

Summary Report

by Sarah MATHESON, Reporter General
John OSHA and Anne Marie VERSCHUUR, Deputy Reporters General
Yusuke INUI, Ari LAAKKONEN and Ralph NACK
Assistants to the Reporter General

2017 – Study Question – Patents

Patentability of computer implemented inventions

Introduction

This Study Question concerns the issue of patentability of computer implemented inventions (CII).

For the purpose of this Study Question:

- the abbreviation **CII** refers to an invention which involves the use of a computer, computer network or other programmable apparatus, where one or more features are realised wholly or partly by means of a computer program;
- the term **patentability of CII** refers to the question of whether CII may properly be the subject of a patent claim.

This Study Question examines the contribution to the state of the art the claimed CII makes, as well as the application of specific claim drafting requirements.

The Reporter General has received reports from the following Groups and Independent Members in alphabetical order: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Denmark, Ecuador, Estonia, Finland, France, Germany, Hungary, Israel, Italy, Japan, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Pakistan, Paraguay, Philippines, Poland, Portugal, Republic of Korea, Romania, Singapore, Spain, Sweden, Switzerland, Taiwan (Independent Member), Thailand, Turkey, Ukraine, United Kingdom (UK), United States of America (U.S.), Uruguay, Venezuela, and Vietnam.

44 reports were received in total¹. The Reporter General thanks the Groups and Independent Members for their helpful and informative reports.

The reports provide a comprehensive overview of national and regional laws and policies relating to patentability of CII. This Summary Report cannot attempt to reproduce the detailed responses in any given report. If any question arises as to the exact position in a particular

¹ Reports received after 1 August 2017 are listed above but their content is not incorporated into this Summary Report.

jurisdiction, or for a detailed account of any particular answer, reference should be made to the original reports. See <http://aippi.org/committee/patentability-of-computer-implemented-inventions>.

In this Summary Report:

- references to reports of or responses by one or more "Groups" may include references to Independent Members;
- where percentages of responses are given, they are to the nearest 5%; and
- in Part IV below, some conclusions have been drawn in order to provide guidance to the Study Committee for this Question.

I. Current law and practice

1) Are there any statutory provisions which specifically apply only to CII?

About one third of the Groups responded YES to this question. Most of these Groups are from countries which are signatories to the European Patent Convention (**EPC**). Article 52 EPC excludes "*computer programs as such*" from patentability. Outside Europe, only the Mexican and Paraguayan Groups reported that there are statutory provisions which apply specifically only to CII. The remaining two thirds of the Groups (28) responded NO.

2) Please briefly describe the general patentability requirements in the written law of your jurisdiction which are specifically relevant for the examination of the patentability of CII.

There is almost no international alignment in the written national/regional laws as to the patentability requirements which are specifically relevant for the examination of the patentability of CII, apart from the generally applicable novelty and inventiveness requirements.

Most European and Asian countries take the approach of broadly defining patentable subject matter by linking the terms "*invention*" or "*solution*" with a reference to "*technology*", e.g. "*invention in any field of technology*" (EPC), "*technical solution*" (China) or "*highly advanced creation of technical ideas utilizing the laws of nature*" (Japan). The EPC and many national laws of European countries aim to further specify this broad definition with a list of subject matter which is deemed to be no invention in a field of technology – provided that this subject matter is claimed "*as such*". The notion of the "*as such*" limitation is however not further specified in the law.

In contrast, the U.S. and Canadian laws set out certain categories of patentable subject matter: "*process, machine, manufacture, or composition of matter*" (U.S.), or "*useful art, process, machine, manufacture or composition of matter*" (Canada). Notably, a further patentability requirement is that the claimed process etc. be "*useful*".

3) Under the case law or judicial or administrative practice in your jurisdiction, are there rules which specifically apply only to CII? If yes, please specify.

23 Groups responded YES, 21 Groups responded NO.

In almost all countries responding YES, very detailed examination guidelines or implementing regulation are in effect aiming to ensure a consolidated practice of the national/regional patent offices. The most detailed examination guidelines are in force in China, at the EPO, in Japan, Korea, and the U.S.

In addition, some countries have a wealth of court decisions dealing with patentability of CII, most notably the U.S., the EPO, and Germany.

In general, most European countries follow the practice of the EPO, with some national nuances/particularities, e.g. UK and Germany.

4) Please briefly describe the general patentability requirements under the case law or judicial or administrative practice of your jurisdiction which are specifically relevant for the examination of the patentability of CII.

While the leadership of the EPO results in a certain degree of harmonisation of the judicial and administrative practice in Europe, the doctrines applied to CII outside this region are worded very diversely. The most prominent doctrines can be summarized as follows.

The EPO and most European countries take the approach that a patentable CII must have “*technical character*” (also called “*further technical effect*”). This requirement is generally satisfied by mentioning technical features (e.g. hardware) in the claim. These may be known in the prior art (no novelty/inventiveness required). However, patentability of CII further requires that the inventive step resides in a “*technical solution*” or “*contribution to the field of technology*”. Contributions/solutions in a non-technical field – no matter how inventive – will fail to pass the inventive step test. For example, assuming a CII implements a (very innovative) algorithm to calculate pension plans, a claim on this CII will fail to pass the inventive step test if this (very innovative) algorithm is the only contribution to the art.

Under U.S. practice, “*laws of nature, natural phenomena, and abstract ideas*” are deemed ineligible for patenting. The exception of “*abstract ideas*” has a particular relevance for CII and implemented as a two-step test. In the first step, one has to determine whether the claims are “*directed*” to an “*abstract idea*”. If so, the second step is to determine whether the elements of a claim is considered both individually and as an ordered combination, transform the nature of the claim into a patentable invention. This second step determines whether a claim “*contain[s] an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application*”.

China, Korea and Japan adopted a “*whole contents*” approach under which all features of a claim need to be taken into consideration when assessing patentability of CII. Broadly speaking, the presence of technical features in the claim seems to

provide an argument for confirming patentability of CII under this test, irrespective of whether these features are new and inventive. The general novelty and inventiveness requirements do not seem to provide specific additional restrictions as to patentability of CII.

5) Exclusion of non-patentable subject matter per se

- a) Do the statutory provisions, case law or judicial or administrative practice (hereinafter referred to as Law/Practice) in your jurisdiction exclude any particular subject matter relating to CII from patentability per se?**

In this context, “per se” means that the non-patentable subject matter is identified without any implicit or explicit examination of the contribution to the state of the art the claimed CII makes.

60% Groups answered YES, while 40% Groups answered NO. Among the Groups answering NO, there are 4 Groups from an EPC country, referring to the “as such” limitation applicable to the list of non-patentable subject matter (cf. Art 52 EPC), whereas 14 Groups from EPC countries answered YES, referring to the same or a similar statutory provision.

- b) Please describe the subject matter excluded from patentability per se and explain in detail how it is identified in practice.**

The Groups answering YES to question 5)a) mention inter alia the following non-patentable subject matter: scientific principles, algorithms, mathematical methods, business methods, computer programs, source code.

However, none of the reports positively explain how a claim on, e.g. a “computer program as such” might be drafted. Rather, throughout the reports, these exceptions are defined by explaining how a rejection under these doctrines/provisions can be avoided (by adding other subject matter to the claim), see question 5)c) below for more details.

- c) If there is any subject matter identified in a patent claim relating to CII that is excluded from patentability per se, is it possible to overcome a rejection of the patent claim by adding other subject matter to the claim?**

Almost all Groups emphasize that the exceptions mentioned under 5)b) are only applicable if the excluded subject matter is claimed “as such”, “per se” or “merely”. While it is not explained as to how a claim for, e.g. a “computer program as such” might be drafted (see above, question 5)b)), there seems to be a consensus that a rejection under these doctrines or statutory provisions can be overcome by adding “technical features” to the claim language. Under some national practices, these added “technical features” might be hardware elements (e.g. a CPU), while other national practices require a more concrete description of the interaction between the software and hardware resources.

In contrast to the above, the Brazilian Group reports that a set of instructions in a language, a source code or a source code structure, are not deemed to constitute inventions, even if creative and despite producing a technical effect.

d) Does the “other subject matter” need to have a certain quality, e.g. does it need to be inventive?

A slim majority of the Groups answering this question responded NO.

Many of the Groups answering YES refer to a (modified) inventive step test. Those answers will be further addressed in question 6) below (Requirement of a contribution in a field of technology).

Leaving aside this (possibly modified) inventive step test, there seems to be a consensus that these “*technical features*” do not need to be novel and inventive, if taken alone, in order to overcome a rejection under the doctrine/provision setting forth the exclusion of non-patentable subject matter per se. However, all these features need to be sufficiently disclosed in the patent description, enabling the person skilled in the art to practice the invention.

e) Can you describe the areas of human endeavour the “other subject matter” needs to relate to? If yes, please explain.

12 of the 24 Groups answering this question responded NO. The other 12 answering YES generally makes reference to the field of “*technology*” as allowable area of human endeavour, specifically pointing to the fields of engineering and natural sciences.

6) Requirement of a contribution in a field of technology

a) Does the examination of the patentability of CII in your jurisdiction implicitly or explicitly involve an examination of the contribution the claimed CII makes to the state of the art (such examination may be part of a general “patentability” test or part of the novelty and inventive step/non-obviousness test)?

Two thirds of the Groups answered YES to this question. However, it should be noted that, e.g. the Chinese and the Korean Group explain, in answering YES, it is merely the standard tests of novelty and inventive step/non-obviousness that apply to CII.

All other Groups answering YES make reference to some kind of additional requirement going beyond the standard novelty and inventive step/non-obviousness tests.

b) Does this test implicitly or explicitly involve excluding contributions from areas of human endeavour which are not deemed to be sources of patentable inventions? In other words, does patentability of CII implicitly or explicitly require a contribution from areas of human endeavour

which are deemed to be sources of patentable inventions (e.g. engineering, natural sciences)? If yes, please explain.

The majority of the Groups answered this question YES. These Groups very clearly state that the contribution of the invention over the prior art must be in a field that is not excluded from patentability. Most Groups mention that this doctrine is based on case law, i.e. not explicitly mentioned in the statute.

c) Does this test also implicitly or explicitly require that the relevant contribution the CII makes to the state of the art qualifies as inventive/non-obvious? This additional test may be integrated into the general inventive step/non-obviousness examination, or may be a stand-alone test. If yes, please explain.

Almost all Groups answering this question responded YES.

Most Groups from EPC countries report that this additional requirement is integrated into a modified inventive step test, while the U.S. Group reports that this test is part of the “*abstract idea exception*”, which is however de-facto overlapping with the non-obviousness test.

Under EPO practice, the inventive step must reside in a “*technical solution*” (or “*contribution to the field of technology*”), while contributions/solutions in a non-technical field – no matter how inventive – will fail to pass the inventive step test. This test is integrated in the general problem-solution approach.

Under U.S. practice, a claim “*directed*” to an “*abstract idea*” has to contain an “*inventive concept*” sufficient to transform the claimed abstract idea into a patent-eligible application. Subject matter that may be enough to qualify as “*inventive concept*” includes:

- Improvements to another technology or technical field;
- Improvements to the functioning of the computer itself;
- Applying the abstract idea with, or by use of, a particular machine;
- Effecting a transformation or reduction of a particular article to a different state or thing; and
- Specific element(s) other than what is well-understood, routine and conventional in the field, or unconventional steps that confine the claim to a particular useful application.

d) Is there an implicit or explicit consensus in your jurisdiction as to the list of areas of human endeavour which are accepted as sources of patentable CII? If yes, is it possible to define these areas of human endeavour?

Three quarters of the Groups answered NO. The Groups answering YES mention, inter alia, the following areas of human endeavour:

- “Technology”, specifically the areas of engineering and natural sciences;
- Industrial process; and
- Change of internal functioning of the computer itself (such as speed, reliable performance, improved utilization of data storage capacity).

7) Does the Law/Practice in your jurisdiction contain any specific claim drafting or other formal requirements which are applicable to CII, i.e. which deviate from the Law/Practice applicable to inventions which are not CII? If yes, please explain.

About one third of the Groups answered this question YES. Some of these Groups refer to the requirements explained under question 5)c) (adding other subject matter to the claim to overcome a rejection of the patent claim under excluded subject matter), while most of these Groups generally mention allowable claim formats for CII, inter alia:

- Method claims,
- Apparatus claims,
- Computer program product claims,
- Computer-readable medium claims,
- Data structure claims, and
- Data signal claims

8) Does the Law/Practice contain any specific requirements as to sufficiency of disclosure and/or enablement which are applicable to CII, i.e. which deviate from the Law/Practice applicable to inventions which are not CII? If yes, please explain.

Almost all Groups answered NO.

9) Do courts and administrative bodies in your jurisdiction apply the Law/Practice for patentability of CII in your jurisdiction in a harmonized way? If not, please explain.

There is an almost even split of YES/NO answers.

A majority of the Groups from EPC countries report that the case law is generally consolidated. Likewise, many Asian Groups (esp. China, Japan, Korea) answered YES to this question.

In contrast, the U.S. Group points to the ongoing and highly dynamic development of the national case law being relevant for CII. Similar comments are made by the Canadian and Australian Groups.

Most of the other Groups answering NO refer to the fact that there are not enough cases/courts decisions available to answer this question.

II. Policy considerations and proposals for improvement of your current law

10) Is the current law in your jurisdiction regarding the patentability of CII considered understandable and workable? If not, please explain.

There is an exactly even split between the Groups responding YES and NO (one Group did not answer this question).

A significant number of Groups from EPC countries consider that the law in their jurisdiction regarding the patentability of CII is understandable and workable, with some concerns being raised that, in particular, SMEs might misunderstand the law and get the impression that no or very limited patent protection is available for CII.

Likewise, most Asian Groups report that the current national practice is understandable and workable.

In contrast, the Groups answering NO criticise their current national practice. In particular, the Groups from Australia, Poland, Singapore, Thailand, UK and the U.S. explain in detail that the current law results in uncertainty, confusion, and inconsistency with respect to patentability of CII.

11) Does the current law in your jurisdiction regarding patentability of CII provide appropriate outcomes, in particular from an economic perspective? If not, please explain.

The majority of the Groups answered NO to this question. Most of these Groups refer to the fact that the current state of Law/Practice regarding patentability of CII has created uncertainty, confusion, and inconsistency and therefore does not support, or even hampers, innovation in the relevant industry. However, only a minority of the Groups answering NO argue in favour of more liberal patentability requirements regarding CII, making reference to the needs of the domestic software industry, especially SMEs.

12) In your jurisdiction, is copyright protection of CII regarded as sufficient from an economic standpoint? If not, please explain.

The vast majority of the Groups answered NO to this question. Copyright protection is not regarded as sufficient protection for the technologies developed by innovative businesses, as it only protects the form of expression of CII, not their functionality.

13) Alternatively, is there an explicit or implicit consensus that patent protection of CII is required to ensure sufficient reward of investments made into the development of CII?

The majority of the Groups answered YES to this question, especially arguing that patent protection provides a key incentive for investors in early stage businesses. Without it, many start-up businesses will be unable to attract sufficient investment or have enough negotiating collateral as acquisition targets and could as a result fail, leaving the market to the dominant players who already have a large market share.

- 14) In your jurisdiction, is there an implicit or explicit consensus that availability of patent protection should be limited to contributions from certain areas of human endeavour, excluding contributions from all other areas of human endeavour, no matter how advanced these contributions?**

Two thirds of the Groups answered NO. However, none of the Groups answering NO reported that there is a consensus that availability of patent protection is unlimited. Rather, these Groups emphasize that the limitations explained (especially under question 6) apply), but that these doctrines/limitations would not be called “*restriction of availability of patent protection to contributions from certain areas of human endeavor*” under the national legal tradition/practice. In other words, the Groups seem to disagree that the concept of “*limitation to contributions from certain areas of human endeavor*” properly reflects their current national practice. However, this may be more a matter of difference in language or terminology, rather than a fundamental disagreement with the concept itself.

III. Proposals for harmonisation

- 15) Do you consider that harmonisation regarding patentability of CII is desirable?**

If yes, please respond to the following questions without regard to your Group's current law.

Even if no, please address the following questions to the extent your Group considers your Group's laws could be improved.

Almost all Groups answered YES to this question.

- 16) Exclusion of non-patentable subject matter per se**

- a) Should there be any exclusion from patentability per se of subject matter relating to CII?**

In this context, “per se” means that the non-patentable subject matter has to be identified without any implicit or explicit examination of the contribution to the state of the art the claimed CII makes.

Two thirds of the Groups responded NO to this question. Many Groups answering NO note that the “per se” exclusions outlined under question 5) are not workable and can be easily circumvented by appropriate claim drafting. The UK Group explains that it is often an implementation choice whether an invention is computer-implemented or not, which may be based on economic considerations as well as speed and reliability. It would be illogical to exclude

one efficient implementation option (CII) while allowing patent protection for its mechanical equivalent.

- b) Please describe the subject matter that should be excluded from patentability per se and explain in detail how it should be identified in practice.**

Most of the Groups did not answer this question as they answered NO to question 16)a). The few Groups that answered this question proposed that the following subject matter be excluded per se:

- algorithms,
- mathematical computing rules,
- computer programs per se,
- computer programs per se recorded in mediums,
- rules or methods for games,
- mental acts.

- c) If there is subject matter identified in a patent claim related to CII you consider should be excluded from patentability per se, should it possible to overcome a rejection of the patent claim by adding other subject matter to the claim?**

All Groups responding to this question answered YES. However, it should be noted that most of the Groups did not answer this question as they answered NO to question 16)a).

- d) Should the “other subject matter” need to have a certain quality, e.g. should it need to be inventive?**

Again, most of the Groups did not answer this question as they answered NO to question 16)a). Two thirds of the 11 Groups answering this question responded YES, arguing that a rejection under these “*per se*” exclusions can be overcome by adding “*technical features*” to the claim language.

- e) Can you describe the areas of human endeavour the “other subject matter” should need to relate to? If yes, please explain.**

Again, most of the Groups did not answer this question as they answered NO to question 16)a).

Only 8 Groups answered this question. Among these Groups, the majority view seems to be that the “other subject matter” should relate to any field of technology.

17) **Requirement of a contribution in a field of technology**

- a) **Should the examination of subject matter eligibility of CII involve an examination of the contribution the claimed CII makes to the state of the art? If not, please explain.**

The majority of the Groups answered YES. Most of these Groups seem generally to favour the EPO's modified inventive step test, i.e. patentability of CII requires that the inventive step resides in a "*technical solution*" or "*contribution to the field of technology*", while contributions/solutions in a non-technical field – no matter how inventive – will fail to pass the inventive step test.

- b) **Should such examination be made under a test specific to CII, or should it be part of the usual novelty and inventive step/non-obviousness test? Please state why in either case.**

The majority of the 22 Groups answering this question responded that such examination should be part of the usual novelty and inventive step/non-obviousness test, which would be again in line with the current EPO practice.

- c) **Under this test, should patentability of CII require a contribution from areas of human endeavour which are deemed to be sources of patentable inventions (e.g. engineering, natural sciences)? In other words, should contributions from areas of human endeavour which are not deemed to be sources of patentable inventions be disregarded? If not, please explain.**

Two thirds of the 21 Groups answering this question responded YES. Some Groups express that they would prefer the following wording of the test:

Contributions from areas of human endeavour which are not deemed to be sources of patentable inventions should be disregarded when assessing patentability.

- d) **Should this test also require that the relevant contribution the CII makes to the state of the art qualifies as inventive/non-obvious? This additional test may be integrated into the general inventive step/non-obviousness examination, or may be a stand-alone test.**

Three quarters of all 15 Groups answering this question responded YES, again frequently making reference to the modified inventive step test under the current EPO practice.

- e) **Should there be a non-exhaustive list of areas of human endeavour which are accepted as sources of patentable CII, taking into account the ultimate purpose of patent law (protecting unforeseen, non-obvious subject matter)? If yes, please provide such a list.**

Three quarters of all 15 Groups answering this question responded NO. The German Group points out, for example, that even if such a list were explicitly referred to as non-exhaustive, it would nevertheless be likely to be used as the starting point for a limiting construction of the law. Also, such a list does not necessarily provide clarity or lead to reliability in the assessment of patent eligible subject matter. Besides, it lies in the very nature of human development that areas of human endeavour are ever changing. Therefore such a list could only be temporary and would not be able to fulfil its purpose of providing reliability.

18) Should there be any specific claim drafting or other formal requirements which are applicable to CII, i.e. which deviate from the rules or practice applicable to inventions which are not CII? If yes, please explain.

Almost all Groups answered NO.

For example, the Norwegian Group explains that deviation from normal claim drafting may introduce uncertainties regarding when to apply CII specific drafting. Specific CII claim drafting requirements are likely to lead to undesirably restrictive claims, and will introduce an unwanted burden on applicants and the examiners with respect to when such particular drafting shall be applied.

19) Should there be any specific requirements as to sufficiency of disclosure and/or enablement which are applicable to CII, i.e. which deviate from the rules or practice applicable to inventions which are not CII? If yes, please explain.

Again, almost all Groups answered NO, arguing that claims to CII should be treated like claims to any other technology.

20) Please comment on any additional issues concerning patent protection of CII your Group considers relevant to this Study Question.

The Groups make quite a diverse range of additional comments:

- The Australian Group would be concerned to see any special rules for CII which look beyond the patent claims to discern the “real invention” (a recent case law development in Australia), as this would decrease certainty for the patentee and the public.
- The Canadian Group is concerned about the problem/solution approach as it results in uncertainty and therefore increased prosecution costs for CII inventions.
- The Danish Group points out that it would be advantageous if the statutory provisions better reflected the current case law, so that especially SMEs could better understand the possibility of patenting CII.
- The Finnish Group considers that CII generally should be eligible for patent protection in a similar manner as inventions in other fields of technology.

- The French Group suggests the indexing of patents should be improved, for example by means of classification of algorithms.
- The Japanese Group suggests improving patent protection of CII-related products that are currently on the market, especially protection of data structures per se, or modules and libraries.
- The Dutch group suggests that strict scrutiny should be applied to judicial and statutory rules for eligibility requirements for CII, to avoid such rules going beyond their purpose. In addition, a reasonable possibility of using functional features would be desirable for CII. Furthermore, it would be undesirable to impose limitations that require “tangibility” etc. because intangible signals can be as concretely useful as tangible objects.
- The Polish Group is of the opinion that TRIPS Article 27 sufficiently regulates the protection of CII and this provision should be fully implemented in all countries.
- The Spanish Group points out that the elimination of the statutory exception for computer programs per se would not broaden the scope of patentable subject matter. This exception merely caused an examination practice for these inventions which is artificial and unnecessary (see the similar position of the UK Group below).
- The Swedish Group emphasises that it is important that the patent system offers good protection of CIIs, especially in view of predicted technical development within the area in which large amounts of money and effort is invested. The Group would be concerned about an approach under which the scope of patentable subject matter cannot develop dynamically in accordance with the progress of technology. The Group recommends that examination practice shall be focused on technical and non-technical features and on the technical effect of the invention.
- The Swiss Group points out that when examining CII one should be reminded that although there may not be a technical improvement in the computer itself, there may nevertheless be a technical improvement provided by the overall system that is at least worth considering.
- Similar to the Spanish Group, the UK Group concludes that the computer program per se exclusion is unhelpful and should be removed. Whether an invention is computer-implemented is often an implementation choice which may be based upon, inter alia, economic/commercial considerations. It is not, therefore, logical or fair to exclude patent protection for inventions implemented by computers, but allow patent protection for the equivalent mechanical implementation. The law on patentability should apply equally across all fields of technology – the mode of implementation should be irrelevant.

- The U.S. Group concludes that new and useful CII should be eligible for patent protection and should be examined using the same criteria as applied to other inventions.

Industry sector views included in these proposals for harmonisation

The following consultation with industry was reported:

- Electronics, telecommunications, mechanical engineering (Finland);
- IT, especially software, optical identification, CAD and CAM (Germany);
- Manufacturing of digital imaging products (Netherlands);
- ICT-sector and from a digital music service provider (Sweden); and
- Automobile Industry, household appliances industry (Turkey).

IV. Conclusions

Need for harmonization

The Groups seem to agree that harmonisation is highly desirable regarding patentability of CII.

Presently, there are three main approaches applied regarding patentability of CII:

- **the European/EPO approach:** requiring that the inventive step resides in a “*technical solution*” or “*contribution to the field of technology*”, while contributions/solutions in a non-technical field – no matter how inventive – will fail to pass the inventive step test;
- **the U.S. approach:** requiring that the claim contains an “*inventive concept*” sufficient to transform the claimed abstract idea into a patent-eligible application, e.g. improvements to another technical field;
- **the Asian (China, Korea, Japan) “*whole contents*” approach:** under which all features of a claim need to be taken into consideration when assessing patentability of CII, while the presence of technical features in the claim seems to provide an argument for confirming patentability of CII under this test, irrespective whether these features are new and inventive.

Although the European and the U.S. approaches are worded quite differently, one may conclude that the substance of these two approaches is quite close, in which case there is already a degree of harmonization (whether intentional or not). In contrast, it seems more difficult to align the Asian approach with the European and U.S. approaches respectively.

Consequently, when discussing harmonization, it is probably necessary first to decide whether the European and U.S. approaches can be considered analogous, and if so, whether it is possible to conceive of language that reflects a combination of these

approaches, i.e. a general European/U.S. approach. If yes, on both counts, by reference to the number of Groups that support either of these approaches, there would be majority support.

Alternatively, the starting point may be to give preference to the Asian approach (which would be in line with positions previously taken by AIPPI, e.g. in the Resolution of Q133 – "Patenting of computer software" (Vienna, 1997)).

In any case, it seems highly desirable to find a common language/terminology in the discussion as a first step in the process of harmonization; at the moment, the very different language/terminology in the various approaches seems to be an unnecessary barrier to harmonisation in itself.

Exclusion of non-patentable subject matter per se (computer programs, algorithms, abstract ideas etc.)

The clear majority of the Groups are of the opinion that statutory exclusions of non-patentable subject matter "per se" are not desirable or workable. Rather, they cause legal uncertainty and should be therefore removed.

One may conclude that these exclusions have no real practical effect in limiting the scope of patentable subject matter, but rather relate to other questions of patent law, such as sufficiency of disclosure, enablement, and claim drafting requirements.

Consequently, elimination of these statutory exceptions, especially the exception for computer programs per se should not broaden the scope of patentable subject matter.

Requirement of a contribution in a field of technology

The majority of the Groups support the concept that patentability of CII requires more than just the standard novelty and inventiveness of the claimed subject matter.

According to the majority, patentability of CII should require a contribution from areas of human endeavour which are deemed to be sources of patentable inventions. Contributions from other areas of human endeavour which are not deemed to be sources of patentable inventions should be excluded.

Drawing from the reports, an appropriately broad and flexible definition of these areas of human endeavour qualifying as sources of patentable inventions might be the term "technology". Further drawing from the concepts of engineering and natural sciences, this term has a dynamic and open meaning, and can expand with the constant progress of technology itself.

Consequently, it might be possible to achieve harmonisation on the basis that patentability of CII requires a contribution to the field of technology. The correlation would be that CII containing contributions only in a non-technical field – no matter how inventive – are not patentable.

Furthermore, it might be possible to achieve harmonisation on the basis that such contribution to the field of technology needs to qualify as inventive/non-obvious, i.e. a trivial technical contribution such as an arbitrary arrangement of hardware components cannot serve as basis of patentability.

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