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STUDY ON PATENT INVENTORSHIP AND OWNERSHIP ISSUES ARISING FROM COLLABORATIVE RESEARCH AND CROSS-BORDER COLLABORATION

Document prepared by the International Bureau

1. At its thirty-fifth session, held in Geneva from October 16 to 20, 2023, the Standing Committee on the Law of Patents (SCP) decided that the Secretariat will prepare, based on the information submitted by Member States, a study on patent inventorship and ownership issues arising from collaborative research and cross-border collaboration and their implications for technology transfer and submit it at the thirty-sixth session of the SCP (see document SCP/35/10 paragraph 30).

2. In accordance with the above decision of the SCP, the Annex to this document contains the said study for the Committee's discussion at its thirty-sixth session, which will be held in Geneva from October 14 to 18, 2024.

3. In the preparation of the study, the Secretariat made use of information provided by the Member States,[1] including national and regional legislative provisions, and decisions rendered by intellectual property offices and courts. In addition, the Secretariat consulted other sources of information in order to obtain supplementary material on the topic.

4. The study contains three sections. Section I introduces the subject, providing background information on patent inventorship and ownership. Against this background, Section II examines in more detail how different legal systems treat patent inventorship and ownership

[1] Member States and Regional Patent Offices were invited, through its Note C. 9199, dated December 7, 2023, to submit to the International Bureau any inputs for the preparation of this Study. The inputs received are published on the website of the SCP electronic forum at: https://www.wipo.int/scp/en/meetings/session_36/comments_received.html.

issues in collaborative research. Then, Section III explores how parties to joint research projects manage, through their contractual agreements, the rights and obligations of the parties, particularly with respect to inventorship and ownership matters. Finally, Section IV illustrates the impact they may have on technology transfer.

[Annex follows]

Patent Inventorship and Ownership Issues arising from Collaborative Research and Cross-Border Collaboration

I. INVENTORSHIP AND OWNERSHIP: BACKGROUND

INTRODUCTION

1. The world is experiencing a number of challenges that are global in nature. These problems call for global solutions, which also include technological solutions. No country or a group of countries, even with their abundant resources and expertise, can solve these global problems on their own. By their nature, interdisciplinary expertise with deep specialization that is often not available in a single country or region is necessary to tackle these challenges.

2. Not to mention the "global" challenges, oftentimes, countries within the same region, or those that are in a similar social and economic environment, face similar challenges to meet the needs of their populations. As, in general, many public research institutions and universities are facing a decrease in public funding, there is a natural opportunity and push towards collaboration in cross-border research, spanning countries and regions, in order to accelerate the quest for technological solutions in a more efficient and effective manner.

3. These collaborative efforts towards finding solutions to pressing problems often involve several different actors. They may include government departments, universities and public research organizations, but also private companies. These organizations may reside in different countries and be governed by different laws. Importantly, they may have altogether different organizational objectives and policies, and have diverse expectations from the collaboration.[2]

4. The parties may, when engaging with each other, rely on a variety of ways to structure and formalize their relationships and to clarify their rights and responsibilities in the collaborative activities. Many different laws may come into play in these relationships, e.g., contract law, innovation and technology law, private international law, commercial law, laws relating to bankruptcy, taxation, succession as well as intellectual property law. As such, while the focus of this study is on patent inventorship and ownership issues, which are usually, but not always, dealt with by national intellectual property laws, it must be kept in mind that it is one of a variety of laws that could be relevant to determine these relationships.

5. In addition, parties usually fine-tune, within the purview of the applicable laws, their relationship through mutual agreements. In the context of collaborative research, a non-exhaustive list of agreements that may be relied upon are:

(i) Research Agreement: A contract between a research organization and a third party that outlines the terms for conducting a specific research project, including scope of work, intellectual property rights, compensation, and deliverables;

(ii) Grant Agreement: A contract that governs the terms under which a funding agency provides financial support for a research project;

(iii) Contract Research/Commissioned Research Agreement: An agreement where an external organization commissions and funds a research organization to conduct specific research on their behalf;

[2] See further WORKING PAPER Expert Group Report on Role and Strategic Use of IPR (Intellectual Property Rights) in International Research Collaborations Final Report - April 2002.

(iv) Research Collaboration Agreement: A contract that establishes the terms for two or more parties to collaborate on a joint research project, including their roles, responsibilities, intellectual property rights, and resource sharing;

(v) Consortium Agreement: Used when multiple organizations are collaborating on a larger research program, this agreement governs the management structure, intellectual property rights, and obligations of each consortium member;

(vi) Material Transfer Agreement (MTA): It covers the transfer of research materials, such as biological materials and chemical compounds, between parties and defines the permitted uses and intellectual property rights;

(vii) Confidential Disclosure Agreement (CDA)/Non-Disclosure Agreement (NDA): It establishes confidentiality obligations for parties to protect proprietary information exchanged during research discussions or collaborations.

6. Where there is collaboration, parties may bring in proprietary knowledge, techniques or information that has been developed and created prior to the collaborative activity. They are commonly called “background IP”. Conversely, “foreground IP” refers to knowledge, technique or information that is created through the collaboration.

7. This study will explore IP issues, particularly on joint inventorship and joint ownership that arise in the context of various ways of collaboration.

WHO IS AN INVENTOR?[3]

8. Throughout this document identifying the inventor of an invention will be a recurrent theme. As a question “who is an inventor?” is an important starting point, examples on the approaches taken by some countries to this question could be illustrative for further discussion of the issues in the collaborative setting.

9. In *Commissioner of Patents v Thaler*[4], the Federal Court of Australia stated that “Inventor” has long been held to bear its ordinary English meaning, being the person(s) responsible for making the invention, namely, “the person who makes or devises the process or product”[5].

10. In China, pursuant to Rule 13 of the Implementing Regulations of the Chinese Patent Law, an inventor is defined as any person who makes creative contributions to the substantive features of an invention-creation. The term “creative contribution” is not further defined in the Regulations. However, according to jurisprudence, it is related to innovative intellectual work carried out in relation to the aforementioned substantive feature.

11. The German Patent Act refers to the term “inventor” on numerous occasions (e.g., Sections 6, 7 and 37), but it does not provide a definition. Rather, the definition and principles of how to determine who the inventor is has been developed by courts. German case law has in essence conceptualized the inventor as the one who first “recognized” the knowledge of how to resolve a specific technical problem by using certain technical means.[6]

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[3] For a more detailed discussion on the determination of an Inventor, see document SCP/35/7, Annex, Section V.D., available at: https://www.wipo.int/edocs/mdocs/scp/en/scp_35/scp_35_7.pdf.
[4] Commissioner of Patents v Thaler [2022] FCAFC 62.
[5] JMVB Enterprises at [71]-[72]; Atlantis Corporation v Schindler [1997] FCA 1105; 39 IPR 29 at 54 (Wilcox and Lindgren JJ),
[6] See Bundesgerichtshof [Federal Court of Justice] BGH, judgement of 18 May 2010, ref: X ZR 79/07, GRUR 2010, 817 – *Steuervorrichtung*; Melullis in: Benkard, *Patentgesetz*, 11th edition 2015, Section 6 para 30.

12. In Japan, in general, courts set two steps for the determination of an inventor:

(i) identify the "distinctive part" of the invention (i.e., technical idea), which are those that overcome technical problems and produce the technical effects of the invention; and

(ii) identify the activities of the alleged inventor in the process towards the "completion of the invention" and evaluate his/her substantive contribution to the distinctive part of the invention.

13. The Japanese Supreme Court ruled that the invention is complete when the technical idea is concrete and objective to the extent that a person skilled in the art can repeatedly implement the idea, achieving the desired technical effect.

14. In the United Kingdom, an inventor is defined in section 7(3) of the Patents Act as the "actual devisor of the invention". In *Henry Brothers (Magherafelt) Ltd v The Ministry of Defence and the Northern Ireland Office*,[7] the Court of Appeal emphasized that a two-step approach was necessary in determining inventorship: One must first identify the inventive concept and then determine who devised that concept. In *University of Southampton's Applications*,[8] an "actual devisor" was described as someone who has "turned what was 'airy-fairy' into that which is practical".

15. In the United States of America, a person must participate in the conception of the invention in order to qualify as an inventor.[9] The term "conception" is understood as a mental process and further defined as the "completion of the mental part of the invention".[10] According to *Burroughs Wellcome Co. v. Barr Laboratories, Inc*., it is the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice. "Conception is complete only when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention into practice, without undue extensive research or experimentation."[11]

16. The concept of reduction to practice is a distinct second step: actual physical creation of the product (e.g., a creation of a prototype), the running of the process or the filing of the patent application on the claimed invention. The person who reduces the invention to practice is not the inventor: The person or persons who conceived of the invention is.

17. As the above examples from several jurisdictions suggest, in general, the inventor is the one who invents – who conceives of the invention. Merely auxiliary activities regarding the invention, such as merely providing a laboratory or somebody responsible for organizational work only, is not considered an inventor. Similarly, contributing funds, facilities or identifying a problem and defining a goal does not make that person an inventor.

18. Where more than one person is entitled to be an inventor of an invention in the jurisdiction concerned, they are joint inventors of that invention. With growing complexity of technologies covering more than one conventional technology field, coupled with more institutionalized innovation processes across national borders, questions relating to joint inventorship is particularly relevant to collaborative research and cross-border collaboration, which will be addressed further in Section II.

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[7] [1999] RPC 442.
[8] [2005] RPC 11.
[9] In re Hardee, 223 U.S.P.Q. 1122, 1123 (Comm'r Pat. 1984).
[10] Burroughs Wellcome Co. v. Barr Laboratories, Inc., 40 F.3d 1223, 1227 (1994).
[11] Sewall v. Walters, 21 F.3d 411, 415 (Fed. Cir. 1994) with further reference to Summers v. Vogel, 332 F.2d 810.

MORAL RIGHTS OF INVENTORS AND RIGHT TO A PATENT

19. Historically, the modern patent system has its origins going back to the letters patent, granted by the King of England, and the protection granted in the Republic of Venice to inventors. They recognize inventors' contribution to society and their importance to economic development and growth. Considering the central importance of inventors in initial creation of inventions, modern patent laws grant inventors moral rights to their inventions and a right to a patent.

Moral rights to inventions

20. According to Article 4*ter* of the Paris Convention, an inventor has the right to be mentioned as such in the patent. That provision established moral rights of the inventor, entailing the right of recognition. In general, a transfer of moral rights is not possible, although an inventor may waive those rights. If the inventor has not been mentioned or has been mentioned incorrectly, the applicable law in many countries provides for the possibility of correcting such errors. If, however, the failure to name the inventor correctly was fraudulent, it could be fatal to obtaining a patent.

Right to a patent

21. Today, most patent laws provide that, in principle, "the right to a patent shall belong to the inventor or his successor in title", recognizing that the initial rights in an invention belong to the inventor.[12]

22. The above principle means that inventors may transfer their right to a patent to a third party. Such a transfer, where allowed by law, may be made before filing a patent application, in which case the successor in title may file a patent application, based on the right acquired. For example, an independent inventor who has no financial resources or expertise to bring a product in market, or simply has no interest in engaging in commercialization activities, may choose to assign his/her right to a patent to another person who wish to obtain such right. Such a transaction could be considered as a win-win deal, since a new right holder, with the possibility of obtaining an exclusive patent rights, would be motivated to invest in further R&D, commercialization, and manufacturing of final products, while the inventor may continue its research activity, supported by a financial (or any other forms of) return gained from such transfer.

23. In today's innovation ecosystem, the image of the mad genius working alone in an attic till the eureka moment is more the exception than the rule. Many inventors are employees hired to engage in research, working in either private companies, universities or research institutions, which provides, *inter alia*, the infrastructure, funding and often the collective experience and direction. In many countries, where an employee invents in the course of his/her normal employment and that is what he/she has been hired to do, the right to a patent belongs to the employer.[13] It should be noted that most employers include clauses in employment contracts that assert the employer's right to inventions that arise from the

[12] For example, under Article 60(1) of the European Patent Convention, the right to a European patent shall belong to the inventor or his successor in title.
[13] The employer however is under the obligation to name the inventor in a patent application as indicated above. For a more detailed discussion on the rights to employees' inventions, see document SCP/35/7, Annex, Section V.F., available at: https://www.wipo.int/edocs/mdocs/scp/en/scp_35/scp_35_7.pdf.

normal course of employment and the employee agrees to assign to the employer all rights to the invention.

24. Under the German Employee Inventions Act, an employee has a duty to report to the employer an invention made during the course of employment which the employer may claim or release to the employee. If the employer claims its ownership, all property rights in the invention passes to the employer, who will then be entitled and under a duty to apply for IP protection domestically and entitled to apply for such protection internationally. The employee has the right to reasonable compensation.

25. As to the right to a patent for inventions created in universities, under the United States Bayh Dole Act, universities that receive government funding are entitled to ownership of patent rights that may result from the research undertaken with that funding. US universities have adamantly guarded this right and are reluctant to agree to another collaborating party in the research to be vested with ownership. This can be a concern for companies engaged in a collaborative research project with US universities. Also in Europe, most recipients of public funding are entitled to own any resulting IP. However, European universities are less insistent on keeping ownership and are more amenable to another party in the collaboration to assume ownership.

26. In Australia the Productivity Commission (PC) published its report on the IP system in 2016 and found that 'on balance', where IP rights including patents are sought in inventions arising from publicly funded research, institutional ownership was preferable to alternatives such as government or individual ownership.[14]

27. It is possible that in research projects in which public research institutions or universities are involved, there may be researchers engaged in the project that are not employees of the institution. They could, for example, be students or researchers who are funded under projects or grants. If they have no obligation (e.g., under a contract) to assign their right to the institution, there may be rights that reside with them under the applicable laws of the country.[15]

Patent inventorship v. patent ownership

28. As already seem above, inventorship and ownership are two distinct concepts in patent law. In general, inventorship is a question of who invented the subject matter claimed in a patent, while ownership is a question of who owns legal title to the subject matter claimed in a patent as a private intangible property.[16]

29. At the heart of any ownership analysis lies the question of who has (or had) the initial right to a patent at the first place, and how that right has been transferred to another, i.e., the chain of transfer of title to a patent. Thus, it is stipulated in many patent laws that if the applicant is not the inventor, the applicant must show his/her entitlement to the right to file a patent application and obtain a patent. The right to a patent is usually assigned by contract or by law to a third party, who is then recognized by law as a person having the right to seek patent protection, and if a patent is granted, become an owner of the patent.

30. As the chain of entitlement to a patent directly relates to patent ownership, any irregularity in that chain is scrutinized. For example, in Singapore, where a person has been mentioned as a sole or joint inventor, any other person who alleges that the former ought not

[14] See the submission of Australia to SCP/36.
[15] See Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle), 1 Practical Guidance on IP to Facilitate Cross Border Collaborations.
[16] See, for example, Beech Aircraft Corp v. EDO Crop 990 F.2d 1237, 1248 (Fed. Cir. 1993).

to have been mentioned may, at any time, apply to the Registrar for a certificate to that effect.[17] Similarly, at any time before a patent is granted, any person may refer to the Registrar the question as to whether the person so mentioned is entitled to patent grant. Where the patent has been granted, any person having or claiming a proprietary interest in or under the patent may refer to the Registrar the question of: (a) who is or are the true proprietor or proprietors of the patent; (b) whether the patent should have been granted to the person or persons to whom it was granted; or (c) whether any right in or under the patent should be transferred or granted to any other person or persons.[18] Some other countries require a court order for making such a change.[19]

31. Where co-inventors or more than one entity hold the right to a patent jointly, they may become joint patent owners. The joint ownership of patents will be further addressed in Section II.

TERRITORIALITY OF PATENT LAWS

32. Patent law, as other intellectual property law, is territorial in nature, i.e., patent rights can be enjoyed within the territory of the country or region in which (or for which) a patent is granted. Article 4*bis* of the Paris Convention states that patents applied for in the various Member States of the Convention shall be independent if patents are obtained for the same inventions in other countries, regardless of their membership to the Paris Convention. Such independence of patents is understood in an unrestricted sense.[20]

33. While the speed and amount of information disseminated across borders have exponentially increased and expansion value chains beyond national borders is nothing new, patent law continues to be territorial. Although international agreements, regional agreements, Regional Trade Agreements (RTAs) as well as unilateral development of national laws have led national patent laws come closer to some extent, the issues regarding inventorship and patent ownership are one of those areas that have been less addressed, relatively speaking, at the international level.

II. INVENTORSHIP AND OWNERSHIP IN COLLABORATION: LEGAL FRAMEWORKS

34. Today, most inventions are the result of institutionalized and organized research projects where a number of researchers, their managers, technicians, assistants, project managers and other contributors come together and work towards a common goal – a goal that has been outlined and set out to them, based on the priorities of the institution they work for. Determining who is the inventor when an invention results from such a team can be a challenge. In collaborative research, there are often a number of such teams from different institutions, companies, universities that come together. Becoming increasingly common, they may come from different countries. In such situations, identifying who the inventor(s) is(are) may become even more complex.

[17] See section 24(3) of the Singapore Patents Act.
[18] See sections 20, 21, 47 and 48 of the Singapore Patents Act. India and the United Kingdom, for example, also provides similar provisions in their laws.
[19] See, for example, the Federal Act on Patents for Inventions of Switzerland 1954 Art 5.
[20] Article 4*bis*(2) of the Paris Convention.

JOINT INVENTORSHIP

35. Often in collaborative research, there is no single individual researcher who can be considered the inventor of the collaborative output. Many would have contributed towards the final result. Therefore, there will be many co-inventors or, depending on the applicable law and/or contractual agreements among the parties, employers/universities of the co-inventors jointly hold the right to a patent.

36. Some national/regional legislations and case law specifically address determination of joint inventors and the level of contribution that rises up to the inventorship.[21] For example, in the United States of America, 35 U.S. Code §116 provides that:

> "When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not contribute to the subject matter of every claim of the patent."

37. The case law provides further guidance on the matter. For example, *Monsanto Co v. Ernst KAMP* provides that:

> "A joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. To constitute a joint invention, it is necessary that each of the inventors work on the same subject matter and make some contribution to the inventive thought and to the final result. Each needs to perform but a part of the task if an invention emerges from all the steps taken together. It is not necessary that the entire inventive concept should occur to each of the joint inventors, or that the two should physically work on the project together. One may take a step at one time, the other an approach at different times [...]."[22]

38. In addition, according to *Kimberly-Clark Corp v. Proctor and Gamble Distributing Co., Inc.:*

> "For persons to be joint inventors under Section 116, there must be some element of joint behavior, such as collaboration or working under common direction, one inventor seeing a relevant report and building upon it or hearing another's suggestion at a meeting. Individuals cannot be joint inventors if they are completely ignorant of what each other has done until years after their individual independent efforts [...]."[23]

[21] For a more detailed discussion on the determination of joint inventors, see document SCP/35/7, Annex, Section V.E., available at: https://www.wipo.int/edocs/mdocs/scp/en/scp_35/scp_35_7.pdf.
[22] Monsanto Co v. Ernst KAMP 269 F. Supp. 818 , 154 USPQ 259.
[23] Kimberly-Clark Corp v. Proctor and Gamble Distributing Co., Inc 23 USPQ2d 1921, 973 F.2d 911.

39. In Germany, a court ruled that a joint inventor is generally anyone who has made a sufficiently significant contribution to the invention.[24] This has to be assessed with a view to the circumstances of the concrete case at hand. The joint inventor's contribution need not itself be inventive in the sense that it does not have to satisfy all the preconditions for a patentable invention. However, contributions that have not influenced the overall achievement (for example, contributions that are unsubstantial with respect to the solution and those that have been made based on the instructions of another person) do not establish status as a joint inventor.[25]

40. In the Republic of Korea, the Supreme Court stated that a joint inventor must be established as being in a relationship of mutual cooperation, on an actual basis, toward completion of the invention.[26] Accordingly, the status of a joint inventor is acknowledged when a person has contributed toward completion of the invention by more than merely providing basic tasks or ideas for the invention, providing general administration for researchers, organizing data and performing experiments upon instruction by a researcher, or supporting or commissioning completion of the invention by providing funds or equipment. Rather, a joint inventor must have contributed toward the invention by newly presenting or adding/supplementing concrete conceptions in regard to technical problems within the invention, materializing new conceptions by conducting experiments, etc., or providing concrete means and methods to achieve the purpose and utility of the invention or by providing actual advice and/or instructions that make the invention possible.

41. In the Singaporean case, *Cicada Cube Pte Ltd v National University Hospital (Singapore) Pte Ltd*[27], the National University Hospital (Singapore) Pte Ltd (NUH) had engaged Cicada Cube Pte Ltd (Cicada) to develop a software for a laboratory test ordering and result reporting system. Cicada subsequently filed a patent for a laboratory specimen collection management system, naming its employees as inventors. NUH asserted that its employees were the actual inventors, and accordingly, it should be entitled to the ownership. The High Court determined that NUH's employees contributed to the first inventive concept while Cicada's employees contributed to a second inventive concept, and accordingly, Cicada and NUH should be named as co-owner. Both Cicada and NUH appealed to the Court of Appeal which upheld the High Court decision on the same grounds.

OWNERSHIP OF IP FLOWING FROM JOINT RESEARCH

Joint Ownership[28]

42. An invention created jointly by more than one inventor may (but not necessarily[29]) lead to joint ownership of a patent. In general, joint owners of a patent obtain equal rights and obligations by law, unless they agree otherwise. As indicated below, the rights each joint owner accrue to exploitation of co-owned patents, i.e., the internal and external relationship

[24] BGH, judgement of 16 September 2003, ref: X ZR 142/01, GRUR 2004, 50, 51 – Verkranzungsverfahren
[25] Cf. BGH, judgement of 16 September 2003, ref: X ZR 142/01, GRUR 2004, 50 – Verkranzungsverfahren; BGH, judgement of 18 June 2013, ref: X ZR 103/11, BeckRS 2013, 13904. See the submission of Germany in response to C.9199.
[26] Supreme Court Decision, 2009Da75178, decided July 28, 2011. See the submission of the Republic of Korea in response to C.9199.
[27] Cicada Cube Pte Ltd v National University Hospital (Singapore) Pte Ltd [2018] SGCA 52. See the submission of Singapore in response to C.9199.
[28] For a more detailed discussion on the rights of co-owners, see document SCP/35/7, Annex, Section V.E., paragraphs 84 to 94, available at: https://www.wipo.int/edocs/mdocs/scp/en/scp_35/scp_35_7.pdf.
[29] For example, if one of the co-inventors assign its right to a patent to another co-inventor, the latter may be a sole patent applicant, who may become a sole patent owner. In another example, where a patent application is filed by joint patent applicants, once a patent is granted, one of the joint applicants may transfer its right to another joint applicant, who will then become a sole patent owner.

among co-owners and the effect of joint ownership on the rights conferred by the patent, vary from country to country. An important aspect in this regard is a distinction between the mandatory rules and default rules under the applicable law, where the latter can be overridden by the parties concerned, usually through contractual arrangements.

43. In practice, the question is whether and how the joint patent owners can (or cannot) exploit the patented invention, license the patent, or transfer their part of the ownership of the patent independently from each other. The legal framework aims to strike a fine balance between sometimes fundamentally opposed economic interests of each co-patent owner. Thus, the individual exploitation of the patent by one co-owner may adversely affect the other co-owners' businesses. Fundamentally, the patent concerned is joint property of all co-owners, and to exploit the patented invention, each co-owner needs to make use of the claimed invention in its entirety.

44. In the United States of America, according to 35 U.S.C. §261, patents have the attributes of personal property. Thus, courts have held that "in the context of joint inventorship, each co-inventor presumptively owns a *pro rata* undivided interest in the entire patent, no matter what their respective contribution." Following this principle, the rights of joint owners are stipulated in 35 U.S.C. §262. It provides that in the absence of any agreement to the contrary, each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention within the United States, or import the patented invention into the United States of America, without the consent of and without accounting to the other owners. Thus, while the statute, by default, provides each co-owner with considerable freedom for individual exploitation of the patent, it also recognizes situations where co-owners may opt to agree on other rules.

45. Similarly, case law has established that each co-owner can license the patent, or assign the interest he/she holds with respect to the patent, without the consent of other co-owners, unless an agreement to the contrary exists among the co-owners. Consequently, offering an exclusive license of a jointly owned patent could be extremely difficult, as each co-owner may claim their right to use the patented invention or license the patent to a third party.

46. However, with respect to taking actions against infringement of the shared patent, 35 U.S.C. §281 states that a patentee shall have remedy by civil action for infringement of his patent, which has been interpreted as requiring joint owners to agree with each other before bringing an infringement action.[30]

47. In the United Kingdom, subject to any agreement to the contrary, co-owners can exploit the patent for their own gain and without any obligation to account to other co-owners for profit generated.[31] However, a co-owner may not license, assign or mortgage the patent, without the consent of all other co-owners, subject to any agreement being in force.[32] In addition, Section 66(2) of the UK Patents Act states that one of the co-owners of a patent may without the concurrence of the others bring proceedings in respect of an act alleged to infringe the patent, but shall not do so unless the others are made parties to the proceedings.

48. In Germany, in the absence of any special provisions in the Patents Act, the general rules apply to this matter. The German Civil Code differentiates ownership of property between the so-called "co-ownership by defined shares (*Gemeinschaft nach Bruchteilen*)"

[30] See, for example, STC.UNM v. Intel Corp Federal Circuit No. 2013-1241. In Ethicon v. U.S. Surgical Corp., 135 F.3d 1456, 1468 (Fed. Cir. 1998), the Federal Circuit held that a joint inventor, even one who was a relatively minor contributor to the overall invention, could effectively prevent another joint inventor from enforcing the patent against an alleged infringer.
[31] See Section 35(2)(a) of the Patents Act.
[32] See Section 35(3)(b) of the Patents Act.

under Section 741 and the so-called "partnership with joint assets (*Gesellschaft mit gesamthänderischer Bindung*)" under Sections 705 and 719. Section 741 of the Civil Code applies to co-ownership of a patent as a default, i.e., without a differing contractual agreement. In accordance with Section 743(2) of the German Civil Code and related jurisprudence,[33] each co-owner may exploit the patent for its gain, without any general compensation entitlement for the other co-owners, in principle. The co-owner may also transfer his/her share of the patent right,[34] without any preemption right for the other co-owners.

49. However, in case where a group of persons contractually agreed to develop an invention jointly, for example, a partnership was created among the co-owners in accordance with Section 705 *et seqq*. of the Civil Code. In contrast to the default co-ownership approach above, the model of "joint asset" does not allow for independent transfer of shares of the invention, because it constitutes a jointly hold asset, each owner having a property right in the whole property.

50. As to the right of a co-owner to license the patent, under Section 741 *et seqq*., the co-owner may not freely grant licenses to third parties, as it is regarded as a form of "administering the patent as such", which can be done only jointly in a co-ownership by defined shares, in accordance with Section 744(1) of the Civil Code. Under German law,[35] the co-owner may grant a license, subject to a vote of the co-owners in that regard.

51. Although no provision regarding the right of a co-owner to bring an action is found in Section 741 *et seqq*. of the Civil Code, in analogy to its Section 1011, every co-owner may bring an action asserting claims arising from the jointly owned patent.[36] Section 139(1) of the Patent Act specifies that each co-owner can independently claim injunctive relief against a third party.

52. In Japan, where a right to a patent is co-owned, no co-owner may transfer his/her share without the consent of all the other co-owners.[37] Similarly, no co-owner of a patent may transfer, or establish a right of pledge, on its share, establish an exclusive license, or grant a non-exclusive license, with regard to the patent, without the consent of all other co-owners.[38] However, unless otherwise agreed upon via a contract, each co-owner may work the patented invention without the consent of any other co-owners.[39]

53. To file a request for trial or appeal under Article 132(3) of the Patent Act, all co-owners of the patent must jointly file such request. As to an action against infringement of the patent, a co-owner may take the action independently and seek civil remedies as far as his/her share in the patent concerned.

54. In France, Article L613-29 of the Intellectual Property Code governs the joint ownership of patent rights, subject to any agreement that may exist among the co-owners. Unless such agreement exists, each co-owner is permitted to exploit the patent, including granting non-exclusive licenses, without any need of getting consent from the other co-owners, provided that other co-owners who are not exploiting the patent are fairly compensated. However, unless agreed among all co-owners otherwise, a co-owner who offers a non-exclusive license must notify the draft licensing agreement, along with an offer to sell its share at a

[33] Bundesgerichtshof (Federal Court of Justice), decision of March 22, 2005, X ZR 152/03 – *Gummielastische Masse II* ("each co-owner may use the patent, as long as there was no majority vote by the co-owner against it").
[34] Section 747 of the German Civil Code.
[35] Section 745(1) of the German Civil Code.
[36] Bundesgerichtshof (Federal Court of Justice), decision of February 24, 2000 – *Ballermann*.
[37] Article 33(3) of the Japan Patent Act.
[38] Article 73(1) and (3) of the Japan Patent Act.
[39] Article 73(2) of the Japan Patent Act.

specified price, to the other co-owners. Any co-owner can oppose such non-exclusive license within a specific time limit by purchasing the share of the co-owner wishing to grant the non-exclusive license. If no agreement is reached within the time limit, a court will set the price. The co-owners have one month from the court's decision to either proceed with or abandon the sale/purchase of the share. The “renouncing party” shall bear the damage.

55. An exclusive license, however, can only be granted with the agreement of all co-owners or through court authorization. Regarding the transfer of ownership, while each co-owner may assign their share to a third party without the consent of the others, the remaining co-owners retain a right of preemption. As to the assignment, while each co-owner may transfer his/her share to a third party without the consent of the other co-owners, the other co-owners have a right of preemption. Additionally, any co-owner may initiate an action against infringement, although they must notify the other co-owners before doing so.

56. In Belgium, Article XI.49 of the Code of Economic Law, which applies in the absence of an agreement among co-owners otherwise, grants each co-owner the right to independently exploit the patented invention. However, the granting of licenses, whether exclusive or non-exclusive, requires the consent of the other co-owners or, when an agreement cannot be reached, court approval. Similar to French law, a co-owner may assign their share without needing the consent of the other co-owners, though the remaining co-owners retain a right of preemption. Nonetheless, the law does not establish an obligation to share profits with the other co-owners.

57. In China, Article 14 of the Patent Law provides that, unless there is an agreement among co-owners stating otherwise, each one may independently exploit the patent or grant a non-exclusive license to third parties. Any royalties received from such licensing must be fairly distributed among all co-owners. However, for actions outside independent exploitation or non-exclusive licensing, the consent of all co-owners is required.

58. A snapshot of the differences that exist in the different jurisdictions is summarized in the Appendix (Table 1). In brief, jointly owned patents covering the same invention may give rise to different rights and obligations of each co-owner, depending on the jurisdiction in which a patent is granted.

59. The recent coming into force of the Unitary Patent (UP) system may have gone some way in alleviating some of the issues inherent in European patents that are essentially a bundle of national patents. Under the UP system, once a patent is granted by the European Patent Office (EPO), the owner of the patent can request the registration of unitary effect to that European patent. This results in the European patent with unitary effect having uniform effect[40] under a single legal regime in the countries that have ratified the Agreement on a Unified Patent Court (UPC Agreement) which currently stands at 18 member states of the European Union.

60. However, Articles 5 and 7 of Regulation (EU) No 1257/2012 stipulates that the ability of an owner of a unitary patent to, amongst other things, exploit, license, and assign the patent (that is as an “object of property”) is to be governed by the law of the country where the applicant’s principal place of business is located at the time of the application, and if there is no such place of business, by the law of Germany.

61. In addition, where the principal places of business of joint applicants are different at the time of the application, in determining which country’s law applies to the patent as an “object

[40] Article 3.2 of Regulation (EU) No 1257/2012 states that “A European patent with unitary effect shall have a unitary character. It shall provide uniform protection and shall have equal effect in all the participating Member States.”

of property", the law of the country of the applicant that was named first in the application will take precedence. Therefore, in view of the divergence of national laws regarding joint ownership, the order of the joint applicants in such a joint application may, in some cases, be of strategic importance among the parties.

Foreign filing license requirements

62. Some countries have national legislation which restricts the filing of patent applications in another country, usually for reasons of national security.[41] The substantive and procedural requirements regarding the foreign filing license vary among national laws. Depending on the applicable national law, the restriction may apply to: (i) applications containing certain subject matter (e.g., applications containing State secrets); (ii) applications filed by nationals of that country; (iii) applications filed by resident of that country; (iv) applications containing an invention made in that country; and (v) any combination of (i) to (iv). The level of restriction also varies among the countries.

63. Some countries implement the so-called first domestic filing requirement, which does not permit an applicant to file a patent application in another country, unless the applicant first file the corresponding application in his/her country. In some other countries, it is possible to first file an application in a foreign country, but it requires a certain review and express permission, e.g., a foreign filing license, by the government authority of that country, before the application is filed in another country with or without being filed in the home country.

64. In some countries, no explicit permission is necessary, but the applicant is required to wait for a certain period before filing a corresponding application abroad. If the applicant does not receive a security notice prohibiting foreign filing within that time period, he/she can assume permission is granted. Furthermore, among the countries that require permission to file abroad, some limit the requirement to only applications that contain inventions relevant to national security and military inventions, while some others expand the requirement to all applications regardless of the nature of the underlying inventions."[42]

65. Failure to comply with these requirements could result in the patent, if granted, being invalidated and even attract a fine or a prison term.

66. In the context of international research collaboration, such restriction to foreign filing could create additional challenges for inventors or their successors in title who seek to file patent applications. For example, joint applicants who seek a patent on a collaboratively created invention can be citizens of, or legal entities established in, two different countries, where each of their national laws has a first filing requirement. In such a case, the joint applicants would be in the impossible situation of both being required to first file in their respective countries. Or, in another situation, the national law of the first applicant provides that the foreign filing restriction applies when the invention is created in that country and the national law of the second applicant stipulates that the restriction applies to the nationals of the country. Consequently, joint applicants would need to navigate various applicable laws and if necessary, obtain foreign filing licenses from the countries. To avoid complexities that may arise from different foreign filing license rules, from the outset, collaborating parties involved in international research collaboration projects might even explore a filing strategy where, for example, one party obtains patent ownership, while other parties secure their right to use the patented invention (and any other rights that can be agreeable between the

[41] With respect to such filing restrictions for the PCT international applications in various countries, see https://www.wipo.int/pct/en/texts/nat_sec.html. See also Annex B of the PCT Applicant's Guide.
[42] https://ipwatchdog.com/2022/04/26/navigating-foreign-filing-requirements-cross-border-patent-inventions-part/id=148647.

collaborating parties) through a contract between the patent owner and other parties. Such arrangements, as discussed below, are oftentimes used to resolve other issues stemming from patent management in a co-ownership setting as well.

III. MANAGING JOINT OWNERSHIP THROUGH CONTRACTS

67. Section II addressed different rules regarding inventorship and ownership, regulated by the national law of each country. However, many of these laws are not obligatory in that parties to collaboration may decide to not leave the issue to be governed by the applicable laws but to regulate their relationship by mutual agreement instead. Particularly where the collaborating parties come from different countries, the best way for them to manage their relationship is to come together and agree on who would own the resulting patents and how that ownership would be exercised in the best interests of all the parties.[43]

68. It is often the case that prior to engaging in collaborative research, it is not evident to the parties that their collaboration will result in something of value that would need an allocation of rights and responsibilities. Even if they do consider how that should be done, "[…] it will not be apparent to them […] when it is worth incurring the costs of fully negotiating the terms of association. And even where it is clearly worth negotiating, the participants may not be able to foresee what information or products will be developed, what contributions each will have made in developing that information or product, or whose expertise will be relevant to future development. Yet, without that knowledge, it is not possible to allocate rights and responsibilities in a just, coherent, or efficient manner".[44]

69. Negotiating a comprehensive collaboration agreement before knowing if the collaboration will yield anything of value can be quite costly. On the other hand, if the parties wait to see if there is anything of value before they enter into an agreement, it can change the power dynamics between the parties (for example, a party that plays a role in advancing basic research and a party that brings expertise on commercialization and with production capability).[45] Therefore, in general, determining the rights and responsibilities of the different parties as early as possible aligned with their respective goals and objectives is preferable than trying to put things in order later in the process.

70. An important preliminary step of interest for all parties is to agree on which information shall be kept confidential, since each party could have a different level and nature of interest in a specific piece of information, and consequently could have different kinds of concern against its disclosure. Thus, an agreement about how to handle the information that would be shared in the collaborative activities, including background IP and foreground IP, should be made.

71. To illustrate the importance of such agreement, in general, universities consider very important to make research results public, in keeping with the mandate of institutions of higher learning to disseminate the results of research widely whether through publication or teaching. This is in direct contrast to the interests of for-profit companies, which usually seek the maximum competitive advantage from the exploitation of the fruit of collaboration in the

[43] According to the experience of the Arbitration Board under the Law on Employees' Inventions established at the German Patent and Trademark Office, inventorship issues are widely addressed in advance in the respective cooperation contracts. Within the framework of the contractual rights and obligations established there, it is determined who shall be entitled to the inventions resulting from the cooperation, how this shall be compensated and who shall have the rights to use the invention. See the submission of Germany in response to C.9199.
[44] See Rochelle C. Dreyfuss, Collaborative Research: Conflicts on Authorship, Ownership and Accountability, 53 Vanderbilt Law Review 1159 (2000), p 1174,
[45] Stewart K. Mehlman, Silvia Uribe-Saucedo, Ronald P. Taylor, Gene Slowinski, Ed Carreras, Chris Arena, Better Practices for Managing Intellectual Assets in Collaborations, Research Technology Management, January – February 2010, page 61.

face of the market competition. From that perspective, protection of the result of the collaboration as trade secrets is one of the options. Even for universities, if they wish to seek patent protection of the collaborative results, the information pertains to the invention must be kept confidential until a patent application is filed (subject to any applicable grace period). Parties to the collaboration need to find a way to work out any differences they may have. For example, the university partner may agree to delay publication for a certain period so that the industry partner would have time to file a patent application. Another contractual option might be to allow the industry partner to read any forthcoming publication from the university partner and to remove from the publication any information that it considers prejudicial to its interest (the so-called "an option to read" clause in a contract).[46]

72. When patenting of a jointly created invention is foreseen, ownership of the patent is another issue to be considered by the collaborating parties. As shown in Section II, in general, national laws determines who has the right to a patent at the first place. However, since that right can be transferred to another party, who will be an owner or co-owners of a patent can be determined through contractual arrangements, within the limit of the applicable law.

73. One option is that all parties may jointly become owners of the patent. In such a case, although statutes provide default rules about each co-owner's rights to the other co-owners, in many instances, parties wish to deviate from the default rule. However, if co-owners have diverse interests and different expectations about how to best exploit the future patents, it can get challenging to re-define each party's rights vis-à-vis the other parties. One party may consider that granting non-exclusive licenses to as many licensees as possible is the best way to exploit the patent, while another party may wish manufacture and sell the patented invention by itself. If there is disagreement among the parties, who will decide in which countries patent applications will be filed? Who will pay maintenance fee? Are all parties committed to join a suit in those countries that have such requirement? These are just a few questions that can come up in a joint ownership situation[47].

74. Another option is that the parties that are entitled to be co-owners transfer their right to a patent to one of the parties, thus allocating the ownership to a single party. That party has all the rights arising from the patent as well as the obligations therefrom. That is, it would also be responsible for prosecuting the patent application (if applicable), bearing the prosecution costs and patent maintenance costs as well as dealing with any infringement issues that may arise. The others would obtain a right to use the patented invention.

75. Counter intuitively, this model is considered a better option for many. This arrangement is less complex and easier to manage, which can lead to increased efficiency for collaborating parties. In addition, many parties consider that the right to use the patented invention is more important than holding a patent ownership. As each party most likely has different needs for exploiting the invention (e.g., using a patented invention, sub-licensing the patent etc.), a license to the collaborating parties for their respective use of the invention could be tailored to respond to the interest of each party. For example, the license can be adapted to each party's geographical scope of activities and fields of use.

[46] See the Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle), page 33.
[47] For further information, see Allocating Patent Rights in Collaborative Research Agreements, Gene Slowinski and Matthew W. Sagal, Research Technology Management, January-February 2006, pages 51 to 58.

76. This approach would also be helpful to manage the interests of collaborators who participated in the cooperative activity, but are outside the "chain of title" to the invention under the applicable patent law, such as those who made financial or managerial contributions or those whose level of technical contributions cannot satisfy the level to become joint inventors under the applicable patent law. Under this model, parties can agree beforehand that they can also receive certain return to their labor and contribution.

77. Much of the above focused on the rights to the foreground IP, which is often the central point of contention. However, when collaborators try to craft an agreement that manages their relationship, the use of background IP should also be clarified. For example, while the background IP is meant for use in the collaboration, parties may want to access to the background IP of their partners for other purposes extraneous to the matter at hand. They may want access to be provided to those that are outside the collaborative activities but are connected to them, because access the background IP may be required for projects that are not part of the collaboration or for continuing the work under the collaboration once the collaborative project ends. If the owner of the background IP agrees to grant access to any of those, the question as to whether there are others outside the collaboration who already hold any rights to the subject covered by the background IP, may arise[48]. If so, that may prevent further rights being granted by the owner of the background IP or authorization has to be obtained from these other persons before further rights are granted.

78. In summary, there are many factors to be considered in managing IP in collaboration, which is directly related to the question of ownership. Some of the relevant variables could be who contributed what in terms of money, resources, expertise, background IP etc., how close to market the results are, how much more work it requires, how much each party needs access to these results for future etc. Each contract will depend on the weight of these different contributions and what each party considers important or comparatively less important for them.

79. Particularly when parties to a collaboration agreement are from different countries, they may also agree on the law that should apply to their contract. Such a choice of law clause provides for greater certainty and clarity in the interpretation of agreements as to where any litigation should take place and the law that should apply. However, given the principle of territory and national registration of patents, the law applicable to determine the existence, validity, registration, duration, transferability, and scope of rights, and all other matters concerning the right as such, is the law of the State for which patent protection is sought. The phrase "the State for which patent protection is sought" should be understood in terms of the rights that arise from registration of a patent in the respective jurisdiction. Thus, the law chosen by the parties governs only the contractual aspects of their relationship and those aspects that are provided for in the statute but are also allowed by law to override by contracts[49]. For example, it is competent to determine whether the parties validly consented to enter the contract and the content of the contract as well as to specify which contractual obligations were undertaken. Furthermore, the law chosen by the parties may determine the remedies in the event of failure to execute the contract.

80. Since collaboration often brings together mixed parties, including government agencies, universities, public research organizations, large multinational companies as well as small businesses and startups, they are likely to have different expectations for what they each wish to gain from the collaboration. Seemingly, it makes the management of their relationship more complex and difficult. However, the more the objectives of the different

[48] For example, the claims of a broader patent held by a patentee who is outside the collaboration may cover the scope of the patent included in the background IP.
[49] See International Law Association's Guidelines on Intellectual Property and Private International Law ("Kyoto Guidelines") - Applicable Law, available at: https://www.jipitec.eu/archive/issues/jipitec-12-1-2021/5247.

collaborators differ, the easier it might be, as they each can secure their spheres of influence or interest without fear of competition by the others. Without fear of competition, i.e., others will not profit from the knowledge shared to the detriment of a person who shared the knowledge, people would more openly engage with each other.

81. To bring as much certainty and predictability as possible to collaboration, many institutions and governments create guidelines, policies and template agreements that parties can rely on[50]. For example, Singapore implemented the National IP Protocol in 2018 to facilitate technology transfer from the government to commercial enterprises and start-ups. It provides a common framework for industry engagement and how IP shall be owned, protected, used and commercialized.[51]

IV. IMPLICATIONS FOR TECHNOLOGY TRANSFER

82. The previous Sections of this study have shown that, in relation to inventorship and ownership, collaborative research and cross-border collaboration need to manage divergences in national laws and in the interest and expectation of each party involved in the collaboration. Regarding the former, however, much similarity is found at the higher level in many respects.

83. The inventors' moral right has been well recognized internationally. Although no definition of an "inventor" is found in international treaties, national laws present many common concepts that make a person become an inventor. Interestingly, the notion of an inventor is often raised in the disputes over joint inventorship, i.e., whether a particular person shall be considered as a co-inventor or not.

84. Also recognizing the central role of inventors in the creation of an invention and the social need for incentivizing inventors to disclose their inventions, a right to a patent originates from an inventor, which is a widely accepted principle found in patent laws. Similarly, also commonly acknowledged in many national laws is the equally important role of employers in the innovation process today. Consequently, national laws grant a right to a patent to the employer of the employee inventor, either automatically or through a transfer of the right from the employee inventor, although each country may determine the circumstances and conditions under which as well as the extent to which the right to the patent belongs to the employer.

85. What is also common among the national laws is the transferability of the right which creates a chain of title, allowing a patent to be assigned to those who are willing to exploit the patent even if it comes with the costs. In the collaboration, the transferability of the right, coupled with flexibilities in designing licensing conditions, give parties the possibility to better organize the rights and obligations of collaborating parties for the efficiency of the collaborative innovation process. Considering the term "technology transfer" in the context of the transfer of knowledge/research results within the respective collaboration project and beyond, greater efficiency in the collaboration process could facilitate better transfer of valuable information and knowledge among the parties. This, in turn, may accelerate the creation of collaborative outputs and their dissemination to those beyond the bounds of collaboration.

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[50] See resources that provide an overview of IP policies and related documents in the sphere of universities and public research institutions collected and made available by WIPO at https://www.wipo.int/en/web/universities/resources and resources to support collaborations provided by Australia in its submission to SCP/36. See also Report of the CREST OMC Expert Group on Intellectual Property (2nd Cycle), Appendix E Guidelines to Collaboration on Research at National Level and Model Contracts and National Recommendations.

[51] See the submission of Singapore to SCP/36.

86. At first glance, national law provisions that regulate the intermural and extramural relationships among co-owners, such as whether and under which conditions a co-owner may individually use the patented invention, or license or assign the patent individually, appear very different. As they are mostly default rules, these provisions leave much space for parties to agree on their own rules that may, collectively speaking, best meet the needs of the parties. In some instances, the corresponding default provisions in national laws are set completely on the opposite sides, i.e., one national law says a co-owner may do X unless there is an agreement to the contrary, while in another national law, it says a co-owner may not do X unless there is an agreement to the contrary. If the collaborating parties seek patent protection in multiple jurisdictions, it seems that determining these matters in an agreement can be simpler than turning to the law of each country concerned.

87. Based on the principle of freedom of contract, on the one hand, parties may each determine what they bring into a collaborative relationship and what they wish to gain from the collaboration, and try to achieve their goals through negotiation and mutual agreement. However, on the other hand, seeing it from the viewpoint of each party, achieving their goal through negotiation and agreement requires negotiation skills supported by viable institutional strategy and priority, based on the solid analysis of law, technology and market. Although it is not a challenge that is specific to technology transfer through collaborative research, the effectiveness of such activities seems to be predicated on the capacity to negotiate IP matters, harnessing different skills, resources and expertise in relation to the sharing of knowledge and research results.

[End of Annex and Appendix follows]

Table 1: Snapshot of the Differences in Selected Jurisdictions Regarding the Exploitation of Jointly Owned Patents

Country	Law	Use of the co-owned patent invention by a co-owner	License by a co-owner		Assignment by a co-owner	Taking action against infringement
			Non-exclusive license	Exclusive license		
Belgium	Art XI.49 Code of Economic Rights	May use the invention without consent of other co-owners. [unless any agreement otherwise]	May grant a non-exclusive license only with consent of other co-owners. [unless any agreement otherwise]		May assign its share without consent of other co-owners but with their right of preemption. [unless any agreement otherwise]	May rake action independently with consent of other co-owners. [unless any agreement otherwise]
China	Art 14 of the Patent Law	May use the invention without consent of other co-owners. [unless any agreement otherwise]	May conclude a non-exclusive license without consent of other co-owners, but with distribution of royalties among all co-owners. [unless any agreement otherwise]	Must obtain consent of other co-owners.	Must obtain consent of other co-owners.	Must obtain consent of other co-owners.
France	Article L613-29 to L613-31 of the Intellectual Property Code	May use the invention without consent of other co-owners, but with compensation to other co-owners not exploiting the patent. [unless any agreement otherwise]	May conclude a non-exclusive license without consent of other co-owners, but with compensation to other co-owners not exploiting the patent, and under certain conditions. [unless any agreement otherwise]	May not grant an exclusive license without consent of other co-owners. [unless any agreement otherwise]	May assign without consent of other co-owners, but with their right of preemption. [unless any agreement otherwise]	May take action independently, but must inform other co-owners. [unless any agreement otherwise]
Germany	Section 741 *et seqq.* of the Civil Code as a default[52]	May use the invention as long as the use of the other co-owners is not affected and no contradicting majority vote.	May grant a license, subject to a vote of the co-owners.		May be assigned without consent of other co-owners.	May take action independently.

[52] Section 705 and 719 of the Civil Code applicable to “partnership joint assets”.

Country	Law	Use of the co-owned patent invention by a co-owner	License by a co-owner		License by a co-owner	Taking action against infringement
			Non-exclusive license	Exclusive license		
Japan	Articles 33(3) and 73 of the Patent Act	May use the invention without consent of other co-owners. [unless any agreement otherwise]	may not license without consent of other co-owners.		May not assign without consent of other co-owners.	May take action independently [unless any agreement otherwise)
United Kingdom	Sections 36 and 66(2) of the Patents Act	May use the invention without consent of other co-owners. [unless any agreement otherwise]	May not license without consent of other co-owners. [unless any agreement otherwise]		May not assign without consent of other co-owners. [unless any agreement otherwise]	May bring action without the concurrence of the others but should join them as parties.
USA	35 USC §262 35 USC §281	May use the invention without consent of other co-owners. [unless any agreement otherwise]	May license without authorization of other co-owners. [unless any agreement otherwise]		May assign without consent of other co-owners. [unless any agreement otherwise]	All co-owners shall join in suit

[End of Appendix and of document]