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Computerimplementierte Erfindungen: Status quo im Europäischen Patentrecht Entscheidung der Grossen Beschwerdekammer des Europäischen Patentamtes vom 12. Mai 2010 (G 3/08)

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Die Möglichkeiten und Grenzen der Patentierbarkeit computerimplementierter Erfindungen sind im Europäischen Patentrecht bis heute nicht hinreichend geklärt. Vor diesem Hintergrund hat die Präsidentin des Europäischen Patentamts (EPA) von ihrem Recht Gebrauch gemacht, der Grossen Beschwerdekammer vier Rechtsfragen vorzulegen, welche für die Erteilungspraxis des EPA bei computerimplementierten Erfindungen und für die Grenzziehung gegenüber der Patentierung von Computerprogrammen "als solchen" von grundsätzlicher Bedeutung sind. Zur Beantwortung der Vorlagefragen hat sich die Grosse Beschwerdekammer eingehend mit dem Ansatz der Beschwerdekammern des EPA auseinandergesetzt und die bisherige Praxis bestätigt. Die Entscheidung bringt damit zwar nichts Neues, fasst aber die Rechtslage in wichtigen Streitpunkten zusammen und bringt den Status quo im Europäischen Patentrecht auf den Punkt.

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En droit européen des brevets, les limites à la brevetabilité des inventions implémentées par ordinateur demandaient une clarification. Par conséquent, la présidente de l'Office Européen des Brevets (OEB) a fait usage de son droit de soumettre à la Grande Chambre de recours quatre questions de droit d'une importance fondamentale concernant la pratique suivie par l'OEB au sujet de la brevetabilité des programmes d'ordinateurs "en tant que tels". Pour répondre à ces questions, la Grande Chambre de recours a analysé l'approche des Chambres de recours de l'OEB et a confirmé leur pratique. La décision n'apporte ainsi rien de nouveau, mais résume la situation juridique dans un domaine où les divergences de vues sont nombreuses et confirme le status quo en droit européen des brevets.

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I. Einleitung

Die Frage nach Sinn und Zweck sowie Ausgestaltung des rechtlichen Schutzes von Computerprogrammen ist noch immer eine der drängendsten und umstrittensten Grundfragen des Immaterialgüterrechts. Neben dem Schutz durch das Urheberrecht, der aufgrund von Art. 10 TRIPS nahezu weltweit gewährleistet ist, steht die Erteilung von Patenten im Zentrum des Interesses. Die Debatte ist hinlänglich bekannt, ebenso die von den Beteiligten angeführten Argumente und bezogenen Positionen.

Allen grundsätzlichen Differenzen zum Trotz ist nüchtern betrachtet festzustellen, dass sich die Erteilung von Patenten für Computerprogramme bzw. computerimplementierte Erfindungen in allen relevanten Patentrechtsordnungen längst durchgesetzt hat. Die USA gewähren Software-Erfindungen bereits seit den 1970er-Jahren Patentschutz und auch das Europäische Patentamt (EPA) hat inzwischen weit über 20 000 Patente für computerimplementierte Erfindungen erteilt. Die Voraussetzungen für die Patentierung sind allerdings weiterhin sehr unterschiedlich. Während namentlich die USA Patente für alle Arten von Software erteilen, verfolgt das EPA auf Grundlage der restriktiven Bestimmungen des Europäischen Patentübereinkommens (EPÜ) eine vergleichsweise zurückhaltende Erteilungspraxis.

Im Europäischen Patentrecht werden Computerprogramme - in der Terminologie des EPÜ: "Programme für Datenverarbeitungsanlagen" - wegen fehlender Technizität nicht als patentierbare Erfindungen angesehen (Art. 52 Abs. 2 lit. c EPÜ); dieser Grundsatz wird jedoch insofern eingeschränkt, als die Erteilung eines Patentes nur ausgeschlossen ist, wenn sich eine Patentanmeldung auf ein Computerprogramm "als solches" bezieht (Art. 52 Abs. 3 EPÜ). Patente werden hingegen für sog. computerimplementierte Erfindungen erteilt, also Erfindungen, zu deren Ausführung ein Computer, ein Computernetz oder eine sonstige programmierbare Vorrichtung eingesetzt wird und die mindestens ein Merkmal aufweisen, das ganz oder teilweise mit einem Computerprogramm realisiert wird (Prüfungsrichtlinien des EPA, C-IV, 2.3.6.). Wo allerdings nach Auffassung des EPA die Grenzlinie zwischen Computerprogrammen als solchen und patentierbaren computerimplementierten Erfindungen verläuft, kann bisweilen nicht hinreichend klar beantwortet werden.

Die nachfolgend weitgehend im Volltext wiedergegebene Entscheidung

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der Grossen Beschwerdekammer bringt hier insofern eine gewisse Klärung, als eine Reihe wichtiger Streitpunkte aufgegriffen und die bisherige Praxis der Beschwerdekammern bestätigt wird.

II. Zum Verfahren

Das EPÜ gewährt dem Präsidenten des EPA die Möglichkeit, der Grossen Beschwerdekammer Rechtsfragen von grundsätzlicher Bedeutung zur Beurteilung vorzulegen. Voraussetzung ist, dass die Beantwortung einer Rechtsfrage zur Sicherung der einheitlichen Rechtsanwendung durch das EPA erforderlich ist oder sich eine Rechtsfrage von grundsätzlicher Bedeutung stellt und dass zwei Beschwerdekammern über diese Rechtsfrage voneinander abweichende Entscheidungen getroffen haben (Art. 112 Abs. 1 lit. b EPÜ).

Mit ihrer Entscheidung vom 12. Mai 2010 hat die Grosse Beschwerdekammer vier Vorlagefragen beantwortet, welche ihr die damalige Präsidentin des Europäischen Patentamts am 22. Oktober 2008 vorgelegt hatte. Die Beschwerdekammer befasst sich dabei im Wesentlichen mit der Frage, ob und unter welchen Voraussetzungen computerimplementierte Erfindungen nach dem EPÜ patentiert werden können. Die Erwägungen zu dieser materiell-rechtlichen Fragestellung werden nachfolgend im Volltext unter dem Titel "The Questions of the Referral" wiedergegeben (III.2).

Im Rahmen der Prüfung der Zulässigkeit der Vorlagefragen hat sich die Grosse Beschwerdekammer eingehend mit ihrer eigenen Rolle und derjenigen des Präsidenten sowie der technischen und juristischen Beschwerdekammern auseinandergesetzt. Angesichts der grossen wirtschaftlichen Bedeutung computerimplementierter Erfindungen und der zahlreichen Verfahren vor den Erteilungsinstanzen und den nationalen Gerichten bestand dabei kein Zweifel, dass die Vorlagefrage eine Rechtsfrage von grundsätzlicher Bedeutung betrifft. Weit weniger klar war hingegen, ob auch die zweite Voraussetzung für die Zulässigkeit erfüllt war, ob also zwei Beschwerdekammern voneinander abweichende Entscheidungen getroffen hatten. In der vorliegenden Konstellation wurden die inhaltlich angeblich abweichenden Entscheidungen nämlich von ein und derselben technischen Beschwerdekammer getroffen, wenn auch in jeweils unterschiedlicher Besetzung. Da die Grosse Beschwerdekammer nicht auf die organisatorische Struktur der Kammern, sondern auf die personelle Zusammensetzung der jeweiligen Spruchkörper abstellte, erachtete sie auch dieses Kriterium als erfüllt.

Eingängig prüfte die Beschwerdekammer sodann, ob im Bereich computerimplementierter Erfindungen tatsächlich voneinander abweichende Entscheidungen gefällt wurden. Im Vordergrund stand dabei die Unterscheidung zwischen effektiv voneinander abweichenden, mithin widersprüchlichen Entscheidungen einerseits und der Entwicklung der Rechtsprechung andererseits. Mit Blick auf die Notwendigkeit einer laufenden Weiterentwicklung der Rechtsprechung, die gerade bei der Beurteilung vergleichsweise neuer Rechtsfragen von zentraler Bedeutung ist, kam die Grosse Beschwerdekammer für die Vorlagefragen 2, 3 und 4 zum Ergebnis, dass keine voneinander abweichenden Entscheidungen der Beschwerdekammern vorliegen; bei der Vorlagefrage 1 stellte sie zwar einen Unterschied zwischen zwei Entscheidungen fest, qualifizierte dies aber als legitime Weiterentwicklung der Rechtsprechung und verneinte damit auch hier das Vorliegen voneinander abweichender Entscheidungen. Die Voraussetzungen

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für die Zulässigkeit der Vorlagefragen waren damit nicht erfüllt, weshalb die Beantwortung aller vier Fragen letztlich offen blieb. Die Erwägungen zu diesen verfahrensrechtlichen Fragestellungen finden sich nachfolgend auszugsweise unter dem Titel "Admissibility of the Referral" (III.1).

Da alle Erwägungen durchnummeriert sind, wird auf das Streichen ganzer Erwägungen nicht ausdrücklich hingewiesen; dasselbe gilt für das Streichen der Querverweise in den Erwägungen und für die Verweise auf konkrete Stellen in den Begründungen der Vorlagefragen der Präsidentin, die ebenfalls gestrichen wurden. Der Volltext der

Entscheidung findet sich unter:
[http://documents.epo.org/projects/babylon/eponet.nsf/0/DC6171F182D8B65AC125772100426656/\\$File/G3_08_opinion_en.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/DC6171F182D8B65AC125772100426656/$File/G3_08_opinion_en.pdf).

III. Aus den Erwägungen

1. Admissibility of the Referral

7.2.1 According to current constitutional thinking, the predictability and verifiability of all state action are indispensable elements of a democratic legal order based on the separation of powers, the rule of law and respect for human rights including fundamental procedural rights. These principles have been subscribed to in substance at national level by all the EPC contracting states, despite differing constitutional traditions and despite several reservations made by different states. As a democracy is prohibited from signing an international treaty which would undermine its citizens' constitutional guarantees, the EPO must therefore support these fundamental principles either explicitly (e.g. Art. 113 EPC) or implicitly (e.g. liberty, equality) (see for example G 3/98, OJ EPO 2001, 62, Reasons, point 2.5.3; G 2/02 and G 3/02, Reasons, point 7.2; T 377/95, OJ EPO 1999, 11, Reasons, points 33-36; T 1193/02 dated 18 March 2005, Reasons, point 10; T 190/03, OJ EPO 2006, 502, Reasons, point 10).

The European Patent Organisation is an international, intergovernmental organisation, modelled on a modern state order and based on the separation of powers principle, which the sovereign contracting states have entrusted with the exercise of some of their national powers in the field of patents. Thus the EPC assigns executive power to the Office to grant patents and to its President to manage the Office in organizational respects (Articles 4 (3) and 10 ff. EPC), while to the Administrative Council it assigns limited legislative powers restricted to lower-ranking rules (Article 33 EPC), along with financial and supervisory powers. Finally, the Boards of Appeal, which in their decisions are bound only by the EPC (Article 23 (3) EPC), are assigned the role of an independent judiciary in this patent system (Articles 21 to 23 EPC; see also G 6/95, OJ EPO 1996, 649, Reasons, points 2 ff.), even if for the present, pursuant to Article 4 (2) EPC and to EPC Part 1 Chapter III, they are not an independent organ of the Organisation but structurally integrated departments of the Office under Article 15 EPC.

7.2.2 Like the judiciary of any democratic entity based on the separation of powers principle, the EPO's Boards of Appeal as an independent judiciary guarantee the due process of law within the Organisation. They are also assigned interpretative supremacy with regard to the EPC in terms of its scope of application (see also Article 23 (3) EPC). Under Article 21 (1) EPC they are responsible for reviewing decisions taken by the Office in grant and opposition proceedings. Their interpretation of the EPC is the basis for the practice established by the Office for the examination of patent applications and oppositions to granted patents. Otherwise there would be no need for the President's right of referral.

On the other hand, the interpretation of the EPC or equivalent national regulations by the courts of the Contracting States has no direct consequences for Office departments; but that does not mean that in interpreting the Convention the Boards of Appeal should not take account of relevant national decisions on harmonised European patent law, in keeping with normal practice. This is implied by the harmonization philosophy behind the EPC. (...)

7.2.5 Thus it is clear that the interpretation of the EPC is primarily the responsibility of the Boards of Appeal. As a rule they have interpretative supremacy with regard to the EPC because their decisions are subject to review only under the narrowly defined conditions of Articles 112 (1) and 112a (2) EPC. It is only when these apply that the Enlarged Board has the last word. The fact that the Enlarged Board takes action only on a referral from the Boards of Appeal or the President (with the exception of

petitions for review under Article 112a EPC, which however concern procedural matters and have a very narrow scope) and thus does not constitute a further instance ranking above the Boards of Appeal within the EPC judicial system is a clear indication of the extent of its significance for legal uniformity. The exhaustive list of admissibility criteria for a referral under Articles 112 (1) (a) and (b) EPC implies that the Enlarged Board takes decisions on specific legal questions and that neither the Boards of Appeal nor the President are authorized to consult it whenever they so wish in order to clarify abstract points of law. For that purpose the President can call upon a separate Legal Department within the Office.

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7.3 The notion of legal development is an additional factor which must be carefully considered when interpreting the notion of "different decisions" in Article 112 (1) (b) EPC, as has occasionally been pointed out in the literature (e.g. R. Teschemacher, *Der Beitrag des Präsidenten des Europäischen Patentamts zur Rechtsprechung der Großen Beschwerdekammer - eine erste Bestandesaufnahme*, GRUR 1993, 320/326 f.) and various *amicus curiae* briefs.

7.3.1 Development of the law is an essential aspect of its application, whatever method of interpretation the judge applies, and is therefore inherent in all judicial activity. In that light an element of legal development can even be seen whenever a specific case is subsumed under an abstract regulation. That is especially true of Anglo-Saxon law, where a decision on an individual case has far greater implications as a precedent than judgments in continental civil law. Consequently, legal development as such cannot on its own form the basis for a referral, only because case law in new legal territory does not always develop in linear fashion, and earlier approaches may be abandoned or modified.

Otherwise the "different decisions" feature of Article 112 (1) (b) EPC would lose its meaning. While the development of the law may superficially appear to give rise to different decisions within the meaning of that provision, on its own it cannot justify a referral to the Enlarged Board. A referral is justified only if at least two Board of Appeal decisions come into conflict with the principle of legal uniformity. The object and purpose of Article 112 (1) (b) EPC is to have an Enlarged Board decision re-establish legal uniformity when it has clearly been disrupted, not to intervene in legal development. This is discussed in more detail in the following.

7.3.2 The EPC as it stands assigns interpretation of the EPC with its numerous undefined legal terms ultimately to the Boards of Appeal (see point 7.2.5 above). They are responsible for defining how the law is to be applied and where appropriate adapted to developments in patent law. To a greater or lesser extent the issue in every case is whether or not the situation is covered by an abstractly formulated regulation. Thus over time case law has given e.g. the notions of invention, novelty, inventive step and industrial applicability increasingly precise meanings with which the Office and other patent system stakeholders can align themselves in their daily practice. Hence in view of the direction that patent law has taken by means of the Boards' case law, appeals against decisions of the Examining and Opposition Divisions mostly operate within legally secure bounds.

7.3.3 Particularly in the field of new technologies, the Technical Boards often have to subject their established case law to critical review, applying accepted judicial procedure and general legal principles to decide whether the often broadly formulated undefined legal terms in the EPC are applicable to the specific nature of the new field, i.e. in particular whether the existing widely accepted case law also yields acceptable solutions in the new field. It is entirely conceivable that the interpretation of undefined legal terms in the light of the EPC's purpose and principles will necessitate drawing further distinctions which, depending on what they include or exclude, may determine whether a patent is granted or refused in a specific case.

7.3.4 Where jurisprudence enters new legal territory, caution is required to avoid making statements that will prove untenable in the very next case to arise. Yet it cannot be ruled out that repeated amendments will be necessary in the course of time if legal solutions that the Boards initially deem correct prove to be mistaken in new situations and cease to be convincing jurisprudence. Such changes of direction in legal development are a normal part of judicial activity, and there is no need to speak of different decisions within the meaning of Article 112 (1) (b) EPC simply because departures from earlier practice are deemed necessary when homing in on the right solution to a specific case (see however R. Moufang in: R. Schulte (Hg.), Patentgesetz mit EPÜ, 8th ed. 2008, EPC 112 (annex to paragraph 73) marginal number 42).

7.3.5 Thus even a radical shift in jurisprudence need not necessarily be construed as a different decision within the meaning of Article 112 (1) (b) EPC vis-à-vis earlier case law, provided that the Board corrects itself and - mostly in explicit fashion - declares its earlier practice to be no longer relevant. The President does not acquire the right of referral simply because he prefers the earlier decision (U. Joos in: M. Singer/D. Stauder (Hg.), Europäisches Patentübereinkommen, 5th ed. 2010, Article 112, marginal number 25; see however Moufang EPC 112 (annex to paragraph 73) marginal number 42). Such corrections are a normal part of the application and development of the law and do not constitute a difference that could be corrected by means of a presidential referral to the Enlarged Board, overriding the interpretative power of the Boards. In fact, shifts of this kind when identified as such leave the Office as patent granting authority in no doubt how the EPC is to be interpreted according to the Boards' latest findings. This may entail altering the Examination Guidelines, but not having the case law reviewed by the Enlarged Board. It is another matter if the Boards themselves see a need to refer points of law to the Enlarged Board in the light of a change in their practice.

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7.3.6 The same should apply where the Boards' case law has developed over an extended period and in the course of several decisions has gradually arrived at solutions which clearly and justifiably move away from the initial premise, even if the public and the patent granting authority have found earlier solutions acceptable. In that way, too, legal development has followed a course which, while not entirely linear, as long as it is transparent does not justify speaking of different decisions that could be grounds for a referral.

7.3.8. The conclusion that must be drawn is that the Enlarged Board cannot develop the law in the same way as the Boards of Appeal, because it does not have to decide on facts of pending appeals, but only in specific instances and only in the aforementioned context of points of law referred to it under Article 112 (1) EPC. This applies *a fortiori* to referrals by the President, which do not even arise from a specific appeal.

If, as required for a referral by the President, there are different decisions on points of law, the Enlarged Board may follow the legal approach of one of the decisions and reject the other as inappropriate, or it may find a third way appropriate. Thus the only way it can influence the assessment of individual issues is by breaking with previous practice and pointing in a new direction or by confirming the approach adopted by a Board.

In the process however the Enlarged Board must also consider whether the divergent decisions might not be part of a constant development, possibly still ongoing, in jurisprudence on recent patent law issues, in the course of which older decisions have lost their significance and so can no longer be considered in connection with newer decisions. Such putative differences do not justify presidential referrals, legal development being one of the principal duties of the Boards of Appeal, in particular in new territory.

Hence the President has no right of referral under Article 112 (1) (b) EPC simply in order to intervene, on whatever grounds, in mere legal development if on an interpretation of the notion of "different decisions" in the sense of conflicting decisions there is no need for correction to establish legal certainty.

2. The Questions of the Referral

8. In the light of these fundamental considerations on the interpretation of Article 112 (1) (b) EPC, the questions that have been referred will now be considered.

Question 1

10. Can a computer program only be excluded as a computer program as such if it is explicitly claimed as a computer program?

10.1 The first step is interpretation of the question. On the face of it all that is asked is whether one has to use the actual words "computer program". If the question is interpreted in this fashion it is easily answered; a claim utilising a synonym for "computer program", such as "a sequence of computer-executable instructions" or "an executable software module" perhaps, would clearly not avoid exclusion from patentability if the equivalent claim to a computer program did not. However the alleged divergence identified in the referral does not simply relate to the form of words chosen. Moreover the "Background" to Question 1 includes the following:

"In this field, claim formulations along the following lines are common: (1) methods (2) systems (i.e. computer systems) (3) computer-implemented methods (4) computer programs (5) computer program products, storing a computer program. However the substance of these claims, i.e. the underlying method to be performed by a computer, is often identical".

The discussion also refers to "the function of the computer program (does the claimed program have technical character) rather than the manner in which it is claimed (e.g. as a computer program, a computer program product or a computer-implemented method)".

Thus it would seem that the first reference to a "computer program" in the question is in fact intended to encompass claims to various matters which involve a computer program without necessarily literally being one, and that the question to which the referral is seeking an answer is something along the lines of:

If a particular claim to a computer program ("1. A program for a computer comprising instructions to carry out steps x, y, z,") is excluded from patentability by Article 52 (2) EPC, are any of the following (or anything else) automatically excluded under the same article?

"2. A computer system loaded with the program of claim 1." "3. A method of operating a computer comprising executing the program of claim 1." "4. A computer program product storing the program of claim 1."

10.2 The only "divergence" in the case law identified by the referral with respect to this question is between the decisions in cases T 1173/97, "IBM" (OJ EPO 1999, 609) and T 424/03, "Microsoft", dated 23 February 2006. It is argued in the referral that according to T 424/03 only a claim of the form "computer program for method x" could possibly be excluded from patentability as a computer program as such, whereas claims of the form "computer implemented method x" or "computer program product storing executable code for method x" would not be excluded (irrespective of the nature of the method x). T 1173/97 is said however to place the emphasis on the function of the computer program rather than on

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the manner in which it is claimed, for example as a computer program product or a computer-implemented method.

T 1173/97 concerned an application where the examining division had come to the conclusion that there was an invention and was prepared to grant a patent including claims of the types which had been accepted at least since T 208/84, "VICOM" (OJ EPO 1987, 14), namely for a method of operating a computer and for a computer adapted to carry out the method (i.e. a computer loaded with an appropriate program). However the applicant had included claims directed not to the system as a whole or a method of operating the system as a whole, but to a program, in two forms, as follows (T 1173/97 Facts and Submissions, point II):

"A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of (independent method) claim 1 when said product is run on a computer," and "A computer program product stored on a computer usable medium, comprising: computer readable program means for causing a computer to (carry out the various steps of method claim 1)."

10.2.1 The Board considered the question whether a computer program might be claimed and if so under what circumstances such a claim could be allowable. Its conclusion, at Reasons, point 13, was:

"In the view of the Board, a computer program claimed by itself is not excluded from patentability if the program, when running on a computer or loaded into a computer, brings about, or is capable of bringing about, a technical effect which goes beyond the 'normal' physical interactions between the program (software) and the computer (hardware) on which it is run.

'Running on a computer' means that the system comprising the computer program plus the computer carries out a method (or process) which may be of the kind according to claim 1.

'Loaded into a computer' means that the computer programmed in this way is capable of or adapted to carrying out a method which may be of the kind according to claim 1 and thus constitutes a system (or device or apparatus) which may be of the kind according to claim 14."

10.2.2 The Board made a point of not deciding on a particular form of words; the Order includes, "The case is remitted to the first instance (...) for examination of whether the wording of the present claims avoids exclusion from patentability under Article 52 (2) and (3) EPC". However it did comment on the question whether claiming the program on a medium could overcome exclusion (also at Reasons, point 13):

"Furthermore, the Board is of the opinion that with regard to the exclusions under Article 52 (2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier."

10.2.3 Since the Board had come to the conclusion that some programs, claimed alone, are excluded from patentability, it must follow from this statement that such a program claimed "as a record on a carrier", i.e. on a computer-readable medium, would also be excluded. The reasoning supporting this conclusion can be seen in the following quotations.

T 1173/97, Reasons, point 5.3:

"This means that programs for computers must be considered as patentable inventions when they have a technical character."

Reasons, point 6.2:

"Physical modifications of the hardware (causing, for instance, electrical currents) deriving from the execution of the instructions given by programs for computers cannot *per se* constitute the technical character required for avoiding the exclusion of those programs."

Reasons, point 6.3:

"Although such modifications may be considered to be technical, they (...) cannot be used to distinguish programs for computers with a technical character from programs for computers as such."

The same evidently applies to the physical modifications of a medium (e.g. the pits created in a CD-ROM) caused by storing a program, and this would appear to be what the Board meant by Reasons, point 9.3:

"(T)he hardware is not part of the invention. (...) Furthermore, it is clear that if, for instance, the computer program product comprises a computer-readable medium on which the program is stored, this medium only constitutes the physical support on which the program is saved, and thus constitutes hardware."

10.2.4 Considering that according to Article 52 (1) EPC (in both 1973 and 2000 versions), "European patents shall be granted for any inventions" provided they are new, inventive and industrially applicable, the reasoning in 9.3 that, (i) when a computer program product comprises a computer-readable medium, the medium constitutes hardware, and (ii) hardware is not part of the invention, makes it clear that the Board considered that a claim to a computer program product could not escape the exclusions of Article 52 (2) EPC merely by comprising a computer-readable medium. Reasons, points 6.2 and 6.3 cited above at least suggest that the Board also considered that claiming a computer loaded with a program or the execution of a program on a computer would not be sufficient to escape the exclusion.

10.3 The decision also referred to the "technical effect which goes beyond the 'normal' physical interactions between the program (software) and the computer (hardware) on which it is run" as a "further technical effect" (see Reasons, point 9.4), and this is the expression which is generally used. As may be seen from the quotations above, the general condition for a claimed invention not to be excluded from patentability by Articles 52 (2) and (3) EPC was considered to be that the claimed subject-matter has a "technical character". Thus in the particular case of a claim to a computer program it has a "technical character" if and only if the program causes a "further technical effect" when run. (This topic will

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be revisited in the discussion of Question 4.)

10.4 It is notable that the definition of further technical effect in Reasons, point 13 makes no reference to the state of the art. Thus according to this decision it may be determined whether a claim to a computer program is excluded from patentability by Articles 52 (2) and (3) EPC independent of the prior art. That is, the identified further technical effect need not be new. By taking this position the Board consciously abandoned the so-called "contribution approach" which had been applied, somewhat inconsistently, in the earlier case law. This was clearly a deliberate development of the case law (the inconsistency of the previous case law having previously been identified in an article, Patentability of computer-software-related inventions, by the then chairman, P. van den Berg, in: The law and practice of the Enlarged Board of Appeal of the European Patent Office during its first ten years, issued by the members of the Enlarged Board of Appeal, 1996, 29 to 47). To our knowledge no decision of the Boards of Appeal has since challenged this choice by the Board in T 1173/97. It therefore stands as the established case law, and cannot be overturned by this Opinion, for the reasons given above (see point 7).

10.5 T 1173/97 also drew the consequence from its abandonment of the "contribution approach" that, "Determining the technical contribution an invention achieves with respect to the prior art is therefore more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Article 52 (2) and (3)," (Reasons, point 8, second paragraph).

10.6 For readers unfamiliar with the jargon, an analogy may help to understand the distinction between the "contribution approach" and the approach adopted by the Board in T 1173/97. Note, however, that what follows is intended to be merely illustrative, not definitive.

Suppose a patent application claims a cup carrying a certain picture (e.g. a company logo). We assume that no effect beyond information, "brand awareness" or aesthetic pleasure is ascribed to the picture. According to the "contribution approach", cups are known, so that the "contribution to the art" is only in a field excluded from patentability by Article 52 (2) EPC and the application may be refused under this provision, i.e. the European patent application is considered to relate to (cf. Article 52 (3) EPC) an aesthetic creation, a presentation of information or possibly even a method for doing business "as such". According to the approach laid down by T 1173/97, for the purposes of Article 52 (2) EPC the claimed subject-matter has to be considered without regard to the prior art. According to this view a claim to a cup is clearly not excluded from patentability by Article 52 (2) EPC. Whether or not the claim also includes the feature that the cup has a certain picture on it is irrelevant. This approach, at least as formulated in e.g. T 258/03, "Hitachi" (OJ EPO 2004, 575) and T 424/03, has been characterised in some of the *amicus curiae* briefs as the "any hardware" or "any technical means" approach.

10.7 Over a series of decisions the Boards of Appeal (and in particular Board 3.5.01) explored this consequence of abandoning the contribution approach. Firstly in T 931/95, "Pension Benefit Systems" (OJ EPO 2001, 441), it decided that an apparatus for carrying out an activity excluded as such from patentability by Articles 52 (2) and (3) EPC was not itself excluded from patentability (Headnote 3). In particular, a claim directed to a computer loaded with a program was not excluded from patentability by Article 52 (2) EPC even if the program itself would be, i.e. if the program caused no "further technical effect" when run. That decision did not however extend the logic to methods employing technical means (Headnote 2). With regard to methods, this decision was explicitly overturned by T 258/03, "Hitachi" (Headnote 1); T 258/03 came to the conclusion that any claim involving technical means was not excluded from patentability by Article 52 (2) EPC (see Reasons 3 and 4), and since a claim directed to a method of operating a computer involved a computer it could not be excluded from patentability by Article 52 (2) EPC. However neither of these decisions dealt with the question whether a claim to a program on a computer-readable medium avoided exclusion. T 424/03, "Microsoft", finally extended the reasoning applied in T 258/03 to come to the conclusion that a claim to a program ("computer executable instructions" in the claim in question) on a computer-readable medium also necessarily avoids exclusion from patentability under Article 52 (2) EPC (see Catchword 2 and Reasons, point 5.3: "The subject-matter of claim 5 has technical character since it relates to a computer-readable medium, i.e. a technical product involving a carrier (see decision T 258/03, 'Auction method/Hitachi')." This statement is quite unequivocal and stands alone as a reason for the claim not to be excluded under Article 52 (2) EPC.

10.7.1 The decision in T 424/03 did go on to note (also in Reasons, point 5.3) that the particular program involved had the potential of achieving a further technical effect when run and thus also contributed to the technical character of the claimed subject-matter. This fact however was not necessary to the conclusion that the claimed subject-matter avoided exclusion, since according to the reasoning of T 258/03

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any technical means claimed was sufficient to overcome the exclusion of Article 52 (2) EPC. The question whether the program itself caused a "further technical effect" when run, and would therefore also qualify as technical means, only assumed importance for the question of inventive step - in parallel to these decisions the Board had been developing an approach to the appraisal of inventive step taking into account the fact that some of the features of a claim might, considered alone, fall under the exclusions of Article 52 (2) EPC (see T 154/04, "Duns", OJ EPO 2008, 46, for an exposition of

the approach). For this approach it is important which features contribute to the technical character of the claimed subject-matter, since only such features are taken into account for the assessment of inventive step. In the particular case of T 424/03, both the computer-readable medium and the program itself were features which gave the subject-matter of the particular claim as a whole a technical character, and were both therefore to be taken into account for the assessment of its inventive step.

10.7.2 Thus finally the Board had arrived at a conclusion which clearly contradicted the position (or rather one of the positions) taken in T 1173/97. T 1173/97 declared, "Furthermore, the Board is of the opinion that with regard to the exclusions under Article 52 (2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier" (Reasons, point 13), whereas T 424/03 stated, "The subject-matter of claim 5 has technical character since it relates to a computer readable medium, i.e. a technical product involving a carrier (see decision T 258/03, 'Auction method/Hitachi)', (Reasons, point 5.3).

10.8 Thus there was a difference between the positions taken in T 1173/97 and T 424/03 on this point. It is still however necessary to decide whether this difference constitutes a divergence allowing a question to be referred by the President on the point. The considerations to be taken into account have been discussed in points 5 to 7 above.

10.8.1 Although both these cases were decided by Board 3.5.01 as an organisational unit, the compositions of the Board were completely different, so that a referral on the basis of these two decisions is not excluded. However there are factors which suggest that the difference should be treated as a development of the case law as discussed in point 7.3 above.

Firstly and most importantly the referral does not identify, and we are not aware of, any decision whatsoever of one of the Boards of Appeal of the EPO which follows T 1173/97 on this point (although T 1173/97 is evidently considered seminal in its definition of "further technical effect" and abandonment of the contribution approach to exclusion).

10.8.2 Secondly, the conclusion arrived at in T 424/03 has not been challenged in any later decisions; nor was it isolated but rather came as the last of a series of decisions, the logic of which is consistent and, at least to our knowledge, has also not been challenged in any later decision of a Board of Appeal of the EPO (national court decisions are another matter, but cannot be taken into account for admissibility as discussed above at point 5). For the reader's convenience we rehearse this logic, as we understand it, in what follows.

10.8.3 As discussed above the Board in T 1173/97 consciously abandoned the "contribution approach" and also expressed the opinion (at Reasons, point 13) that "with regard to the exclusions under Article 52 (2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier." These two positions are, however, contradictory when considered in the context of the case law of the Boards of Appeal as a whole.

10.8.4 T 1173/97 declares that a claim to a computer program is not excluded from patentability if the program, when run, shows a "further technical effect", i.e. a technical effect going beyond those effects which occur inevitably when any program is run. It further states that this "further technical effect" need not be new and there should be no comparison with the prior art when making the judgement whether there is such a "further technical effect". It cannot have been intended that there be no comparison with the prior art for computer programs, but that there should be for other claimed subject-matters. So it may be concluded that the judgement whether some subject-matter is excluded under Articles 52 (2) and (3) EPC from patentability is, according to T 1173/97, always to be decided without regard to the prior art.

10.8.5 Following this principle, a claim to a particular kind of computer-readable medium memory with certain special properties, e.g. a Blu-Ray disk, is evidently not excluded from patentability by Articles 52 (2) and (3) EPC, whether or not it is new at

the relevant date. But applying the principle consistently, the claim does not have to be a special kind of memory - "A computer-readable data storage medium," specifying no further details, has the "technical effects" of being computer-readable and of being capable of storing data. And since there is no entry in the list of Article 52 (2) EPC relating to computer-readable media as such there is no requirement for a "further" effect going beyond the basic properties of such a computer readable storage medium. In short, according to the logic of T 1173/97 the following claim is not excluded from patentability by Articles 52 (2)

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and (3) EPC: "A computer-readable storage medium."

*10.8.6*In the case law of the Boards of Appeal there has never been any suggestion that narrowing a claim can bring it under the exclusions of Articles 52 (2) and (3) EPC, which would require weighting of features or a decision as to which features define the "essence" of the invention (cf. T 26/86, "Koch & Sterzel", OJ EPO 1988, 19, Reasons, point 3.4, and T 769/92, "Sohei", OJ EPO 1995, 525, Headnote 1), in contrast to e.g. the Bundespatentgericht, where such a weighing up of features has at some times been used (known by the expression "Kerntheorie", see e.g. B. Ganahl, *Ist die Kerntheorie wieder aktuell?*, *Mitteilungen der deutschen Patentanwälte* 2003, 537). Thus according to Boards of Appeal case law, since the claim, "A computer-readable storage medium," is not excluded from patentability by Articles 52 (2) and (3) EPC, neither is a claim, "A computer-readable storage medium storing computer program X," (cf. "A cup decorated with picture X").

*10.8.7*It might be argued that whereas "A Blu-Ray disk with program X written on it," would escape the exclusion of Article 52 (2) EPC, "A computer-readable storage medium with program X written on it," should not. The only basis for such an argument which the Enlarged Board can envisage would be that the feature "computer-readable storage medium" loses its technical nature because it is too generic or "functionally defined". There is however no case law known to the Enlarged Board that would support this view.

*10.8.8*Thus the position taken in T 424/03 that a claim to a program on a computer-readable storage medium is necessarily not excluded from patentability by the provisions of Articles 52 (2) and (3) EPC is in fact a consequence of the principles laid out in T 1173/97; the contrary position taken in that decision is inconsistent with its own premises. It would appear that the Board in that case did adopt an implicit "essence of the invention" position ("(T)he hardware is not part of the invention. (...) Furthermore, it is clear that if, for instance, the computer program product comprises a computer-readable medium on which the program is stored, this medium only constitutes the physical support on which the program is saved, and thus constitutes hardware.") But as explained above there is no support for such an approach in the general case law of the Boards of Appeal.

The arguments above apply with equal force to claims which "mention" a computer (as the referral puts it in Question 2).

*10.9*Returning to the direct question of admissibility of the referred question it is further noted that there was a period of approximately seven years between the issuance of the two decisions, a period which, although not very long in legal terms, is nonetheless compatible with the notion of development of the case law.

*10.10*It is perhaps regrettable that the Board in T 424/03 did not mention the fact that it was deviating from an earlier decision, as foreseen in the Rules of Procedure of the Boards of Appeal, Article 20 (1) (previously Article 15 (1)). However in the judgement of the Enlarged Board this fact alone is not sufficient to disqualify the process as a legitimate development of the case law.

10.11 While the final outcome of the cases is not the decisive factor in determining the admissibility of a referral, the Enlarged Board also notes that there is no suggestion in the referral that the change of approach from Article 52 (2) EPC to Article 56 EPC had any effect on the final result of T 424/03.

10.12 Thus in the judgement of the Enlarged Board, although T 424/03 does deviate from a view expressed in T 1173/97 this is a legitimate development of the case law and since T 1173/97 has not been followed by any Board on this particular point there is no divergence which would make the referral of this point to the Enlarged Board of Appeal by the President admissible. Question 1 is therefore not admissible.

10.13 The present position of the case law is thus that (phrasing the conclusion to match Question 2 of the referral) a claim in the area of computer programs can avoid exclusion under Articles 52 (2) (c) and (3) EPC merely by explicitly mentioning the use of a computer or a computer-readable storage medium. But no exposition of this position would be complete without the remark that it is also quite clear from the case law of the Boards of Appeal since T 1173/97 that if a claim to program X falls under the exclusion of Articles 52 (2) and (3) EPC, a claim which specifies no more than "Program X on a computer-readable storage medium," or "A method of operating a computer according to program X," will always still fail to be patentable for lack of an inventive step under Articles 52 (1) and 56 EPC. Merely the EPC article applied is different. While the Enlarged Board is aware that this rejection for lack of an inventive step rather than exclusion under Article 52 (2) EPC is in some way distasteful to many people, it is the approach which has been consistently developed since T 1173/97 and since no divergences from that development have been identified in the referral we consider it not to be the function of the Enlarged Board in this Opinion to overturn it, for the reasons given above (see point 7.3.8).

10.13.1 In the section 3.1.IV, "Consequences", of the referral it is stated that, "if one were to follow the reasoning of T 424/03, overcoming the exclusion of programs for computers

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would become a formality, merely requiring formulation of the claim as a computer implemented method or as a computer program product." Indeed if the Boards continue to follow the precepts of T 1173/97 it follows that a claim to a computer implemented method or a computer program on a computer-readable storage medium will never fall within the exclusion of claimed subject-matter under Articles 52 (2) and (3) EPC, just as a claim to a picture on a cup will also never fall under this exclusion. However, this does not mean that the list of subject-matters in Article 52 (2) EPC (including in particular "programs for computers") has no effect on such claims. An elaborate system for taking that effect into account in the assessment of whether there is an inventive step has been developed, as laid out in T 154/04, Duns. While it is not the task of the Enlarged Board in this Opinion to judge whether this system is correct, since none of the questions put relate directly to its use, it is evident from its frequent use in decisions of the Boards of Appeal that the list of "non-inventions" in Article 52 (2) EPC can play a very important role in determining whether claimed subject-matter is inventive.

10.13.2 We note, in passing, that it is somewhat surprising that the referral does not address any of its questions to the validity of this way of judging an inventive step, an issue which is surely of general interest (and one which Lord Justice Jacob proposed should be put to the Enlarged Board - "How should those elements of a claim that relate to excluded subject-matter be treated when assessing whether an invention is novel and inventive under Articles 54 and 56?", "Aerotel/Macrossan" at 76, question (2)). The Board can only speculate that the President could not identify any divergence in the case law on this issue, despite the fact that (at present) approximately seventy decisions issued by a total of fifteen different Boards (in the sense of organisational units) cite T 641/00, "COMVIK" (OJ EPO 2003, 352), and over forty decisions by eight Boards cite T 258/03, "Hitachi", the decisions which essentially defined the approach. Nor is the Enlarged Board aware of any divergence in this case law,

suggesting that the Boards are in general quite comfortable with it. It would appear that the case law, as summarised in T 154/04, has created a practicable system for delimiting the innovations for which a patent may be granted.

Question 2

11.(a) Can a claim in the area of computer programs avoid exclusion under Art. 52 (2) (c) and (3) merely by explicitly mentioning the use of a computer or a computer-readable storage medium?

(b) If Question 2 (a) is answered in the negative, is a further technical effect necessary to avoid exclusion, said effect going beyond those effects inherent in the use of a computer or data storage medium to respectively execute or store a computer program?

11.1 Firstly the question has to be interpreted again, although its intention is in this case fairly clear. While the question says "merely by explicitly mentioning", it may be presumed that the referral does intend there to be a functional relationship, such as, "Method of operating a computer according to program X".

11.2 The referral argues that "claims for a computer program and a computer implemented method can be seen as having an identical scope," and also that "the scope of a method claim would encompass a computer program for carrying out that method," which would not appear to be quite the same thing, since the latter suggests that the scope of the method claim could be greater than that of a claim to a computer program. Reference is then made to the assertion in T 258/03 that any method involving technical means is not excluded from patentability (see Headnote 1). Given the equivalence of method and program claims, this is said to be inconsistent with the requirement in T 1173/97 that programs for computers must show a "further technical effect" in order to escape exclusion from patentability under Article 52 (2) EPC.

11.2.1 The argument that computer program claims and computer implemented method claims have identical scope is as follows:

"Method claims are, in essence, a series of instructions or steps which are to be carried out by any capable entity (this could be a person, a machine, a combination thereof or indeed a computer). A computer implemented method corresponds to the specific case of the entity for carrying out the steps being a computer. In the same way a computer program is a series of instructions or steps, constituting a method, whereby the instructions or steps are carried out by a computer. Thus claims for a computer program and a computer implemented method can be seen as having an identical scope."

It is to be noted that this argumentation is based on the features claimed actually being the same, rather than any considerations of the protection conferred, in the sense of e.g. Article 123 (3) EPC.

11.2.2 There seem to be two logical weaknesses in the argumentation. The first is the assertion that a method can be divorced from the device that it is (to be) carried out on, which is made as a general statement, not limited to computer implemented methods. This is palpably not the case; "A method of operating a shoe polishing machine comprising placing a shoe in a position touching a surface rotatable in a direction" clearly requires the presence and involvement of the shoe polishing machine.

11.2.3 The second logical weakness seems to be a confusion between a

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set of instructions for carrying out steps and the steps themselves. This is already present in the "Definitions" section of the referral ("A computer program is a series of steps (instructions)"). There is a general distinction in logic to be made between an object and a name or description of the object. Consider the following argument:

Tigers eat meat. Meat is a word. Therefore tigers eat words.

Clearly there must be an error in this argument. It occurs because "meat" is being used differently in the two premises. In the second premise what is being discussed is not the substance meat, but the name of the substance. These are two different things, and the usual way of distinguishing them is to put the name in quotation marks. For a famous but more complicated example of this kind of wordplay see *L. Carroll's "Through the Looking Glass (and What Alice Found There)"*, search expression, "The name of the song is called". In such a complicated situation it is easy to confuse names or descriptions and the things they refer to.

*11.2.4*In the present case there is a logical distinction between a method carried out by a computer and the sequential list of instructions which specify that method. This distinction is real; consider for example a program which contains an instruction to increment the value of a variable. There may be only one such instruction in the program, but if it occurs inside a loop (e.g. a "while" statement) the corresponding method carried out by a computer may involve the increment step being carried out many times. It is moreover possible to talk of a computer loaded with a set of instructions or of a computer-readable medium storing a set of instructions. The concepts of a computer (or any other machine) "loaded" with a method, or a computer-readable medium "storing" a method, appear to be meaningless. The only way a meaning can be assigned to these concepts is to assume that they are elisions of, respectively, a computer loaded with and a computer-readable medium storing instructions to carry out a method.

*11.2.5*Since formulations like "a program loaded on a computer" and "a disk storing a computer program" are commonplace in the art, the Enlarged Board considers that the skilled person understands the word "program" to refer to the sequence of instructions specifying a method rather than the method itself. (It may be noted that although very few of the *amicus curiae* briefs addressed this point, those that did agreed with this position, sometimes in rather forceful terms.)

*11.2.6*The referral's confusion on this point seems to arise from its equating a method claim, which is a description (or at least delimitation) of a method, with the method it delimits: "Method claims are, in essence, a series of instructions or steps (...) In the same way a computer program is a series of instructions or steps, constituting a method, whereby the instructions or steps are carried out by a computer. Thus claims for a computer program and a computer implemented method can be seen as having an identical scope."

*11.2.7*While on a correct interpretation there is a distinction between a computer program and the corresponding computer-implemented method, it is conceivable that there is nonetheless a divergence in the case law of the Boards of Appeal, resulting from a false usage by Boards of the word "program". The referral asserts that two decisions take the same view as it does that a claim to a computer program has the same scope as a claim to a computer implemented method (or that the method encompasses the program), namely T 1173/97 at Reasons, point 9.6, second paragraph, lines 1 to 3, and T 38/86, "IBM" (OJ EPO 1990, 384), Reasons, point 14. Even though the argument made in the referral that a program is the same as a method is not convincing, it is nonetheless necessary to consider whether Boards have in fact used the expression "computer program" to mean a method in the cases where such use is asserted in the referral.

*11.2.8*The first citation (i.e. T 1173/97 at Reasons, point 9.6, second paragraph, lines 1 to 3) is, "It is self-evident that a claim to such a computer program product must comprise all the features which assure the patentability of the method it is intended to carry out when being run on a computer." There is however no problem in interpreting this as being a reference to the instructions which make up the program. It does not imply that the Board in T 1173/97 necessarily saw the features of a claim to a computer program product as being method steps. Indeed the sentence which immediately follows the cited one gives the opposite impression: "When this computer program product is loaded into a computer, the programmed computer constitutes an apparatus which in turn is able to carry out the said method." This would appear to indicate that

the Board in that case saw computer programs in the same way as the Enlarged Board does.

*11.2.9*The second citation (i.e. T 38/86, "IBM", Reasons, point 14) is, "Although a computer program is not expressly recited in Claim 1, it is clear to a reader skilled in the art that the claim covers the case in which a computer program is used and, indeed, in the only embodiment disclosed in the application the text processing system is controlled by a set of programs and data stored in memory." Claim 1 was a method claim. However this does not mean that a computer program is a method, merely that, as it says, the

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claim could be satisfied by the use of a computer program. The shoe polishing method mentioned above may be satisfied by a particular use of the shoe polishing machine, but this does not mean that claims to the machine and to the method have the same scope or that the scope of the method encompasses the scope of the machine. If anything the scope of (in the sense of protection conferred by) a claim to the machine encompasses the scope of a claim to a method of using the machine - see G 2/88 (OJ EPO 1990, 93, Headnotes 1 and 2).

*11.3*Thus no divergence in the case law supporting this question has been identified by the referral and the question is therefore not admissible.

Question 3

12.(a) Must a claimed feature cause a technical effect on a physical entity in the real world in order to contribute to the technical character of the claim?

(b) If Question 3(a) is answered in the positive, is it sufficient that the physical entity be an unspecified computer?

(c) If Question 3(a) is answered in the negative, can features contribute to the technical character of the claim if the only effects to which they contribute are independent of any particular hardware that may be used?

*12.1*The referral argues that a divergence arises as follows: "According to decisions T 163/85 ('BBC', OJ EPO 1990, 379) and T 190/94 ('Mitsubishi', dated 26 October 1995), a technical effect on a physical entity in the real world was required. This was however not the case in T 125/01 ('Henze', dated 11 December 2002) and T 424/03. In these decisions the technical effects were essentially confined to the respective computer programs".

*12.2*There are two evident problems with this assertion. The first is that the referred question relates to individual features, rather than the claimed subject-matter as a whole. The referral does not specify, and the Enlarged Board cannot identify, any passage in the cited decisions relating to the individual features. Indeed the referral does not even mention the fact that the question relates to individual features in its discussion of the alleged divergence.

*12.2.1*This is an important point. The case law of the Boards of Appeal as a whole is consistent in considering all the features that are claimed. As mentioned above the Boards have always avoided approaches which involve weighting of features or a decision which features define the "essence" of the invention. It is true that the "COMVIK/Hitachi" approach to deciding whether there is an inventive step may involve ignoring some features, but the method starts with a consideration of all the features together to determine whether the claimed subject-matter has a technical character. Only once this determination has been made can the Board turn to the question of which claimed features contribute to that technical character and therefore should be taken into account for the assessment of whether there is an inventive step.

*12.2.2*It is in fact a well-established principle that features which would, taken in isolation, belong to the matters excluded from patentability by Article 52 (2) EPC may nonetheless contribute to the technical character of a claimed invention, and therefore

cannot be discarded in the consideration of the inventive step. This principle was already laid down, albeit in the context of the so-called "contribution approach", in one of the earliest decisions of the Boards of Appeal to deal with Article 52 (2) EPC, namely T 208/84, "VICOM" (Reasons, point 4 ff.).

12.3 The second problem with the alleged divergence is that the decisions T 163/85 and T 190/94, said in the referral to require a technical effect on a physical entity in the real world, simply did not do so. They merely accepted this as something sufficient for avoiding exclusion from patentability; they did not state that it was necessary. The referral does not identify any passages requiring such an effect and the Enlarged Board cannot find any.

12.4 Thus there is no divergence. The other two decisions cited considered that there were technical effects; whether the Boards concerned considered that these technical effects were on a physical entity in the real world is irrelevant.

12.5 This question is therefore also inadmissible.

Question 4

13.(a) Does the activity of programming a computer necessarily involve technical considerations?

(b) If Question 4 (a) is answered in the positive, do all features resulting from programming thus contribute to the technical character of a claim?

(c) If Question 4 (a) is answered in the negative, can features resulting from programming contribute to the technical character of a claim only when they contribute to a further technical effect when the program is executed?

13.1 Again the question needs some interpretation. The Enlarged Board supposes that "the activity of programming a computer" is intended to relate to the intellectual activity of working out what are the steps to be included in a computer program rather than the simple physical activity of entering a program into some computer.

13.2 The referral asserts correctly in our view, that T 1177/97, "SYSTRAN", dated 9 July 2002, considers that programming always involves technical considerations, at least implicitly, and that T 172/03,

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"Ricoh", dated 27 November 2003, assumes the same in that it considers the skilled person, who, it is emphasised, is a technical expert, to be a software project team, consisting of programmers. On the other hand, T 833/91, "IBM", dated 16 April 1993, T 204/93, "AT&T", dated 29 October 1993, and T 769/92, "Sohei", OJ EPO 1995, 525, are said to consider the programmer's activity, programming, to be a mental act, falling within the exclusions of Article 52 (2) EPC.

13.3 However, there is no contradiction between these positions, as may be seen by considering the same case in a non-controversial field, for example bicycle design. Designing a bicycle clearly involves technical considerations (it may also involve non-technical, e.g. aesthetic, considerations) but it is a process which at least initially can take place in the designer's mind, i.e. it can be a mental act and to the extent that it is a mental act would be excluded from patentability, just as in the cited cases T 833/91, T 204/93 and T 769/92 (cf. also T 914/02, "General Electric", dated 12 July 2005, Reasons, point 2.3 and T 471/05, "Philips", dated 6 February 2007, Reasons, points 2.1 and 2.2).

13.4 Hence the question does not satisfy the requirement for a divergence in the case law and is therefore inadmissible.

13.5 While the referral has not actually identified a divergence in the case law, there is at least the potential for confusion, arising from the assumption that any technical considerations are sufficient to confer technical character on claimed subject-matter, a position which was apparently adopted in some cases (e.g. T 769/92, "Sohei",

Headnote 1). However T 1173/97, "IBM" sets the barrier higher in the case of computer programs. It argues that all computer programs have technical effects, since for example when different programs are executed they cause different electrical currents to circulate in the computer they run on. However such technical effects are not sufficient to confer "technical character" on the programs; they must cause further technical effects. In the same way, it seems to this Board, although it may be said that all computer programming involves technical considerations since it is concerned with defining a method which can be carried out by a machine, that in itself is not enough to demonstrate that the program which results from the programming has technical character; the programmer must have had technical considerations beyond "merely" finding a computer algorithm to carry out some procedure.

13.5./Defining a computer algorithm can be seen in two different lights. On the one hand it may be seen as a pure mathematical-logical exercise; on the other it may be seen as defining a procedure to make a machine carry out a certain task. Thus for example Knuth, in: *The Art of Computer Programming, Volume 1/Fundamental Algorithms*, 2nd ed., 1973, gives a purely abstract mathematical definition of an algorithm, and then immediately goes on to state that, "There are many other essentially equivalent ways to formulate the concept of an effective computational method (for example, using Turing machines)," (sentence bridging 8 and 9). Turing, in: *On Computable Numbers, with an Application to the Entscheidungsproblem*, proved a purely mathematical result but did so by defining a hypothetical, but plausible, machine to carry out algorithms (*The Essential Turing*, ed. B.J. Copeland, Oxford, 2004, 58-90). Depending on which of these views is favoured the question whether computer programming always involves "technical considerations" may be answered negatively or positively. Either view may apparently be genuinely held, as may be seen from the lack of consensus in the *amicus curiae* submissions; which one is held depends on one's intuitive notion of the term "technical". It was apparently the intention of the writers of the EPC to take the negative view, i.e. to consider the abstract formulation of algorithms as not belonging to a technical field. In T 1173/97 the Board concentrated on the effect of carrying out an algorithm on a computer, noting that there were always technical effects, which led the Board, since it recognised the position held by the framers of the Convention, to formulate its requirement for a "further" technical effect. Only if a computer program, when run, produced further technical effects, was the program to be considered to have a technical character. In the same way, it would appear that the fact that fundamentally the formulation of every computer program requires technical considerations in the sense that the programmer has to construct a procedure that a machine can carry out, is not enough to guarantee that the program has a technical character (or that it constitutes "technical means" as that expression is used in e.g. T 258/03, "Hitachi"). By analogy one would say that this is only guaranteed if writing the program requires "further technical considerations".

IV. Die Entscheidung im Überblick

Die Entscheidung der Grossen Beschwerdekammer des EPA leistet einen wichtigen Beitrag zur Konsolidierung der Rechtslage bei der Patentierung von Computerprogrammen bzw. computerimplementierten Erfindungen im Europäischen Patentrecht. Zwar hat die Grosse Beschwerdekammer die vier Vorlagefragen materiell nicht beantwortet, weil sie zum Schluss gekommen ist, dass die formellen Voraussetzungen

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hierfür nicht gegeben sind. In ihren Erwägungen hat sich die Grosse Beschwerdekammer aber eingehend mit der Praxis der Beschwerdekammern zur Patentierung computerimplementierter Erfindungen auseinandergesetzt und diese in zentralen Streitpunkten bestätigt. Die wichtigsten Erkenntnisse können wie folgt zusammengefasst werden:

Bestätigt hat die Grosse Beschwerdekammer zunächst das Prinzip, wonach ein Computerprogramm als solches nicht von der Patentierung ausgeschlossen ist, wenn es beim Ablaufen auf einem Computer einen technischen Effekt erzielt oder erzielen kann, der über die normalen physikalischen Wechselwirkungen zwischen Programm und Computer hinausgeht (E. 10.2.1). Dieser weitere technische Effekt muss dabei als solcher nicht neu und erfinderisch sein. Die Grosse Beschwerdekammer hat damit die Aufgabe des sog. "contribution approach" bekräftigt, nach welchem Computerprogramme nur dann nicht von der Patentierung ausgeschlossen waren, wenn sie einen erfinderischen Beitrag zum Stand der Technik auf einem Gebiet leisteten, das nicht vom Patentschutz ausgeschlossen war (E. 10.4). Ob nämlich eine Erfindung im Sinne von Art. 52 EPÜ vorliegt, beurteilt sich richtigerweise - entgegen dem "contribution approach" - unabhängig vom Stand der Technik (E. 10.8.4). Entscheidend ist für diese Frage einzig, dass die beanspruchte Erfindung technischen Charakter aufweist, sog. "any hardware" oder "any technical means approach" (E. 10.6). Diesem Ansatz entsprechend hat die Grosse Beschwerdekammer auch klargestellt, dass ein Patentanspruch, der sich auf ein Computerprogramm bezieht, bereits dann nicht mehr nach Art. 52 EPÜ von der Patentierung ausgeschlossen ist, wenn in diesem Anspruch ausdrücklich der Gebrauch eines Computers oder eines computerlesbaren Speichermediums erwähnt wird (E. 10.7 ff., insb. 10.8.2).

Damit ein Patent erteilt werden kann, muss freilich nicht nur eine Erfindung im Sinne von Art. 52 EPÜ vorliegen, die Erfindung muss vielmehr auch neu und nicht-naheliegend sein (Art. 54 Abs. 1 und Art. 56 EPÜ). Bei dieser Prüfung dürfen nach der Praxis des EPA einzig die technischen Merkmale der Erfindung berücksichtigt werden. Ein Patent wird also nur erteilt, wenn die beanspruchte Erfindung einen technischen Beitrag zum Stand der Technik leistet; das Neue und Nicht-Naheliegende darf mithin nicht auf einem Gebiet liegen, welches aufgrund von Art. 52 EPÜ gerade vom Patentschutz ausgeschlossen ist (E. 10.13). Bei der Beurteilung der Schutzvoraussetzungen können die Ausschlussgründe damit eine entscheidende Rolle spielen (E. 10.13.1). Der Prüfungsansatz des EPA führt somit dazu, dass die Erteilung eines Patents bei vielen Computerprogrammen zwar nicht schon an der Prüfung der Ausschlussgründe scheitern wird, wohl aber an derjenigen von Neuheit und Nicht-Naheliegen. Am Ergebnis ändert sich damit freilich in aller Regel nichts.

Bestätigt hat die Grosse Beschwerdekammer auch, dass bei der Prüfung nach Art. 52 EPÜ stets alle beanspruchten Merkmale zu beachten sind. Erst wenn aufgrund einer Gesamtbetrachtung festgestellt werden konnte, ob die Erfindung technischen Charakter hat, kann in einem zweiten Schritt beurteilt werden, welche der beanspruchten Merkmale zum technischen Charakter beitragen und damit bei der Prüfung auf Neuheit und Nicht-Naheliegen zu berücksichtigen sind. Zu beachten ist dabei, dass Merkmale, die für sich allein genommen zu jenen gehören würden, die nach Art. 52 EPÜ von der Patentierung ausgeschlossen wären, in Verbindung mit anderen Merkmalen durchaus zum technischen Charakter einer Erfindung beitragen können. Auch solche Merkmale müssen deshalb in die Beurteilung der erfinderischen Tätigkeit einfließen (E. 12.2.1 f.).

Schliesslich war die Frage zu klären, ob das Programmieren eines Computers notwendigerweise technische Überlegungen einschliesst und ob deshalb alle Merkmale, die Ergebnis des Programmierens sind, zum technischen Charakter eines Patentanspruchs beitragen. Dazu hielt die Grosse Beschwerdekammer fest, dass zwar jede Programmierung insofern technische Überlegungen erfordert, als ein Verfahren entwickelt und definiert werden muss, welches eine Maschine ausführen kann, dass dieser Umstand aber für sich allein nicht ausreicht, um einem Computerprogramm technischen Charakter zu verleihen. Vielmehr müssen bei der Entwicklung eines Computerprogramms "weitere technische Überlegungen" angestellt werden, die über das bloss Auffinden eines Algorithmus hinausgehen, der ein von einer Maschine ausführbares Verfahren definiert. Denn nach dem Art. 52 EPÜ zugrunde liegenden

Konzept weist die abstrakte Formulierung eines Algorithmus gerade keinen technischen Charakter auf (E. 13.5. f.).