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Amicus Curiae statement concerning case G 2/21

Dear Sirs,

please find attached our written statement concerning the Enlarged Board of Appeal case G 2/21 in accordance with Art. 10 (1) RPEBA.

Yours sincerely,

/Heiko Sendrowski/
Senior Counsel IP

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1. Reformulation of the referred questions

We encourage the Enlarged Board of Appeal to reformulate the questions posed by the referring Board, because in their present form the sequence of questions is illogical, and the questions conflate different dogmatic concepts.

Currently, question 1 concerns the principle of free evaluation of evidence, whereas questions 2 and 3 concern the very matter requiring support by evidence. This is a non sequitur. Before an answer can be rendered on how evidence is to be evaluated, there must first be a decision on the matter open for support by evidence.

The questions 2 and 3 relate to the plausibility of effects. Both questions neither define the nature of “effects” nor the setting under which the existence of “effects” would be decisive for the grant or maintenance of a patent. Nor does the EPC contain an article or rule concerning “effects”. The term “effect” has, however, been used in quite different dogmatic contexts, e.g. regarding the “technical effect” of computer programs, the “technical effect” of new therapeutic applications, the “technical effect” of selection inventions and the “technical effect” invoked for defining the objective technical problem in the analysis of an inventive step. Thus, the present wording of the questions is not clear.

It is furthermore dubious if the referring Board depends on an answer to either of questions 2 and 3 referred to the Enlarged Board for a decision on the case. In the questions 2 and 3, the Board asks about the legal consequences if the skilled person does not accept, at the filing date, effects to be plausible (“not implausible”) in view of the information provided in the original application documents. However, the contentious issue is not a *lack* of information in the original application documents. Instead, the *correctness* of such information is disputed. Thus, an answer to the questions in their current form arguably is not required to decide the case.

Despite these shortcomings, the referring Board’s questions touch on points of law of fundamental importance. As expounded below, effects of an invention can be decisive in patentability assessments under various EPC articles. And the mode of evaluation of evidence, in particular the principle of free evaluation of evidence, is a necessary constraint for all fact-based decisions of the EPO organs. We therefore encourage the Enlarged Board not to hold the referral inadmissible but instead to reformulate the questions to address the underlying legal issues.

Because the referred questions need to be reformulated, we hereinafter comment on certain aspects of law discussed in the referring Board’s decision without explicit link to the questions in their present form.

We will hereinafter first define our interpretation of “effects of an invention” and show that their acceptance or rejection is decisive in various perspectives of patent examination. Then, we will explain the conditions that, in our opinion, must be met such that “effects of an invention” can be considered in the examination process. Finally, we will comment on which matters are open to

support by evidence and how evidence ought to be evaluated. We furthermore attach a summary of our opinions and a compilation of decisions cited herein.

2. Effects of an invention

2.1 To be patentable an invention must allow a skilled person to achieve at least one technical effect. To fully understand the concept of technical effect, the concept of an invention and the delimitation of technical effects as compared to purely physical or purely commercial effects must be analysed.

2.2 First, a distinction must be made between an invention and the claims of a patent application, because the effect of an invention does not have to be an explicit, limiting claim feature:

Inventions are technical teachings (cf. G 1/98 of 20.12.1999, sec. 3.10). As such, they necessarily at least declare a causal relationship between technical effects and the means to achieve them (cf. G 1/08 of 9.12.2010, sec. 6.4.2.1 with reference to the German Federal Court of Justice's "Red Dove" decision). Both – the technical effects and the means to achieve them – are indispensable constituents of any patentable invention: if the technical effect of the invention were left undefined or not apparent, the invention would lack industrial application (Art. 57 EPC, cf. R. 42 (1) f EPC). If the means to achieve the effect were left undefined or were unreliable, the invention would not be sufficiently disclosed to be carried out by a person skilled in the art (Art. 83 EPC) or would not solve the problem of the invention (Art. 56 EPC).

The claims define the subject matter for which protection is sought (cf. Art. 84 EPC). The function of such definition is to enable third parties and judges to ascertain which aspects of the invention are to be monopolised by the patentee. The definition of protected subject matter may not require that effects of the invention be recited in the claims. If the claim features consist of definitions of the technical means of the invention, then protection for these means is sought as such, regardless of any effect elicited by the application of those means. If, on the other hand, protection is sought for technical means of the invention only in so far as a specific technical effect is obtainable or obtained thereby, then the effect must be incorporated as a limiting claim feature.

It follows that the invention must have a technical effect attainable using reliable technical means even if the effect is not recited in the claims.

2.3 The technical effect of the invention can be of any kind. However, it seems expedient to emphasise that assessments of patentability are not only based on physical effects observable on a physical entity (technical effects sensu stricto, cf. G 1/19 of 10.03.2021, sec. 51). In addition, technical advantages are also taken into account. Advantages are based on an *evaluative* comparison of two quantities or states. Since physical parameters as such are value-free, the standard for evaluations is necessarily not a physical one. Instead, the standard of evaluation must be a commercial one, because patent law is intended to promote the commercial exploitation of technical teachings (Art. 57 EPC). For example, where an invention can be performed at a reduced reaction temperature, the physical parameter "temperature" is not as such crucial for

deciding whether the invention should be industrially applied. The reduction of reaction temperature, however, can significantly reduce the costs of performing the invention by reducing fuel consumption, reducing wear and tear, making the invention less hazardous, etc. Beneficial commercial effects may thus be inextricably linked to changes in physical parameters. In such cases they constitute technical advantages or technical effects sensu lato.

Albeit not being strictly technical in themselves, technical advantages can influence the interpretation of the technical teaching of the invention. The statement of such advantages may guide the skilled person in the selection of appropriate technical means to solve a technical problem. Stated advantages can also change the skilled person's expectation of how strongly a technical effect may be obtained or which trade-offs between technical effects have to be accepted. This influence can apply both to the invention as such and to the claimed subject matter. Technical advantages can thus alter the technical character of the invention (cf. T 440/91 of 22.3.1994, sec. 4.1) in the same way as a statement of a technical effect sensu stricto. It is thus traditionally accepted that technical advantages can be relied on to support patentability, in particular during discussion of inventiveness.

For the purposes of the following explanations, we will therefore not differentiate between technical effects sensu stricto and technical advantages (technical effects sensu lato).

3. Disclosure of effects of an invention

3.1 The effects of an invention are, as described above in section 2, inextricably linked with the means to achieve them. A statement of an effect of the invention thus influences the interpretation of the claimed subject matter. This can affect the outcome of an analysis of patentability in several ways: By taking a particular effect into account, a verdict on clarity (Art. 84 EPC) could be influenced, because the skilled person with a mind willing to understand would rule out claim interpretations that cannot be reconciled with the whole disclosure, i.e. interpretations not conductive to the manifestation of an effect stated in the original application documents (T 920/00 of 16.6.2003). Also, the very meaning of claim features can be affected by considering a particular purpose; this influences the outcome of an analysis under Art. 123 (2) and (3) EPC (cf. T 190/99 of 6.3.2001, sec. 2.4). Such consideration also applies mutatis mutandis for the assessment of novelty, Art. 54 EPC. Furthermore, in light of the effect to be achieved, the skilled person would receive guidance on the implementation of claim features, in particular of functional claim features, and this would influence the assessment of the "technical concept fit for generalisation" (cf. T 1121/03 of 20.4.2006, sec 3.1), thereby influencing a verdict on sufficiency of disclosure (Art. 83 EPC). And the effects of the invention can influence the choice of closest prior art and the formulation of the objective technical problem in the assessment of inventiveness under Art. 56 EPC.

In view of the fundamental importance of a definition of effects of the invention, it is necessary to decide if all effects must be already disclosed in the original application documents or if they can be disclosed after the filing date. The answer to this question follows from an analysis of the purpose of the patent system.

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Patent law is distinguished from instruments for the advancement of science and the arts: the mere recognition of a technical teaching and making it practicable belongs to the field of science (engineering), the implementation of a technical teaching for its own sake is art. Patents, on the other hand, are intended to serve as an incentive for industrial activity (Benkard PatG/Asendorf/Schmidt, 11th ed. 2015, PatG § 5 marginal no. 4: "Patente sollen dem Ansporn für den Gewerbefleiß dienen"). Only inventions which can be applied commercially are eligible for patent protection. An invention is industrially applicable if its subject matter can be made or used in any kind of industry (Art. 3 Strasbourg Patent Convention and Art. 57 EPC). An invention is not already industrially applicable if its subject matter can be produced at all – this is a question to be decided under Art. 83 EPC. If Art. 57 EPC is to have an independent normative character, it cannot be exhausted by repeating the patentability requirement of Art. 83 EPC. Instead, for industrial applicability, the gainful character of the technical teaching of the invention is crucial. This industrial character results from the fact that the invention has an inherent technical property that is amenable to industrial exploitation. It is at indispensable that the invention brings about an effect that goes beyond the mere existence of the produced subject-matter or the mere fact of carrying out the process.

The industrial applicability must already be given on the filing date. The properties which confer industrial applicability on the invention must accordingly be described in the original application documents (R. 42(1) f EPC; see also T 898/05 of 7.7.2006, headnote 1). This prohibits making the grant or maintenance of a patent dependent on effects found or made credible only afterwards.

Thus, all effects (technical effects sensu stricto and technical advantages) must be disclosed in the application documents on the filing date. Effects that are invoked later cannot be taken into account when deciding on patentability of an invention, because the person skilled in the art could not exploit these effects commercially given the information disclosed on the filing date: they were either not disclosed to him or they were so unsupported that taking up a commercial activity to achieve these effects would have been purely speculative. However, the purpose of patent law is not to promote activities undertaken on an off-chance or in the dark. The patent applicant is only entitled to an exclusive right to the extent that the invention enriches the practical competence of the person skilled in the art in the sense of a reasonable, purposeful approach ("Belohnungstheorie", cf. BGH X ZR 100/00 – Enalapril; "patent bargain", cf. UK Supreme Court, in Warner-Lambert v Mylan & Actavis [2018] UKSC 56). This competence is not improved by allegations of means-effects-relationships which are either not apparent to the skilled person on the basis of the original application documents or which are so unsubstantiated that the skilled person would consider an industrial endeavour to exploit them unreasonable.

3.2 However, the requirement to disclose, at the filing date, all effects relied on for justifying the grant or maintenance of a patent does not require an explicit enumeration of those effects. The application documents are to be interpreted by the skilled person (cf. T 164/92 of 29.4.1993, headnote 1). This person automatically applies the common general knowledge at the filing date to understand the contents of the original application documents (cf. T 1046/96 of 19.1.1998, sec. 4) and thus need not be taught what is apparent or what follows necessarily from the explicit teaching of the original application documents.

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A distinction must be made between the common general knowledge and any specific prior art. Unless proven to the contrary no single prior art is part of the common general knowledge. Thus effects that only become apparent by a comparison of the original application documents and a particular prior art (including the closest prior art) cannot be taken into account.

Taken literally, the reasons of decision T 386/89 of 24.3.1992, sec. 4.3, seem to disagree. In that decision the Board held that the problem of the invention can be reformulated "as long as the problem can be clearly deduced by the skilled person from the application as originally filed when considered in relation to the nearest prior art". However, the aforementioned statement was made in the context of a potential modification of "a specific problem identified in the description" and was not meant to endorse the creation of a completely new problem by relying on effects unforeseeable by the skilled person on the basis of the original application documents alone. In particular, the Board agreed to an earlier expression used in decision T 184/82 of 4.1.1984, sec. 5, which required that the skilled person "could recognise the same as implied or related to the problem initially suggested", which is in agreement with the opinion expressed herein.

Thus, where the original application documents disclose an effect of the invention and a prior art document only differs by the degree to which this effect can be reached, this difference can be taken into account. Likewise, where the prior art is encumbered by a disadvantage which the skilled person, in the light of the common general knowledge, would anyway aspire to reduce or eliminate even in the absence of an explicit mention in the original application documents, then the effect of avoiding or reducing the disadvantage can also be taken into account. However, an effect not identified or implicit in the original application documents, and which only becomes apparent by comparison of the claimed subject matter with a specific prior art, cannot be taken into account. Such effect would be a surprising additional information to the skilled person and would constitute an unforeseen extra effect not eligible for consideration, e.g. in the context of an inventive step assessment (cf. T 226/88 of 11.10.1989, sec. 3.5).

3.3 The requirement to disclose the effects of the invention must not be interpreted as requiring proof of the actual performance of the invention in the original application documents. In many cases, the application will provide examples where the fact that the effects are achieved is demonstrated. However, this is not a requirement of the EPC (cf. R. 42 (1) e EPC). It would indeed be unfair to limit the scope of the invention and thus the scope of claimable subject matter to the contents of the examples because such limitation would install an unwarranted advantage to the applicant in command of the greatest financial and experimental resources. The patent system does not intend to reward the "sweat of the brow" but instead rewards ingenuity.

The effects of the invention must, however, be disclosed in such a way that the skilled person does not merely understand the nature of the alleged effect. Rather, the skilled person must also be able to recognise that obtaining the alleged effect is a credible, preferably inevitable, result of the skilful application of the claimed subject matter; the original application documents must warrant a serious expectation of success in the eyes of the skilled person. This again is a result of the requirement that patents are granted for inventions (Art. 52 (1) EPC) and not for theories, plans or idle speculation. The patent system is intended to contribute to the progress of the technical arts,

to enrich the knowledge of technical cause-effect relationships and is not intended to monopolise an unploughed field of research (cf. T 1063/06 of 3.2.2009, sec. 3.2). The original application documents thus must teach the skilled person which problem is solved by the invention (R. 42 (1) c EPC). Merely inviting the skilled person into an ongoing research project to find out what the invention actually is (or what effects are obtainable by the invention) is not sufficient. It would thus constitute an abuse of the patent system to merely list technical means and indiscriminately attribute effects to them in the hope that at least one means-effect-combination can be validated during the grant procedure.

Whether or not original application documents provide a credible teaching of effects of an invention cannot be decided in the abstract. In some cases a short description of the means and the effects will suffice, in particular in those areas where the skilled person is already in possession of detailed knowledge of technical relationships. The less comprehensible it is for the skilled person that a certain effect is achieved by the means indicated, the more detailed and persuasive the explanations in the original application documents must be in order to convince the skilled person of the existence of a corresponding means-effect relationship. For unprecedented technical effects, this may require the disclosure of a full proof in the original application documents (cf. T 1538/05 of 28.8.2006, sec. 6). There is no presumption of credibility of an alleged effect merely because the allegation is made in a patent application.

3.4 The effect must also be obtainable over the whole scope of the claimed subject matter, notwithstanding isolated failures. As described above, an invention, being a technical teaching, defines a causal relationship between an effect and the means for obtaining it. If an effect is not obtainable over the whole scope of the claimed subject matter, then the technical teaching underlying such claim is incomplete. However, according to Art. 52 (1) EPC patents shall be granted for “inventions”, which implies that the invention must be complete at the filing date and excludes granting patents for “inventions in statu nascendi” (cf. G 1/03 of 8.4.2004, sec. 2.5.3). Thus, patentability of claimed subject matter cannot be justified by relying on effects that are not part of a completed invention.

4. Evidence and evaluation

4.1 No evidence is necessary, or even possible, where the veracity of an allegation is irrelevant for the decision to be reached. Thus, where an alleged effect is not credibly disclosed in the original application documents, it is of no concern if documents provided after the filing date confirm the existence of the effect.

However, an applicant must be allowed to defend himself against the allegation, e.g. when confronted with prior art, that an effect is not credibly disclosed in the original application documents. Likewise, an applicant must be allowed to defend himself against the allegation, e.g. when confronted with later experimental data, that an effect is not obtainable despite information given in the original application documents. Both allegations must be substantiated by verifiable facts and thus are open to be contested. In particular the applicant must be allowed to provide, as usual, documents in support of his interpretation of the skilled person’s assessment and the

correctness of information contained in the original application documents. The same applies if credibility of an effect is challenged after grant of the patent. Again, once the opponent has satisfied his burden of proof, the burden shifts to the patentee.

4.2 The evaluation of such evidence must proceed according to the established principles of free evaluation of evidence. Neither the EPC nor the case law allows for an exception to the principle of free evaluation of evidence. Both Articles 113 and 114 EPC explicitly refer to evidence as a basis for decisions in all proceedings before the EPO. By using the term “evidence” the EPC highlights that the alleged facts have to be evaluated for their relevance for the decision to be made and for their truthfulness. An allegation of fact that is not relevant to the decision does not need further evaluation, and an alleged fact of dubious veracity cannot form the basis of a decision. Thus, the Articles guarantee that decisions are based on verifiable facts which have indeed been verified and found to be relevant and truthful.

There is no provision in the EPC which requires a deciding body of the EPO to disregard certain evidence. Even in the case of belatedly produced evidence there is no prohibition of evaluating such evidence. Instead, Art. 114 (2) EPC leaves the evaluation to the deciding body’s discretion. Thus, the evaluation of evidence is necessarily a “free” evaluation, unlimited by any surmised bounds other than consistency. This principle of free evaluation of evidence has so far never been called into questions by literature, and it has been affirmed repeatedly by decisions of the EBA (cf. G 1/12 of 30.4.2014, answer to question 2).

Thus, since there is no doubt that *all* evidence has to be evaluated according to the principle of free evaluation of evidence, no exception can be made for *some* evidence.

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5. Summary

1. The EBA should hold the referral admissible. The EBA should reformulate the questions proposed by the referring Board to address the underlying legal issues.

2. Acceptance of technical effects conferred by an invention, including technical advantages, affect decisions on patentability under all Articles 54, 56, 57, 83, 84 and 123 EPC.

3. The purpose of patent law is not to promote activities undertaken on an off-chance or in the dark. Patent protection under the EPC is a reward for making non-speculative, concrete technical effects available to the public.

3. Technical effects to be relied on for justification of patentability must be credibly disclosed in the original application documents to the skilled person’s satisfaction. The detail of factual substantiation required for a credible disclosure is to be determined on a case by case basis.

4. If the actual existence of a technical effect is disputed, this issue can be resolved on the basis of any evidence that proves or disproves the correctness of the assertion. Evidence that merely relates to the disclosure of the technical effect in the original application documents and their expert interpretation or the skilled person's confidence in or prejudice against the correctness of the asserted effect, on the other hand, is unsuitable and cannot be considered to that extent.

5. If the credible disclosure of a technical effect is disputed, this issue can be resolved on the basis of any evidence concerning the disclosure of the technical effect in the original application documents and their expert interpretation or the skilled person's confidence in or prejudice against the correctness of the asserted effect. Evidence relating only to the actual existence of a technical effect, on the other hand, is inappropriate and cannot be considered to that extent.

6. Any evidence appropriate for proving or disproving a factual assertion must be evaluated according to the principle of free evaluation of evidence. It is not a limitation of the principle of free evaluation of evidence that evidence which is unsuitable to prove or disprove a factual assertion cannot be evaluated.

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Cited decisions

decision	comment
G 1/98 of 20.12.1999, sec. 3.10	Patents are “granted … for technical teachings”
G 1/08 of 9.12.2010, sec. 6.4.2.1	The term "invention" requires a technical teaching, characterised as "a teaching to methodically utilize controllable natural forces to achieve a causal, perceivable result"
G 1/19 of 10.03.2021, sec. 51	technical effects are “effects on a physical entity in the real world”
T 440/91 of 22.3.1994, sec. 4.1	Additional advantages, not indicated in the application as filed, but relating to the same field of use cited therein, may be provided subsequently as a justification for the patentability of the invention under Article 52(1) EPC, “dès lors que ces avantages ne changent pas le caractère de l'invention”
T 920/00 of 16.6.2003	The patent must be construed by a mind willing to understand, not a mind desirous of misunderstanding
T 190/99 of 6.3.2001, sec. 2.4	Objections under Art. 123(3) EPC are unfounded if they are based on a claim interpretation which is not “technically sensible and takes into account the whole disclosure of the patent”
T 1121/03 of 20.4.2006, sec 3.1	It has to be established whether or not the patent in suit discloses a technical concept fit for generalisation
T 898/05 of 7.7.2006, headnote 1	It is necessary to disclose in definite technical terms the purpose of the invention and how it can be used in industrial practice to solve a given technical problem, this being the actual concrete benefit or advantage of exploiting the invention
BGH X ZR 100/00 – Enalapril	A patent grants its owner an exclusive right (limited in time) as a reward for disclosing the invention
UK Supreme Court, in Warner-Lambert v Mylan & Actavis [2018] UKSC 56	“The inventor obtains a monopoly in return for disclosing the invention and dedicating it to the public for use after the monopoly has expired”
T 164/92 of 29.4.1993, headnote 1	The disclosure of a publication is determined by what knowledge and understanding can and may be expected of the average skilled person in the technical field in question
T 1046/96 of 19.1.1998, sec. 4	The skilled person derives informations “from an application as filed by reading it in the light of common general knowledge”

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T 386/89 of 24.3.1992, sec. 4.3	An alleged effect of a described feature “cannot be taken into account when determining the problem underlying the invention for the purpose of assessing inventive step, if it cannot be deduced by the skilled person from the application as filed considered in relation to the nearest prior art”
T 184/82 of 4.1.1984, sec. 5	An effect of the invention can be used “provided that it is apparent to the person skilled in the art that the effect is implicit in, or related to, the problem originally set out”
T 226/88 of 11.10.1989, sec. 3.5	A possibly unforeseen bonus effect does not confer inventiveness
T 1063/06 of 3.2.2009, sec. 3.2	“Patent protection under the EPC is not designed for the purpose of reserving an unexplored field of research for a particular applicant, but to protect factual results of successful research as a reward for making concrete technical results available to the public.”
T 1538/05 of 28.8.2006, sec. 6	New physical theories must be “unambiguously proven”
G 1/03 of 8.4.2004, sec. 2.5.3	“When an application for a patent is filed, the process of making the invention has to be completed.”
G 1/12 of 30.4.2014, answer to question 2	“Proceedings before the EPO are conducted in accordance with the principle of free evaluation of evidence.”