



HOFFMANN EITLE



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# Driven by Technology: Patenting AI Before the European Patent Office (Part II)

In this second article of our series on artificial intelligence (AI) inventions (see the first [here](#)), we deal with sufficiency of disclosure. After summarizing the European Patent Office's (EPO) general requirements in this regard, we look at certain decisions of its Boards of Appeal and examine what they teach in relation to AI inventions' input data, engine, and output data. We conclude by identifying what should be included in a patent application to comply with the EPO requirements for sufficiency of disclosure.

## 1. Sufficiency of disclosure: General requirements at the EPO

The EPO requires that patent applications provide a detailed description of at least one way of carrying out the invention. This requirement relates however to the essential aspects that would allow the skilled person to put the invention into practice across the entire claimed range without undue burden and without resorting to inventive skill, rather than to well-known ancillary features.<sup>1</sup>

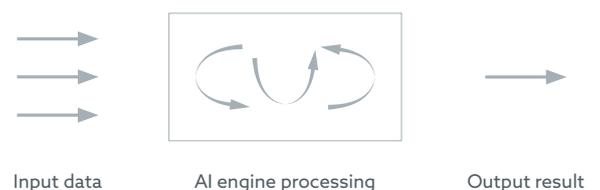
In principle, one example may suffice, though for claims covering broad fields different examples or variations are recommendable.<sup>2</sup> The application may include structural and/or functional explanations, the latter usually better suiting computer-implemented inventions.

An objection arises if there are serious doubts substantiated by verifiable facts.<sup>3</sup> In particular, an invention may be considered insufficiently disclosed when the successful performance of the invention is dependent on chance or when it would be contrary to well-established physical laws.<sup>4</sup>

## 2. How are AI inventions handled?

The EPO does not treat AI inventions substantially differently, though particular care has to be exercised as to what constitutes the common general knowledge of the skilled person, what is sufficient information or what is undue burden for inventions involving AI and ML.

In order to illustrate the peculiarities of AI inventions, we will refer to the following schematic representation of an AI system, which includes an AI engine representing, e.g., the neural network to which input data is provided either in the learning phase or in use, and which outputs a result of the AI engine processing.



Under AI engine, we include also aspects of how its training is controlled, how the neural network is structured, how the trained network is operated, etc. The above figure is deliberately similar to the one included in G1/19,<sup>5</sup> a decision dealing with computer-implemented simulations that will be the topic of the fourth article of the series, in which possible links to AI will be discussed.

<sup>1</sup> Guidelines for Examination in the European Patent Office, March 2022 edition, F-III, 1, first paragraph.

<sup>2</sup> Ibid.

<sup>3</sup> Guidelines for Examination in the EPO, F-III, 1, third paragraph.

<sup>4</sup> For a more detailed overview on the general topic, see the Guidelines for Examination in the EPO, F-III.

<sup>5</sup> G1/19 of 10 March 2021, Bentley Systems (UK) Limited, Reasons 85.

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### 3. What level of detail is needed for the training data?

To answer the question, we will take as example the case underlying T0161/18<sup>6</sup> dealing with the problem of measuring the aortic cardiac output of a person in a non-invasive manner by deriving it from the blood pressure measured at the arm of the same person. Instead of using formulas known in the art, the invention at issue makes use of a neural network trained with data pairs of a blood pressure curve obtained by measurement at the arm and a blood pressure curve obtained by measurement in the aorta. The application merely states<sup>7</sup> that, to avoid specialization of the claimed network, the training data should cover a wide range of input values and use measurement data from patients of different ages, sexes, constitutional types, and health conditions.

According to the Board, the application did not disclose input data suitable for training the artificial neural network, or at least one data set suitable for solving the technical problem, such that the person skilled in the art would not be able to carry out the invention.<sup>8</sup>

As one may infer from this case, it is recommendable to include in the application a reference to a publicly available data set suitable for carrying out the invention or, if the invention relies on a particular data set not publicly available on the date of filing, a detailed description of a particular exemplary training data set. The latter may include listing the data set or parts thereof in the description.

Further, extrapolating from the concise discussion in this decision, we believe that it would be important, at the drafting stage, to understand and disclose whether and how the training data would need to be specifically structured, and which fields would be therein contained, to handle the broad claimed range covering patients characterized by different blood pressures and different correlations between arm and aorta parameters, because of their different age, sex, and physiological or pathological conditions.

Ideally, when not publicly known at the time of filing, one should consider disclosing, e.g., by listing at the end of the description, at least one data set suitable for the invention to be worked throughout the whole range. However, such datasets are usually very large to list without incurring excessive official fees for the resulting lengthy description. An alternative lies in including in the description a reference to the data set included in such file while stating that this is deemed to be incorporated, and providing the EPO, upon filing, with a copy of the data set.<sup>9</sup> We are not aware of a mechanism officially recognized by the EPO for depositing datasets like to the one known and regulated for the deposit of microorganism;<sup>10</sup> nonetheless, we believe that there are ways to possibly achieve this result depending on the details of the case.

Hence, when listing is not an option for the Applicant, it is advisable to at least describe the training data, including for example a description of which fields it should contain, how the entries of the respective fields can be obtained, the statistical set of samples to be used for the data collection, etc. In fact, this may increase the credibility of how the neural network can function to output a useful result over the whole claimed range or possibly facilitate, if needed, the filing of a representative dataset at a later stage of the procedure while arguing that it corresponds to the one originally described. In addition, applicants should also consider including test results showing that, given the provided or described training data, the neural network achieves the intended function with reasonable accuracy. Thus, a detailed explanation on the input data may be helpful to sufficiently describe also how the output data is ultimately obtained.

This highlights the importance, not only of disclosing the training data in detail, but also of explaining or providing evidence on how the training is fit for purpose.

<sup>6</sup> T0161/18 of 21 May 2020, ARC Seibersdorf Research GmbH.

<sup>7</sup> The description on the training data is rather short, see the last paragraph on page 5 and the first paragraph on page 6 of the international A2 publication.

<sup>8</sup> T0161/18, Reasons 2.1 to 2.4.

<sup>9</sup> See e.g. Case Law of the Boards of Appeal of the European Patent Office, 10th edition, July 2022, section II.C.4.2: "In order to be validly incorporated, each document [on which Applicant wants to rely in the description to the effects of a sufficient disclosure] must: (i) be available to the Office on or before the date of filing of the application; and (ii) be available to the public no later than on the date of publication of the application (...)."

<sup>10</sup> See also the epi's comments of 22 December 2022 on CA/PL 5/20, found in the epi Information 01/2021, pp. 9ff.

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## 4. The AI engine: Technical literature as evidence of common knowledge

Many applications rely on an off-the-shelf AI engine treated as a black box. Unless the technology used for the black box is fully irrelevant to the execution of the invention, it is recommended to give at least one reference to technical literature to guide the skilled person in reproducing the invention. T0466/09<sup>11</sup> offers an interesting example in that regard, in which the Board held that the patent met the requirements of Article 83 EPC.

The patent underlying this case relates to a method for monitoring the health of a patient. At a very general level, the method requires using measurements of a patient's blood glucose levels to formulate and subsequently correct an adaptive mathematical model that takes into account the patient's diet, medication and physical strain, such that the adaptive mathematical model learns to predict the patient's blood glucose level.

The opponents relied on various lines of argumentation in alleging lack of sufficient disclosure. Inter alia, it was argued that the patent included only a single example of a mathematical algorithm that could be used, but not how to actually construct the claimed model, nor how to determine whether a given model was suitable. Furthermore, it was argued that no guidance was provided as to how inputs to the model should be processed, i.e., quantified, scaled, pre-processed and represented.

However, the Board considered that Widrow's adaptive LMS algorithm, which was mentioned as the only example for the mathematical model, was described in detail in technical literature forming part of the common general knowledge of the skilled person in this technical field.<sup>12</sup>

Similar to T0161/18, the application did not disclose a specific form of the input data should take. In our view, one could envisage, for example, a number of calories consumed to reflect diet, or an amount of a particular active ingredient to reflect medication, but no such disclosure was provided in the patent. In this case however, the Board held that, in view of the wording of the claim, a rudimentary incorporation of the patient's diet, medication and physical strain as parameters of the mathematical model would be sufficient.<sup>13</sup>

It is worth noting that the patentee's inventive step arguments were not based on aspects of the adaptive mathematical model, which was considered to be anticipated by a prior art document, but on features relating to use of the model by means of a mobile phone or two-way pager.

Further, all data and measurements used to formulate and correct the adaptive mathematical model related to the same patient and, while some of the prior art indicated that the exact effects of the parameters on glucose metabolism were not known, there seems to have been no doubt that these parameters would be relevant to the patient's blood glucose level.

Hence, this case teaches that reference to literature may help in preventing negative findings on sufficiency of disclosure, especially if the features at issue are not central to defending novelty and inventive step. However, as the next case shows, it is prudent providing a more detailed description of the AI-related aspects, especially when these features are considered more central to the definition of the invention.

<sup>11</sup> T0466/09 of 8 January 2013, Nokia Corporation.

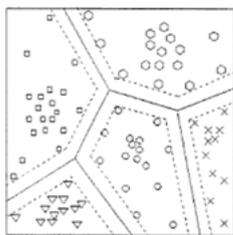
<sup>12</sup> T0466/09, Reasons 4.

<sup>13</sup> T0466/09, Reasons 4, and paragraphs [0028] and [0029] of the patent.

## 5. Known AI techniques and the entire scope of the claim: Critical scenarios

An issue may arise when the AI engine, even if well-known and well-referenced in the application, may have shortcomings making it unsuitable for working the invention over its entire claimed scope. We will illustrate this situation by referring to T1358/09.<sup>14</sup>

To generalize, the claimed method involves converting training data, in the form of text documents, into vectors based on the frequency of occurrence of a certain term in the respective documents and dividing the resulting vector space into subspaces based on the clusters of vectors. Classification is then achieved by determining into which subspace the vector of a new document is mapped and a confidence of this classification is based on whether the new vector was mapped to a margin of the subspace (where none of the training documents were mapped) or not. The following schematic illustration is Figure 3<sup>15</sup> of the patent application at issue in T1358/09, showing various subspaces and the margins therebetween.



- Documents in class I
- Documents in class II
- △ Documents in class III
- × Documents in class IV
- ▽ Documents in class V

Oversimplifying, the invention aims at classifying text documents by using mathematics to represent each of them on a map divided into regions, each region corresponding to a classification of the document. Thus, the type of document can be understood by looking into which region it has been mapped by the AI algorithm. For example, in the above figure, documents mapped to the upper right-hand region, i.e., those in class III, may be invoices, and documents mapped to another region sales requests, letters, etc.<sup>16</sup>

However, the applicant's own remarks in the application highlighted to the Board that such an approach was only workable where the clouds of vectors are pairwise linearly separable,<sup>17</sup> i.e., where the regions in the map are separable according to certain mathematic properties. As this could not be guaranteed, the Board voiced their skepticism on whether the requirements of Article 83 EPC had been met, although, in view of the inventive step objection, the Board eventually did not decide on this issue.

Here, it is worth noting that the application did in fact include references to particular techniques to address this issue. Despite this, the Board commented that the application did not explain any of these techniques in detail, and that claim 1 did not specify any measure being taken to ensure linear separability,<sup>18</sup> i.e., to ensure that the shortcomings recognized by the Applicant could be dealt with by the invention.

As such, where a proposed machine learning technique has some limitation, the application as filed must include a detailed description of how this limitation may be overcome and/or explicit basis to amend the claims to exclude cases where the technique may not work, depending on the details of the case.

<sup>14</sup> T1358/09 of 21 November 2014, BDGB Enterprise Software Sàrl.

<sup>15</sup> See WO 00/67150, the international publication of the application underlying the case at issue.

<sup>16</sup> See, for example, the last paragraph on page 17 of WO 00/67150.

<sup>17</sup> T1358/09, Reasons 4.1 to 4.3.

<sup>18</sup> T1358/09, Reasons 4.4.

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## 6. Conclusions

- At the EPO, AI inventions are subject to the same sufficiency requirements as other inventions.
- Patent applications should generally provide detailed disclosure of how the AI engine is trained, including the training data used or at least one training data set suitable for solving the technical problem.
- It is also wise to cite or provide description even for an off-the-shelf AI engine, and descriptions of how any shortcomings thereof may be addressed.
- The description should be at least credible as to how the output data can be obtained in the entire claimed range given the described input data, AI technique and training. To this effect, providing test results to strengthen credibility should be considered.

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# Cross-Border Effects From Dutch Courts Without Local Patent Infringement

The case LONGi (Netherlands) Trading B.V. vs Hanwha Solutions Corp. has raised eyebrows on the ease with which the Dutch court provided an injunction for preventing patent infringement outside the Dutch borders. Although in the appeal the injunction was based on patent infringement, in the first instance the provisions judge<sup>1</sup> based the injunction on a general tort. This possibility may open new avenues for patent holders to fight infringement.

After grant a European patent should be validated in all those EPC Member States in which protection is desired. Since this also means that annuity fees for each of the Member States need to be paid, in most cases only a limited number of countries are chosen in which the patent is maintained. It appears that many European patents are only validated in 3 states (Germany, France and the UK), while only about 25% of the patents are validated in the Netherlands. This means that often a European patent is valid in one or more European countries, but not in the Netherlands.

Yet, the Netherlands is an important hub for international transport. Many goods enter the European market from Rotterdam and are distributed from there to other destinations in Europe. It follows that many distributor companies (or daughter companies) in the Netherlands serve to supply goods to foreign companies, and these goods may infringe patents in the European countries to which they are exported.

The case of LONGi (Netherlands) Trading B.V. vs Hanwha Solutions Corp.<sup>2</sup> related to such a distribution daughter company of LONGi.

While LONGi and Hanwha were involved in several infringement cases in Germany, France and the USA, the case in the Netherlands was started by Hanwha who approached the local court in Rotterdam for a request for seizures for evidence and surrender of solar panels that were held by LONGi Netherlands Trading B.V., which acted as distributor for Europe for the LONGi group.

In a preliminary case to lift the seizure, a counterclaim was filed by Hanwha to forbid LONGi Netherlands Trading B.V. from directly or indirectly infringing the patent in countries where this patent was still validly in force.

The provisions judge first assessed his competence to decide on this request. For a request that is based on unlawful behaviour, i.e. a tort, the Dutch court found itself competent since the defendant was based in the Netherlands and the harmful events – in this case the storage and distribution of the panels – were taking place in the Netherlands.

The provisions judge found that LONGi Netherlands Trading B.V. itself did not (directly or indirectly) infringe the patent by importing the panels into the Netherlands and storing them there or by exporting the panels to countries without patent protection. Further, it held that LONGi Netherlands Trading B.V. also did not directly infringe in the countries to which it exported. However, it held that the defendant would facilitate and encourage infringement of the parties that were buying the exported panels (i.e. the other companies of the LONGi group). Thus, considering the presumed validity of the patent (which was upheld in opposition) and the fact that it found the solar panels of LONGi to infringe the patent, it held that LONGi Netherlands Trading B.V. would act unlawfully by exporting the solar panels to countries where the patent was valid.

<sup>1</sup> In the Netherlands, the term "provisions judge" refers to a single judge in provisional cases, i.e. in cases where provisional measures can be ordered.

<sup>2</sup> Case ID: C/10/621252 / KG ZA 21-563, ECLI:NL:RBROT:2021:6825.

Since this threat was imminent, it was recognized that Hanwha had an interest in a preliminary decision and thus the provisions judge forbade LONGi Netherlands Trading B.V. from distributing the solar panels. Although this was not literally an injunction, the effect of this decision was identical to a cross-border injunction.

This decision was given by the provisions judge of the district court of Rotterdam, indeed the court that should be addressed when a defendant resides in the harbour of Rotterdam or when the harmful events take place in the harbour. Although for patent matters in the Netherlands only the courts in The Hague are competent, this is not the case when general unlawful behaviour is claimed. In the present case, the Rotterdam court found itself not competent to decide on basis of patent infringement, but competent to decide on basis of a general tort.<sup>3</sup> This also was recognized when the present case was appealed (the appeal court from decisions of the Rotterdam court is the appeal court in The Hague). There the case was again decided in favour of Hanwha, but now – since the appeal court in The Hague is competent on patent infringement matters – on basis of the imminent infringement.

The lesson to be learnt from this is that it could be possible to get a cross-border injunction from any district court in the Netherlands when the claim is based on the presence of unlawful behaviour of the defendant. Such unlawful behaviour can be caused by distribution of goods all over Europe from a local distributor company that, by distribution of these goods, would facilitate and encourage infringement outside the Netherlands. When both the distributor company and the foreign companies that would infringe are members of the same group, this requirement appears to be fulfilled.

However, two recent cases<sup>4</sup> showed that the Dutch company should have an active role in facilitating the infringement. If a Dutch company within the group is only summoned to establish the competence of the Dutch court, when this company is not involved in the cross-border infringement, the court will be prohibited to issue an injunction.

In case the Dutch group-member is not a distributor, it would also be sufficient if it can be proven that this company factually manages or has influence on foreign, infringing companies of that group.<sup>5</sup>

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<sup>3</sup> The competence of a court in a preliminary case is dependent on the competence of the court when this would be a case on the merits. In the present case, the Rotterdam court would be competent in a case on the merits on basis of a tort, but it would not be competent to decide on patent infringement.

<sup>4</sup> Boston Scientific Ltd. vs. Cook Medical, 3 May 2022 (C/13/713564 / KG ZA 22-118 or C/09/624716 / KG ZA 22- 111) and Ericsson vs. Apple, 9 May 2022 (C/09/6240 12 / KG ZA 22-42).

<sup>5</sup> Very recent case Novartis AG vs. Pharmathen Global B.V., 19 July 2022 (C/09/625801 / KG ZA 22-201).

# The History and Entanglement of the "Spezi" Trademark; What did Riegele and Paulaner Agree Back Then?

In Germany and specifically in Bavaria, a non-alcoholic mix drink with the ingredients Cola and Orange soda has reached cult status and may be recognized as one of the most popular non-alcoholic drinks. Among consumers this Cola and Orange mix drink is well-known as "Spezi".

Whenever the relevant public orders or refers to "Spezi", oftentimes the "Spezi" manufactured and distributed by the brewery Paulaner Brauerei Gruppe GmbH & Co. KGaA ("Paulaner") is meant. According to Paulaner, they sell about 90,000,000 litres of it every year.

Since 1957, "Spezi" is a registered trademark owned by the brewery Brauerei S.Riegele, Inh. Riegele KG ("Riegele"). It is undisputed that Riegele invented "Spezi" as the name for the above-mentioned Cola and Orange soda mix drink in reference to the Bavarian term for "friend". In this respect, Riegele is of the opinion that "Spezi" may not be used by just anyone for Cola and Orange soda mix drinks, as it is not a generic name.

## So, how did Paulaner get to use "Spezi" for their Cola and Orange mix drink?

Well, from a factual basis and as far as publicly communicated, in 1974 Riegele concluded a contract with Paulaner, which permitted Paulaner to use "Spezi" as a sign for the mix drink for 10,000 German Mark (roughly 5,000 Euro).

Riegele established an association in 1977 to expand the production of the mix drink with the help of other breweries. As part of the association, the breweries were allowed to use the name "Spezi" under licence. Paulaner has never joined this association.

**The question currently being subject of a legal dispute before the Regional Court Munich I (Germany) is the nature of the contract between Riegele and Paulaner concerning the mark "Spezi".**

Given the success of Paulaner's "Spezi" drink over the years and the one-time payment many years ago, Riegele terminated the original agreement with Paulaner, intending to conclude a fairer agreement, at least from Riegele's perspective.

Should a license be agreed upon, the court calculated that Paulaner would be obliged to pay an annual amount of approximately 5 million Euro, based on the amount of the "Spezi" drinks Paulaner sells within one year.

Paulaner is of the opinion that the parties concluded a demarcation agreement in 1974 and that Riegele's termination was unjustified. Thus, Paulaner filed a lawsuit to have the original agreement declared to be valid. Riegele on the other hand is of the opinion that the parties concluded a licence agreement, and that the termination was justified. Therefore, Riegele has filed a counterclaim seeking a judgement that the termination was justified. Thus, the question is whether a demarcation agreement or a licence agreement was originally concluded and with which provisions this was done.

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## Demarcation agreement vs. licence agreement

A demarcation agreement may be considered if the parties to the agreement have (potential) conflicting trademarks or might have such in the future and would like to exclude trademark collisions as far as possible. Therefore, the conclusion of a demarcation agreement is a commonly used instrument to efficiently eliminate (potential) trademark right conflicts and to further amortise the marketing investments so far made.

Typical contents of such agreements are, inter alia, a demarcation of the goods and services concerned, the signs, the distribution channels or the distribution territories.

In the absence of a termination provision in the agreement, the demarcation agreement applies for an unlimited period of time.

Licence agreements grant the right to use a trademark by way of a contract. The licence agreement determines the scope of use for the licensee. Usually, licence agreements are agreed on only for a limited time.

Both agreements may also be terminated or amended if necessary e.g. for good cause. For the demarcation agreement, a good cause could be considered a significant violation of the demarcation agreement or the loss or serious endangerment of a trademark right. Meanwhile for the licence agreement, the licensee repeatedly exceeding the limits of the licence constitutes a good cause.

An amendment of the agreements is possible if, after the conclusion of the agreement, there is a serious change in circumstances such that the parties would not have concluded the agreement in this way under these circumstances. For example, an adjustment of the demarcation agreement may be considered if an extension or reduction of the scope of protection of one of the trademarks is concerned. An adjustment of the license agreement could result from an unexpected increase in the licence fee.

## Back to Spezi

A decision in the "Spezi"-case has not yet been issued; so far the parties have considered achieving a settlement. At the hearing the presiding judge stated that the present agreement between Riegele and Paulaner may be interpreted as a demarcation agreement. In this regard it is questionable whether the requirements for a termination are fulfilled.

In the event that the court finds that the parties have entered into a demarcation agreement, the court assumes that, at the time the agreement was entered into, Paulaner and Riegele believed that Paulaner also had their own rights in relation to the "Spezi" mark, or at least expectations. Curiously, on the label of the mix drink Paulaner states: "Spezi licence" while naming the registration number of the trademark owned by Riegele. However, it should be noted that this indication on the label does not justify by itself the assumption that the parties concluded a licence agreement.

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# The German Patent Double Protection Prohibition and the UPCA: New Aspects to Consider

Historically, a European patent and its German counterpart could legally not co-exist in view of the German double protection prohibition. Because of this prohibition, the related German patent loses part or all of its legal effectiveness and thus its enforceability. Recent legal revisions, in light of the Unified Patent Court Agreement (UPCA), have created a new scenario: the double protection prohibition will not apply to: 1) European patents with unitary effect and 2) European patents which have not been opted out.

This fairly recent legal change has practical consequences and deserves a closer look, since the UPCA is expected to enter into force early 2023.

## Background

In practice, situations often arise where related national and European patents could co-exist in the same country. For example, a German patent and a European patent may share the same priority right(s) and the same proprietor(s), after first filing a German patent application followed by a European patent application claiming its priority and then prosecuting both applications up to grant. Such a scenario means that the proprietor(s) could potentially have two patents for the same invention, in the same country, and could enforce either of them.

To avoid this situation, German IP law contains a double protection prohibition.<sup>1</sup> Namely, by law, the German patent (herein 'related German patent') loses its legal effectiveness for the subject-matter that is already protected by the related European patent application. The related German patent does not cease to exist (and still accrues annuities) but practically becomes unenforceable with respect to the common subject-matter, which may concern part or all of the German patent.

The loss of legal effectiveness occurs once the European opposition period has lapsed or once European opposition proceedings are concluded, and the loss is irrevocable, i.e. definitive, even if the European patent is later amended or revoked. In practice, however, German infringement courts may interpret the legal requirements of the double protection prohibition narrowly, and, as a result, the German patent may, on a case-by-case basis, not lose its enforceability as categorically as the law suggests.

The double protection prohibition was introduced because it was held that there is no legal interest in owning two patents for the same invention, covering the same territory. In addition, the European patent was considered to have a greater economic significance so that it ought to take precedence. In essence, a proprietor currently needs to choose whether an invention is to enjoy patent protection via a German national patent or via a European patent with effect for Germany. The double protection prohibition, however, does not apply to German utility models, and thus, branching off a utility model allows a proprietor to have a German national IP right in parallel to the European right after all.

<sup>1</sup> Pursuant to new Art. II § 8 "Gesetz über internationale Patentübereinkommen" (see: BGBl. I S. 3914).

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## Recent changes

Recently, significant changes have been introduced into the German law to account for the new unitary patent system.<sup>2</sup>

In a nutshell, the double protection prohibition only continues to apply to nationally validated European patents that do not fall under the exclusive jurisdiction of the Unified Patent Court (UPC), i.e., European patents for which an opt-out<sup>3</sup> has become effective. In turn, this means that for European patents with unitary effect and for nationally validated, non-opted-out European patents, the double protection prohibition does not apply. For such constellations, the related German patent remains unaffected, meaning that there is no automatic loss of effectiveness. This new scenario will apply once the UPCA enters into force.<sup>4</sup> For nationally validated, opted-out European patents, the double protection prohibition remains unchanged. The loss of legal effectiveness occurs once the opt-out has become legally effective and is still irrevocable, even if the opt-out is withdrawn.

Finally, although the loss of effectiveness and enforceability of the related German patent neither applies to European patents with unitary effect nor to nationally validated, non-opted-out European patents, the recent legal revision has created a new "double assertion objection/defence"<sup>5</sup> that may limit enforceability. In other words, a patent infringement action based on the related German patent is to be rejected as inadmissible or is to be stayed if: 1) there is or was a comparable patent infringement action before the UPC based on the related European patent with unitary effect or on the related, nationally validated, non-opted-out European patent; and 2) the defendant raises the objection.

## Practical considerations

The legal revision of the German double protection prohibition implies that European patents with unitary effect and nationally validated, non-opted-out European patents can co-exist with the related German patent without the latter being affected. Hence, these European patents can be genuinely 'flanked' by a related German patent. Why though should applicants consider having a parallel German patent in addition to a European patent with unitary effect or in addition to a nationally validated, non-opted-out European patent?

There are several reasons which support such a strategy: i) an "all eggs in one basket" situation is avoided, ii) access to the German infringement litigation system can be maintained, and iii) the flexibility of German patent prosecution may be enjoyed. These three points are explained in somewhat more detail in the following:

i) One downside of a European patent with unitary effect is that it can be nullified for the entire territory by a single central nullity attack before the UPC. In such a case, a parallel German patent may provide a safety net for still having protection in Germany, the largest economy of the European Union.

ii) The German infringement litigation system, with its leading courts in Düsseldorf, Munich and Mannheim, offers relatively fast and cost-efficient enforcement of patents. Patent proprietors often use the German infringement litigation system in an early stage of resolving pan-European or even global patent disputes. This will likely continue to be a popular strategy, since this system may also help reduce the risk of central nullity attacks targeting related European patents with unitary effect.

<sup>2</sup> BGBl. I S. 3914 to 3916.

<sup>3</sup> Pursuant to Art. 83(3) UPCA.

<sup>4</sup> Pursuant to Art. 89 UPCA.

<sup>5</sup> Pursuant to new Art. II § 18 "Gesetz über internationale Patentübereinkommen", see: BGBl. I S. 3915.

iii) German patent prosecution practice not only allows for delaying the start of examination by up to 7 years, but it also offers a relatively high flexibility when it comes to amendments during prosecution. In some cases, this may allow for covering a competitor's product which cannot be covered by a European patent with unitary effect or by a nationally validated European patent, due to, for example, the strict claim amendment policy applied during EPO prosecution.

These considerations may all play a role for future filing strategies as well as for 'opt-out'-decisions. For example, if a 'flanking' German patent is desired for the reasons set out above, the European patent should not be opted out, since the related German patent would otherwise lose legal effectiveness. In other words, genuine double protection can only be enjoyed if the European patent is not opted out, with the exception of the "double assertion defence" (i.e. see above).

Finally, timing should also be considered. As mentioned, the new scenario (no double protection prohibition) will only apply once the UPCA has entered into force. Until then, the double protection prohibition still applies, and the related German patent may legally lose effectiveness. Hence, applicants may be interested in delaying examination proceedings of the related German patent until the UPCA enters into force for more choices and flexibility. This can be achieved either by filing normal term extension requests during examination before the German Patent and Trademark Office (GPTO) or by filing a special "decision delay request",<sup>6</sup> if no response term is pending and grant may be imminent.

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<sup>6</sup> See: "BIPMZ 2022, 157 Mitteilung Nr. 6/22 der Präsidentin des Deutschen Patent- und Markenamts über die zeitlich befristete Möglichkeit zur Aufschiebung der Erteilung eines Patents im Zusammenhang mit dem Inkrafttreten des Übereinkommens über ein Einheitliches Patentgericht (EPGÜ)".

# When Are Products "Available to the Public" in the Sense of Art. 54(2) EPC?

Following Enlarged Board of Appeal (EBoA) opinion G 1/92, the EPO's Boards of Appeal have adopted different interpretations of the criteria that need to be satisfied for a product to be made available to the public in the sense of Art. 54(2) EPC. A referral to the Enlarged Board of Appeal may provide clarity.

## I. Legal framework

In the patent field, the claimed subject matter must be novel and inventive over the prior art. In the European Patent Convention (EPC), the prior art is defined in Art. 54(2) EPC as comprising everything that has been made available to the public before the relevant (filing or priority) date of the patent or patent application.

The EPC does not distinguish between the various forms by which a disclosure may be made available to the public. Such a disclosure can be a written document or oral presentation, but also a product put on the market.

This is in line with the general principle that, in order for a disclosure to be available to the public, the *theoretical possibility* to access the disclosure suffices (in analogy to a written article, where the publication makes its content available to the public, not the actual act of reading). Thus, anything that a skilled person can derive from a product is considered to be disclosed.

However, in G 1/92, the EBoA highlighted that a disclosure is only available to the public if its teaching is reproducible, which is in line with the case law on other forms of disclosures.<sup>1</sup> The EBoA held in the Reasons 1.4 of G 1/92 (emphasis added):

## II. G 1/92

While the relevant content can be readily analysed in the case of written disclosure, what teaching is made available to the public by a product was a matter of dispute. As one example, does a substance disclose its chemical structure that can only be identified by analysis, or does such information only become available to the public once the analysis has been conducted and the results are published?

This question was answered three decades ago in G 1/92. The EBoA held that a product put on the market does disclose its composition and internal structure, even if no analysis is performed.

*An essential purpose of any technical teaching is to enable the person skilled in the art to manufacture or use a given product by applying such teaching. Where such teaching results from a product put on the market, the person skilled in the art will have to rely on his general technical knowledge to gather all information enabling him to prepare the said product. Where it is possible for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art.*

<sup>1</sup> Case Law of the Boards of Appeal of the European Patent Office, 10<sup>th</sup> edition, section I.C.4.11.

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### III. Case law applying G1/92

It is thus clear that, in order for a product to be available to the public in the sense of Art. 54(2) EPC, three criteria have to be met:

- a. The product must be *accessible*;
- b. The product must be *analysable*;
- c. The product must be *reproducible*.

Accessibility is often in dispute between the parties in the case of a public prior use, but this is not relevant for commercial products. Here, the criteria of analysability and reproducibility are key.

#### III.1 Analysability

A key question is whether a product needs to be analysable to the extent that all aspects of its composition and structure can be revealed, or is it sufficient if the properties in the claims can be identified.

In one decision, the exact internal composition and structure of a product could *not* be identified by even elaborate analysis techniques, so the product was deemed *not* to be available to the public.<sup>2</sup> Conversely, other decisions stated that an exact analysis of the structure is *not* required, but that the ability to identify *the claimed* compound, structure or property would be sufficient.<sup>3</sup>

One Board<sup>4</sup> considered that compounds that were present as impurities in a prior art product and which undisputedly *could* be analysed in a composition were however still *not* made available to the public by the product, as they were not relevant in the context of the product's commercialization. This decision was based on the Board's position that the term "chemical composition" in G 1/92 would need to be construed to indicate a level of detail that is relevant for a skilled person. Thus, the term would vary depending on the nature of the product and its intended application. A claim directed to the impurity compound was thus held novel.

<sup>2</sup> T 946/04.

<sup>3</sup> T 952/92, T 1452/16.

<sup>4</sup> T 2048/12.

<sup>5</sup> T 23/11, T 1833/14.

<sup>6</sup> T 1452/16.

#### III.2 Reproducibility

Whether a product can be reproduced in the absence of detailed information may very much depend on the technical field. As one example, in the polymer field, the reagents and synthesis conditions have a significant influence on numerous product properties, and a skilled person has to make a choice between thousands of catalysts that could be used under very different reaction conditions. Each of these choices will typically have some impact on the product properties. Without knowledge of the manufacturing process, it can be very difficult or impossible to reverse-engineer a commercial product in all its detail and with the exact combination of properties as observed for the commercial product (even if it could be analysed).

The question thus arises whether an *exact* reproduction must be possible, or *how close* a reproduced product must match a commercial product to be considered the same.

In several decisions, products that could not be reproduced to full identity have been considered a non-enabled entity and have thus been excluded from the state of the art.<sup>5</sup> Another decision considered that an exact reproduction is not required, and that it is only necessary that a skilled person be capable of reproducing a product having the properties required by the claim, even if an identical reproduction is not possible.<sup>6</sup>

## IV. Legal consequences

Diverging approaches also exist with regard to the legal consequences that arise when a product is not analysable and/or not reproducible. While several decisions completely excluded a product from the state of the art and assessed novelty and inventive step as if the product never existed,<sup>7</sup> the case law also includes an alternative approach in which information that could be derived from a non-reproducible product by known analysis techniques was nonetheless considered as information that was made available to the public.<sup>8</sup> Such an approach could also be relevant in cases where published information exists on a commercial product in e.g. datasheets, but where the product is itself not reproducible. Does such information form part of the state of the art, or is it to be disregarded because it relates to a non-enabled entity?

## V. Possible referral to the Enlarged Board of Appeal

In view of the issues discussed above, Board of Appeal 3.3.03 identified diverging interpretations of G 1/92 and is contemplating referring the following questions to the Enlarged Board of Appeal:<sup>9</sup>

- 1. Is a product put on the market before the date of filing of a European patent application to be excluded from the state of the art within the meaning of Article 54(2) EPC for the sole reason that its full composition or internal structure cannot be analysed or reproduced?*
- 2. If the answer to question 1 is no, is a partial technical information about said product put on the market which was made available to the public before the filing date (e.g. by publication of technical brochure, non-patent or patent literature), state of the art within the meaning of Article 54(2) EPC, irrespective of whether the full composition or internal structure of the product could be analysed and reproduced by the skilled person before that date?*

*3. If the answer to question 1 is no, is a partial technical information about said product put on the market which can be obtained by analysis, state of the art within the meaning of Article 54(2) EPC, irrespective of whether the full composition or internal structure of the product could be analysed and reproduced by the skilled person before that date?*

*4. If the answer to question 1 is yes or the answer to question 2 or question 3 is no, which criteria are to be applied in order to determine whether or not the composition or internal structure of the product can be analysed or reproduced within the meaning of opinion G 1/92.*

*(a) In particular, what are the criteria to objectively assess the level of detail required for an analysis of the composition or internal structure of the product?*

*(b) Are the criteria for reproducing the product the same as defined under the Case Law for sufficiency of disclosure?*

## VI. Outlook

If the Board decides to refer the above (and possibly further) questions to the Enlarged Board of Appeal, the Enlarged Board of Appeal decision will give valuable advice and improve legal certainty for both Patent Proprietors and Opponents in proceedings before the EPO.

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<sup>7</sup> T 23/11, T 1833/14.

<sup>8</sup> T 2458/09.

<sup>9</sup> T 438/19 relating to EP 2 626 911; HOFFMANN EITL represents the Patent Proprietor and questioned whether a commercial product has been made available to the public in the sense of Art. 54(2) EPC in view of G 1/92.

# Amendment of the Description Before the EPO: An Update

In the March 2022 issue of the *HOFFMANN EITLE Quarterly*,<sup>1</sup> we discussed a recent EPO Appeal Board decision<sup>2</sup> that questioned the legal basis in the EPC for requiring adaptation of the description of a European patent application to the amended claims. The decision sparked hope that the EPO's currently strict insistence on extensive adaptations would be eased. In the meantime, new case law has emerged from the EPO Boards of Appeal, some of which supports the original decision and some of which calls it into question. The EPO also recently commented on the issue of adapting the description.

## The original decision T 1989/18

T 1989/18 concerned an appeal against the decision of an Examining Division to refuse a European patent application on account of the description containing broader subject-matter than the claims, which issue the applicant declined to address by amending the description. The applicant argued that the European Patent Convention (EPC) does not require passages of the description to be removed even if the claims no longer cover these passages.

In its reasoning, the Board of Appeal agreed with the appellant and reviewed several EPC legal provisions that could be seen as basis for refusing an application when the description is not sufficiently adapted to the amended claims. The Board noted that Art. 84 EPC, which is frequently cited by Examining Divisions to demand adaptation of the description, requires above all that the claims be clear. Thus, according to the Board, if the claims are in themselves clear and supported by the description, their clarity is not affected by subject-matter in the description that lies outside the scope of the claims. The appeal was allowed, and the decision of the Examining Division was set aside.

Some practitioners and applicants welcomed this ruling as an indication that the EPO's strict requirement for conformity of the claims and description would be softened. If this change were to occur, less work would be required to bring the description into conformity with the amended claims, which can be a costly exercise for patent applications with many embodiments and examples.

## Follow-up decisions of the Boards of Appeal

Earlier this year, Board 3.3.01 confirmed in T 1444/20 the views Board 3.3.04 had taken in T 1989/18.<sup>3</sup> Both appeal cases concerned *ex parte* proceedings and the Boards comprised the same legally qualified member.

The question at hand in T 1444/20 was whether the applicant refusing to remove claim-like clauses, i.e., numbered paragraphs or embodiments, from the description prior to grant could lead to refusal of an application under Art. 84 EPC. In this case, no major inconsistencies existed between the claim-like clauses and the claims.

<sup>1</sup> Toby Simpson, Amendment of the Description: Is It the EPO's Guidelines That Require Adaptation?, *HOFFMANN EITLE Quarterly*, pp. 9-10, March 2022.

<sup>2</sup> T 1989/18 (Adaptation of the description/HOFFMANN-LA ROCHE) of 16.12.2021.

<sup>3</sup> T 1444/20 of 28.4.2022.

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The Board held that, since that the clauses appeared under the header “Specific embodiments of the invention”, they could not be mistaken for claims and thus had no bearing on the clarity of the claims. The Board, relying on the reasoning in T 1989/18, also found that allegedly redundant subject-matter such as claim-like clauses does not have to be removed.

In the meantime, a number of dissenting decisions have been issued in the context of inter partes (i.e., opposition) proceedings.

In T 1024/18,<sup>4</sup> Board 3.2.06 held that the requirements of Art. 84 EPC (clarity, conciseness, and support in the description for the claims) are not hierarchically ordered, i.e. support for the claims in the description is not a subordinate requirement to the claims’ clarity. Hence, even if discrepancies between the description and the claims would not render the claims unclear, such discrepancies could still violate the support requirement. According to the Board, “[...] to provide only support for the claims in one single passage of the description while the rest of the description might give a different or even contradictory meaning to the claims, would in essence negate the general meaning of the words “supports by the description” [...]”. The Board also held that the requirements of Art. 84 EPC pertain to the claims and the description as a whole rather than to isolated parts thereof. T 1024/18 has been cited by other, like-minded Boards.<sup>5</sup>

The argument was developed further in T 2293/18.<sup>6</sup> Namely, since the claims show the effective technical contribution over the state of the art, they must be based on the description to sufficiently enable the skilled person to work the invention (T 409/91 and T 659/93). Consequently, the description and claims were considered to form a unitary document that may contain different but not contradictory information.

## Recent views of the EPO

The EPO itself apparently saw a need to contribute to the discussion sparked by T 1989/18. In July 2022 the EPO issued a communication titled “EPO practice confirmed on adaptation of description” originating from a prior expert workshop on the topic of adapting the description.<sup>7</sup>

Therein, the EPO explicitly confirmed its usual practice according to which the description must be consistent with the amended claims. The EPO also made a link to Art. 69(1) EPC that concerns claim interpretation in national proceedings. Accordingly, fulfilling the support requirement would serve to ensure legal certainty for national post-grant proceedings, by avoiding diverging claim interpretations.

Finally, the EPO announced that the *Guidelines for Examination in the EPO* would be further revised to “provide a better definition of what should be considered inconsistent, conflicting or contradictory or to insert illustrative examples”. The respective section of the current *Guidelines* already saw significant additions in 2021. In particular, it was highlighted therein that parts of the description and drawings that are “inconsistent” (previously: “not covered”) with the claimed subject-matter must be removed or clearly labelled as not being part of the claimed invention in view of the support requirement of Art. 84 EPC.

<sup>4</sup> T 1024/18 of 1.3.2022.

<sup>5</sup> See for example T 2766/17 of 17.3.2022; T 0121/20 of 11.3.2022; T 1516/20 of 16.5.2022.

<sup>6</sup> T 2293/18 of 31.3.2022.

<sup>7</sup> “EPO practice confirmed on adaptation of description”, European Patent Office, 7 July 2022, <https://www.epo.org/news-events/news/2022/20220707.html>.

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## Conclusion

T 1989/18 is facing resistance from other EPO Boards of Appeal and also from the EPO itself. Only T 1444/20 followed the notion expressed in T 1989/18 that there would be no legal basis in the EPC to demand certain adaptations of the description as a result of amendments made to the claims. At least five other decisions from the Boards of Appeal disagreed with T 1989/18, and the EPO in its recent statement confirmed its current practice, not following T 1989/18 either.

It seems unlikely that the EPO's strict requirements and practice on adapting the description will change any time soon. Yet, the existence of contradicting decisions of the Boards of Appeal may lead to a referral to the Enlarged Board of Appeal, either by a Board or the President of the EPO, to ensure uniform application of the EPC. However, no such initiative is currently in sight.

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