for arbitrarily isolating parts of the document in order to derive therefrom an item of technical information which would be distinct from or even

contradict the integral teaching of the document. Therefore, the board considered that a particular feature relating to the positioning of the outer electrodes of a transmission ion chamber, in such a way that they partially lay in the shadow of a collimator, for implementing a process for correcting alignment errors of a divergent beam of rays, was not disclosed in a prior art document which, however, contained a figure in which such positioning could be identified. The reason was that the figure in question was obviously a schematic illustration showing neither the proportions nor the dimensions of the actual apparatus. In order to be able to interpret it correctly, the skilled technician therefore had to refer to the other figures and to the written description of the document; he would have deduced from the latter, however, that the outer electrodes should be positioned entirely in the radiation field, and not partially in the shadow of the collimators, as set out in the claims examined (see **T 332/87**, **T 441/91** and **T 657/92**).

### **3.2 Distinguishing features**

In **T 4/83** (OJ 1983, 498) the board held that when examining for novelty, it should be taken into consideration that any information in a patent specification which conveyed to the person skilled in the art a technical teaching, belonged to the content of the disclosure irrespective of whether or not it fell within the scope of the claims or what purpose it served.

#### **3.2.1 Difference in wording**

In **T 114/86** (OJ 1987, 485) the board held that a mere difference in wording was insufficient to establish novelty (see **T 12/81** (OJ 1982, 296), **T 198/84** (OJ 1985, 209) and **T 248/85** (OJ 1986, 261)). In **T 565/90** the appellant submitted that only preferred ranges or examples amounted to a technical disclosure destructive of novelty, and that generic ones could not anticipate the more specific teaching of the patent in dispute. The board did not agree and confirmed earlier case law that the definition of an invention which differed from the prior art only in its wording was insufficient to establish novelty. The board stated that what had to be established was whether or not the state of the art made the subject-matter of the invention available to the skilled person in the form of a technical teaching.

In **T 917/94** the board stated that incorporation of a technical feature which is redundant because it does not change the claimed subject-matter does not impart novelty to known subject-matter.

In **T 826/94** the board was of the opinion that a claimed measuring device, which showed all the constructive features of a known measuring device and differed from the latter only in name, ie in the dimensions to be measured, was novel within the meaning of Art. 54 EPC if it was only at the level of abstract thought, when the basic principles of the two measuring devices were compared with each other, that the conclusion could be drawn that the two measuring instruments were of the same type.

In **T 870/95** it was decided that the **general term "base"** used in the citations was novelty-destroying of the more specific one "permanganate in aqueous solution" if it were shown that in the light of the skilled person's general technical knowledge the former could only be understood to mean the latter.

In **T 79/96**, an extract from an handbook (D1) disclosed all the features of the claim 1 of the patent in issue apart from the use of a "countercurrent gas/gravity classifier". Thus, with respect to novelty it only had to be decided whether a vibrating fluidized bed with an upwards gas flow through the bed of particles as described in D1 should be regarded as a countercurrent gas/gravity classifier. The definition of a countercurrent gas/gravity classifier was given in an extract from another standard handbook on chemical technology (D3). The proprietor of the patent was of the opinion that the definition given in D3 was too broad and that a person skilled in the art would not consider a fluidized bed, being a rather inefficient classifier, as a countercurrent gas/gravity classifier.

The board did not share this view. It held that when assessing novelty of the claimed subject-matter an expression in a claim should be given its broadest technically sensible meaning. On that basis, any gas/gravity classifier, including a fluidized bed, satisfied the classification requirements of the claim 1 of the patent on issue. The subject-matter therefore lacked novelty over D1.

### 3.2.2 Differences in values

In **T 686/96** claim 1 related to a composition with a feature (iv) requiring a perspex<sup>®</sup> abrasion value (PAV) in the range from about 12 to about 20 PAV. A prior art document disclosed in example 2 a composition having features (i) to (iii) of claim 1. With respect to novelty it had to be decided whether the known composition also had an abrasion value as required by feature (iv) of claim 1. The board established that the abrasion value of the known composition was somewhat below the lower value indicated in feature (iv) of the claim. Since the lower limit in the claim 1 was defined as "about 12", some interpretation was necessary. The board held that, when deciding on the novelty of the subject-matter of a claim, the broadest technically meaningful interpretation of a claim should be taken into account. In the board's view the scope of claim 1 was to be construed to mean that the indicated lower limit corresponded to the value disclosed in the prior art. Claim 1 was then considered to lack novelty.

In **T 262/96**, regarding the issue of novelty, the appellant/opponent contended that the ZN40 material was commercially available before the priority date and that these products had the composition, microstructure and properties indicated in claim 1 of the patent in suit. The silica content of this sample of ZN40 material was lower than the lower limit of 0.05 wt% stated in claim 1 of the patent in suit. The appellant's argument that the difference between the said numerical values was only 0.007, and thus not significant, was not convincing for the board. As the silica content of this ZN40 material was itself relatively low, this difference represented in fact 16%. A difference of 16% in the silica content was sufficient to distinguish two products from each other if such low silica contents could be determined with sufficient accuracy by the method of measurement used. The appellant did not provide information about the standard deviation or the degree of accuracy of the method used. Instead, he argued at the oral proceedings that the value of 0.043 wt% was in fact lower than the actual value since the analysis was effected on the sintered body and such an analysis was more problematic than an analysis performed on the starting powder because of the additional components formed during sintering. In the board's view the fact that an analysis might be more difficult on the sintered product did not mean that the result of the analysis was necessarily too low.

Furthermore, the appellant's affirmation that the silica content measured in the sintered body was lower than the actual value was not supported by evidence and was contested by the respondent. If it were to be assumed for the sake of argument that the value given for ZN40 was too low, then the appellant would still have had to prove that the actual value lay within the claimed range of 0.05 to 0.5 wt%. Evidence to this effect was not provided by the appellant, although the burden of proof rested with him. In these circumstances, the board considered that, in the absence of evidence to the contrary, the silica content disclosed lay outside the claimed range and would not destroy the novelty of the claimed ceramic bodies.

### 3.2.3 Difference in composition

In **T 80/96** (OJ 2000, 50), claim 3 of the main request read as follows: "Preparation containing L-carnitine in the form of tablets, capsules, powders or granules, in particular for external application, characterised in that it contains L-carnitine-L-tartrate with an auxiliary substance or auxiliary substances and, possibly, one or more further active agents." An aqueous solution of the claimed tartrate compound was described in the prior art. The board held that, in the case of an active agent which was known as such to be water-soluble, it was clear to a person skilled in the art that describing and claiming the active agent as a solution did not add to or change the definition of that active agent. Without further specification, the mere characterisation of a solvent or diluent as liquid or solid in a claim did not change the assessment of the novelty of the subject-matter of the claim.

Analogously, in a claim directed to a preparation of a known structurally defined active agent with at least one auxiliary substance, in which the feature "with an auxiliary substance or auxiliary substances" meant that something was added to the active agent, the admixture of an unspecified auxiliary substance could not, in view of the unlimited number of substances which might enter into consideration, be deemed a substantive and distinctive addition to the active agent, unless this feature, which was necessary if novelty was to be recognised, was specified in such a way that a person skilled in the art could recognise what it was that should be added to the active agent. The claim was therefore not new.

### 3.2.4 Inevitably obtained products

In **T 270/97** the claimed product was considered by the opposition division and the respondent/opponent as anticipated by the agent produced and inevitably obtained by repeating Examples 1 and 2 of a prior-art document.

The board however found that the method disclosed in the text of Example 2 implied a way of acting not envisaged in the method according to the patent in suit. The parties' attempts to show that the particles obtained according to Example 2 were, or were not, identical to the products of the patent in suit, produced highly contradictory results. Therefore the board could only conclude that depending on experimental conditions not disclosed in Example 2 different products might be obtained. Thus the claimed product was not inevitably obtained by following the method of Example 2. As to Example 1, the board found that it did not disclose an essential feature of the method of making the product of the patent in suit. Under these circumstances, it was not tenable to argue that the product according to the patent in suit was the inevitable result of repeating Example 1.

### 3.2.5 Functional features

Likewise, in **T 500/89** it could only be seen from the disclosure considered in its entirety that the prior art document did not cause lack of novelty, because the method constituting the closest prior art differed from the claimed method in one functional characteristic. The disputed patent related to a method for the production of photographic material by the simultaneous application of several layers of fluid photographic coating materials. Although the document cited in support of the opposition listed the numerical ranges for layer thickness, viscosity, coating speed, etc. used in the method claimed, the latter was nevertheless held to be new because the cited document described the choice of these numerical ranges as leading to intermixing between two particular layers. The contested patent was to be assessed according to a different criterion because it described the application of the layers as being "substantially free from intermixing". The "intermixing" described as an objective in the citation was not merely a stated purpose not constituting one of the technical features of the method described, but a functional feature - a criterion, in effect - forming an essential element of the teaching set out in this publication.

### 3.2.6 Generic disclosure

In **T 651/91** the board cited the Guidelines C-IV, 7.4 with approval, confirming that a generic disclosure did not normally take away the novelty of any specific example falling within that disclosure. The board further added that a disclosure could be generic even where it only left open the choice between two alternatives. In **T 508/91** the board, citing the same paragraph of the Guidelines, held that, on the other hand, the prior disclosure of the subset "vegetables" took away the novelty of the wider set "fruits and plants".

### 3.2.7 Product claim with process features

In **T 815/93** and **T 141/93**, the claims comprised both product features and features for a process for manufacturing the product. In both cases, only the process features distinguished the invention from the prior art. Following the case law on the novelty of product-by-process claims, the board found that process features not previously described could establish the novelty of the claimed product only if they caused it to have different properties from the products previously described. Neither the patent proprietor in the first case nor the applicant in the second case could demonstrate this.

## **4. Chemical inventions and selection inventions**

The state of the art often includes documents containing technical teachings described in general terms; these teachings in turn subsume a number of more specialised technical teachings. In assessing the novelty of subject-matter that can be subsumed under a general term in the state of the art, the question arises whether the general term makes the claimed matter fully or partially accessible to the public. In other words, it has to be established whether the general term used in the citation discloses the subject-matter defined by the special term in the claim. The prior-art disclosure needs to be ascertained especially carefully in such cases. General terms of this kind occur particularly frequently in the chemical literature, which is why the relevant case law usually relates to this field. There are two types

of case here:

(a) assessing the novelty of chemical substances and groups of substances in respect of general formulae (Markush formulae) under which they fall (see below, Chapter I.C.4.1), and  
(b) assessing the novelty of products or processes defined by parameter ranges as against known products or processes characterised by wider or overlapping parameter ranges (see below, Chapter I.C.4.2).

These types differ mainly in technical terms, but the same patent-law principles apply to both. For this reason the boards of appeal have always been able to adopt the same approach to questions of this nature.

#### **4.1 Novelty of chemical compounds and groups of compounds**

**T 12/81** (OJ 1982, 296) is a decision of fundamental importance as far as novelty in the field of chemistry is concerned and is referred to time and again in the case law of the boards of appeal. It states that the teaching of a cited document is not confined to the detailed information given in the examples of how the invention is carried out, but embraces any information in the claims and description enabling a person skilled in the art to carry out the invention. If a product cannot be defined by a sufficiently accurate **generic formula**, it is permissible to make the definition more precise by additional product parameters such as melting point, hydrophilic properties, NMR coupling constant or the method of preparation (product-by-process claims). From this it necessarily follows that patent documents using such definitions will be prejudicial to the novelty of later applications claiming the same substance defined in a different and perhaps more precise way. Decision **T 12/81** related to such a case. The board summarised that in the case of one of a number of chemical substances described by its structural formula in a prior publication, the particular stereo-specific configuration of the substance - though not explicitly mentioned - was disclosed in a manner which caused lack of novelty, if it proved to be the inevitable but undetected result of one of a number of processes adequately described in the prior publication by the indication of the **starting compound** and the **process**.

The applicant argued that the novelty of the claimed product was based on a selection. The starting substance was chosen from a list of 20 compounds and combined with one of the five alternative process variants. The board did not share this view, but used the opportunity to comment on this argument and develop **criteria for selection inventions** that have frequently been adopted in later decisions:

- A substance selection can come about if an unmentioned compound or group of compounds having a formula covered by the state of the art is found, in the absence of any information as to the starting substance or substances. The subject-matter in the case in question, however, did not involve a selection of that kind in an area which, although marked out by the state of the art, was nonetheless virgin territory.

- However, the disclosure by description in a cited document of the starting substance as well as the reaction process is always prejudicial to novelty because those data unalterably establish the end product.

- If, on the other hand, two classes of starting substances are required to prepare the end products, and examples of individual entities in each class are given in two lists of some length, then a substance resulting from the reaction of a specific pair from the two lists can nevertheless be regarded for patent purposes as a selection and hence as new.

The board held that the combination between starting substances and process variants, however, was quite a different matter from a combination of two starting substances and thus not comparable. At its simplest, if the starting substances were regarded as fragments of the end product, then every conceivable combination of a given starting substance in the first list with any starting substance in a separate second list of additionally required starting substances involved a true substantive modification of the first starting substance, since in every combination it was supplemented by a different fragment of the second starting substance to become a different end product. Each end product was thus the result of two variable parameters.

However, combining a given starting substance from a list of such substances with one of the methods of preparation given did not result in a real substance alteration of the starting substance but only an "identical" alteration. In the case in question, for example, no matter which of the processes described in detail was used, the end product was always the particular starting substance's hydrogenation product, which differed from the starting substance itself only in that it contained two additional hydrogen atoms. The process parameter was thus - seen in terms of the end product - not a variable parameter that would result in an immense widening of the range of possibilities, so that precisely in this case the end product was not the result of two variable parameters.

#### 4.1.1 Anticipation of certain compounds

##### (a) Definition of a substance by its structural formula or other parameters

In **T 12/81** (OJ 1982, 296) the board stated (see above, I.C.4.1) that it is permissible to make the definition of a chemical substance more precise by additional product parameters such as melting point, hydrophilic properties, NMR coupling constant or product-by-process claims if it cannot be defined by a sufficiently accurate **generic formula**. From this it necessarily follows that patent documents using such definitions will be prejudicial to the novelty of later applications claiming the same substance defined in a different and perhaps more precise way.

In **T 352/93** it was decided that a claim for an ionic compound (salt) that was defined only by structural parameters, ie the structural formulae of the cation and anion of the compound, was not novel over prior art disclosing an aqueous solution that contained a base corresponding to the cation and an acid corresponding to the anion.

In **T 767/95** the patent related to purified interleukin-1 having a specified molecular weight, a specified pI and a specified amino acid sequence. The appellant/opponent could not show that the substance disclosed in prior art document (1) and the claimed interleukin-1 were the same protein. The board stated (a) that there were differences as to the molecular weight, (b) that a comparison between the pI's of the substance described in document (1) and the



claimed substance was not possible under the given circumstances, and (c) that document (1) suggested a mixture of proteins. The semipurified nature of the preparation of document (1) was confirmed by statements in the scientific literature. There was thus a blockage preventing the skilled person from sequencing the material of document (1). Regardless of whether it arose from the semipurified nature of these preparations or from the process yielding only traces of the protein, this blockage prevented the teaching of document (1) from making available to the public a protein having the amino acid sequence specified in the patent in suit. In conclusion, since there was no evidence before the board that the material of document (1) exhibited the features of claim 1 of the patent in suit, this document did not affect the novelty of the purified interleukin-1.

(b) Selection of starting substances from different lists

In **T 401/94** the board again adopted one of the criteria for selection inventions laid down in decision **T 12/81** (OJ 1982, 296), namely, that if two classes of starting substances were required to prepare the end products, and examples of individual entities in each class were given in two lists of some length, the substance resulting from the reaction of a specific pair from the two lists could be regarded for patent purposes as a selection and, hence, as new. The board applied the above criterion to the case in question and stated that although **T 12/81** concerned the synthesis of a chemical product, whereas the case in question involved the preparation of a **mixture**, the claimed subject-matter was defined on the basis of two chemical entities, each of which had been selected from a list of compounds. Hence the criteria defined in **T 12/81** were applicable in this case. By analogy, the board held that in this case the claimed composition had to be viewed as a selection, and therefore as novel, as it corresponded to a specific combination of constituents, each of which had been selected from a relatively long list. The board therefore concluded that there had been no implicit disclosure of the mixture of these constituents.

In **T 427/86**, the prior document described a process of synthesis characterised on the one hand by the starting substances and on the other by the catalytic system comprising the metal constituent and the catalytic promoter; taking into account the number of alternatives in the list of metal constituents and list of promoters in this document 36 different catalytic systems could be contained. The invention claimed aimed at improving the operation of the catalytic system. It comprised the selection of a very small number of alternatives (one and two respectively) from the list of metal constituents and list of promoters according to the prior document, the combination of which was not mentioned anywhere in the latter. The board was of the opinion that a substance resulting from the reaction of a specific pair from the two long lists was for patent purposes a selection and could be regarded as new because this specific combination chosen from the wide range of possibilities had not been disclosed by the citation. The board added furthermore that in view of the earlier decision **T 198/84** (see I.C.5.2.1), an objective reading of the prior art document suggested constituents of the catalytic system different from the claimed ones. Therefore, the claimed components were not implicitly disclosed. The board concluded that the condition of novelty had been satisfied.

In **T 366/96** the patent related to a detergent composition comprising a peroxidase, hydrogen peroxide, and a surfactant. Prior art document (12) disclosed a detergent composition comprising surfactants, enzymes and a bleaching agent. In the list of suitable enzymes,

peroxidases were mentioned. The list of suitable bleaching agents comprised, i. a., inorganic peroxide.

The board found that document (12) taught a detergent composition comprising a peroxidase and a bleaching agent. As was generally known in the art, peroxidases act on hydrogen peroxide as a substrate. This implied that if the presence of peroxidases was specified, there would also be the simultaneous presence of hydrogen peroxide. In other words, even if one were to accept for the sake of argument that in document (12) the peroxidase on the one hand was enumerated in one list (i.e. that of the enzymes) and the hydrogen peroxide was mentioned in another list (i.e. that of the bleaching agents), to arrive at the compositions of the patent in suit would not require a "twofold" selection from two lists which could render the resulting combination of features novel. On the contrary, as soon as a person skilled in the art contemplated a detergent composition containing peroxidase, he or she must also contemplate the hydrogen peroxide precursors also disclosed in document (12) in order to ensure the supply of the necessary peroxidase substrate hydrogen peroxide. It was not comparable to a "twofold" selection which could render a resulting combination novel if compelling technical necessities made a particular second component mandatory as soon as the first component was chosen.

(c) Selection on the basis of a general formula

Prior-art disclosure is also of key importance here. In **T 181/82** (OJ 1984, 401) the board confirmed that the products of processes which were the inevitable result of a prior description of the starting materials and the process applied thereto belonged to the state of the art. This was true even if one of the two reactants manifested itself as a chemical entity (C<sub>1</sub> alkyl bromide) from a group of generically defined compounds (C<sub>1</sub> - C<sub>4</sub> alkyl bromides). The board took the view that the description of the reaction of a certain starting material with C<sub>1</sub> to C<sub>4</sub> alkyl bromides disclosed only the C<sub>1</sub>-substituted product, and was not prepared to recognise the disclosure of a particular butyl substituent on the grounds that four isomeric butyl radicals existed.

In **T 7/86** (OJ 1988, 381) the board also based its reasoning on **T 12/81** (OJ 1982, 296), stating that the principle that a substance resulting from the reaction of a specific pair from two lists could nevertheless be regarded as new was applicable not only for starting substances in chemical reactions but also for polysubstituted chemical substances where the individual substituents had to be selected from two or more lists of some length, such as in the case in question.

Following on from **T 181/82** (OJ 1984, 401) it was stated in **T 7/86** that if a class of chemical compounds precisely defined only in structural terms (by a chemical reaction) and with only one generically defined substituent, did not represent a prior disclosure of all the theoretical compounds encompassed by an arbitrary choice of a substituent definition, this clearly also had to be the case for a group of chemical substances, the general formula of which had two variable groups. Therefore, a class of chemical compounds, defined only by a general structural formula having at least two variable groups did not specifically disclose each of the individual compounds which would result from the combination of all possible variants within such groups.

In **T 258/91** the case concerned a selection from two lists of starting compounds. The compound (formula VI) cited as taking away novelty from the patent in suit differed from the claimed compound (formula I) by the methyl residue on the amino group in the 4-position. In the board's judgment, the information in the cited document was not sufficient to disclose the compound of formula I to the skilled person in the form of a concrete, reproducible technical teaching. The board found that the cited document did not contain any teaching involving the modification of the compound, which was mentioned only by way of example. What was being taught was merely the preparation of a class of compounds and not of a specific, individual compound.

In **T 658/91** the board held that the case law did not suggest that a chemical compound was deemed to be specifically disclosed only if that compound was mentioned by name or even described in an example. On the contrary, it was sufficient if the compound could be unambiguously identified as envisaged in individualised form in the document in question, since the purpose of Art. 54(2) EPC was to exclude the state of the art from patentability.

#### 4.1.2 Novelty of groups of substances

The case law on the novelty of generically defined compounds and particular examples of these was summarised in decision **T 12/90**. The board had to consider the novelty of a vast family of chemical compounds defined by a general structural formula, where the prior art also disclosed a vast family likewise defined by a general structural formula, the two families having a large number of products in common.

The board pointed out that a distinction had to be drawn between two situations:

(a) if the subject-matter of the invention was a particular compound, whereas the prior art disclosed a family of compounds defined by a general structural formula including this particular compound but not describing it explicitly, the invention had to be considered novel (see **T 7/86**, **T 85/87**, **T 133/92**).

(b) if, with the same prior art, the subject-matter of the invention was a second family of compounds partially covering the first, the invention was not new (see **T 124/87**).

As regards case (a) the board said, "**That** case is not comparable with the present one in which a distinction must be drawn between the novelty of a group of substances defined by a general formula and a second group of substances partially covering the first and defined by another general formula, because the **concept of individualisation** naturally only applies to the structural definition of a single compound, not a collection of compounds".

Case (b) was extensively discussed in **T 124/87** (OJ 1989, 491). This decision dealt with the problem of assessing the novelty of a class of compounds defined with parameters within numerical ranges. The patent in suit claimed a class of compounds defined by parameters within numerical ranges while the prior document disclosed a process by which a class of compounds could be prepared - comprising those claimed in the patent in suit - having the combination of parameters required by the main claim of the latter.

In that particular case, the specifically described example in the prior document did not disclose the preparation of any particular compounds within the class defined in the claims of the disputed patent. However, it had been accepted by the patentee that a skilled man would have no difficulty in preparing such compounds within the class defined by the claims of the disputed patent using the process described in said prior document, in combination with his common general knowledge, so that the disclosure of the prior document had to be regarded as not only limited to the particular compounds whose preparation was described in the examples, but also comprising the general class of compounds made available to the skilled man in that technical teaching, even though only certain compounds within this class were described as having been prepared. Since the compounds as defined in the claims of the disputed patent formed a major part of this general class, they formed part of the state of the art and therefore lacked novelty.

In **T 133/92** the question to be answered in examining novelty was whether the selection of the alkyl group as defined in claim 1 of the disputed patent had been made available to the public within the meaning of Art. 54 EPC, having regard to the disclosure of a prior document. Citing **T 666/89** (OJ 1993, 495), the respondents (patent proprietors) contended that the legally correct approach for deciding selection novelty was identical or very similar to that employed in determining obviousness. In particular, they argued that in cases of overlapping ranges of compounds, a claim to a narrower range as compared with a broader prior art range was always selectively novel if it could be demonstrated that the narrow range was inventive over the broader range. However, the board observed that in the case cited the board had repeatedly emphasised that selection novelty was not different from any other type of novelty under Art. 52 EPC and Art. 54 EPC, so that the proper approach was to consider availability in the light of a particular document. Thus the board found that a claimed group of compounds essentially resulting from omitting those parts of a larger group of compounds which a skilled person would have immediately considered as being less interesting than the rest, could not be selectively novel. In addition, in the board's opinion, a skilled person would, having regard to these considerations, have seriously contemplated applying the technical teaching of this prior art document in the range of overlap.

#### 4.1.3 Novelty of enantiomeres

According to decision **T 296/87** (OJ 1990, 195), the description of racemates did not anticipate the novelty of the spatial configurations contained in them; racemates were described in the state of the art by means of expert interpretation of the structural formulae and scientific terms; as a result of the asymmetric carbon atom contained in the formula the substances concerned might occur in a plurality of conceivable spatial configurations (D and L enantiomers) but the latter were not by themselves revealed thereby in an individualised form. That methods exist to separate the racemate into enantiomeres was something that should only be considered with respect to inventive step.

In **T 1048/92** the board observed that the fact that the disclosure of the prior document did not embrace more than two possible steric configurations did not take away the novelty of the specific one which was claimed in the application, because there was no unambiguous technical teaching directed to that configuration. The novelty of such an individual chemical configuration could only be denied if there were an unambiguous disclosure of this very

configuration in the form of technical teaching. It was thus not sufficient that the configuration in question belonged conceptually to a disclosed class of possible configurations without any pointer to the individual member.

In **T 1046/97** the claim was directed to a specific pure enantiomer. The examining division found that prior art document (B) disclosed a compound of the same formula as the one claimed by the applicant but without giving any information on its stereochemical configuration. However, in (B) it was also stated that "all optically active forms of the compounds described therein were enclosed in the teaching thereof." Since it belonged to the skilled person's general knowledge to identify such mixtures and to separate them, in the examining division's view the claimed enantiomer was not novel.

The board saw no reason to believe that a skilled person would not combine the disclosure of that compound with the reference to the racemic, meso and optically-active forms. However, it was established case law of the boards of appeal that the novelty of an individual chemical compound could only be denied if there was a direct and unambiguous prior disclosure of this very compound in the form of a technical teaching (see **T 181/82**, OJ 1984, 401; **T 296/87**, OJ 1990, 195). It was thus not sufficient for denying novelty that the claimed enantiomer belonged conceptually to the group of possible optically-active forms mentioned in (B) unless there was a pointer to the individual member of the group at stake. Thus, the claimed specific enantiomer being incontestably neither a racemate nor a meso form, the assessment of novelty crystallised on the question, whether it was directly and unambiguously derivable from the disclosure of the compound when combined with the reference to the optically active forms.

The board held that the term "optically-active forms" was to be interpreted as embracing any stereochemical form of the compounds disclosed in (B), independently of whether such property was obtained by a pure stereochemical isomer or by any mixture of such isomers. Since (B) provided no information about any specific stereochemical form this disclosure must be regarded as undifferentiated, with the effect that the reference to "all optically active forms of the compounds described therein" could not be equated to an individualised disclosure of a specific enantiomer. The board thus held that the specific configuration of the claimed enantiomer was not directly and unambiguously derivable from the teaching of (B) and novelty not destroyed.

#### 4.1.4 Achieving a higher degree of purity

In **T 990/96** (OJ 1998, 489), it had to be examined whether the feature under dispute, which in fact represented a **specific degree of chemical purity** (in particular diastereomeric purity) constituted a "new element" imparting novelty to the claimed subject-matter.

The board stated that it was common general knowledge that any chemical compound obtained by a chemical reaction would normally contain impurities for various reasons and that it was not possible for thermodynamical reasons to obtain a compound, which was - in the strict sense - completely pure, ie totally free of any impurity. It was, therefore, common practice for a person skilled in the art of preparative organic chemistry to (further) purify a compound obtained in a particular chemical manufacturing process according to the

prevailing needs and requirements. Conventional methods for the purification of low molecular organic reaction products, which could normally be successfully applied in purification steps, were within the common general knowledge. It followed that, in general, a document disclosing a low molecular chemical compound and its manufacture made this compound available to the public within the meaning of Art. 54 EPC in **all grades of purity** as desired by a person skilled in the art.

Exceptional situations could exist which could justify a different conclusion. One such exceptional situation could be a situation where it was proved on the balance of probability that all prior attempts to achieve a particular degree of purity by conventional purification processes had failed.

In **T 728/98** (OJ 2001, 319), the applicant (appellant) argued that the situation was such an exceptional one as mentioned in **T 990/96**. The claimed pharmaceutical composition differed from the state of the art because the particularly high purity level of the compound it contained could not be achieved by conventional methods.

The board found, however, that the applicant, who bore the burden of proving this allegation, had not provided the necessary evidence. In fact, the prior-art teaching yielded significant, even if small, quantities of the substantially pure compound using conventional purification methods. The general rule therefore applied that achieving a particularly high level of purity of a known compound was not a feature to be regarded as imparting novelty to such a product over the prior art.

## **4.2 Selection of parameter ranges**

### 4.2.1 Selection from a broad range

The principles applied by the boards of appeal as part of their established case law on the novelty of selection inventions were developed in particular in **T 198/84** (OJ 1985, 209). They are summarised briefly in **T 279/89** as follows: a selection of a sub-range of numerical values from a broader range is new when each of the following criteria is satisfied:

- (a) the selected sub-range should be narrow;
- (b) the selected sub-range should be sufficiently far removed from the preferred part of the known range (as illustrated for instance in the examples given in the prior art);
- (c) the selected sub-range should not be an arbitrarily chosen specimen from the prior art, ie not merely one way of carrying out the prior teaching, but must provide a new invention (purposive selection).

The three postulates for the novelty of a selected sub-range are based on the premise that novelty is an absolute concept. It is therefore not sufficient merely for the wording of the definition of an invention to be different. What has to be established in the examination as to novelty is whether the state of the art is such as to make the **subject-matter** of the invention available to the skilled person in a technical teaching (**T 198/84** (OJ 1985, 209), **T 12/81** (OJ 1982, 296), **T 181/82** (OJ 1984, 401) and **T 17/85** (OJ 1986, 406)).

With reference to the third criterion, the board in **T 198/84** was of the opinion that this view of novelty really entailed more than just a formal delimitation vis-à-vis the state of the art. There would be delimitation only in respect of the wording of the definition of the invention, but not in respect of its content, if the selection were arbitrary, ie if the selected range only had the same properties and capabilities as the whole range, so that what had been selected was only an arbitrary specimen from the prior art. This was not the case if the effect of the selection, eg the substantial improvement in yield, occurred in all probability only within the selected range, but not over the whole known range (purposive selection).

To prevent misunderstanding, the board emphasised, following **T 12/81** (OJ 1982, 296), that a sub-range singled out of a larger range was new not by virtue of a newly discovered effect occurring within it, but had to be new per se. An effect of this kind was not therefore a prerequisite for novelty; in view of the technical disparity, however, it permitted the inference that what was involved was not an arbitrarily chosen specimen from the prior art, ie not a mere embodiment of the prior description, but another invention (purposive selection).

In **T 17/85** (OJ 1986, 406) the novelty of the claimed range was denied, because the preferred numerical range in a citation in part anticipated the range claimed in the application. A claimed range could not be regarded as novel, at least in cases where the values in the examples given in the citation lay just outside the claimed range and taught the skilled person that it was possible to use the whole of this range.

In **T 247/91**, in deciding the question of the novelty of an invention, the board emphasised that consideration had to be given not only to the examples but also to whether the disclosure of a prior art document as a whole was such as to make available to the skilled person as a technical teaching the subject-matter for which protection was sought. The board stated that it was accepted by the appellant (patent proprietor) that a skilled reader of the cited document had no reason to exclude the range of 85 to 115 °C claimed in the patent in suit when carrying out the invention disclosed in the citation. The teaching of the cited document was clearly not limited to the use of the exemplified temperatures but extended to the whole described temperature range of 80 to 170 ° which had been made available to the skilled person as a technical teaching and the subject-matter of the patent in suit lacked novelty.

In **T 406/94** the board found that the percentage range cited in the prior art, although numerically close to the claimed range, could not be relied on to anticipate the subject-matter claimed, because the percentage cited in the prior art was based on different starting materials.

In **T 209/94**, in spite of the fact that the temperature ranges of pyrolysing steps to be carried out for preparing fibres overlapped ("greater than about 1600 °C" according to the invention and "from 900 to 1800" according to the prior art document), the functional limitation of the pyrolysing step established by the statement introduced into claims 1 and 2 of the application at issue - "for a period of time sufficient to reduce oxygen and/or nitrogen content of the fibres to below about 0.5 % by weight" - distinguished the claimed process from the process according to prior art document. Indeed, from the latter document the board concluded that the presence of nitrogen (and boron) in the fibres in certain amounts was essential for their temperature stability. Since this improved thermal stability of the fibres was the very object

of the invention disclosed in the prior art, fibres which would not have met this requirement could not have been considered to be within the teaching of this document. This meant, by implication, that fibres having a nitrogen and/or oxygen content which was too low to produce the desired thermal stability were not within the scope of the invention disclosed in the prior art: the lowest value disclosed in the prior art document was 3.89%, whereas according to the application at issue the maximum amount permitted was 0.5%.

In **T 610/96** the patentee/respondent claimed a magnetoresistive material comprising magnetic and non-magnetic metallic thin film layers. The board found that the claimed ranges defining the composition of said layers must be considered as a narrow selection of the generic disclosure of prior art document D10 which did not overlap with the sub-ranges preferred in D10 and which further selected a specific non-magnetic layer among a group of possible layers. This selection also was sufficiently far removed from the specific examples of D10. Furthermore, the claimed material showed different characteristics of the magnetoresistance change, so that the specific sub-range was not simply an arbitrary part of the generic disclosure of D10, but was of a different nature and therefore novel. The criteria for selection inventions set out in **T 279/89** were thus satisfied. Moreover, since a passage of D10 might be seen as a statement dissuading the skilled person from applying the concept of D10 in the sub-range of the contested patent, the person skilled in the art would not seriously contemplate applying the teaching of D10 in this range (see **T 26/85**, OJ 1990, 22).

#### 4.2.2. Overlapping ranges

In decision **T 666/89** (OJ 1993, 495) the board gave a ruling on novelty assessment in cases of overlapping numerical ranges. The patent related in particular to a shampoo comprising 8-25 % anionic surfactant and 0.001-0.1 % cationic polymer. In an earlier patent application a shampoo composition had been disclosed containing 5-25 % anionic surfactant and 0.1-5.0 % cationic polymer.

The board held that the composition was not new. In the board's view, there was no fundamental difference between examining novelty in situations of so-called "overlap" or "selection", and in doing so in other situations, although it might be helpful, in order to verify a preliminary conclusion of a novelty examination in cases of overlap, to investigate whether or not a particular technical effect was associated with the narrow range in question. It needed to be stressed, however, that such a particular effect was neither a prerequisite for novelty nor could it as such confer novelty; its existence could merely serve to confirm a finding of novelty already achieved. The term "available" in Art. 54(2) EPC clearly went beyond literal or diagrammatical description, and implied the communication, express or implicit, of technical information by other means as well. Thus it was clear that matter that was hidden, not in the sense of being deliberately concealed but rather in the sense of being reconditely submerged in a document, would not have been "made available" in the above sense. In the case of overlapping ranges of physical parameters between a claim and a prior art disclosure, what would often help to determine what was "hidden" as opposed to what had been made available, was whether or not a skilled person would find it difficult to carry out the prior art teaching in the range of overlap. A similar approach was to consider whether a person skilled in the art would, in the light of all the technical facts at his disposal, "seriously contemplate" applying the technical teaching of the prior art document in the range of overlap.



Realising that the concept of "seriously contemplating" moving from a broad to a narrow (overlapping) range seemed akin to one of the concepts used by the boards for assessing inventive step, namely, whether the notional addressee "would have tried, with reasonable expectation of success" to bridge the technical gap between a particular piece of prior art and a claim whose inventiveness was in question, the board added that its novelty concept was fundamentally different from this "inventive-step concept" because, in order to establish anticipation, there could not be a gap of the above kind. Novelty was carefully analysed on the basis of comparable considerations in **T 366/90** and **T 565/90**.

Decision **T 26/85** suggested, as a specific test for determining whether a technical teaching had been made available to the public, posing the question whether the person skilled in the art would in the light of the technical facts **seriously contemplated** applying the technical teaching of the prior art document in the range of overlap. If it could be fairly assumed that he would do so, it had to be concluded that no novelty existed. This formulation of the question was adopted inter alia in **T 279/89**, **T 666/89**, **T 255/91** (OJ 1993, 318), **T 369/91** (of 7 October 1992), **T 631/92** and **T 660/93**.

In **T 751/94** the board found that it was clear that the method according to the cited document was not to be carried out in the overlapping range, and consequently novelty was not destroyed by the overlap. In addition the combination of parameters in the claimed invention was not disclosed in, and was not clearly derivable from, the cited document.

#### 4.2.3 Multiple selection

In **T 245/91** the appellants (patent proprietors) contested the lack of novelty objection of the respondents in the light of the disclosure in a prior document and contended that the subject-matter of claim 1 amounted to the purposeful selection of a small area from the very broad disclosure in the said document. The board observed that most of the ranges in claim 1 of the patent in suit could be obtained by narrowing down the ranges according to the cited document by approximately 25 to 80% and restricting them to their central portion, and that in a situation like this, where several ranges of parameters were to be considered, a careful comparison had to be carried out in order to assess whether or not the subject-matter of the claimed invention was available to the skilled person. Any obviousness considerations were to be strictly avoided. The board, referring to **T 666/89** (OJ 1993, 495), emphasised that under the EPC novelty had to be decided by reference to the total information content of a cited prior art document. In the board's judgment, the combination of the relevant features would not have been seriously contemplated by the skilled reader and was not made available to him, because the said features were not prominent in the cited document and did not therefore lend themselves to an unambiguous, implicit disclosure. A further point to consider was the number of parameters used to define the claimed subject-matter, since each of the ethylene polymers was characterised by several parameters. The board held that even if most of the ranges for these parameters corresponded to a more-or-less central portion of the range limiting the corresponding parameter in the composition according to the cited document, because of the number of parameters involved, which exceeded 10, the scope of the claimed blends was in reality quite narrow with regard to the breadth of the definition of the known composition. This was also the reason why the argument that there had been an implicit description of this narrow selection in the prior document was not

accepted.

In case **T 653/93**, the appellant (applicant), whose patent was refused by the examining division, argued that the process of claim 1 was novel as it referred to a combination of three process features with selected ranges and product features with specific limits, which combination was not disclosed in the prior art document.

The board of appeal emphasised that in such situations the question of novelty could not be answered by contemplating the ranges of the various parameters separately. This would, in the board's judgment, be an artificial and unjustified approach, since it was not the specified ranges of the three parameters or their agglomeration that formed the subject-matter of claim 1, but the group of processes defined by the combination of these ranges, which was rather small when compared with the group of processes disclosed in the prior art document.

Thus the group of processes claimed, which was characterised by the combination of three specific process parameters, was not explicitly disclosed in the prior art document and therefore could be said to result from a "multiple (ie threefold) selection". The person skilled in the art, when applying the teaching of the prior art document, would not have had any reason to concentrate on the combination of the sub-ranges as defined in claim 1, eg because the omitted parts of the ranges disclosed in the prior art document could be recognised as of lesser interest. Since there was no indication to this effect, the "combined selection" did not emerge from the prior art document as being implicitly disclosed for the skilled person.

The novelty of the technical teaching of claim 1 was corroborated by experimental evidence showing that the products resulting from the claimed processes couldn't have been obtained by processes which were close to but nevertheless outside the range of the processes claimed. Moreover, the combination of properties of the products obtained by the claimed processes was not the inevitable result of the process disclosed in the prior art document but was obtained only by a particular combination of process parameters. It followed that the subject-matter of claim 1 was not considered as having been disclosed in the prior art document.

In **T 65/96**, there was no mention in the prior-art document D2 of a rubber-reinforced copolymer having the combined features forming the solution of the technical problem addressed in the opposed patent. The board pointed out that the argument of the appellant (opponent) that all the relevant parameters had been mentioned "within a few lines" was irrelevant, because the location within the document of a disclosure did not in itself suffice to show the true contextual relationship of the parameters, let alone establish that they were disclosed in combination, as required by the solution of the technical problem. In any case, one of the parameters was referred to in a quite separate section of the disclosure.

Furthermore, closer examination of D2 showed that the parameters of amount of rubber and particle size of rubber were merely disclosed as independent ranges without any indication as to how, or indeed whether, they might vary with one another. Whilst it was conceded by the respondent at the oral proceedings that D2 disclosed ranges partly overlapping with those defined in the solution of the technical problem, the latter required the simultaneous fulfilment

of three values of the same parameters.

The board came to the conclusion that the claimed solution was not arbitrary since it solved a specific technical problem compared with the products according to D2. Hence, the claimed solution, to the extent that it overlapped with the general disclosure of D2 at all, represented a narrow selection therefrom and fulfilled all the requirements of a true selection (see **T 198/84**, OJ 1985, 209).

#### **4.3 Subject-matter group**

**T 763/89** looked at selection from a generically defined group of multilayer materials. The patent related to a reversal colour photographic material comprising three layers having differing colour sensitivity, each layer comprising a further three layers having the same colour sensitivity but differing photographic sensitivity. The closest prior art consisted of a reversal material with "at least two" layers. The opponent had argued that the multilayer materials disclosed by this prior art also included the three-layer material claimed, therefore causing lack of novelty. The board, however, held that it was new: although "at least two" was synonymous with a multilayer material and set the lower limit in the form of a double-layer material (the description related to any multilayer material without specifying an upper limit for the number of possible layers), the only theoretical examples given for such multilayer materials were double-layer materials. Nor did the documents cited in support of the opposition as much as hint at a three-layer material. It might appear logical for a three-layer material to form part of the group of multilayer materials in the cited documents, but this did not mean that it was thereby disclosed. On the contrary, it was a new material forming part of this group and selected from it.

The board gave this ruling in the context of previous case law on selection inventions involving chemical substances. This had laid down that a technical teaching was prejudicial to novelty if it disclosed a substance in individualised form, ie one clearly distinguishable from structurally similar substances. This principle for assessing the novelty of individuals as distinct from a group could be applied to things such as the photographic material in question, which was clearly distinguishable from other things forming part of the same generically described group.

### **5. Novelty of use**

#### **5.1 First medical use**

##### **5.1.1 Introduction**

Methods for the surgical or therapeutical treatment of the human or animal body and diagnostic methods practised on the human or animal body ("medical methods") are not regarded as inventions susceptible of industrial application (Art. 52(4) EPC, first sentence). Art. 54(5) EPC provides that the general rules of law relating to novelty (Art. 54(1) to (4) EPC) do not exclude the patentability of any substance or composition, comprised in the state of the art, for use in a method referred to in Art. 52(4) EPC, provided that its use for any method referred to in that paragraph is not comprised in the state of the art. Thus in addition to the

general concept of novelty (Art. 54(1) to (4) EPC) this article introduces, in respect of substances and compounds used in surgical and therapeutic treatment and in diagnostic processes carried out on humans and animals, a **special concept of novelty** unknown in other technical fields (**T 128/82** (OJ 1984, 164)).

For the first medical use of a known substance, Art. 54(5) EPC provides a particular form of claim (purpose-related product claim). In **G 5/83** (OJ 1985, 64) the Enlarged Board observed that the inventor of a "first medical indication" could obtain purpose-limited product protection for a known substance or composition, without having to restrict himself to the substance or composition when in a form technically adapted to a specified therapeutic purpose. The appropriate protection for him was, therefore, in its broadest form, a purpose-limited product claim. No problem arose over its susceptibility of industrial application, within the meaning of Art. 57 EPC.

#### 5.1.2 Scope of a purpose-related product claim

In **T 128/82** (OJ 1984, 164) the board considered the question of a first medical indication (first medical use of a known substance) with regard to the breadth of the purpose-related product claim. The examining division had refused the application on the grounds that it failed to fulfil the requirements of Art. 52(4) EPC and Art. 54(5) EPC as the claims were not limited to the specific therapeutic use of the known compounds as first discovered. The board had to consider whether the broad version of the claims was allowable having regard to Art. 54(5) EPC and, in particular, whether the EPC offered a basis for a limited statement of therapeutic purpose susceptible of narrow interpretation. In the opinion of the board the EPC neither prohibited nor required an unlimited statement of purpose. It held that Art. 54(5) EPC permitted a purpose-limited substance claim stating a general therapeutic purpose and found that where a known compound was for the first time proposed and claimed for use in therapy, the fact that a specific use was disclosed in the specification did not in itself call for a restriction of the purpose-limited product claim to that use (see also **T 36/83** (OJ 1986, 295) and **T 43/82**). The board further observed that the practice of the EPO hitherto had shown that substance and medical preparation claims for therapeutically active compounds not limited to specific indications were allowed, even though as a rule only certain specific activities were stipulated. As a general rule, this practice concerned new compounds. In the board's judgment, it could not be inferred from the EPC that compounds, which - although previously known - were still patentable under Art. 54(5) EPC, were in principle to be treated differently. If an inventor was granted absolute protection in respect of a new chemical compound for use in therapy, the principle of equal treatment would also require an inventor, who for the first time made a known compound available for therapy, to be correspondingly rewarded for his service with a purpose-limited substance claim under Art. 54(5) EPC covering the whole field of therapy. Any other treatment would only be justified were Art. 54(5) EPC to forbid outright a broad scope of protection. The fact that Art. 54(5) EPC did not contain any requirement that protection should be broad was not in itself a reason for refusing to grant such protection. As a general rule, the usual practice as it related to new compounds should be followed. On the other hand, the mere fact that there were no instructions concerning all and any possible specific therapeutic applications did not justify limiting the scope to the therapeutic application actually mentioned. This would not be in keeping with general EPO practice concerning therapeutically active compounds.

The board noted that under Art. 54(5) EPC a compound which was known but not used therapeutically was to be regarded as novel. Novelty, however, was not only destroyed by the fact that the same specific therapeutic effect was already known in the art, but suffered also from the disclosure of any other specific therapeutic application. The disclosure of any specific effect, therefore, always had the same consequences as far as novelty was concerned - which in turn made it fair to regard as admissible a broad statement of purpose covering all and any specific indications.

#### 5.1.3 Protection of a preparation in the form of a "kit-of-parts"

In **T 9/81** (OJ 1983, 372) it was held that combined preparations the individual components of which represented known therapeutic agents might be protected in a formulation corresponding to Art. 54(5) EPC even when claimed as a kit-of-parts, providing those components formed a functional unity (true combination through a purpose-directed application. Claim 1, which was drawn up in the form stipulated in Art. 54(5) EPC, referred to a combined preparation containing an oxazaphosphorin cytostatic agent and the sodium salt of 2-mercapto-ethane-sulphonic acid as therapeutic active ingredients. The first-mentioned component of the product was known, and the second was a known mucolytic agent. According to the documentary prior art available to the board, the two active ingredients had never been used together for a **new joint effect** and were **unknown as a composition**. The active ingredients which were administered preferably at the same time according to the invention did not therefore represent a mere aggregate of known agents, but a new combination with the surprising, valuable property that the severe side-effects to be expected when administering the cytostatic agents were absent as a result of the detoxifying effect of the sodium 2-mercapto-ethane-sulphonate.

Claim 1 referred to a product which was limited to simultaneous, separate or sequential use in cytostatic therapy. In the board's judgment, it followed from this indication of purpose that the components were no longer necessarily present as a union, eg in composition, since the components would not otherwise be available for separate or sequential application. The board stated that as a **kit-of-parts**, however, it was not necessarily a true combination in view of the physical separation of the individual components. The mere loose association of known components did not in itself turn them into a functional unity in which a necessary and direct interaction between the components was a precondition for the purposive use (eg lock and key, match and striking surface, two-component adhesive). Although the components in the claimed combination did not enter into such direct interaction with each other, the indication of purpose for the combined therapy might re-establish the unity of the product as a functional amalgamation of its two components, if it represented a genuine restriction to the specified application. In so far as the components could not attain the advantageous effect according to the invention independently of each other, the joint effect justified the unity of the combined product as a result of the limitation by the indication of purpose of the area of protection of the claim under the conditions laid down in Art. 54(5) EPC, even if the components were presented side-by-side and not as a union. Since the individual components of the combined product in the present claims had themselves known therapeutic applications, these claims, by expressly including the separate presentation of those components, were indeed to be regarded as limited to the joint use of the combined products, so that the individual applications according to the state of the art were excluded.

## 5.2 Second (further) medical use

### 5.2.1 Formulation of claims

#### (a) Use of a substance or composition for the manufacture of a medicament

The question of law which was referred to the Enlarged Board in **G 5/83** (OJ 1985, 64) (see also **G 1/83**, OJ 1985, 60; **G 6/83**, OJ 1985, 67) arose essentially because of the particular exclusion from patentability in relation to "methods for treatment of the human or animal body" set out in Art. 52(4) EPC, first sentence, and the exception to the novelty requirement set out in Art. 54(5) EPC. In the field of medical or veterinary inventions, the normal type of **use claim** is prohibited by Art. 52(4) EPC, but Art. 54(5) EPC expressly provides for an exception to the general rules governing novelty (Art. 54(1) to (5) EPC) in respect of the first medical or veterinary use of a substance or composition, by allowing a claim to the substances or compositions for that use.

The Enlarged Board did not accept claims directed to the use of a known substance X for the treatment of disease Y, because such a claim would relate to a medical method which was not patentable under Art. 52(4) EPC. However, it allowed claims of the type "use of substance X for the manufacture of a medicament for therapeutic application Y". The Enlarged Board derived the novelty of such claims from their sole new feature, that is the new pharmaceutical use of that known substance. The Enlarged Board found that no intention to exclude second (and further) medical indications generally from patent protection could be deduced from the terms of the EPC. As a result, the Enlarged Board considered that it was legitimate in principle to allow claims directed to the use of a substance or composition for the manufacture of a medicament for a specified new and inventive therapeutic application, even where the process of manufacture as such did not differ from known processes using the same active ingredient.

#### (b) Process for the manufacture of a medicament

In **T 51/93** the board found that document (4) anticipated process claim 1 put forward in the set of claims for AT, ES and GR, as the novelty of the intended use of the product could only be taken into account as a technical feature limiting the claim where the claim took the form of a use claim as approved in decision **G 5/83**. The use claim as approved in decision **G 5/83** emphasised that the intended use was a **technical** feature to be taken into account in assessing novelty, and which limited the claim. The board stated that normally, however, in a claim to a "Process for making X for use Y comprising the steps of..." the process claim was interpreted as covering the particular process of making X irrespective of whether that X was to be used for use Y or not. Thus, in such a process claim the wording "for use Y" was intended not as a distinguishing technical feature but merely as an **illustration** of what X could be used for. Consequently the board considered that in the process claim 1 for AT, GR and ES the words "for use in the treatment by subcutaneous administration ..." were to be treated in accordance with common practice for process claims as merely illustrative and not as a restrictive technical feature capable of establishing novelty. The board further stated that, for the purpose of assessing novelty in EPO proceedings, the interpretation to be given to a claim had to be the same irrespective of the contracting states for which the claim was put

forward. The fact that the contracting states AT, ES and GR had, for a time, laws restricting claimable subject-matter, could not, where the prior art was the same for all designated states, lead to a claim being interpreted as novel and allowable for these states if it was not also novel and allowable for all other contracting states. Thus the fact that process claim 1 was put forward only for AT, ES and GR did not assist the appellant.

In **T 893/90**, however, a board of appeal came to a different conclusion. The claims were formulated as method claims, namely as a method of producing a pharmaceutical composition for controlling bleeding in non-haemophilic mammals characterised by admixing the two components in functionally defined amounts and proportions. In the board's judgment, the said claims did not substantially differ in their formulation from use claims, ie from claims directed to the use of the mixture of the two components in functionally defined amounts and proportions for the stated purpose, namely for producing a pharmaceutical composition for controlling bleeding in non-haemophilic mammals. In this respect, it was also observed that, according to claim 1, the mixture excluded other physiologically active materials; thus, the said mixture was well-defined in terms of its components. The board concluded that the claims were thus in accordance with established EPO case law that claims are allowable directed to the use of a substance or composition for the manufacture of a medicament for a specified new and inventive therapeutic application, even if the process of manufacture as such does not differ from known processes using the same active ingredient(s) (see **G 5/83**).

In **T 958/94** (OJ 1997, 242), the examining division had refused the claims for Greece and Spain on the grounds that because they were directed to a process rather than an application or use they were not in the "second medical indication" form stipulated by the Enlarged Board of Appeal in **G 6/83** (OJ 1985, 64). The examining division had taken the view that the novelty of "the use of a substance for the manufacture of a medicament" was linked to formal requirements and that given the order of decision **G 6/83** on the protection of the second medical indication, only **use** claims - not **process** ones - fulfilled those requirements. The appellant (applicant) had filed an appeal against that decision, requesting that the decision to refuse the application be set aside.

The board noted that Enlarged Board decisions **G 1/93**, **G 5/83** and **G 6/83** made no mention of requirements of form or category governing claims directed to a medicament's second therapeutic indication. In the board's view the French wording "revendications ayant pour objet" used in decision **G 6/83** referred not to the formal aspect of the category of a claim but rather to its substance, ie the definition of the claimed invention in terms of its essential features. Parallel decisions **G 1/83** and **G 5/83** in German and English used the words "Patentansprüche gerichtet auf" and "claims directed to" rather than "Gegenstand" or "subject-matter", which also showed that the determining factor was not the wording or category chosen for the claim but its substance, namely the technical feature which formed the essence of the invention claimed (use of the substance in question). This interpretation was confirmed by the reasons for decisions **G 1/83**, **G 5/83** and **G 6/83**.

In point 11 of decision **G 5/83** (first paragraph) the Enlarged Board held that an invention relating to an activity could be claimed either as the application or use of a thing for a stated purpose (eg to achieve a technical result) or as a method or process to achieve the same

result using the same thing, depending on the applicant's preference. Either type of claim also involved a sequence of steps giving rise to the final effect. In terms of use, therefore, there was no difference of substance. This general rule also applied in the field of therapy. There was no discernible substantive difference between a claim for the use of a substance or composition for the treatment of the human or animal body by therapy and a claim directed to a method of treatment of the human or animal body by therapy. The sole difference was in the wording, as was emphasised by the Enlarged Board in point 13 of decision **G 5/83**. Thus, manufacturing a medicament did indeed involve a sequence of common and obligatory steps, irrespective of the form of the claims which circumscribed its manufacture, and whether the claims were for the "application of a substance to obtain a medicament intended for a new therapeutic use" or for a "process to obtain a medicament intended for the new application, characterised in that the substance is used". Although the active substance per se, the medicament and the process for its manufacture were already known, the Enlarged Board in decisions **G 1/83**, **G 5/83** and **G 6/83** allowed a claim for preparing the medicament for the new therapeutic indication and directed to the substance's use in manufacturing the medicament intended for that new therapeutic indication. In the same conditions - ie where the active substance, the medicament and the process for its manufacture all lacked novelty - it would therefore be unjustified to regard a claim of the type "method for manufacturing the medicament intended for the new therapeutic indication" as not patentable, given that a claim for the use of a substance to manufacture a medicament intended for a new therapeutic use and a claim for a method of manufacturing the medicament intended for the new use and characterised in that the same substance was used were substantively equivalent. This decision endorses the approach already outlined in **T 893/90** of 22 July 1993.

(c) Further issues relating to the second medical use claim

In **T 570/92** the board allowed a claim which took the form of a claim to a second medical use of a known substance and referred to a substance which had not previously been described in concrete terms. In line with **G 5/83**, what was claimed was the use of that substance for the manufacture of a long-lasting medicament for the oral treatment of hypertension, to be administered once or twice daily. The latter feature, concerning the administration of the medicament, did not lead to exclusion from patentability under Art. 52(4) EPC. The wording used served not to indicate to the doctor the frequency of administration actually intended when treating an individual patient, but merely to convey the teaching that the success of the treatment was assured if the medicament was administered not more than twice a day.

In **T 143/94** (OJ 1996, 430) the board found that a claim directed to the use of a substance or composition for the production of a medicament for a therapeutic application did not conflict with Art. 52(4) EPC or Art. 57 EPC (see **G 1/83**, **G 5/83**, **G 6/83**); this was true irrespective of what purpose the claim served (protection of a first medical use of a substance or composition, or protection of a further medical use). Accordingly, prior evidence of a further medical use was not required for this form of claim to be included in a patent application.

In **T 4/98** (OJ 2002, \*\*\*) the independent claims were drawn up in the form of "Swiss type" claims. The board had difficulties however in accepting the opposition division's opinion that these claims reflected in fact a second (further) medical use and that some particular features in the claims constituted a specified therapeutic application from which novelty for the claims



could be derived in accordance with the principles of decision **G 5/83** (OJ 1985, 64). The board held that in accordance with the principles in **G 5/83** and subsequent case law, the concept of second or further medical use can only be applied to claims to the use of substances or compositions for the preparation of a medicament intended for use in a method referred to in Art. 52(4) EPC. It noted that the concept of "therapy" or "therapeutic application" includes treatment of a particular illness or disease with a specified chemical substance or composition in a specified human or animal subject in need of such treatment and that in the absence of the identification of at least (i) the illness or disease to be treated or the ailment to be cured or (ii) the nature of the therapeutic compound used for treating or curing the disease or (iii) the subject to be treated, a mere process feature could not be construed as specifying a particular method of treatment or therapeutic application within the meaning of Art. 52(4) EPC (see Reasons, paragraphs 8.1 and 8.2). Thus the board came to the conclusion that the subject-matter of the independent claims was accordingly to be understood as relating to a non-therapeutic technical activity (process).

#### 5.2.2 Novelty of the new therapeutical application

##### (a) Identification of the subject to be treated

The board of appeal applied the principles of decision **G 5/83** in case **T 19/86** (OJ 1989, 24). It had to decide whether the application of a known medicament for the prophylactic treatment of the **same disease** in an **immunologically different** population of animals of the same species could be considered a new therapeutic application from which novelty for the claims could be derived. According to decision **T 19/86** the question of whether a new therapeutic use was in accordance with decision **G 5/83** should not be answered exclusively on the basis of the ailment to be cured but also on the basis of the subject (in the case in question, the new group of pigs) to be treated. A therapeutic application was incomplete if the subject to be treated was not identified; only a disclosure of both the disease **and** the subject to be treated represented a complete technical teaching. The proposal according to the application to protect animals which could not hitherto be protected from the disease in question, by intranasally administering to them a known serum, could not be considered disclosed in the prior art and therefore constituted a novel therapeutic application in accordance with the above-mentioned decision of the Enlarged Board (see also **T 893/90**).

##### (b) Distinguishing between group of subjects

In **T 233/96** the board held that if the use of a compound was known in the treatment or diagnosis of a disease of a particular group of subjects, the treatment or diagnosis of the same disease with the same compound could nevertheless represent a novel therapeutic or diagnostic application, provided that it is carried out on a new group of subjects which is distinguished from the former by its physiological or pathological status (**T 19/86**, OJ 1989, 25; **T 893/90**). This does not apply, however if the group chosen overlaps with the group previously treated or the choice of the novel group is arbitrary which means that no functional relationship does exist between the particular physiological or pathological status of this group of subjects (here humans who are unable to exercise adequately) and the therapeutic or pharmacological effect achieved.

(c) Difference in the prescribed regimen of two drugs

In **T 317/95** the issue of novelty concerned both the question of whether the mere difference in the course of the administration of two drugs (ie the prescribed regimen) could indeed confer novelty on claim 10, and the objections to this claim which appeared to imply the issue of patentability under the terms of Art. 52(4) EPC. The invention involved the treatment of exactly the same category of patients by separately administering to them the same two commercial drugs in the same concentration, dosage and formulation for the treatment of the same illness or disease, with the sole exception that the prescribed regimen for this treatment was slightly modified (BNS and cimetidine were administered to the patient within five minutes of each other).

The board observed that in **G 5/83** (OJ 1985, 64) the Enlarged Board had stated that it was the purpose of the exclusion of medical treatments from patentability according to Art. 52(4) EPC to free from restraint non-commercial and non-industrial medical and veterinary activities. The board did not question the appellants' submission that the pharmaceutical industry was engaged in optimising the use of drugs and medicaments by investigating the optimum regimen for their administration to achieve the maximum possible therapeutic effect. However, the board pointed out that determination of the best individual treatment schedule, in particular the prescribing and modification of drug regimens used for administering a particular medicament, so as to comply with the specific needs of a patient, appeared to be part of the typical activities and duties of the doctor in attendance in exercising his professional skills of curing, preventing or alleviating the symptoms of suffering and illness. These were typical non-commercial and non-industrial medical activities which Art. 52(4) EPC intended to free from restraint. The board found that before the priority date of the contested patent, the medical practitioner was aware of the possibility of treating gastrointestinal disorders using the particular combination of drugs defined in claim 10. He was similarly in a position to prescribe an effective regimen for treating each patient according to his or her individual needs. It therefore appeared questionable to the board whether the feature at issue could indeed be considered to represent a further medical indication from which novelty could be derived on the basis of the principles set out in decision **G 5/83**. In any case, inventive step was lacking.

(d) Difference in the mode of administration

In **T 51/93** a European patent application relating to the use of human HCG for the manufacture of a medicament for subcutaneous administration was refused by the examining division because prior art document D(1) implicitly disclosed the subcutaneous administration, and because the subcutaneous administration of HCG was an obvious alternative to intramuscular administration. D(4) (cited by the board) disclosed vials for injection containing HCG and diluent, obtained by mixing HCG with a carrier and/or diluent. The only difference between the invention as claimed and the disclosure of D(4) was that the claim was directed to an intended method of subcutaneous administration. The claim was drafted in the form approved in decision **G 5/83** for claims where the novelty was solely that of the intended use, so the only question was whether a difference in the mode of administration of a medicament could be treated as a new therapeutic use. The board, relying on **T 290/86**, observed that the mode of administration might be a critical factor in a medical

treatment and no reason could be seen for any **a priori** bar to relying on this difference when distinguishing over the prior art. Rather, patentability should be treated as depending only on whether this modification was in fact novel and inventive. Thus, it was possible to acknowledge novelty over D(4) (see **T 143/94**, OJ 1996, 430).

(e) Novelty based on the different technical effect

In decision **T 290/86** (OJ 1992, 414) the board had to give a ruling on the novelty of a claim drawn up in the form of a second medical use. The claim's subject-matter was the use of a lanthanum salt for the preparation of a composition intended to remove dental plaque (according to the patent proprietor, plaque removal had the effect of preventing caries). The closest prior art disclosed compositions comprising salts containing various elements, including lanthanum, to depress the solubility of tooth enamel in organic acids, and thus to inhibit tooth decay. The board considered the claimed invention new. The grounds for its decision were as follows: "When a prior document and a claimed invention are both concerned with a similar treatment of the human body for the same therapeutic purpose, the claimed invention represents a further medical indication as compared to the prior document within the meaning of decision **G 5/83** if it is based upon a different technical effect which is both new and inventive over the disclosure of the prior document". In this case the technical effect considered new was the removal of dental plaque, whereas the prior art only disclosed the depression of enamel solubility in organic acids.

(f) Statement of purpose

In **T 227/91** (OJ 1994, 491) the board held that the purpose of a surgical use alone could not render novel the subject-matter of a claim relating to the use of the components of a known instrument for its manufacture, ie assembly. The claim under consideration related to the use for intercepting a laser beam of substrate means and coating means in the manufacture of a laser surgical instrument. The indication of the purpose, ie intercepting the laser beam, was a characteristic of the surgical use of the instrument and did not affect the structure or composition of the entity itself. This kind of functional reference could not normally impart novelty to an otherwise known article unless the function implied a necessary modification of the article itself.

In decisions **T 303/90** and **T 401/90** the main claims related to a contraceptive composition comprising known pharmaceutical compounds. The board was of the opinion that the composition as claimed could not be considered novel and the added word "contraceptive" did not change the product claim into a use claim. Only in the case of first medical use could the addition of a purpose characteristic render a product claim new, if the product as such was known in other technical fields.

(g) Discovery of a previously unknown property of a compound

In **T 254/93** (OJ 1998, 285) an application relating to the use of a retinoid compound in association with the use of corticosteroids in the prevention of skin atrophy was refused by the examining division.

The board noted that it was a basic consideration in **G 2/88** that the recognition or discovery of a previously unknown property of a compound, such property providing a new technical effect, could involve a valuable and inventive contribution to the art. This was apparently the reason why the Enlarged Board of Appeal accepted that the use related to such a property could be regarded as a technical feature appropriate for establishing novelty. The board stated that it had no difficulty in accepting that the prevention of skin atrophy had to be regarded as a pharmaceutical feature and, following the conclusions of the Enlarged Board of Appeal, that the effect underlying this feature was not made available to the public in written form by any of the cited literature. Nevertheless, the question arose whether, in the case at issue, this effect represented a **technical effect** within the meaning of decisions **G 2/88** and **G 6/88**, which was necessary to establish novelty, under Art. 54(1) EPC, of the claimed subject-matter over the prior art. Although it concerned a specific aspect of the known use, the use specified in claim 1 (prevention of skin atrophy) was not finally different from the known use (treatment of dermatoses). The board observed that when a second medical indication was claimed in relation with the use of a constituent in the preparation of a known composition and the final effect was apparent in using the known composition for the known purpose, a technical problem could be seen neither in the obtention of the final effect nor in the preparation of the composition. The only remaining question could be the explanation of the phenomenon underlying the treatment according to the known process. However, the mere explanation of an effect obtained when using a compound in a known composition, even if the explanation related to a pharmaceutical effect which was not known to be due to that compound in the known composition, could not confer novelty on a known process if the skilled person was already aware of the occurrence of the desired effect when applying the known process.

#### 5.2.3 Inventive step of the new therapeutical application

In **T 913/94** the appellant had argued that gastritis and ulcer were distinct diseases characterised by a different pathology. In the appellants' view, no class of medicaments existed, with the exception of the anti-acids, suitable for treating both diseases. In fact, the leading drugs for peptic ulcer were not used by the medical profession for treating gastritis.

In the context of assessing the **inventive merit** of the claimed use of GGA for the treatment of gastritis the board came to the conclusion that ulcer does not develop independently of gastritis and according to an exclusive mechanism, which would justify the occurrence of ulcer without any previous occurrence of gastritis, but, on the contrary, that the two diseases develop through the same mechanism, or at least through some common, early stages, on a scale of progressive, increasing severity of symptoms depending on the severity of the aggressive agent. The board also found that on the priority date of the application, the skilled person was aware that the leading and most widely employed anti-ulcer medicaments, ie anti-acids and H<sub>2</sub>-histamine receptor antagonists, were also effective against gastritis. While admitting that GGA represented a different class of anti-ulcer medicaments, the board considered this point as immaterial. In the board's judgment, what was decisive was the elucidation of the mechanism of action of GGA. The board held that GGA was known for the treatment of experimentally induced ulcer; its use for the preparation of a medicament for the treatment of gastritis did not involve any inventive merit (cf. chapter D.6.18).

### **5.3 Second (further) non-medical use**

#### 5.3.1 Novelty criteria for non-medical use claims

##### (a) General issues decided in the decision of the Enlarged Board of Appeal

In general, the EPC allows both method claims and use claims, but whether any activity is claimed as a method of carrying out the activity (setting out a sequence of steps) or as the use of a thing for a stated purpose (the sequence of steps being implied) is a matter of preference. For the EPO there is no difference of substance (**G 5/83**, OJ 1985, 64).

Two referrals to the Enlarged Board raised the general issue of novelty of a second non-medical use which was not connected with the specific problems of use claims in the medical field.

In the non-medical field use claims are admissible and not subject to special conditions. In **T 231/85** (OJ 1989, 74) the board had to judge the novelty of a second non-medical use in a special constellation. It held that the fact that a substance was known could not preclude the novelty of a hitherto unknown use of that substance, even if the new use did not require any technical realisation other than that for a previously known use of the same substance. In the case in question the known use was use as a growth regulator and the new one, now claimed by the applicant, use as a fungicide. The technical realisation was in both cases the spraying of useful plants.

Later, the same board, with a different composition, referred to the Enlarged Board the question whether a claim for the use of a compound for a particular non-medical purpose was novel under Art. 54 EPC having regard to a prior publication which disclosed the use of that compound for a different non-medical purpose, so that the only novel feature in the claims was the purpose for which the compound was used. The specific problem in these cases was that the previously disclosed use of the substance, although specifically stated to be for another purpose, would **inherently** comprise the use as claimed in the new application (**T 59/87**, OJ 1988, 347) and **T 208/88** of 20.7.1988).

In decisions **G 2/88** (OJ 1990, 93) and **G 6/88** (OJ 1990, 114), the Enlarged Board stated that the patentability of a second non-medical use of a product was already recognised in principle in **G 5/83** which concerned the second medical use of a substance. However, in that earlier decision the exclusion from patentability of therapeutic and diagnostic methods had caused the Enlarged Board to allow only a special type of claim. These specific difficulties did not arise in the non-medical field; there the question was of a general nature, concerned primarily with the question of interpretation of Art. 54(1) EPC and Art. 54(2) EPC. In **G 2/88** and **G 6/88**, therefore, it was pointed out that a claimed invention lacked novelty unless it included at least one **essential** technical feature which distinguished it from the state of the art. A basic initial consideration, when deciding upon the novelty of a claim, was therefore to analyse it in order to determine its technical features. The Enlarged Board took the view that the proper interpretation of a claim whose wording clearly defined a new use of a known compound would normally be such that the attaining of a new technical effect on which the new use was based was a technical feature of the claimed invention. Thus, where the

particular technical effect underlying such use was described in the patent, the proper interpretation of that claim would require a functional feature to be implicitly contained in the claim as a technical feature - eg the compound actually achieved the particular effect.

Referring to the facts of **T 231/85** (see above) as an example, the Enlarged Board explained that the claim directed to the use of a substance (known as a growth regulator) as a fungicide implicitly included a **functional** technical feature, namely that the said substance when used in accordance with the described means of realisation in fact achieved the effect (ie performed the function) of controlling fungus. The claim should not be interpreted literally as only including by way of technical features "the substance" and "the means of realisation of the claimed purpose", but should in appropriate cases be interpreted as also including as a technical feature the function of achieving that purpose, because that was the **technical result**. When determining novelty the decisive question of what had been made available to the public was one of fact in each case. A line had to be drawn between what was in fact made available and what remained hidden or had not otherwise been made available. In that connection the distinction between lack of novelty and lack of inventive step also had to be emphasised: information equivalent to a claimed invention may be "made available" (lack of novelty), or it may not have been made available but is obvious (novel, but lack of inventive step), or was not made available and is not obvious (novel and inventive). Thus, in particular, what is hidden may still be obvious. Under Art. 54(2) EPC the question was not what might have been "inherent" in what was previously made available to the public under the EPC. Under the EPC, the hidden or secret use, because it had not been made available to the public, was not a ground of objection to the validity of a European patent. In that respect, the provisions of the EPC might differ from the earlier national laws of some contracting states, and even from the current national laws of some non-contracting states. Thus, the question of "inherency" did not arise as such under Art. 54 EPC. Any vested right derived from prior use of an invention was a matter of national law.

The Enlarged Board thus concluded that with respect to a claim to a new use of a known compound, such new use might reflect a newly discovered technical effect described in the patent. The attaining of such a technical effect should then be considered as a **functional technical feature** of the claim (eg the achievement in a particular context of that technical effect). Had that technical feature not previously been made available to the public by any of the means set out in Art. 54(2) EPC, then the claimed invention was novel, even though such technical effect might have inherently taken place in the course of carrying out what had previously been made available to the public. The final decisions in cases **T 59/87** (OJ 1991, 561) and **T 208/88** (OJ 1992, 22) both held that the claimed use inventions were novel and inventive.

(b) Non-therapeutic treatment of animals

In decision **T 582/88** the board applied the principles set out in decision **G 2/88** in slightly different circumstances. The invention's subject-matter was a method of non-therapeutic treatment of animals for the purpose of improving their milk production and comprising oral administration of a propionate-increasing amount of glycopeptide antibiotics. In the board's view the technical effect produced by the invention - in this case an improvement in milk production - was new and had to be construed as a new technical feature sufficient to make

the invention novel. The claim's subject-matter was a method of non-therapeutic treatment of animals, not - as in decision **G 2/88** - use of a known product to achieve a new effect.

(c) Non-therapeutic use distinguishable from the known therapeutic use

In **T 469/94** a European patent application on the basis of a set of claims directed to the protection of the second medical indication of choline or a choline derivative was refused by the examining division because it considered that the known treatment with choline of muscle diseases and hardness was equivalent to or even a synonym for the treatment for reducing muscle fatigue which was claimed in the application in suit. In response to a communication from the board, the appellant filed a new set of claims having the form of the protection of the second non-therapeutic use of a product.

Examining the case, the board concluded that the ability of choline to reduce the perception of fatigue had not been made available to the public. The first use of choline, in the therapeutic field, was known from two prior art documents. The board held that an independent invention could be based on the newly discovered effect if such an effect led to a new technical application which was clearly distinguishable from the previous known application. The prior art documents did indeed describe the use of choline on groups of patients having manifest diseases: either epilepsy or muscle diseases and injuries. Likewise in the case of the prophylactic use of choline envisaged in a prior art document for muscle rheumatism or muscle troubles arising from thyroidal diseases, the prophylaxis did not appear to mean the prevention of the disease itself, but simply the prevention of the acute phase of a chronic disease. The board observed that fatigue arising from major exercise was not of a pathological nature, and that the performance itself of major exercise appeared to be quite incompatible with the situations envisaged in the prior art documents, specifically that of muscle injuries. The non-therapeutic use of choline according to the invention was therefore independent of, and distinguishable from, the known therapeutic use because it was **directed to a distinct group of persons**. The subject-matter of the claim at issue was therefore found to be novel.

(d) Discovery of a new use of a known apparatus

In **T 15/91** the board ruled that, according to board of appeal case law, the discovery that known apparatus could be used in a manner not hitherto described did not substantiate the novelty of that apparatus if the hitherto unknown use did not require any modification to the technical design of the known apparatus (see **T 523/89**). In **T 215/84** the board held that the discovery that the known equipment might be used in a new manner could not render the entity itself novel. In **T 958/90** the board mentioned that a known effect could not be novel for the sole reason that the patent gives the information that it was present to a hitherto unknown extent.

In **T 637/92** the board held that according to established case law the statement of purpose of a claimed device (or product) was to be interpreted as meaning that the device was suitable for the stated purpose and that a known device that served another purpose but otherwise possessed all the features listed in the patent claim was not prejudicial to the novelty of the subject-matter of the claim if the known device was unsuitable for the purpose

## *Novelty*

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referred to in the claim (see Guidelines C-III, 4.8, and **T 287/86**, reasons, 2.2). In the case in question, however, these conditions had not been met since the device known from the citation did not possess one of the features of claim 1.

### (e) New use functional feature in a known process

In **T 848/93** the application claimed a process which differed from the prior art only in its use. The examining division had understood the claim to mean that the process claimed was suitable for the use described, and had considered that it lacked novelty because the process known in the prior art was also suitable for that use, even if this was not expressly stated.

The board did not agree: if a claim concerned e.g. an apparatus which differed from a known apparatus only as regards the use indicated, then the use was not an apparatus feature. This meant that the two pieces of apparatus were identical in terms of structure. If the known apparatus was suitable for the claimed use, the application lacked novelty. If the claim was directed to an object, a substance or a composition, the same applied. If however the claim was for a process, the situation was not comparable. In such a case, the use feature was a functional process feature comparable in category with the other features (steps) of the process. The teaching of **T 69/85** or Guidelines C-III, 4.8 was therefore not transferable to the present case.

### (f) Claim directed to the use of a known process for a particular purpose

In **T 210/93** the originally claimed process for the production of a rubber product was held not to be novel by the examining division because the claimed temperature range was already disclosed in D1. With reference to **G 2/88** and **G 6/88**, the applicants thereupon claimed the use of this known process for the purpose of preparing the rubber product having a certain maximum ratio of constituent X. They argued that in the absence of a disclosure of this mole ratio in D1, this constituted a "specific technical purpose of achieving the previously unknown chemical structural arrangement". The board observed that decisions **G 2/88** and **G 6/88** related to claims to the use of a known **compound** for a particular purpose, in contrast to the appellants' claim, which was directed to the use of a known **process** for a particular purpose, the purpose being the preparation of a particular product naturally resulting from such process. In the board's view, the use of a process for the purpose of preparing its product(s) could be said to be nothing but that very same process, and the scope of protection appeared to be the same for a claim to the process as such and a claim to such use.

### (g) Discovery of properties in a known product

In **T 279/93** a claim directed to the use of a first compound in a process for preparing a second compound was revoked by the opposition division for lack of novelty. In particular, the claims were directed to the use of the alkanolamines for reducing the formation of isomelamine impurities. According to the appellant, this purpose, even if it might have been inherently attained by following the teaching of a prior art document, should have rendered the subject-matter of the claims novel, since, in application of the reasoning in decision **G 2/88**, inherency did not destroy the novelty of the new use, which had to be regarded as a functional technical feature of the claims.



In the board's judgment, the use of a compound in a process for preparing another compound in order to reduce the formation of impurities was not necessarily a functional technical feature in the sense of decision **G 2/88**, and did not therefore in all circumstances confer novelty on the subject-matter of a claim containing it. The facts of the case at issue differed significantly from those underlying decision **G 2/88**, since the claim did not appear to contain any new technical effect or technical purpose in the sense required by that decision. In the board's view, noticing that an old product had the property of containing fewer isomelamine impurities was a mere discovery. To convert this into a patentable invention, and to show the characteristics of a new technical effect, the use referred to in the claim would have to be some new use of the product which exploited the discovery that the isomelamine impurities were low for some new technical purpose. However, the patent in suit disclosed no such new use; it did not teach the skilled person to do something which would not have been done without knowing the content of the patent. The patent merely gave the person skilled in the art reasons for preferring one known product over other known ones for the uses for which it had already been suggested

(h) Discovery of a new technical effect

In **T 892/94** (OJ 2000, 1) the board noted that according to **G 2/88** (OJ 1990, 93), novelty within the meaning of Art. 54(1) EPC could be acknowledged for a claim directed to the use of a known substance for a hitherto unknown, ie new, non-medical purpose reflecting a newly discovered technical effect. However, a newly discovered technical effect did not confer novelty on a claim directed to the use of a known substance for a known non-medical purpose if the newly discovered technical effect already underlay the known use of the known substance.

The disclosure in citation (1) was, in the board's judgment, prejudicial to the novelty of the claim in question. It was immaterial for the purposes of prejudice to novelty that the actual technical effect exhibited by "aromatic esters" in deodorising compositions was not described in the cited document. The ex post facto discovery that the deodorising effect of "aromatic esters" when used as an active ingredient in deodorising products could result from their capability of inhibiting esterase-producing micro-organisms might possibly be regarded as a (potentially surprising) piece of knowledge about the known use or application of such esters but could not confer novelty on a claim, since the latter would require that the newly discovered effect indeed ended in a new technical application or use of the "aromatic esters" which was not necessarily correlated with the known application or use and could be clearly distinguished therefrom.

In **T 706/95** the board held that the discovery that the same known means lead to an additional effect when they are used for the same known purpose (i.e. known use) of reducing the concentration of nitrogen oxides in the same effluent could not confer novelty to this known use.

In **T 189/95** the board ruled that a new property of a substance, ie a new technical effect, did not necessarily signal or give rise to a new use for that substance. For example, the new property might merely explain the mechanism behind the use already described in the prior art, as in **T 892/94** (OJ 2000, 1). Here again the board ruled that discovering a new property

or activity did not in itself render novel a claim for the use of a known substance for a known non-medical use, if the discovery only showed what formed the basis of the known use of the known substance.

In **T 1073/96** the board noted that under **G 2/88** (OJ 1990, 93) and **G 6/88** (OJ 1990, 114) novelty can only be acknowledged if the requirements as follows are met: (i) the claimed use as such was new, and (ii) if it reflected a newly discovered technical effect described in the patent. Concerning the question of whether the particular intended use stated in the claim at issue ("to provide an improved structural gum surface for a confectionery coating") reflected a technical effect that had not previously been made available to the public, the board found that it could not reasonably be considered based on or to reflect a technical effect described for the first time in the contested patent and, as such, could be distinguished from the known effects already described in (2) and (3) in association with the known use of PalatinitR. The finding that the known use of PalatinitR claimed in the patent in suit possibly resulted in an improved structural gum surface for a confectionery coating could merely be regarded as the ex post facto attempt to explain the known effects resulting from the known use of PalatinitR already disclosed in paragraph 1.3 of the document (3). The above considerations were, in the board's judgment, in line with the conclusions in decision **T 254/93** (OJ 1998, 285, see especially Reasons, point 4.8). A definite distinguishing technical feature, which confers novelty on the subject-matter of claim 1 within the meaning of Art. 54(1) EPC was not recognisable in the patent in suit.

#### 5.3.2 Statement of purpose in non-medical use claims

In **T 36/83** (OJ 1986, 295) the board stated that having discovered for the first time the surprising properties of a chemical product already known in the state of the art and having shown those properties in various uses, the applicant had the right to have those uses protected. In the particular case the uses were presented in the description as two methods: a method of medical treatment and a method of non-medical treatment. Under Art. 52(4) EPC a method of medical treatment was not patentable but a product for use in that method certainly was. Claims 1 to 7 had been worded accordingly. The method of non-medical treatment was one falling within the general field of patentable inventions. There could be no objection to the patentability of either use or method claims in general (see **G 5/83**). The applicants had chosen the phrase "use as a cosmetic product of thenoyl peroxide". The board considered that this form of claim was acceptable in the case in suit. The board noted that when considering the exclusions from patentability under Art. 52(4) EPC the wording of the claim was important. In reaching this conclusion the board held the use of the word "cosmetic" in the context of that application to be sufficiently precise to exclude therapeutic uses, without the need for a specific disclaimer of such uses.

#### 5.3.3 Disclosure of an equivalent article without an indication of the particular use claimed

In **T 523/89** a particular prior art document disclosed a container having all the structural features defined in claim 1 of the contested patent. Hence, the only outstanding issue was the fact that D1 nowhere indicated that the container disclosed therein was intended to be used for ice-cream. The board noted that the question of anticipation of a claim to an article for a particular use was dealt with in the Guidelines C-III, 4.8, and C-IV, 7.6, from which it was

clear that, with the exception of medical uses of known substances, the indication of intended use was only to be seen as limiting to the extent that the article had to be suitable for that use. In other words, disclosure of an equivalent article without an indication of the particular use claimed - although the article was nevertheless suitable for it - would cause lack of novelty of a claim to the article for that particular use. The board saw no reason to disagree with this general principle of interpretation laid down in the Guidelines.

## **D. Inventive step**

### **1. Introduction**

An invention is considered to involve an **inventive step** if, having regard to the **state of the art**, it is not **obvious** to a **person skilled in the art** (Art. 56 EPC, first sentence). The "state of the art" for the purposes of considering inventive step is as defined in Art. 54(2) EPC; it does not include later published European applications referred to in Art. 54(3) EPC (for full details see Guidelines, C-IV.9).

Technical progress is not a requirement for patentability under the EPC. Therefore, technical progress shown in comparison with marketed products as an alleged support for inventive step cannot be a substitute for the demonstration of inventive step with regard to the relevant closest state of the art (see **T 181/82** (OJ 1984, 401), **T 164/83** (OJ 1987, 149) **T 317/88** and **T 385/94**).

The extent of the monopoly conferred by a patent should correspond to and be justified by the technical contribution to the art. This general principle of law, applied in **T 409/91** (OJ 1994, 653) and **T 435/91** (OJ 1995, 188) (albeit to determine the scope of protection justified under Art. 83 EPC and Art. 84 EPC), also applies to decisions under Art. 56 EPC, because everything covered by a legally valid claim has to be inventive. Otherwise the claim has to be amended, by deleting anything obvious to ensure that the monopoly is justified (**T 939/92** (OJ 1996, 309), **T 930/94**, **T 795/93** and **T 714/97**).

### **2. Problem and solution approach**

To assess inventive step, the boards normally apply the "problem and solution approach". This consists essentially in (a) identifying the "closest prior art", (b) assessing the technical results (or effects) achieved by the claimed invention when compared with the "closest state of the art" established, (c) defining the technical problem to be solved as the object of the invention to achieve these results, and (d) examining whether or not a skilled person, having regard to the state of the art in the sense of Art. 54(2) EPC, would have suggested the claimed technical features for obtaining the results achieved by the claimed invention (see also Guidelines, C-IV, 9.5). The boards frequently cite R. 27(1)(c) EPC as the basis for the problem and solution approach. R. 27(1)(c) EPC requires that the invention be disclosed in such terms that the technical problem (even if not expressly stated as such) and its solution can be understood. Problem and solution are thus component parts of any technical invention. The problem and solution approach was primarily developed to ensure objective assessment of inventive step and avoid ex post facto analysis of the prior art.

According to board of appeal case law (see **T 1/80** (OJ 1981, 206), **T 20/81** (OJ 1982, 217), **T 24/81** (OJ 1983, 133) and **T 248/85** (OJ 1986, 261)), the assessment of inventive step has to be based on the objective, not subjective, achievement of the inventor. By starting out from the objectively ruling state of the art, the technical problem is to be determined on the basis of objective criteria and consideration given to whether or not the disclosed solution was obvious to the skilled person. The correct use of the problem and solution approach rules out an **ex post facto analysis** which inadmissibly makes use of knowledge of the invention (**T 564/89**, **T 645/92**, **T 795/93** and **T 730/96**).

In **T 465/92** (OJ 1996, 32) the board did not take the problem and solution approach when assessing inventive step, and said this was merely one possible approach, with advantages and drawbacks. This however is a one-off decision.

### **3. Closest prior art**

#### **3.1 Determination of closest prior art - general**

In accordance with the problem and solution approach, the boards have developed certain criteria for identifying the closest prior art to be treated as a starting point. After the relevant prior art has been identified, careful consideration must be given to the question whether, in the case concerned, the skilled person, taking into account all the available information on the technical context of the claimed invention, would have had good reason to take this prior art as the starting point for further development. The boards have repeatedly pointed out that the closest prior art for assessing inventive step is normally a prior art document disclosing subject-matter conceived for the same purpose or aiming at the same objective as the claimed invention and having the most relevant technical features in common, i.e. requiring the minimum of structural modifications (**T 606/89**, **T 686/91**, **T 834/91**, **T 482/92**, **T 298/93**, **T 380/93**, **T 59/96**, **T 730/96**). A further criterion for the selection of the most promising starting point is the similarity of technical problem (**T 495/91**, **T 570/91**, **T 439/92**, **T 989/93**, **T 1203/97**, **T 263/99**). The prior art has to be assessed from the point of view of the skilled person on the priority date applicable (**T 24/81** (OJ 1983, 133), **T 772/94**, **T 971/95**).

#### **3.2 Same purpose or effect**

In selecting the closest prior art, the first consideration is that it must be directed to the same purpose or effect as the invention. Otherwise, it cannot lead the skilled person in an obvious way to the claimed invention. According to **T 606/89** the closest prior art for the purpose of objectively assessing inventive step was generally that which corresponded to a **similar use** requiring the minimum of structural and functional modifications (see **T 574/88**, **T 834/91**, **T 897/92**, **T 380/93**, **T 1040/93** and **T 795/93**). In **T 273/92** the board of appeal confirmed the established case law of the boards according to which a document could not qualify as the closest prior art to an invention merely because of similarity in the composition of the products; its suitability for the desired use of the invention also had to be described (see also **T 327/92**). According to **T 506/95**, the closest prior art was therefore that most suitable for the purpose claimed by the invention, not that superficially showing structural similarities with the solution as claimed. Ideally that purpose or objective should be something already mentioned in the prior art document as a goal worth achieving (**T 298/93**). The aim was that the

assessment process should start from a situation as close as possible in reality to that encountered by the inventor. If it was not clear from this criterion what the closest prior art was, the problem and solution approach should be repeated taking possible alternative starting points (**T 710/97**).

In **T 176/89** the board concluded that the closest prior art was two documents in combination with each other. It found that **exceptionally** the two documents had to be read in conjunction; they had the same patentee, largely the same inventors, and clearly related to the same set of tests. As a rule, however, when assessing inventive step, two documents should not be combined if in the circumstances their teaching is clearly contradictory (see also **T 487/95**).

### **3.3 Similarity of technical problem**

A document serving as the starting point for evaluating the inventive merits of an invention should relate to the same or a similar technical problem or, at least, to the same or a closely related technical field as the patent in suit (**T 989/93, T 1203/97, T 263/99**).

In **T 439/92** (dividing wall for a corner or circular shower) the board pointed out that although there was freedom in the choice of the starting point on which an objection of lack of inventive step was based, there were certain criteria that should be adhered to if the prior art chosen was to be the closest. One such criterion was the problem already stated in the patent. Clearly in many cases it was reasonable for there to be a link between this problem and the prior art chosen as being closest (**T 495/91, T 570/91**).

In **T 325/93** the application related to an epoxy resin dispersion which provided a cured resin with improved impact resistance. The board stated that the problem addressed by the application was neither derivable nor indeed recognisable from the disclosure of D2 relating to compositions having a low coefficient of friction and which, according to the department of first instance and the appellant, represented the closest prior art. As early as **T 686/91**, another board had observed that, when ascertaining the closest prior art, ex post facto considerations should be avoided. Thus a document not mentioning a technical problem which is at least related to that derivable from the patent specification does not normally qualify as the closest prior art for inventive step purposes, however many technical features it may have in common with the subject-matter of the patent concerned (see also **T 410/93, T 708/96** and **T 59/96**). In **T 644/97** the board concluded that a technical problem arising from a "closest prior art" disclosure which was irrelevant to the claimed subject-matter (in the sense that it did not mention a problem that was at least related to that derivable from the patent specification) had a form such that its solution could practically never be obvious, because any attempt by the skilled person to establish a chain of considerations leading in an obvious way to the claimed subject-matter was bound to fail. It followed that the respective claimed subject-matter was non-obvious in the light of such art (see also **T 792/97**).

### **3.4 Most promising springboard**

**T 254/86** (OJ 1989, 115) described the objectively closest prior art as the "most promising springboard" towards the invention which was available to the skilled person (see also **T 282/90, T 70/95, T 644/97**).

### *Inventive step*

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Where several cited documents all belonged to the same technical field as the claimed invention, the closest prior art was the one which on the filing date would most easily have enabled the skilled person to make the invention (**T 656/90**).

According to **T 870/96** when trying to evaluate a skilled person's capabilities and behaviour in the problem and solution approach, as closest prior art a "bridgehead" position should be selected, which said skilled person would have **realistically** taken under the "circumstances" of the claimed invention insofar as these circumstances can be retrieved in one item of the prior art. Consequently, among these "circumstances", aspects such as the designation of the subject matter of the invention, the formulation of the original problem and the intended use and the effects to be obtained should generally be given more weight than the maximum number of identical technical features (see also **T 66/97**).

### **3.5 Selection of most promising starting point**

Some decisions (especially from mechanics board 3.2.4) explained how to ascertain the closest prior art which constituted the easiest route for the skilled man to arrive at the claimed solution or the most promising starting point for an obvious development leading to the claimed invention.

In **T 570/91** the board emphasised that although a person skilled in the art was completely free in choosing a starting point, he would of course be bound afterwards by that choice. If, for instance, the skilled person preferred and decided to start from a specific compressor piston, he could further develop that piston but at the end of that development the normal result would still be a compressor piston and not an internal combustion engine piston. In **T 439/92** it was explained that a conscious choice of starting point, made in the knowledge of the respective benefits and drawbacks of the various types concerned, not only determined the subject-matter serving as a starting point but also defined the framework for further development, ie a further development within this particular type. A change of type during the further development of the consciously chosen type, to another type, which was previously known but had not been chosen, could then only be seen as the result of an ex-post-facto analysis (see also **T 1040/93**, **T 35/95**, **T 739/95**). It is unlikely, and normally not obvious, for the invention type originally chosen to be changed during development (**T 817/94**). A generically different document cannot normally be considered as a realistic starting point for the assessment of inventive step, **T 870/96** (see also **T 1105/92**, **T 464/98**).

In **T 487/95** it was clear from the description of the contested patent and of the original application that the invention was the result of further development of a military protective helmet. In its assessment of inventive step the board therefore chose a military protective helmet as the closest prior art, pointing out however that this did not mean that documents describing protective helmets of a different kind (such as workers' safety helmets) could not be said to form part of the knowledge of a person skilled in the art. In this case, adopting the problem and solution approach, the information contained in the patent which related to a known military protective helmet (D9) represented the **primary** source of information, ie the most promising point of departure, from which the skilled person would attempt to arrive at the claimed subject-matter. The other documents could however represent important **secondary** sources of information (in this case workers' safety helmets) from which the

skilled practitioner could obtain indications and suggestions with regard to the problem being addressed.

However, when applying these principles, care must be taken to avoid an ex-post-facto-approach. A skilled person endeavouring to arrive at a simple construction is unlikely to begin by using prior art relating to an exceptional embodiment with a complex mechanism, and then to omit this mechanism from the invention (**T 871/94**).

### **3.6 Improvement of a production process for a known product**

Where the invention concerned improving a process to manufacture a known chemical compound, then the closest prior art was confined to documents describing that compound and its manufacture. Comparison with these alone would show whether an improvement had been achieved which could thus be taken into account in formulating the problem the invention sought to solve (**T 641/89**, **T 961/96**, **T 713/97**). This accurately and objectively reflects the actual situation in which the skilled person found himself on the priority date of the contested patent (**T 793/97**).

The above considerations regarding the closest prior art also apply to production processes for subject-matter other than a chemical compound. In **T 325/97** the patent related to a method for manufacturing a device for controlled delivery of nicotine from an adhesive reservoir. Also in **T 373/94** the board applied the principles and conclusions laid down in **T 641/89** where the invention related to the improvement of a manufacturing process for prefilled plastic syringes.

### **3.7 Old prior art documents as closest prior art**

Some decisions concerned determining the closest art by taking old prior publications as a realistic starting point for identifying the technical problem to be solved.

In **T 334/92** the board held that a document that had been disregarded for more than 20 years by those skilled in the art, had never been used during that period as a basis for further development, was moreover completely silent about the extent of the indicated activity and, finally, did not even mention, let alone discuss, the relevant state of the art, so that the skilled person was not in a position to recognise any technical advantage of these compounds in respect of that state of the art, did not represent the closest state of the art and could not therefore be used to define a realistic technical problem. However, in **T 964/92**, filed as a divisional application to **T 334/92**, the board held that the same document could be considered as a realistic starting point for the determination of the relevant technical problem. The board stated that in **T 334/92** the technical problem that was solved should be seen as the provision of further chemical compounds which were more active in the treatment of angina pectoris than the known compounds and less toxic. In contrast, in **T 964/92** the skilled person set out to seek no more than alternatives to known compounds described as medicaments for treating angina pectoris. Therefore, the board held that the skilled person would consider any compound or group of compounds belonging to the state of the art, and known to have the desired activity, as a suitable starting point. In such a case the length of time for which this document had been available to the public was irrelevant. Thus, there was

no reason why said document, which clearly described compounds having a high degree of structural similarity to those claimed, should not be regarded as the closest state of the art.

In **T 1000/92** the board referred to its case law, according to which a document should be considered as the closest state of the art only if a skilled person would have had good reason to select its content as a basis for further development. In the board's judgment the selection of document (1) as the closest state of the art did not meet this criterion because the disadvantages of the process described in document (1), which had been published about 30 years before the priority date of the application, were so evident and well known that a skilled person would not have tried to improve and develop such an old process (see also **T 616/93**).

In **T 153/97** it was stated that there was no plausible reason why the skilled person should have disregarded a document only because the publication date lay 30 years in the past. The situation in **T 1000/92** was quite different, since well-known disadvantages of the prior art would have deterred the skilled person from taking this starting point.

**T 69/94** also pointed out that Art. 54(2) EPC defined the state of the art as comprising everything made available to the public, clearly without any time restriction. Thus a document which related to an antiquated technology no longer used in industry comprising a teaching disapproved by those skilled in the art at the filing date of the patent in suit could not simply be disregarded as closest prior art only because of its publication date about 20 years before the filing date of the application documents.

#### **4. Technical problem**

##### **4.1 Determination of the technical problem**

R. 27(1)(c) EPC stipulates that an application's description must "disclose the invention, as claimed, in such terms that the technical problem (even if not expressly stated as such) and its solution can be understood, and state any advantageous effect of the invention with reference to the background art". As long ago as **T 26/81** (OJ 1982, 211), R. 27(1)(c) EPC was recognised as clearly binding. The boards' case law, and correct application of the problem and solution approach (see **T 1/80** (OJ 1981, 206) and **T 24/81** (OJ 1983, 133)), show that objective criteria must be used to determine the technical problem, ie the problem which can be seen to have been actually solved in the light of the closest prior art which may be different from the prior art which was at the disposal of the inventor (**T 576/95**). These objective criteria may be concretely defined by assessing the technical progress made in the subject-matter of the application against the closest prior art (**T 20/81**, OJ 1982, 217, **T 910/90**). A comparison of the problem indicated in the application with that indicated in a prior document must avoid an unduly abstract approach far removed from the practical thinking of the person skilled in the art (**T 5/81**, OJ 1982, 249).

In identifying the problem it is not permissible to draw on knowledge acquired only after the date of filing or priority. According to **T 268/89** (OJ 1994, 50) the non-effectiveness of a prior art apparatus or method recognised or alleged only after the priority or filing date could not be drawn on in **formulating the problem**, particularly where that problem was adduced in



support of inventive step in a "problem invention" (see **T 2/83**, OJ 1984, 265). Inventive step had to be assessed on the basis of the skilled person's knowledge before the priority or filing date (see also **T 365/89**).

In **T 931/95** (OJ 2001, 441), the board denied the presence of an inventive step since the objective problem was not of a technical character. The board stated that the improvement envisaged by the invention according to the application was an essentially economic one i.e. lay in the field of economics, which, therefore could not contribute to inventive step (see also **T 1053/98**).

#### **4.2 Ex-post-facto analysis - no pointers to the solution**

According to decisions **T 229/85** (OJ 1987, 237) and **T 99/85** (OJ 1987, 413) the technical problem addressed by an invention had to be formulated in such a way that it did **not contain pointers to the solution** or partially anticipate the solution, since including part of a solution offered by an invention in the statement of the problem necessarily had to result in an ex post facto view being taken of inventive step when the state of the art was assessed in terms of that problem (**T 322/86**, **T 184/89**, **T 289/91** (OJ 1994, 649), **T 957/92**, **T 422/93** (OJ 1997, 24), **T 986/96**, and **T 313/97**). Decision **T 910/90** added that this did not mean that determination of the inventive step could be based on a very general problem unrelated to the invention. Instead, when assessing the objective problem, the closest prior art and any technical advance achieved by the characterising features of the invention had to be taken into account. In so doing, it was not important whether this problem had already been mentioned in the closest prior art; what mattered was what the skilled person objectively recognised as the problem when comparing the closest prior art with the invention.

#### **4.3 Problem formulated in the contested patent**

Furthermore it had to be considered that an objective definition of the problem to be solved by the invention should normally **start from** the problem described in the contested patent. Only if examination showed that the problem disclosed had not been solved or if inappropriate prior art were used to define the problem, was it necessary to investigate which other problem objectively existed. The definition of **artificial and technically unrealistic problems** was to be avoided (see **T 246/91**, **T 495/91**, **T 731/91**, **T 741/91**, **T 334/92**, **T 881/92**, **T 380/93**, **T 813/93** and **T 68/95**, **T 644/97**, **T 747/97**). This legal principle is also applicable to ex parte proceedings (**T 881/92**, **T 882/92** and **T 884/92**). In **T 419/93** it was added that, when determining the problem, the statements relating thereto in the application should be examined for correctness with regard to the prior art and for their de facto relevance to the claimed features of the solution. Only if the problem described in the application did not meet prior art requirements and/or was not solved in accordance with the features of the invention, should it be adapted to the prior art and/or actual technical success. In this connection, **T 800/91** emphasised that in any event the formulated problem should be one which the skilled person knowing only the prior art would wish to solve. It should not be tendentiously formulated in a way that unfairly directed development towards the claimed solution.

#### **4.4 Alleged advantages**

According to the boards' case law, alleged advantages to which the patent proprietor/applicant merely refers, without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in determining the problem underlying the invention and therefore in assessing inventive step (see **T 20/81** (OJ 1982, 217), **T 181/82** (OJ 1984, 401), **T 124/84**, **T 152/93**, **T 912/94**, **T 284/96**, **T 325/97**, **T 1051/97**).

In **T 355/97** the patent related to an improved hydrogenation process for preparing 4-aminophenol. The technical problem as indicated in the patent in suit consisted in improving the performance index of the preparation process without loss of selectivity. The patent proprietor, however, did not demonstrate properly that the purported advantages, ie improvement of the performance index without loss of selectivity, of the claimed invention have successfully been achieved. The Board referred to the above mentioned jurisprudence and held that since the alleged advantages lacked the required adequate support, the technical problem needed reformulation. Therefore, the objective problem could only be seen in providing merely a further method for preparing 4-aminophenol.

#### **4.5 Reformulation of the problem**

It is established case law that an applicant or patentee may restate the specific problem set out in the description if in particular the objective assessment of inventive step draws on newly introduced prior art which is closer to the invention than that cited in the original application or granted patent. In **T 184/82** (OJ 1984, 261) the board said that "regarding the effect of the invention" reformulation of the problem could be allowed "provided the skilled man could recognise the same as implied or related to the problem initially suggested". The problem may thus be restated to meet a less ambitious objective (see also **T 106/91**). It was also ruled in **T 13/84** (OJ 1986, 253) that a reformulation of the problem was not precluded by Art. 123(2) EPC if the problem could be deduced by the skilled person from the application as filed when considered in the light of the closest prior art (**T 469/90**, **T 530/90**, **T 547/90**, **T 375/93**, **T 687/94**). In **T 818/93** the board added that it sufficed if the reformulated problem could be deduced later by comparing the application with the closest art. Since features from the drawings might be incorporated into the claims, and also into the description in support of the claims (**T 169/83**, OJ 1985, 193), those features' effects and advantages might also be used as a basis for reformulating the problem, provided this problem could be clearly deduced from the above comparison. **T 162/86** (OJ 1988, 452) added that it should still be possible in appeal proceedings to define the original problem more precisely, within the limits of the original description. According to **T 339/96** a reformulation of the technical problem solved by the invention is permissible to take account of prior art which becomes known to the applicant after filing the patent application, when the reformulated problem represents a less ambitious goal which was also foreseen - at least implicitly - in the original disclosure.

According to **T 39/93** (OJ 1997, 134), the technical problem as originally presented in the application or patent in suit, which was to be regarded as the "subjective" technical problem, might require reformulation on the basis of objectively more relevant elements originally not taken into account by the applicant or patentee. This reformulation defined the "objective" technical problem. The latter represented the problem ultimately remaining, ie the technical

effect achieved by the subject-matter (features) as defined in the claim.

In **T 564/89** the appellant submitted that any amendment of the technical problem had to be in line with Art. 123(2) EPC. The board stated that this article was not concerned with the issue of whether or not an objectively reformulated technical problem could be used in the course of the so-called problem-solution approach which was developed by the boards as a tool for achieving objectivity and to avoid ex post facto analysis in the assessment of inventive step. Art. 123(2) EPC would therefore only come into play if an amended technical problem were incorporated into the description itself.

In **T 732/89** the respondent submitted that the "hot/wet" performance of the claimed composites, although admittedly better than that of the control composition, corresponded to a completely new effect which could not be incorporated into the technical problem without contravening Art. 123(2) EPC. The board did not follow this line of argumentation and referred to **T 184/82** (OJ 1984, 261) where a redefinition of the problem regarding the effect of an invention was allowed provided that the skilled person could recognise the same as implied or related to the problem initially suggested. In the case in point the board took the demonstrated effect into account in the formulation of the technical problem and stated that in determining which effect was crucial and which was merely accidental (the so-called "bonus effect"), a realistic approach had to be taken, considering the relative technical and practical importance of those effects in the circumstances of a given case (see also **T 227/89**).

In **T 440/91** the board pointed out that R. 27 EPC did not rule out the possibility of additional advantages - not themselves mentioned in the application as filed but relating to a mentioned field of use - being furnished subsequently in support of patentability for the purposes of Art. 52(1) EPC, as such advantages did not alter the character of the invention. Thus, the character of the invention was not altered if the technical problem specified in the application as filed was supplemented by such advantages, since the skilled person might consider them on account of their close technical relationship to the original problem (see also **T 1062/93**). The board made a distinction with regard to the situation in **T 386/89** and **T 344/89**, where there was no such technical relationship. In **T 386/89** the board had found that the solution to the technical problem derivable from the application as filed was in no way associated with a technical effect subsequently invoked. This additional effect had thus not been taken into consideration. The alleged effect of a described feature could not be taken into account when determining the problem underlying the invention for the purpose of assessing inventive step, if it could not be deduced by the skilled person from the application as filed considered in relation to the closest prior art. Similarly in **T 344/89**, the board had refused to take account of a subsequently invoked technical effect on the grounds that to do so would have altered the character of the invention.

Another aspect was described in **T 155/85** (OJ 1988, 87). According to this decision, it was not acceptable to rely on an effect which had previously been described as undesirable and of no value by the applicant, to present it suddenly as possibly representing an advantage from another point of view, and thereby to imply that the technical problem and the considerations for the inventive step should take this reversal into account. A redefinition of the technical problem should not contradict earlier statements in the application about the

general purpose and character of the invention (see also **T 115/89**).

#### **4.6 Alternative solution to a known problem**

In **T 92/92** the board noted that Art. 56 EPC did not require that the problem to be solved should be novel in itself. The fact that the underlying problem of the patent had already been solved by the prior art does not necessarily require redefinition of the problem for the assessment of inventive step, if the subject-matter of the patent represented an **alternative** solution to this problem. In this context the board referred in particular to decision **T 495/91**. In this case too, the problem stated in the patent specification had already been solved. The problem to be objectively solved was the provision of an **alternative** process and of apparatus which made it possible to produce a floor covering with specific properties by simple and low-cost means (see also **T 780/94**, **T 1074/93**).

According to **T 588/93**, for an inventive step to be present, it was not necessary to show improvement - substantial or gradual - over the prior art. Thus an earlier solution to a given technical problem did not preclude later attempts to solve the same problem in another, non-obvious way.

### **5. Skilled person**

#### **5.1 Definition of the skilled person - team of experts**

##### 5.1.1 Definition

According to the boards' case law, **the person skilled in the art** should be presumed to be an **ordinary practitioner** aware of what was common general knowledge in the art at the relevant date (average skilled person). He should also be presumed to have had access to everything in the **state of the art**, in particular the documents cited in the search report, and to have had at his disposal the normal means and capacity for routine work and experimentation (Guidelines, C-IV, 9.6). **T 39/93** (OJ 1997, 134) explained that whilst generally accepted definitions of the notional "person skilled in the art" did not always use identical language to define the qualities of such a person, they had one thing in common, namely that none of them suggested he was possessed of any inventive capability. It was the presence of such capability in the inventor which set him apart from the notional skilled person.

Regarding the role of the skilled person, the board gave the following ruling in **T 32/81** (OJ 1982, 225): "If the problem prompts the person skilled in the art to seek its solution in another technical field, the specialist in that field is the person qualified to solve the problem. The assessment of whether the solution involves an inventive step must therefore be based on that specialist's knowledge and ability" (**T 141/87**, **T 604/89**, **T 321/92**).

According to **T 422/93** (OJ 1997, 25), when examining for inventive step using the "problem and solution approach", the starting point for defining the appropriate skilled person was the technical problem to be solved on the basis of what the prior art disclosed, irrespective of any other definition of the skilled person suggested in the contested patent. Since the technical

problem addressed by an invention had to be so formulated as not to anticipate the solution, the skilled person to be considered could not be the appropriate expert in the technical field to which the proposed solution belonged if this technical field was the one considered when formulating the technical problem. Nor did the appropriate skilled person's basic knowledge include that of a specialist in the different technical field to which the proposed solution belonged if the closest prior art gave no indication that the solution was to be sought in this other technical field.

#### 5.1.2 Group of people as "skilled person"

Sometimes the "skilled person" may be a group of people, such as a research or production team. For the purposes of Art. 56 EPC the person skilled in the art is normally not assumed to be aware of patent or technical literature in a remote technical field. In appropriate circumstances, however, the knowledge of a team consisting of persons having different areas of expertise can be taken into account (**T 141/87, T 99/89**). This would be the case in particular if an expert in one particular field was appropriate for solving one part of the problem, while for another part one would need to look to another expert in a different area (**T 986/96**).

Thus, the board stated, for example, in **T 424/90** that in real life the semiconductor expert would consult a plasma specialist if his problem concerned providing a technical improvement to an ion-generating plasma apparatus. In **T 99/89** too, the board took the view that "competent skilled person" could be taken to mean a team of two or possibly more experts from the relevant branches.

In **T 164/92** (OJ 1995, 305) it was observed that sometimes the average skilled person in electronics, particularly if he did not have an adequate knowledge of programming languages himself, might be expected to consult a computer programmer if a publication contained sufficient indications that further details of the facts described therein were to be found in a program listing attached as an annex thereto.

Further comments on the concept of the "team of experts" are to be found in the following decisions: **T 57/86, T 222/86** (in advanced laser technology, the "skilled person" as a production team of three experts in physics, electronics and chemistry respectively), **T 141/87, T 460/87, T 295/88, T 825/93, T 2/94, T 402/95** and **T 986/96** (team consisting of a first expert in the field of mail processing and a second expert acquainted with information in the field of weighing).

#### 5.1.3 Definition of the person skilled in the art in the field of biotechnology

The person skilled in the art in the field of biotechnology is well defined by the case law of the boards of appeal. His attitude is considered to be conservative. He would never go against an established prejudice, nor try to enter unpredictable areas nor take incalculable risks. The notional skilled person would perform a transfer of technology from a neighbouring field to his specific field of interest, if this transfer involved routine experimental work comprising only routine trials (**T 455/91** (OJ 1995, 684), **T 500/91, T 387/94, T 441/93**).

### *Inventive step*

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In **T 60/89** (OJ 1992, 268) the board took the view that the skilled person in genetic engineering in 1978 could not be defined as a Nobel prize winner, even if a number of scientists working in this field at that time actually were awarded that prize. Rather he should be assumed to be a scientist (or team of scientists) working as a teacher or researcher in the laboratories which made the transition from molecular genetics to genetic engineering at that time.

This case law was confirmed in the "Biogen II" decision (**T 500/91**). The board ruled that the average skilled person - who might also be a team of specialists in the relevant field - operated at a practical level, and the technical development which might normally be expected of him did not include solving technical problems through scientific research.

From the notional skilled person nothing more can be expected than the carrying out of experimental work by routine means within the framework of the normal practice of filling gaps in knowledge by the application of existing knowledge (**T 886/91**, **T 223/92**, **T 530/95**, **T 791/96**).

It had to be assumed that the average skilled person would not engage in creative thinking (**T 500/91**). Yet he or she could be expected to react in a way common to all skilled persons at any time, namely that an assumption or hypothesis about a possible obstacle to the successful realisation of a project must always be based on facts. Thus, in the board's view, an absence of evidence that a given feature might be an obstacle to carrying out an invention would not be taken as an indication that this invention could not be achieved, nor that it could (**T 207/94**, OJ 1999, 273).

In **T 223/92** the board had to consider the knowledge and capabilities of the notional skilled person in the field of genetic engineering as at October 1981, more than one year later than was the case in **T 500/91**. By this time, a considerably greater number of genes had been made the subject of cloning and expressing methods, and skills and experience in this technical field were developing rapidly. The knowledge of the notional person skilled in the art had to be considered as that of a team of appropriate specialists who knew all the difficulties still to be expected when considering the cloning of a new gene. However, the skilled person had to be assumed to lack the inventive imagination to solve problems for which routine methods of solution did not already exist.

In **T 412/93** the patent related to the production of erythropoietin. The parties agreed that in this particular case the skilled person should be treated as a team of three, composed of one PhD researcher with several years' experience in the aspect of gene technology or biochemistry under consideration, assisted by two laboratory technicians fully acquainted with the known techniques relevant to that aspect. The composition of the team might vary depending on the knowledge and skills required by the particular aspect dealt with.

In **T 455/91** (OJ 1995, 684) the board set out considerations on the skilled person's likely attitude to possible changes, modifications or adjustments in known products (eg a plasmid) or procedures (eg an experimental protocol). Its aim was to answer, objectively and avoiding any ex post facto analysis, the question whether it would be obvious to the skilled person to make given changes in a structure or procedure. The skilled person in this field was well

aware that even a small structural change in a product (eg a vector, protein, or DNA sequence) or procedure (eg a purification process) could produce dramatic functional changes. He would therefore adopt a conservative attitude. For example, he would neither go against an established prejudice, nor venture into "sacrosanct" or unpredictable areas, nor take incalculable risks. However, within the normal design procedures, he would readily seek appropriate, manifest changes, modifications or adjustments involving little trouble or work and no or only calculable risks, especially to obtain a handier or more convenient product or simplify a procedure. In particular, the skilled person working in one field (eg expression in yeast) would regard a means conveniently adopted in a neighbouring field (eg the bacterial art) as readily usable also in his own field, if this transfer of knowledge involved nothing out of the ordinary.

If on the other hand he would expect to have to perform scientific research rather than routine work in order to transfer a technology previously set up in one field of research (method of transforming *Saccharomyces cerevisiae* whole cells) to a neighbouring field (method of transforming *Kluyveromyces* whole cells), then inventive step could be acknowledged (**T 441/93**).

## **5.2 Neighbouring field**

Two landmark decisions, **T 176/84** (OJ 1986, 50) and **T 195/84** (OJ 1986, 121) addressed in detail the problem of the relevant technical field, ie the question of the extent to which neighbouring areas beyond the specific field of the application might be taken into consideration when assessing inventive step. According to **T 176/84**, when examining for inventive step, a skilled person would, as well as considering the state of the art in the specific technical field of the application, look for suggestions in neighbouring fields or a broader general technical field if the same or similar problems arose, and if he could be expected to be aware of such general fields. **T 195/84** added that the state of the art also had to include prior art in a non-specific (general) field dealing with the solution of any general technical problem which the application solved in its specific field. Such solutions of general technical problems in non-specific (general) fields had to be viewed as forming part of the general technical knowledge which a priori was to be attributed to those skilled persons versed in any specific technical field. These principles were applied in a large number of decisions.

In **T 560/89** (OJ 1992, 725) the board took the view that the skilled person would also draw on prior art in other fields which were neither neighbouring nor broader general fields, if prompted to do so because the materials used were related or because of public debate about a technical problem common to both fields. Expanding on this, **T 955/90** added that in practice the person skilled in a broader general field would also draw on the narrower, more specialised field of the known main application of the general technology in search of a solution to a problem lying outside the special application of that technology (**T 379/96**).

According to **T 454/87** a skilled person specialising in a particular technical field (gas chromatography equipment) would in the course of his normal professional activity also observe developments in equipment used in a related technical field (absorption spectral analysis).

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In **T 891/91** the board stated that a skilled person in the field of lenses for ophthalmic use, confronted with the technical problem of adhesion and abrasion resistance of a coating made on a surface of the lens, would also refer to the state of the art in the more general field of coated plastic sheets in which the same problems of adhesion and abrasion resistance of the coating arose and of which he was aware.

In **T 767/89**, regarding carpets, the board ruled that wigs were neither a neighbouring technical field nor a broader general one which included the former field. So wigs were not a related technical field in which the person skilled in carpets would have been prompted to seek solutions. The two inventions addressed different problems; the user requirements were not comparable.

Because of the differing security risks, a skilled person could not be expected to search in the field of bulk-goods packaging for ideas for the design of a closure for a means of conveying money (**T 675/92**).

Further comments on the concept of relevant field are to be found in several other decisions, including the following: **T 277/90** (in dentistry, moulding technology and prosthodontics are neighbouring technical fields); **T 358/90** (discharging the content of a portable toilet did not lead the skilled person to the field of filling a tank of a chain saw by means of a special kind of container); **T 1037/92** (a person skilled in the art of making fuse links for programmable ROMs would also have consulted the documentation in the field of ultraminiaturised integrated switches), **T 838/95** (the pharmaceutical and cosmetic fields were immediate neighbours), **T 365/87**, **T 443/90**, **T 47/91**, **T 244/91** and **T 189/92**.

On a different aspect, with regard to the applicant's reference to a remote state of the art, the board gave the following ruling in **T 28/87** (OJ 1989, 383, headnote): "If reference is made in the introduction to the description of an application or a patent to a state of the art which cannot objectively be classified as a relevant field, that state of the art cannot in the course of examination for patentability be rated to the applicant's or proprietor's disadvantage as a neighbouring field merely on account of that reference". The document to which the proprietor of the patent had himself referred in the introduction to the description was therefore not taken into account in the assessment of inventive step.

### **5.3 Skilled person - level of knowledge**

The same level of skill has to be applied when, for the same invention, the two questions of sufficient disclosure and inventive step have to be considered (**T 60/89**, OJ 1992, 268, **T 373/94**). **T 694/92** (OJ 1997, 408) added that although the same level of skill is applied for both Art. 56 and 83 EPC, the two starting points differ: for inventive step purposes, the skilled man knows only the prior art; for sufficiency of disclosure, he knows the prior art **and** the disclosed invention (see also p. 145).

According to **T 426/88** (OJ 1992, 427) a book providing general teaching in a general technical field covering the invention's specific technical field was part of the general knowledge of a specialist in that specific technical field. When books, representing common general knowledge, described a basic general technical theory or methodology and



exemplified the same with specific applications in certain technical fields only, these did not limit the general scope and relevance of such disclosures so as to exclude possible applications in other fields. The appellant had argued that the book, written in German, was not a general reference book consulted by experts in that field in Great Britain. The board, however, adhered to the definition of the state of the art given in Art. 54 EPC, according to which no account was taken of the location at which the skilled person exercised his profession.

In **T 766/91** the board summarised the normally accepted view that common general knowledge was represented by basic handbooks and textbooks on the subject in question. It was knowledge that an experienced person in this field was expected to have, or at least to be aware of to the extent that he knew he could look it up in a handbook if he needed it. Statements in such works were used as convenient references to show what was common knowledge. The information as such did not as a rule become such knowledge through publication in a given handbook or textbook; rather, by the time it appeared in such works it was already generally known. For this reason, publication in an encyclopaedia, say, could normally be taken as proof that the information was not only known but was common general knowledge. The assertion that something was part of the common general knowledge therefore needed only to be substantiated if challenged by another party or the EPO (**T 234/93, T 590/94, T 671/94, T 438/97**).

In **T 378/93** the board confirmed this case law, adding that the same applied to articles in scientific periodicals addressed primarily to qualified professionals and enjoying worldwide repute.

In **T 939/92** (OJ 1996, 309) it was explained that the state of the art could also perfectly well reside solely in the relevant common general knowledge, which, in turn, need not necessarily be in writing, ie in textbooks or the like, but might simply be a part of the unwritten "mental furniture" of the average skilled person. In the case of any dispute, however, the extent of the relevant common general knowledge had to be proven, eg by documentary or oral evidence.

Numerous publications in the specialist press over a fairly short time, reporting on meetings and research in a particularly active field of technology, could reflect common general knowledge in this field at that time (**T 537/90**).

In **T 632/91** the board stated that evidence which did not comprise a comparison of the claimed subject-matter with the state of the art might nevertheless rebut a prima facie assumption that there existed some common general knowledge which would have allowed the skilled person to disregard structural differences of chemical compounds.

#### **5.4 Everyday items from a different technical field**

In **T 1043/98** the patent concerned an inflatable gas-bag for a vehicle restraint system, one part being club-shaped and the other generally butterfly-shaped. The edges of the two parts were sewn together along a continuous seam. According to the appellant, the skilled person would immediately arrive at the claimed gas-bag from his knowledge of tennis-ball or baseball construction. This raised the issue of the application of features or solutions drawn from

another technical field but which could be considered "everyday items".

In **T 397/87** the board had already pointed out that there was no obvious reason why a skilled person trying to solve a non-trivial problem should have been led to the claimed process by simple examples from everyday life which were unrelated to the problem in question. In **T 349/96**, too, the board was unable to see why the fact that different transport containers are used for beer bottles in an everyday context should prompt a skilled person to invent a spinning/winding machine combination with an integrated transport system even if the many citations from the relevant technical field were unable to do this (see also **T 234/91**).

In **T 234/96**, however, the board concurred with the examining division's view that the skilled person dealing with the practicalities of motorising a dispenser drawer for washing powder had in mind as a model the disc tray of a CD player with push-button electromotor operation which at the time of filing the application was familiar to anyone and which therefore suggested the subject-matter of claim 1. In the board's view, the fact that washing machines and CD players were intrinsically different items serving different purposes did not suffice to prevent the skilled person concerned with the construction of washing machines from taking into consideration the basic principle of automatic tray operation in CD players when designing a dispenser drawer for washing powder.

From a comparison of the above-mentioned decisions, the board in **T 1043/98** concluded that the relevance of such items for inventive step depended very much on the circumstances of the individual case. It agreed that persons skilled in developing the gas-bags in question would include tennis or baseball players. It could not however share the appellant's view that to solve the problem addressed by the invention the skilled person would draw on what he might know about tennis-ball or baseball construction. The main reason was that the gas-bag was not intended to be spherical in shape. It was therefore unlikely that the skilled person would take as his starting point an object which was the epitome of a sphere (see **T 477/96**, where the board also concluded that everyday experience was not relevant to the technical field of the invention).

## **6. Proof of inventive step**

### **6.1 "Could-would approach" and ex post facto analysis**

Many decisions of the Boards of appeal warn against an ex post facto approach when assessing inventive step (see also the Guidelines, Chapter C-IV, 9.9). This applies especially to inventions which at first sight seem obvious, to combination inventions and where the proposed solution is supposedly "simple". Correct application of the problem and solution approach avoids this inadmissible ex post facto analysis which draws on knowledge of the invention (**T 24/81** (OJ 1983, 133), **T 564/89**, **T 645/92**, **T 795/93**).

When assessing inventive step, an interpretation of the prior art documents as influenced by the problem solved by the invention while the problem was neither mentioned or even suggested must be avoided, such an approach being merely the result of an a posteriori analysis (**T 5/81**, OJ 1982, 249, **T 63/97**, **T 170/97**, **T 414/98**).

It is the boards' established case law that the question is not whether the skilled person **could** have carried out the invention, but whether he **would have done** so in the hope of solving the underlying technical problem or in the expectation of some improvement or advantage ("could-would approach", **T 2/83** (OJ 1984, 265), **T 90/84**, **T 7/86** (OJ 1988, 381), **T 200/94** and **T 885/97**). So the point is not whether the skilled person could have arrived at the invention by modifying the prior art, but rather whether, in expectation of the advantages actually achieved (ie in the light of the technical problem addressed), he would have done so because of promptings in the prior art (**T 219/87**, **T 455/94**, **T 414/98**).

It has been held that once an invention existed, it could often be shown that the skilled person could have made it by combining different elements in the prior art, but such arguments had to be disregarded as the product of ex post facto analysis (**T 564/89**).

According to **T 939/92** (OJ 1996, 309), the answer to the question what a skilled person would have done depended in large measure on the technical result he had set out to achieve. In other words, the notional "person skilled in the art" was assumed to act not out of idle curiosity but rather with a specific technical purpose in mind.

**Technical feasibility** and the absence of obstacles were only necessary requirements for reproducibility but were not sufficient to render obvious **what was actually achievable** for the skilled person (**T 61/90**). The fact that the inherent properties of a technical means were known to the skilled person, so that he had the intellectual possibility to apply this means in a conventional device, merely established the **possibility** of using such technical means in such a manner, ie that the skilled person **could** have used it. However, if it was to be established that such intellectual possibility was also a technical measure which it was obvious for the skilled person to use, it was necessary to show that there was a recognisable pointer in the state of the art to combine the known means and conventional device for achieving the intended technical aim, ie that the skilled person **would** have made such a combination. The existence of such a technical reason was dependent on the known properties not only of the means but also of those of the device (**T 203/93** and **T 280/95**).

## **6.2 Expectation of success, especially in the field of genetic engineering and biotechnology**

In accordance with the case law of the boards of appeal, a course of action could be considered obvious within the meaning of Art. 56 EPC if the skilled person would have carried it out in expectation of some improvement or advantage (**T 2/83**, OJ 1984, 265). In other words, obviousness was not only at hand when the results were clearly predictable but also when there was a reasonable expectation of success (**T 149/93**).

In some decisions in the field of genetic engineering the board asked whether in the cases in point it was obvious for the skilled person to try a suggested approach, route or method with a **reasonable expectation of success** (**T 60/89**, OJ 1992, 268). For more about biotechnological inventions and the definition of the skilled person, see page 111 et seq.

In **T 296/93** the board held that, in relation to inventive step, the fact that other persons or teams were working contemporaneously on the same project might suggest that it was

"obvious to try" or that it was an interesting area to explore, but it did not necessarily imply that there was a "reasonable expectation of success". **A reasonable expectation of success should not be confused with the understandable "hope to succeed"**; it implied the ability of the skilled person to predict rationally, on the basis of the knowledge existing before a research project was started, the successful conclusion of the said project within acceptable time limits. The more unexplored a technical field of research was, the more difficult it was to make predictions about its successful conclusion and, consequently, the lower the expectation of success (**T 694/92**, OJ 1997, 408). According to **T 207/94** (OJ 1999, 273), the "hope to succeed" was merely the expression of a wish, whereas a "reasonable expectation of success" presupposed scientific appraisal of available facts.

In **T 187/93** it was stated that even if it was obvious for the skilled person to try an experiment, it was not necessarily true that this person would have any reasonable expectation of success when embarking on it.

In **T 223/92** the board said that in 1981, given the state of the art at that time, the skilled person would have opted for DNA-recombination technology only if relying, eg, on his own good luck and inventiveness to overcome the known (and as yet unknown) problems involved, which would have caused the average skilled person to expect to fail.

In the light of the closest prior art the board saw the technical problem to be solved in **T 886/91** in the exact identification and characterisation of DNA sequences of HVB genome subtype adyw. The board pointed out that the situation in **T 886/91** could not be compared with the one in **T 223/92** and **T 500/91**, where production of a partially known protein in a recombinant-DNA system was achieved and considered inventive on the basis of the fact that in the specific circumstances of the cases there was no realistic expectation of success. In the case in point the closest prior art had already disclosed the cloning and expression of the HBV genome subtype adyw. The identification and characterisation of the claimed specific sequences of the same genome involved for the skilled person nothing more than the performance of experimental work by routine means in connection with the normal practice of filling gaps in knowledge by application of existing knowledge.

In **T 923/92** (OJ 1996, 564) the board had to decide whether the skilled person would have attempted, with reasonable expectation of success, to produce cDNA coding for human t-PA, or whether in this instance he would have known from his technical knowledge, before even embarking on the research, that he would be able to complete his project within acceptable time. The board bore in mind that, as stated in **T 816/90**, "even when it is possible to theoretically conceive a straightforward approach to solve a specific technical problem, the skilled person might be confronted with unexpected difficulties when trying to put the conceived strategy into practice". The board stated that, although hoping to succeed, the skilled person embarking on this project would have known that its successful conclusion depended not only on technical skill in putting into practice the sequence of precise steps of the theoretical experimental protocol, but to a large extent also on the ability to take the right decisions along the way whenever a difficult experimental situation so required. Under these circumstances, it could not be said that the skilled person had a reasonable expectation of success.

In **T 386/94** (OJ 1996, 658), again citing **T 816/90**, the board ruled that in gene technology inventive step could not be acknowledged if, at the priority date, a skilled person could expect to perform the cloning and expression of a gene in a fairly straightforward manner, and the cloning, although requiring much work, did not pose such problems as to prove that the expectation of success was ill-founded.

Where the expression of a cloned DNA in a chosen foreign host constituted the subject-matter of the claimed invention, the question whether a reasonable expectation of success existed or not could be evaluated only by taking into account real difficulties relating to that step. Thus, in order to be considered, any allegation that features jeopardised a reasonable expectation of success had to be based on technical facts (**T 207/94**, OJ 1999, 273).

In **T 737/96** the board was of the opinion that it was not appropriate to attempt to evaluate the expectation of success of a random technique such as mutagenesis where results depended on chance events. This was because the skilled person knew that, unless a specific selection method could be developed, which was not the case in the patent in suit, perseverance and chance played a key role in achieving success, as no form of control could be exerted over the mutation events. Under these circumstances, as in a lottery game, the expectation of success always ranged irrationally from nil to high, so it could not be evaluated in a rational manner based on technical facts. This was at variance with technical situations in which more predictable methods were relied upon to solve a particular problem, such as methods of genetic engineering like cloning or expressing a DNA sequence. In such situations, it was often possible to make rational predictions about the likelihood of success, and "reasonable expectation of success" was then a meaningful and reliable criterion for assessing inventive step (see also **T 694/92**, OJ 1997, 408).

Decisions **T 455/91**, **T 412/93**, **T 915/93**, **T 63/94** and **T 856/94** also consider this topic.

### **6.3 Technical disclosure in a prior art document**

In line with the established case law of the boards of appeal, when investigating inventive step it should be borne in mind that the technical disclosure in a prior art document should be considered in its entirety, as it would be done by a person skilled in the art and that it is not justified arbitrarily to isolate parts of such document from their context in order to derive from them technical information which would be distinct from the integral teaching of the document (**T 56/87** (OJ 1990, 188), **T 768/90**, **T 223/94**, **T 115/96**, **T 717/96**, **T 414/98**, see also page 68 et seq.). According to **T 95/90**, **different parts of text in a document** can be combined if there is nothing to stop the skilled person from doing so.

### **6.4 Combination invention**

#### **6.4.1 Existence of a combination invention**

In assessing the inventive step involved in an invention based on a combination of features, consideration must be given to whether or not the state of the art was such as to suggest to a skilled person precisely the combination of features claimed. The fact that an individual feature or a number of features were known does not conclusively show the obviousness of

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a combination (T 37/85 (OJ 1988, 86), T 656/93, T 666/93, T 1018/96). The question is not whether the skilled person, with access to the entire prior art, **could** have made the combination according to the invention, but whether he actually **would** have done so in expectation of an improvement (T 2/83 (OJ 1984, 265), T 713/93, T 223/94, T 406/98). When assessing inventive step in a combination invention the decisive criterion is not whether individual elements of the combination were known and obvious from prior art, but whether the state of the art would lead a skilled person to this particular overall combination of (possibly already known) features. Were this not so, it would be impossible for a combination consisting exclusively of known individual features to involve an inventive step (T 388/89, T 717/90, T 869/96).

A mere aggregation of features must be distinguished from a combination invention. The existence of a combination invention requires that the relationship between the features or groups of features be one of **functional reciprocity** or that they show a combinative effect beyond the sum of their individual effects (see also 6.4.2, Partial problems).

In T 406/98 the board found that as a rule, particularly when large numbers of citations were involved, it was necessary to ask **why** the skilled person would consider documents in that specific combination, and whether, **not knowing the invention**, he had reason to do so. In this case, a complete solution to the problem required deliberate selection from a large number of citations.

In T 55/93 the appellant's argument, according to which the alleged invention should have been regarded as a mere aggregation of solutions of two independent partial problems which were not interrelated, was not accepted by the board. In the case in point, not only could the primary problem underlying the contested patent neither be found nor be derived from the prior art documents, but also the claimed features complemented each other. The board stated that the features were functionally linked together, which was the actual characteristic of a combination invention. It was wrong to select, on the basis of a plurality of partial problems to be solved, the respective constructional means used in the apparatus combination, or the steps of the method worded in terms of functional features, which by working together provided a solution to the problem taken as a whole. The non-obviousness of a combination claim turned on the simultaneous application of all its features (T 175/84, OJ 1989, 71). A combination effect was also acknowledged in T 120/88, T 731/94, T 434/95 and T 897/95.

#### 6.4.2 Partial problems

In patent law terms, the existence of a combination of features, ie of a combination invention, is to be viewed differently from the mere existence of partial problems, ie of an aggregation of features. According to current case law, partial problems exist if the features or sets of features of a claim are a mere aggregation of these features or sets of features which are not functionally interdependent, ie do not **mutually influence each other** to achieve a technical success over and above the sum of their respective individual effects, in contrast to what is assumed in the case of a combination of features (T 389/86 (OJ 1988, 87), T 387/87, T 294/90, T 363/94). Also to be borne in mind is that solutions to partial problems in differing technical fields must be assessed on the basis of the knowledge and expertise of the person

skilled in the art where the solution is found (**T 32/81** (OJ 1982, 225) and **T 324/94**).

In **T 389/86** (OJ 1988, 87) the relationship between the two groups of features was not one of functional reciprocity. The board ruled that in such circumstances no combinative effect could be advanced in support of inventive step; rather the question was whether each group, taken singly, was obviously derivable from the prior art. For the subject-matter of the claim to be inventive, it sufficed if one of these groups was (**T 345/90, T 701/91**).

Also in **T 130/89** (OJ 1991, 514) the technical problem intended to be solved by the claimed invention consisted of two technically independent partial problems, each solved independently by one of the claimed subject-matter's features. The board held that the independence of the claimed subject-matter's features (each producing a different effect) meant that in assessing inventive step two closest states of the art had to be considered to enable each of the two partial problems to be defined. It concluded that since each of the partial problems was solved by means which merely performed their known functions, each partial solution was obvious and the invention thus lacked inventiveness. In **T 597/93** the board again saw no inventive step in combining the claim's two features - both known per se - since they related to the solving of two entirely separate partial problems. It cited **T 687/94** which held that in such cases the solutions could be assessed separately against the prior art (see also **T 315/88** and **T 65/90**).

In **T 711/96** the board found that characterising features (a) and (b) functioned completely independently of each other; there was no functional interplay (combination) between them. Although the setting for one value (eg spread) could indirectly affect that for the other (eg quantity), in that spread and quantity could both be adjusted upwards to maintain constant distribution, the two features were not directly related. In other words, the characterising features did not necessarily influence each other, although they could do. The board therefore assessed the inventive step of the two features separately, and concluded that both partial problems were obvious.

In **T 410/91** the board of appeal stated that no inventive step was involved since, although all the measures in claim 1 contributed to an increase in the efficiency of the plant, that contribution was based on known, different individual effects which resulted in these measures being executed in a manner expected by the skilled person. The subject-matter of claim 1 therefore involved the stringing-together of known measures which displayed their characteristic effects; no synergistic effect based on a combination of the individual measures was discernible in the sense of a mutual influence on their respective operation (see also **T 144/85, T 141/87, T 407/91**).

### **6.5 Features not contributing to the solution of the problem**

According to the established case law of the boards of appeal, features which do not contribute to the solution of the problem set in the description are not to be considered in assessing the inventive step of a combination of features (**T 37/82**, OJ 1984, 71). According to this decision, in assessing the inventive step of a combination of features, consideration had to be given to a feature only if the applicant had provided evidence that it contributed, either independently or in conjunction with one or more of the other features, to the solution

of the problem set in the description (see also **T 65/87**, **T 144/90**, **T 206/91**, **T 574/92**, **T 226/94**, **T 912/94** and **T 15/97**). Therefore, only those claimed features are to be considered which contribute causally to the solution of the problem (**T 285/91**). In **T 294/89** the board stated that the additional feature provided no surprising advantage and did not make any contribution to solving the problem indicated. Hence, the said additional feature was not relevant for assessing the inventive step of the combination of features claimed.

In **T 589/95** the terms of the solution of the technical problem extended into an area of use where it had been admitted that the relevant problem was known not to arise in practice. The board stated that, for such an area, the features of the solution did not contribute to the solution of the technical problem and could not be taken into account in the assessment of inventive step.

#### **6.6 Foreseeable disadvantageous or technically non-functional modifications**

In some decisions the subject-matter was found not to involve an inventive step, when the invention was the result of a foreseeable disadvantageous modification of the closest prior art (**T 119/82** ( OJ 1984, 217), **T 155/85** (OJ 1988, 87), **T 939/92** (OJ 1996, 309), **T 72/95**).

The board in **T 119/82** (OJ 1984, 217) had already found that disadvantageous modifications did not involve an inventive step if the skilled person could clearly predict these disadvantages, if his assessment was correct and if these predictable disadvantages were not compensated by any unexpected technical advantage.

With reference to **T 119/82**, Board 3.3.5 in **T 72/95**, **T 157/97**, **T 176/97** and **T 158/97** held that similar considerations applied to technically non-functional modifications. An inventive step could not be claimed on the basis of a non-functional modification of a known device. If a known device was modified by adding a feature which had no technical function, this modification could not be inventive. However, the board was obliged to assess the existence of a technical function alleged to be relevant to inventive step. The board was aware of **T 1027/93**, in which another board had observed (obiter) that the EPC does not require that an invention, to be patentable, must entail any useful effect, and that the apparent futility of a given modus operandi could rather be said to render it completely non-obvious. The board emphasised that the concept of "invention" implied a technical character. Technically non-functional modifications were therefore irrelevant to inventive step, even if the skilled person would never think of such a modification. A parallel could be drawn here with a new design based on a known technical concept. The new design might be a surprise and thus "not obvious" for professional designers. Nevertheless if the modifications had no technical relevance and were, from a technical point of view, arbitrary, the new design was not patentable and did not involve an inventive step.

#### **6.7 Substitution of materials - analogous use**

According to **T 21/81** (OJ 1983, 15), a skilled person's selecting from the materials known to him as suitable for a certain purpose the one which was the most appropriate had to be regarded as forming part of his normal activities. The skilled person should therefore be at liberty, within the constraints of standard technical progress, to use alternative means known



by him to have the same effect (**T 324/94**). In **T 410/92** the board also held that using higher-quality materials in the design of single-phase synchronous motors with a double-pole permanent-magnet rotor was obvious. The appellants had argued that the skilled person using the superior materials available to him would be confronted with baffling starting problems. The board however concluded that the skilled person's encountering known problems when using newly developed materials would not deter him from using them in order to achieve specific, desired improvements, particularly since the means of overcoming such problems could be derived from the prior art.

The headnote in **T 192/82** (OJ 1984, 415) read as follows: "If an article is known as a combination or mixture of components fulfilling known functions, the generation and application of an improved novel component for the same purpose may be patentable as such and also as an improved article incorporating the same. If the component in question forms, on the other hand, part of the state of the art together with its relevant properties, the incorporation thereof in the same article will be obvious in view of its predictable beneficial effect ("analogous substitution")".

In this connection the board also established in **T 130/89** (OJ 1991, 514) that the use of a known material on the basis of its known properties and in a known manner to obtain a known effect in a new combination was not normally inventive ("similar use"). Exceptions to this principle might be allowed in special cases, eg where a selection brought unexpected advantages, a known prejudice was overcome or unforeseen difficulties were encountered, such as the need to alter another component.

Following these decisions, the board summed up in **T 213/87** that, in the absence of any unexpected effect, the mere substitution of an element by another known for its relevant properties to provide that known effect could not be regarded as patentable.

### **6.8 Combination of documents**

It would not be obvious to a skilled person to combine an isolated, very old document (ie 50 year old document), which had not given rise to a trend in the art and whose teaching ran counter to the present trend, with the document reflecting the closest state of the art (**T 261/87**, **T 366/89**, **T 404/90**).

In **T 745/92** the board pointed out that the disclosure of two prior documents - even if they were classified under the same IPC classification - could only be combined so as to result in a finding of lack of inventive step if such combination would have been obvious to a skilled person seeking to solve the problem underlying the claimed invention (**T 104/95**).

In **T 552/89** the board confirmed that, when assessing inventive step, it was not permissible to combine the teachings of different documents within the state of the art in order to establish the obviousness of a claimed invention, unless it would have been obvious for the skilled person to do so at the time of filing. When a problem defined by reference to the closest prior art as disclosed in a primary document consisted of individual problems, board of appeal case law stated that the skilled person could be expected to take account of solutions to the individual problems proposed in different secondary documents in the same or neighbouring

technical fields. Thus, the teachings of secondary documents might be combined with the disclosure of the closest prior art if such secondary documents provided solutions to specific individual problems forming part of the objective problem in progressing from the closest prior art, in particular when such individual solutions were merely aggregated together in the claimed invention.

## **6.9 Chemical inventions**

### 6.9.1 Structural similarity

To deny inventive step for novel chemical compounds because of their structural similarity to known chemical compounds amounted to an allegation that a skilled person would have reasonably expected the same or similar usefulness of both the known and the novel compounds as the means for solving the technical problem underlying the application in question. Such an expectation would be justified, if the skilled person knew, be it from common general knowledge or from some specific disclosure, that the existing structural differences of the chemical compounds concerned were so small that they would have no essential bearing on those properties, which were important for solving the said technical problem and could be disregarded (**T 852/91**).

In **T 643/96** the board held that the concept of bioisosterism did form part of the common general knowledge of those skilled in the art, but that it had to be applied with caution when deciding upon inventive step. In the field of drug design, any structural modification of a pharmacologically active compound was, in the absence of an **established** correlation between structural features and activity, expected a priori to disturb the pharmacological activity profile of the initial structure. This also held true for an alleged case of bioisosterism, which was one option of a structure-activity relationship, as long as it was not an **established case** of bioisosterism (see also **T 548/91**). In **T 643/96** it was held that, "When deciding upon inventive step in relation to pharmacologically active compounds, what was essential was not whether a particular substructure of a chemical compound was replaced by another known isosteric one, but whether information was available on the impact of such a replacement on the pharmacological activity profile of the specific (group of) compound(s) concerned" (see also **T 467/94**, **T 156/95**).

In **T 930/94** the board held that knowledge of the fact that one specific member of a class of chemical compounds did not lead to the effect achieved by several other members of this class, did not, without additional indications, mean that such an effect could be attributed to all the compounds in this group. In such circumstances, the effect in point did not lead to a recognition of the existence of a technical concept that could be generalised.

In **T 989/93** the board stated that, in the absence of the appropriate common general knowledge, no conclusions are possible on the basis of the known properties of one group of chemical compounds (here: benzene derivatives) regarding the properties of a different group of chemical compounds (here: naphthalene derivatives).

### 6.9.2 Broad claims

Art. 56 EPC requires the claimed invention, ie the proposed technical solution for a given technical problem, not to be obvious to a skilled person from the state of the art. If the inventive step of a claimed invention is based on a given technical effect, the latter should, in principle, be achievable over the whole area claimed (**T 939/92** (OJ 1996, 309), **T 694/92** (OJ 1997, 408) and **T 583/93** (OJ 1996, 496)).

**T 939/92** (OJ 1996, 309) contained fundamental rulings on broad claims in the field of chemistry. The board held that in view of the state of the art the technical problem which the patent in suit addressed was provision of further chemical compounds with herbicidal activity. It was necessary for all the claimed compounds to possess this activity. The question as to whether or not such a technical effect was achieved by all the chemical compounds covered by such a claim might properly arise under Art. 56 EPC was posed, if this technical effect turned out to be the sole reason for the alleged inventiveness of these compounds. The appellants' submission that the test results contained in the description showed that **some** of the claimed compounds were indeed herbicidally active could not be regarded as sufficient evidence to lead to the inference that substantially **all** the claimed compounds possessed this activity. In such a case the burden of proof rested with the appellants. The requirements of Art. 56 EPC had not therefore been met.

The board, following **T 939/92** (OJ 1996, 309), stated in **T 668/94** that the technical problem could only be taken into account in the assessment of inventive step if it could be accepted as having been successfully solved, ie if it were credible that substantially all claimed compounds possessed the plant growth regulating activity. When only some and not substantially all claimed compounds exhibited a particular technical effect, the conclusion had to be that the invention as broadly defined in the independent claim was not a solution to the technical problem of achieving the given technical effect, with the consequence that the alleged technical effect of some of the claimed compounds was to be disregarded when determining the objective problem underlying the invention and thus when assessing inventive step.

### 6.9.3 Intermediate products

In key decision **T 22/82** (OJ 1982, 341) the board ruled that the preparation of new intermediates for a surprisingly advantageous complete process for the preparation of known and desired end products was inventive.

Again in **T 163/84** (OJ 1987, 301) intermediate chemical products were held to be patentable on the grounds that their further processing to the known end products involved an inventive step. The board however held that a new chemical intermediate did not become inventive merely because it was prepared in the course of an inventive multi-stage process and was further processed to a known end product; there had to be other factors as well, such as that the process for preparing the new intermediate had enabled it to be prepared for the first time and had done so inventively and other methods of preparing it had appeared to be ruled out.

In **T 648/88** (OJ 1991, 292) the board disagreed with the view expressed in **T 163/84**,

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pursuing instead the line taken in **T 22/82**. An intermediate intended for the preparation of a known end product was deemed to be inventive if its preparation took place in connection with inventive preparation or inventive further processing or in the course of an inventive complete process.

In **T 65/82** (OJ 1983, 327) it was explained that new intermediates which take part in (non-inventive) analogy processes for sequent products (i.e. end products or intermediates of various kinds), must - in order to qualify as intermediates - provide a structural contribution to the subsequent products. Even where this condition is met, such intermediates are not thereby unconditionally inventive, i.e. not without taking the state of the art into consideration. As state of the art in relation to intermediates there are two different areas to be taken into account. One is the "close-to-the-intermediate" state of the art. These are all compounds identified from their chemical composition as lying close to the intermediates. On the other hand the "close-to-the-product" state of the art must also be taken into account, i.e. those compounds identified from their chemical composition as lying close to the subsequent products.

In **T 18/88** (OJ 1992, 107) the applicants had argued that the insecticidal activity of the known end products was significantly superior to that of another known insecticide with a similar structure; this was sufficient to establish an inventive step for the intermediate products, even if the end products were not novel and/or inventive. The board, referring to **T 65/82** (OJ 1983, 327), rejected the applicants' argument on the following grounds: claimed intermediates must themselves be based on an inventive step to be patentable. Whether, under certain circumstances, new and inventive subsequent products might support an inventive step of intermediates was not the question here, because the subsequent products in this case were either not novel or not inventive. The superior effect of subsequent products which were neither novel nor inventive was not sufficient to render the intermediates inventive.

### **6.10** **Equivalents**

According to established board of appeal case law, equivalents which are not disclosed in a published document must not be considered in assessing novelty as this properly belongs to the examination for inventive step (**T 167/84** (OJ 1987, 369), **T 446/88** and **T 517/90**, see also Guidelines C-IV, 7.2). In **T 697/92**, the board dealt with the concept of "equivalent means", according to which two means were equivalent if, despite having different embodiments, they fulfilled the same function with regard to the same result. Both means performed the same function if they shared the same basic idea, ie if they applied the same principle in the same way. The result was the totality of the technical effects produced by the means. In order to be considered as equivalents, the means had to achieve the same kind and quality of result. A means was thus not equivalent if, because of its different embodiment, it led to a result of the same kind but of a different quality or degree of effectiveness. The result did not necessarily even have to be better; it was sufficient for it to be different, since it was not the result itself which was patentable but the means by which it was achieved (see also **T 818/93**).

### **6.11 Problem inventions**

The discovery of an unrecognised problem may in certain circumstances give rise to patentable subject-matter in spite of the fact that the claimed solution is retrospectively trivial and in itself obvious (see **T 2/83** (OJ 1984, 265) and **T 225/84**). The posing of a new problem did not represent a contribution to the inventive merits of the solution if it could have been posed by the average person skilled in the art (**T 109/82**, OJ 1984, 473). It also had to be taken into consideration that it was the normal task of the skilled person to be constantly occupied with the elimination of deficiencies, the overcoming of drawbacks and the achievement of improvements of known devices and/or products (see **T 15/81** (OJ 1982, 2) and **T 195/84** (OJ 1986, 121)). In **T 532/88** the board confirmed the established principle that to address a problem simply by looking for ways of overcoming difficulties arising in the course of routine work did not constitute inventiveness. Following this case law, the boards held in **T 630/92**, **T 798/92**, **T 578/92**, **T 610/95** and **T 805/97**, that the posing of the problem could not confer any inventive merit on the claimed subject-matter. Inventive step was however acknowledged in **T 135/94** und **T 540/93** (pet doors) on the ground (also) that the posing of the problem was not obvious.

In **T 971/92** the board emphasised that the appreciation of conventional technical problems which formed the basis of the normal activities of the notional person skilled in the art, such as the removal of shortcomings, the optimisation of parameters or the saving of energy or time, could not involve an inventive step. The appreciation of a technical problem could thus only contribute to the inventive step in very exceptional circumstances. However, if an applicant nevertheless wished to rely on an assertion that the inventive activity resided in the recognition of a technical problem to which the solution was admittedly obvious, then the minimum requirement to be met was that this technical problem be clearly and unambiguously disclosed in the application as filed.

In **T 566/91** the invention related to a soft nystatin pastille formulation for treatment of candidiasis in the oral cavity. In the case in point the board did not agree with the submission by the appellants that the technical problem underlying the contested patent consisted in the unrecognised problem of poor patient compliance, as the average skilled person could have posed that problem where - as in that particular case - one necessarily came to light when an object or product was used. Consequently, a problem which amounted to no more than noticing obvious non-compliance with an obvious desideratum in a given situation, namely poor patient compliance using nystatin formulation as a result of the unpleasant taste of the active substance, could not be retained as the actual problem to be solved.

### **6.12 New use of a known measure**

When determining inventive step in the case of a new use of a known measure, the boards of appeal examine whether or not the problem which has been solved with a known measure in a known case differs from the problem posed in the case to be decided. If this examination reveals that there is no fundamental difference between the two problems, it can in principle be concluded that there is no inventive step if the known measure is adopted (see in particular **T 39/82** (OJ 1982, 419), **T 142/84** (OJ 1987, 112), **T 332/90**, **T 485/91**, **T 25/97**). In **T 39/82** (OJ 1982, 419) the board stated that it could not be considered obvious for the

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skilled person to use a known measure in a different context since the problems differed fundamentally from one another.

Referring to **T 39/82** (OJ 1982, 419) the board confirmed in **T 818/93** that in a **combination invention** all the features might be known per se - the invention resided in the way the features were interrelated, both structurally and functionally. In assessing the inventive step of the combination in question it was therefore of no consequence that a suitable structure was already known, provided its use and application in the conditions, and circumstances disclosed in the patent were not suggested by the cited prior art.

In **T 741/92** the invention involved the new use of a known means, namely a particular mesh structure. In the case of such inventions the board took the view that it was of little importance that the means was known per se if new properties and purposes came into play in its use. The known means was used in the invention to obtain a result not previously known or obvious.

Summing up in **T 301/90**, the board held that it was a generally accepted principle in the assessment of inventive step that, whereas the use of a known measure to achieve a known result on the basis of the expected inherent effect was not normally inventive, the indication of a new and non-obvious technical result, which could be achieved through these known effects (for application to the field of chemistry, see **T 4/83** (OJ 1983, 498) and to the field of physics, see **T 39/82** (OJ 1982, 419)), might nevertheless convert the use of this known measure into a new and non-obvious tool for solving a new technical problem. It might thus represent an enrichment of the art and imply an inventive step (see **T 1096/92**, **T 238/93**).

In **T 590/90** the respondents argued that both the measures taken that distinguished the technical teaching of the contested patent from that of document 1 were already part of the prior art, and their application to the process described in document 1 was obvious. However, the board held that the application of a measure known as such, contrary to warnings given in several documents, was not obvious. Since this measure involved an inventive step, the overall process of claim 1 encompassing that measure likewise involved an inventive step: the modification of a known process by two measures, at least one of which was not obvious, rendered the entire process inventive.

#### **6.13 Obvious new use**

In **T 112/92** (OJ 1994, 192) document (1), as the closest prior art, referred to the use of glucomannan as a thickener for an ungelled processed food product, but did not mention its function as a stabiliser. The board applied the principles set out in **T 59/87** (OJ 1991, 561) to the present case and stated that even if glucomannan did act as an emulsion stabiliser in preparing the product in accordance with document (1), this use would have been a hidden use. It came to the conclusion that the use of a substance as a stabiliser for emulsions, if not inextricably linked with its use as a thickening agent, was at least very closely related. The board held that it would have been obvious for the skilled person, knowing that glucomannan was effective as a thickening agent for emulsions, at least to try to find out if it was also effective as a stabiliser. Although **T 59/87** had found that a claim to an inherent but hidden later use of a known substance could be novel, the subject-matter of such a claim would still

lack inventive step if the prior art indicated a well-established link between the earlier and later uses (see also **T 544/94**).

#### **6.14 Need to improve properties**

In its headnote to **T 57/84** (OJ 1987, 53) the board stated: "If a product is required to manifest a particular property (in this case a highly fungicidal effect) under various conditions, the superiority of the invention will depend on whether or not that property is improved under all conditions liable to be encountered in practice and particularly under the various conditions evolved in order to test it (in this case exposure to water and wind). If comparative tests are cited in support of that superiority, it is their combined results that have to be considered. The decisive factor is whether the invention outperforms the substance used for comparison in the tests as a whole (in this case, results in the need to use a significantly lower concentration of the pollutant substance), even if the substance used for comparison proves better in one of the tests".

Following **T 57/84**, it was stated in **T 254/86** (OJ 1989, 115) that an invention which relied on a substantial and surprising improvement of a particular property did not also need to show advantages over the prior art with regard to other properties relevant to its use, provided the latter were maintained at a reasonable level so that the improvement was not completely offset by disadvantages in other respects to an unacceptable degree or in a manner which contradicted the disclosure of the invention fundamentally (see also **T 155/85**, OJ 1988, 87). It was thus not necessary for there to be an improvement in every respect (**T 302/87**, **T 470/90**).

In **T 155/85** (OJ 1988, 85) it was further pointed out that subject-matter falling structurally between two particular embodiments of cited disclosure and displaying, in all relevant respects, effects substantially between those known for the same embodiments, lacked inventive step in the absence of other considerations.

#### **6.15 Disclaimer**

According to **T 4/80** (OJ 1982, 149) and **T 433/86**, in cases where what is claimed in general overlaps with the state of the art it is permissible to exclude a special state of the art from the claimed invention by means of a disclaimer, even if the original documents give no (specific) basis for such an exclusion (see however **T 323/97** (OJ 2002, \*\*\*) where it was stated obiter dicta that the practice of permitting disclaimers having no support in the application as filed could not be maintained, see p. 161).

Whereas a disclaimer can be used to make an inventive teaching which overlaps with the state of the art novel, it cannot make an obvious teaching inventive (**T 170/87** (OJ 1989, 441), **T 597/92** (OJ 1996, 135)). In **T 710/92** the board stated that the latter was also valid in cases where the disclaimer was introduced for novelty reasons, since the excision, in the form of a disclaimer, of part of a claim could not change the content of the original teaching.

In **T 871/96** the board held that therefore, the limiting clause represented by the disclaimer is meaningless in assessing the inventive step. For this reason, the invention without

discontinuities between the claimed subject-matter and that part of the original subject-matter excised by way of a disclaimer has to solve uniformly what is regarded as the underlying technical problem (see also **T 434/92**).

In **T 308/97** the disclaimer was intended to differentiate between cited documents in the same technical field and was not introduced in order to establish novelty, since novelty was present even without the disclaimer. The purpose of the disclaimer was to make obvious subject-matter non-obvious, thereby making it a different invention. The board therefore concluded that the introduction of the disclaimer was not allowable and was in breach of Art. 123(2) EPC.

For further information on disclaimers, see pages 101 et seq. and 210 et seq.

#### **6.16 Optimisation of parameters**

In key decision **T 36/82** (OJ 1983, 269), the board stated that inventive step was not considered to be constituted by efforts directed at the concurrent optimisation of two parameters of a particular device by the simultaneous solution of two equations which were known per se and respectively expressed those parameters as functions of certain dimensions of the device. The fact that it had proved possible to find a range of values for the dimensions in question which provided an acceptable compromise between the two parameters could not be considered surprising where there were indications in the prior art suggesting that favourable results might be obtained by the method of calculation applied.

In **T 263/86** the invention related to a spectacle lens with an astigmatic effect. The board of appeal pointed out that the relationship between residual astigmatism, focussing error and frequency response could be assumed to be known by a spectacles expert. The board therefore saw the quality formula as merely the result of simultaneous optimisation of a number of lens properties which led to a compromise lying within the skilled person's discretion. However, such compromises in the case of a parameter optimisation were not deemed to be surprising and their discovery was thus not considered to involve an inventive step.

In a number of other decisions, all of which referred to **T 36/82** (OJ 1983, 269) the subject-matter was found not to involve an inventive step, particularly when the problem addressed was to find a suitable compromise between different parameters (**T 38/87**, **T 54/87**, **T 655/93** and **T 118/94**). In **T 410/87** the board stated that it was part of the activities deemed normal for the skilled person to optimise a physical dimension in such a way as to reach an acceptable compromise, serving the intended purpose, between two effects which were contingent in opposing ways on this dimension (see also **T 409/90** (OJ 1993, 40), **T 660/91**, **T 218/96**, **T 395/96**).

In **T 73/85** the board stated that the very fact that the problem of improving the property in question was solved not - as was normal - by means of a specific change in structural parameters but by amending process parameters had in fact to be considered surprising. In this case it did not matter that the individual reaction conditions claimed in the disputed patent were known per se; more important was whether the skilled person, in expectation of the



sought-after optimisation had suggested, or - in the absence of possible predictions - had tried as a matter of priority, the combination of measures known per se claimed.

In **T 500/89** the board established that the fact that individual parameter areas taken per se were known did not imply that it was obvious to combine them specifically to solve the problem according to the contested patent. The combination of the individual parameter areas was not the result of merely routine optimisation of the process according to document 1, as there was nothing in said document to suggest this combination.

#### **6.17 Small improvement in commercially used process**

In **T 38/84** (OJ 1984, 368) the board of appeal pointed out that the achievement of a numerically small improvement in a process commercially used on a large scale (here enhanced yield of 0.5%) represented a worthwhile technical problem which should not be disregarded in assessing the inventive step of its solution as claimed (see also **T 466/88** and **T 332/90**). In **T 155/85** (OJ 1988, 87) the board added that it was correct to say that even small improvements in yield or other industrial characteristics could mean a very relevant improvement in large-scale production, but the improvement had to be significant and therefore above margins of error and normal fluctuations in the field in consequence of other parameters. In **T 286/93** the invention related to a process for manufacturing wrapping paper and board. The results for the process had shown that the machine speed and the mechanical quality of the paper obtained had improved by some 3 % vis-à-vis a process in which the order in which aluminium polychloride and cationic starch were added had been reversed. Since a process of this kind was obviously intended for the production of paper on an industrial scale, even a small improvement had to be regarded as significant.

#### **6.18 Evidence of inventive step in the field of medicine**

In **T 619/94** the board held that features that were known or obvious in the field of sandblasting could not automatically be transferred to the medical field without considering the particular situation in the latter field, since in the case in point the consistency of the human tissue to be removed by abrasion was different from that of the material normally removed by sandblasting.

In **T 913/94** the invention relates to the use of a specific agent in the preparation of a medicament against gastritis. In the board's view, though gastritis and ulcer are distinct diseases, they have common aspects in relation to their causative factors. In the case in point the board investigated, whether, an anti-ulcer medicament would also have been expected to be active against gastritis. It arrived at the conclusion that if the manifestations of the second more serious disease (ulcer) are known to run through the manifestations of the first disease, and this assumption reliably substantiated was not confuted, then the activity of a medicament against the more serious disease would already strongly suggest an effect also against the less serious one. Thus, said agent is known for the treatment of experimentally induced ulcer; its use for the preparation of a medicament for the treatment of gastritis does not involve any inventive merit.

### **6.19 Analogy process/Envisageable product**

The effect of a process manifests itself in the result, ie in the product in chemical cases, together with its internal characteristics and the consequences of its history of origin, eg quality, yield and economic value. It is well established that analogy processes are patentable insofar as they provide a novel and inventive product. This is because all the features of the analogy process can only be derived from an effect which is as yet unknown and unsuspected (problem invention). If, on the other hand, the effect is wholly or partially known, eg the product is old or is a novel modification of an old structural part, the invention, ie the process or the intermediate therefor, should not merely consist of features which are already necessarily and readily derivable from the known part of the effect in an obvious manner having regard to the state of the art (**T 119/82** (OJ 1984, 217); see also **T 65/82** (OJ 1983, 327)).

According to **T 2/83** (OJ 1984, 265), so-called analogy processes in chemistry are only claimable if the problem, ie the need to produce certain patentable products as their effect, is not yet within the state of the art.

**T 595/90** (OJ 1994, 695) was concerned with the inventiveness of a product which could be envisaged as such but for which no known method of manufacture existed. Accordingly, a product which could be envisaged as such with all characteristics determining its identity including its properties in use, ie an otherwise obvious entity, might nevertheless become non-obvious and claimable as such if there was no known way or applicable (analogous) method in the art for making it and the claimed methods for its preparation were therefore the first to achieve this and do so in an inventive manner.

In **T 233/93** the combination of properties defining the claimed products had been a desideratum which the skilled community had striven to achieve. These properties, however had been considered to be irreconcilable. The board stated that such a desired product, which may appear obvious per se, may be considered non-obvious and be claimable as such, if there is no known method in the art to make it and the claimed methods for its preparation are the first to produce it and do so in an inventive manner.

### **6.20 Examples of the denial of inventive step**

#### **6.20.1 Reversal of procedural steps**

The mere reversal of procedural steps in the production of component parts could not provide justification for inventive step (**T 1/81**, OJ 1981, 439).

#### **6.20.2 Purposive selection**

If, for a particular application of a known process, the skilled person could obviously use a material generally available on the market and suitable for the purpose, and was also highly likely to use it for reasons irrespective of its characteristics, such use should not be considered as inventive on account of those characteristics alone. It stood to reason that if carrying out such a step was itself already obvious for other reasons, the natural choice of

### *I.D.7. Secondary indicia in determining inventive step*

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the particular means on the market-place was devoid of mental or practical effort, or of "purposive selection", in the absence of anything to the contrary (**T 513/90**).

#### 6.20.3 Automation

In **T 775/90** the board ruled that mere automation of functions previously performed by human operators was in line with the general trend in technology and thus could not be considered inventive.

The mere idea of executing process steps automatically, eg replacing manual operation by automatic operation, was a normal aim of the skilled person (**T 234/96**).

#### 6.20.4 Routine experiments

Work involving mere routine experiments, such as merely conventional trial-and-error experimentation without employing skills beyond common general knowledge, lacked inventive step (**T 455/91** (OJ 1995, 684), **T 104/92**).

In **T 253/92** the subject-matter of claim 1 related to a process for the manufacture of a permanent-magnet alloy. In the board's view a skilled person would have regarded it as obvious to try out a variety of alloys known from the prior art to be of similar composition to those of the better examples and to measure their magnetic properties. During such routine experiments the skilled person would have come upon those alloys, which combined excellent stability with an energy product of at least 28.1 MGoe, since these were not hidden properties, but precisely the ones being sought.

#### 6.20.5 Simplification of complicated technology

In **T 61/88** the board indicated that in the face of an optimal but sophisticated solution to a technical problem the skilled person could not be denied the capacity to recognise that less complicated alternatives generally achieved less perfect results and consequently to envisage such alternatives, at least in situations in which the advantages of decreased complexity could reasonably be expected to outweigh the resulting loss of performance (**T 817/94**).

In **T 505/96** the board concluded that the simplification of complicated technology in situations in which advantages of decreased complexity could reasonably be expected to outweigh the resulting loss of performance must be considered to be part of the normal work of the person skilled in the art.

## **7. Secondary indicia in determining inventive step**

### **7.1 General issues**

According to established case law, a mere investigation for indications of the presence of inventive step is no substitute for the technically skilled assessment of the invention vis-à-vis the state of the art pursuant to Art. 56 EPC. Where such indications are present, the overall

picture of the state of the art and consideration of all significant factors may show that inventive step is involved but this need not necessarily always be the case (see **T 24/81** (OJ 1983, 133) and **T 55/86**). Secondary indicia of this kind are only of importance in cases of doubt, ie when objective evaluation of the prior art teachings has yet to provide a clear picture (**T 645/94**, **T 284/96**, **T 71/98**). Indicia are merely **auxiliary considerations** in the assessment of inventive step (**T 1072/92**, **T 351/93**).

In the "**Epilady**" case (**T 754/89**) the board detailed its reasons for ruling that an inventive step was involved. Although factors such as commercial success, the overcoming of prejudice, the age of the documents cited, the cost of advertising and the creation of a new market segment, the satisfaction of a long-standing need, the existence of imitations and forms of infringement had received considerable attention, particularly in the parties' written submissions, the technical facts of the case were such that secondary indications of inventive step had lost any relevance.

## **7.2 Prejudice in the art**

According to the case law of the boards of appeal (see **T 119/82** (OJ 1984, 217) and **T 48/86**), inventiveness can sometimes be established by demonstrating that a known prejudice, ie a widely held but incorrect opinion of a technical fact, needs to be overcome. In such cases, the burden is on the patentee (or patent applicant) to demonstrate, for example by reference to suitable technical literature, that the alleged prejudice really existed (**T 60/82**, **T 631/89**, **T 695/90**).

A prejudice in any particular field relates to an opinion or preconceived idea widely or universally held by experts in that field. The existence of such prejudice is normally demonstrated by reference to the literature or to encyclopaedias published before the priority date. The prejudice must have existed at the priority date, any prejudice which might have developed later is of no concern in the judgment of inventive step (**T 341/94**, **T 531/95** and **T 452/96**).

Generally speaking, prejudice **cannot** be demonstrated by a statement in a single patent specification, since the technical information in a patent specification or a scientific article might be based on special premises or on the personal view of the author. However, this principle does not apply to explanations in a standard work or textbook representing common expert knowledge in the field concerned (**T 19/81** (OJ 1982, 51), **T 104/83**, **T 321/87**, **T 392/88**, **T 601/88**, **T 519/89**, **T 453/92**, **T 900/95**). In **T 515/91** the board regarded "ABC Naturwissenschaft und Technik" as a standard work (see also **T 461/92**, **T 152/93**). In **T 943/92** the existence of a prejudice was supported by a specialist book which reflected the technical knowledge in the special field of the contested patent. This book did not contain the opinion of just one specialist author, but that of experts in the field, as it had resulted from the collaboration of "numerous recognised scientists, technicians and practitioners as well as associations and institutes". General critical remarks in one textbook were not sufficient for substantiating an alleged prejudice, if a plurality of prior art documents pointed to the opposite (**T 134/93**).

Generally established board of appeal case law is **very strict** on recognising the existence

of a prejudice. A solution put forward as overcoming a prejudice must clash with the prevailing teaching of experts in the field, ie their unanimous experience and notions, rather than merely citing its rejection by individual specialists or firms (T 62/82, T 410/87, T 500/88, T 74/90, T 943/92, T 531/95 and T 793/97). The fact that a disadvantage is accepted or the prejudice simply ignored does not mean that a prejudice has been overcome (T 69/83 (OJ 1984, 357), T 262/87, T 862/91).

In T 550/97 the respondent (patent proprietor) had argued that, years after the invention, technically less advanced solutions had been filed for and marketed as a means of integrating different mobile radio networks. However, the board did not consider the fact that arguably less advanced solutions had been developed later to be evidence of inventive step, as there was no reason to assume that later development was attributable to a technical prejudice which the present invention had needed to overcome.

In T 347/92 the board pointed out that the finding of a relatively small operating window in an area which, according to the teaching of the most recent publications, was considered inaccessible, could not be considered obvious to a person skilled in the art. The existence of a prejudice was also confirmed in T 57/98.

One form of secondary indicia in the nature of a "technical prejudice" is a **development of the art in a different direction** (see also T 2/81, OJ 1983, 133, T 650/90, T 330/92). In T 872/98 the board pointed out that the presence of secondary indicia might also be attested by the fact that a competitor had, shortly after the priority date, filed a patent application with the German Patent Office in which the invention took an entirely different direction to the European application.

### **7.3 Age of documents/time factor**

The age of documents known long before the filing date might only be an indication of inventive step if a need for the solution of an unsolved problem had existed for the whole time between the date of the documents and that of the invention (T 79/82 and T 295/94). Nevertheless, the long period of time to be considered was not the period that had elapsed between the publication of a document and the filing of the European patent application disclosing the teaching of that document, but that between the time the problem became apparent and the date of filing of the European patent application providing a solution (T 478/91).

A period of 23 years between the publication date of the document deemed to be the closest prior art and the priority date of the contested patent in an economically significant and frequently studied field could normally be viewed as an indication of the presence of inventive step (T 273/92). In T 203/93 and in T 795/93 a period of 11 years was considered to be an indication in support of inventive step, in T 986/92 a period of 70 years, in T 478/91 80 years and in T 626/96 60 years (see also T 774/89, T 540/92, T 957/92, T 697/94, T 322/95, T 255/97, T 970/97).

In T 330/92 the documents reflecting the general knowledge available to experts in the field of the application (injection mould technology for cashcard holders) had been published at

least 17 years before the filing date of the contested patent. The board of appeal pointed out that the elements which could have led to the feature combination of claim 1 had thus long been known in the prior art. Nevertheless the experts had for all this time been "blind" to these findings. Nor had other applicants in the same field made use of the knowledge in question.

In **T 1077/92** the board faced the unusual situation of a problem and its ready solution having co-existed for 100 years in general, and more recently in a field of intensive research, and still the seemingly obvious step had not been taken. The board concluded that, as no other explanation could be found, this must have been because inventive insight was needed (**T 617/91**).

In **T 123/97** the failure to adopt an obvious solution to the technical problem underlying the patent in suit may have resulted from a variety of causes: for example there may have been a commercial reason for not adopting this new technique, because the old technique was found satisfactory by the clients and could also be improved, thus avoiding considerable investment costs involved in the adoption of a new technique on an industrial scale.

#### **7.4 Satisfaction of a long-felt need**

The fact that the state of the art has been inactive over a long period prior to the invention may be an indication that an inventive step is involved if during that time an urgent need for improvement has demonstrably existed (see **T 109/82** (OJ 1984, 473), **T 555/91** and **T 699/91**). This indication is closely linked to the positive indications of the time factor and age of the cited document.

In **T 605/91** the board stated that it was not sufficient if only one individual skilled person discovered a "long-felt need". Only if various and repeated attempts to deal with the relevant disadvantages could be identified would such a long-felt need appear to have persisted.

In **T 1014/92** the board did not accept the appellant's further argument, that the long period of time (about 35 years) for which documents (1) and (2) had been available to the public without having been combined was in itself cogent evidence that there was no obvious connection between them. The board held that this conclusion might only be drawn if evidence relating to time were corroborated by other evidence, such as long-felt want. Therefore, a finding of obviousness, based on an objective evaluation of the state of the art, could not be affected by the mere fact that two documents had not been combined by a skilled person for a considerable period of time.

Where a process had been performed successfully on a commercial scale for more than 20 years in spite of economic disadvantages associated with it, and the claimed invention provided a solution to the technical problem of avoiding such economic disadvantages, this supported a finding of inventive step (**T 271/84**, OJ 1987, 405).

#### **7.5 Commercial success**

In principle, commercial success alone is not to be regarded as indicative of inventive step.

#### *I.D.7. Secondary indicia in determining inventive step*

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The following requirements must first be met (see Guidelines, C-IV,9.9): a long-felt need must have been fulfilled, and the commercial success must derive from the technical features of the invention and not from other influences (eg selling techniques or advertising).

In **T 110/92** the board did not dispute that the heating assembly according to claim 1 might have been a commercial success. However, such a commercial success alone, with the technically relevant examination of the claimed subject-matter leading to a negative result, could not be regarded as forming the basis for an indication of inventive step even if the board were convinced that the success derived from technical features of the heating assembly and not from other causes such as those of a commercial nature (see **T 5/91**, **T 219/90**, **T 373/94**).

In **T 478/91** too, commercial success was not regarded as indicative of inventive step. The board pointed out that it was well known that the commercial success of a product could just as easily be due to factors other than its properties, in particular more streamlined manufacture, a market monopoly, advertising campaigns or efficient selling technique (see **T 270/84**, **T 257/91**, **T 712/92**).

In **T 677/91** the board took the commercial success of the claimed invention into consideration and stated that it would have been wrong to ignore the practical impact that the invention had made in its own field since the priority date. For example, in several passages of a textbook reference was made to the fact that the various advantages of the claimed invention had brought in a new era in this special field. The board concluded that it was difficult to reconcile the contents of such passages with the idea that the claimed invention was a matter of mere routine development and thus held that the invention involved an inventive step.

In **T 626/96** the invention had likewise achieved great commercial success and gained widespread recognition in a number of countries. Furthermore, the success was achieved in a very short space of time, so that there seemed to be a pressing commercial need for this simple solution. Furthermore, the success was directly attributable to the structure of the product claimed and was not due to marketing techniques or advertising skills.

**Efforts undertaken by market competitors to obtain rights of joint use** are a subsidiary instance of an indication of commercial success and may result in a decision in support of the presence of inventive step, but need not necessarily do so. In **T 351/93** the board stated that the latter applied particularly where a technical and expert assessment of the invention in the light of the prior art led, according to the problem-solution approach, to the conclusion that the existence of inventive step had to be denied.

The case was slightly different in **T 812/92**: the situation might arise where, shortly before the filing date of the contested patent, **one of the patent proprietor's competitors** offered a customer a technical apparatus without reducing to practice the advantageous technical solution according to the invention. This might be an indication that an inventive step was involved.

## 7.6 Simple solution

In a technical field of commercial importance to which considerable attention is directed the simplicity of a proposed solution may indicate inventive step. The difficulty of developing a simple solution without sacrificing quality may therefore indicate inventive step (**T 106/84** (OJ 1985, 132), **T 229/85** (OJ 1987, 237), **T 9/86** (OJ 1988, 12), **T 29/87**, **T 44/87**, **T 528/89**, **T 73/95**). This did however presuppose the absence in the prior art of anything that hinted at the proposed solution (**T 712/92**).

In **T 234/91** it was pointed out that experience in structural engineering showed that with the same or even an improved effect - in the case in point an increase in reliability - it was often much more difficult to identify and achieve a simple solution than complicated embodiments. In view of the large number of solutions suggested in the technical literature, the board came to the conclusion that the improvement achieved by the simple structural measure suggested in the contested patent had not been obvious (see also **T 330/87**).

In **T 349/95** the subject-matter at issue related to a simple form of a simple device, a device which, however, had brought about a surprising major functional improvement. In the board's view, this surprising improvement and the fact that the prior art gave no clear hint of the solution constituted evidence of the inventiveness of the claimed solution.

A different aspect was dealt with in **T 113/82** (OJ 1984, 10). In order to proceed from the known art to the invention, a series of steps needed to be taken. The board stated that this could be considered as an indicator of the presence of inventiveness, particularly in a case where the last decisive step had neither been proved to be known from the prior art nor was derivable therefrom, although this last step might at first sight seem to be a very simple one (see also **T 315/87**, **T 508/88**, **T 424/89**, **T 394/90**).

## 7.7 Surprising effect

### 7.7.1 "Bonus effect"

An effect which may be said to be unexpected can be regarded as an indication of inventive step (**T 181/82**, OJ 1984, 401). However, certain preconditions have to be met. In **T 21/81** (OJ 1983, 15) the board considered that if, having regard to the state of the art, it would already have been **obvious** for a skilled person to arrive at something falling within the terms of a claim, because an advantageous effect could be expected to result from the combination of the teachings of the prior art documents, such claim **lacked** inventive step, irrespective of the circumstance that an extra effect (possibly unforeseen) was obtained (see **T 365/86**, **T 350/87**, **T 226/88**). This case law was also confirmed in **T 69/83** (OJ 1984, 357). Where, because of an essential part of the technical problem being addressed, the state of the art obliged a skilled person to adopt a certain solution, that solution was not automatically rendered inventive by the fact that it also unexpectedly solved part of the problem. Therefore, an unexpected bonus effect does not confer inventiveness on an obvious solution (**T 231/97**).

Furthermore, in **T 192/82** (OJ 1984, 415) the board stated that the skilled person had to be free to employ the best means already available for his purposes, although the use of means



leading to some expected improvements might well be patentable in relying on an additional effect, provided this involved a choice from a multiplicity of possibilities. The lack of alternatives in this respect might therefore create a "**one-way-street**" situation leading to predictable advantages which remained obvious in spite of the existence of some unexpected "bonus" effect. The board also pointed out in **T 506/92** that an additional effect achieved inevitably by the skilled person on the basis of an obvious measure without any effort on his part simply represented a bonus under EPO case law which could not substantiate inventive step, even as a surprising effect (see also **T 766/92, T 431/93, T 703/93, T 681/94**).

The board in **T 936/96** held that, once a realistic technical problem had been defined and once it had been established that a particular solution to such a problem **would** have been envisaged by a skilled person in the light of the relevant state of the art, that solution could not be said to involve an inventive step, and this assessment was not altered by the fact that the claimed invention inherently also solved further technical problems. In the case in point the claimed surprising effect could not be regarded as an indication of the presence of an inventive step.

In **T 227/89** the board stated that in determining which effect was crucial and which was merely accidental (the so-called "bonus effect"), a realistic approach had to be taken, considering the relative technical and practical importance of those effects in the circumstances of a given case (see also **T 732/89** and **T 729/90**). When assessing chemical substances for inventive step, it is often their surprising properties that are considered (see in this connection **T 20/83**, OJ 1983, 419).

In **T 848/94** the solution of the existing technical problem required a combination of measures that was not suggested by the prior art in such a manner that it would have been adopted by the person skilled in the art. Therefore, the person skilled in the art was not in a "one-way-situation".

In **T 154/87** it was pointed out that the achievement of a surprising effect was no precondition for the existence of inventive step. All that was necessary was to ascertain that the respective subject-matter could not be derived by the skilled person in an obvious manner from the available prior art (**T 426/92, T 164/94, T 960/95, T 524/97**).

In **T 551/89** the board stated that an effect which was to be expected as the result of an obvious measure could not contribute to recognition of the required inventive step, even if the scale of this effect was surprising to the skilled person. In this case an effect whose scale surpassed the skilled person's hopes merely represented a bonus effect following inevitably from the use of an obvious measure and obtained by the skilled person without any inventive effort on his part (**T 506/92, T 882/94**).

In **T 240/93** the application related to an apparatus for the surgical treatment of tissues by hyperthermia, equipped with heat protection means. The application was refused by the examining division, which considered the short treatment duration of one hour and further advantages resulting from the use of cooling means to be extra (bonus) effects. The board, however, stated that in the case in point the objective problem underlying the invention was

to provide an apparatus for the effective therapeutic treatment of benign prostate hyperplasia in a short period of time. In view of the many considerable practical advantages of a single one-hour hyperthermia session for a patient, such a short treatment duration could not be dismissed as a mere "bonus" effect, but was crucial to the invention and the basis of the objective problem.

#### 7.7.2 Comparative tests

In certain cases an effect demonstrated by means of a comparative test may be regarded as indicating that an inventive step has occurred. According to the case law of the boards of appeal, if comparative tests are chosen to demonstrate an inventive step on the basis of an improved effect, the nature of the comparison with the closest state of the art must be such that the said effect is convincingly shown to have its origin in the distinguishing feature of the invention (**T 197/86**, OJ 1989, 371) and alleged but unsupported advantages cannot be taken into consideration in respect of the determination of the problem underlying the application (**T 20/81** (OJ 1982, 217) and **T 561/94**).

In **T 197/86** (OJ 1989, 371) the board supplemented the principles laid down in earlier decision **T 181/82** (OJ 1984, 401), according to which, where comparative tests were submitted as evidence of an unexpected effect, there had to be the closest possible structural approximation in a comparable type of use to the subject-matter claimed. In the case in point the respondent (proprietor of the patent) strengthened support for his claim by voluntarily providing comparisons with variants which, although not expressly belonging to the prior art, differed from the claimed subject-matter only by the distinguishing feature of the invention. The board summarised its position by stating, that in cases where comparative tests were chosen to demonstrate an inventive step with an improved effect over **a claimed area**, the nature of the comparison with the closest state of the art had to be such that the effect was convincingly shown to have its origin in the distinguishing feature of the invention. For this purpose it might be necessary to modify the elements of comparison so that they differed only by such a distinguishing feature (**T 292/92**, **T 412/94**, **T 819/96**).

Already in **T 35/85** the board stated that an applicant or patentee may discharge his onus of proof by voluntarily submitting comparative tests with newly prepared variants of the closest state of the art identifying the features common with the invention in order to have a variant lying closer to the invention so that the advantageous effect attributable to the distinguishing feature is thereby more clearly demonstrated (**T 40/89**, **T 191/97**).

In **T 390/88** the board addressed the question of the circumstances under which the production of comparative examples was unnecessary. In the above-mentioned earlier cases the invention had been obvious *prima facie* because the products, although novel, were very close structurally to the prior art products. The case in point was different. Here, the board said that the production of comparative examples was not essential to establish inventiveness, as the invention had not been obvious from the outset (**T 656/91**).

In **T 172/90** the comparative examples produced did not constitute suitable evidence of inventive step. The board said that the products adduced as a basis of comparison were commercially available and had evidently been selected at random. Technical progress

shown in comparison with products of this kind could not be a substitute for the demonstration of inventive step with regard to the closest prior art (see also **T 164/83**, OJ 1987, 149, **T 730/96**).

## **E. The requirement of industrial applicability under Article 57 EPC**

### **1. Notion of "industrial application"**

Art. 57 EPC provides that "An invention shall be considered as susceptible of industrial application if it can be made or used in any kind of industry, including agriculture". This Article defines and explains the nature of the requirement in Art. 52(1) EPC that the subject-matter is "susceptible of industrial application". In particular, this Article makes it quite clear that, under the EPC, agriculture is a kind of industry, and that agricultural methods are therefore, in general, methods which are susceptible of industrial application (**T 116/85**, OJ 1989, 13).

In **T 144/83** (OJ 1986, 301) the board stated that under Art. 57 EPC an invention was to be considered as susceptible of industrial application if it could be made or used in any kind of industry. Enterprises in the cosmetic field - such as cosmetic salons and beauty parlours - were part of industry within the meaning of Art. 57 EPC, since the notion of "industry" implied that an activity was carried out continuously, independently and for financial gain. A board had already decided that the professional use of such inventions in a cosmetic salon was an industrial application within the meaning of Art. 57 EPC. In **T 36/83** (OJ 1986, 295) the board also found that the professional use of the invention in a beauty parlour was an industrial application within the meaning of Art. 57 EPC.

In **T 204/93** the board held that commercial use excluded from patentability under Art. 52(2)(c) and (3) EPC (in so far as it was not construed as a method for doing business) was a feature which might be understood to fall under the requirement that an invention had to be susceptible of industrial application (Art. 52(1) EPC), ie that it could be made or used in any kind of industry (Art. 57 EPC); reference was made in particular to the German word "gewerblich" in that provision of the Convention. The board noted that it was not disputed that computer programs could be exploited commercially. The exclusions from patentability defined in Art. 52(2) EPC and in Art. 52(3) EPC did not in any way refer to the requirement in Art. 52(1) EPC of "industrial application" but to the requirement in that Article that the subject-matter claimed had to be an "invention". The exclusions in Art. 52(2) and (3) were generally understood to have in common that the excluded matters lacked technicality but not that they could not be made or used, eg traded.

In **T 953/94** the board stated that as the Convention showed (Art. 52(1) EPC), the requirement (defined in Art. 52(2) and (3) EPC) of claimed subject-matter being an "invention" was distinct from the requirement (defined in Art. 57 EPC) of the claimed invention being "susceptible of industrial application". Even though the former requirement might, cum grano salis, be equated with a requirement for a "technical" contribution, this was not the same as a requirement for an "industrial" applicability; at least in this context, the terms "technical" and "industrial" were not synonyms. In Art. 57 EPC, the meaning of "industrial" was evidently intended to cover commercial applications; this was made clear, for instance, by the German

### The requirement of industrial applicability under Article 57 EPC

version ("gewerblich"). In the context of Art. 52(2) EPC, this was clearly not the case for the meaning of "technical". This was because, in the context of "controlling a ... process", the adjective "industrial" should, other than in the context of Art. 57 EPC, be understood to relate only to technical processes usually occurring in "industry" (this latter term in its present context being understood in the narrower sense of what in German would be called "Industrie") and thus not as including "commercial", or even "financial", applications.

In **T 541/96** the board noted that according to Art. 52(1) EPC a European patent could be granted for an invention which was, inter alia, susceptible of industrial application. This concept was related to the obligation on an applicant to give a sufficient description of the invention, as required by Art. 83 EPC. An invention or an application for a patent for an alleged invention which would not comply with the generally accepted laws of physics would be incompatible with the requirements of Art. 57 EPC and Art. 83 EPC because it could not be used and therefore lacked industrial application. The description would moreover be insufficient to the extent that the applicant would not be able to describe how it could be made to work.

The board went on to observe that the EPC did not prevent the patentability of "revolutionary" inventions. However, Art. 83 EPC made the amount of information required for a sufficient disclosure of an invention somewhat dependent on the actual "nature" of the invention. If the latter lay in a well-known technical field and was based on generally accepted theories, the description did not need to comprise many specific technical details which would anyway be implicit to a skilled person. However, if the invention seemed, at least at first, to offend against the generally accepted laws of physics and established theories, the disclosure should be detailed enough to prove to a skilled person conversant with mainstream science and technology that the invention was indeed feasible (ie susceptible of industrial application). This implied, inter alia, the provision of all the data which the skilled person would need to carry out the claimed invention, since such a person, not being able to derive such data from any generally accepted theory, could not be expected to implement the teaching of the invention just by trial and error.

In the case at issue, the gist of the invention consisted in inducing nuclear fusion between light nuclei and heavy unstable nuclei at low temperature by means of an electric field. The appellant had provided neither experimental evidence nor any firm theoretical basis which would enable the skilled person to assess the viability of the invention; the description was essentially based on general statements and speculations which were not apt to provide a clear and exhaustive technical teaching. Thus, it was irrelevant to consider whether the fusion reactions referred to in the description might be theoretically possible, or whether they might indeed occur under certain conditions.

In **T 718/96** the board ruled that although disclosure objections could be raised under Art. 57 EPC, on the grounds that an invention which cannot be carried out is not susceptible of industrial application, they should rather be based on Art. 83 EPC or Art. 100(b) EPC which specifically relate to the performability of inventions.

## **2. Indicia in determining industrial applicability**

### **2.1 Methods applied in the private and personal sphere**

In **T 74/93** (OJ 1995, 712) the application was refused by the examining division because claim 5, which was directed to the use of a contraceptive composition (eg a cream) for applying to the cervix of a female capable of conception, was not susceptible of industrial application as required by Art. 57 EPC in so far as the compound was to be applied to the cervix of a human female. The appellant had argued essentially that many inventions in the field of daily needs were used privately and their patentability should not be restricted.

The board noted that since "industry" in the field of industrial property was widely understood in its broadest sense (Art. 1(3) of the Paris Convention), such a liberal interpretation could also apply to Art. 57 EPC. However, the board stated that in determining the borderline between industrial activities, in which the effects of patents had to be respected, and private and personal activities, which should not be adversely affected by the exercise of these rights, the board took into consideration the fact that Art. 57 EPC might be regarded as an expression of the general idea that any natural person had the right to have his or her privacy respected. The core of this right was not to be taken away from anybody. Therefore the fact that for some women contraception was connected with professional activities did not give an act, which was in essence private and personal, an industrial character. The board noted that this did not apply to contraception in general, but to the specific type of application of a composition as claimed in claim 5.

The board was unable to ascertain any field of industrial application for the direct use defined in claim 5, for which the requirement of Art. 57 EPC had to be met. The question as to whether it would be sufficient for an industrial application to be expected in future could be left unanswered. Even if the board were to accept the appellant's position in this respect, it would not be sufficient simply to make an unsubstantiated allegation to this effect. Without any specific indication the board was not in a position to accept that the requirement of Art. 57 EPC was fulfilled.

### **2.2 Possibility of services offered by an enterprise**

In **T 1165/97** the board held that a method of using a vaginal discharge collector and disposing of the collector after a single use could be considered susceptible of industrial application if it was imaginable that these steps were carried out as a paid service and were not exclusively dependent for their execution on the instructions of the woman in question. The board noted that, for the purposes of Art. 57 EPC, what was relevant was the possibility that such a service might be offered by an enterprise. In that case, the board decided in the affirmative, pointing out that - in contrast to the case in **T 74/93** - the service was not one satisfying only the strictly personal needs of the woman in question. Collecting a sample could be caused by external reasons, eg on the advice of a medical practitioner to have such a sample taken for further diagnosis.

### **3. Other criteria - Formulation of claims**

In **G 5/83** (OJ 1985, 64), claims directed to substances or compositions for use in any methods for treatment of the human or animal body were unquestionably directed to inventions which were susceptible of industrial application within the meaning of Art. 52(1) EPC. This was not only expressly made clear in Art. 52(4) EPC, last sentence, but could also be inferred from the definition of "susceptible of industrial application" in Art. 57 EPC, namely that the invention "can be made or used in any kind of industry, including agriculture". The last sentence of Art. 52(4) EPC appeared to be a statement of the obvious, stemming from an abundance of caution.

In **T 80/96** (OJ 2000, 50), the board found that the use of a substance to make a new pharmaceutical product without delimitation to an indication did not contravene the requirements of Art. 57 EPC in conjunction with Art. 52(1) EPC. In the board's view, the requirement for clarity of the claims (Art. 84 EPC) likewise did not mean that a claim for a process for preparing a particular product could not be drafted in the form of a use claim. No other meaning could be given to the individual process steps (see, for example, **T 279/93** of 12 December 1996, not published in OJ , reasons No. 4).