

Standing Committee on the Law of Patents

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SUMMARY: STUDY ON UNITY OF INVENTION

Document prepared by the Secretariat

INTRODUCTION

1. In accordance with the decision of the Standing Committee on the Law of Patents (SCP), taken at its thirty-fifth session, held in Geneva from October 16 to 20, 2023, the Secretariat prepared document SCP/36/4 consisting of a study on unity of invention. The study touched upon various aspects of the unity of invention, including: (i) divisional applications; and (ii) unique aspects of the unity requirement as it pertains to different fields of technology. This document is a summary of document SCP/36/4.

UNITY OF INVENTION: GENERAL CONCEPTS AND PRINCIPLES

Introduction to Unity of Invention and Divisional Applications

2. The principle of “unity of invention” is a fundamental principle in patent law, requiring that a patent application encompasses only a single invention or a group of inventions related in a certain manner. Under the Patent Cooperation Treaty (PCT), that concept is expressed as “a group of inventions so linked as to form a single general inventive concept”. Most jurisdictions have adopted an approach to unity of invention closely aligned to the PCT standard, with the notable exception of the United States of America with respect to directly filed U.S. national applications.

3. Divisional applications are a tool in patent law that can be used, *inter alia*, when a single patent application is found to contain multiple inventions. When a patent examiner finds that an application does not comply with the unity of invention requirement, the applicant can file divisional applications to protect each of the identified inventions. These divisional applications each retain the original filing date (or priority date), ensuring protection for all inventive concepts disclosed in the initial filing, even if the original application does not meet the unity requirement.

Purpose and Rationale behind the Unity of Invention Principle

4. There are several objectives underlying the unity of invention principle.
5. **Streamlining the Examination Process:** By mandating that all claims in an application be connected by a single general inventive concept, it becomes simpler for patent offices to assign the application to one examiner with expertise in the relevant technical field.
6. **Ensuring Sustainability of Patent Office Operations:** Focusing on a single inventive concept also aligns examination costs with the fees charged by patent offices. Without this principle, applicants could include multiple unrelated inventions in a single application, leading to higher examination costs and straining patent office resources. By limiting each application to one cohesive concept, a direct relationship between fees and examination effort is maintained.
7. **Enhancing Legal Clarity:** The unity of invention enhances legal clarity by clearly defining the scope of a patent application, making it easier to determine the extent of protection and facilitating the classification and search of patents. This clarity helps third parties assess their freedom to operate and ensures transparency in the patent system.

Options Available After a Finding of Non-Unity

8. After a finding of non-unity, in general, applicants have several options:
 - i. **Amend Claims:** Modify claims to focus on a single invention or clarify the inventive concept to satisfy the examiner.
 - ii. **Challenge the Finding:** Argue against the non-unity decision by providing reasons or evidence that the inventions are linked by a single general inventive concept.
 - iii. **File Divisional Applications:** Submit divisional applications for each identified invention to seek protection.
 - iv. **Abandon the Application:** Opt to abandon the application if the potential benefits do not outweigh the costs and effort required to address the non-unity finding.

LEGAL FRAMEWORKS FOR UNITY OF INVENTION

The International Legal Framework

9. The right of applicant to avail themselves of divisional applications in case of non-compliance with unity of invention requirement is explicitly recognized by Article 4G of the Paris Convention. The Patent Law Treaty (PLT) also touches upon the issue of unity of invention in Article 23(1), stipulating that its Contracting Parties may declare a reservation in relation to the application of Article 6(1) to unity of invention. However, it is the PCT that requires international applications to comply with the requirement of unity of invention and provides the relevant rules and guidelines that have been well accepted by many Member States. For that reason, this summary document focuses on the relevant legal framework and procedures under the PCT.

Legal Framework under the PCT

10. Article 4(iii) of the PCT requires an application to comply with the prescribed requirement of unity of invention, which is covered in Rule 13 of the Regulations under the PCT. In particular, Rule 13.1 states that:

*“The international application shall relate to **one invention only** or to **a group of inventions so linked as to form a single general inventive concept** (“requirement of unity of invention”).” [emphasis added]*

11. Where there is a group of inventions sharing a single general inventive concept that is claimed in the same international application, Rule 13.2 indicates that:

*“[...] the requirement of unity of invention requirement referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or **corresponding special technical features**. The expression **‘special technical features’** shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.”*
[emphasis added]

12. Rule 13.3 further clarifies that unity of invention is maintained regardless of whether these inventions are contained within a single claim or spread across multiple claims, as follows:

“The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.”

13. Rule 13.4 allows that an independent claim may have a reasonable number of dependent claims, claiming specific forms of the invention claimed in the independent claim, even where the features of any dependent claim could be considered as constituting in themselves an invention.

14. Rule 13 is interpreted as allowing the inclusion of any one of the following combinations of claims of different categories within the same international application:

- i. in addition to an independent claim for a given product, an independent claim for a process specially adapted for the manufacture of the said product, and an independent claim for a use of the said product, or
- ii. in addition to an independent claim for a given process, an independent claim for an apparatus or means specifically designed for carrying out the said process, or
- iii. in addition to an independent claim for a given product, an independent claim for a process specially adapted for the manufacture of the said product and an independent claim for an apparatus or means specifically designed for carrying out the said process.

15. Here, a process is considered to be specially adapted for the manufacture of a product, if the claimed process inherently results in the product, with a technical relationship being present between the claimed product and the claimed process. However, the words “specially adapted” are not intended to imply that the product could not also be manufactured by a different process.

16. Similarly, an apparatus or means is regarded as specifically designed for carrying out a process, if the contribution over the prior art or the apparatus or means corresponds to the contribution the process makes over the prior art. It would not be sufficient that the apparatus or means is merely capable of being used in carrying out the claimed process. However, the expression “specifically designed” does not imply that the apparatus or means could not be used for carrying out another process, nor that the process could not be carried out using an alternative apparatus or means.

Handling Lack of Unity in the International Phase of the PCT

17. Article 17(a) of the PCT requires an International Searching Authority (ISA) to consider whether the international application complies with the requirement of unity of invention and

invite the applicant to pay additional fees, if the ISA considers that the international application does not comply with the requirement. The ISA shall establish the international search report on those parts of the international application which relate to the invention first mentioned in the claims (“the main invention”) and, provided the required additional fees have been paid within the prescribed time limit, on those parts of the international application which relate to inventions in respect of which the said fees were paid. The applicant may protest the allegation of lack of unity, or that the number of required additional fees is excessive, and request a refund of the additional fees paid. If, and to the extent that, the ISA finds the protest justified, the fees are refunded.

18. Although lack of unity of invention will have been noted and reported upon by the ISA in most instances, if the International Preliminary Examining Authority (IPEA), in accordance with Article 34(3)(a) of the PCT, considers that the international application does not comply with the requirement of unity of invention, it may invite the applicant to restrict the claims so as to comply with the requirement or to pay additional fees. If the applicant timely complies with the invitation, the examiner carries out international preliminary examination on those claimed inventions for which additional fees have been paid or to which the claims have been restricted. Otherwise, the International Preliminary Report on Patentability (IPRP) is established on those parts of the international application which relate to what appears to be the “main invention”. A protest procedure against the determination of the examiner, similar to that at the international search, is available for applicants before the IPEA.

19. At the supplementary international search stage, the Authority specified for supplementary search may make its own assessment as to unity of invention, but it should take into account the opinion of the ISA included in the international search report as well as any protest by the applicant or decision by the ISA in relation to such a protest, if it is received prior to the start of the supplementary international search. There is no opportunity to pay additional fees for additional searches of further inventions at this stage. In addition, the normal protest procedure does not apply to requests for supplementary international search. However, the applicant may, within the prescribed time limit, request the Authority to review the examiner’s opinion on unity of invention.

20. It is important to note that there is no possibility for dividing an international application in the international phase; it is for the designated or elected Office to invite the filing of divisional applications in the national phase where it considers that unity of invention is not complied with.

General Process of Assessing Unity

21. This section outlines the general process for assessing unity of invention, which is primarily based on the administrative instructions, guidelines and case law related to PCT international applications. However, the general process described in this section is also relevant for national patent applications filed in many countries due to the similarity between the PCT practice and their national practices.

22. **Preliminary analysis of independent claims:** The assessment begins with a preliminary analysis of independent claims to determine if a single general inventive concept or shared technical features bind the application into a coherent whole. If there is only one independent claim or if claims have analogous features (e.g., an apparatus and its method of use), unity is typically satisfied at this stage. The determination of unity is based on the claims, interpreted with the description and drawings.

23. **Detailed analysis of independent claims (*a priori* evaluation):** When independent claims lack analogous features, a detailed review is required. Unity is satisfied if a technical relationship exists among the claimed inventions, characterized by shared or corresponding technical features. The aim is to pinpoint these shared technical features across the independent claims. These features could include similar structures, functions, or solutions to

the same technical problem. For example, different mechanisms achieving the same result or components that interact specifically, like a plug and socket, can demonstrate unity. Even diverse materials, such as a metal spring and a rubber block, may share a common technical effect, like providing elasticity.

24. Unity can also be established through a cause-and-effect relationship, such as a manufacturing step that imparts a unique structural feature to a product. If no such commonalities exist (e.g., a solar panel versus a windmill), a unity objection may be raised at this stage before considering prior art leading to an *a priori* objection.

Example 1 – A Priori Evaluation

25. Suppose we had a patent application with the following claimset:

- **Claim 1:** a chair (A) with wheels (B).
- **Claim 2:** a chair (A) made of plastic (C).
- **Claim 3:** wheels (B) made of plastic (C).

In this case, there is no common subject matter to all claims and thus a lack of unity can be found between the claims prior to reviewing the prior art.

26. **Review of and comparison with the prior art (*a posteriori* evaluation):** The process involves identifying the closest prior art and comparing it with the shared technical features of the inventions. To satisfy unity, these features must make a "contribution" over prior art in terms of novelty and inventive step. If the common elements are known or obvious, and if the remaining claim elements of the claimed inventions lack a unified inventive concept, unity is absent, leading to a *a posteriori* objection. For example, if two claims only share a common element already known in prior art, this element cannot establish unity.

Example 2 – A Posteriori Evaluation

27. Suppose we had a patent application with the following claimset:

- **Claim 1:** A multi-function pocket knife (A) with a ball-point pen (B) + a USB Stick (D).
- **Claim 2:** A multi-function pocket knife (A) with a pencil (C) + a laser pointer (E).

A multi-function pocket knife (A) with a fountain pen (F) is found as a relevant piece of prior art.

28. Here, element A of claims 1 and 2 is the same, and elements B and C are corresponding as they are both a means of writing. However, elements D and E are not corresponding as element D is a means adapted to save data electronically and element E is a means adapted to point to an object. As the common feature (A) is known from the prior art, it cannot be considered "special technical features". Element F from the prior art is a writing means and thus the corresponding technical feature of claims 1 and 2 are not special. The common matter has neither the same, nor corresponding special technical features. In this case, D and E do make a technical contribution over the prior art. However, they have different technical properties, and thus the inventions in claims 1 and 2 are not linked by a single general inventive concept.

29. Even if the claim(s) do not meet the requirement of unity of invention *strict sensu*, in exceptional circumstances, an examiner may be able to complete search and examination of all claimed inventions with negligible additional work. It could happen particularly where the

inventions are conceptually very close. In such cases, considering the efficiency of examination and the additional workload that may be imposed on examiners, the examiners may have the discretion in completing the search and examination for the additional invention(s), on a case-by-case basis, without raising non-unity objection.

National and Regional Laws and Practices

30. Document SCP/36/4 also illustrates the national/regional laws and practices regarding unity of invention in a number of jurisdictions. It appears that most countries' laws and practices regarding unity of invention are very similar to the relevant Regulations and guidelines under the PCT.

31. The United States Patent and Trademark Office (USPTO) adopts a dual approach when assessing unity of invention. When acting as an ISA or International Preliminary Examining Authority (IPEA) under the PCT, or for PCT applications that enter the national phase, the USPTO evaluates unity of invention based on standards that largely align with the international framework established by the PCT, as described above. However, for national applications filed directly with the USPTO, a distinct standard is applied, focusing on the concepts of "independent" and "distinct" inventions. Reportedly, by reviewing the corresponding national patent applications filed with the USPTO and three other patent offices, originated from the same priority application, a higher rate of non-unity rejection by the USPTO (base on the concept of "independent" and "distinct" inventions) was observed, compared to the non-unity rejection rates of the other patent offices that applied the unity practice aligned with the PCT standard.

32. Specifically, for the national applications filed with the USPTO, if two or more "independent" and "distinct" inventions are claimed in a single application, the USPTO may require the application to be restricted to one of the inventions. The terms "independent" (i.e., unrelated) and "distinct" (i.e., related but patentably distinct) have mutually exclusive meanings and thus are interpreted as alternative requirements. Only one of these requirements must be met in order to support a restriction.

33. For a proper requirement for restriction between two claimed inventions, there are two criteria:

- i. Showing the inventions are independent or distinct as claimed; and
- ii. Showing that there would be a serious search and examination burden on the examiner if restriction is not required.

34. The term "independent" (i.e., unrelated) means that there is no disclosed relationship between the two or more inventions claimed, that is, they are unconnected in design (e.g., structure or method of manufacture), operation (e.g., function or method of use), and effect.

35. Related (i.e., not independent) inventions are distinct if the inventions as claimed are not connected in at least one of design, operation, or effect (e.g., can be made by, or used in, a materially different process) and wherein at least one invention is patentable (novel and non-obvious) over the other (though they may each be unpatentable over the prior art). An illustrative scenario could involve a novel process and a specifically engineered apparatus for said process: while interconnected, if each introduces a significant, non-obvious advancement distinguishable from the other, they may be considered "distinct" inventions. This categorization acknowledges the existence of related inventions that, despite their connection, present independent innovative leaps deserving of separate patent considerations.

36. To further illustrate how the USPTO's "independent and distinct inventions" practice is applied to different situations, document SCP/36/4 contains several examples relating to "combination-subcombination", "subcombinations usable together", "process and apparatus for its practice", "process of making and product made", "apparatus and product made" and "product, process of making, and process of using".

37. In addition to showing inventions are independent and distinct, there must be a serious search and examination burden on the examiner. A serious burden can be shown if the inventions involve: (i) separate classification; (ii) separate status in the art when they are classifiable together; or (iii) a separate field of search.

COMPLEX CLAIM STRUCTURES AND UNITY OF INVENTION

38. Document SCP/36/4 also provides information on how the general principles and rules of unity of invention are applied to Markush claims and claims covering intermediate and final products. It describes examination guidelines from the PCT and national/regional patent offices with respect to these claims. The document also includes a number of examples of the claims, which illustrate how the unity of invention requirement is applied to these types of claims under the applicable law.

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