

## **A Study of Patent Eligibility of Computer-Implemented Inventions - from the standpoint of Japan -**

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### **ABSTRACT**

Inventions have shown variation in association with industrial development and progress in science and technology. Since the Patent Act is a law in which the protection and use of inventions are placed at the center of its purpose and its framework is closely related to innovation on a continuous basis, flexible responses must always be made to the needs of the time. In examining the invention's subject matter that is eligible for protection, it is difficult to derive uniquely because it is a problem between law interpretation and policy problems. Patent eligibility of computer-implemented inventions (hereinafter: CII) has been hotly debated since 1960s in many countries. Each country's laws and practices have significantly evolved over time. For instance, Japan has made revisions to the Examination Guidelines, as well as legal amendments as appropriate. In U.S., the issue of patent eligibility of business method inventions has led to the increase in the number of litigations over patent eligibility and vigorous discussions have been conducted. In Europe, they try to conduct harmonization has been sought about various methods difference between the EPO and member states. In addition, Protection eligibility of CII is one of study questions topics for International Association for the Protection of Intellectual Property (AIPPI) world congress 2017.

In this situation show that it is time to revisit patent eligibility of CII. In particular, focus on the three legal systems in determining patent eligibility. (1. Japan: Definition, 2. United States: non-statutory subject matter, 3. Europe: Ineligible subject matter exclusion). Below, this paper describes the current situation in Japan and speculates as to parallels that might emerge between the current situation in US and Europe. This research study aims to be of some help to the efforts made for international systemic harmonization by considering the requirement for patent eligibility from the viewpoint of comparative law.

**Keywords:** Patent eligibility, Computer implemented inventions, Patent protection, creation of technical ideas, Alice/Mayo test

## **I. Introduction**

Inventions have shown variation in association with industrial development and progress in science and technology. Since the Patent Act is a law in which the protection and use of inventions are placed at the center of its purpose and its framework is closely related to innovation on a continuous basis, flexible responses must always be made to the needs of the time. In examining the invention's subject matter that is eligible for protection, it is difficult to derive uniquely because it is a problem between law interpretation and policy problems. Patent eligibility of CII has been hotly debated since 1960s in many countries. Each country's laws and practices have significantly evolved over time. However, the development of the various practices has not linear at all. In addition, Protection eligibility of CII is one of study questions topics for AIPPI world congress 2017.

In this situation show that it is time to revisit each country's position on patent eligibility of CII. In particular, focus on the three legal systems in determining patent eligibility. (1. Japan: Definition, 2. United States: non-statutory subject matter, 3. Europe: Ineligible subject matter exclusion). Below, this paper describes the current situation in Japan and speculates as to parallels that might emerge between the current situation in US and Europe.

## **II. Current law and practice in Japan<sup>1</sup>**

The current status of Japan describes based on the activity report examined by AIPPI-JAPAN CII Committee 2017 composed of IP experts.<sup>2</sup>

### **A. Current law and practice**

#### **1. Statutory Provisions**

In the Japanese Patent Act, Article 1 prescribes the purpose of the Act while Article 2, paragraph (1) defines inventions and the main paragraph of Article 29(1) of the Patent Act provides that a patent shall be granted for an invention as defined in the Patent Act; an "invention" is clearly defined to mean a "highly advanced creation of technical ideas utilizing the laws of nature." Currently, with respect to "the laws of nature" as prescribed in Article 2, paragraph (1) of the Japanese Patent

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<sup>1</sup> Study Report from AIPPI Japanese Group to Study Question on Patentability of computer implemented invention, 2017; <[http://aippi.org/wp-content/uploads/2017/05/2017\\_JP\\_Study\\_Question\\_Patentability\\_of\\_computer\\_implemented\\_inventions\\_2017-05-10.pdf](http://aippi.org/wp-content/uploads/2017/05/2017_JP_Study_Question_Patentability_of_computer_implemented_inventions_2017-05-10.pdf)>(2017/06/01)

<sup>2</sup> I appreciate the insightful comments and feedback offered by AIPPI-JAPAN CII committee member about current situation in Japan. The members are as follows; Kay KONISHI, Yuzuru OKABE, Shigeru INABA, Mitsuhiro Kato, Tsuyoshi SUEYOSHI, Manabu MIYAJIMA, Kazuhiro YAMAGUCHI, Etsuko YOSHIDA, Hideki TAKAISHI, Nobuyuki TANIGUCHI.

Act, “the laws of nature” is regarded as referring to fundamental rules and principles that have physical, chemical or biological rules such as mere mental activities, simple academic rules and man-made agreements. Yet, technical ideas utilizing such fundamental rules or principles are regarded as inventions<sup>3, 4</sup>. Accordingly, as in the case of inventions of other subject matters, CII must meet the definition of “invention” in order to be patented. More specifically, the common eligibility test applicable to both CII and inventions of other subject matters is whether the invention “utilizes the laws of nature” and embodies “technical ideas.”

## 2. Practice: the Examination Guidelines

Japan has responded flexibly to progress in computer technology by the examination guidelines revisions (to include recording media in which computer programs are recorded in the scope of protection in 1997, and include computer programs, etc. in the scope of "invention of a product" in 2000). The provisions in Chapter 1 “Computer software related Inventions” of Annex B “Application examples of the specific technical fields” in the Examination Handbook for Patent and Utility Model in Japan (hereinafter “Examination Handbook”), are rules that apply only to CII under the case law or judicial or administrative practice. However, it should be clarified that Annex B of the Examination Handbook only explains the points to note when applying the Examination Guidelines to CII, or more specifically, only sets forth the criteria for interpretation of the “use of the laws of nature” in CII, and it does not lay down a different criteria for CII from those for inventions of other subject matters. The following is cited as the points to note when applying the Examination Guidelines to CII.

### a. Eligibility

A two-stage test is provided for the determination of eligibility of CII (or construed in the context of the Japanese law as determination as to whether CII meets the definition of an “invention,” that is, whether it is “creation of a technical idea utilizing a law of nature”).

The first test is whether CII meets the definition of an “invention,” which is a general test prescribed in the Examination Guidelines as one that applies to all types of inventions including CII. With regard to the first test, Annex B of the Examination Handbook gives the following as examples of an invention that is found to be eligible for patent under the general criterion: (i) those concretely performing control of an apparatus or processing with respect to the control and (ii) those concretely performing information processing based on the technical properties such as physical, chemical, biological or electric properties of an object. Also in relation to the first

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<sup>3</sup> Nobuhiro Nakayama "Tokkyohou (Patent Act)" at 98 to 102 (Koubundou, 2nd ed., 2012).

<sup>4</sup> Ryu Takabayashi "Hyoujun Tokkyohou 5th ed. (Standard Patent Law 5th ed.)" at 26 to 33 (Yuhikaku, 5th ed., 2014).

test, the Examination Guidelines list the following as subject matters that do not meet the definition of “invention”: (I) a law of nature as such; (II) mere discoveries and not creations; (III) those contrary to a law of nature; (IV) those in which a law of nature is not utilized; (V) those not regarded as technical ideas; and (VI) those for which it is clearly impossible to solve the problem to be solved by any means presented in a claim. Among these categories, (IV) and (V) are related to CII. The Examination Guidelines subdivide Category (IV), those in which a law of nature is not utilized, into the following: (i) any laws other than a law of nature (e.g., economic laws); (ii) artificial arrangements (e.g., a rule for playing a game as such); (iii) mathematical formula; (iv) mental activities of humans; and (v) those utilizing only (i) to (iv) (e.g., methods for doing business as such). Category (V), those not regarded as technical ideas, includes, for example, the mere presentation of information (where the feature resides solely in the content of the information, and the main object is to present information).

If the eligibility of CII can be determined by applying the first test (general criterion), the second test (specific criterion for CII) is not applied. Courts deny the patent eligibility of an invention if the substance of the invention is an artificial arrangement as such or is focused directly on the mental activities of humans<sup>5</sup>. In the past, both the JPO and courts used to apply a strict criterion to determine the eligibility of CII. However, over the last decade, the JPO seems to have relaxed the criterion and more often found CII to be eligible for patent. For example, the Intellectual Property High Court found that an idea which utilizes mental activity of a human being is an invention utilizing computer software as the technical means (Interactive dental treatment network case; judgment of the Intellectual Property High Court of June 24, 2008, (Gyo-Ke) No. 10369). Accordingly, in most court cases in which the patent eligibility of CII was raised as a question, the claimed invention did not contain computer-related elements as its constituent elements and none of these cases denied the patent eligibility of CII for the said reasons.

The second test is specific to the eligibility of CII and this applies if the first test does not work. The second test determines the eligibility of a software-related invention by examining “whether information processing by the software is specifically implemented by using hardware resources,” or more specifically, by examining, “based on the statement of the claims, whether or not specific calculation or processing of information depending on the intended use is implemented by specific means or procedures on which software and hardware resources cooperate.” If it is obvious that information processing by the software is specifically implemented by using hardware resources, the software-related invention may be

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<sup>5</sup> Judgment of the Tokyo District Court of January 20, 2003, 2002 (Wa) 5502 (Case of funds classification balance sheet), judgment of the Tokyo High Court of December 21, 2004, 2004 (Gyo-Ke) 188, Hanji No. 1891 at 139 (Circuit simulation method case), judgment of the Intellectual Property High Court of February 29, 2008, 2007 (Gyo-Ke) 10239 (Hash function case).

found to be eligible for patent even when the hardware resources are not explicitly recited in the claim.

b. Novelty, Inventive-step

In connection with the determination of novelty and inventive step, when recognizing a software related invention, it is considered appropriate to understand the claimed invention as a whole, rather than dividing it into an artificial arrangement or the like and a systemization method. Thus, there are no rules specific to CII regarding the determination of novelty and inventive step. It does not distinguish between the technical and non-technical features of the claimed invention, and not determine by excluding non-technical features.

3. Non-patentable subject matter

Any subject matter, not limited to those relating to CII, is excluded from patentability per se if it falls within the categories of subject matters that are excluded from patentability in the course of determining eligibility under the main paragraph of Article 29(1) of the Patent Act, such as “those in which a law of nature is not utilized” and “those not regarded as technical ideas.” In other words, whether the claimed invention meets the definition of an “invention” is examined explicitly as the common test that is applicable regardless of whether the subject matter is related to CII or not<sup>6</sup>.

The Examination Guidelines enumerate the following as “those in which a law of nature is not utilized”:

- (1) any laws other than a law of nature (e.g., economic laws);
- (2) artificial arrangements (e.g., a rule for playing a game as such);
- (3) mathematical formula;
- (4) mental activities of humans; and
- (5) those utilizing only (1) to (4) (e.g., methods for doing business as such).

“Those not regarded as technical ideas” refers to, for example:

the mere presentation of information (where the feature resides solely in the content of the information, and the main object is to present information).

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<sup>6</sup> Part III Patentability Chapter 1 Eligibility for Patent and Industrial Applicability (Main Paragraph of Article 29(1) of Patent Act)  
<[http://www.jpo.go.jp/tetuzuki\\_e/t\\_tokkyo\\_e/files\\_guidelines\\_e/03\\_0100\\_e.pdf](http://www.jpo.go.jp/tetuzuki_e/t_tokkyo_e/files_guidelines_e/03_0100_e.pdf)> (2017/06/01)

In addition to the above, inventions that are liable to injure public order as prescribed in Article 32 of the Patent Act (e.g. a method used exclusively for committing a massacre of people) are excluded from patentability per se<sup>7</sup>.

#### 4. Requirement of a contribution in a field of technology

In the novelty and inventive step test of CII, the contribution the claimed CII makes to the state of the art is necessarily examined, whereas this point is not examined in the course of determining whether the claimed CII is eligible for patent as prescribed in the main paragraph of Article 29(1) of the Patent Act. The “contribution to the state of the art” referred to in the question means the contribution to prior art. In Japan, the state of the art is considered to consist of both technical and non-technical features. Therefore, including non-technical features in the scope of the state of the art. Under the Patent Act of Japan, the claimed invention is not regarded as an “invention” as defined in Article 2(1) of the Act unless it is “the highly advanced creation of technical ideas utilizing the laws of nature.” The phrase “highly advanced” used here is interpreted as meaning the degree of advancement as compared to the requirement under the Utility Model Act, rather than referring to an “inventive step,” which is a patentability requirement.

The novelty and inventive step test does not derive a conclusion based only on the areas of human endeavor the claimed invention is related to. Accordingly, non-technical features of the claimed invention are also taken into consideration together with its technical features in the course of determining its inventive step.

As regards any specific requirements as to sufficiency of disclosure and/or enablement which are applicable to CII, There is no particular requirement as to the sufficiency of disclosure or enablement that is applicable to CII. Therefore, no greater disclosure is required for CII beyond the general level of sufficiency of disclosure or enablement, such as disclosure of a detailed algorithm. In other words, in determining the sufficiency of disclosure, a common test applies to CII as it applies to inventions in other areas, i.e. whether the claimed subject matter can be understood by persons skilled in the art as something that can solve the target problem. Similarly, in determining enablement, whether the detailed explanation of the invention describes the invention clearly and sufficiently to the extent that it enables any person skilled in the art to practice the invention is a common test that applies not only to CII but also to inventions in other areas.

## **B. Policy consideration**

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<sup>7</sup> Part III Patentability Chapter 5 Category of Unpatentable Invention (Patent Act Article 32)  
<[http://www.jpo.go.jp/tetuzuki\\_e/t\\_tokyo\\_e/files\\_guidelines\\_e/03\\_0500\\_e.pdf](http://www.jpo.go.jp/tetuzuki_e/t_tokyo_e/files_guidelines_e/03_0500_e.pdf)> (2017/06/01)

## 1. Current Law and practice

As mentioned above, Current law and practice, it is considered appropriate in Japan to examine and determine the eligibility of the claimed CII as a whole, by applying the Patent Act, the Examination Guidelines, and the Examination Handbook, and by following the procedures for determining the eligibility of CII. This process of determining eligibility is specific to CII and therefore relies on claim drafting in some aspects, but it effectively works as a clear and highly predictable test. In the stage of determining eligibility, the claimed CII's contribution to the state of the art is not determined. This also facilitates predictability in the determination of eligibility of CII. Even if an invention that is not eligible for patent is mistakenly patented, a third party is guaranteed a means for invalidating the patent ex post fact on the grounds of lack of eligibility.

## 2. Economic perspective

Analyzing current law and practice from an economic perspective, Japan catches up with progress in computer technology by adapting the patent practice to it quickly. More specifically, Japan has made revisions to the Examination Guidelines, etc. as well as legal amendments as appropriate (to include recording media in which computer programs are recorded in the scope of protection in 1997, and include computer programs, etc. in the scope of “invention of a product” in 2000). In the examination of CII, eligibility is determined first and then novelty and inventive step are determined. The patent grant rate for business-related CII, which was below 10% in 2000, has been on a gradual rising trend, recently reaching around 70%, almost on a level equal to the rate for inventions in other technical areas<sup>8</sup>. Actives efforts have also been made in addressing the research and development of IoT-related technology and the application thereof in business. Case examples of IoT-related technology have been added to the Examination Handbook (in September 2016 and March 2017)<sup>9</sup>. In particular, the case examples introduced in March 2017 show clear standards for handling trained models (AI-related technology) and 3D printing data. As in the case of other computer software-related inventions, the determination of eligibility of inventions involving IoT-related technology is conducted in accordance with the current legal provisions as well as the provisions of the Examination Guidelines, Part III, Chapter 1 Eligibility for Patent and Industrial Applicability, and the Examination Handbook, Annex B, Chapter 1 Computer software related Inventions. Furthermore, with a view to ensuring that patents necessary for promoting innovation can be obtained and put into use with certainty in the areas of business using IoT, the Japanese patent authorities will, by the end of FY2017, review the Examination Guidelines, etc. focusing on software-related inventions that

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<sup>8</sup> <[http://www.jpo.go.jp/seido/bijinesu/biz\\_pat.htm](http://www.jpo.go.jp/seido/bijinesu/biz_pat.htm)> (2017/06/01) [Only in Japanese]

<sup>9</sup> Case examples pertinent to IoT related technology

<[https://www.jpo.go.jp/tetuzuki\\_e/t\\_tokkyo\\_e/files\\_handbook\\_sinsa\\_e/app\\_z\\_e.pdf](https://www.jpo.go.jp/tetuzuki_e/t_tokkyo_e/files_handbook_sinsa_e/app_z_e.pdf)> (2017/06/01)

are closely connected with IoT-related inventions, and discuss methods for using patents for business-related inventions through the use of IoT, and will disseminate the outcomes of such review and discussion at home and abroad in due course. More information will be made available with regard to procedures and methods to obtain and use patent rights for these inventions<sup>10</sup>.

### 3. Copyright protection of computer implemented inventions

Under the Copyright Act of Japan, works of computer programming are enumerated as a type of copyrightable work (Article 10(1)(ix)). The term “computer program” refers to “something expressed as a set of instructions written for a computer, which makes the computer function so that a specific result can be obtained” (Article 2(1)(x)-2). Instructions given from CII to hardware deserve protection under the Copyright Act. However, “work” as defined under the Copyright Act means a “production in which thoughts or sentiments are creatively expressed and which falls within the literary, academic, artistic, or musical domain” (Article 2(1)(i)). In short, a copyrightable work is not an idea but its expression. Consequently, the protection of works of computer programming is limited within the area of expressions. On the other hand, the main role of a computer program resides in its function of having a computer perform a desired calculation or processing, rather than its expression. However, a function falls within the category of ideas, which are outside the scope of protection under the Copyright Act. Furthermore, there is a limit to expressions that can fulfill the intended function. As a result, computer programs are less likely to be recognized as copyrightable, and even if they are found to be copyrightable, the scope of adaptation right is limited. In consequence, protection under the Copyright Act for computer programs is likely to be limited (e.g. protection against slavish imitations). Thus, copyright protection cannot be regarded as sufficient, the substance of CII is not expressions but ideas, and the protection of ideas should be realized by the Patent Act.

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<sup>10</sup> <<http://www.meti.go.jp/press/2017/04/20170419002/20170419002-1.pdf>> (2017/06/01)[Only in Japanese]



### III. Current law and practice in US and EU

#### A. United States

##### 1. After Alice decision

The US court of Appeal for the Federal circuit (CAFC) and the US District Courts increasing the number of litigations concerning patent eligibility under 35 U.S.C §101<sup>11</sup> since *Alice v. CLS Bank* (Supreme Court, 2014)<sup>12</sup>. Generally, US examiner apply the following test to determine whether patent is eligible under 35 U.S.C §101. The key to understanding is the test, is referred to as Alice/Mayo test (two part test). In the background of this test are based on the theory of preemption concerning the adverse effect on the subsequent invention. In determining patent eligibility of CII, focus on whether or not it falls under the non-statutory subject matters<sup>13</sup> (abstract ideas) relevant to Article 101. Under Step1, determine whether the claim is directed to a statutory category of invention. If so, Step2A, whether the claim is directed to a judicial exception. If so, under Step2B, whether the claim recite significantly more than the judicial exception. However, Alice/Mayo test greatly confused under CAFC and district courts after Alice, because how to apply “significantly more than judicial exception” was not clear in supreme court. Especially patent eligibility in the computer software field is determined strictly. Therefore, the USPTO has repeatedly released the memorandum regarding examination instructions to the Patent Examining Corps relating to subject matter eligibility of claims under 35 U.S.C. § 101<sup>14</sup>. As to the determination of patent eligibility, it is determined whether there is a technical solution different from conventional on technical problems on the basis of Alice /Mayo test. The adverse effects on subsequent inventions that have been concerned up to now it seems to be mitigation. Recently, CAFC rendered several decisions to grant patent eligibility<sup>15</sup>.

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<sup>11</sup> 35 U.S.C. § 101 : Whoever invents or discovers any new and useful process machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent thereon, subject to the conditions and requirements of this title.

<sup>12</sup> *Alice Corp. v. CLS Bank Int'l*, 134 S.Ct. 2347 (2014)

<sup>13</sup> The non-statutory subject matters relevant to Article 101 of the U.S. Patent Law is following. (i) law of nature, (ii) natural phenomenon and (iii) abstract ideas.

<sup>14</sup> 2014 Interim Guidance on Patent Subject Matter Eligibility, Federal Register, vol. 79, No.241, p.74618 -74633 (December 16, 2014) <[http://www.uspto.gov/patents/law/exam/myriad-mayo\\_guidance.pdf](http://www.uspto.gov/patents/law/exam/myriad-mayo_guidance.pdf)> (2017/06/01); <<http://www.uspto.gov/sites/default/files/documents/ieg-july-2015-qrs.pdf>> (2017/06/01); <[http://www.uspto.gov/sites/default/files/documents/ieg-may-2016-sme crt\\_dec.pdf](http://www.uspto.gov/sites/default/files/documents/ieg-may-2016-sme crt_dec.pdf)> (2017/06/01).

<sup>15</sup> *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 113 U.S.P.Q.2d 1097 (Fed. Cir. 2014); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 118 U.S.P.Q.2d 1684 (Fed. Cir. 2016); *Bascom Global Internet Svcs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 119 U.S.P.Q.2d 1236 (Fed Cir. 2016); *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 120 U.S.P.Q.2d 1091 (Fed. Cir. 2016); *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 120 U.S.P.Q.2d 1527 (Fed. Cir. 2016)

However, it will take a little more time to see how the Alice/Mayo test set out are implemented by CAFC, the lower Courts and the USPTO.

## B. Europe

### 1. EPC

In Europe, Article 52 of the EPC<sup>16</sup> prescribes patentable inventions and those which may be excluded from the category of “inventions.” Currently, the determination on patent eligibility is made by determining whether or not the relevant invention has “technical character”<sup>17</sup> and then the invention is found to have patent eligibility if it does not fall under the exclusions prescribed in said Article.

Many trial decisions rendered over patent eligibility dealt with the issue of whether or not the relevant invention falls under the exclusions prescribed in Article 52 of the EPC and in particular, the construction of computer programs “as such” was the focal point.<sup>18</sup> Until the 1990s, the court adopted the technical contribution approach and from around 2000, the court started to adopt the means of determining whether or not the invention has technical nature. This change in the EPO’s determination method affected the determination on patent eligibility of computer software related invention in the U.K. mentioned below and as a result, the President of the EPO made G3/08 referral<sup>19</sup> to the Enlarged Board of Appeals, questioning the consistency in the EPO’s determinations on patent eligibility of computer software related inventions.

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<sup>16</sup> Article 52 of the European Patent Convention

<<https://www.jpo.go.jp/shiryousonota/fips/pdf/epo/mokuji.pdf>> (2017/06/01)

(1) European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible to industrial application.

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:

(a) discoveries, scientific theories and mathematical methods;

(b) aesthetic creations;

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(d) presentations of information.

(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

<sup>17</sup> "Technical character" is also called "technical features" and although it may not be read from the provisions, a detailed explanation is provided in Rules 42 and 43 of the Implementing Regulations to the European Patent Convention and G-I2(II) of the Guidelines for Examination in the European Patent Office

<sup>18</sup> Benkard/ Melullis, *Europäisches Patentübereinkommen*, 2. Aufl. (2012), EPÜ Art. 52 Rn. 190-199.

<sup>19</sup> Referral to the Enlarged Board of Appeals: OJ EPO 2009, 32, Opinion of the Enlarged Board of Appeal with respect to the referral: OJ EPO 2011, 10.

## 2. Referral to the Enlarged Board of Appeals (G3/08)

The President of the EPO took it seriously that no consistency could be found in the determinations made in past trial decisions concerning patent eligibility of computer programs (i.e. T1173/97: IBM trial decision, T424/03: Microsoft trial decision and T258/03: Hitachi Trial Decision) and made referral to the Enlarged Board of Appeals on October 22, 2008. However, in May 2010, the Enlarged Board of Appeals determined that all of the questions did not satisfy the requirements for referral to the Enlarged Board of Appeals (Article 112, paragraph (1) of the EPC) and showed its stance to support the EPO trial decisions by daring to state its opinion that there are no discrepancies in the trial decisions in the course of the development of laws (G3/08).<sup>20</sup>

## 3. Germany<sup>21, 22</sup>

One of the important German decisions that is referred to in the Guidelines for the Examination Procedure of Germany to serve as a guideline for determining patent eligibility is XZB 11/98 (Logikverifikation; logic verification; 1999)<sup>23, 24</sup>. In this case, the court stated that "even if the means to solve the problem does not directly utilize controllable natural forces, if it develops the possibility of manufacturing useful products by making use of knowledge based on technical considerations, such means to solve the problem would, by no means, be excluded from patent protection." Accordingly, there is a common concept concerning patent eligibility in German decisions that the technical problem must be presented and solved rather than technical means being used.<sup>25, 26</sup> This means that a patent right would not be

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<sup>20</sup> OJ EPO 2011, 10. For explanation, see Jun Sugiura, Seiko Saku, "Compyūtā Sofutowea Kanren Hantsumei ni Kansuru Nichi Bei Ou no Shinsakijun to Tokkyo Tekikakusei Youken ni Kansuru Kousatsu (Consideration on the examination guidelines used in Japan, the U.S. and the E.U. and patent eligibility requirements with respect to computer software related inventions)" Chizaiken Forum Vol. 84 (2009) at 27.

<sup>21</sup> Michele Baccelli, Markus Müller, translated by Mitsuyoshi Hiratsuka and the Secretariat of AIPPI, "Computer implemented inventions in Germany and a comparative view with the EPO" AIPPI (2010) Vol. 55 No. 12 at 12 to 24.

<sup>22</sup> Schulte/Moufang, Patentgesetz mit EPÜ (Kommentar), 9. Aufl. (2014), "Patentfähige Erfindungen," Rn. 131 to 133.

<sup>23</sup> GRUR 2000, 498; 33 IIC 2002 231.

<sup>24</sup> Yasuhide Ono, Kazuo Harada, Kenji Ushiku "Doitsu Saikou Saibansho 'Rojikku Kensho' Jiken ('Logic verification' case in the German Supreme Court)" Patent Vol. 55 (2002) at 21 to 30.

<sup>25</sup> Schulte, ibid, Rn. 134.

<sup>26</sup> Katsuya Tamai "'Hatsumei' no Gainen – Tokuni Shinposei tonon Kanren ni tsuite- (Concept of 'Invention' - Especially in relation to inventive steps-)" Monya Nobuo Koki Kinen Chitekizaisanho to Kyosoho no Gendaiteki Tenkai (Recent development of the academic disputes on the intellectual property laws and the competition law: publication of articles in commemoration of the 70th birthday of professor Dr. Nobuo Monya) on pages 147 to 148 (Japan Institute for Promoting Invention and Innovation, 2006)

granted if the means used in the invention only solves problem other than technical problems such as problems found in economic activities.

#### 4. United Kingdom<sup>27</sup>

Since a common law system is adopted in the U.K., future court decisions would be bound by precedents. In the past, court decisions were developed by citing the trial decisions rendered by the EPO. However, the U.K. court held in the *Aerotel & Macrossan* decision (2006)<sup>28</sup> that the EPO's policy change since 2000 has no consistency and adopted the Four Part Test (*Aerotel* test)<sup>29</sup> as its own determination method. In the U.K., in determining patent eligibility, the invention's contribution must be determined, and based on the determination on novelty and inventive steps, the invention's technical contribution to the technical problems of prior art shall be determined.

### IV. Discussion

As mentioned above, Each country's laws and practices have significantly evolved over time. The direction to determine whether it is a technical solution different from the conventional one about technical problems is in harmony with US, Europe and Japan. Yet, in terms of the solution of the technical problem, the issue of whether or not the relevant invention exceeds the basic principles per se in social activities is determined based on its technical effects in Europe and the U.S. In contrast, in Japan, the technical significance of the invention is found in the specific method used for realizing the invention and if such technical significance is specified in the claim, the relevant invention is found to be statutory.

It also seems that there are several parallels between the *Alice/Mayo* test and the tests used in Europe for determining patent eligibility of CII. In both jurisdictions it remains possible to CII provided they also make a "technical" (in Europe) or "not abstract" (in the U.S.) contribution. The precise definition of "technical" and "abstract" remain unspecified, and whether any particular invention makes the necessary contribution will be difficult to predict. On this regards in Japan, it might be easy to determine by the definition provisions. However, whether or not a definition requirements are necessary for that country is another theme. In order to avoid further confusion, it is necessary to set at least certain criteria by courts and examination guidelines. Criterion setting tends to be thought of as modeling, formatting, formalizing, but it is not so. The criterion is a guide to the thought process,

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<sup>27</sup> Brad Sherman "The Patentability of Computer-related Inventions in the United Kingdom and the European Patent Office" [1991] 3 EIPR 85.

<sup>28</sup> *Aerotel Limited v Telco Limitd; Macrossan's Application* [2007] R.P.C.7; [2006] EWCA Civ 1371.

<sup>29</sup> See UK Intellectual Property Office, *Manual of Patent Practice-Patent Act 1977, Part 1: New Domestic Law, Patentability, Section 1: Patentable inventions* (Jan. 2015), at 1.18.

and it would be prevent it from becoming reliance on claim-drafting technique and formalization by continue to review it. The adverse effects on subsequent inventions that have been concerned up to now could be avoided by requirements such as definiteness requirement, not by patent eligibility. It is better to have a policy towards solving technical problems in the advanced information age.

## **V. Conclusion**

In this paper, the respective requirements for determining whether or not an invention is patent eligibility used in Japan, the U.S. and Europe were studied from a comparative perspective the standpoint of Japan. In analysis of current situation about patent eligibility in Japan, US and Europe, the method of determination is different each other, however, since each country is promoting the solution of technical problems, each countries are in a direction to harmonize. From now on, it would be necessary to think about how to find technical significance from the invention without forcing the patent eligibility too much. In addition, since the balance adjustment with the advanced information society for harmonization is expected to continue in the future, it would be necessary to consider in further the consistency between the patent system and the framework for objective evaluation of the scope of invention to be protected.