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Table of abbreviations

AIPPI	The International Association for the Protection of Intellectual Property (Association Internationale pour la Protection de la Propriété Intellectuelle)
ArbEG	Gesetz über Arbeitnehmererfindungen
CJEU	The Court of Justice of the European Union
CPI	French Code de la propriété intellectuelle
DSM Directive	Directive on copyright and related rights in the Digital Single Market
EEA	The European Economic Area
EIA	The German Employee Invention Act
EPC	European Patent Convention
EU	The European Union
FTC	Federal Trade Commission (USA)
IP	Intellectual Property
IPC	The French Intellectual Property Code
IPR	Intellectual Property Right
PatG	German Patent Act (Patentgesetz)
Software Directive	Directive on the legal protection of computer programs
TRIPS Agreement	The Agreement on Trade-Related Aspects of Intellectual Property Rights
U.K.	United Kingdom of Great Britain and Northern Ireland
UPCA	Agreement on a Unified Patent Court
U.S., USA	United States of America

1. Introduction

Despite the EU's tremendous work in legislation harmonization, the area of IP rights assignment in employment contracts remains uncovered. Therefore, the way to overcome divergences in member states legislation and to harmonize the issue of transfer of IP rights from hired inventors/creators on the EU level shall be researched. Additionally, the issue of fair remuneration must be addressed as one leading innovation within the EU and increasing the motivation of employees. Furthermore, the call for harmonization exists due to the crucial importance of the mobility of workers as one of the freedoms of the internal market.

Employee inventions are at the root of technological innovation. This issue affects economic innovation policy and IP protection practice. Between 85% to 90% of the EU member states patented inventions are made by employees working in the future patent owners' research and development and engineering departments.

The legislative regulations of the employees' rights for the inventions vary from one Member State to another. Even though the EU harmonization achieved markable developments in the intellectual property rights field, employment agreements need more attention in the EU. On 11 November 2021, the EU Parliament adopted a resolution on the EU Commission's "Intellectual Property Action Plan for Recovery and Resilience" with a majority and put forward a series of recommendations for future EU initiatives in the field of intellectual property (2021/2007(INI)). Nevertheless, it also needs to reveal the issue of IP rights in employment contracts.

The master's thesis aims to analyze and compare the existing approaches to IP rights distribution in employment contracts in different jurisdictions and scientific developments with a harmonization perspective. Furthermore, to select the best practices and elaborate the recommendations on their elimination.

The methodological basis of the research was a system of philosophical, general scientific, and special legal methods. The general scientific method of dialectical cognition became fundamental in this system. It made it possible to fulfil the scientific tasks defined in the thesis in the unity of their social content and legal form. With the help of the historical method, the development of IP rights in employment contracts in the USA and Europe was studied

(paragraph 2). The system-structural method was used to characterize current legal regulations of IP rights issues in employment contracts on examples of copyrights, patents, and trade secrets (paragraphs 3, 4). The comparative legal method was applied during the analysis of the legislation of different jurisdictions concerning IP rights in employment agreements (paragraph 3). The methods of induction and deduction helped to consider the trends of contractual and legal regulation of IP matters in contracts based on the analysis of foreign experience (paragraph 3). Using the logical method made it possible to reveal the divergences over the employee invention laws within Member States and the goals of balancing the interests of employer and employee in acquiring IP rights, which also may co-exist with different national regulatory regimes (paragraph 5). The modeling method was used to develop proposals for the main principles which may create the basis for EU harmonization of IP rights in employment contracts (paragraph 6).

Apart from integral parts of the table of contents, such as a list of abbreviations, the bibliography, and abstract, I would like to represent the master thesis as follows. Paragraph one is the Introduction. The second paragraph presents historical and theoretical grounds of IP matters in employee-employer contractual relations. Furthermore, the third paragraph aims to demonstrate the current regulatory grounds of IP rights in employment contracts on the examples of copyright and patents. In the fourth paragraph, the author covers the legal issues of trade secrets and non-competition clauses in such agreements, which also affect IP matters and the free movement of workers within the internal market. The fifth paragraph analyses current theoretical approaches to developing main principles, which may become a basis for EU harmonization in IP rights in employment contracts. Finally, paragraph six deals with the concluding remarks and recommendations.

After analyzing legal sources and scientific literature, it is possible to develop the basic principles that may create a ground for EU harmonization in IP rights in employment contracts.

2. IP rights in employment contracts – historical and theoretical developments

IP law's foundations which have their roots in the 16th and 17th centuries led to the Berne Convention and Paris Convention at the end of the 19th century. In contrast, Labour law regulations appeared much later and followed its path starting in the 19th century.

The development of labour and intellectual property laws took different paths during the late 19th century. Labour law developed towards collective solutions and relations where trade unions were recognized as legitimate representatives for workers. In contrast, the development in IP law strongly emphasized and focused on the creative individual. The author, the inventor and the creator were, with very few exceptions, the heroes of the developing IP law¹.

The legal recognition of the employment contract presupposed the idea of a society where citizens were formally equal before the law. In the period before World War II, the issue of employee inventions was, with some rare exceptions, not an issue for labour law since "workers" or "employees" very rarely made inventions.

Norwegian researcher Ragnar Knoph has described the legal situation of engineers and other white-collar workers in the 1920s in Norway, but also more generally on an international level, with particular attention to Germany, in a small book published in 1928. According to Knoph, the right to inventions for employed engineers was essentially regarded as a contractual issue. There was a tradition in older contracts that the engineer assigned all inventions they might do during their employment to the employer firm. But Knoph also noted that it had become more common for attention also to be paid to the interest of the inventor in these contracts. For instance, Knoph describes the arrangements used in the 1920s by Norsk Hydro, where a special inventor's clause was included. Under this clause, "All inventions made during the time of employment became the employer's property if the exploitation of it was regarded as relevant for the company's activities". The inventor, however, was entitled to get his name mentioned as the inventor in the patent application and other relevant documentation as long as this did not create complications or problems for granting the patent or the possible further assignment

¹ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021)
<<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023.

of the patent rights. Furthermore, the inventor was entitled to some form of remuneration when the company could exploit the invention, the amount of which was to be decided by the company.

Ragnar Knoph discussed at length the contractual validity of clauses that gave the employer full entitlement to all future inventions made by the engineer regardless of their relationship to the tasks and activities of the engineer in his job for the employer. His starting point from a Norwegian and Nordic standpoint was that such an agreement could not be regarded as automatically null and void, but it might be challenged on specific clauses in contract law. For instance, it might be against good faith (*tro och heder*) to invoke it in certain situations. Knoph also advocates that the employer's entitlement to the invention is a derivative one, always a transfer from the inventor/employee to the employer². He also presented an extensive discussion on how to evaluate the situation when there are no contractual stipulations concerning the contract. Here he is advocating a large margin for the judge to find a hypothetical or concluding clause in the contract due to an analysis of the circumstances in the concrete case.

Knoph is also referring to the development in Germany, where already in the early 1920s, there had been some collective agreements or *tarifverträgen* (collective agreements) for certain groups of employees, sometimes with academic education. Already here, the grouping of three categories: *Betriebserfindungen*, *Diensterfindungen* and *freie Erfindungen*, is very relevant.

The *Betriebserfindung* (*mission invention*) was regarded as the result of ordinary work based on tasks given to the employee. In respect of the *Diensterfindungen* (*employment-dependent invention*), the employee played a significant role as inventor and was entitled to be mentioned in the patent application and also to get extra compensation. The *freie Erfindungen* (*free inventions*) were not regarded as having a relevant relationship to the employment and the rights to the invention stayed with the inventor, although the employer had a priority to acquire rights to it.

² Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021) <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023.

In the U.S., where the bulk of industrial inventions were made in the 20th century, the approach was similar to that in Europe. In the U.S., developing the "shop right rule" in situations where an invention had been made during employment without any contract governing the matter offered some guidelines on the right to the invention. The shop right rule had no impact on the original right to the invention vested with the inventor. The effect of the shop right rule was that it prevented the employee from asserting his patent monopoly against his employer and thus gave the latter a license to practice the invention. The scope of the license, usually defined by the employment relationship, preserves to the employer the fruits of the labour which it can be shown that he hired (thus, he need not pay twice: once as compensation for the labour and then again for a license to use the invention)³.

The shop right rule can be described as the right of an employer to use the inventions and improvements of the employees on a nonexclusive basis without compensation to the employee. Inherent in applying the rule, however, is the occurrence of events that trigger the rule. The courts have yet to completely agree on the type or nature of circumstances that establish the shop right, and two separate theories have been utilized. The initial version of the rule required the employer to establish that the employee had developed the invention on the employer's time and had consented or acquiesced to the employer's use. The more modern version of the rule only requires that the employee used the employer's materials or that the employer bore the expense of implementing the invention. The rule is limited to inventions which relate to the business of the employer and, by definition, is limited to a nonexclusive license to the employer and does not transfer ownership of the invention to the employer.

Although the rule is applicable to situations where employees are specifically hired to invent something, the primary thrust of the rule is centered on cases where the inventions were developed by employees not specifically required by their jobs to invent or make improvements⁴.

³ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021) 6.
<<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023.

⁴ Sandrock, Scott P, 'The Evolution and Modern Application of the Shop Right Rule' *The Business lawyer* (1983, Vol.38 (3)) 954-955.

Employers need a shop right for protection as a defense against an infringement claim of a patent issued to their employees or assignors in case, they failed to secure ownership of the employee invention through an express assignment contract. The shop right rule not only protects these law firms but also encourages them to reach agreement for the ownership⁵.

The shop right rule in the USA application was developed through court decisions, but it is still quite challenging nowadays. Thus, it depends on the circumstances of how the invention was created. That leads to the conclusion that it is still important to draw attention to the contract to make it clear and beneficial in employment relations between employee and inventor and state IP rights' entitlement assignment.

To summarize with a little conclusion, it is possible to outline the main achievements in historical and theoretical developments in IP rights in employment contracts.

Thus, for the European legal doctrine of the 1920th, it was already developed a list of basics for IP rights in employment contracts, namely: (1) the right to inventions for employed persons was regarded as a contractual issue; (2) the assignment of all inventions that he/she might do during the period of his/her employment to the employer firm; (3) all inventions made during the time of employment became the property of the employer if the exploitation of it was regarded as relevant to the activities of the company (in relation to the company's activities); (4) the interest of the inventor in these contracts must be drawn; (5) the right of the inventor to get his name mentioned as the inventor in the patent application and other relevant documentation; (6) the inventor was entitled to some form of remuneration when the company could exploit the invention, the amount of which was to be decided by the company; (7) the view that the employer's entitlement to the invention is a derivative one is always a transfer from the inventor/employee to the employer.

Furthermore, attention was drawn to the different types of contracts covering the IP rights between employees and employers – individual employment agreements and collective agreements. Additionally, the distinction between different inventions in correlation to the work duties of the inventor was drawn.

⁵ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 397-398.

Namely, the three categories of inventions arise in the context of employment agreements: (1) mission inventions (inventions made as a result of ordinary work based on tasks given to the employee, no mentioning of the inventor's name, remuneration included in salary); (2) employment-dependent inventions (the employee played a significant role as an inventor and was entitled to be mentioned in the patent and to get extra compensation); (3) free inventions (not regarded as having a relevant relationship to the employment of the invention, and all rights to the invention stayed with the invention).

3. Current legal grounds of IP rights in employment contracts in different jurisdictions

Many improvements have been made in IP protection around the globe, but the inventorship-ownership issues in employer-employee relations still significantly vary.

However, inventorship is the starting point of the ownership and the ownership is a fundamental issue to give a basis to claim the right of intellectual property. Allocation of the ownership of inventions resulting from the employment ('employee inventions') between the employee inventor and the employer directly relates to a basic policy question for the patent system, promoting innovations through encouraging inventions and commercialization. Despite the necessity for harmonizing the ownership allocation rule, each jurisdiction adopts its own rule and mechanism to transfer the ownership to employers. In addition, the rule for employees' rights to compensate the transfer of ownership differs from one jurisdiction to another⁶.

The law of employee inventions still needs to be harmonized in the EU intellectual property protection system. Even though the national regulation of the question varies significantly, it is important to stress that 80-90 per cent of innovation by patentable inventions depends on the creative activities of employees in industry and research organizations. Consequently, this causes harm to both injustice to creativity and affects the functioning of the EU's Internal Market as an innovation market based on dynamic competition and free movement of workers. According to Art. 45 TFEU '1. Freedom of movement for workers shall be secured within the Union. 2. Such freedom of movement shall entail the abolition of any discrimination based on nationality between workers of the Member States as regards employment, remuneration and other conditions of work and employment'.

Germany represents a most advanced legal system providing detailed rules for balancing interests between employers and their employee inventors through the enhancement of the Employee Invention Act ('EIA'). Unlike many other jurisdictions, the German EIA is separate from Patent Act. Reflecting an essential public policy under German Labour Law, EIA clarifies that any agreement between an employee and employer conflicting with a provision in EIA

⁶ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 366.

and detrimental to the employee's rights is void and thus extensively limits the freedom of contract between employers and employee inventors.

In contrast, the freedom of contract governs ownership of employee inventions under the U.S. Patent Law, which is the paradigm of a patent system in common law countries. Another relevant common-law country is the United Kingdom. The U.K. employee invention system is based on the freedom of contract and shares many similar features with U.S. patent systems. No statutory provision exists to control the ownership of inventions resulting from employment relationships except for federally funded inventions under the Bay-Dole Act.

On its face, U.S. and German systems are so different that it seems impossible to reconcile their basic principles. However, some other jurisdictions have employee invention systems which are hybrid in incorporating various features from both U.S. and German systems. The French system is an excellent example of such a hybrid. Their rules of ownership and compensation for inventors share common features with the regulations under U.S. and German employee systems⁷.

The USA and common law countries approach. Freedom of contract and 'shop right rule'.

In the United States, only a natural person or plural natural persons can be the sole inventor or joint inventors, excluding the possibility for a non-human legal entity, such as a corporation, from inventorship. Thus, the examination of the ownership always starts from the determination of inventorship. It is important to note that the inventorship issue 'who is true and original inventor or inventors?' is a separate question from the ownership issue, 'who owns property rights in the invention made by the inventor(s)?'⁸.

Moreover, In the USA a freedom of contract regulates the IP distribution in employment agreements. IP assignment clauses are used because, by default under U.S. Law, IP is owned by the inventor not the employer. There is a limited exception to this principle. In situations where an employee specifically hired to solve a particular problem to create a specific invention, the invention is owned by the employer (the specially hired to invent doctrine). But

⁷ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 367-368.

⁸ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 369.

if someone is merely hired to participate in research and development, not create employer-specified inventions (the hired to invent in general doctrine), then he/she owns her own inventions in the absence of an IP assignment. Those inventions made partly or wholly at the employer's expense but not at its specification are the property of the employee-inventor. Unlike patent law, copyright law has a work-made for hire doctrine, where the employer can own the copyright outright, but much like an IP clause, the employer must make an agreement with the author to gain ownership rights. Without an IP assignment clause, an employer generally does not own inventions that are created using the employer's time and resources ('consistent with the presumption that the inventor owns his invention, an individual owns the patent rights even though the invention was conceived and/or reduced to practice during the course of employment'). In the absence of an IP assignment agreement, if the invention was created within the scope of employment and using company resources, the employer will receive 'shop right', which allows the employer to use the invention as if it had received a nontransferable, nonexclusive license. But relying on the shop right limits the employer's right to the employee's IP, since the employer only receives a nonexclusive license to use the invention. The employer cannot license the shop right to other entities, transfer the license to a subsidiary or parent company, or sell the invention. Thus, employers use IP assignment clauses to ensure full ownership of employee inventions⁹.

Unlike many civil law jurisdictions, employers are not required to pay any additional compensation as consideration for a transfer of rights in the invention. This is because US courts view the payment of salary, assistance of co-employees, and right to use an employer's facility constitutes sufficient consideration¹⁰.

In most research environments today, employers require employees involved in research-related activities to assign their inventions to the employer, although some state laws limit such agreements to inventions developed within the scope of employment or developed using the employer's facilities. Even where no express agreement has been signed by an employee, patents invented by the employee may nonetheless be deemed to have been assigned where an

⁹ Elisabeth Knuppel, "'A Mortgage on a Man's Brain': Unconscionability of Overly Broad Intellectual Property Assignment Clauses in Employment Contracts'. (*Texas Law Review, Austin*, Vol. 100. Issue 5. April 2023), <https://texaslawreview.org/a-mortgage-on-a-mans-brain-the-unconscionability-of-overly-broad-intellectual-property-assignment-clauses-in-employment-contracts/> 10 June 2023 1-2.

¹⁰ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 373.

employee has specifically been employed to invent in the field in which the invention was made. In these circumstances, a court may imply an assignment clause into the employment contract¹¹.

Germany and supremacy of EIA employee invention act. Limited freedom of contract.

The fundamental rule that ownership of invention is exclusive to the inventor remains. Germany has a separate legislative act which regulates employee inventions – EIA. Under the German EIA, the patent law rule that inventors are original owners prevails over employment law. However, it guarantees employers a right to claim a transfer of the ownership of employees' inventions.

Under EIA, patentable inventions are further classified into two types: service inventions and free inventions. An invention made during employment is a service invention if (1) it resulted from the employee's tasks in the employer's business or public administration or (2) it is essentially based upon the experience or activities of the employer's business or public administration. Any other inventions that do not fall into the definition of service invention are free inventions.

Concerning a service invention, EIA guarantees the employer's right to claim ownership of all property rights in the invention. A failure to exercise the claiming right may lead to a forfeiture of the employer's right in the ownership of service invention under the EIA. The German EIA has provided that inventor-employees could retain rights in the ownership if their employers did not exercise their claiming rights within the 'four months from the receipt of a proper report'. It gave employees the freedom to assign ownership to a third party, including the employer's competitor. EIA also covers the issue when employers are unfamiliar with EAI requirements and may have failed to secure the ownership of employee inventions. To remedy this problem, the German EIA represents a declaration to confirm that the employer would not exercise their rights and thereby release rights in the invention within months from the receipt of the report submitted by the employee. This assumption made German EIA's ownership transfer mechanism complete in protecting employers from losing their rights in service inventions, which result from their negligence or ignorance of EIA provisions.

¹¹ Menell P Scotchmer S, *Intellectual Property* (Forthcoming Handbook of Law & Economics., University of California Berkeley 10 June 2005).

In return of transfer of rights through an exercise of claiming right also results in a variety of obligations on employers. These duties give rise to a variety of employees' rights for protecting their interests. The most important is the right for protecting employee-inventors' interest is a right for compensation, which resulted from the transfer of invention ownership to the employers. The EIA imposes a duty on employers to pay a reasonable remuneration or compensation. However, an employee cannot enforce this right unless the employer begins practicing the invention. The EIA requires employers to consider multiple factors including: (1) commercial applicability of the invention; (2) duties and position of the employee; and (3) contribution by the employer for calculating the compensation¹².

So, employment inventions in Germany are regulated by a separate legal act, which prevails over labour law. On the one hand, the approach is well-balanced and protects employees-inventors' right to fair remuneration. On the other hand, it contrasts with the freedom of contract approach.

France. Hybrid approach.

In France, the ownership rules for inventions are provided in the French Intellectual Property Code ('IPC'). The French system follows the same fundamental rule that the ownership of invention is, in principle, vested in the inventor. However, this fundamental rule is significantly modified because the French IPC allows ownership of invention vested in employers if inventions made by an employee fall into the definition of 'mission invention'. Although only a natural person or persons can be sole inventor or joint inventors and has a right to be named as the inventor, employers, including a legal entity, can be the original owner of the invention made by their employees. The ownership of an invention is assignable before and after a patent application. French IP law provides clear rules to remove a conflict of employee invention ownership with labour law. Namely, using the hybrid of the USA and German systems because: (1) freedom of contract prevails with respect to mission inventions, while (2) the labour and employment law and patent law policy prevails with respect to beyond mission inventions. The French IPC classifies inventions into three categories: (1) an inventive mission invention; (2) a beyond mission invention; and (3) free inventions¹³.

¹² Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 378.

¹³ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 380-381.

French rules for compensating inventor-employees are also a hybrid of US case law and the German EIA: Like the German EIA, the French IPC limits freedom of contract and requires employers to pay additional compensation for the ownership of invention concerning mission inventions. Different methods and approaches to calculating the payment exist.

Moreover, for 'beyond mission inventions', the French IPC requires employers to pay a fair price if employers exercise their right of claim to transfer the ownership of an invention or grant of license. Among other approaches, parties can agree to set a fair price amount via a two-step process: (1) a payment of a preliminary lump sum amount, which the employer expects to be the profits resulting from the future exploitation of the invention when he exercises the right to claim the ownership of invention, and (2) adjustment of the preliminary amount at the end of a period that the parties agreed on to set the final amount by taking into account the exploitation of the invention during the period.

The additional compensation and the fair price under the French IPC sound similar to the compensation for service inventions under the German EIA. However, they differ from the German EIA because an employee can enforce his rights of compensation and fair price even before his employer starts practicing the invention. Moreover, the French IPC does not impose any duty on employers for filing domestic and foreign patent applications. This follows that French employee's rights for compensation and fair price do not depend on a patent grant. These rights are not based on the monopoly principle for sharing from an exclusive right, which is a stark contrast to the right of reasonable compensation under the German EIA¹⁴.

Summing up the above, common law and civil law vary in their approaches but not significantly. For the thesis, it is relevant to notice the differences in the legal regulation of EU Member States. Among the primary features of German and French employee inventions' legal regulations, it is relevant to stress differences in terminology, legislative level, and approach to remuneration.

¹⁴ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 386-387.

Employee invention legal regulations within the Member States of the EU.

According to recent research by H. Ullrich concerning the harmonization of employee invention laws in the EU, the striking differences between legal regulation on the matter within Member States appear.

The approach in national legislation varies. The status of the employed inventor and, accordingly, that of his inventions may depend on the particular nature of the employment. Namely, while private and public employment relations are covered, the latter generally follow a specific sub-regime. Also, the scope of application of regulations on employee inventions, typically according to whether the regulation is part of general patent law or set up by a separate legislative act: the former tends to focus solely on patentable inventions; the latter might extend the regime, e.g., to invention-like but non-patentable technical teachings. So, the regime varies among Member States on the grounds of private and public employment inventions. E.g., French Code de la propriété intellectuelle (CPI), art. L 611-7, para. 1 to 3 (private employment) and para. 5 with art. R611-11 to R611-14 CPI (public employment); §§ 1 to 39.

German Employee Inventions Act (Gesetz über Arbeitnehmererfindungen - ArbEG - of 25 July 1957, as last amended 31 July 2009) cover private employment; §§ 40, 41 provide for a sub-regime for public employment inventions. Inventions made by employees in public research institutions are subject to the special regime of § 42 ArbEG that has taken the place of the former exemption of inventions made by university professors (so-called "professors' privilege"). In France, university inventions and the like are covered by particular rules outside the CPI. Art. 65 of the Italian Codice della proprietà industriale (c.prop.ind.) also provides for a special regime of inventions made in employment relationships with universities or public research institutes; it is particularly favorable to the inventor-researcher¹⁵.

Similarly, while, for the purpose of deciding on the attribution of the right to inventions made by employees, most Member States distinguish between inventions made in fulfillment of the duties of the employee under his employment relationship ("mission- invention") and other inventions made incidentally as a result of the employment ("employment-dependent invention") or independently thereof ("free inventions"), the definition of these categories may

¹⁵ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 11-12.

differ from one national law to the other. Accordingly, the legal position of employers and employees will vary, since, as a general rule, the employer will be attributed the title to mission inventions whereas in respect of employment-dependent inventions it will only have an option to obtain the title, and, as regards free inventions, it will have hardly any rights. In addition, Member States' laws differ as to the way the title to an employee invention is attributed to the employer - *ex lege* or only upon the employer specifically claiming title to the invention. Typically, title to mission inventions is attributed *ex lege* to the employer whereas it may obtain title to employment-dependent inventions only upon request. However, under German law the employer always needs to expressly claim the title, be it a mission or an employment-dependent invention. The practical consequences of the different ways of attributing title to the employee invention are in part differences of handling costs and legal certainty, in part differences of substance¹⁶.

Interflow and collaboration of researchers expand beyond borders. Conflicting employee invention ownership rules present a serious challenge in managing intellectual property to multinational firms and public research institutions. To try to cope with this challenge, legal professionals use a choice of law provisions in employment contracts. Courts may not enforce the choice of law provisions in employment contracts. Courts may not enforce the choice of law provisions because of the public nature of the intellectual property. Only a global harmonization of ownership rules can effectively address the challenge of intellectual property management¹⁷.

Consequently, the differences in employment invention law provisions among Member States could be more beneficial for global collaboration and expansion of innovation. The choice of more beneficial national law regulation may affect the choice of base for the research or innovation production location. Additionally, it results in limits on employees' mobility.

¹⁶ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 11-12.

¹⁷ Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013) 400.

3.1. Copyrights

The historical development of copyright may be shortly presented in three stages, namely recognition of the author's moral rights, recognition of economic rights, and maintenance of the author's rights after his death by his successors.

The European tradition on copyright places a strong emphasis on the individual creator and author of works that could be protected by copyright. It was therefore quite consistent to argue that an author, under copyright law, must always be a physical person who is entitled to moral rights. The European traditional approach to copyright does not allow for corporations to become authors. Therefore, the right to a protected work originally had to be the entitlement of the individual author, while the employer or parties that had commissioned the activity which resulted in this work could only achieve derived rights based on contractual agreements¹⁸.

Regarding employee IP, against this background, it is necessary to note that the essential issues a legal system has had to address include, at least, whether employees, as creators obtain any rights to works, they have created. Here it is possible to see that they usually get the recognition right or the right to attribution and an original entitlement. There must be an assignment whereby rights are transferred from the employee to the employer. The exception is a legal fiction, where the employer, by law, is made the 'creator' of such works.

There are several options as to how the assignment can be made. Contractual means are most common, but there is a wide variety as to how these contractual arrangements can be regulated, from complete contractual freedom to different restrictions or guidelines. Presumptive rules or implied rules are common; if nothing is agreed, the right to the employee-created work or invention is considered to have been transferred. The presumptive rule might also include parallel rights, shop rules which can give the employer a right to exploit IP although the 'ownership' stays with the employee. There can be different kinds of time limits involved: the employer may be given a reflection period during which IP can be claimed. The assignment of moral rights has to be evaluated separately from the issue of economic rights. But even with

¹⁸ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 12.

economic rights, there might be some restrictions, and there might exist a residual remuneration right that is left after the transfer of certain exclusive rights (so called unwaivable rights¹⁹).

The issue is of interest primarily regarding the law applicable to the first ownership of copyright in a work. In that regard, the attitude between Member States shows strong divergences: whereas some apply *lex protectionis*²⁰ also to ownership, others emphasize that in view of the universal nature of copyright, and for reasons of practical convenience, it is preferable to subject the question of who has acquired authorship in a work to one single law, namely the law of the country of origin.

The difference becomes particularly relevant in relation to countries where, in contrast to most EU Member States, copyright in a 'work made for hire', i.e., a work made in course of employment, is vested in the employer. Other than in (continental) Europe, this means that the 'author' of a work, in a legal sense, is not necessarily the personal creator, but can also be a company financing and organizing the work, e.g., film production company. Accordingly, if *lex originis*²¹ is applied as the law determining first ownership, a court adjudicating on infringement of a work created in a country where the work made for hire doctrine applies will be forced to deny the right to claim authorship to the person by whom the work was created, even though under domestic law, the principle of personal authorship would be governing.

In practice, however, the conflict is rarely as acute as the theory might suggest. In most cases, what is at stake in infringement cases are the economic rights of exploitation, and those rights are regularly transferred by the personal author to the company commissioning the work so that, as a result, the differences between the systems will not be of practical relevance. However, the issue may become topical when the 'moral rights' of authors are at stake, such as the right to be named or to oppose the distortion, mutilation, or similar modification of the work (*droit moral*, Article 6 bis Berne Convention). Under the law of EU Member States applying *lex protectionis* to first ownership, such rights would not be denied to the personal

¹⁹ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 17.

²⁰ *Lex loci protectionis* – the law of the place of protection. The law of the jurisdiction in which property. (Especially intellectual property) is legally registered or protected...

²¹ *Lex originis* – the law of origination. The law of the jurisdiction in which property originated. For example, if intellectual property was first invented or fixed on a tangible medium in State A, and the alleged infringement occurred in State B, it is permissible for a court of State B seized of an infringement claim to apply its own law....

creators of works originating from countries where the work-for-hire doctrine applies, whereas a different result would ensue in principle from the application of *lex originis*. On the other hand, even Member States applying *lex originis* as the general rule with regard to ownership may be inclined to grant at least some protection to personal authors in such cases based on considerations of public policy.

At the current moment, despite all harmonizing efforts mentioned, which the EU Commission now calls the 'European regulatory framework', there still is a lack of harmonization in at least two aspects. First, many areas – most notably moral rights, limitations and exceptions including private copying, certain related rights as well as copyright contract law – remain largely if not totally unharmonized. Second, even as regards the areas that have been harmonized by the EU copyright Directives, national laws may differ from each other, either because Member States have made different use of implementation options provided for by the Directives themselves, or because the statutory language implementing the Directives varies depending on each Member State's national legislative language tradition. Of course, since an increasing number of cases concerning the interpretation of harmonizing Directives are referred by the Member State's national courts to the CEJU, the decisions handed down by the CJEU substantially contribute to further harmonizing the application of Member States' national copyright laws²². Moreover, the existing principle of territoriality of copyright, namely copyright is not universal but limited in its effect to the territory of the state under the laws of which it has been granted. As an effect – national character exists if not rights are created which take effect throughout EU, copyright granted in certain country only has effect in this country. Consequently, the same work is protected by different laws in each EU Member State (national copyright rules apply within territory of a certain Member State).

Furthermore, according to the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, the following statements are relevant.

'4) A harmonised legal framework on copyright and related rights, through increased legal certainty and while providing for a high level of protection of intellectual property, will foster substantial investment in creativity and innovation, including network infrastructure, and lead

²² Kur A Dreier T, Luginbuehl S, *European Intellectual Property Law* (2nd edn, Edward Elgar Publishing Limited 2019) 293-294.

in turn to growth and increased competitiveness of European industry, both in content provision and information technology and more generally across a wide range of industrial and cultural sectors. This will safeguard employment and encourage new job creation.

(6) Without harmonisation at Community level, legislative activities at national level which have already been initiated in a number of Member States in order to respond to the technological challenges might result in significant differences in protection and thereby in restrictions on the free movement of services and products incorporating, or based on, intellectual property, leading to a refragmentation of the internal market and legislative inconsistency. The impact of such legislative differences and uncertainties will become more significant with the further development of the information society, which has already greatly increased transborder exploitation of intellectual property. This development will and should further increase. Significant legal differences and uncertainties in protection may hinder economies of scale for new products and services containing copyright and related rights.

(11) A rigorous, effective system for the protection of copyright and related rights is one of the main ways of ensuring that European cultural creativity and production receive the necessary resources and of safeguarding the independence and dignity of artistic creators and performers'.

To sum up, the thesis is crucial that despite all harmonizing efforts within the EU, there still needs to be harmonization in moral rights recognition and copyright contract law. The need for harmonization on the EU level in copyright is clearly stated, aiming for creativity and innovation, increased competitiveness, and new job creation encouragement. The delay in harmonization activities will negatively affect the free movement of workers and the transborder exploitation of intellectual property. Additionally, harmonizing copyright in employment contracts will increase cultural creativity and independence, and dignity among creators.

Furthermore, according to Recital 3 (objectives) of the Digital Single Market Directive, 'Rapid technological developments continue to transform the way works and other subject matter are created, produced, distributed, and exploited. New business models and new actors continue to emerge. Relevant legislation needs to be future-proof so as not to restrict technological development. The objectives and the principles laid down by the Union copyright framework remain sound. However, legal uncertainty remains for rightsholders and users regarding specific uses, including cross-border uses, of works and other subject matter in the digital environment... In order to achieve a well-functioning and fair marketplace for copyright, there

should also be rules on rights in publications, on the use of works or other subject matter by online service providers storing and giving access to user-uploaded content, on the transparency of authors' and performers' contracts, on authors' and performers' remuneration, as well as a mechanism for the revocation of rights that authors and performers have transferred on an exclusive basis'.

So, the DSM Directive additionally stresses the need for legal certainty of the author's contracts and remuneration. Furthermore, the exception to the copyright of the author is reflected in Art 2(3) Software Directive: (Employee-created computer programs): 'Where a computer program is created by an employee in the execution of his duties or following the instructions given by his employer, the employer exclusively shall be entitled to exercise all economic rights in the program so created, unless otherwise provided by contract.' But no other equivalent provision on the EU legislative level for employee-created works, in general, is provided.

Since before the adoption of the DSM Directive there was little EU law concerning copyright contracts, the number of CJEU cases addressing this issue are rather limited and only concern issues that arise with regard to contractual relationships within the diverse Directives. This might, of course, change if the rules concerning copyright contracts proposed by the Commission in its copyright package in order to protect the financial interests of authors and performers are adopted²³.

To sum up, a list of issues is unharmonized in the copyright law within the EU. The very little regulation concerning employee copyright in Software Directive does not solve the issue. The need for harmonization is clear. The main principles for the harmonization on the EU level concerning copyright to be covered: (1) principle of authorship; (2) principle of author's remaining the moral rights in full range; (3) rules of assignment (acquiring) of economic rights to the employer; (4) different types of employee involvement into work while copyright created, in analogy with range of employee invention approach (mission works, employment-dependent works, free works); (5) principle of fair remuneration of author; (6) legal certainty in authors' remuneration; (7) legal certainty of authors contracts.

²³ Kur A Dreier T, Luginbuehl S, *European Intellectual Property Law* (2nd edn, Edward Elgar Publishing Limited 2019) 387.

3.2. Patents

To begin with, according to Article 4ter Paris Convention: ‘Patents: ‘The inventor shall have the right to be mentioned as such in the patent.’ Currently, in European patent law, in the general European approach, it has, however, been discussed whether the inventor must also be the first applicant for the patent. Still, it has generally been accepted that a legal person can also, through an assignment, obtain the right to apply. Also on the assignment issue, we find largely divergent approaches in Europe, from the Nordic idea that an employer can unilaterally take on the rights to an invention to other demands for real assignments, sometimes separately for each means of disposal of the invention (right to use or exclusive right to use). All in all, the core right of the inventor is to be acknowledged as the inventor and to apply for a patent²⁴.

Furthermore, the inventors' rights and obligation in employment relations will be analyzed. Based on the historical roots, natural persons (inventors) used to be the primary subjects of rights to inventions, utility models, and industrial designs, whereas legal entities may obtain the rights on patent on the grounds of the contract or law.

In some jurisdictions the scope of application of regulations on employee inventions may vary, typically according to whether the regulation is part of general patent law or set up by separate legislative act: the former tends to focus solely on patentable inventions; the latter might extend the regime, e.g., to invention-like but non-patentable teachings. For instance, art. L 611-7 CPI covers only titles to industrial property as defined by art. L 611-2, i.e. patents and utility models (certificats d'utilité), whereas § 1 ArbEG extends the scope of the ArbEG to so-called “technical improvement proposals” in order to entitle the proponent to a remuneration in case the proposals conveys on the employer a preferential market position that is equivalent to that of a patent (§ 20 ArbEG). Consequently, although by definition not patentable (§ 3 ArbEG), such technical instructions must be unique or invention-like in the sense of relative novelty and inventiveness²⁵.

²⁴ Niklas Bruun, Marja-Leena Mansala, ‘Chapter 1: Foundations of Labour and IP Law’ (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 13-14.

²⁵ Ullrich H, ‘Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy’ (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 11.

Furthermore, in respect of Article 60 EPC:

'1) The right to a European patent shall belong to the inventor or his successor in title. If the inventor is an employee, the right to a European patent shall be determined in accordance with the law of the State in which the employee is mainly employed; if the State in which the employee is mainly employed cannot be determined, the law to be applied shall be that of the State in which the employer has the place of business to which the employee is attached.

2) If two or more persons have made an invention independently of each other, the right to a European patent thereof shall belong to the person whose European patent application has the earliest date of filing, provided that this first application has been published.

3) In proceedings before the European Patent Office, the applicant shall be deemed to be entitled to exercise the right to a European patent'.

Consequently, the article 60 EPC does refer to the principle of territoriality and the ownership for patent must be determined according to the State of main employment of employee inventor or the State in which the employer has the place of business to which the employee is attached. In the context of functioning of internal market and prospective for the European patents with “classic” unitary effect (“unitary patents”) and European patents, this approach seems to be largely challenging.

Moreover, most Member States in employment inventions outline the distinction between (a) mission invention - invention made in fulfilment of the duties of the employee under his employment relationships; (b) employment-dependent invention – invention made incidentally because of the employment; (c) free invention – inventions created independently from employment.

The definition of these categories differs from one national law to the other. Consequently, the legal position of employers and employees will vary since, as a rule, the employer will be attributed the title to mission inventions. In contrast, regarding employment-dependent inventions, they will only have the option to obtain the title, and as regards free inventions, they will have hardly any rights.

Typically, title to mission inventions is attributed ex lege to the employer whereas it may obtain title to employment-dependent inventions only upon request. However, under German law the

employer always needs to expressly claim the title, be it a mission or an employment-dependent invention. The practical consequences of the different ways of attributing title to the employee invention are in part differences of handling costs and legal certainty, in part differences of substance. Under a regime requiring the employer to specifically raise its claim to the title, the employer may also be under a duty to actually apply for patent protection and to maintain the patent, once granted, on the register. Conversely, the employee may itself seek protection should the employer abstain from taking title to patent protection or abandon it²⁶.

To sum up the abovementioned, acquiring rights for employee inventions are partially differences in substance and partly differences in legal certainty.

According to Article 60 (1) EPC, while confirming the principle that it is the inventor who is entitled to obtain patent protection for the invention (“inventor principle”), its 2nd sent. provides only for a conflicts-of-laws rule regarding attribution of title to inventions made by employees. The principle is that the law of the state applies in which the employee is mainly employed, by default, the law of the state in which the employer has the place of business to which the employee is attached.

Furthermore, to establish uniformity of the substantive conditions of the grant and validity of European patents (Arts. 52-56, 83, 138 EPC), the EPC harmonizes the term of protection (Art. 63), the extension of the scope of process patents to products directly resulting from the process (Art. 64(2)), and the determination of the scope of the patent in general (Art. 69 - interpretation of claims). National laws follow these rules also as regards patents granted nationally.

EU Directive 98/44/EC of 6 July 1998 on the legal protection of biotechnological inventions (OJEC 1998 L 213, 13) has largely harmonized patent protection in its field. Once it is ratified, Arts. 25 to 29 of the Agreement on a Unified Patent Court (UPCA) of 19 February 2013 (OJEU 2013 C 174, 1) will establish uniform infringement law for both European patents and European patents with unitary effect (supra n. 3). Basically, these provisions of the UPCA constitute but a consolidation of existing national laws that Member States have unilaterally and softly harmonized by anticipating the rules that would have governed the Community

²⁶ Ullrich H, ‘Harmonization of Employee Invention Laws: The Black Hole of the EU’s Innovation Policy’ (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 12.

Patent or that are already harmonized by the EU (notably many of the exceptions listed by Art. 28 UPCA)²⁷.

The most debatable question related to employee inventions is whether the employee inventor should be rewarded for 'inventive activity' or not. Many Member States, including Austria, require employee inventors to remunerate for their inventions adequately. The distinction between mission inventions, employment-dependent inventions and free inventions leads to the scope of remuneration.

For example, the German ArbEG is based on the premise that by taking title to an employee invention, the employer will enjoy a particular, legally protected position on the market for the exploitation of the invention and that the employee inventor, who as the author of the invention has to pass the title to protection to the employer, should be entitled to participate in the “extra” benefits flowing from the employer's position of exclusivity. Accordingly, the employee has attributed a right to remuneration as a matter of principle, with the distinction between mission inventions, employment-dependent or employment-related inventions being relevant only to determine the quantum of remuneration.

Given the costs and complications of obtaining, maintaining and enforcing protection of an invention - and frequently enough protecting only a single invention out of a body of technology by only a single patent will not be a commercially viable project in the first place - the hypothesis of the employee stepping in where the employer sees no interest in protecting the invention hardly is a realistic one for employment-dependent inventions, and certainly not for mission inventions (except if the employment relationship is about to come to its end or in case of a spin-off strategy of the employer, and even then the employer is likely to retain at least some control). One may also wonder how art. L 611-7(2) CPI or art. 64(3) c.prop.ind. work in practice, which in the case of employment-dependent or employment-related inventions, respectively, allow the employer to request instead of full property only a license. When reforming the ArbEG in 2009 the German legislature suppressed the availability of such

²⁷ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 10.

a limited option. At least in the private sector it was of little practical importance and tended to block de facto the exploitation of the invention by the employee²⁸.

It is possible to outline two main approaches existing within the EU Member States. Firstly, the principle that the right to a patent belongs to the inventor is common to all EU Member States as regards both European patents (see Art. 60(1), 1st sent. EPC) and patents granted by national patent offices (see § 6(1) PatG (German Patent Act); art. L611-6(1) CPI; art. 63(2) c.prop.ind.). It rests on the inventor's moral right to the invention as a personal achievement. The ArbEG expresses this "exclusivity rule", commonly called the "monopoly principle" (a misnomer since patent protection rarely results in a monopoly on the market), by the employer's duty to apply for and maintain patent protection for the invention (§§ 13 to 16), and by assimilating trade secrets and technical improvement proposals to inventions only if the subject matter qualifies for protection (§ 17) or is equivalent to an invention (§ 20). Also, § 9(2) and the official Guidelines on compensation issued pursuant to § 11 (see infra n. 39) purposely set the commercial value of the invention as the starting point for determining the remuneration. Secondly, by contrast, the distinction between these categories of employee inventions is fundamental for the employee inventions law of many other Member States. It determines the way the employer may obtain title to the employee invention and the nature of the remuneration it has to pay to the employed inventor, if any.

Thus, the general rule for mission inventions is that the employer is attributed title to them ex lege and without any obligation to pay for it, the assumption being that the contractual salary also covers the employee's "inventive activity". It is only if the legislature specifically so provides or if exceptional circumstances exist, such as an obvious discrepancy between the salary and the value of the invention, that the employer has to pay a "supplementary" remuneration. For employment-dependent or employment-related inventions, by contrast, the rule is that the employee retains the title to the invention. However, the employer may request its transfer within statutorily defined delays. If the employer exercises that option, it has to pay

²⁸ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 13-14.

a price for the invention, not merely a remuneration. Still, that price is not the general market price but only one that is set at "equitable" terms²⁹.

In conclusion, it is essential to outline the core principles of patent protection in the context of employment contracts crucial to harmonization. An inventor is a physical person who formulates an idea of the claimed invention (presumption of inventorship). It rests on the inventor's moral right to the invention as a personal achievement. A legal entity may receive the rights to an invention through an assignment or law. The scope of application of regulations on employee inventions varies within Member States. When such regulation is part of general patent law, it affects only patentable inventions. When a separate legislative act sets up the regulation of employee IP rights, the regime is extended to other invention-like but non-patentable teachings. The harmonized approach to employee inventions must consider the distinction between patentable and non-patentable teachings and provide regulation for both.

The distinction between three groups of inventions (mission invention, employment-dependent invention, free invention) must be unified, and the definition must be the same for all the Member States. The principle of remuneration and the general guidance for remuneration of employee inventors are to be set up.

²⁹ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 13-14.

4. Trade secrets and non-competition clauses in employment contracts

There are provisions applicable in the context of employment contracts and IP, which are the most relevant aspect of trade secret protection. On the one hand, trade secrets may be used for non-patentable subject matter. On the other hand, it can be part of the IP protection management of the company not to disclose all the information via failing the patent but to keep secret part of technology and protect it in the form of a trade secret.

Moreover, from the employee perspective, IP assignment provisions in most cases are not negotiated and included in the contract on a 'take it or leave it' basis. Additionally, the IP assignment clauses are regularly signed at the beginning of employment, and the employee does not know the value of the IP they are giving to an employer.

Post-employment contract restrictions, including but not limited to non-competes and non-solicitation clauses, became a standard practice in specific industries. In the USA, the unfair use of non-compete agreements was found to negatively affect low-wage workers' economic mobility and precluding their ability to overcome poverty. Well-known experience of the state of California and the 'Silicon Valley Approach' where non-competes are not enforceable was caused by the desire to increase innovation and to let employees further develop their ideas. In other words, the motto of this movement is - don't steal when you go, but when you go, you may use your knowledge. This movement was a massive step for the industry that forced innovation.

Human capital contracts are difficult to interpret in large part because of relational opportunism. Employment contracts are traditionally vague and open-ended because the parties prefer the flexibility inherent in the evolving relationship. The agreement resides in a few policy statements but the actual terms unfold over time, and the concrete terms are not present at the point of entry. The questions about what knowledge is secret, what has been developed by the employee, what the competition looks like, and what investment has been made in the employee's human capital are all aspects that cannot be known until the end of the relationship³⁰.

³⁰ Lobel, Orly, 'Enforceability TBD: from status to contract in intellectual property law' *Boston University law review* (Boston, 2016, Vol.96 (3)) 885.

Furthermore, employers also want to resort to non-competes to ensure that up-to-date knowledge is not transferred to the new employer. Employees are more vulnerable in negotiating contractual terms. The limits of validity of non-compete clauses or non-compete agreements must be set up. Additionally, in return, an employer also must offer some benefits.

To continue with, a non-compete is a written employment agreement in which an employee covenants at the outset of the employment relationship that they will refrain from competing with the employer in specified ways for a while following the termination of the relationship. However, as the empirical study research shows, human capital and post-employment contracts are broader than merely the iconic non-compete clause. Standard employment contracts commonly include additional restrictions such as non-solicitation, non-dealing, and non-disclosure clauses. Additionally, these contracts frequently include innovation assignment agreements and clauses about loyalty during employment³¹.

The protection of trade secrets attempts to strike a balance between exclusivity on the one hand and access to information on the other. Trade secrets differ from patents and copyrights in that they will not necessarily be made public, and there are no moral rights involved, such as the right to attribution. The employee will usually not get public recognition for having developed a trade secret, but he will for a patentable invention or a significant copyright-protected work. There is no entitlement to extra compensation, although internal reward systems might apply in some organizations. When a trade secret becomes public, it is free for everyone to use, and the investments made in developing it can usually not be covered³².

Under the para.2 Article 39 of the TRIPS Agreement natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information: (a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily

³¹ Lobel, Orly, 'Enforceability TBD: from status to contract in intellectual property law' *Boston University law review* (Boston, 2016, Vol.96 (3)) 874.

³² Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 30.

accessible to persons within the circles that normally deal with the kind of information in question; (b) has commercial value because it is secret; and (c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

According to para.1 of Art.39 of the TRIPS Agreement, while ensuring effective protection against unfair competition as provided in Article 10bis of the Paris Convention (1967), Members shall protect undisclosed information under paragraph 2. The EU Directive 2016/943 of 8 June 2016 on protecting undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure is a prominent example of the increased attention paid to protecting trade secrets within the EU.

According to point (1) of Article 2 of the EU Directive 2016/943 of 8 June 2016, 'trade secret' means information which meets all the following requirements: (a) it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that usually deal with the kind of information in question; (b) it has commercial value because it is secret; (c) it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

On the one hand, where employees have access to sensitive information, they are regularly subject to a duty of confidentiality during – but also for some time after – termination of their contract. On the one hand, where employees have access to sensitive information, they are regularly subject to a duty of confidentiality during – but also for some time after – termination of their contract.

On the other hand, it would neither be compatible with the fundamental freedom to do business, nor would it benefit the economy if post-contractual non-disclosure or non-compete agreements were to preclude or make it overly complicated for employees to seek new employment or conduct their activities based on skills acquired during their previous employment. While the European legislature acknowledges the crucial importance of such issues, the EU Directive 2016/943 of 8 June 2016 is limited to stipulating in Article 1 (3) that nothing in this Directive shall be understood to offer any ground for restricting the mobility of employees. Concerning the exercise of such mobility, this Directive shall not offer any ground

for (a) limiting employees' use of information that does not constitute a trade secret as defined in point (1) of Article 2; (b) limiting employees' use of experience and skills honestly acquired in the normal course of their employment; (c) imposing any additional restrictions on employees in their employment contracts other than restrictions imposed in accordance with Union or national law.

Additionally, the Directive makes a strong statement in Article 14 (1): "Member States may limit the liability for damages of employees towards their employers for the unlawful acquisition, use or disclosure of a trade secret of the employer where they act without intent." To highlight one more time, trade secret protection has many advantages in contrast to patent protection, namely the non-disclosure of information. But this is not an advantage for the fields where reverse engineering will quickly discover how the invention works. That is very true for the software world. Trade secrets work well when it can be kept confidential.

Moreover, from the employees' point of view, strong trade secrecy protection needs to be revised. It is not always easy to draw the line between, on the one hand, trade secrets and, on the other, experience and skills gained by employees in the ordinary course of their employment or information generally known among, or readily accessible to, persons within the circles that typically deal with the kind of information in question.

For an employee, it is also a problem that, by definition, the author or inventor of a trade secret will not obtain general recognition or attribution for their achievement. It is possible to internally cooperate to reward an inventor or author of a trade secret. Still, there are no legal obligations for the employer to introduce such systems at the EU level.

There is a very close link between intellectual property rights and trade secrets in the sense that the employer always has a choice to either patent an invention or keep it as a trade secret. The problem in such a situation of confidentiality is of course that the moral rights of the inventor will not be respected. No one will know the identity of the inventor in a situation where nobody knows about the invention. It is easier to guarantee the employee's economic rights in such a situation; the legislators in some countries have expressly stipulated that when the employee is of the opinion that he/she has made a patentable invention, but the issue will never be tested due to the fact that the employer decides not to disclose the invention, the invention shall be

dealt with as if it was patentable unless the employer is able to bring evidence showing that this is not the case³³.

The knowledge of the trade secret might in a complicated way be part of the intellectual capital of the employee. It is a challenge for modern IP and labour law to introduce some rights for an employee whose right to mobility has been restricted to gain some financial compensation. In fact, development regarding the regulation of non-competes indicates that employers requiring long abstention from working for competitors will have to pay compensation to their former employees³⁴.

In such circumstances, the countries developed and continue to evaluate different approaches to non-compete clauses regulation. Namely, the actions to reassess the legitimacy of non-compete clauses in many countries took place because non-competes restrict employees' mobility in the labour market, especially for professional workers. On the other hand, there is some evidence that non-competes might promote the willingness of employers to train and educate employees besides being regarded as an essential tool by which trade secrets can be protected.

As a result, non-competes have lost legitimacy because professional workers can no longer count on job security and long careers with the same employer. In such a situation, where mobility is a new norm, non-competes should be restricted to a minimum and only be used when they are regarded as necessary.

The general trend is towards restricting the scope of application and use of non-competes. On the other hand, there is a general trend opposite direction by strengthening the protection of trade secrets and especially the means and tools that the employer can use when an unjustified disclosure of a trade secret has taken place³⁵.

³³ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 27.

³⁴ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021), <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 33.

³⁵ Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021),

In such a framework, employers must grant new benefits such as a promotion, additional training, or a change in compensation, commission, duties, or nature of employment. For example, suppose an employer wishes to add a non-compete clause to a fully integrated and executed employment contract. In that case, the employer must offer the employee additional benefits as consideration for the clause. Allowing the employee to keep his job is insufficient consideration for the added non-compete clause and would be unenforceable in jurisdictions that follow this rule.

As the recent example, it is relevant to mention that Federal Trade Commission (the USA) proposed a new rule that would ban employers from imposing noncompetes on their workers, a widespread and often exploitative practice that suppresses wages, hampers innovation, and blocks entrepreneurs from starting new businesses. By stopping this practice, the agency estimates that the new proposed rule could increase wages by nearly \$300 billion per year and expand career opportunities for about 30 million Americans. Namely, The Federal Trade Commission proposes to add a new subchapter J, consisting of part 910, to chapter I in title 16 of the Code of Federal Regulations: 'Add new subchapter J, consisting of part 910, to read as follows: Subchapter J Rules Concerning Unfair Methods of Competition³⁶'. Currently this is on the stage of receiving proposals but the course to include the non-competes into the list of unfair methods of competition is clearly stated.

Furthermore, among Member States of the EU position of non-competes significantly vary. Despite a transparent element of restraint of (cross-border) trade, the EU still needs to attempt to harmonize the national laws. In some the EU Member States, it is much easier (and cheaper) for businesses to impose non-compete agreements on employees than in others. There is no level playing field for companies in the EU in this area. In the Netherlands, for example, the only statutory requirement for non-compete clauses is formal: the clause needs to be in writing and signed by an adult employee. The court can partly or entirely nullify unreasonable non-compete provisions, which require (costly) employee litigation. The result of a court case is usually hard to predict since it depends on the circumstances of the case (and perhaps

<<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023 29.

³⁶ 'FTC Proposes Rule to Ban Noncompete Clauses, Which Hurt Workers and Harm Competition' *Federal Trade Commission* (5 January, 2023), <<https://www.ftc.gov/news-events/news/press-releases/2023/01/ftc-proposes-rule-ban-noncompete-clauses-which-hurt-workers-harm-competition>> accessed 10 June 2023.

sometimes on the judge as well) whether the non-compete clause is found reasonable. In the best scenario for the worker, the clause is declared void by the court, but with no compensation for the worker for being bound to an excessive or unjustified non-compete clause. Compared to, for example, Germany or Belgium, where financial compensation for the worker is required for the clause to be enforceable, the legal position of the worker in the Netherlands is much worse.

The absence of the EU involvement is notable, especially considering that the EU has taken steps to unify the laws on non-compete clauses in a few specific areas. The Directive 2008/104/EC on temporary agency work is significant since it requires the Member States to ensure that any clauses prohibiting or having the effect of preventing the conclusion of an employment relationship between the user undertaking and the temporary agency worker after his assignment are null and void (Article 6 (2)). Furthermore, Directive (EU) 2019/1152 on transparent and predictable working conditions regulates the competition of employees working multiple jobs (i.e., parallel employment, Art. 9), explicitly aiming to diminish the employers' possibility of prohibiting workers from working for other employers during the occupation. Regulating (possible) competition after employment is a small step from there, but this step was not taken.

Furthermore, the freedom to choose an occupation and the right to engage in work are fundamental rights. When employees do disclose trade secrets or compete with their former employer in another wrongful way, then they can be held liable (in court) for performing a wrongful act. In addition, there already exists the EU Directive 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure³⁷.

All in all, attention must be drawn to banning non-compete clauses or setting a legal framework for the use of non-compete clauses to protect workers' freedom, rights, and mobility within the EU.

³⁷ Nuna Zekić, 'Non-compete clauses and worker mobility in the EU' (*Global Workplace Law & Policy*. Wolters Kluwer, 30 November 2022) <<https://global-workplace-law-and-policy.kluwerlawonline.com/2022/11/30/non-compete-clauses-and-worker-mobility-in-the-eu/>> accessed 10 June 2023.

To sum up the abovementioned, even though trade secrets fit poorly into the general system of intellectual property law. Because trade secrets law encourages inventors not to disclose inventions, while, for example, for patents, a reward for the inventors is combined with the disclosure to society. Moreover, trade secrets differ from patents and copyrights in that they will not necessarily be made public, and no moral rights are involved, such as the right to attribution.

The area of trade secret protection received the most development from the point of the EU harmonization in the field of trade secret regulation in employment contracts. Namely, the Directive clearly stated what should not be understood as restricting the freedom of establishment, the free movement of workers, or the mobility of workers as provided for in Union law. Nor is it intended to affect the possibility of concluding non-competition agreements between employers and employees under applicable law. The definition of trade secret provided by the Directive excludes trivial information and the experience and skills gained by employees in the ordinary course of their employment and excludes information that is generally known among or is readily accessible to persons within the circles that usually deal with the kind of information in question. Additionally, it does not prevent Member States from providing in their national law that the liability for damages of employees is restricted in cases where they have acted without intent.

On the one hand, the increased protection of trade secrets is perfect for employers but not as beneficial for employees because it is impossible for them to include such achievements and recognition in their portfolio and to show future employers their achievements and professional progress. On the other hand, that questions the mobility of workers and their free movement on the job market.

In such a situation, where mobility is a new norm, non-competes should be restricted to a minimum and only be used when they are regarded as necessary. Nevertheless, job mobility is a fundamental element of economic growth and innovation worldwide; it has increased meaning within the European internal market. Regarding the above, some important aspects must be regulated on the EU level. Firstly, the issue of rewarding an inventor or author of a trade secret. There are still no legal obligations for the employer to introduce such systems. Considering the nature of trade secrets, where the inventor's recognition in the process of trade secret creation is not possible, the legislation must concentrate on rewards for employee

regulation and provide mechanisms that will be obligatory for employers. Secondly, the limits of validity of non-compete clauses or non-compete agreements must be set up. Additionally, the fair remuneration of the employee in return for such restrictions must be regulated.

5. Perspectives for the EU harmonization concerning IP rights in employment contracts

The divergences between national employee invention laws tend to undermine the optimal allocation of resources regarding research and development and production since they might influence a firm's choices of the location of production and or R and D subsidiaries of facilities. Also, international cooperation between firms of different Member States may suffer from divergences when as inventors, the employees of the cooperating parties have to work together under different regimes. Thus, the availability of uniform patent protection may be negatively affected.

Moreover, leaving Member States' divergent employee invention laws as they stand will result in inconsistencies on the very level of the EU's system of intellectual property protection. For one thing, the acquisition of the title to a European patent with unitary effect, which is granted under the uniform conditions of the EPC and whose scope and limitations will be uniform throughout its territory of protection (Arts. 3, 5 Reg. (EU) 1257/2012), would be subject to divergent rules regarding the conditions and costs of the acquisition of the title to the invention in the first place. Thus, the availability of uniform patent protection may suffer. For another, while in respect of computer programs that are developed by employed authors Art. 3(3) Directive 2009/24/EC on software copyright harmonizes national copyright laws by attributing the title to the work to the employer, the title to computer implemented inventions, possibly made by the same employee or by a member of its R and D team, will be attributed in accordance with divergent national employee invention laws although copyright protection may be complementary, if not a substitute to patent protection³⁸.

Therefore, the work analyzes recent scientific developments relevant to perspective harmonization. According to H. Ullrich, three general points need to be mentioned. First, under most national employee invention laws, the rules on remuneration and the payment of fair prices are mandatory, and thus, the amount due becomes a matter of judicial control. Second the criteria determining the remuneration or the price, such as the nature of the inventive effort and its relation to the employee's mission, the contributions made by the employer in terms of

³⁸ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 19-20.

the quality of the R and D facilities and of inspiration etc. cut across the categories of inventions, albeit to different degrees.

Third, and related to the former, the very fact that the different concepts, which underlie the national approaches to compensating the employed inventor, have come to be applied in seemingly convergent ways as regards the methods and criteria of determining the level of compensation points to systemic inconsistencies if not to uncertainties regarding the objectives that employee invention laws are supposed to achieve. Thus, although under French law, the “juste prix” usually should be higher than the “rémunération supplémentaire” the former reflecting the value of the invention, the latter only the value added by an outperformance of the employment contract, namely the delivery of a result rather than only the performance of an effort, the judicial practice has come to assess the remuneration by reference also to the economic value that the mission invention has for the employer. Under Italian law, the “German formula” is used for determining the “equo premio” as an “indemnification” to be paid by the employer for acquiring ex lege title to an invention that, in most instances, the employee is not able and or not willing to exploit itself rather than as a remuneration due to the employee for having created an opportunity for the employer to exploit a protectable market position of exclusivity.

According to §§ 22, 23 ArbEG; art. L 611-7, (1st sent.), CPI. However, divergences exist in respect of important details. Thus, under § 22 ArbEG, employer and employee may, after notification of the invention by the employee, agree on terms that are less favorable than those of the ArbEG, provided they are not manifestly inequitable (§ 23 ArbEG).

The overview over the employee invention laws of only some major Member States of the EU shows that the divergences relate to all elements of the regime to which they subject the employed inventor: (1) the scope of the regime *ratione materiae* – only inventions or also nonpatentable subjectmatter; (2) the categorization into mission inventions, employment-dependent or employment-related inventions and free inventions; (3) the attribution of title to the invention and the way it is attributed, including its impact on the autonomy the employer enjoys as to its patenting strategy; (4) the award of a compensation, the nature of the compensation and the determination of its quantum; (5) the forms and delays that the parties must observe to comply with the requirements of information and notification that form part

of their general duty of legal cooperation in this particular area of the employment relationship³⁹.

In the light of the research of N. Bruun and M.L. Mansala, it is possible to outline the goals of balancing the interests of employer and employee in acquiring IP rights, which also may coexist with different national regulatory regimes:

1. It must not restrict the employee's entitlement to recognition for achievements.
2. It must not restrict the possibility for the employer to collect IP's exclusive rights and decision-making (transactions capability) in the very commercial hand.
3. It must be a simple process to determine any compensation for the employee.
4. There must be ways of solving conflicts that create confidence and reliability.

The system of moral rights also protects the authors, and it is clear that in the modern labour market, where employees have to keep themselves competent and update their capabilities to be employable, employees' achievements must be recognized and visible. When it is more challenging to implement in a system where the work made for hire rule prevails, special clauses could do it to give recognition to those physical persons who contributed to creating work. The close link between human and moral rights, or the right to recognition, is worth noticing. There must be recognition, and the right to recognition must be strengthened. Especially in situations where achievements are protected as trade secrets, it isn't easy to see how an efficient right to recognition can be construed, but nonetheless, efforts in this regard should be made.

The need for rightsholders to be able to use a bundle of rights together or split rights up is essential. It is inefficient if many employee rightsholders (globally, even in different countries and jurisdictions) can create "hold-up" situations.

Traditionally, compensation schemes for employee IP have produced fairness by linking the compensation to actual sales of products implementing the invention through licensing agreements. The problem is that things change fast, and corporate structures are continuously restructuring. Unresolved claims regarding employees could be more practical, and licences

³⁹ Ullrich H, 'Harmonization of Employee Invention Laws: The Black Hole of the EU's Innovation Policy' (2022). *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023 17-18.

for employees or former employees are rarely a good solution. Lump sum compensation with a particular clause giving the right to additional remuneration in certain rare situations is the most practical solution and, as a starting point, compensation can and should also be reflected in wages paid to an employee. Claims for compensation need to be resolved in a speedy manner. Too often, the creation of significant IP or a breakthrough invention results in a conflict between the employee and the employer. The conflict can be around compensation, technological development, or both.

The International Association for the Protection of Intellectual Property (AIPPI) resolution Q183 recommends that courts which have jurisdiction in the field of intellectual property rights should also be competent to decide on all disputes between employers and employees over those rights. This is a reasonable demand since these courts usually have knowledge and capabilities to decide such cases. On the other hand, the “battle is lost” when disputes between employer and employee have to be settled by the courts. We need smoother conflict resolution both at company level and at national level. In some countries, bodies for such conflict resolution exist, for instance, the “Employee Inventions Board” in Finland. The use of a Board might sometimes be a rather formal and laborious procedure. We therefore think the use of some kind of arbitration might be a good way forward, especially if costs for such a procedure can be kept at a reasonable level⁴⁰.

In addition, in light of employer's input, in the USA courts attempt to determine reasonableness, they consider more than what was reasonable at the time the contract was drafted. They consider everything that has happened since then, including: (1) what the employee received in terms of training, skills, and trade secrets; (2) the value and contribution efforts of the employee; (3) how long the employee actually worked for the employer; and (4) the employee's possible career plans and options at the point of departure⁴¹.

Moreover, the AIPPI resolution Q183 also adopts the following Resolution: '1) Employer should be granted ownership by contract or law of economic rights in the creations carried

⁴⁰ Niklas Bruun, Marja-Leena Mansala, ‘Chapter 1: Foundations of Labour and IP Law’ (*Elgaronline, Law*, 13 July 2021), <https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml> accessed 10 June 2023 pp.42-45.

⁴¹ Lobel, Orly, ‘Enforceability TBD: from status to contract in intellectual property law’ *Boston University law review* (Boston, 2016, Vol.96 (3)) 886.

out by the employees within the framework of their employment relationship. 2) Courts and authorities which have jurisdiction in the field of intellectual property rights should also be competent to decide on all disputes between employers and employees, with respect to those rights. In those disputes, although a conciliation phase may be desirable in certain circumstances, it should not be mandatory in every case. 3) When a claim of ownership is necessary, the term of limitation should be reasonably short to avoid uncertainty as for the ownership of rights and its financial consequences, if any, and the law should indicate clearly what the starting point of the term of limitation is. 4) Any compensation to the employee for the assignment of the rights for the creation to the employer should be clearly determinable and established in a simple way. 5) The harmonisation of the rules of ownership of intellectual property rights should be encouraged particularly at the regional level and the intergovernmental agreements regulating regional IPR should provide rules on the ownership of those rights. 6) The harmonization of the rules of ownership of intellectual property rights may be advanced by means of rules of presumption and by encouraging the adoption of model standard contract stipulations. 7) There should be clear rules for the assignment of the rights to the employers when such assignment is necessary. 8) Employers' rights to intellectual property should not restrict the employee's entitlement to the recognition of the creative achievement in an appropriate form⁴².

So, for this paper, it is necessary to outline the main issues which may be the basis for the harmonization of intellectual property rights in employment agreements: rules on remuneration and the amount must be unified; the rules for compensating the employed inventor, methods, and criteria for determining the level of compensation must be the same for all Member States; fair remuneration plus supplementary remuneration definition and rules unified; the unified rules or regulations must exclude the possibility to conclude contracts on terms that are less favorable than stated on the EU level; the categorization into mission inventions, employment-dependent inventions, and free inventions must be unified; the attribution of title to an invention and the way it is attributed; the instrument (e.g., arbitration) that serves conflict solving between employee and employer must be launched; the above-mentioned rules must be applicable to copyrights, inventions, and also nonpatentable subject matter.

⁴² The AIPPI resolution Q183 (Yearbook 2004/II, pages 701–702 Congress Geneva, June 19–23, 2004) <<https://www.aippi.fr/upload/Geneve%202004%20Q180%20181%20182%20183/rs183english.pdf>> accessed 12 June 2023.

6. Conclusions

After analyzing legal sources and scientific literature the following conclusions can be drawn from the analysis of the material presented in the master thesis.

The list of basics for IP rights in employment contracts defined by the European legal doctrine of the 1920th: the right to inventions for employed persons was regarded as a contractual issue; the assignment of all inventions that he/she might do during the period of his/her employment to the employer firm; all inventions made during the time of employment became the property of the employer if the exploitation of it was regarded as relevant to the activities of the company (in relation to the company's activities); the interest of the inventor in these contracts must be drawn; the right of the inventor to get his name mentioned as the inventor in the patent application and other relevant documentation; the inventor was entitled to some form of remuneration when the company could exploit the invention, the amount of which was to be decided by the company; the view that the employer's entitlement to the invention is a derivative one is always a transfer from the inventor/employee to the employer. Additionally, the definitions of types of inventions in correlation to the work duties of the inventor were drawn: mission inventions (inventions made as a result of ordinary work based on tasks given to the employee, no mentioning of the inventor's name, remuneration included in salary); employment-dependent inventions (the employee played a significant role as an inventor and was entitled to be mentioned in the patent and to get extra compensation); free inventions (not regarded as having a relevant relationship to the employment of the invention, and all rights to the invention stayed with the invention).

Current legal regulations of the inventorship-ownership issues in employer-employee relations still significantly vary in different countries. Generally, the USA and common law countries' approach presents freedom of contract and the 'shop right rule'. Germany represents the supremacy of the EIA employee invention act and limited freedom of contract, and France follows the hybrid approach.

Concerning the harmonization of employee invention laws in the EU, the striking differences between legal regulation on the matter within Member States appear. Consequently, the differences in employment invention law provisions among Member States could be more beneficial for global collaboration and expansion of innovation. The choice of more beneficial

national law regulation may affect the choice of base for the research or innovation production location. Additionally, it results in limits on employees' mobility.

The main principles for the harmonization on the EU level concerning copyright in employment contracts to be covered namely: (1) the principle of authorship; (2) the author's remaining moral rights in full range; (3) rules of assignment (acquiring) of economic rights to the employer; (4) different types of employee involvement in work while copyright created, in analogy with a range of employee invention approach (mission works, employment-dependent works, free works); (5) principle of fair remuneration of the author; (6) legal certainty in authors' remuneration; (7) legal certainty of authors contracts.

It is essential to outline the core principles of patent protection in the context of employment contracts crucial to harmonization, which must be unified for all the Member States. An inventor is a physical person who formulates an idea of the claimed invention (presumption of inventorship). It rests on the inventor's moral right to the invention as a personal achievement. A legal entity may receive the rights to an invention through an assignment or law. The distinction between patentable and non-patentable teachings and regulation for both. The difference between three groups of inventions (mission invention, employment-dependent invention, free invention). The principle of remuneration and the general guidance for remuneration of employee inventors are to be set up.

For the area of trade secrets and non-competition clauses in employment contracts within the EU, the following must be under control for harmonization. Non-competition clauses (agreements) must be restricted to a minimum and only be used when they are regarded as necessary. The limits of its validity must be clearly defined. Fair remuneration of the employee in return for a trade secret.

Concerning perspectives for the EU harmonization of IP rights in employment contracts based on this paper, it is necessary to outline the main principles which may create the basis for it. Firstly, rules on remuneration and the amount must be unified and the rules for compensating the employed inventor, methods, and criteria for determining the level of compensation must be the same for all Member States. Secondly, fair remuneration plus supplementary remuneration definition and rules unified. Thirdly, the unified rules or regulations must exclude the possibility of concluding contracts on less favourable terms than stated on the EU level.

Furthermore, the categorization into mission inventions, employment-dependent inventions, and free inventions and their' definitions must be unified. Moreover, the attribution of title to an invention and the way it is attributed must be set. Additionally, the instrument (e.g., arbitration) that solves the conflict between employee and employer must be launched. The rules mentioned above must be applicable to copyrights, inventions, and nonpatentable subject matter. Finally, the rules for employee remuneration for trade secrets and the limits of validity of non-competition clauses and non-competition agreements must be set up.

As a general summary, it is relevant to provide policy suggestions. Namely, to create regulation at the EU level concerning IP rights and IP-related clauses in employment contracts to unify the approach to distributing rights and fair remuneration within the Member States based on the abovementioned principles. The regulation must cover copyrights, patents, and non-patentable subject matter. Guidance for fair remuneration and supplementary remuneration must be provided. These developments will result in increased innovation, the rise of research cooperation between Member States and the evolution of the role of employee creator/inventor and their mobility.

The precise formulation of articles for regulation was different from the purpose of the thesis. Nevertheless, the basic principles for it are outlined. Consequently, the regulation's legal norms could be an interesting topic for further papers.

7. Literature

European conventions

- Agreement on a Unified Patent Court of 19 February 2013 (UPC Agreement) [2013] OJ C 175/1
- Convention on the Grant of European Patents (European Patent Convention, EPC) of 5 October 1973

EU legislation

- Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure [2016] OJ L 157/1
- Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC [2019] OJ L 130/92
- Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society [2001] OJ L 167/10
- Directive 2008/104/EC of the European Parliament and of the Council of 19 November 2008 on temporary agency work [2008] OJ L 327/9
- Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs [2009] OJ L 111
- Regulation (EU) No 1257/2012 of the European Parliament and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection [2012] OJ L 361/1

International treaties and agreements

- Agreement on Trade-Related Aspects of Intellectual Property Rights [1994] L 336/214
- Berne Convention for the Protection of Literary and Artistic Works 1886
- Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C 326/49
- Paris Convention on the Protection of Industrial Property 1883
- WIPO Copyright Treaty 1996 [2000] OJ L 89

National legislation

- France Code de la propriété intellectuelle (Dernière mise à jour des données de ce code : 01 juin 2023. Télécharger le code à la date du : 24 Jun 2023)
- Italy Codice della proprietà industriale, a norma dell'articolo 15 della legge 12 dicembre 2002, n. 273 (Entrata in vigore del decreto: 19-3-2005 (Ultimo aggiornamento all'atto pubblicato il 30/07/2021)
- Germany Employee Inventions Act (Gesetz über Arbeitnehmererfindungen, ArbEG - (of 25 July 1957, as last amended 31 July 2009)

Secondary Sources Books

- Bentley L, “Trade secrets. ‘Intellectual property but not property?’” *Concepts of Property in Intellectual Property Law* (Cambridge University Press 2013)
- Bently L Sherman B, *Intellectual Property Law* (Oxford, Oxford University Press 2001)
- Bomhard von V and Mühlendahl A, *Concise European trademark law* (3rd edn, Wolters Kluwer, 2018)
- Brown A E L & Waelde C, *Research handbook on intellectual property and creative industries* (Edward Elgar Publishing, Cheltenham, 2016)
- Bruun N Mansala M L, *Research Handbook on Intellectual Property and Employment Law* (Northampton, England, Edward Elgar Publishing Ltd. 2021)
- Calboli I and de Werra J, *The law and practice of trademark transactions* (Edward Elgar Publishing, Cheltenham, 2016)
- Carlos C and Xavier S, *Intellectual property and development* (Springer, Singapore, 2019)
- Carlos C, *Trade related aspects of intellectual property rights – a commentary on TRIPS* (Oxford University Press, Oxford, 2017)
- Catherina S, *Propertizing European Copyright. History, Challenges and Opportunities* (Edward Elgar Publishing 2018)
- Catherine B, *The substantive law of the EU: The four freedoms* (3rd edn, Oxford University Press, Oxford, 2010)
- Clauwaert S and Schmitt M, *The Charter of Fundamental Rights of the European Union and the Employment Relation* (Hart Publishing 2019)
- Davies C Cheng T, *Intellectual Property Law in the United Kingdom* (Great Britain, Kluwer Law International 2011)

- Dreyfuss R C and Siew-Kuan Ng E, *Framing intellectual property law in the 21st century: Integrating incentives, trade, development, culture, and human rights* (Cambridge University Press, Cambridge, 2018)
- Gervais D, *(Re)structuring copyright* (Edward Elgar Publishing, Cheltenham, 2017)
- Gielen C & von Bomhard V, *Concise European Trademark and Design Law* (2nd edn, Wolters Kluwer, 2017)
- Granstrand O, *Evolving Properties of Intellectual Capitalism. Patents and Innovations for Growth and Welfare* (Edward Elgar Publishing 2018)
- Hugenholtz P B, *Copyright reconstructed: Rethinking copyright's economic rights in a time of highly dynamic technological and economic change* (Wolter Kluwer, 2018)
- Jaeger T, *System einer Europäischen Gerichtsbarkeit für Immaterialgüterrechte: Grundlagen – Struktur-Verfahren* (1st edn, Springer Berlin Heidelberg 2013)
- Justine P, *The subject matter of intellectual property* (Oxford University Press, Oxford, 2017)
- Kazuhide O, *The Right to Employee Inventions in Patent Law. Debunking the Myth of Incentive Theory* (Hart Publishing 2018)
- Kur A Dreier T, Luginbuehl S, *European Intellectual Property Law* (2nd edn, Edward Elgar Publishing Limited 2019)
- Lindner B and Shapiro Ted, *Copyright in the information society, A guide to national implementation of the European Directive* (2nd edn, Edward Elgar Publishing, Cheltenham, 2019)
- Menell P Scotchmer S, *Intellectual Property* (Forthcoming Handbook of Law & Economics, University of California Berkeley 10 June 2005)
- Monotti A, *Employment Law and Intellectual Property Law* (Edward Elgar Publishing 2018)
- Ole-Andreas R, *Property Aspects of Intellectual Property* (Cambridge University Press 2018)
- Ole-Andreas R, *Property aspects of intellectual property* (Cambridge University Press, Cambridge, 2018)
- Pila J and Torremans P, *European Intellectual Property Law* (Second Edition, 2019)
- Ricketson S and Ginsburg J C, *International copyright and neighbouring rights* (3rd edn, Oxford University Press, Oxford, 2019)

- Robert P M. & Seagull H S, *Transnational intellectual property law* (Edward Elgar Publishing, Cheltenham, 2018)
- Rosati E, *Copyright and the Court of Justice of the European Union* (Oxford University Press, Oxford, 2019)
- Shubha G, *Intellectual property and innovation* (Edward Elgar Publishing, Cheltenham, 2017)
- Takenaka T, *Intellectual Property in Common Law and Civil Law* (Edward Elgar Publishing Limited 2013)
- Torremans P, *Research handbook on copyright* (2nd edn, Edward Elgar Publishing, Cheltenham, 2017)
- Toshiko T, *Research handbook on patent law and theory* (2nd edn, Edward Elgar Publishing, Cheltenham, 2019)
- Tritton G, *Intellectual Property in Europe* (London, 2nd edn, Sweet & Maxwell 2002)
- Tritton G Davis R, *Tritton on intellectual property in Europe* (5th edn, Sweet & Maxwell, London, 2018)
- Winfried T & Clemens P, *Unified patent protection in Europe* (Oxford University Press, Oxford, 2018)
- Wolk S Szkalej K, *Employees' Intellectual Property Rights* (2nd edn, Kluwer Law International 2017)

Command papers and Law Commission reports

- Council of the EU, “Conclusions on intellectual property policy and the revision of the industrial design systems in the Union” of 10 November 2020, doc. 12750/20
- EN 2022. Special report. EU intellectual property rights protection not fully waterproof. European court of auditors. <https://www.eca.europa.eu/Lists/ECADocuments/SR22_06/SR_EU-IPR_EN.pdf> accessed 28 June 2023
- European Commission, Communication of 25 November 2020 ‘Making the most of the EU’s innovative potential, an intellectual property action plan to support the EU’s recovery and resilience’, COM (2020) 760
- Green Paper on Copyright and the Challenge of Technology. COM/88/172 of 7 June 1988

- Special report 06/2022: EU intellectual property rights. Protection not fully waterproof. European Court of Auditors. <<https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=61056>> accessed 28 June 2023

Websites and blogs

- ‘FTC Proposes Rule to Ban Noncompete Clauses, Which Hurt Workers and Harm Competition’ (*Federal Trade Commission*, 5 January 2023) <<https://www.ftc.gov/news-events/news/press-releases/2023/01/ftc-proposes-rule-ban-noncompete-clauses-which-hurt-workers-harm-competition>> accessed 10 June 2023
- Bisola Scott, ‘Essential Intellectual Property Clauses in Employment Contracts’ (*Global Law Experts*, 27 November 2019) <<https://www.globallawexperts.com/NewsArticle.aspx?PID=1970>> accessed 10 June 2023
- Christian Meyer, ‘European Parliament: Resolution On The Action Plan For Intellectual Property Adopted’ (*Maiwald Intellectual Property*, 29 November 2021) <<https://www.maiwald.eu/cn/maiwald-blog/european-parliament-resolution-on-the-action-plan-for-intellectual-property-adopted/>> accessed 12 June 2023
- Elisabeth Knuppel, "' A Mortgage on a Man's Brain": Unconscionability of Overly Broad Intellectual Property Assignment Clauses in Employment Contracts' (*Texas Law Review, Austin*, Vol. 100. Issue 5. April 2023) <<https://texaslawreview.org/a-mortgage-on-a-mans-brain-the-unconscionability-of-overly-broad-intellectual-property-assignment-clauses-in-employment-contracts/> 10 June 2023> accessed 10 June 2023
- Ella Bond, ‘Can you use employment and consultancy contracts to protect your intellectual property?’ (*Harper James Knowledge Hub for Growth* 8 April 2022) <<https://harperjames.co.uk/article/protect-your-intellectual-property/>> accessed 28 June 2023
- Helen Snow, ‘Businesses must ensure the ownership of IP rights is made clear to safeguard against claims from employees’ (*People Management*, 18 August 2022) <<https://www.peoplemanagement.co.uk/article/1796129/protecting-intellectual-property-employment-contracts>> accessed 28 June 2023
- Maria del Coro Gutierrez Pla, Lynn Burtchaell, ‘Managing intellectual property rights in innovation: the key to reaching the market’ (*WIPO Magazine, March 2021*. <https://www.wipo.int/wipo_magazine/en/2021/01/article_0009.html> accessed 12 June 2023

- Niklas Bruun, Marja-Leena Mansala, 'Chapter 1: Foundations of Labour and IP Law' (*Elgaronline, Law*, 13 July 2021) <<https://www.elgaronline.com/display/edcoll/9781782547242/9781782547242.00007.xml>> accessed 10 June 2023
- Non-Compete Clause Rulemaking (*Federal Trade Commission*, 5 January 2023) <<https://www.ftc.gov/legal-library/browse/federal-register-notice/non-compete-clause-rulemaking>> accessed 10 June 2023
- Nuna Zekić, 'Non-compete clauses and worker mobility in the EU' (*Global Workplace Law & Policy Walters Kluwer*, 30 November 2022) <<https://global-workplace-law-and-policy.kluwerlawonline.com/2022/11/30/non-compete-clauses-and-worker-mobility-in-the-eu/>> accessed 10 June 2023

Newspaper articles (journal articles)

- Emilie-Pauline Gallié, Legros Diégo, 'The use of intellectual property rights by French firms' (*Research policy*, 25 September 2009)
- 'Employee Invention: Principles Governing the Assessment of Outstanding Benefit to an Employer and the Fair Share of the Employer' *GRUR International Journal of European and International IP Law* (2020, volume 69 (7)) 743
- Christopher Leptien, 'Incentives for employed inventors: an empirical analysis with special emphasis on the German Law for Employee's Inventions' *R&D Management* (Kiel, Germany, May 2007)
- Emilie-Pauline Gallié; Legros, Diégo, 'French firms' strategies for protecting their intellectual property' *Research policy* (Amsterdam, 2012, volume 41 (4)) 780
- Graves, Charles Tait, 'Is the copyright act inconsistent with the law of employee invention assignment contracts?' *New York University, School of Law Journal of intellectual property and entertainment law* (2018, volume 8 (1)) 1
- Guiyang Zhang, 'Employee co-invention network dynamics and firm exploratory innovation: the moderation of employee co-invention network centralization and knowledge-employee network equilibrium' *Scientometrics, Springer International Publishing* (2021, volume 126 (9)) 7811
- John F. Hornick, 'Trade secrets: important weapons in the corporate IP arsenal' *The Licensing journal* (Aspen Publishers, Inc., 2014, volume 34 (8))

- Johnson P, ‘From Banks to Shanks: The history of employee awards for patented inventions under the Patents Act 1977’ *Queen Mary Journal of Intellectual Property* (2021, volume 11 (2)) 124
- Lobel, Orly, ‘Enforceability TBD: from status to contract in intellectual property law’ *Boston University law review* (Boston, 2016, volume 96 (3)) 869
- Marcela Miozzo, Panos Desyllas, Hsing-fen Lee, Ian Miles, ‘Innovation collaboration and appropriability by knowledge-intensive business services firms’ *Research Policy* (Volume 45, Issue 7, September 2016) 1337
- Mark Davison, Ann Monotti, Leanne Wiseman, ‘Patents for inventions: allocation of rights and ownership, the Register and dealings’ *Australian Intellectual Property Law* (United Kingdom, Cambridge University Press, 2015,) 557
- Pavel Svacina, ‘Rewarding employee inventions in corporations: Designing a framework to evaluate adequacy of remuneration and offering an optimal remuneration system’ *European journal of innovation management* (2021, volume 24 (2)) 258
- Roisah K., Utama Y.J., Saraswati R., Whidari Y., ‘Status and contemporary development of employee inventions ownership in G-20 countries’ *European research studies* (2018, volume 21 (2)) 214
- Sandrock, Scott P, ‘The Evolution and Modern Application of the Shop Right Rule’ *The Business lawyer* (1983, volume 38 (3)) 953
- Ullrich H, ‘Harmonization of Employee Invention Laws: The Black Hole of the EU’s Innovation Policy’ (2022) *Max Planck Institute for Innovation & Competition* (Research Paper, No.22-03) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4039627> accessed 10 June 2023

Working papers

- The AIPPI resolution Q183 (Yearbook 2004/II, pages 701–702 Congress Geneva, June 19-23, 2004)
<<https://www.aippi.fr/upload/Geneve%202004%20Q180%20181%20182%20183/rs183english.pdf>> accessed 12 June 2023
- WIPO ‘WIPO Intellectual Property Policy Template for Universities and Research Institutions’ (January 29, 2019) <https://www.wipo.int/about-ip/en/universities_research/docs/ip_toolkit/policy_template.docx> accessed 27 June 2023

Abstract

Despite the EU's tremendous work in legislation harmonization, the area of IP rights assignment in employment contracts remains uncovered. The master's thesis aims to analyze and compare the existing approaches to IP rights distribution in employment contracts in different jurisdictions and scientific developments with a harmonization perspective. Furthermore, it seeks to select the best practices and elaborate on the recommendations for their elimination. Based on this paper, the author outlined the main principles for the basis of the perspective of the EU harmonization in employment contracts. As a result, policy suggestions were provided. Thus, the need to create regulations at the EU level concerning IP rights and IP-related clauses in employment contracts to unify the approach to distributing rights and fair remuneration within the Member States based on the abovementioned principles. The regulation must cover copyrights, patents, and non-patentable subject matter. The aim for guidance for fair remuneration and supplementary remuneration is stated. The significant relevancy of rules for employee remuneration for trade secrets and the limits of validity of non-competition clauses and non-competition agreements are stated. These developments will result in increased innovation, the rise of research cooperation between Member States and the evolution of the role of employee creator/inventor and their mobility.

Key words: *employee inventions, intellectual property rights, employment contracts, inventor principle, EU harmonization.*

Trotz der enormen Arbeit der EU bei der Harmonisierung der Rechtsvorschriften bleibt der Bereich der Übertragung von Rechten des geistigen Eigentums in Arbeitsverträgen ungedeckt. Die Masterarbeit zielt darauf ab, die bestehenden Ansätze zur Verteilung von IP-Rechten in Arbeitsverträgen in verschiedenen Rechtsordnungen und wissenschaftlichen Entwicklungen aus einer Harmonisierungsperspektive zu analysieren und zu vergleichen. Darüber hinaus sollen die besten Praktiken ausgewählt und Empfehlungen für deren Beseitigung erarbeitet werden. Auf der Grundlage dieses Papiers skizzierte der Autor die wichtigsten Grundsätze, die der Perspektive der EU-Harmonisierung in Arbeitsverträgen zugrunde liegen. Als Ergebnis wurden politische Vorschläge vorgelegt. Daher besteht die Notwendigkeit, auf EU-Ebene Regelungen zu Rechten des geistigen Eigentums und Klauseln im Zusammenhang mit geistigem Eigentum in Arbeitsverträgen zu schaffen, um den Ansatz zur Verteilung von Rechten und einer gerechten Entlohnung innerhalb der Mitgliedstaaten auf der Grundlage der oben genannten Grundsätze zu vereinheitlichen. Die Verordnung muss Urheberrechte, Patente

und nicht patentierbare Gegenstände abdecken. Das Ziel einer Orientierung für eine gerechte Vergütung und Zusatzvergütung wird dargelegt. Es wird auf die erhebliche Relevanz von Regelungen zur Arbeitnehmervergütung für Geschäftsgeheimnisse sowie auf die Geltungsgrenzen von Wettbewerbsverbotsklauseln und Wettbewerbsverbotsvereinbarungen hingewiesen. Diese Entwicklungen werden zu mehr Innovation, einem Anstieg der Forschungszusammenarbeit zwischen den Mitgliedstaaten und einer Entwicklung der Rolle des Mitarbeiters als Urheber/Erfinder und ihrer Mobilität führen.

Schlagwörter: Arbeitnehmererfindungen, IP-rechte, Arbeitsverträge, Erfinderprinzip, EU-Harmonisierung.