

Technische Universität Dresden

Institut für Internationales Recht, Geistiges Eigentum und Technikrecht

**Divided and joint patent infringement  
meeting (extra)territorial reach of protection:  
A study of Germany and the United States**

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Master of Laws

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## List of Useful Abbreviations

CAFC / Fed. Cir.	United States Court of Appeals for the Federal Circuit
F.3d	Federal Reporter, Third Series (since 1993)
SCOTUS	Supreme Court of the United States
S. Ct.	Supreme Court Reporter
BGH (FCJ)	Bundesgerichtshof (Federal Court of Justice)
OLG	Oberlandesgericht (Higher Regional Court)
ECJ	European Court of Justice
U.S.C.	Code of Laws of the United States of America
Stat.	United States Statutes at Large
JMOL	Judgment as a Matter Of Law
PatG	Patentgesetz (Patent Act)
EPC	European Patent Convention
UPCA	Agreement on a Unified Patent Court
PABX	Public Automated Branch Exchange
LAN	Local Area Network
RF	Radio Frequency
LATA	Local Access Transport Area (used in US telecom)
TSA	Transportation Security Administration
Rdnr.	Randnummer (margin number)

## Prelude

Patents are (at least to date) territorial rights.<sup>1</sup> They are enforceable in states that each have their own national borders.<sup>2</sup> Despite patent procurement being highly international these days<sup>3</sup>, this is still the case.

However, commerce and exchange of information on the other hand are becoming increasingly global in the modern information economy.<sup>4</sup> In cases of international patent infringement cases, a plethora of questions emerges. Many of those questions deal with some sort of cross-border infringement. They have in the past at least been addressed by national court judges, often with a legal basis in the respective national law, with different outcomes. As will become clear, as seen from a global perspective on the patent system, the current situation leaves room for improvements.

The present thesis wants to address some of these questions first in the light of the current situation of the national states that are undergoing a continuing globalization process. To that end, the thesis tries to disentangle – to possible extent – the different questions of patent infringement in international contexts, although they may often appear in a mixed manner in practical cases. To enable a solid and thorough discussion, clear definitions for different infringement topologies are established. Practical cases may of course very well deal with situations that touch upon several of the questions of e. g. divided infringement, joint infringement, indirect infringement and questions of extraterritorial reach of patent law. It will also become clear that – with Germany being a good example – a strong extraterritorial reach can effectively be introduced by an extensive liability standard involving further parties if these parties happen to reside abroad.

Patents are granted with a certain technical scope of protection. To define that scope of protection, contemporary patents right are equipped with a set of patent claims<sup>5</sup>. What scope of protection to grant for a certain patent is often the practically most important question to be debated and resolved during official patent grant procedures. The underlying idea is to have the claims protect what was actually – that is, objectively – invented<sup>6</sup>, to assign a fair scope of protection to it and thereby to clearly draw a border of what technical teaching is protected as well as what teaching is not protected

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<sup>1</sup> Pila/Torremans, “European Intellectual Property Law”, Oxford, 2016, p.135 para. 1; see also Götting, “Gewerblicher Rechtsschutz”, C. H. Beck, 10th ed., 2014, 3 Rdnr. 2, 7 Rdnr. 9;

<sup>2</sup> *ibid.*, para. 2

<sup>3</sup> see *ibid.*, p.141 section 5.3.1.2

<sup>4</sup> Cogburn, Adeya, “Globalization and the Information Economy: Challenges and Opportunities for Africa”, e.g. p. iv, starting at the bottom, or p. iii, abstract

<sup>5</sup> cf. e.g. Art. 69 EPC, *infra* note 16, § 14 PatG (German Patent Act); see also Pila/Torremans, *supra* note 1, p.143 section 5.3.1.3.2

<sup>6</sup> Keukenschrijver in Busse/Keukenschrijver, 8th ed. 2016, § 14 Rdnr. 19ff (p.494)

and is available to the public - that is, to maximize legal certainty for all involved parties.<sup>7</sup> It may be debated if natural language is really the most suitable tool for the expression of technical teachings. If however the claims shall define the scope of protection, one needs to avoid interpretations and mechanisms that render the effective scope inequitably narrow or inequitably wide. This is an important point to keep in mind: divided infringement, joint infringement, indirect infringement and an extraterritorial reach of patent law may all be seen as mechanism that – in different ways and under different preconditions - extend the effective scope of protection conferred by the patent *beyond* the usual requirement of a complete practice of the protected teaching of the claim wording within the protected territory<sup>8</sup> and by a single infringer<sup>9</sup>. For example, in some court decision reasonings, a certain feature of e.g. a method is attributed to a different party than the one who actually performed it or put it in place<sup>10</sup>, or a certain part of a system is moved to a different country by legal fiction than the country where it is actually physically present<sup>11</sup>.

For this thesis, a focus will be set on the United States of America and Germany as two amongst the most important and active national patent law jurisdictions to date. The most relevant case law that is pertinent to the questions at hand known to the author will be discussed. France and the UK will be mentioned only briefly in the context of extraterritorial reach of national law. National law aspects of direct and indirect infringement will be discussed whenever they become relevant.<sup>12</sup> As a disclaimer, however, any questions that directly relate to the nature of the specific infringing act of “offering for sale”<sup>13</sup> to be prohibited by the patent as enlisted in the respective legal statutes – such as, e. g. offering on the internet, by phone, by letter, which is another very interesting topic regarding international reach of patents – needed to be excluded from this thesis due to the limited available space. These questions go hence beyond the scope of the discussions presented herein.

The main concepts of this thesis are divided infringement, joint infringement and territorial issues. The concept of indirect infringement is a highly related but different concept from divided and joint infringement and hence comes into the discussion at specific points. Finally, suggestions to move towards an improved international patent enforcement that is less prone to be circumvented by national country borders and that is fair and equitable for both patentees and defendants are made.

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<sup>7</sup> *ibid.*, § 14 Rdnr. 18 (p.493)

<sup>8</sup> sometimes referred to as the “all elements rule”, particularly in the United States

<sup>9</sup> sometimes referred to as the “single entity rule”

<sup>10</sup> e.g. *Akamai, Travel Sentry, Lilly, Rohrschweißverfahren* (*infra* notes 71, 89, 94, 177)

<sup>11</sup> e.g. *NTP, Prepaid-Karten II* (*infra* notes 147, 187)

<sup>12</sup> In many cases presented herein, a certain “competition” is present between indirect infringement and a tortfeasorship regarding a direct infringement (which is particularly true for the US where both of these require a finding of direct infringement).

<sup>13</sup> e.g. 35 U.S.C. § 271(a), third in the enumeration; § 9 Nr. 1 PatG, second in the enumeration

## Quick Reader's Guide

This thesis is organized in seven chapters. It follows essentially two “golden threads” with divided/joint infringement being the first and extraterritorial reach of patent law being the other. The thesis aims to examine as well the intersection where these two threads “cross” or overlap.

Chapter I will take the reader on a journey to better understand the bigger picture and motivations. It may be skipped or only studied later. Chapter II will be kept short and is intended to merely provide some definitions to set the stage and for their use in the remaining chapters.

Chapter III equips the interested reader with some background information about patent infringement in the US legal system and in Germany. This information is given for completeness and allow readers to study this thesis as a rather self-contained document. By any person skilled in the field, Chapter III may hence be skipped.

Chapters IV and V constitute the main parts of the thesis. Chapter IV discusses pertinent case law of the United States whereas Chapter V deals with Germany. Although a certain overlap could not be avoided, the decisions in both Chapter IV and V have been grouped to a structure to first cover the divided and joint infringement, followed by the extraterritorial reach of national patent law. A focus for these chapters is set on studying the *factual* decision behaviour of the courts as well as the lines of arguments employed to that end. Therefore judicial opinions are discussed extensively whilst scholarly opinions and other literature are, for the sake of these two Chapters, intentionally kept to a minimum.

Chapter VI provides a comparison of the overall legal situation in the US and Germany. Doctrinal perspectives as well as rather pragmatic ones are taken to study and analyze the overall picture, but also to shed some light on practical consequences for patent applicants and proprietors (as well as possible third-party infringers of patents).

For the doctrinal perspective, it was furthermore found expedient to dive a bit into the delimitation of statutory indirect infringement to contributory liability for a direct infringement by virtue of generally applicable tort law.<sup>14</sup> This is well-motivated since both divided/joint infringement and indirect infringement deal in some way with “performing only in-part” the technical teaching of a protected subject-matter.

We go back to the case law introduced in the previous two chapters and perform a comparative Gedankenexperiment which reassesses the cases in the legal framework of the other jurisdiction, respectively.

Chapter VII finalizes the thesis with conclusions and some suggestions to improve the present situation in the future.

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<sup>14</sup> regarding the U.S., but in particular also regarding the “special” German situation of § 10 PatG (by now present as well in several other European jurisdictions and planned for the Unified Patent Court, Art. 26 UPCA, *infra* note 36)

# CHAPTER I: Motivation: A Glance at the Current State of Patent Litigation in Europe

*This first chapter provides a practitioner's view on the current state of patent litigation in Europe. To that end, this chapter will depart a bit from the core questions of this thesis, but instead try to give a look at the bigger picture. Hence, remarks on questions of international jurisdiction, particularly in Europe, can be found in this chapter. This is a conscious choice, with the intention is to introduce the reader quickly to the topic, "to set the stage" for the later discussions and to raise the reader's awareness for the currency of the problems. The questions raised here are thoroughly readdressed in later chapters and the underlying legal doctrine and policy arguments will be discussed at that point. The reader may – at this own choice – jump right-away to the respective sections which are designed as self-contained to the highest possible degree.*

## European Cross-Border Litigation

The current European approach to cross-border patent litigation suffers from several severe problems. European patents are prosecuted and granted as bundles of national patents that only unfold their effect on national level.<sup>15</sup> Although the European Patent Convention<sup>16</sup> provides for some guidance as to the interpretation and the claim construction<sup>17</sup> and substantive patent law has been fairly well harmonized to a high degree, the larger part of both attorney work and freedom of interpretation and application of law in infringement lawsuits are left for the national authorities of the member states construing and interpreting according to national law.<sup>18</sup> As a result, even in cases corresponding to one and the same European patent that has been granted with the same scope throughout the territory of all participating EPC member states, there are chances for different outcomes in different countries from the same circumstances and facts.<sup>19</sup> Effectively, there is hence a high risk for divergent

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<sup>15</sup> see Article 2(2) EPC, *infra* note 16, see also Article 64(1) EPC

<sup>16</sup> Convention on the Grant of European Patents (European Patent Convention) of 5 October 1973, current to the latest revision of 29 November 2000, available at <https://www.epo.org/law-practice/legal-texts/html/epc/2016/e/ma1.html> [hereinafter: EPC]

<sup>17</sup> Article 69 EPC, *supra* note 16, and Protocol on the Interpretation of Article 69 EPC, see also Article 164(1) EPC; note also Article 64(2) EPC which gives however no further practical guidance as being already a minimum standard for WTO member states (Article 28(1)(b) TRIPs Agreement)

<sup>18</sup> Article 64(3) EPC, *supra* note 16

<sup>19</sup> see also Hölder, "Patent litigation nowadays requires more insight and creative Imagination than ever before", Leaders League Intelligence Report & Directory Series 2017, p.315

decisions.<sup>20</sup> The extremely different procedural rules of each country, e.g. in civil procedure, provide for an additional huge contribution to the resulting non-uniformity and furthermore demand for the appointment of experts of legal procedure of each country in order to sue efficiently for infringement or e.g. to efficiently defend internationally based on grounds of invalidity.

Due to continuing globalization, international exploitation of patents plays an increasingly important role. This is particularly true in Europe where the long term goal of a free internal market of goods and services needs to be complemented by effective enforcement strategies throughout the territory.

Legislative measures have been put in place a long time ago to facilitate cross-border legal remedies and enforcement throughout the European Union. For the case of intellectual property, and specifically patents, the regulations of Brussels Ia<sup>21,22,23</sup> and Rome II<sup>24</sup> are particularly relevant to international legal cases within Europe wherein, in essence, the former provides rules to find a forum that has jurisdiction whereas the latter should be consulted regarding what law, i.e. the (substantial) law of which member state, to apply.

## European Patents: Jurisdiction and Invalidity Defense

The value of the regulations mentioned as tools for the consolidation of the legal European society and the efficacy of legal relief can probably hardly be overemphasized in general. However, for the cross-border litigation of *patents*, several problems have proven to be a severe burden. Two of the most significant relate to the fact that patents are territorial rights entered into each national register.<sup>25</sup> This is particularly even true for European patents, i.e. patents that are granted, usually in most cases with a unique scope of claim protection for all countries, resulting from a single patent granting process.

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<sup>20</sup> Cremers et al., Patent litigation in Europe, European Journal of Law and Economics, August 2017, Vol. 44, Issue 1

<sup>21</sup> Regulation No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (recast) [hereinafter: Brussels Ia, I bis or Brussels I (recast)]

<sup>22</sup> for torts, see particularly Art. 7 No. 2 giving jurisdiction to the *forum delicti commissi*; with *favor actoris* between the place of the event giving rise to the damage (“Handlungsort”) and place where the damage occurred (“Erfolgsort”, damages restricted to the respective member state), s. ECJ C-21/76 - Handelskwekerij Bier ./ Mines de Potasse d'Alsace

<sup>23</sup> including predecessor regulations and convention as well as the Lugano II Convention which acts as a supplement for geographical extension

<sup>24</sup> Regulation No. 864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations [hereinafter: Rome II]; see particularly Art. 8 (principle of *lex loci protectionis*)

<sup>25</sup> see also *Pila/Torremans*, *supra* note 1, p.28 section 1.3.3

The first one relates to the interpretation of Article 8<sup>26</sup> Brussels Ia as it is currently established by the European Court of Justice (ECJ). In the past, the provision (and its predecessors) have successfully been applied to sue in a country where the defendant is not domiciled. Based on a close legal connection<sup>27</sup> as to the claims and parties, a joinder of lawsuits was able to be performed. In this way, it was possible to consolidate the procedures against several connected defendants and avoid different outcomes on essentially same or highly similar and related matters of dispute in different member states.<sup>28</sup> The effectivity of these legal instruments is however today seen as to have been drastically reduced, primarily due to interpretation provided by the ECJ.<sup>29</sup>

The second issue stems from Article 24 Brussels Ia as it is in force today. Essentially, merely a *raised defense*<sup>30</sup> based on invalidity in an infringement suit suffices to put an end, by virtue of Article 27 Brussels Ia, to EU-wide jurisdiction for the case.<sup>31</sup>

The regulations and jurisprudence practically confine the international court competence in patent matters that is left to preliminary measures only.<sup>32</sup> For main proceedings, two powerful mechanisms are available to the defendant(s) to break the cross-border jurisdiction apart: either based on their splitting of legal entities<sup>33</sup> and/or by the mere raising of an invalidity defense<sup>34</sup>.<sup>35</sup>

A Unified Patent Court in Europe may for a certain number of countries being part of the EU pursuant to an agreement<sup>36</sup> in the foreseeable future be established or not<sup>37</sup>. Although the above described problems can partly be resolved by a unitary patent, i.e. within the EU<sup>38</sup>, the controversy towards the remaining EPC countries and non-EPC countries will remain. There is likely rather little to happen since particularly the Brussels Ia regulation would remain unaffected by the latest UPCA.<sup>39</sup>

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<sup>26</sup> *supra* note 21, Article 8

<sup>27</sup> cf. also the German expression “Konnexität” for this legal relation between cases

<sup>28</sup> In particular, Dutch courts became well-known to utilize these legal instruments in cross-border cases, specifically in conjunction with their “spin in het web” doctrine.

<sup>29</sup> ECJ, Roche Nederland ./. Primus, C-539/03

<sup>30</sup> *supra* note 21, Article 24 No. 4

<sup>31</sup> cf. also ECJ, GAT v LuK, C-4/03, prior to its statutory codification in Brussels Ia

<sup>32</sup> affirmed by ECJ, C-616/10, Solvay SA ./. Honeywell Fluorine Products Europe BV

<sup>33</sup> hence “no close connection” under Brussels Ia

<sup>34</sup> A strict *raised defense* (“Einrede”) suffices, particularly there is no need to attack the registered patent.

<sup>35</sup> Note in this context how the CJEU has “reconciled” intellectual property with Art. 345 TFEU, by distinguishing IP right *existence* from *exercise*; see e.g. Schütze, “European Union Law”, Cambridge, 2<sup>nd</sup> ed., 2018, p. 541, and references therein

<sup>36</sup> Agreement on a Unified Patent Court [UPCA], available online at <https://www.unified-patent-court.org/sites/default/files/upc-agreement.pdf>

<sup>37</sup> mainly hindered by Brexit and the lack of a proper German ratification due to German constitutional complaints, for Brexit see England, “A Practitioner’s Guide to European Patent Law, Hart Publishing, 2019, p.348ff

<sup>38</sup> given the remaining EU Member States would join

<sup>39</sup> *supra* note 36, Article 31 UPCA; see also Art. 71a-d Brussels I (recast)

## Cross-Border Infringement

Another major problem in international patent law and enforcement that fundamentally relates to territoriality is – apart from the above jurisdiction issues, to which it can however be non-trivially linked – the issue of a literal *cross-border infringement* situation.

In a classical situation of patent infringement, i.e. the situation the laws were originally designed for, an infringer produces the *whole* of a patent-protected device or performs the *whole* of the steps of a protected method, *in* the country of territorial protection. However, not only has international trade gained in importance and protection of the same invention in several countries, preferably with a harmonized scope of protection, has become standard IP practice of internationally operating companies and multi-nationally operating groups – the nature of inventions in the modern information society has to a large part shifted to modern electronic and computer-implemented inventions that bear an additional risk to “escape” from territorial protection by performing parts of the invention somewhere abroad on non-protected territory. For example, given the internet and mobile phone network today, a situation can easily be conceived where an invention could be *used*<sup>40</sup> on a standard mobile phone device whereas e.g. parts of the claimed subject-matter would be realized in another country. Several such cases will be discussed in the case law parts of this thesis.

## Interests at Stake

Pertinent questions hence relate to “extraterritorial” protection of inventions – an extension of protection beyond its proper territory<sup>41</sup> - as well as divided/joint infringement, thereby always having in mind that a fair balance needs to be taken, properly weighing the interests between essentially the patentee on the one side and third parties and the public interest on the other side. Trying to render the public interest more tangible for the sake of this introduction, consider e.g. a simple situation where a patent has been granted with a scope of protection being narrower than what would have been necessary since, for example, unnecessary features and limitations have been added. Many countries require – due to legal certainty for third parties and public – that the scope not be broadened a posteriori. Loosely speaking, it is the applicant’s (or his or her patent attorney’s) “own fault” during prosecution of the

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<sup>40</sup> here referring to the standard meaning of the word “use”, without any legal meaning yet to be implied

<sup>41</sup> Peukert, A., “Territoriality and Extraterritoriality in Intellectual Property Law”, in: Handl, Zekoll, Zumbansen (eds.), “Transnational Legal Authority in Age of Globalization”, Leiden/Boston, 2008, 189, (“II. Extraterritorial Reach of IP Laws”, 200ff)

invention. The underlying argument may similarly prove valid in cross-border situations.

Last but not least, the autonomy of countries must always be taken into account in international constellations.<sup>42</sup> This may make treaties necessary to implement good cross-border protection and legal relief.

On the side, all of these considerations may also be combined with all sorts of different types of infringement, e.g. by taking into account, as one example, the doctrine of equivalents in cross-border situations, yielding very interesting thought patterns. Since the space allowed for this thesis work is however constrained, it cannot be addressed as part of this work.

### Towards the Topic of This Thesis

This thesis deals with the aspects of divided and joint patent infringement on the one hand and with extraterritoriality aspects of patent infringement, e.g. infringement across borders, on the other hand. The particular goal is to gain insights from both of these aspects and possibly combine them into reasonable legislative advice, with the aim to be able to provide a solid patent protection of modern contemporary and future inventions irrespective of national borders.

One of the main pillars and justification of comparative law is to learn from others and their experiences. That is particularly true since laws cannot be tested very well in a simulation or a laboratory. And as it comes to patent legislation, we must admit that we even fail to measure the economic effects – positive or negative – and implications of the presence or absence of a patent system as a whole.<sup>43</sup>

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<sup>42</sup> *cf.* Holbrook, “What counts as extraterritorial in patent law?”, 25 B.U. J. Sci. & Tech. L. 291 (2019), 291, 293

<sup>43</sup> F. Machlup, “An Economic Review of the Patent System”, 1958, 85th Cong., 2d sess. Committee print, U.S. Gov. Printing Office, Wash. 1958

## CHAPTER II: Taxonomy of Joint and Divided Infringement

### Definitions

In the literature and even the jurisprudence, the terminology of “divided infringement” and “joint infringement” are often used interchangeably. They are indeed closely related.

It is proposed to draw a line between these two.<sup>44</sup>

Divided infringement shall denote an infringement topology where one party controls another in a way so that the actions of the controlled party are attributable to the party in control. There is hence only one party who is to be held liable as a potential infringer. See e.g. *Akamai*<sup>45</sup> for a question of divided infringement.

Joint infringement on the other hand shall denote an infringement topology where two (or potentially even more) parties act, more or less symmetrically, together based on an agreement. In a joint infringement case, both parties shall be equally liable (joint and severally liable<sup>46</sup>) as potential infringers since they infringe an IP right jointly, that is, together.

Both divided and joint infringement can appear in national or cross-border contexts and may hence touch upon the question of the territoriality context and the extraterritorial reach of patent law.

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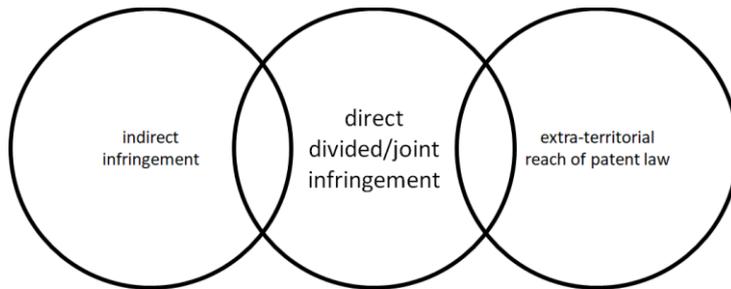
<sup>44</sup> The reader will find that not all decisions and literature agree on this distinction. Sometimes, one term actually means the other. In some further cases, both terms are even used interchangeably.

<sup>45</sup> *Akamai*, *infra* note 71

<sup>46</sup> gesamtschuldnerisch

## A simplified illustrative picture

For the reader who fears to “get lost” between the different types of infringement, (nationally varying) types of indirect infringement as well as tortfeasorships, their topologies and how they may interplay and influence each other, the following Venn-type diagram – which is oversimplifying, but quite illustrative – may be regarded as helpful.



Regarding the divided and joint infringements, the present discussion most often refers to a direct patent infringement. Method steps or parts of a system are provided by different legal entities.

The extra-territorial reach (right circle) extends the territorial reach, e.g. via specific statutes or via attribution of acts, wherein practical questions often involve a question of direct infringement. Both the mid and the right circle have in common that, by virtue of law, acts or parts of systems will be attributed to another place or another entity respectively, e.g. based on where or for whom a benefit occurs by using a patented invention.

Extra-territorial divided/joint infringement is easily conceivable.

The indirect infringement (left circle) has a strong interplay with the divided/joint infringement as well. The indirect infringement can be in principle independent from, as e.g. in Germany, or dependent on the finding of a direct infringement, as e.g. in the US (comprising both induced and contributory infringement). The direct infringement may therein well be given by a divided/joint infringement, opening the door for very interesting interplay.<sup>47</sup>

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<sup>47</sup> see e.g. *Lilly v. Teva*, *infra* note 94, for a three-party interplay with a finding of indirect infringement for one party based on a finding of direct infringement being divided between the two others

## CHAPTER III: Patent Infringement in the United States and Germany

### Patent Infringement Suits in the U.S. Legal System

The United States of America (US) practise a so-called common law legal system. Comparative studies regarding civil and common law systems can e.g. be found in *Rheinstein*<sup>48</sup>, or in a context of IP in *Takenaka*<sup>49</sup>.

A particular feature of common law systems is however that not only statutory laws, for example as bills that have been passed by U.S. Congress, but also decisions of courts are regarded as law, hence strictly forming part of the body of available and applicable law. Such type of law is often referred to as case law and the case law applicable to a certain case is called a precedent.

In this system, usually the decisions of the higher courts are binding on the lower courts.<sup>50</sup> A higher court (e. g. an appellate level court) can overrule a lower court's decision if the judges consider the decision wrong and thereby remove the lower court's decision from the body of law. Alternatively, a higher level court may distinguish their present case from another decision by highlighting the differences in the case. In that case, both decisions remain applicable law.

A court on a certain level, e. g. appellate level, is also bound by its earlier decisions (*stare decisis*). An exception to this rule is the so-called *en banc* hearing. In an *en banc* hearing, an appellate level court will have a judicial hearing with usually all judges of the court rather than just a panel, and has the power to "rewrite the law" by deviating from its earlier decisions.

Entry level court decisions are not regarded as law, given their nature to not be binding to anyone.

Regarding the enactment of laws, a distinction is to be drawn between the actual bill that was passed<sup>51</sup> and a later codification<sup>52</sup>. In referring to a U.S. law or codification, the currentness of the document can be of high importance.

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<sup>48</sup> M. Rheinstein, "Common Law and Civil Law: An Elementary Comparison," 22 *Revista jurídica de la Universidad de Puerto Rico* 90 (1952)

<sup>49</sup> T. Takenaka (Editor), *Intellectual Property in Common Law and Civil Law*, 2013, *Research Handbook on Patent Law and Theory: Second Edition*, 2019

<sup>50</sup> given they are arranged in the hierarchy so that the higher court could review a lower court's decision. If this is not the case, the decision may not be binding, however still be persuasive.

<sup>51</sup> e. g. bills of Congress published in *Stat.* (United States Statutes at Large)

<sup>52</sup> e. g. the Code of Laws of the United States of America (United States Code, U.S.C.)

The US practices a federal judicial system whereas each of its states practices an additional state judicial system. Which of the systems is competent to hear a particular case is usually determined by means of subject-matter jurisdiction. This includes first and foremost the actual subject-matter of the case in a narrow sense, but other mechanisms are available, e.g. diversity jurisdiction<sup>53</sup>.

As a side remark, the US patent system has during the past decade undergone important changes, first and foremost by the America Invents Act (AIA)<sup>54</sup>. This law has taken a huge impact on the US patent prosecution system, particular on what is prior art, how it is to be dealt with and the swearing back of prior art, changing the US system from a true First-to-Invent to a First-Inventor-to-File system. This had lead to further harmonization of rules between the US and the “rest of the world” (First-to-File being most dominant system in the world). Critics argue that the US have gone “half the way” only. The AIA and the transitory provisions are necessary to be kept in mind when studying the (parts of) US decisions that address the patent (in)validity.

## U.S. Venue in Patent Matters

In patent matters, the federal court system has jurisdiction. This choice has its root in the U.S. Constitution. Accordingly, Congress<sup>55</sup> is given the power “to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”<sup>56</sup>. An infringement law suit is brought to one of the district courts, given that it has venue<sup>57</sup>. Before 1982, appeal would be made to the Circuit Court (having a regional jurisdiction). Since 1982 however, patent matters are concentrated before the United States Court of Appeals for the Federal Circuit (CAFC), inofficially also known as “the Federal Circuit”.<sup>58</sup> The Supreme Court (SCOTUS) forming the highest court of the federal court system, it results that the case law in patent matters of the past four decades is given by decisions of CAFC and SCOTUS.<sup>59</sup>

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<sup>53</sup> A Federal Court may become competent for hearing based on e.g. amount-in-dispute or if the parties are from different states, *see* 28 USC § 1332.

<sup>54</sup> Leahy-Smith America Invents Act [AIA], “To amend title 35, United States Code, to provide for patent reform”, 125 Stat. 284 – 341, effective 2012/2013

<sup>55</sup> Constitution of the United States, Article I

<sup>56</sup> *ibid.*, Article I, Section 8, Clause 8, inofficially denoted as “the Copyright Clause”

<sup>57</sup> *TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017)

<sup>58</sup> The rules for cases that involve a patent, but further additional non-patent issues are complicated and omitted here.

<sup>59</sup> The courts are sometimes metaphorically compared to David and Goliath. In statistical average, CAFC decides rather pro-patentee (e.g. in 101 eligibility and 103 non-obviousness questions) whereas SCOTUS puts up resistance by being rather pro-defendant/pro public interest.

## Statutory Provisions of U.S. Patent Infringement

Patent infringement under US law is dealt with by 35 U.S.C. § 271. Its first version was passed by Congress in 1952. Before that time, the judiciaries had resorted to common law principles to find the infringement of a patent. The (to the discussions in this thesis) most relevant subsections of this provision will be briefly discussed here.

Is it important to note that the question of patent infringement under US law is strictly a *question of fact*<sup>60</sup> as opposed to matters of law. This has important implications such as the question being eligible to the constitutional right of a decision via a jury trial.

### 35 U.S.C. § 271(a): Direct Infringement<sup>61</sup>

Direct patent infringement under 271(a) is regarded a *strict liability tort*, giving rise to a claim for payment of damages.

All limitations of a patent claim need to be reproduced for the claim to be directly infringed.<sup>62</sup>

### 35 U.S.C. § 271(b) and (c): Induced and Contributory Infringement

For an infringement under 271(b), according to the prevailing opinion, intent is required. This makes the induced infringement hard to prove, intent being the highest level of the mens rea hierarchy.<sup>63</sup> In particular, absence of knowledge (e. g. of the existence of the patent) is a common and very strong defense against asserted intent.

Under 271(c), knowledge is sufficient, making the proof easier for the plaintiff. There is however the additional statutory requirement to show that there is no substantial non-infringing use of the article.

### 35 U.S.C. § 271(f): Exportation of Components

271(f) introduces explicit extraterritorial reach into the US patent law. In response to the *Deepsouth* decision<sup>64</sup> handed down in 1972, Congress enacted 271(f) in 1984. With

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<sup>60</sup> see e.g. *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1129-30 (Fed. Cir. 2011)

<sup>61</sup> 35 U.S.C. § 271(a); 35 U.S.C. § xx will be abbreviated xx from here on

<sup>62</sup> often denoted All Elements Rule (*side remark*: even applicable and to be respected under the Doctrine of Equivalents)

<sup>63</sup> intent - knowledge - recklessness – negligence (Model Penal Code of the American Law Institute, in descending order)

<sup>64</sup> *Deepsouth*, see *infra* note 126

the changed law, there was now a statutory induced liability for supplying components from the United States to other countries.

The statute contains two subsections.

271(f)(1) provides for a finding of infringement when one “supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention (...) in such manner as to actively induce the combination of such components outside of the United States”, i.e. their combination abroad.

271(f)(2) provides similar extraterritorial reach with respect to the contributory infringement of 271(c).

## Infringement in Germany: § 9ff PatG

The direct infringement under § 9 PatG is conceptually similar to 271(a).

The German “indirect infringement”<sup>65</sup> under § 10 PatG probably resembles most the induced and contributory infringement standards under 271(b) and (c).<sup>66</sup> The contributory infringement in the U.S. and the German indirect infringement both restrict themselves to some “material/essential part” of the invention. Hence, no “all elements rule” applies.

It is undisputed to very high degree that an infringement under 271(b) and (c) in the U.S. requires a direct infringement under 271(a) by another party, i.e. the actual infringement that is either induced or contributed to. However, the German indirect infringement under § 10 PatG covers, as an *independent* patent infringement offense, acts of supplying of invention-essential means<sup>67</sup>, thereby adding further protection to the direct infringement under § 9 PatG and independently therefrom.

The German standard is hence effectively softer, mainly requiring “suitability” and “intent” for the parts to infringe<sup>68</sup>.

However, as will become clear, it is imperative to see each of those standards in the context of their proper national law. Whereas the private customer is exempt from liability in Germany – hence he will never be direct infringer – this is possible in the US.

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<sup>65</sup> mittelbare Patentverletzung

<sup>66</sup> § 10 German Patent Act (PatG), translation

[http://www.gesetze-im-internet.de/englisch\\_patg/englisch\\_patg.html](http://www.gesetze-im-internet.de/englisch_patg/englisch_patg.html);

regarding this assertion, see the discussion later in this thesis

<sup>67</sup> often expressed via the terminology „verselbständigter Gefährdungstatbestand“ (to be roughly translated as „threat-related offense assuming an independent existence“

<sup>68</sup> Bestimmtheit der Mittel (not: intent in the mens rea sense (Vorsatz), they may have to do with each other, but can clearly not be equated)

Divided infringement as well as joint infringement topologies may in Germany be covered by mechanisms of the civil law such as *Mittäterschaft*, *Nebentäterschaft* or *Störerhaftung*. The first two differ from the third in that they essentially involve direct liability for the tort whereas they differ from each other regarding the question of culpability (knowledge/intent as opposed to negligence). These mechanisms for vicarious and contributory liability will be addressed in the context of the respective German case law in Chapter V. Doctrinal viewpoints and delimitations will be discussed as part of Chapter VI.

## CHAPTER IV: United States Case Law on Joint/Divided Infringement and Extraterritorial Reach of Patent Law

The problem of joint/divided infringement in the US case law is in principle and in its broadest sense a very old one and goes at least back to 1872 where an infringing gun was sold without the explicitly claimed cartridge<sup>69</sup>, hence being dealt with under common law principles without having a specific statute for the tort as it is in force today<sup>70</sup> with section 271.

Due to the very long and rich history and the limited space, the thesis needs to restrict itself to the most relevant and recent case law which is also relevant for modern inventions in the age of computers. There was hence a need to select a few cases and to sort many others out. To that end, a focus will be set on the case law that establishes the current standard, and a contrast will be drawn by comparing it with the “old standard”, that is, how the problem was dealt with just before.

There is an observable “shift” from divided infringement of apparatus patents to that of method patents. Using modern communication technology, method patents have become way more vulnerable to divided infringement than before since it is easier to overcome distances. An apparatus is usually finalized by at least someone who would be liable as direct infringer, for methods however, a true split is possible where no party practices all the steps alone. That is why the majority of the case law here addresses methods.

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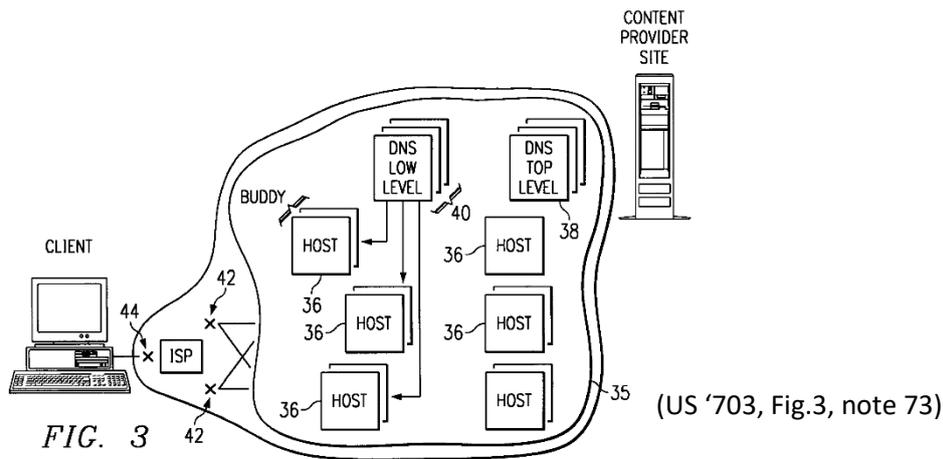
<sup>69</sup> *Renwick v. Pond*, 20 F. Cas. 536, 10 Blatchf. 39; 5 Fish. Pat. Cas. 569; 2 O. G. 392 (1872) June 8, 1872 · United States Circuit Court for the Southern District of New York

<sup>70</sup> Today, such case is likely to be dealt with under 271(b) or (c)

## Akamai v. Limelight<sup>71</sup>

The Akamai case set the current standard of divided and joint infringement liability in the US.<sup>72</sup>

The claimed method dealt with hosting regional copies of web page content to be delivered to end users on a computer network.<sup>73</sup> As claimed, it involved a step of tagging objects in order to ensure they will be loaded from such regional server well-accessible to an end user (and not overloaded) instead of a central server. The system can be visualized as follows<sup>74</sup>:



Limelight implemented such method without implementing a tagging step themselves, leaving it to their customers – the content providers – to perform the method step of tagging (cf. “content provider site” in the figure above).

To that end, the standard contract that Limelight made with its customers would delineate the steps to be performed by the customers to use the Limelight service, including the step of tagging.<sup>75</sup> As a side remark, Akamai implemented all the steps including the tagging step in their own product.<sup>76</sup>

<sup>71</sup> Akamai Technologies, Inc. v. Limelight Networks, Inc., 797 F.3d 1020 (Fed. Cir. 2015), inofficially also known as “Akamai V”

<sup>72</sup> Garde, T., “Artificial Intelligence and Induced Infringement”, GRUR Int. 2018, 1132

<sup>73</sup> US Patent No. 6,108,703 - “Global hosting system”

<sup>74</sup> *ibid.*, Fig. 3

<sup>75</sup> *Akamai V*, *supra* note 71, at 1024

<sup>76</sup> for further discussion, see also section “Comment on Claim Draftsmanship” below

Some remarks on the case history appear to be in order. In 2010, the CAFC first held<sup>77</sup> that the patent was not infringed under 271(a), but later in 2012 considered en banc an induced infringement under 271(b)<sup>78</sup>. SCOTUS reversed<sup>79</sup> holding that induced infringement cannot occur without direct infringement and remanded.

Upon remand, CAFC first confirmed their prior argumentation of non-infringement under 271(a).<sup>80</sup> In a final en banc decision<sup>81</sup>, the CAFC found infringement by overruling their own precedent law as to the assessment of joint and divided infringement under 271(a) of *BMC*<sup>82</sup> and *Muniauction*<sup>83</sup>. It was held that “liability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance”.

Since then, the rather strict direction-and-control test that required an actual agency relationship between a controlling party (“mastermind”) and an agent has been replaced by the new Akamai standard which is easier fulfilled, hence being beneficial to patentees. The new test to determine direct infringement is to consider “whether all method steps can be attributed to a single entity”<sup>84</sup>.

The central determination is hence “whether the acts of one [party] are attributable to the other”<sup>85</sup>, with the direction-and-control test the crucial one for divided infringement.

The *Akamai V* standard has since then been followed in further decisions<sup>86</sup>. It is easier met for patentees and hence softer than the overruled prior standard of *BMC* and *Muniauction*.

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<sup>77</sup> Akamai Technologies, Inc. v. Limelight Networks, Inc., 629 F.3d 1311 (Fed. Cir. 2010)

<sup>78</sup> Akamai Technologies, Inc. v. Limelight Networks, Inc., 692 F.3d 1301 (Fed. Cir. 2012)

<sup>79</sup> Limelight Networks, Inc. v. Akamai Technologies, Inc., No. 12-786, 572 U.S. 915, 134 S. Ct. 2111 (2014)

<sup>80</sup> Akamai Technologies, Inc. v. Limelight Networks, Inc., 786 F.3d 899 (Fed. Cir. 2015)

<sup>81</sup> *supra* note 71, Akamai Technologies, Inc. v. Limelight Networks, Inc., 797 F.3d 1020 (Fed. Cir. 2015), inofficially also known as “Akamai V”

<sup>82</sup> *BMC*, *infra* note 105

<sup>83</sup> *Muniauction*, *infra* note 114

<sup>84</sup> *Akamai V*, *supra* note 71, at 1023

<sup>85</sup> According to the final en banc decision, *supra* note 71, two sets of circumstances justify attribution: [1] one entity “directs or controls” the other or [2] they form a joint enterprise (4 factors to determine [2]), *see ibid.* at 1022)

<sup>86</sup> *see e.g.* Nalco Co. v. Chem-Mod LLC, 883 F.3d 1337 (Fed. Cir. 2018)

## A Comment on Claim Draftsmanship to Cover Potential Divided/Joint Infringement

According to the prevailing opinion in the literature, a patent shall in normal circumstance not protect more than what protection is objectively sought for, that is, the (properly construed) claim wording.<sup>87</sup> What the inventor had subjectively in mind as well as what underlying future product he or she may have intended to protect are hence aspects that are not – at least not directly – taken into account. The contrary view would be detrimental to the public interest in having legal certainty regarding the absolute right given by the disclosed patent that needs to be respected.<sup>88</sup>

In *Akamai*, one could argue that the explicit “tagging” step could have been avoided by good claim draftsmanship. For example, one could simply have referred to respective objects as “tagged”, thereby enlarging the scope of protection and obviating the performance of a tagging step by the infringing party completely. In such a scenario, one could have found direct infringement of Limelight immediately.

Yet, in *Akamai*, it is interesting to note that Akamai’s own product – the product whose protection the patent-in-suit was likely intended for – actually *involved* a performance of a tagging step *by Akamai*, hence not by the customer himself or someone else. This could be seen as an indication that likely the idea the inventor had in mind upon filing involved such a step, i.e. to be performed by the same entity.

In this context, the finding of the divided infringement by CAFC may also be regarded as an ex post facto extension – regardless if equitable or not – of the effective protection.

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<sup>87</sup> *Pila/Torremans*, *supra* note 1, p.199 section 8.3.2;

*cf. also* Götting, “Gewerblicher Rechtsschutz”, C. H. Beck, 10th ed., 2014, 24 Rdnr. 23

<sup>88</sup> BGH, Urteil vom 31. Mai 2007 - X ZR 172/04 - *Zerfallszeitmessgerät*

## Travel Sentry v. Tropp<sup>89</sup>

The patents<sup>90</sup> claim methods for airline luggage inspection (e.g. by TSA). The consumer can buy a lock with a key whereas a luggage screening entity (that is, e.g. TSA) is provided with a master key. The method claim contained explicit steps of an opening of a luggage by the luggage screening entity given prior agreement. Importantly, these steps were performed by the luggage screening entity - Travel Sentry merely providing the master key - not by Travel Sentry being the entity providing the lock to the customer. To enable the luggage inspection, an agreement was furthermore made between the Travel Sentry and the TSA.<sup>91</sup>

The question hence arises if the actions of the luggage screening entity can be attributed to the lock provider under the *Akamai V* standard.

The district court granted a summary judgement (JMOL) for non-infringement, holding that the lock provider has no influence whatsoever on the airport luggage screening entity. CAFC vacated the JMOL and remanded<sup>92</sup>, holding that there are factual questions to be properly addressed in order to assess if a direction or control of the method steps by the lock provider occurred or not. It was held that as in *Akamai V* there were “evidence that a third party hoping to obtain access to certain benefits can do so if it performs certain steps identified by the defendant, and does so under the terms prescribed by the defendant”<sup>93</sup>.

## Lilly v. Teva<sup>94</sup>

*Lilly v. Teva* shows how the Akamai standard can have far-reaching effects also on the question of indirect infringement. *Lilly v. Teva* is one of the plenty cases worldwide that deal with pemetrexed disodium used for medical treatment.

Lilly owns a patent<sup>95</sup> for a method for administering a chemotherapy drug. To reduce side effects, the patient should furthermore be administered vitamin B12 as well as folic acid. The product would be sold with according instructions. The vitamin B12 would usually be administered by the doctor/physician (by injection) whereas the folic acid would be taken (orally) by the patient him- or herself.

The question was whether Teva could be held liable for induced infringement under § 271(b). To that end, a direct infringement act under § 271(a) by the physician would

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<sup>89</sup> Travel Sentry, Inc. v. Tropp, 877 F.3d 1370 (Fed. Cir. 2017)

<sup>90</sup> U.S. Patent Nos. 7,021,537 and 7,036,728 – “Method of improving airline luggage inspection”

<sup>91</sup> MoU, see *Travel Sentry*, supra note 89, at 1373

<sup>92</sup> *Travel Sentry*, supra note 89, at 1386

<sup>93</sup> *ibid.*, at 1380

<sup>94</sup> Eli Lilly & Co. v. Teva Parenteral Meds., Inc., 845 F.3d 1357 (Fed. Cir. 2017)

<sup>95</sup> U.S. Patent No. 7,772,209 – “Antifolate combination therapies”

have to be established. It was hence disputed if the missing step, the administration of the folic acid by the patient, could be attributed to the doctor/physician.

The court gave a positive answer to this question<sup>96</sup>, finding infringement by the physician and inducement for Teva, by applying the *Akamai V* standard. If the instructions to the patients clearly state that taking folic acid is very important and failure to comply will result in not receiving the health benefits mentioned, this “conditions participation in an activity or receipt of a benefit upon performance of a step”<sup>97</sup> under the *Akamai V* standard.

It is noteworthy that the manual/actions by *Teva* are taken here into account to justify attribution to the *physician*, i.e. a different entity. Here it was argued, based on expert evidence (provided by Lilly), that a responsible physician will no longer administer the pemetrexed if he or she found out that the patient did not take their folic acid. Therefore, the act of instructing the patient may be attributed (as well) to the physician (so in addition to avoiding the already discussed side effects, further pemetrexed treatment being seen as the benefit<sup>98</sup>).

### Medgraph v. Medtronic<sup>99</sup>

This case is presented at this point in the thesis since it applies the *Akamai* standard. The facts though exhibit similarities to *McKesson*<sup>100</sup> that had been decided pre-*Akamai*. It is again related to a potentially patent-infringing<sup>101</sup> healthcare software (“the CareLink system” for long-term taking of medical data, e.g. for diabetes patients). The question-in-dispute on appeal is if the acts of a patient/doctor, e.g. detachment of a device or downloading some patent-related medical data from a database that has previously been stored there, are attributable to the defendant.

The case shows that limitations to attributability of acts are still to be found, even under the broadened *Akamai V* standard. Applying the standard, the court found that no “condition[ing of] participation in an activity or receipt of a benefit” occurred by Medtronic that would justify a potential attribution of the missing method steps. Patients can freely choose how to deal with their data or when to detach the device.

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<sup>96</sup> *Lilly, supra* note 94, at 1365 and 1366

<sup>97</sup> *Akamai, supra* note 71

<sup>98</sup> *Lilly, supra* note 96, 1368

<sup>99</sup> *Medgraph, Inc. v. Medtronic, Inc.*, 843 F.3d 942 (Fed. Cir. 2016)

<sup>100</sup> *McKesson, infra* note 118; presented at a later stage since it employs the pre-*Akamai* standard

<sup>101</sup> US Patent No. 5,974,124 and US Patent No. 6,122,351 – “Method and system aiding medical diagnosis and treatment”

Since this denied no benefit to the patient based on their choices, hence no conditioning were performed.<sup>102</sup>

Doctrinally, the court confirmed that the criterion that “all steps of [the] claim are performed by or attributable to a single entity”<sup>103</sup> still applies under *Akamai V*. *Akamai V* merely “reiterated the rule while broadening the circumstances under which attribution may be proper”<sup>104</sup>. Furthermore, indirect infringement were predicated on a finding of direct infringement.

Therefore, the patents were found non-infringed and the appeal against the district’s courts grant of a JMOL for non-infringement was dismissed.

The case appears to be an extreme case where a proprietor of a patent with a rather unskillfully and ill-written claim attempted to benefit from the – at the time very recent – *Akamai V* en banc decision, overruling the old precedent.

The decision convinces in the essential points. Even a broad standard needs to be provided with limits, particularly for the protection of innocent parties.

### **BMC Resources, Inc. v. Paymentech, L.P.**<sup>105</sup> [overruled by *Akamai*]

Before *Akamai V*, the standard for divided infringement was given by the direction-and-control test of *BMC*, *Muniauction*, *McKesson*.<sup>106</sup>

BMC had offered Paymentech licenses for two US patents relating to processing of card payment transactions.<sup>107</sup> As a response, Paymentech filed a suit seeking declaratory judgement of non-infringement, arguing that some of the claimed method steps were not performed by Paymentech itself but rather by a bank.

The court found that no direction or control of the actions of the bank took place. No direct infringement was found, and - in the absence of any direct infringement - that furthermore no inducement or contributory infringement had possibly occurred.<sup>108</sup>

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<sup>102</sup> for the detailed reasoning, see *Medgraph*, *supra* note 99, 948

<sup>103</sup> see *Akamai IV*, *supra* note 80, at 909

<sup>104</sup> *Medgraph*, *supra* note 99, 948

<sup>105</sup> *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007)

<sup>106</sup> Although often denoted “direction or control”, it seems that what is meant is that always both of them are actually required.

<sup>107</sup> US Patent No. 5,715,298 (note incorrect citation in the decision of note 118), US Patent No. 5,870,456 – “Automated interactive bill payment system using debit cards”

<sup>108</sup> *BMC Resources*, *supra* note 105, at 1380

In view of the court, direct infringement requires a practice of each and every feature of the claimed invention. Indirect infringement required however a finding of direct infringement.

The court held that – in an attempt to avoid direct infringement liability – a defendant cannot simply “contract out” certain steps of a patented process to another entity.<sup>109</sup> In this case, liability would be found for direct infringement since then one party exercised direction or control over the other.<sup>110</sup>

However, direct infringement should not be interpreted to reach independent conduct of multiple actors.<sup>111</sup>

To that end, the CAFC reasoned that claims can usually be properly drafted as to capture the actions of a single entity. The court held that, in the case at hand, the method steps were performed by four different actors: the defendant, the merchant, the debit network and the financial institution.<sup>112</sup>

According to the court, direct infringement should not be interpreted to widely, since it is a strict liability offence while indirect infringement requires a further showing of knowledge and absence of non-infringing substantial use (contributory infringement) or specific intent (induced infringement).<sup>113</sup>

This reasoning can convince in all but one point: Contributory infringement and inducement are rendered impossible by the absence of any direct infringement. Direct infringement should therefore be seen less strictly when it is only to be satisfied as a precondition for an indirect infringement that the defendant is charged with.

### Muniauction, Inc. v. Thomson Corp.<sup>114</sup>

Muniauction’s patent-in-suit relates to an electronic bidding system for bonds that uses a web browser.<sup>115</sup> Besides questions of non-obviousness, for some claims the court dealt with the question of divided infringement, finding non-infringement of Thomson as a matter of law by applying the *BMC* direction-and-control standard.

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<sup>109</sup> *ibid.*, at 1381 and 1382

<sup>110</sup> *ibid.*

<sup>111</sup> *ibid.*

<sup>112</sup> *ibid.*

<sup>113</sup> *ibid.*

<sup>114</sup> *Muniauction v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008)

<sup>115</sup> U.S. Patent No. 6,161,099 – “Process and apparatus for conducting auctions over electronic networks”

Thomson had control over their systems and provides third-party bidders with instructions. However, as in *BMC*, Thomson did not perform all the steps of the patented method.<sup>116</sup>

For their finding on non-infringement, the court explained that the direction-and-control test is satisfied in situations where the assumed direct infringer can be traditionally held vicariously liable for the third-party actions.<sup>117</sup>

### McKesson Technologies Inc. v. Epic Systems Corp.<sup>118</sup>

Epic Systems licenses software to healthcare providers. McKesson's patent-in-suit<sup>119</sup> relates to a method of patient-provider communication comprising a first step of "initiating a communication". Such initiation was however performed by the patients. All remaining steps were performed by the healthcare provider.

The court held that the direction-and-control test of *BMC* were not satisfied. There was no agency relation or contractual obligation between the provider and the patient.<sup>120</sup>

As in *BMC* and *Muniauction*, there was no finding of indirect infringement due to the absence of direct infringement.

In her dissenting opinion<sup>121</sup>, Judge Newman stated that an application of joint tortfeasorship would have been more appropriate.

She reasons that not finding an infringement at all in any situation where not all actions are performed by a single entity deprives patent owners of their constitutionally guaranteed protection in the era of modern economy and technology. Patentees shall not be required to direct their claims to a single infringer only in order to obtain protection.

Her reasoning can convince, at least for the facts of the case at hand. Under the later *Akamai V*, the case may have well been decided otherwise.

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<sup>116</sup> *Muniauction*, *supra* note 114, at 1330

<sup>117</sup> *ibid.*

<sup>118</sup> *McKesson Technologies Inc. v. Epic Systems. Corp.*, Case No. 2010-1291 (Fed. Cir. April 12, 2011)

<sup>119</sup> U.S. Patent No. 6,757,898 – "Electronic provider—patient interface system"

<sup>120</sup> *McKesson*, *supra* note 118

<sup>121</sup> *ibid.*, Dissent section

## Extraterritorial Reach

Each state has proper jurisdiction on its own territorial ground.<sup>122</sup> The principle of territoriality may be regarded as a doctrine that bars states from exercising jurisdiction beyond their respective borders.<sup>123</sup>

Under the principle of territoriality, in a simple example, a territorially granted patent like e.g. a national patent cannot be enforced to stop a potential infringement if all actions related to the infringement take place in another country.

However, the exact borderline may have some reach to include certain actions taking place abroad. From a viewpoint of legal doctrine, the principle of territoriality may stand in a certain tension with a doctrine of effects/impact since actions abroad may very well have a practical impact on parties in a country, in particular in today's modern and globally trading economy.

Within the recent years, the strictness of application of the principle of territoriality seems to have softened in plenty of jurisdictions. Many countries have in the rather recent past adapted their IP laws to cover acts such as exportation as infringing.<sup>124</sup> The issues of (extra)territoriality have become more important in the modern information economy, in particular in the field of patents, since quick communication via networks is possible and parts of modern inventions may easily be localized abroad.

Effective extra-territorial reach of patent law may be achieved in many different, direct or indirect, manners, e.g. explicit statutes as well as via indirect infringement or joint tortfeasance<sup>125</sup>.

### Deepsouth v. Laitram<sup>126</sup>

The *Deepsouth* case had – as will be seen - an important impact on the extraterritorial reach of patent law and illustrates very well the problem at issue.

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<sup>122</sup> [https://en.wikipedia.org/wiki/Territorial\\_principle](https://en.wikipedia.org/wiki/Territorial_principle)

<sup>123</sup> Buxbaum, H., "Territory, Territoriality, and the Resolution of Jurisdictional Conflict", *American Journal of Comparative Law*, Vol. 57, No. 2, 2009, 631, 632

<sup>124</sup> e.g. France whose patent law prohibits since 2014 "[l]a fabrication, l'offre, la mise dans le commerce, l'utilisation, l'importation, l'exportation, le transbordement, ou la détention aux fins précitées du produit objet du brevet"

(Code de la propriété intellectuelle, Article L.613-3 a))

<sup>125</sup> In particular, the joint tortfeasance may be invoked for any different kind of tort, giving extra-territorial reach to tort law as a whole; see e.g. in a passing-off context: Court of Appeal (England and Wales), *Glaxo Wellcome UK Ltd v. Sandoz Ltd* [2017] EWCA Civ 335

<sup>126</sup> *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 92 S. Ct. 1700, 32 L. Ed. 2d 273 (1972)

The patent-in-suit dealt with a shrimp deveining machine.<sup>127</sup> The alleged infringer did not sell the claimed device as a whole, but however sold all necessary parts to be assembled abroad.

SCOTUS held that a manufacturer who shipped unassembled parts of the patented machine abroad was not liable for patent infringement, holding that “it is not an infringement to make or use a patented product outside of the United States”.

In response to the 1972 decision, Congress enacted 271(f) in 1984. With the changed law, there was now a statutory induced liability for supplying components. 271(f)(1) provides for a finding of infringement when one “supplies components” of the patented invention for their “combination” abroad.

### Microsoft v. AT&T<sup>128</sup> : What is a “component”, when is it supplied from the US?

AT&T’s patent-in-suit<sup>129</sup> related to a digital encoding for recorded speech. The allegedly infringing product was the software NetMeeting that came as a part of the Microsoft Windows computer operating system.

Microsoft had shipped “golden master disks” from the US to foreign computer manufacturers where they were replicated to have more copies which in turn were used to install Windows on computers. Alternatively, Microsoft sent the Windows software electronically.

Infringement was held in the first instance and confirmed by CAFC. However, SCOTUS reversed. The main question was if software were a component under 271(f). It had been found that software were indeed a component under 271(f) by CAFC.<sup>130</sup>

SCOTUS held that “[a] copy of Windows, not Windows in the abstract, qualifies as a ‘component’ under § 271(f)”<sup>131</sup> and that “[a]ny doubt that Microsoft’s conduct falls outside § 271(f)’s compass would be resolved by the presumption against extraterritoriality”<sup>132</sup>.

Since the master disks were copied abroad (or alternatively “copies” were made based on the electronically transmitted data), and only those *copies* were used for installation on computers, it was argued that those copies, and not the master version sent by Microsoft, are installed on the foreign manufacturers’ computers; hence both the

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<sup>127</sup> U.S. Patent No. 2,694,218 – “Shrimp deveining machine”

<sup>128</sup> Microsoft Corp. v. AT&T Corp., 550 U.S. 437 (2007)

<sup>129</sup> U.S. Patent No. 4,472,832 – “Digital speech coder”

<sup>130</sup> AT & T Corp. v. Microsoft Corp., 414 F.3d 1366 (Fed.Cir.2005); Eolas Technologies, Inc. v. Microsoft Corp., 399 F.3d 1325 (Fed.Cir.2005)

<sup>131</sup> *Microsoft*, *supra* note 128, at 452

<sup>132</sup> *ibid.* at 454

“master disks and electronic transmissions that Microsoft sent from the United States could not themselves serve as a basis for liability”.<sup>133</sup>

As a result, there were hence no components supplied from the US, as required by 271(f)(1). Furthermore, quite similar to *Deepsouth*, the “loophole” were something “for Congress to consider”.<sup>134</sup>

## Concurrence

Some concurring opinions of the Justices even went as far to hold that, even in a case where Microsoft shipped not only “golden” master disks to be copied abroad, but instead their disk would directly be used directly to install Windows on an abroad computer, there would be no infringement under 271(f) if the disk were removed from the drive after proper installation, hence not being a “component” that would remain in the assembled “combination”.

According to the concurrence, “if these computers could not run Windows without inserting and keeping a CD-ROM in the appropriate drive, then the CD-ROMs might be components of the computer. But that is not the case here”.<sup>135</sup>

The concurrence thereby again shares the opinion’s viewpoint that it were “the general rule under United States patent law that no infringement occurs when a patented product is made and sold in another country”<sup>136</sup> to which 271(f) were an exception.

## Dissent

According to a single dissent of one Justice, “unlike a blueprint that merely instructs a user how to do something, software actually causes infringing conduct to occur”.<sup>137</sup> If a disk can be a “component”, how can “the most important ingredient of that component”<sup>138</sup> not be a component in itself?

The dissent criticizes that “[o]n the Court’s view, Microsoft could be liable under § 271(f) only if it sends individual copies of its software directly from the United States with the intent that each copy would be incorporated into a separate infringing computer.”<sup>139</sup>

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<sup>133</sup> *ibid.* at 448 via footnote 9

<sup>134</sup> *ibid.* at 457

<sup>135</sup> *ibid.* at 462

<sup>136</sup> *ibid.* at 441

<sup>137</sup> *ibid.* at 464

<sup>138</sup> *ibid.*

<sup>139</sup> *ibid.*

The arguments are – in their simplicity – very convincing. The key feature of the protected invention obviously lies in the source code of the program, and not at all in the physical disk which it is written on and which is in itself just a commonplace staple article.

Furthermore, only the lone dissent seems to have noted one could have addressed the question well also by invoking 271(f)(2).<sup>140</sup>

### Author's Comment on the Opinion

The term “component” was given a very literal meaning, whilst the responsibility for it was put on the legislator, that is, Congress.

The reasoning is astonishingly stubborn and clings forcefully to the literal wording of the law. Patentability of software is of course a question on its own that justifies proper discussion. However, as long as computer programs may be subject-matter of a granted patent, it does not convince to allow circumvention of the patent protection by not having the program in a tangible form. The court should have taken responsibility and properly interpreted a law from 1984 in the framework of the present times. Software can today be transferred in seconds over networks such as the internet and even wirelessly. It was doubtful Congress had software in mind when passing the 1984 bill and intended to purposefully exclude it by non being a “component”. The single dissent's arguments are more convincing than those of the majority opinion.

If this had happened within the US, at least an indirect infringement would have reasonably been supported. Hence, a teleological interpretation of the statute, taking into account technical development of several decades, would have been appropriate.

Economical considerations and fears may have played a role in the opinion formation process of Microsoft supporters. US software industry may have feared to lose competitive advantage abroad due to rising US software prices.<sup>141</sup>

In a similar case against Microsoft<sup>142</sup>, CAFC had also held that software – this time Internet Explorer – were a component suitable to infringe the patent-in-suit<sup>143</sup> under 271(f)(1). It was in a similar manner debated if foreign sales resulting from US-shipped

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<sup>140</sup> *ibid.* at 463

<sup>141</sup> [https://en.wikipedia.org/wiki/Microsoft\\_Corp.\\_v.\\_AT&T\\_Corp.#Opinions\\_from\\_the\\_society](https://en.wikipedia.org/wiki/Microsoft_Corp._v._AT&T_Corp.#Opinions_from_the_society)

<sup>142</sup> *Eolas Technologies, Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005)

<sup>143</sup> U.S. Patent No. 5,838,906 - „Distributed hypermedia method for automatically invoking external application providing interaction and display of embedded objects within a hypermedia document“

“golden master disks” are to be included in the damages award. To the best knowledge of the author, after CAFC confirmed the district’s court interpretation of 271(f)(1) when applied to software, the case has been settled later between the parties – confidentially – and remarkably several months after SCOTUS had rendered their decision on the AT&T case. The initial jury verdict in *Eolas* had been 520.6 million US dollars.<sup>144</sup> There are hence good reasons to assume for an objective observer that the case was settled rather low as compared to the numbers initially debated.

As a side remark, the courts upheld the concept that “software” in its role as a potentially infringing embodiment is in itself abstract and generally not suitable to directly infringe on method claims in later decisions. In one example, an optical drive was sold together with a software that would enable to use the drive to perform the patented method.<sup>145</sup> It was held that “software is not itself a sequence of actions, but rather it is a set of instructions that directs hardware to perform a sequence of actions”<sup>146</sup>. This overall paradigm hence seems to be quite strong in the US case law.

### NTP v. RIM<sup>147</sup>

The allegedly infringing products are given by the rather famous BlackBerry devices offered and operated by Canadian company Research In Motion (RIM).<sup>148</sup> NTP sued RIM for infringement based on several US patents<sup>149</sup> claiming both systems and methods for email “push” systems that will push an email message to a user end device connected via an RF network as compared to traditional “pull” of e-mails.<sup>150</sup> Hence, instead of “pulling” his emails from a mailbox using e.g. a desktop computer and a landline network, a user could receive his email on his mobile RF device, and later even transfer the email message to another computer, if he desired to do so. The patents’ description explains that such system were particularly advantageous for businessmen on travel. They were enabled to review their incoming messages without access to a (full-size) computer that is turned on and connected.

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<sup>144</sup> Los Angeles Times,  
<https://www.latimes.com/archives/la-xpm-2003-aug-12-fi-micro12-story.html>

<sup>145</sup> Ricoh Company, Ltd. v. Quanta Computer Inc., 550 F.3d 1325 (Fed. Cir. 2008)

<sup>146</sup> *ibid.* at 1335

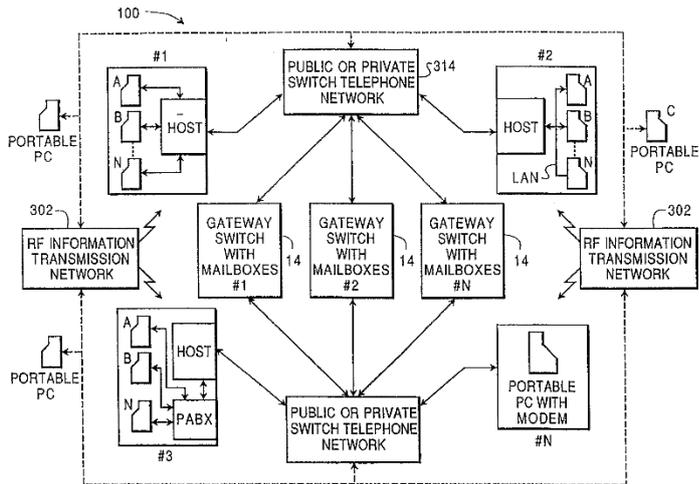
<sup>147</sup> NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282 (Fed. Cir. 2005)

<sup>148</sup> RIM and BlackBerry will be used as synonyms in the following.

<sup>149</sup> US Patent Nos. 5,436,960; 5,625,670; 5,819,172; 6,067,451; 6,317,592 – “Electronic mail system with RF communications to mobile processors and method of operation thereof” (a series of true continuations with the US ‘960 being the parent)

<sup>150</sup> As of *today*, 2021, it appears this has become a standard feature of every “smartphone” device. Here the discussion refers however the situation of the early 1990s.

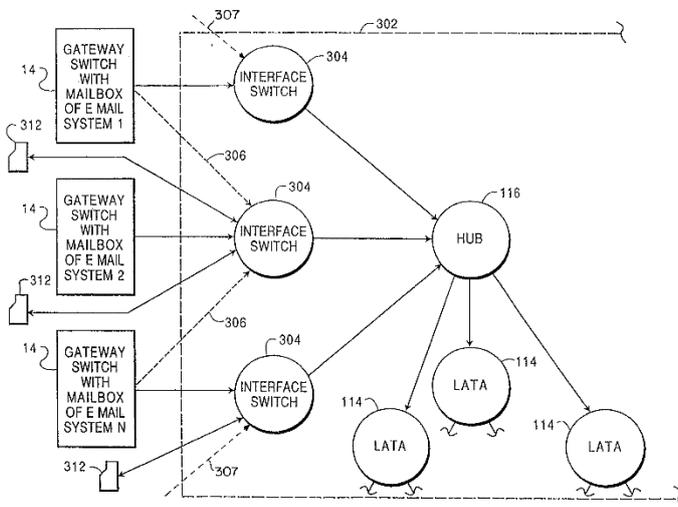
FIG. 8



(note 149, Fig. 8)

BlackBerry sold and allowed customers to operate their handheld devices in the US. The patent feature in dispute was the “interface” or the “interface switch” (see reference symbol 304), that would provide an interface between the traditional email network and the RF network and that was embodied by a relay server maintained by BlackBerry. BlackBerry’s relay server was however located in Canada, hence outside of the US.

FIG. 9



(note 149, Fig. 9)

Regarding the question if use within the US in the meaning of section 271 occurred, the court reached different answers for system claims as compared to method claims.

### System Claims

Regarding the system claims, the court held that “[w]hen RIM's United States customers send and receive messages by manipulating the handheld devices in their

possession in the United States, the location of the use of the communication system as a whole occurs in the United States.”<sup>151</sup>

Since the Blackberry customers “located within the United States controlled the transmission of the originated information and also benefited from such an exchange of information”, the court concluded that “the location of the Relay in Canada did not, as a matter of law, preclude infringement of the asserted system claims in this case”.<sup>152</sup>

In the older decision *Decca*, the question, whether a transmitting station located in Norway, owned by the United States of America, can for the sake of a patent embody a claimed feature<sup>153</sup>, had been affirmed as well.<sup>154</sup> It was found relevant “the ownership of the equipment by the United States, the control of the equipment from the United States and (...) the actual beneficial use of the system within the United States”.

## Method Claims

While affirming the infringing act of use (domestic) use for the system claims, the court reached a different conclusion for process claims.

“Because a process is nothing more than the sequence of actions of which it is comprised, the use of a process necessarily involves doing or performing each of the steps recited.”<sup>155</sup>

This were also “unlike use of a system as a whole, in which the components are used collectively, not individually.”<sup>156</sup>

Applying this principle to the present case where “each of the asserted method claims of the (...) patents recites a step that utilizes an ‘interface’ or ‘interface switch’, which is only satisfied by the use of RIM's Relay located in Canada”, the court concluded that “as a matter of law, these claimed methods could not be infringed by use of RIM's system”<sup>157</sup>.

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<sup>151</sup> *NTP, supra* note 147, 1317

<sup>152</sup> *ibid.*

<sup>153</sup> in this case under 28 U.S.C. § 1498

<sup>154</sup> *Decca Ltd. v. United States*, 210 Ct.Cl. 546, 544 F.2d 1070 (1976)

<sup>155</sup> *NTP, supra* note 147, 1318

<sup>156</sup> *ibid.*

<sup>157</sup> *ibid.*

## No Equal Treatment: Breaking of System-Method Symmetry

In the light of the discussion regarding system and method claims, it is interesting to note that SCOTUS indicated a different view on the matter in *Quanta* a few years after *NTP*: "Apparatus and method claims may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus."<sup>158</sup>

In the end, RIM licensed the patents in a settlement agreement over 612.5 million US dollars paid to non-producing entity NTP, likely facing a court-ordered shutdown of the BlackBerry system throughout the US otherwise.<sup>159</sup> The patents were later found invalid in the course of inter partes reexamination by the USPTO, however without potential benefit for RIM.<sup>160</sup>

## Cardiac Pacemakers v. St. Jude Medical<sup>161</sup>: No exportation of a method step

The patent in dispute<sup>162</sup> was about an implantable cardioverter defibrillator (so called ICD) and method. ICDs can detect and correct abnormal heart rhythms. The disputed claim related to a method of heart stimulation using an implantable heart stimulator that is capable of detecting heart arrhythmias. The rather complicated case history is summarized on the first few pages of CAFC's decision.

In the decision taking during the course of this en banc hearing, it was held that 271(f) does not apply to a method claim. Hence, the practice of a claimed method outside the United States does not infringe that claim.

The court's reasoning is similar to that in *Microsoft v. AT&T*.<sup>163</sup> The method and its "components", the method steps, were intangible entities and could not be regarded as components within the statutory meaning since "a component of a tangible product, device, or apparatus is a tangible part of the product, device, or apparatus, whereas a component of a method or process is a step in that method or process"<sup>164</sup>.

The lone dissent<sup>165</sup> reasons that the statutory wording mentions "patented invention". This wording does not indicate at all that all process inventions should be excluded, this

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<sup>158</sup> *Quanta Computer, Inc. v. LG Electronics, Inc.*, 128 S. Ct. 2109, 170 L. Ed. 2d 996 (2008)

<sup>159</sup> <https://www.nbcnews.com/id/wbna11659304>

<sup>160</sup> Allen, William R., "RIM v. NTP, Yet Again", <https://spectrum.ieee.org/at-work/innovation/rim-v-ntp-yet-again>

<sup>161</sup> *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 576 F.3d 1348 (Fed. Cir. 2009)

<sup>162</sup> US Patent No. 4,407,288 – "Implantable heart stimulator and stimulation method"

<sup>163</sup> *Microsoft Corp. v. AT&T Corp.*, *supra* note 128

<sup>164</sup> *Cardiac Pacemakers*, *supra* note 161, 1362

<sup>165</sup> *id.*, 1366

interpretation actually being a different one than the interpretation of “patented invention” in all other parts of Title 35 which covers both devices and methods. 271(f) and 271(e) using that same language and having being passed by Congress at around the same time, the dissent holds that it were “not reasonable now to rule that the same words used in two adjacent subsections of the same statute, enacted by the same Congress in close temporal proximity, were intended to diverge radically from the statutory definition of ‘patented invention’ and from each other”<sup>166</sup>.

Going back to the majority opinion, with its breaking of the symmetry between methods and systems<sup>167</sup>, the court distinguished the case from SCOTUS’s reasoning in *Quanta*.<sup>168</sup>

It is hence notable that under US patent law, device claims are deemed to have further extraterritorial reach outside of the US than corresponding method claims.

### Comment on Symmetry of Method and Apparatus Claims

Methods and apparatus claims have a long history in patent law. They can be claimed independently of each other, although many inventions allow to be well-expressed in both categories, hence in both the “language” of method and patent claims, and can thereby be “double-protected”. This gives more security against drafting errors to the patentee and may also help in interpretation of the claims in the case of an infringement. In many cases, subtle differences in the scope of protection are present, even if there is a huge overlap.

The long-standing clear separation into the two categories helps in claim construction. (And the exception of so-called product-by-process claims is to date dealt with in a well-structured manner, being a special case of a process claim.)

If it is clear, what type of invention (product or method) protection is sought for with a particular claim, and as long as both types of claims may be included in a single patent application, there should be no motivated need for a completely symmetric treatment.

To give extraterritorial protection to *method* claims in the context of “shipping abroad” does not seem convincing or necessary, since it is never “a method” as such being shipped abroad. While in *Microsoft v AT&T* the dissent has the stronger argument, the majority opinion convinces in *Cardiac Pacemakers*. A software that will be employed in the very end as a part of a device, to enable the device to perform specific functions, and that will even at a physical level be stored on a data carrier (e.g. a hard disk on a

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<sup>166</sup> *id.*, 1368

<sup>167</sup> *cf. NTP, supra* note 147

<sup>168</sup> *Quanta, see supra* note 158

computer) is a different scenario from a claimed method that can only be infringed upon performance of the method steps and hence as an intangible entity never be exported abroad. Territoriality then legitimately requires that the method be protected in the country of performance to find infringement.

On the other hand, regarding the distinction between method and system in the context of “domestic use” of the invention – although, as indicated above, drawing a fundamental line between both types of claims and treating them differently should be legitimate – *NTP* does not convince by requiring that the *use of the system* may include the beneficial use of something happening abroad whereas the *use of a method* should not be granted recourse to that argument.

If one, in the times of the modern information economy, can locally use a part of *something* which is not local, why should one fundamentally be unable to use a part of *acts* that are performed elsewhere?

The German answer, affirming the beneficial use (explicitly at least) for the method claim, is presented further below.<sup>169</sup>

## Comment on Infringement of a Software Patent by a Software

The U.S. are often criticized for easily granting loads of software patents, many of them being easily attacked for invalidity, no matter if due to e.g. lack of subject-matter eligibility or due to lack of inventive step. Therefore, lots of low quality inventions get granted, mixed with the high-quality inventions, since no pre-grant mechanism is in place to “sort the wheat from the chaff” or to “weed out the unfit”.

This picture – suggesting an overly strong patent protection – is drastically contrasted by the protection that software as such, or e.g. on a data carrier if no such data carrier is claimed, enjoys under the infringement prong.

Both CAFC<sup>170</sup> and SCOTUS<sup>171</sup> seem to – nowadays – agree that a software itself is something abstract and hardly suited to infringe on a patent, in particular never ever directly. Even if methods and systems are claimed, no infringement – particularly no direct infringement – will be found, unless the software is really executed and run or e.g. a disk containing the software has been properly placed into the drive of the “computer system”. These last steps usually only happen with the end user, the product’s very final destination.

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<sup>169</sup> *Prepaid-Karten II*, *infra* note 187

<sup>170</sup> see e.g. *Cardiac Pacemakers*, *supra* note 161; *Ricoh*, *supra* note 145

<sup>171</sup> see e.g. *Microsoft*, *supra* note 128

What else is there that patentees can do in an era where software can easily be copied and distributed? There are possible improvements, e.g. by additionally directing a claim to a data carrier containing certain instructions. However, this can be in no way a desirable solution. It should rather be obvious and self-understood that applicants wishing to protect a software would also like to have it covered when it exists on any data carrier. Furthermore, in the age of wireless transmission and the internet, such protection will decrease in importance in favor of protection of (e.g. electronic or photonic, wired or wireless) signal transmission.

A real enforceable protection for software, given that is patentable, is needed. The effected protection of granted software patents needs to go beyond narrowly interpreted methods and systems.

A possible solution could be the following: If the gist of an invention lies in the software, which is in particular usually the case when you can run it on a staple computer, machine-readable instructions corresponding to a method claim should simply be covered by the method claim. This could be achieved by passing a corresponding law.<sup>172</sup> The practical consequence of the current U.S. case law can only be called a loophole – left for Congress or not – and convinces in no possible way.

## CHAPTER V: German Case Law

To quickly recall, as mentioned in the introductory part, the German Patent Act, Section 10, covers as an *independent* patent infringement offense acts of supplying of invention-essential means<sup>173</sup>, thereby adding further protection going beyond the direct infringement of Section 9.

Divided infringement as well as joint infringement topologies may in Germany be covered by mechanisms such as *Mittäterschaft*, *Nebentäterschaft* or *Störerhaftung*. The first two differ from the third in that they essentially involve direct liability for the tort whereas they differ from each other regarding the question of culpability<sup>174</sup> (knowledge/intent as opposed to negligence<sup>175</sup>).

As to harmonization in Europe, the EU legislator has adopted the approach that injunctive relief be available also against intermediaries of infringers of IP rights.<sup>176</sup>

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<sup>172</sup> e.g. similarly to derivative protection of products of processes that has been introduced long ago, cf. e.g. PatG § 9(1) Nr. 3, cf. RG, Urt. v. 14.03.1888 - I 389/87, RGZ 22, 8, 17 – *Methylenblau*; cf. 35 U.S.C. 271(g)

<sup>173</sup> often expressed via the terminology „verselbständigter Gefährdungstatbestand“ (to be roughly translated as „threat-related offense assuming an independent existence“)

<sup>174</sup> cf. BGH, Beschl. v. 21.7.1993 - 2 StR 331/93, NStZ 1994, 91 - *Nebentäterschaft bei Drogen-Herstellung* (criminal law)

<sup>175</sup> re *Störerhaftung*: even including acts of absence of any culpability

<sup>176</sup> Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights (OJ L 157, 30.4.2004),

## Rohrschweißverfahren<sup>177</sup>

In *Rohrschweißverfahren*, the patent-in-suit<sup>178</sup> related to a method for the “welding” of polymer tubes (“fittings”) to be used as gas pipes.

The fittings to be welded would comprise identification tags that would contain information in order to instruct the welding device to use specifically adapted welding and correction parameters during the welding process for best results.

The actual method is essentially partially performed by the producers of the fittings (providing the data, placing the data carrier on the fitting) as well as partially by the customers performing the welding process and benefitting thereby from the actual invention. The majority of fitting producers were proper licensees of the patentee.

The alleged infringers provided welding devices suitable for use with the present invention. Those devices would comprise specifically a bar code reader (for reading out bar code data from the fitting to be welded) as well as a temperature sensor (in order to adapt and correct the welding process to an actually measured temperature of the fitting). Both of these “features” would be necessary in the welding device to use it to perform the method claimed in the patent. It should be noted that no protection for the device itself formed part of the patent.

In this very interesting case, three main questions were addressed by the FCJ:

1. Does the welding *device* provide means relating to an essential element of the invention (i.e. the claimed method of using the device to weld a fitting)?
2. Does the customer use the patented invention, i.e. the claimed method, including all its features, even if he merely performs the welding, relying on the data carrier that was placed on the fitting by the fitting producers, hence does not actually perform all claimed steps himself?
3. Does the customer infringe if he uses a duly-licensed fitting? What about the case where he uses a non-licensed welding device to weld a duly-licensed fitting?<sup>179</sup>

Regarding question 1, the court confirms that the welding device related to an essential element of the invention - and hence confirms the (potential) indirect infringement by the supplier of the welding device (disregarding defense arguments,

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[Enforcement Directive], see Art. 9, 11; Recital 23

<sup>177</sup> BGH, Urteil vom 27. 2. 2007 – X ZR 113/04 – *Rohrschweißverfahren*

<sup>178</sup> European Patent No. EP 0 272 978 – „Procédé pour contrôler l'élévation de température de pièces chauffées électriquement“

<sup>179</sup> Recall the wording of § 10 PatG [translated]: ...other than those entitled [question 3] to exploit the patented invention with means relating to an essential [question 1] element of the invention for use [question 2] ....

e.g. of exhaustion, for the time being). As to question 3, the customer is deemed to be authorized via an implicit license obtained upon purchase of the duly-licensed fitting (under the doctrine of exhaustion). It is very interesting to note that – in the context of question 3 – the use of the welding device by the customer is in the public domain since the device itself is not protected by any claim. This may seem counterintuitive at first sight, the device being exactly the same as the one giving rise to indirect infringement in the answer to question 1. Properly assessed, however, the court's reasoning regarding these questions is convincing. In the case at hand, 85 – 90 % of the fittings were properly licensed by the plaintiffs.<sup>180</sup> The court's finding of no indirect infringement by selling the devices in cases where the customer is entitled via a license obtained via respective fitting is convincing.<sup>181</sup> As *Hölder* notes, the defenses available to the customer should indeed be equally available to the supplier accused of indirect infringement.<sup>182</sup>

For the topic of this thesis, the reasoning regarding question 2 would be most interesting, dealing with the joint/divided infringement question. However, the court's reasoning on this question turns out rather brief.

It is held that findings of *Mittäterschaft* and *Nebentäterschaft* are generally possible for a direct infringement wherein several parties each only perform a part of the claimed method steps.

The decision states (see *Leitsatz*, b)) that “if a welding method having one or multiple method parts is directed to a production of a data carrier in a first method part which, in turn, is used in a second method part to control the welding process, then the user of the data carrier uses the method with all its features, if/when he performs the welding method using the data carrier” (translated). It does not become clear throughout the whole decision how the court arrived at that conclusion, neither how this can be extrapolated or generalized to other cases or situations. Are those claimed method steps attributed to another party? What are the conditions under which such an attribution is possible or appropriate? Is this only the proper tool when assessing indirect infringement of the method by a third party who supplies means (it appears to be the case in the present context – consider e.g. the position of Rdnr. 19 in the structure of the decision - but the court's literal wording of the decision's at *Leitsatz*, b) clearly tells otherwise) - or is this applicable more widely? (see Rdnr. 19)

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<sup>180</sup> *Rohrschweißverfahren*, *supra* note 177, Rdnr. 20

<sup>181</sup> *ibid.*, Rdnr. 21

<sup>182</sup> Hölder, N., “Die Haftung für Auslandstaten”, p.16, published in „Überprotektion durch Geistiges Eigentum?“, Götting, Lunze (eds.), Festschrift regarding the 10th anniversary of “International Studies in Intellectual Property Law” [p. 181 – 196, p. 195]

While the court's reasoning regarding the indirect infringement via the sale of the welding device, or more specifically regarding the essentiality of the properly adapted welding device, convinces (see question 1), their answer to question 2 appears to be rather poorly reasoned and giving rise to legal uncertainty for infringement of method patents.

It gave rise to a demand for further clarifications by the court in later decisions<sup>183</sup>, but also here not good reasoning regarding question 2 was provided.

The patent claim clearly contained an explicit step of *entering* the data to the data carrier.<sup>184</sup> How can this interpretation of law be reconciled with the *Schneidmesser*<sup>185</sup> jurisprudence? Accordingly, the "literal sense" of the constituents of the *claims* define what should be seen as part of the invention and what not.<sup>186</sup>

After *Rohrschweißverfahren*, open questions remain.

### Prepaid-Karten<sup>187</sup>

In the Prepaid-Karten cases, the patent-in-suit<sup>188</sup> relates to a method of making a phone call, e.g. from a public telephone cell, which was quite popular before consumer mobile phones became available in large quantities. The customer would purchase a card with a code, often hidden behind a covering layer that could be rubbed or scratched off e.g. with a coin. This code would be associated with a certain amount of money available as a credit balance for making phone calls. To initiate a phone call, the customer would first dial a toll-free number to connect to the service operator, would identify the ownership of his credit balance using the code read off the card, after which he would dial the actual number of his or her desired callee.

Technically, the customer would place his initial call using the toll-free number to connect to a so-called Public Automated Branche Exchange (PABX), a device also operated by the alleged infringer – however in this case not on German territory, but on British soil. As a result, certain method steps were factually not performed in Germany.

To complicate things further, a step of "marking (...) the numbers (...) on a vendible carrier member" was claimed, hence a step that is somewhat unclear and could also easily be construed as to relate to the process of the fabrication of the card that would

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<sup>183</sup> see e.g. BGH, *Audiosignalcodierung*, *infra* note 208, Rdnr. 37/38

<sup>184</sup> EP '978, *supra* note 178, revendication 1, „on entre dans des données propres à être lues ...”

<sup>185</sup> for BGH, *Schneidmesser I, II*, see *infra* note 272

<sup>186</sup> see BGH, Urteil vom 29.11.1988 – X ZR 63/87 – *Schwermetalloxidationskatalysator*;  
BGH, Urteil vom 03.10.1989 – X ZR 33/88 – *Batteriekastenschnur*

<sup>187</sup> OLG Düsseldorf, Urteil vom 10.12.2009 – 2 U 51/08 – *Prepaid-Karten II*

<sup>188</sup> European Patent No. EP 0 572 991 – “A method of processing prepaid telephone calls”

contain the secret code before it is sold. Also this step was not proven to have been performed in Germany.

The court found direct infringement of the German part of the European patent although several method steps were performed abroad. The reasoning<sup>189</sup> is based on the effects and benefits of the use of the claimed method effectively taking place inside of Germany, i.e. where the customer is located. The court particularly held that certain method steps such as identification of a code number, comparison with a credit balance or deletion of a spent code number “may *as such* have been performed abroad, nevertheless they need to be considered legally as domestic in nature since their results are used domestically”<sup>190</sup>.

Based on this argumentation, the court concluded to find direct infringement of the patented method. There is hence an attribution of steps to a different country<sup>191</sup>, based on a sufficiently marked relation to the target country<sup>192</sup>.

It is interesting to note that the European patent-in-suit was granted for several contract states and maintained, including the case of Ireland – where the defendant is based – but most importantly including Great Britain – where the remaining method steps were performed by a computer system.<sup>193</sup> Renewal fees had been duly paid in both of these countries including the 19<sup>th</sup> year of the patent lifetime.<sup>194</sup> A “seamless” European patent protection would hence have obviated the court’s reasoning and infringement could have been found immediately, if a such a “seamless” patent protection or any other proper collaboration between the countries in territorially divided infringement matters had been in place.

In the decision, the court noted as a side remark that no foreign patent could, on the other hand, be infringed, since some steps of the method claims were clearly only performed in Germany.<sup>195</sup>

It hence appears they were clearly aware of the problem<sup>196</sup>, but their possibilities were limited by the principle of territoriality and the European patent being a bundle of

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<sup>189</sup> *Prepaid-Karten II*, *supra* note 187

<sup>190</sup> translated from *ibid.*, reasons, B.2. b) cc) para. 4, italics added

<sup>191</sup> *ibid.*, reasons, B.2. b) aa) para. 2

<sup>192</sup> *ibid.*, reasons, B.2. b) bb) para. 1

<sup>193</sup> see European Patent Register and respective national Patent Registers

<sup>194</sup> the reason being that the patent had been declared void by the Federal Court of Justice in the parallel nullity action (X ZR 2/10) in 2012, reversing the Federal Patent Court’s decision

<sup>195</sup> *ibid.*, reasons, B.2. b) cc) para. 7

<sup>196</sup> *ibid.*, reasons, B.2. b) bb) para. 1, last two sentences

national rights being legally disconnected, so their hands were tied to argue in a different manner<sup>197</sup>.

A similar approach as in *Prepaid-Karten II* has been adopted by the United Kingdom. In this case a gambling machine protected by a system claim<sup>198</sup> was operated by its users in the UK while its software was run abroad.<sup>199</sup>

## Abdichtsystem<sup>200</sup>

The invention of the patent-in-suit<sup>201</sup> relates to a sealing system for repairing of car tires having a leak. Some of those sealing systems were sold within Italy between parties before the buyer would resell them to a German distributor. The decision addresses the question of the vicarious liability of the original seller regarding a patent infringement under German law.

Based on the German part of the European patent, the court held that, under certain circumstances, the delivery within another country – in this case from an Italian supplier to an Italian buyer – may give rise to a liability as well of the supplier. Although there were no *general* obligation of the supplier, such a responsibility may effectively result if there were *specific indications* present to him indicating that his or her buyers may in turn import or sell to Germany.<sup>202</sup> To that end, the court provides a non-exhaustive list of examples what may constitute such specific indications.

While a merely abstract possibility for sale abroad were insufficient<sup>203</sup>, such specific indications<sup>204</sup> to be assessed on a case-by-case basis may be given by deliveries having actually occurred or imminent ones. The criteria may however include, as examples, a) large amounts or b) correlations of the amount with the buyer's activity in Germany.<sup>205</sup> Furthermore, it may be an indication if user manuals in German language are provided by the seller, but only if the seller him/herself would have no sales business in Germany which would justify the German manual. Since the latter were the case in the dispute

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<sup>197</sup> different view: see e.g. *SBM v Bluewater* 259706/HA ZA 06-544 (11 April 2007) Rechtbank Den Haag, where the court assumed jurisdiction also in another country of parallel protection (part of EP patent)

<sup>198</sup> European Patent No. EP 0 625 760 – “Interactive, computerised gaming system with remote terminals”

<sup>199</sup> *Menashe Business Mercantile Ltd. & Anor v William Hill Organization Ltd.* [2002] EWCA Civ 1702

<sup>200</sup> BGH, Urteil vom 16. Mai 2017 - X ZR 120/15 (GRUR 2017, 785) - *Abdichtsystem*

<sup>201</sup> European Patent No. EP 1 291 158 – „Tyre sealing system“

<sup>202</sup> BGH, *Abdichtsystem*, 2017, *supra* note 200, Rdnr. 62ff, Leitsatz 3 re PatG § 9 Nr. 1, § 139, BGB § 840

<sup>203</sup> *ibid.*, Rdnr. 63, 66, 67

<sup>204</sup> *ibid.*, Rdnr. 64, 69

<sup>205</sup> *ibid.*

at hand, the court deemed the manual insufficient to find specific indications in the present case.<sup>206</sup> Specific indications were however found otherwise.<sup>207</sup>

In a previous decision, the court had relied on a German-based company being mentioned on the buyer's website as responsible distributor for the German market.<sup>208</sup>

In *Abdichtsystem*, the court hence affirms the liability for the enabling or facilitation of a patent infringement by someone else.<sup>209</sup> Resulting claims however require such infringement actually taking place, or at least a threat or risk of first-time infringement. These considerations however leave untouched the indirect patent infringement, to be assessed independently on its own.<sup>210</sup>

It is interesting to note that the European patent-in-suit was also validated and kept alive in Italy.<sup>211</sup> Hence, by the same acts committed in Italy, an infringement of the Italian part of the European patent has likely simultaneously happened – on Italian soil and under Italian law.

The principle underlying this decision – a type of vicarious liability if the ultimate goal of the completed invention is the German market – can be seen as established jurisprudence of the German court. This can either be realized by the infringer shipping essential means abroad from Germany if the ultimate product is later to be reimported to Germany<sup>212</sup>. Also, if the shipping would take place within another country, e.g. China, it may already be deemed a shipment to Germany given the deliverer had knowledge/intent regarding the later infringement<sup>213</sup>.

Mit- and Nebentäterschaft are affirmed in this context<sup>214</sup>, arising from the general principle that no distinction should be made between an own infringement and the “making possible” of that of another<sup>215</sup>. The legal reasoning and liability shift upon

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<sup>206</sup> *ibid.*, Rdnr. 69

<sup>207</sup> *see ibid.*, Rdnr. 65, 72

<sup>208</sup> BGH, Urt. v. 3.2.2015 – X ZR 69/13 (GRUR 2015, 467) - *Audiosignalcodierung*, Rdnr. 32

<sup>209</sup> BGH, *Abdichtsystem*, 2017, *supra* note 200, Rdnr. 78

<sup>210</sup> *ibid.*; *see also* BGH, Urt. v. 3. Juni 2004 - X ZR 82/03 - *Drehzahlmittlung*, particularly p.18ff/21;

regarding (non-)essentiality of means *see* BGH, Urteil vom 21. August 2012 - X ZR 33/10 - *MPEG-2-Videosignalcodierung*; *see also* BGH, *Audiosignalcodierung*, *supra* note 208

<sup>211</sup> Register of the *Ufficio Italiano Brevetti e Marchi*

<sup>212</sup> BGH, Urt. v. 30. Januar 2007 - X ZR 53/04 – *Funkuhr II*

<sup>213</sup> BGH, *Audiosignalcodierung*, *supra* note 208, Leitsatz c), Rdnr. 31ff

<sup>214</sup> *ibid.*, Rdnr. 35; *cf. also* BGH, Beschluss v. 26. Februar 2002 - X ZR 36/01 – *Funkuhr I*

<sup>215</sup> *see also* BGH, Urt. v. 3. Juni 2004 - X ZR 82/03 - *Drehzahlmittlung*

presence of specific indications that make an actual patent infringement appear plausible are very similar to those applied to freight forwarding agents.<sup>216</sup>

On the other hand, even the domestic creation of technical plans to carry out the teaching of the patent abroad does not infringe on a German patent.<sup>217</sup>

## Strong Effective Geographical Reach of German Patents

In total, it needs to be said that – by means of the vicarious/contributory liability mechanism – German patents may effectively acquire a quite strong extraterritorial reach. Under such a legal doctrine, parties doing business – even those doing it only nationally - need to always duly consider that their buyers may sell to other countries and hence need to consider the patent situation in those countries. Even if there is no vicarious/contributory liability for selling parties to start with, the hurdle of the *specific indications* to be seen individually on a case-by-case basis seems to be rather low, leading to a high burden of complicated risk assessment for sellers and resellers. This may clearly protect holders of German patents e.g. from infringing production abroad maliciously intended for the German market in order to then import the infringing product by some intermediaries trying to avoid liability. Also, this may extend the choices of the patentees to choose a most suitable defendant for damage payment (i.e. also in a case where an infringer in Germany is less likely to be able to pay high damage awards, whereas an economically successful foreign reseller being liable as a joint tortfeasor may be able to fully compensate such damages to the injured party).

However, after weighing the interests properly, those mentioned interests of the patentee cannot justify the burden put on innocent parties abroad, that is on territory where there is no patent in force, and merely selling to parties abroad - again - where there is no patent in force.

Therefore, a better balanced and easier system would be desirable, one that is practically easier to overview and has less risk management and scrutiny duties, particularly for parties acting only abroad.<sup>218</sup>

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<sup>216</sup> cf. also BGH, Urt. vom 17. September 2009 - Xa ZR 2/08 – *MP3-Player-Import*

<sup>217</sup> LG Düsseldorf InstGE (2006) 6, 130 – *Diffusor*

<sup>218</sup> Additionally, the current situation rather incentivizes alleged infringers abroad to file for declaratory judgement of non-infringement in their own jurisdiction after a cease-and-desist letter to preempt any suit for satisfaction in Germany. This again contradicts the interest of the German patentee.

Similar notable opinions are held by *Hölder*<sup>219</sup> discussing several interesting cases of Regional Courts<sup>220</sup> and – with a detailed discussion of pertinent BGH case law – *Tochtermann*<sup>221</sup>.

## CHAPTER VI: Comparative Analysis of U.S. and German Legal Standard, Comment on the Case Law and Comparative Remarks

### Direct/Indirect Infringement – Contributions to Infringement: Codified (Statutory) Law, Case Law or Codifications of Case Law?

The most naive approach for a comparative analysis of patent infringement under United States and German law would be to establish a correspondence "link" between the direct infringement under German and US law (§ 9 PatG, 35 U.S.C. § 271(a)), as well as a correspondence between the indirect infringement under § 10 PatG as well as induced and contributory infringement under 271(b) and (c). It is noteworthy that, in both jurisdictions, the respective codified laws had been added later on: The German indirect infringement codification hence goes back to 1981<sup>222</sup> whereas the 271(b) and (c) codifications in the U.S. go back to 1952<sup>223</sup>.

Two factors however indicate that such analysis needs to be made very carefully and may not even be the most appropriate one.

There is, on the one hand, the independent and self-sustained nature of the German indirect infringement. The U.S. courts have debated the analogous question in detail for 271(b) and (c), however arriving as a result at the opposing view. An accessoriness has hence been established by virtue of the case law principle.<sup>224</sup>

On the other hand, a historical perspective on 271(b) and (c) seems to be in order. The mechanisms originally arose by virtue of applying common law principles and have only later been codified. This deviation from true common law doctrine to the codification

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<sup>219</sup> *Hölder*, *supra* note 182, p.4-6, in particular p.5

<sup>220</sup> in particular: LG Düsseldorf, Urteil vom 21.06.2007 – 4a O 233/06 – *Wahlwiederholung*

<sup>221</sup> *Tochtermann*, L., „Joint liability in Germany for patent infringement committed abroad“, *Journal of Intellectual Property Law & Practice*, 2019, Vol. 14, No. 6, 494; *GRUR Int.* 2019, 437

<sup>222</sup> see e.g. *Rinken*, M., „Die Rechtsfolgen einer mittelbaren Patentverletzung nach § 10 Patentgesetz“, *Europäische Hochschulschriften*, p. 7ff

<sup>223</sup> Before, those topologies had been established by case law under common law, by resorting to common law principles and generic tort law, such as contribution to torts.

<sup>224</sup> similar to the German standard prior to codification in 1981, cf. *Rinken*, *supra* note 222, cf. also *Hölder*, *supra* note 182, p.8 mid-page

has been criticized in the literature.<sup>225</sup> Particularly, when the latter is applied in a rather literal manner, it has been found that cases that should be included from a doctrinal viewpoint can no longer be subsumed properly under the codified wording.<sup>226</sup> As a general remark, the danger of unintentionally changing a legal standard by legal codification of existing case law is frequently debated by scholars, and observed in both common and civil law systems.<sup>227</sup>

For purposes of a comparative analysis, it may hence be the best choice, particularly also from a doctrinal analysis point of view, to regard the German indirect infringement as an additional mechanism for protection without a true U.S. law correspondence.

For reasons discussed herein further below, the validity of this viewpoint is affirmed.

### German Indirect Infringement: “Gefährdungsmodell” or “Teilnahmemodell”?

Under German law, a certain competition arises<sup>229</sup> between acts regarded as contributing to a direct patent infringement (by virtue of e.g. *Mittäterschaft*, *Nebentäterschaft*, *Anstiftung*, *Beihilfe* of the German Civil Code) and the – independent - indirect infringement under § 10 PatG<sup>230</sup>.

The BGH as well as the other German courts seem to struggle with the questions both how and where to draw the line.<sup>231</sup>

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<sup>225</sup> Grow, N., “Resolving the Divided Patent Infringement Dilemma”, 50 U. MICH. J. L. REFORM 1 (2016). Available at: <https://repository.law.umich.edu/mjlr/vol50/iss1/1>

<sup>226</sup> *ibid.*, in particular II. and III., p. 13ff

<sup>227</sup> As a current example, at the time of writing a codified weighing of interests of both - and even third - parties to obtain injunctive relief under a revised German Patent Act is in progress [BT-Drucksache 19/30498]. Although this is intended to merely codify existing BGH jurisprudence [BGH, Urteil vom 10.5.2016 – X ZR 114/13, GRUR 2016, 1031 - *Wärmetauscher*], both scholars and practitioners have expressed fears the codification may dilute the present power of injunctive relief [see e.g. <https://www.bardehle.com/en/ip-news-knowledge/ip-news/news-detail/the-german-parliament-adopts-government-bill-for-a-second-act-concerning-the-simplification-and-modernization-of-german-patent-law>].

<sup>228</sup> terminology taken from *Rigamonti*, *infra* note 234

<sup>229</sup> *Rigamonti*, *infra* note 234, p.59 right column, at the bottom, *Hölder*, *supra* note 182, p. 8 mid to bottom, p.7

<sup>230</sup> The wording of § 10 PatG requires the “essential” means to be “suitable and intended” (“geeignet und bestimmt”), the latter being the subjective criterion. Suitability is easily fulfilled if the means happens to actually be used in a direct infringement, hence the “competition” addressed here.

<sup>231</sup>cf. *Hölder*, *supra* note 182, p. 6-9

At the same time, the same question seems to bother scholars and practitioners from other jurisdictions in the European Union, see e.g. Belgium<sup>232</sup>, referring to indirect infringement at the same time as to general tort law<sup>233</sup>.

*Rigamonti*<sup>234</sup> criticizes that the BGH, with respect to the indirect infringement of § 10 PatG, be doctrinally inconsistent, i.e. promoted and held onto a doctrine of “abstract danger/threat”<sup>235</sup> on the one hand while at the same time promoting a theoretical model (for the “intent” prong) that were rather suitable to assess actual participation in an actual and direct infringement<sup>236</sup> and unsuitable regarding the danger/threat standpoint<sup>237</sup>. According to his case law analysis, it were however rather the latter standpoint that is being supported by the factual jurisprudence.<sup>238</sup>

The author shows this discrepancy specifically for the “intent” prong<sup>239</sup> of indirect patent infringement under § 10 PatG which according to the BGH doctrine looked to the supplier of the means only.<sup>240</sup> The factual decision behaviour of the courts<sup>241</sup> (including BGH) however supported well the doctrine of “abstract danger/threat”<sup>242</sup>, looking to the supplier, the buyer as well as third parties.<sup>243</sup> The “sphere of the supplier” doctrine for the “intent” prong of § 10 PatG should hence be given up.<sup>244</sup>

This seems in our view to be at the core of the confusion between a participation or contribution in a direct infringement and (and least the stereotype of) an indirect infringement under § 10 PatG. While in practice a certain overlap remains<sup>245</sup> – it is clear that an abstract danger may become an imminent one and in turn become a direct

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<sup>232</sup> see De Lange et al., „Joint liability for IP infringement“, AIPPI, Belgian national group, [https://orbi.uliege.be/bitstream/2268/245996/1/Joint liability for IP infringement - Report Belgium - final.pdf](https://orbi.uliege.be/bitstream/2268/245996/1/Joint%20liability%20for%20IP%20infringement%20-%20Report%20Belgium%20-%20final.pdf); see also <https://aippi.soutron.net/Portal/DownloadImageFile.ashx?objectId=6473> and <https://www.aippi.fr/upload/Boston%202008%20Q2%202003%202004%202005/sr204english.pdf> (at the time of writing, unfortunately no further national group submission seems to (still) be available except for the Belgian one)

<sup>233</sup> *ibid.*, p. 12 para. 4; p. 21 8) para. 2 first hyphen; see also p. 13, discussing fault and suggesting a case-by-case basis

<sup>234</sup> Rigamonti, C. P., „Theorie und Praxis der mittelbaren Patentverletzung“, Mitt. 2/2009, p.57

<sup>235</sup> “Gefährdungsmodell” as opposed to “Teilnahmemodell” (and to “Verletzungsmodell”), *ibid.*, p. 59

<sup>236</sup> hence “Teilnahmemodell”, *ibid.*, p.59

<sup>237</sup> *ibid.*, p.57/58, p.60 left column

<sup>238</sup> *ibid.*, p.60, p.61ff

<sup>239</sup> Bestimmtheit der Mittel

<sup>240</sup> *ibid.*, p.57/58, p.60 left column

<sup>241</sup> *ibid.*, p.57, p. 61ff

<sup>242</sup> “Gefährdungsmodell”, see *supra* note 235; *ibid.*, p.61 left column para. 1

<sup>243</sup> *ibid.*, p.66 right column

<sup>244</sup> *ibid.*

<sup>245</sup> *ibid.*, p.59 right column para. 2, second sentence

patent infringement or a participation in one<sup>246</sup> – this can clarify the different nature of the two acts.<sup>247</sup>

The telos of § 10 PatG then becomes clearly the *protection beforehand*. If the abstract<sup>248</sup> danger suffices and is the correct mechanism for § 10 PatG, one needs to look for the sake of § 10 PatG necessarily also<sup>249</sup> to the supplier. An assessment of a participation in any direct infringement – including joint/divided – may then still be performed completely independently therefrom.<sup>250</sup>

This idea, that § 9 and § 10 PatG complement, but do not exclude each other<sup>251</sup> is justified by its telos. It is also concurred with the author that a defense against *Mittäterschaft* to a direct infringement based on § 10 PatG cannot be justified as it is not supported by the law.<sup>252</sup> A detailed and historical perspective on § 10 PatG has been taken by *Berger*<sup>253</sup>. As a side remark, it has been proposed to coin § 10 PatG “patent endangerment”<sup>254</sup> to clarify its distinct nature and to acknowledge its legal nature as a (independent) right of the patent proprietor<sup>255</sup> which is convincing.

## Joint/Divided Infringement and Extraterritorial Reach: Comparative Analysis of U.S. and German Case Law

While the US case law on extraterritorial reach focuses on exportation, the German courts seem to be rather concerned about importation of products and means leading to patent infringement on German territory.<sup>256</sup>

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<sup>246</sup> *ibid.*, p.60 left column para. 2

<sup>247</sup> Other, more simple-minded, suitable criteria for clear distinction could apparently not be established. Just to mention one example, with respect to mens rea, both acts in discussion are equally held to be potentially committed by negligence, cf. e.g. Keukenschrijver in Busse/Keukenschrijver, PatG, 8<sup>th</sup> ed. 2016, § 10 PatG Rdnr. 36ff (p.441) and § 139 PatG Rdnr. 127ff (p.2063)

<sup>248</sup> *Rigamonti*, *supra* note 234, p.59 right column para. 2, first sentence

<sup>249</sup> in our view even mainly; of the group consisting of the vendor, the supplier and third parties, the sphere of the supplier should be most relevant

<sup>250</sup> even if there should arguably be no “double damages” for the same factual acts

<sup>251</sup> *Hölder*, *supra* note 182, p.8 lower half page

<sup>252</sup> *ibid.*, p.9, para. 2, discussing BGH proposing such defense for cases of negligence

<sup>253</sup> Berger, T., “Die mittelbare Patentverletzung (§ 10 PatG)”, *Der grüne Bote*, Zeitschrift für Lauterkeitsrecht und Geistiges Eigentum, 4/2009, [www.gb-online.eu](http://www.gb-online.eu), p. 239ff

<sup>254</sup> Patentgefährdung, see Holzapfel, H., “Zu § 10 PatG als Rechtszuweisungsnorm”, *GRUR* 2002, 193, 193-194, where it is held that the terminology „mittelbare Patentverletzung“ is historically motivated, but today dated and misleading (for § 10 PatG as of 1981);

cf. also already BGH, Urteil vom 24.09.1991 - X ZR 37/90 - *Beheizbarer Atemluftschlauch*

<sup>255</sup> *ibid.*, 194, III.

<sup>256</sup> *Funkuhr II*, *supra* note 212; *Abdichtsystem*, *supra* note 200; *MP3-Player-Import*; *supra* note 216, *Audiosignalcodierung*, *supra* note 208

Remote use of inventions where such use happens on their territory seems to bother Germany and the US likewise.<sup>257</sup> Attribution schemes in order to assign acts to different entities or virtually move them into a different country are present in both jurisdictions.

However, there are some remarkable differences. While in the US, system claims seem to receive stronger effective protection in divided scenarios than method claims<sup>258</sup>, the “method-only” patent grants are dominant in the German case law<sup>259</sup>. In addition, although not stated, the German courts’ reasonings seems to be equally well applicable to system/apparatus claims<sup>260</sup>, hence – without further case law showing the contrary – a symmetry between methods and systems could be reasonably assumed.

In all approaches, the patent protection still suffers from the presence of country borders, even in cases of patent protection being obtained by sovereign right of respective states on both sides of the border. Splitting inventions seems in many cases be purposefully motivated to circumvent the patent. In these cases, it can be difficult to properly enforce the patent and it seems the judges try hard by using all kinds of attribution and legal fiction reasonings to get back to the result that would have been without country borders, by using currently available and in the present legal framework justifiable legal tools.

All such reasonings are incomplete, difficult to apply to new cases and hard to predict – and they all give the impression to reintroduce a right to patent enforcement “by the back door”.

## Achieving Similar Results by Virtue of Different Legal Systems: Case Law

Within the *existing* legal framework, however, the types of solutions found by the judges of the different countries are convincing and may be – in general – regarded as “as good as it gets”.

This section wants to compare the existing legal standards of both countries under scrutiny for divided/joint infringement and extraterritorial reach, thereby taking into account both the case law, but considering also each sample solution as part of the respective country’s legal ecosystem. To that end, simple one-to-one comparisons of only very narrow aspects shall be avoided.

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<sup>257</sup> e.g. *Prepaid-Karten II*, *supra* note 187; *NTP*, *supra* note 147

<sup>258</sup> *see NTP*, *supra* note 147; *see also Cardiac Pacemakers*, *supra* note 161; *cf. also* 35 U.S.C. 271(f)

<sup>259</sup> *see Prepaid-Karten II*, *supra* note 187; *see BGH, Rohrschweißverfahren*, *supra* note 177

<sup>260</sup> at least nothing seems to hint to the contrary

To gain comparative insights, the cases discussed in the previous chapters are analyzed in the light of the law of the respective other country. Thereby, it is established that the effective legal standards are – although some differences remain – surprisingly similar.

At times, different legislations may achieve similar results, though by different pathways and means. An attempt to understand the underlying reasons is made.

### Gedankenexperiment 1: Moving U.S. Cases to Germany

It is proposed that under the German infringement standards, the *Akamai* case would be seen – as in the US – as a direct patent infringement, now under § 9 PatG. Limelight would be seen as *Mittäter* (their customer as *Teilnehmer*) and Limelight would be held directly liable. The German judges would justify this by attributability of the acts. Any indirect infringement would likely be denied. In the U.S., this had been based on the accessoriness to 271(a), in Germany the same result would be achieved due to a non-fulfilment of the statutory requirement. Since a performance-in-part of a method claim is discussed, § 10 PatG does likely not cover it. No method-essential means are delivered (unlike the welding device in *Rohrschweißverfahren*) that enable a full practice of the invention by someone else. Put differently, with respect to the telos of § 10 PatG, there is no “patent endangerment” regarding direct infringement by someone else implied by the acts of Limelight, the only danger being present the infringement by themselves.

Also the *Travel Sentry* case would be seen similarly under German law. As to the direct infringement, the same reasons apply as to *Akamai*.

Additionally however, the provision of the master key could potentially be seen as an indirect infringement under § 10 PatG, regarding the potential of a direct infringement by TSA.<sup>261</sup>

*Lilly v. Teva* is a case where presumably a rather similar result would be achieved in Germany, however in a quite different manner. Teva’s (planned) behaviour would be seen as a stereotype “patent endangerment” under § 10 PatG. Due to its nature as an independent right from § 9 PatG<sup>262</sup>, no discussion as to attribution of steps would need to take place whatsoever. The result would be clear.<sup>263</sup>

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<sup>261</sup> This would however likely be hindered by additional features present in the claim. Although the claim wording does not “read” well on TSA, this possibility would likely be discussed and analyzed in Germany.

<sup>262</sup> Holzapfel, H., “Zu § 10 PatG als Rechtszuweisungsnorm”, GRUR 2002, 193, 193-194

<sup>263</sup> The instruction manual would be regarded as “sinnfällige Herrichtung”.

cf. BGH, Urteil vom 15. Dezember 2015 - X ZR 30/14 - *Glasfasern II*;

BGH, Urteil vom 21. November 1989 - X ZR 29/88, GRUR 1990, 505 - *Geschlitzte Abdeckfolie*

Regarding extraterritorial reach, both *Deepsouth* and *Microsoft* deal with the exportation of a potentially infringing good.

Since in *Deepsouth*, all device components were made, this is likely “close enough” for German judges to find a direct infringement for “producing the device”. Note that German judges could not resort to § 10 PatG: No German patent is in danger for the mere act of exporting<sup>264</sup>, unless it were intended to be brought back onto German soil<sup>265</sup>.

*Microsoft's* behaviour would have to be accepted by the German judges, again assuming the software does not get back to Germany afterwards. There is no correspondence to 271(f) in the German law, so the exportation would be legitimate under German law.

It could be debated if there could be a patent infringement for “making” the data carrier in Germany.<sup>266</sup> The author is not aware of any German case law giving an answer to this issue at the time of writing. However, it is conceivable that German judges would take a practical approach: In order to not deprive software inventions from their protection, infringement by a data carrier oder data transfer signal containing the software – at least of the method – should be found. This provides equitable protection to software inventions which are, for the reasons mentioned before, already difficult to enforce and hence particularly vulnerable.

Regarding *NTP*, RIM's behaviour would likely have been deemed as infringement of *both* method and system claim. At the very least, *Prepaid-Karten II* does not contain any hint to the contrary or parts of arguments that would not apply analogously to systems.

## Gedankenexperiment 2: Rohrschweißverfahren to the U.S.

In the context of the German *Rohrschweißverfahren* case, it was debated by the German courts if the *customer* infringes the method with all its steps. In line with *Hölder's* approach, the German judges argued that the customer *used* the patented method, also including the steps priorly executed by the producer of the “fittings”. In the context of the case, it should be recalled that this was mainly relevant to answer the question if the welding device maker infringed indirectly since the means he provided are not only essential, but *suitable* to be used for the patented method (including all its steps).

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<sup>264</sup> cf. „double territoriality“ required by § 10 PatG, cf. England, “A Practitioner's Guide to European Patent Law, Hart Publishing, 2019, p.71

<sup>265</sup> *Funkuhr II*, *supra* note 212

<sup>266</sup> under § 9 PatG, not covered by § 10 PatG

Under U.S. law, in particular the *Akamai* standard, a different approach would be taken, giving this case a whole new dimension.

With *Akamai*, CAFC asked as main question: Who “conditions participation in an activity or receipt of a benefit”?<sup>267</sup>

It is arguably the vendor of the polymer tube equipped with the bar code containing the welding information<sup>268</sup>. In the same line of argument, the customer/welder is the party using the bar code to have better technical welding results, i.e. the recipient of a benefit.

Consequently, since the tube vendors are liable for direct infringement under 271(a), the welding device merchants as defendants should be liable under 271(b) and/or (c)<sup>269</sup>: Their products are obviously intended for the technical teaching of welding according to the bar code information.

Putting it again differently, BGH arrives at the correct conclusion regarding the central question, suggesting indirect infringement of the welding device merchants, however arriving there in the wrong way: The underlying acts constituting the danger to the patentee’s patent – though being finalized by the customers – are those, upon completion, directly method-infringing acts of the barcode-equipped polymer tube vendors.

The solution proposed here, under the U.S. standard of *Akamai*, appears rather neat and well-structured as compared to the respective judgement of BGH.

The German approach should be seen very carefully. While § 10 PatG was designed to provide additional patent protection *beforehand*, i.e. to “take the evil at its root”<sup>270</sup>, it should be noted that the *Akamai* approach serves this purpose very well: Parties further “upstream” in the vertical economic hierarchy/value chain, i.e. here the infringing polymer tube producers, are rendered liable whilst giving amnesty to the customers further downstream. It can furthermore be seen that – as well – an intrinsic economic motivation can be found.

The arguments show that *Hölder’s* economically motivated proposal is rather unsuitable: It puts entities at disadvantage who finish the started and partially performed method of another. These are usually the parties economically further “downstream”.

The *Akamai* approach however provides a suitable framework.

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<sup>267</sup> and established the timing or manner

<sup>268</sup> unless duly licensed

<sup>269</sup> to the extent their devices are used in infringing manner, i.e. with unlicensed polymer tubes

<sup>270</sup> das Übel bei der Wurzel packen (German saying), *Holzapfel*, supra note 254, 193

## Gedankenexperiment ct'ed: German Case Law to the U.S.

It should be briefly mentioned as well that both *Prepaid-Karten* as well as *Abdichtsystem* would likely not be deemed as patent infringement in the US. The former relies only on a method claim which, under *NTP*, does – unlike a device claim – require a full practice including all steps within the country's territory.

The *Abdichtsystem* case would likely be found non-infringing based on the strong “presumption against territoriality” taken by both CAFC and SCOTUS<sup>271</sup>.

## Conclusion

The U.S. and German legal system reach in many cases – *Rohrschweißverfahren* the most prominent counterexample in this thesis – similar effective results.

It is emphasized that aspects of the patent system always need to be seen in a holistic perspective. At the same time, different patent systems should not be mixed / randomly combined! In many cases, different factors or different hurdles compensate each other effectively and lead to similar results. Such factors may include – apart of course from the legal application – additional specific (accessory or independent) infringement statutes (§ 10 PatG, 271(f), ...) or features such as exemptions, e.g. private use (in Germany).

## The Future of Method Patents

The notions of territoriality and the “all elements rule” have found a particularly strict interpretation when applied to method claims.

Applicants should therefore take due care when drafting their patent claims, in particular method claims, and particularly not unnecessarily claim too many features or steps. It is established practice of patent law that claiming “too much” or defining one's own invention in a too narrow context will be detrimental to the applicant doing so.<sup>272</sup>

It is an interesting methodology, for method claims, to formulate large portions of the claim as “preconditions” instead of actual steps that are true parts of the method. Just as one example, consider *Akamai* had claimed “tagged” content, rather than introducing the tagging as an explicit method step.

If this strategy is applied repeatedly, one may end up with a process invention that comprises only one explicit step. The infringer may eventually only need to implement

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<sup>271</sup> cf. also *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007), 454

<sup>272</sup> see e.g. BGH, Urteile vom 12. 3. 2002:

X ZR 168/00 – *Schneidmesser I*; X ZR 135/01 – *Schneidmesser II*

one step, the one that “finalizes” the invention. The whole invention may then be seen as the performance of this step in a given set of preconditions. The use of the method in the infringement context is then embodied by this one step only, to the advantage of the patentee.

This seems to be a suitable tool against “divided infringement fears” as well, concentrating the gist of the whole invention on one essential step. On the infringers’ side, all the blame may be put on one entity to be held strictly liable for direct infringement.

Noteworthy, *Hölder* concludes that who finalizes a multi-step method is liable for direct infringement<sup>273</sup> if he achieves the method outcome by building on the priorly (by someone else) executed steps. This convinces at first sight from the viewpoint that the reaper of the poisonous fruit shall have to deal with the consequences. Therefore, this can be well justified under a pragmatically oriented doctrine. *Hölder* himself denotes his proposal to be based on an *economic* perspective<sup>274</sup> and restricts his argument in order not to give rise to multiple damage claims based on the same infringing acts<sup>275</sup>.

From a doctrine of properly designed method patent protection however, this approach does not convince at all. All explicit method steps of a multi-step method should be equally important and essential given a properly designed method claim, the drafting of which is left to the applicant.

If a method claim comprises multiple explicit steps, unlike implicit ones, its scope of protection shall not be unduly expanded (for the sake of direct infringement).<sup>276</sup> The contrary will systematically lead to a patent system of more ill-drafted patents and legal uncertainty. The boundaries of scope of protection do suffer much from such dilution being brought along by this type of construction of the method claim wording.

Is the future method claim hence in many cases to be a “one-liner with a huge preamble” – or will it alternatively be, for the sake of direct infringement, be interpreted as such, as implied by *Hölder’s*<sup>277</sup> solution? On clarity and readability of patent claims, this may have a negative impact. Method claims of this type may no longer be easily read as a “top-to-bottom” list of instructions, like a cooking recipe.

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<sup>273</sup> *Hölder*, *supra* note 182, p.17; cf. also *Rohrschweißverfahren*, *supra* note 177

<sup>274</sup> *Hölder*, *supra* note 182, p. 14 para. 1

<sup>275</sup> *ibid.*, *supra* note 182, p.13 para. 2, commenting on the multi-national infringement of a method patent wherein the method is only executed once

<sup>276</sup> cf. also e.g. *Akamai*, *supra* note 71, and discussion thereof (cf. p.18 herein)

<sup>277</sup> *supra* note 182, p. 14 para. 1 and p. 17

Other mechanisms of providing sufficient method patent protection (see e.g. the Conclusions of this thesis) would be preferable.

### Method Patents in View of the Power of Combinations

Also, quite often the “gist” of an invention lies in the particular *combination* of things or steps – the constituting parts themselves being well-known when regarded in isolation. This is even true for many breakthrough inventions, if one looks closely: consider e.g. the recently emerged blockchain cryptocurrency technology (e.g. Bitcoin) and its successive use in various fields. Without any intention to understate the achievement made, the breakthrough idea itself<sup>278</sup> may be seen as a combination of four ingredients – a Cryptocurrency, a Distributed Ledger, a Blockchain as well as a Proof of Work (Hashcash) – all of which were priorly known as such in isolation. The “gist” lies hence in the combination.

To maximize his patent protection for such combination inventions with respect to method claims, does the patentee need to draft a single method claim for each contributing step, each claim reciting one explicit step and the other ones as preconditions? Again, this would likely make sets of patent claims more “messy” in an uncontrolled manner, and hence be detrimental to one of their functions, which is to make knowledge about new technology public and readily accessible.

Once again, this is why alternative solutions need to be found.

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<sup>278</sup> Nakamoto, S., “Bitcoin: A Peer-to-Peer Electronic Cash System”, available at <http://www.bitcoin.org/bitcoin.pdf>

## Deferred examination: A global copyright-system for patents?

The concerns generated by territoriality and potential solutions to overcome it appear to be rather old in the field of intellectual property.

Before the Berne Convention<sup>279</sup> was devised, there was a problem of exploitation of copyrighted works abroad without the consent of the author.

Copyright however does not rely on substantial examination to obtain full protection. It is still worth a thought if such a system may still be – at least in some part – a role model for an improved patent protection system.

For an unexamined patent of the utility model type<sup>280</sup> whose validity will need to be established positively prior to enforcement, such a system is conceivable.

One may well argue, it is hence the patent examination procedure, to be performed as per national standard, that brings the first strong influence of territoriality into the patent system, leading to different outcomes, scopes of protection, etc.

One could conceive a practically world-wide utility model of this type.<sup>281</sup> Should one hence try to follow this “naïve-looking approach”? If one could overcome only a handful severe problems (such as e.g. language questions), one could offer with this international utility model an IP right with the potential<sup>282</sup> of obtaining a seamless protection for distributed inventions of the modern information economy. This would furthermore be an unprecedentedly cost-effective IP right at the filing stage.<sup>283</sup>

The general idea is nice, however, seen from the current state of the situation, too many obstacles appear to be in its way, too many problems remain to be solved, it is doubtful that it would be practically feasible – and maybe even more that it would be accepted.

Such a system could, implemented now or in the future, itself have enormous benefit from modern computer, information and communication technology<sup>284</sup>.

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<sup>279</sup> Berne Convention for the Protection of Literary and Artistic Works of 1886

<sup>280</sup> roughly corresponding to a PCT application without any obligation to enter national phases during prescribed time periods

<sup>281</sup> cf. e.g. the provisional protection of a published PCT application; note also the (current) strict time periods for national/regional PCT phase entry (cf. Weiss/Ungler, “Die europäische Patentanmeldung und der PCT in Frage und Antwort, Rdnr. 926ff), these would need to be deferred to arrive at the proposal discussed here

<sup>282</sup> e.g. based on certain conditions on a later examination in the countries concerned, prior to enforcement

<sup>283</sup> maybe so cost-effective that some IP professionals specialized in international prosecution may worry about their income and complain

<sup>284</sup> benefits that were not available nor foreseeable when the PCT was created

## CHAPTER VII: Conclusion

The principle of territoriality still governs major parts of contemporary patent protection. Since the deployment of these systems, new technologies have emerged that render the idea of the enforceable patent for these technologies (at least partially) obsolete to incentivize innovation.<sup>285</sup> Although this idea is generally convincing, in a world where patents still play, at least partially, an important role, a legitimate patent protection should be “strong” against, i.e. irrespective of, geographical boundaries and not be circumvented by an infringer implementing the invention in a cross-border split. Since many contemporary computer-implemented inventions can be realized fully, or at least in large part, with commonplace standard computer hardware, employing software programs thereon that are distributable with relative ease using networks such as the internet, these inventions are hence very vulnerable to be easily split, e.g. onto servers in two, three, four or maybe even more different countries. This observable trend can be expected to accelerate even further in the future.

For modern information technologies, protection which is not “seamless” and can be geographically circumvented will hence become more and more use- and worthless.

The “attribution schemes” and “beneficial use theories” that attribute an act of someone to a third party, possibly in the same or another country, or use a legal fiction to assign an act that happens in one country to another, can serve as provisional solutions, but bring high legal uncertainty and cannot convince in the long run, because they do not fundamentally address the problem.

Besides, a different treatment of method and system claims that some courts practice with respect to international infringement does not convince.

A good balance needs to be taken between the interests of patentees on the one hand and those of the public, in particular the protection of innocent parties, on the other hand. The extensive interpretation of liability for alleged tortfeasors abroad, with no direct German market contact, that is suggested by the recent German jurisprudence puts an unjustified burden of “monitoring specific indications” that are too easily met on innocent parties.

Patentees can be expected to perform proper claim drafting that protects the “single entities” of their invention and to understand what they truly consider to have

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<sup>285</sup> Takenaka, T., “Inclusive Patents for Open Innovation”, Texas Intell. Prop. L.J. (forthcoming 2021), preprint available on: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3581218](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3581218)

invented, and that this is reflected in the claims (i.e. not put limitations that they consider inessential themselves). This is a requirement of good “draftsmanship” when applying for a patent. Giving patentees effective protection for mere parts of the claimed subject-matter does not convince and is often just the remedy for an ill-drafted claim. Similarly, they are expected to understand who they intend to potentially sue: it is the applicant’s sole responsibility that the claim be drafted to address an entity commercializing the invention rather than an end customer who cannot be successfully sued in practice to claim damages or take a license.

On the other hand, patentees holding patents for the same invention in multiple countries should not have to tolerate circumvention of their patents and exploitation of their inventions by merely “splitting” it between two or more countries, particularly not if these are actually countries of protection. The patenting of method claims with only on explicit method step, disguising all other steps as preconditions, does not appear either as a convincing solution that would improve the patent system.

In the future, joint and divided infringement topologies will deserve better protection as well. In cases involving divided or joint infringement, it does not seem acceptable that patentees are practically required to take two hurdles like in the US to show infringement under 271(b) or (c): the overall (US) direct infringement as well as the contributory infringement or inducement of the defendant. The United States have struggled a lot with the question<sup>286</sup> if direct or indirect infringement is the proper mechanism to deal with divided infringement. The underlying reasons appears to be that, unlike in Germany, indirect infringement always requires the direct infringement by some party. If no single defendant can be held liable under 271(a), under *Akamai V* or before under *BMC*, then 271(b) and (c) are automatically excluded as well.<sup>287</sup> This renders the US system rather obscure.

A solution for the US could be that inducement and contributory infringement gain in importance for divided infringement again, by – for the sake of 271(b) and (c) – requiring that the acts corresponding to direct infringement are merely committed in full by someone, e.g. including also groups of actors.<sup>288</sup> The accessoriness between direct and indirect infringement should be given up for divided infringement preferably to the extent mentioned. Care should, on the other hand, be taken in the material assessment of indirect infringement: In particular, when features are completely missing, i.e. not practiced by anyone, a narrow interpretation seems to be in order that does not inequitably expand the effective scope of protection.

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<sup>286</sup> see particularly *Akamai I – V*, *supra* note 71, *supra* notes 77 - 80

<sup>287</sup> see e.g. *McKesson*, *supra* note 118; *BMC*, *supra* note 105

<sup>288</sup> cf. *Akamai*, *supra* note 78, CAFC, 2012 (first *Akamai* en banc decision of CAFC, “*Akamai II*”), in particular 1308, 1309

Regarding method patents, a position governed by principle and fundamental patent law is taken that allows to preserve the general rule, the infringement of a method claim should necessitate the practice of all method steps. The *Akamai V* approach to 271(a) forming the current US standard and looking to “condition[ing] participation in an activity or receipt of a benefit” is more convincing than the economically motivated proposal by Hölder (cf. *Rohrschweißverfahren*). An analysis of the *Rohrschweißverfahren* case assessed under the *Akamai V* standard has been presented as part of a comparative study Gedankenexperiment, concluding that the U.S. system finds a neater and better-motivated legal solution for the case at hand. It could be shown that the approach also serves to protect actors who are further downstream in the value/supply chain of goods and services (e.g. towards customers) whilst it shifts the liability further upwards, thereby enhancing a finding of infringement for entities located further upstream. The *Akamai* standard turns out to be helpful to address the problem of direct infringement early on, beforehand and “right at” or at least closer to the “root of the evil” (an aspect often noted as important when discussing § 10 PatG).

A unified European patent court could be the internal solution for the European Union and would be an important step leading to high improvement. It does however not solve the fundamental problem, not even for all the EPC member states and particularly not beyond Europe.

The grant and enforcement of a “worldwide patent” does not seem a realistic goal in the near future, and not without first taking “small steps” towards such a mechanism. Boundaries established by territoriality would need to be softened gradually and step by step.

A union-type international treaty for mutual recognition of patented steps amongst the union members is necessary for equitable protection of inventions of modern information technology. This could aid in all matters, including direct infringement and indirect infringement setups, and may liberate the judiciary from having to rely on case-by-case attributability reasonings. Supplemented with proper provisions for finding a competent court, this seems to be the most promising approach to render country borders less attractive to evade patent infringement. The necessity for more coordinated international legal relief is expected to rise further and, of the many different fields of private law, it is the field of Intellectual Property that is given the task to pioneer it. Until then, *Akamai V* as well as *Prepaid-Karten II* should be seen as suitable primary guidance for feasible interim solutions.

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