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Datasheet for the decision of 21 January 2025

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Application Number:	16715353.5
Publication Number:	3245182
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Language of the proceedings:	EN

Title of invention:
PROCESS FOR PREPARING ETHYLENE GLYCOL FROM A CARBOHYDRATE

Patent Proprietor:
Avantium Knowledge Centre B.V.

Opponents:
Hoffmann Eitle Patent- und Rechtsanwälte Partnerschaftsgesellschaft mbB
Elkington and Fife LLP

Headword:
ETHYLENE GLYCOL FROM A CARBOHYDRATE /Avantium

Relevant legal provisions:
EPC Art. 56
RPBA 2020 Art. 12(4)

Keyword:
Inventive step (main request and auxiliary requests 1 to 3) - effect not made credible within the whole scope of claim
Amendment to case (auxiliary request 4) - admitted (no)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1377/22 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 21 January 2025

Appellant I: (Opponent 1)	Hoffmann Eitle Patent- und Rechtsanwälte Partnerschaftsgesellschaft mbB Arabellastr. 30 81925 München (DE)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Appellant II: (Opponent 2)	Elkington and Fife LLP 3-4 Holborn Circus Greater London EC1N 2HA (GB)
Representative:	Elkington and Fife LLP Prospect House 8 Pembroke Road Sevenoaks, Kent TN13 1XR (GB)
Respondent: (Patent Proprietor)	Avantium Knowledge Centre B.V. 29, Zekeringstraat 1014 BV Amsterdam (NL)
Representative:	Wurfbain, Gilles L. Avantium Support B.V. Kallenkoterallee 82A 8331 AJ Steenwijk (NL)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 4 April 2022 concerning maintenance of the European Patent No. 3245182 in amended form.**

Composition of the Board:

Chairman	J.-M. Schwaller
Members:	P. Ammendola
	J. Hoppe

Summary of Facts and Submissions

I. The interlocutory decision of the opposition division that found the patent in amended form with the claims of the main request to be allowable has been appealed by both opponents 1 and 2 (appellants I and II). Claim 1 thereof (hereinafter maintained claim 1) reads as follows:

"*1. Process for preparing ethylene glycol from a carbohydrate source, wherein hydrogen, the carbohydrate source, a liquid diluent and a catalyst system are introduced as reactants into a reaction zone; wherein the catalyst system comprises a tungsten compound and at least one hydrogenolysis metal selected from the groups 8, 9 or 10 of the Periodic Table of the Elements; wherein the diluent that is introduced into the reaction zone comprises an alkylene glycol; and wherein the carbohydrate source is reacted with hydrogen in the presence of the catalyst system to yield an ethylene glycol-containing product, wherein the reaction starts from the beginning in a diluent that comprises an alkylene glycol, and wherein the catalyst system comprises tungstic acid.*"

II. In the contested decision, the opposition division decided *inter alia* that the subject-matter of claim 1 of the main request was not obvious when starting from the prior art disclosed in D3 (WO 2014/161852 A1).

III. In their grounds of appeal, the appellants both contested the inventive step of the maintained claim 1 in view of D3.

IV. With its reply, the respondent filed four sets of claims labelled auxiliary requests 1 to 4.

V. Claim 1 of auxiliary request 1 differs from maintained claim 1 in the following amendments (made apparent):

"[...] wherein the reaction starts from the beginning in a diluent that comprises an alkylene glycol, ~~and~~ wherein the catalyst system comprises tungstic acid, and wherein the concentration of carbohydrate source in the diluent is from 4 to 50% wt."

Claim 1 of auxiliary request 2 differs from that of auxiliary request 1 for the added wording (made apparent):

"[...] wherein the catalyst system comprises tungstic acid, wherein the carbohydrate source is selected from the group consisting of starch, hemicellulose and hemicellulose sugars, glucose and combinations thereof, and wherein the concentration of carbohydrate source in the diluent is from 4 to 50% wt."

Claim 1 of auxiliary request 3 differs from that of auxiliary request 2 for the added wording (made apparent):

"[...] *wherein the catalyst system comprises tungstic acid, wherein the diluent comprises ethylene glycol, wherein the diluent further includes water as diluent, and wherein the amount of alkylene glycol in the diluent is in the range of 2 to 25% vol, based on the volume of water and alkylene glycol, wherein the carbohydrate source is selected from the group consisting of [...]".*

Claim 1 of auxiliary request 4 differs from that of auxiliary request 3 for the added wording (made apparent):
"[...] *in the range of 2 to 25% vol, based on the volume of water and alkylene glycol, and wherein the process is conducted in a CSTR, wherein hydrogen, the carbohydrate source, and the liquid diluent are continuously fed to the CSTR, and wherein continuously a product mixture comprising ethylene glycol and diluent is removed from the CSTR, wherein the carbohydrate source is selected from the group consisting of* [...]".

VI. Appellant I disputed the admittance of auxiliary request 4.

VII. In reply to the board's preliminary opinion, the respondent submitted observations in which the results of experiments 1 to 10 of the Table in paragraph [0049] of the patent in suit were compared with the help of four graphs.

VIII. At the oral proceedings held on 21 January 2025, the final requests of the parties were as follows:

The appellants requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the appeals be dismissed (main request) or, as an auxiliary measure, that the patent be maintained on the basis of the claims of one of auxiliary requests 1 to 4 filed with the reply to the grounds of appeals.

Reasons for the Decision

1. *Main request* - Construction of maintained claim 1

This claim describes a process for preparing ethylene glycol from a carbohydrate source that requires the introduction into a reaction zone of hydrogen, the carbohydrate source, a liquid diluent and a (bi-component) catalyst system. The claimed process is further characterised, *inter alia*, in that "*the reaction starts from the beginning in a diluent that comprises an alkylene glycol*" (this feature is hereinafter also referred to in short as the initial presence of an alkylene glycol) and in that "*the catalyst system comprises tungstic acid*".

The board finds convincing the respondent's submissions that the wording of maintained claim 1, describing the initial presence of an alkylene glycol, can only be construed by the skilled person as requiring the presence of (at least) one of these chemical compounds (one of which is ethylene glycol itself) already when the reactants meet and the reaction occurs for the first time since the beginning of the process.

As the appellants did not dispute this construction in the context of the discussion of the objection of lack of inventive step, no further details need to be given.

2. Main request - Inventive step (Article 56 EPC)

2.1 As to the closest prior art, the parties did not dispute the finding of the opposition division that the process for preparing ethylene glycol from a carbohydrate source disclosed in D3 constitutes a

suitable starting point for assessing the inventive step of the subject matter of maintained claim 1.

The respondent concurred with the opposition division that the initial presence of an alkylene glycol in the diluent and the inclusion of tungstic acid in the catalyst system were the two distinguishing features between the subject-matter of maintained claim 1 and the prior art process disclosed in D3 (in particular Example 1). During the discussion, the appellants also acknowledged these two features as the relevant differences distinguishing the claimed process from the prior art disclosed in D3. The board finds no reason to reach a different conclusion.

2.2 As to to the technical problem solved, according to the decision under appeal the respondent had convincingly explained why, for the skilled reader of the patent in suit, the experimental data in the Table in paragraph [0049] of the patent proved that (as stated in the subsequent paragraph [0050]) the initial presence of an alkylene glycol, in combination with the presence of tungstic acid in the catalyst system, ensured a higher ethylene glycol yield in comparison to when no alkylene glycol is initially present, and such effect would plausibly occur across the scope of the claim under dispute because, as explained in the patent itself and clarified by the respondent, tungstic acid was insoluble in water and the initial addition of an alkylene glycol would plausibly favour its dissolution already at the very beginning of the process.

As the initial presence of an alkylene glycol and the presence of tungstic acid in the catalyst system that are responsible for the superior yield in ethylene glycol also distinguish the process of maintained claim

1 from the process of D3, according to the opposition division, the technical problem solved by the subject matter of maintained claim 1 over this prior art had to be identified in the provision of a process for the production of ethylene glycol from a carbohydrate source with improved yield.

2.2.1 According to the appellants, neither the teachings in the patent nor the mere allegations provided by the respondent as explanations could justify the conclusion that the data in the opposed patent demonstrated the effect alleged in paragraph [0050]. In particular, no pair of experiments differed solely in the presence of ethylene glycol, the reported yields exhibited clearly significant variability and, in any case, the data were insufficient to render plausible the occurrence of such an effect across the entire broad scope of maintained claim 1. Therefore the claimed subject matter only solved the technical problem of providing an alternative to the prior art.

2.2.2 The respondent rebutted such objection by relying in particular on the analysis of the data in the Table of paragraph [0049] of the opposed patent, presented by means of the Graphs 1 to 4 submitted with the letter of 2 January 2025, in which it was concluded that the ethylene glycol yields observed in the invention experiments were clearly higher than those of the comparative experiments conducted under the same reaction time, and thus significant in spite of the differences in terms of reaction temperature between the compared experiments. The respondent also reiterated the explanations already provided in opposition and found convincing by the opposition division, as to the fact that the variability that was apparent from the difference in ethylene glycol yields

of the two comparative experiments 7 and 10 should not be expected to also affect the ethylene glycol yields of the invention experiments, and was in any case not so large to question the apparent difference in ethylene glycol yields between the invention and the comparative experiments. As to the disputed plausible occurrence of such effect across the scope of maintained claim 1, the respondent stressed that even very small amounts of alkylene glycol might be expected to have an influence on the dissolution of the few ppm of tungstic acid required for the reaction to occur.

2.2.3 The board finds however relevant, as stressed by the appellants, that the data in the Table of paragraph [0049] of the opposed patent only pertain to invention experiments (1 to 6 in said Table) in which only ethylene glycol is used as the initially present alkylene glycol, and exclusively at concentrations of at least 3.7 vol% of the diluent. Moreover, in all the experiments (1 to 10 in said Table), tungstic acid is the sole tungsten compound in the catalyst system.

On the contrary, as further stressed by the appellants, maintained claim 1 allows for any alkylene glycols to be initially present in the diluent in any amount, and does not exclude the additional presence of other tungsten compounds in the (bi-metallic) catalyst system.

Nor has the respondent denied, as stressed by the appellants, that the chemical class of alkylene glycols embraces compounds differing greatly in the number of carbon atoms and in the sort of carbon chain (linear, more or less branched, or cyclic), and thus embraces molecules whose structure, and hence also polarity and

dissolution properties, must be expected to vary substantially.

The board notes further that it is also undisputed that the class of tungsten compounds possibly apt at promoting the relevant reaction includes compounds whose solubility in water (or in mixtures of water and alkylene glycol) can be very different from that of the (almost water-insoluble) tungstic acid.

Hence, in the board's view, even assuming in favour of the respondent that the data in the Table of paragraph [0049] of the opposed patent would allow the conclusion that the presence of at least 3.7 vol% of ethylene glycol in the initial diluent ensures higher ethylene glycol yields when tungstic acid is the sole tungsten compound forming the catalyst system, such a conclusion does not justify the expectation — absent supporting evidence — that a significant improvement in ethylene glycol yield would also occur in the many other embodiments of the subject matter of maintained claim 1 where, for instance:

- the catalyst system also comprises, or even predominantly comprises, additional tungsten compound(s) capable of promoting the relevant reaction from the beginning, which may even be more effective than tungstic acid, and for whose activity or dissolution properties the patent's teachings neither explicitly allege nor imply any influence of an initial addition of an alkylene glycol; and/or
- the diluent comprises, even just in trace amounts, one or more alkylene glycols whose chemical structures — and therefore also their ability to dissolve e.g. tungstic acid — differ significantly from those of ethylene glycol.

2.2.4 Therefore, the technical effect (allegedly shown by the data in the patent) is not made credible within the whole scope of maintained claim 1.

Hence, already for this reason, the board finds unconvincing the line of reasoning that would justify the conclusion that the technical problem solved over D3 was the provision of a process for converting a carbohydrate source into ethylene glycol with improved yield.

2.2.5 The board considers nevertheless appropriate to point out that it also finds convincing the appellants' submission that no technically sound conclusion can be drawn from the ethylene glycol yields in said Table already in view of the significant variability clearly affecting these yields. This is evident from the substantial difference in ethylene glycol yields (39.3 wt.% vs. 25.7 wt.%) between comparative experiments 7 and 10 in the Table, despite identical process conditions in these two experiments.

As already briefly indicated in 2.1.3 above, the respondent argued that such variability of the ethylene glycol yields — variability which, according to the explanations provided by this party, only affected the ethylene glycol yields measured in the comparative experiments but not those measured in the invention experiments — would not change the fact that the ethylene glycol yields measured in the invention experiments were clearly higher than those of the comparative experiments (having the same duration). The respondent referred in particular to Graph 3 of the letter of 2 January 2025, and stressed that the ethylene glycol yields above 64.4% wt in invention experiments 4 to 6 were much larger than the highest

ethylene glycol yield of the two comparative experiments 7 and 10, i.e. than the 39.3% wt ethylene glycol yield of experiment 7.

The board notes however that such reasoning remains inaccurate, even when assuming in favour of the respondent that the explanations provided by this party (disputed by the appellants) would render plausible that a variability in the ethylene glycol yields comparable to that observed for the identical comparative experiments 7 and 10, could be excluded (even in the absence of any supporting evident) to also affect the yields reported for the invention experiments, and the ethylene glycol yields of comparative experiments 7 and 10 should only reasonably be compared to those (of at least 64.4% wt.) measured in invention experiments 4 to 6 (rather than to those of the invention experiments 1 to 3, wherein the ethylene glycol yields were as low as 52.4% wt).

In fact, it is immediately apparent to the board that the different ethylene glycol yields in experiments 7 and 10 (the ratio between 39.3% wt and 25.7% wt is about 1.5:1) are *per se* sufficient to demonstrate a very significant variability (i.e. justify the expectation that further very different yields would be measured when attempting to repeat the same process), but insufficient to make any reliable prediction regarding the extent of such variability. In other words, the variability of yields proved by comparative experiments 7 and 10 does not allow to predict whether, for instance, further attempts to repeat the same process would (mostly) produce ethylene glycol yields between about 39.3% wt and 25.7% wt, or well above 39.3 wt.%, or well below 25.7 wt.%, or even homogeneously distributed across a range of yields much broader than

that of between 39.3% wt and 25.7% wt. This means that, even under the assumptions in favour of the respondent mentioned above, the ethylene glycol yields measured for each of the comparative experiments (7 to 10) in the opposed patent must be expected affected by a very large uncertainty, whose maximum extent is unknown but whose minimum extent must be such to justify the very different ethylene glycol yield values measured upon repeating the same process in comparative experiments 7 and 10.

The board concludes that already for this very large uncertainty affecting the ethylene glycol yields measured for all the comparative experiments in the patent, no technically sound teaching may be derived from the comparison between the ethylene glycol yields reported from the invention experiments 1 to 6 and the comparative experiments 7 to 10.

2.2.6 Hence, also for this reason, the board finds unconvincing the line of reasoning that would justify the conclusion that the technical problem solved over D3 was the provision of a process for converting a carbohydrate source into ethylene glycol with improved yield. Indeed, this line of reasoning is also based on the finding that the comparison among the invention and comparative experiments in the opposed patent would prove the technical effect of the initial presence of an alkylene glycol on the ethylene glycol yield.

2.2.7 The board considers it appropriate to mention that the data in document D20/20a, whose admittance was disputed, appear to have no bearing on the above findings. Moreover, the respondent did not refer thereto during the oral proceedings. The board

therefore concludes that a decision on its admittance was not necessary.

2.2.8 Accordingly, the board concludes that the appellants correctly identified the technical problem credibly solved across the scope of maintained claim 1 over the prior art disclosed in D3 in the provision of a alternative process for converting a carbohydrate source into ethylene glycol.

2.3 As to the obviousness of the solution, the appellants submitted in essence that, since the technical problem solved was just the provision of an alternative to the prior art disclosed e.g. in Example 1 of D3, the modifications of this latter required to arrive at the subject matter of maintained claim 1 (i.e. the additions of some, even just detectable, amounts of an alkylene glycol at the beginning of the process, and of tungstic acid in the catalyst system) were obvious considering that alkylene glycols (including ethylene glycol) are immediately formed in the process of Example 1, to which may also be applied the teaching in the sentence bridging pages 4 and 5 of D3 itself, as to the preferred presence of tungstic acid in the catalyst system. Thus, the solution offered by the process according to maintained claim 1 to the posed technical problem over the prior art was obvious in view of D3 alone.

2.3.1 The respondent rebutted this reasoning in essence by disputing that the technical problem solved would not be that of providing an alternative but rather that of rendering available a process with improved yield in ethylene glycol. However, as discussed above, these submissions of the respondent have been found unconvincing.

2.3.2 The only remaining written argument submitted by the respondent that apparently aimed at disputing the appellants' submissions, was that in point 4.14 of the reply to the appeals, according to which "*the addition of a reaction product to your reactor constituents at the start of the reaction (in order to speed up / enhance your reaction) is not something that is commonly done. Rather to the contrary, generally one starts a reaction without reaction products being present at the beginning and removes them during the process to help the reaction achieve high conversions*".

At the oral proceedings the respondent presented instead a slightly different argument, by submitting that it would in general always be counter-intuitive to add the desired product at the beginning of the reaction for producing it, as the presence of added product would reduce the amount of reagents that are converted.

2.3.3 The board notes preliminarily that, in the present case, the assessment of inventive step requires to consider what a skilled person would consider obvious to do in order to arrive to a further process for converting a carbohydrate source into ethylene glycol, and not necessarily what this person would do "*in order to speed up/enhance your reaction*", or in order to achieve "*high conversion*", as considered by the respondent in the above written submissions. Hence, the submissions in point 4.14 of the reply to the appeals are found irrelevant.

2.3.4 Moreover, if the above-cited respondent's allegation at the oral proceedings was intended to express that a skilled person would in general never add a product to the starting reaction mixture in any process for

producing the same product, as this would affect the reaction yields, the board has severe doubts, in the absence of supporting evidence, that such prejudice (clearly existing in the case of a single reversible reaction) would also be considered of relevance for the heterogeneous and complex reaction path of the present process, involving at least two different metals as catalysts, and resulting in a plurality of products, in particular since it is not even apparent that all the involved reactions must be reversible.

In any case, as emphasised by the appellants, it is evident that in the multi-step process of the prior art of departure, the reaction is discontinued, fresh glucose is added, and the reaction is restarted several times (see Example 1 of D3), without any removal of the product of the previous reaction step from the reactor before each new portion of glucose is introduced. Hence, starting from the introduction of the second portion of fresh glucose, in this example from D3 the reaction is restarted multiple times in the presence of increasing amounts of product.

Already this fact is sufficient to reject as unfounded the respondent's allegation that it would in general always be counter-intuitive (and thus, also for a skilled person dealing with this sort of process for converting a carbohydrate source into ethylene glycol, and in particular also for that starting from D3) to add a product at the beginning of a reaction, as this would inevitably affect the reaction yields.

2.3.5 The board concludes that the respondent did not provide any convincing argument that could justify the rebuttal of the appellants' submissions as to the obviousness of the solution offered by process of maintained claim 1,

to the technical problem of providing an alternative to the prior art disclosed in D3.

2.4 Accordingly, the subject matter of maintained claim 1 is found to lack and inventive step over the prior art and thus, the main request is found to contravene Article 56 EPC and is not allowable.

3. *Auxiliary requests 1 to 3* - Inventive step

3.1 With the communication of 29 November 2024, the board had informed the parties of its preliminary opinion that none of these three versions of claim 1 overcame the objections of lack of inventive step in view of *inter alia* D3 because (as indicated in point 10 of said communication) the submissions in points 6.1 to 6.3 of appellant 1's letter of 1 June 2023 rendered apparent that the features further added in the three versions of claim 1 according to these auxiliary requests were already present in the prior art of D3.

Hence, each of these versions of claim 1 had preliminarily been found obvious in view of D3, for substantially the same reasons that the appellants already submitted against maintained claim 1 and that had also preliminarily been found convincing by the board.

3.2 Since the board has ultimately concluded that the arguments submitted by the appellants to demonstrate that maintained claim 1 contravenes Article 56 EPC are convincing, and as the respondent has provided no further submissions in the letter of 2 January 2025 or during the oral proceedings, to rebut the above-cited preliminary opinion of the board (concerning the lack of inventive step over D3 for each version of claim 1

in auxiliary requests 1 to 3), the board sees no reason to depart from this preliminary opinion.

3.3 Thus, the board finds that none of auxiliary requests 1 to 3 involves an inventive step, for substantially the same reasoning given above for the main request, and are therefore also not allowable under Article 56 EPC.

4. *Auxiliary request 4* - Admittance

4.1 The appellants disputed the admittance of this request by arguing in essence that claim 1, that additionally requires the use of a continuously stirred tank reactor (CSTR), is identical to claim 1 of auxiliary request 8 in opposition that had already been filed (lately) with the aim to make a fresh case with letter of 7 January 2022 (i.e. few days before the Rule 116 EPC deadline for the submissions in preparation to the oral proceedings before the opposition division of 10 March 2022). Thus, also the filing of auxiliary request 4 with the reply to the appeal was an attempt to make a fresh case and belated.

4.1.1 In the board's preliminary opinion (see points 6.2.3 to 6.2.7 and 6.2.9), these objections were held convincing for the following reasons :

(a) In addition to the fact that none of the claims of the patent as granted mentioned CSTR, also the patent examples do not use a CSTR and the patent in suit only describes such reactor as very suitable for carrying out the process of the invention.

(b) The board too finds that the filing of auxiliary request 8 with letter of 7 January 2022 (i.e. few days before the Rule 116 EPC deadline) occurred

late, without any justification. Indeed, when the respondent filed auxiliary requests 6 to 8 with letter of 7 January 2022, there was no objection on file against any of the previously filed auxiliary requests (and also not against auxiliary request 5 of 7 January 2021, corresponding to auxiliary request 1 of 7 January 2022) directly or indirectly rendering relevant the fact that the claimed process was not limited to a process requiring CSTR. Hence, the fact that the letter of 7 January 2022 presents auxiliary request 6 filed therewith (i.e. the first of the auxiliary requests 6 to 8 in which the CSTR limitation was introduced in claim 1) by stating at the top of page 21 that "*Auxiliary Request 6 is also to be considered if AR1 is found to lack basis in the absence of the CSTR*", shows that this modification only addresses a not previously raised hypothetical objection, that the respondent could and should have hypothesised (and reacted to) already when filing auxiliary request 5 one year before (i.e. with letter of 7 January 2021, as already claim 1 of such auxiliary request 5 contained all the additional limitations recited in auxiliary request 1 of 7 January 2022.

Moreover, it is apparent from the respondent's own submissions in opposition (see paragraph bridging pages 17 and 18 of the letter of 7 January 2022) that the limitation to a process requiring CSTR in claim 1 of auxiliary request 6 aimed mostly at overcoming the objections of novelty or inventive step (in view of *inter alia* D3) that had already been raised in the notices of opposition. Hence, and since also claim 1 of auxiliary request 8 of 7 January 2022 is limited by reciting the same

features relating to a CSTR already present in claim 1 of auxiliary request 6 of the same date, the respondent's submissions (also repeated e.g. in point 2 of the letter of 15 December 2023) as to the justification for filing auxiliary request 8 on 7 January 2022 are found unconvincing.

(c) In addition, the limitations to a process requiring a CSTR in each version of claim 1 of auxiliary requests 6 to 8 filed with letter of 7 January 2022, appear to inevitably add new issues and to possibly deprive of relevance most of the arguments of the discussion of inventive step that had already been submitted in writing during the opposition, including those relating to the plausibility of the technical advantage alleged in paragraph [0050] of the opposed patent in view of the results in the examples in the patent.

In view of the above reasons, the board preliminarily concluded that the filing with letter of 7 January 2022 of auxiliary request 8 was a belated attempt to create a fresh case and thus, at detriment of procedural economy and that, as also convincingly stressed by the appellants, the same conclusion necessarily applied to the reiteration of substantially the same belated and new line of defence, by filing auxiliary request 4 with the reply to the appeals.

4.2 The respondent did not make any submission (neither in the letter of 2 January 2025 nor during oral proceedings) in reply to the board's preliminary opinion on the disputed admissibility of auxiliary request 4. Therefore, the board sees no reason to depart from its preliminary opinion that (also) the filing of auxiliary request 4 with the reply to the

appeals was a belated attempt to create a fresh case and thus, at detriment of procedural economy.

4.3 Hence, and since auxiliary request 4 is a new request (it contains one claim less than auxiliary request 8 in opposition) and therefore an amendment according to Article 12(4) RPBA, the board exercising the discretion under said Article decides not to admit it into the appeal proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

A. Wille J.-M. Schwaller

Decision electronically authenticated