

ORDER
of the Court of Appeal of the Unified Patent Court
issued on 8 July 2026
concerning a request for provisional measures

APPELLANTS (AND DEFENDANTS 1, 2, 4, 5 AND 6 BEFORE THE COURT OF FIRST INSTANCE)

1. **Angelalign Technology Inc.**, Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands
 2. **Angelalign France Technology SASU**, 147 Avenue de Malakoff, 75116 Paris, France
 3. **Angelalign Technology (Germany) GmbH**, Wankelstrasse 60, 50996 Cologne, Germany
 4. **Italy Angelalign Technology S.R.L.**, Corso Vercelli 40, Milan CAP 20145, Italy
 5. **Shanghai EA Medical Instruments Co., Ltd.**, Room 601-603, No. 500 Zhengli Road, Yangpu District, Shanghai, China
- (hereinafter jointly referred to as “**Appellants**”)

all represented by Dr. Arno Riße, Rechtsanwalt, Arnold Ruess Rechtsanwälte Part mbB, Düsseldorf, Germany

RESPONDENT (AND APPLICANT BEFORE THE COURT OF FIRST INSTANCE)

Align Technology, Inc., 410 North Scottsdale Road, Suite 1300, Tempe, Arizona 85288, United States
(hereinafter referred to as “**Respondent**”)

represented by Agathe Michel-de Cazotte, Avocat à la Cour, Carpmeals & Ransford LLP, London, United Kingdom

PATENT AT ISSUE

EP 4 346 690

PANEL AND DECIDING JUDGES

Panel 3:

Ulrike Voß, presiding judge
Bart van den Broek, legally qualified judge and judge-rapporteur
Nathalie Sabotier, legally qualified judge
Stefanie Philipps, technically qualified judge
Alessandro Sanchini, technically qualified judge

IMPUGNED ORDER OF THE COURT OF FIRST INSTANCE

Order of the Local Division Düsseldorf, 12 February 2026, issued in the action for provisional measures UPC_CFI_723/2025

LANGUAGE OF THE PROCEEDINGS

English

DATE OF THE ORAL HEARING

18 June 2026

FACTS AND REQUESTS OF THE PARTIES

The patent at issue

1. Respondent is the proprietor of the patent at issue ("**patent**"). The patent derives from European patent application 22733820.9, which in turn derives from international (PCT) patent application PCT/US2022/031752, filed on 1 June 2022. The patent claims priority to US 202163195674P, filed on 1 June 2021. The mention of the grant of the patent was published on 23 July 2025 and the patent was registered for unitary patent protection on 29 July 2025. The patent is currently opposed by, *inter alia*, Appellants 1 and 3 at the Opposition Division of the European Patent Office ("**EPO**").
2. Independent claim 1 of the patent relates to a method for automated management of clinical modifications of a treatment plan for orthodontically treating teeth. Dependent claim 13 adds some further steps to the method according to claim 1. Independent claim 15 relates to a system for orthodontically treating teeth. Claims 1, 13 and 15 read as follows:

Claim 1

A method for automated management of clinical modifications to a treatment plan for orthodontically treating teeth, the method comprising:
generating a digital model of a final position of a patient's teeth from a scan of the patient's teeth in an initial position of the patient's teeth;
generating the treatment plan comprising incremental positions of the patient's teeth to move the patient's teeth from the initial position towards the final position;
providing a three-dimensional representation of the treatment plan to a display (1324);
receiving, in real time, a user request to modify the treatment plan,
characterised by
determining, in real time, that the requested user modification is within a predetermined thresholds for modifications to the treatment plan,
generating, automatically and in real time when the user requested modification is within the predetermined threshold, a revised treatment plan based on the user requested modification; and
outputting to the display a three-dimensional representation of the revised treatment plan.

Claim 13

The method of claim 1, further comprising: outputting instructions for fabricating a plurality of orthodontic appliances based on the modified treatment plan; and/or forming one or more aligners from the modified treatment plan.

Claim 15

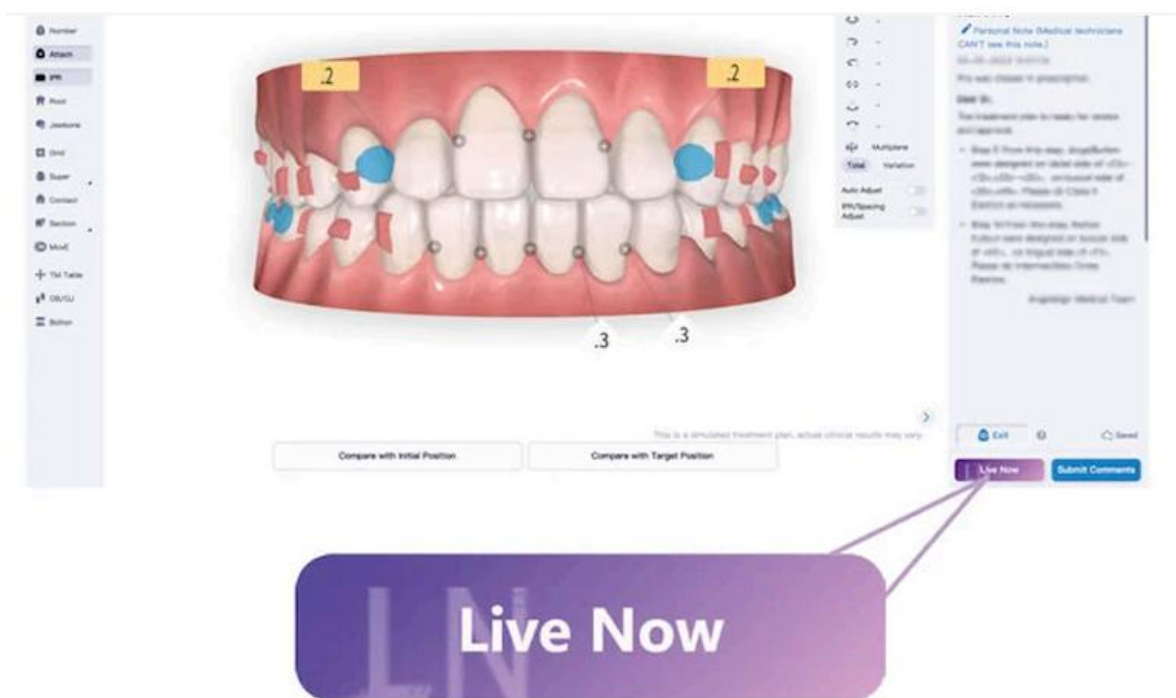
A system (200) for orthodontically treating teeth, the system comprising: one or more processors and memory comprising instructions that when executed by the one more processors (1314) causes the system to carry out the method of one or more of claims 1 to 12.

The parties

- Appellants are part of the Angelalign Technology group, founded in 2003. Appellants are active in over 50 countries in the field of clear aligner orthodontic therapy. Clear aligner therapy is a type of orthodontic treatment that uses a series of custom-made, removable, transparent plastic braces (aligners) to gradually straighten a patient's teeth. Appellants offer and sell aligners and associated products to support clinicians in their treatment planning, including a software tool known as "iOrtho".
- Respondent was established in 1997 and is based in the United States. Respondent played a leading role in establishing the clear aligner therapy and launched its therapy in 1999 under the name "Invisalign®". Respondent offers and sells aligners and associated products, such as digital imaging systems and a suite of treatment planning software, known as "ClinCheck". Since 2022, the ClinCheck software contains a "Live Update" feature which, according to Respondent, includes the features of the patent.

The contested embodiments

- Respondent accuses the Appellants of infringing the patent with the "iOrtho" orthodontic planning software and with aligners produced by using this software. In particular, according to the Respondent, the "Live Now" feature of the iOrtho software infringes the patent. This feature was introduced in May 2025 with Release 5.2 of the iOrtho software. Release 5.2 of the iOrtho software will be referred to as the "iOrtho software" and the aligners obtained by using the iOrtho software as the "Aligners". A screenshot of the iOrtho software is inserted below:



- The iOrtho software can be used to automatically generate and modify a treatment plan for orthodontically treating teeth.

7. With the iOrtho software, the user can generate a digital model of a final position of the patient's teeth from a scan of the patient's teeth in their initial position. The iOrtho software can further generate and display a treatment plan comprising incremental positions of the patient's teeth to move the patient's teeth from the initial position to the final position. The generated treatment plan can be modified automatically via the "Live Now" feature. With this feature, the iOrtho software can receive in real time a request by a user to modify the treatment plan. Upon clicking the "Live Now" button, the software can generate and display a revised treatment plan based on the user requested modification. After approval of the revised treatment plan, Aligners may be produced corresponding to the revised treatment plan.
8. One of the features of the iOrtho software, is that the user can move an attachment on the digital model of the patient's teeth using the computer's mouse. Attachments are anchoring elements which are placed on the patient's teeth and correspond with receptacles in the aligner so that the aligner can apply a selected force on the tooth. While moving the attachment on the digital model, a red line is shown close to the gum line. When the user tries to move the attachment beyond the red line, the attachment disappears from the display. When the attachment is moved within the red line, the user can click the 'Live Now' button and after a few seconds a revised treatment plan is shown.

The procedural background and the impugned order

9. On 15 August 2025, Respondent filed an Application for a preliminary injunction and other provisional measures ("**Application**") with the Local Division Düsseldorf ("**LD**" or "**LD Düsseldorf**"), arguing that the iOrtho software and the Aligners are infringing the patent, in particular claims 1, 13 and 15 and (alternatively) dependent claims 5, 7, 8, 9, 10 and 14. By using and offering the iOrtho software, Appellants would directly infringe claims 1 and 13, by offering and selling the Aligners, Appellants would directly infringe claim 13 and by offering and supplying the iOrtho software and the Aligners, Appellants would indirectly infringe claim 15.
10. In the Objection to the Application dated 23 October 2025 ("**Objection**"), Appellants relied on various prior art references to argue that the patent was more likely than not invalid for lack of novelty and inventive step. In addition, Appellants argued that the patent was likely to be held invalid for lack of sufficient disclosure. In its order of 10 January 2026, the LD requested the Appellants to identify the three validity-attacks that they considered to be the most promising. In their response to the order, the Appellants identified the following three invalidity-attacks: (i) lack of novelty in view of US 2019/0175303 A1 ("**D2**"), (ii) lack of novelty in view of the YouTube video "*3Shape Clear Aligner Studio workflow with [REDACTED]*" ("**D6**"), and (iii) lack of inventive step in view of EP 2 263 598 B1 ("**D7**") in combination with EP 1 991 939 B1 ("**D8**"). In the same order, the LD requested the Respondent to identify its fallback position in the event the LD would consider claim 1 to be more likely than not invalid. In its response, Respondent indicated that it then wished to rely on a combination of claim 1 and the first option of claim 9. This would result in the following additional features to claim 1:

"wherein the predetermined thresholds for modifications to the treatment plan are location thresholds for aligner features [claim 8, CoA] wherein the location threshold is a proximity threshold with respect to a gingival line [claim 9, first option, CoA]"
11. In the Objection, Appellants did not raise any non-infringement arguments, other than their assertion that the patent was likely to be invalid. However, following the Respondent's Reply to the Objection dated 10 November 2025 ("**Reply**"), Appellants did raise a number of non-infringement arguments in paragraphs 13 to 24 of their Rejoinder dated 28 November 2025 ("**Rejoinder**") referring to a declaration from one of their employees (Exhibit AR07). Respondent objected to the submission of these non-infringement arguments as late filed. On 16 December 2025, the LD issued an order indicating that it would disregard paragraphs 13 to 24 of the Rejoinder and Exhibit AR07. A request for discretionary review of this order was dismissed by the Court of Appeal on 6 January 2026.

Appellants did not file an appeal against this order together with the appeal against the impugned order of 12 February 2026 (“**Order**”).

12. In the Order, the LD Düsseldorf held that it had jurisdiction and internal competence to hear the case against the Appellants and that the case was filed in a timely manner, satisfying the requirements of urgency. The LD further held that claims 1, 13 and 15 were not likely to be invalid on the grounds for revocation raised by the Appellants. As the Appellants had not timely contested that the iOrtho software and the Aligners infringed the patent, the LD assumed infringement for the purposes of these proceedings given the claim construction provided in the Order.
13. On that basis, after weighing the parties’ interests, the LD granted a preliminary injunction prohibiting direct infringement of claims 1 and 13 and indirect infringement of claim 15 in the UPC territory. In addition, Appellants were ordered to pay Respondent an interim award of costs of €400,000. The LD rejected the claims against Defendant 3 (Europe Angelalign Technology B.V.) for lack of proof that this defendant performed infringing acts in the UPC territory. Appellants were ordered to pay the costs of the proceedings.
14. On 27 February 2026, Appellants (i.e. Defendants 1, 2, 4, 5 and 6 in the proceedings before the LD) lodged an appeal against the Order.

The requests of the parties

15. In the Statement of grounds of appeal (“**Grounds of Appeal**”), Appellants request that the Court of Appeal:
 - i) set aside Sections A, B, C, D, E, G and H of the operative part of the Order, and issue a final decision pursuant to Art 75(1) of the Agreement on a Unified Patent Court (“**UPCA**”)
 - ii) grant Requests I, II, III, and VII of Appellants, as set out in the Objection
 - iii) dismiss requests A, B, C, D and E of the Respondent, as set out in the Application
 - iv) order the Respondent to reimburse to Appellants the provisional amount paid by Appellants pursuant to Section D of the operative part of the Order
 - v) order the Respondent to pay the costs of the proceedings at first instance and in appeal.
16. Appellants further request admission in the proceedings of:
 - a. Appellants’ arguments regarding non-infringement, as set out in paragraphs 13 to 24 of its Rejoinder
 - b. the witness statement of Exhibit AR07, which the Appellants submitted with the Rejoinder
 - c. the additional evidence in the form of a video (Exhibit AR09a including overview of still images and comments, AR09b, together referred to as “**Exhibit AR09**”), and an accompanying witness statement from ██████████ (Exhibit AR10)
17. In its Statement of response (“**Statement of response**”), Respondent submits the following requests to the Court of Appeal:
 - A. the Appeal is dismissed.
 - B. the Appellants’ Requests (i)-(v) are dismissed.
 - C. the Appellants’ Requests a. to c. are dismissed and that the Court of Appeal instead disregards as late filed the newly filed evidence, i.e. Exhibits AR09a, AR09b, and AR10 (and any associated submissions of the Appellants in the Grounds of Appeal) pursuant to Rule 222.2 RoP.
 - D. the Appellants are ordered to pay the Respondent’s costs of these proceedings.

18. In the event that the Court of Appeal would not find it more likely than not that the patent is valid, the Respondent requests that:
 - E. the Court of Appeal upholds the Order on the basis of a combination of claim 1 with dependent subclaim 9 (first option), and accordingly
 - F. makes any necessary amendments to Section A of the operative part of the Order to account for request E.

SUMMARY OF THE PARTIES' SUBMISSIONS

19. Appellants argue that the LD was incorrect to assume infringement because Appellants would not have timely contested that the contested embodiments were covered by claims 1, 13 and 15. Appellants argue that they did contest infringement in first instance and that the LD should at least have assessed whether the infringement arguments of Respondent justified the conclusion that infringement was made. In any event, Appellants request the Court of Appeal to allow the submission of the non-infringement arguments set out in the Rejoinder and Exhibit AR07, and to reject the requested provisional measures based thereon. Appellants further argue that the LD was incorrect to hold the patent likely to be valid. According to Appellants, claims 1, 13 and 15 are anticipated by D2 and D6. In addition, these claims lack an inventive step in view of (i) D1, D2, D6 and D7 in combination with common general knowledge, (ii) D2 in combination with D6 (starting from D2 or from D6), and (iii) D7 in combination with D8. Furthermore, claims 1, 13 and 15 would not be novel in view of the newly filed Exhibits AR09 and AR10. Appellants request the Court of Appeal to allow the submission of these exhibits, as these could not have been filed in first instance and are highly relevant for the (in-)validity of the patent. Finally, Appellants argue that the LD was incorrect to decide that the requested provisional measures were necessary to protect the interests of the Respondent.
20. Respondent argues that the LD correctly held that it was more likely than not that claims 1, 13 and 15 were valid and infringed. The LD was correct to assume infringement and to conclude that D2 and D6 did not disclose all features of the claim, in particular feature 1.7 which requires that a revised treatment plan must be generated "in real time". Furthermore, the LD was correct to decide that the combination of D7 and D8 was not likely to invalidate the patent, as neither of these documents discloses the modification of an initial treatment plan according to features 1.5 to 1.8. In the event the Court of Appeal would consider claim 1 likely to be invalid, Respondent requests the Court of Appeal to grant the provisional measures on the basis of a combination of claim 1 and claim 9 (first option). Moreover, the Respondent requests the Court of Appeal not to allow the non-infringement arguments in the Rejoinder and Exhibit AR07, as these arguments could and should have been included in the Objection. By allowing these submissions in this appeal, the Respondent would lose one instance to deal with these non-infringement arguments. For the same reasons, the newly filed invalidity arguments and documents (Exhibits AR09 and AR10) should be disregarded. Finally, the Respondent argues that provisional measures are necessary, as the parties are direct competitors and allowing Appellants to continue to market its infringing products would result in Respondent's loss of market share.

GROUNDS FOR THE ORDER

21. Appellants' appeal against the Order of the LD Düsseldorf is admissible but unfounded.

I. Jurisdiction

22. In the Order, the LD Düsseldorf accepted jurisdiction and competence to hear the case for the UPC territory against all Appellants. International jurisdiction was based on Art. 71b(1)/(2) and Art. 7(2) of Regulation (EU) No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgements in civil and commercial

matters (recast) as amended by Regulation (EU) No 542/2014 of the European Parliament and Council of 15 May 2014, and internal competence was based on Art. 33(1)(b) UPCA. The Court of Appeal agrees with the LD that the UPC has international jurisdiction and competence for the UPC territory with respect to all Appellants.

II. The patent

23. The patent relates to orthodontic and dental treatment planning of malocclusions of patients using a series of patient-removable appliances, such as aligners. According to the description (paragraph [0001]), the process of generating a treatment plan may be interactive, adjusting the staging and in some cases the final target position based on constraints on the movement of the patient's teeth and on the dental professional's preferences. Once the treatment plan is finalized, the series of aligners may be manufactured corresponding to the treatment planning.
24. The patent explains (paragraph [0002]) that the treatment planning process may include many manual steps that are complex and may require a high level of knowledge of orthodontic norms, such as the preparation of the model for digital planning and the placement of aligner features. Because the steps are performed in series, the process may require a substantial amount of time. After the steps have been performed, the initial treatment plan may be provided to a dental professional, who may then modify the plan further and send it back for additional processing to adjust the treatment plan. According to the description (paragraph [0003]), the additional manual processing when modifying a treatment plan may add delay to the overall workflow, in some instances up to several weeks. For instance, a dental professional may send instructions to a dental technician for manually modifying the treatment plan. These instructions may then be added to the technician's queue such that the technician may not quickly turnaround the modified treatment plan (see also e.g. paragraphs [0033] and [0034]).
25. According to paragraph [0004] of the description "*what is needed are apparatuses (e.g. system and devices, including software) and methods that may improve treatment planning, including potentially increasing the speed at which treatment plans may be completed, as well as providing greater choices and control to the dental professional.*"
26. Against this background, claims 1 and 13 protect a method for automated management of clinical modifications of a treatment plan and claim 15 protects a system for orthodontically treating teeth which carries out the method according to one or more of claims 1 to 12. The parties and the LD have referred to the separate features of claims 1, 13 and 15 as follows, to which the Court of Appeal agrees:

Claim 1

- Feature 1.1 *A method for automated management of clinical modifications to a treatment plan for orthodontically treating teeth, the method comprising:*
- Feature 1.2 *generating a digital model of a final position of a patient's teeth from a scan of the patient's teeth in an initial position of the patient's teeth;*
- Feature 1.3 *generating the treatment plan comprising incremental positions of the patient's teeth to move the patient's teeth from the initial position towards the final position;*
- Feature 1.4 *providing a three-dimensional representation of the treatment plan to a display (1324);*
- Feature 1.5 *receiving, in real time, a user request to modify the treatment plan,*
- Feature 1.6 *determining, in real time, that the requested user modification is within a*

predetermined thresholds for modifications to the treatment plan,

Feature 1.7 *generating, automatically and in real time when the user requested modification is within the predetermined threshold, a revised treatment plan based on the user requested modification; and*

Feature 1.8 *outputting to the display a three-dimensional representation of the revised treatment plan.*

Claim 13

Feature 13.1 *The method of claim 1, further comprising:*

Feature 13.2 *outputting instructions for fabricating a plurality of orthodontic appliances based on the modified treatment plan; and/or*

Feature 13.3 *forming one or more aligners from the modified treatment plan.*

Claim 15

Feature 15.1 *A system (200) for orthodontically treating teeth, the system comprising:*

Feature 15.2 *one or more processors and memory comprising instructions that when executed by the one more processors (1314) causes the system to carry out the method of one or more of claims 1 to 12.*

27. Claim 1 of the patent provides a method for automated management of clinical modifications to a treatment plan for orthodontically treating teeth (feature 1.1). Features 1.2 to 1.4 specify the generation of the initial treatment plan, comprising the steps of generating a digital model of the final position of the patient's teeth based on the initial teeth position (feature 1.2), generating a treatment plan with incremental positions of the patient's teeth to move the teeth from the initial position to the final position (feature 1.3) and providing a three-dimensional display of the treatment plan (feature 1.4).
28. Features 1.5 to 1.8 specify the steps of automated modification of the initial treatment plan. According to feature 1.5, a user request to modify the treatment plan is received in real time. Features 1.6 and 1.7 require that a determination is made in real time that the requested modification is within a predetermined threshold for modifications to the treatment plan (feature 1.6) and that a revised treatment plan is generated automatically and in real time based on the user requested modification when the requested modification is within the predetermined threshold (feature 1.7). Lastly, according to claim 1, a three-dimensional representation of the revised treatment plan is outputted to the display (feature 1.8).
29. According to the description, the automated method for modifying a treatment plan according to the patent reduces computing resources and overhead for transmitting and/or storing updated treatment planning data (paragraph [0008]) and may complete the workflow "*in minutes rather than in days or weeks*" (paragraph [0048]). This is in line with the object of the invention mentioned in paragraph [0004] of the patent to improve the efficiency of treatment planning.

III. Skilled person

30. The LD defined the skilled person as a software engineer with a background in orthodontics and experience in the field of orthodontic treatment planning software for clear aligner therapy. This definition was provided by the Respondent and the Appellants agreed with this definition. The Court of Appeal also agrees with this definition but adds that the software engineer as defined by the LD,

forms a *team* together with a dental professional having experience in treatment planning for clear aligners (see e.g. paragraphs [0001] and [0010] of the patent).

IV. Claim construction

31. The principles applicable to claim construction have been set out by this Court in its final order in UPC_CoA_335/2023 (26 February 2024, NanoString v 10x Genomics, as rectified; see also CoA UPC_CoA_1/2024, 13 May 2024, VusionGroup v Hanshow; UPC_CoA_768/2024, 30 April 2025, Insulet v. EOFflow). A patent claim is not only the starting point but the decisive basis for determining the protective scope of a European patent under Art. 69 EPC in conjunction with the Protocol on the Interpretation of Art. 69 EPC. The interpretation of a patent claim does not depend solely on the strict, literal meaning of the wording used. Rather the description and the drawings must always be used as explanatory aids for the interpretation of the patent claim and not only to resolve any ambiguities in the patent claim. A patent claim must always be interpreted from the perspective of a skilled person. The skilled person interprets the features of a claim always in the light of the claims as a whole (UPC_CoA_1/2024, 13 May 2024, VusionGroup v Hanshow; UPC_CoA_768/2024, 30 April 2025, Insulet v EOFflow, UPC_CoA_646/2024, 25 November 2025, Meril v Edwards). These principles for interpreting a patent claim apply both to the question of patent infringement and to the question of validity (NanoString v 10x Genomics).
32. The parties are mainly in dispute about the interpretation of features 1.6 and 1.7. Below, the Court of Appeal will discuss these features and some other features of claim 1.

Feature 1.1

33. According to feature 1.1, claim 1 protects a method for “automated management” of clinical modifications to a treatment plan. When read in the context of claim 1, this feature requires that all steps specified in the claim must be performed in an automated way. This does not mean that human intervention is impermissible, provided, however, that the steps of claim 1 are performed in an automated way. An example of such human intervention is shown in Figure 3 (bottom) and paragraph [0047], which describes the optional step of manually modifying the treatment plan in addition to the automatic generation of the revised treatment according to the claim.

Feature 1.5

34. According to feature 1.5, a user request to modify the treatment plan is received in real time. The reference to “the” treatment plan in feature 1.5, makes it clear that the request to modify relates to the treatment plan mentioned earlier in the claim, i.e. the treatment plan generated in accordance with features 1.2 to 1.4. In the description, this treatment plan is called the “initial” or “original” (unmodified) treatment plan (see e.g. paragraphs [0002], [0033], [0044], [0060] and Figure 10).
35. The request to modify the treatment plan must be received “in real time”. This same limitation is included in features 1.6 and 1.7. A skilled person will understand the term “in real time” to mean that the action concerned must be performed within a specific, usually tight, time constraint. In view thereof, the requirement in feature 1.5 that the request to modify is “received” in real time will be understood by a skilled person to mean that the input of the user is captured and integrated without undue delay after the user has made the request to modify.
36. Feature 1.5 does not provide a specific time limit for receipt of the request to modify the treatment plan. Such a time limit is neither provided in the description. The description only mentions exemplary timeframes for *generating* the revised treatment plan, such as in paragraph [0019] (within 15 minutes or less after receiving the user request to modify the treatment plan) and paragraph [0045] (“*Modifying the treatment plan may, for example, take around 5-15 minutes.*”). These timeframes are, therefore, not directly applicable to the step of feature 1.5, but do confirm that the term “in real time” in the claim requires a relatively quick (re-)action. On the other hand, the standard should not be set too strictly. The key point is that the modification of a treatment plan

should be carried out quickly and in a more time-efficient manner than in the prior art (paragraph [0004]).

37. Feature 1.5 does not contain a limitation regarding the type of user requested modification or the way in which the user can make such request. The description lists a number of examples of user requested modifications, such as a modification of a tooth location, a modification of the final position of the patient's teeth, or a modification of the location of the attachments on a patient's teeth (see e.g. paragraph [0017] and claim 10). By way of example, the patent describes that the user request to modify the treatment plan may be received via the three-dimensional controls of the treatment plan or via text instructions (see, for example, paragraphs [0007], [0016] and [0055] and claims 5 and 6).

Feature 1.6

38. Feature 1.6 requires a determination in real time, that the requested user modification is within a predetermined threshold for modifications to the treatment plan.
39. Feature 1.6 refers to "the" requested user modification. This is the user request to modify the treatment plan according to previous feature 1.5. Logically and based on the text of the claim, a skilled person will understand that the user requested modification precedes the step of determining that this modification is within the predetermined threshold. This order of steps is confirmed at various places in the description (e.g. paragraphs [0056] and [0058]).
40. In addition, the threshold of feature 1.6 must be "predetermined". In the context of the claim, this will be understood by a skilled person to mean that the threshold is set prior to requesting a modification of the treatment plan, possibly prior to generating the initial treatment plan.
41. Furthermore, the threshold must be a threshold "*for modifications to the treatment plan*". Contrary to Respondent's position, this wording does not require a one-to-one relation between the requested modification (e.g. a modification of a tooth location) and a threshold (e.g. a tooth moving threshold). The threshold may also relate to other aspects of the treatment plan. Feature 1.6 refers in general terms to "*a threshold for modifications to the treatment plan*" and does not contain further limitations regarding the threshold to be applied to the user requested modification or the relationship between the two. Equally, based on the wording of the claim, feature 1.6 does not limit the thresholds to those specifically set for modifications to the treatment plan but also covers predetermined thresholds that were already set for the initial treatment plan (provided that these thresholds are still applicable to user requested modifications of the treatment plan). The term "determining" in feature 1.6 means that an evaluation or comparison is made of the user requested modification against the predetermined threshold.
42. The description provides a number of examples of predetermined thresholds, such as a threshold for space required for moving teeth without collisions, tooth movement thresholds and location thresholds for aligner features, such as attachments (see, for example paragraph [0025] at column 6, lines 12-18, paragraphs [0075] and [0076] and claims 2, 8 and 9). The description confirms that a one-to-one relation between the requested modification and the predetermined threshold is not needed. According to the description, the determination step may also involve assessing whether a user requested modification complies with more general constraints, such as those relating to the practicability or efficacy of the treatment plan. Reference is made, for example, to paragraphs [0075] and [0076], which explain that generating the revised treatment plan may include determining whether the requested modification is clinically acceptable or has potentially undesirable effects, such as limitations in manufacturing, impacts on treatment duration or the modification is unlikely to work. There is no reason for the skilled person to consider such determinations to be outside the scope of feature 1.6.

Feature 1.7

43. Feature 1.7 requires the step of generating, automatically and in real time, a revised treatment plan based on the user requested modification, when the requested modification is within the predetermined threshold.
44. The word “automatically” in feature 1.7 confirms that the generation of the revised treatment plan is performed in an automated way. As indicated above, this also follows from feature 1.1.
45. The term “in real time” was discussed above in the context of feature 1.5. The description explains that the generation of a revised treatment plan may be performed within 15 minutes or less from the moment of receipt of a user requested modification (see e.g. paragraph [0019]). Also elsewhere, the description explains that the generation of a revised treatment plan may be completed “*in minutes rather than days or weeks*” (paragraph [0048]). Although also in the context of feature 1.7 no strict deadline applies, the examples in the description confirm that the revised treatment must be automatically generated within a relatively tight time constraint without undue delay.
46. Feature 1.7 does not contain a limitation regarding the entity that generates the revised treatment plan. According to the description (e.g. paragraphs [0024] and [0045]) and dependent claim 3, the revised treatment plan may be generated by a doctor using a local (“frontend”) processor that is in immediate communication with the display of the doctor’s computer. On the other hand, the revised treatment plan may also be generated by a remote (“backend”) processor that may send the revised treatment plan to the doctor after its generation (see e.g. paragraph [0027] and dependent claim 12). Contrary to Respondent’s suggestion, claim 1 is therefore not limited to the modification and generation of a revised treatment plan in the doctor’s office, possibly in the presence of the patient.
47. According to feature 1.7, a revised treatment plan based on the user requested modification is generated “*when the user requested modification is within the predetermined threshold*”. This raises two issues of interpretation: (1) the **temporal order** of the determination step (feature 1.6) and the generation step (feature 1.7), and (2) the **substantive relation** between the determination step and the generation step, in particular what happens in case the requested modification is outside the predetermined threshold.
48. As to the temporal order, feature 1.7 refers to the situation wherein the user requested modification is “*within **the** predetermined threshold*”. The skilled person will read this as a reference to the determination step of feature 1.6 (“*determining ... that the user requested modification is within **a** predetermined threshold*”). Logically and based on the text of the claim, a skilled person will therefore understand that the determination step of feature 1.6 precedes the step of generating the revised treatment plan. According to the text of feature 1.7, the step of generating the revised treatment plan depends on the outcome of the determination step and this implies that the determination step should be performed before generating the revised treatment plan.
49. The examples in the description are in line with this temporal order of features 1.6 and 1.7. Reference is made, for example, to Figure 4 and the accompanying text in paragraph [0058]. According to step 420 in Figure 4, the “[t]reatment planning system determines if modifications exceed various treatment threshold(s)” (= feature 1.6). Paragraph [0058] explains that following this determination, a revised treatment plan is generated if the thresholds are not exceeded (= feature 1.7):

“At 420, the treatment planning system determines if modifications exceed various treatment thresholds. (..) If thresholds are not exceeded, the treatment planning system translates the modifications to treatment planning steps on the 3D model and/or the treatment plan.”
50. The description also includes passages stating that “*certain steps*” of the method described in Figure 12 (paragraph [0079]) and “*the steps illustrated and/or discussed herein*” (paragraphs [0114] and [0123]) may be performed in a different order. These statements generally refer to the steps described in the description, without indicating which steps are meant. In the opinion of the Court

of Appeal, these general statements cannot set aside the explicit language of the claim and the examples in the description which specifically describe the steps of features 1.6 and 1.7 to be in a certain temporal order, i.e. first determining that the user requested modification is within a predetermined threshold (feature 1.6) and then generating the revised treatment plan based on the user requested modification (feature 1.7).

51. As to the substantive relation between features 1.6 and 1.7, the Court of Appeal notes that feature 1.7 only specifies what happens in case the requested modification is *within* the predetermined threshold. In that case a revised treatment plan is generated based on the user requested modification. Feature 1.7 does not specify what happens in case the requested modification is *outside* the predetermined threshold. In view thereof, the LD concluded that also in case the threshold is exceeded, a revised treatment plan may nevertheless be generated. The Court of Appeal disagrees.
52. The determination of whether the user requested modification complies with a threshold, can either result in a finding that the modification is within the threshold or that the modification is outside the threshold. Feature 1.7 specifies that a treatment plan based on the user requested modification is automatically generated when the modification is within the threshold. Although not specified in the claim, it implicitly follows from the determination step of feature 1.6 and the reference to its outcome in feature 1.7 that no revised treatment plan is generated based on the user requested modification if this modification exceeds the predetermined thresholds. An interpretation in which the thresholds can be ignored is illogical and would render the assessment step (feature 1.6) and the reference to its outcome (feature 1.7) meaningless.
53. This interpretation is confirmed when looking at the aim and effects of the invention described in the patent. Respondent correctly notes in this respect that the reduction of computer resources and overhead is one of the stated advantages of the invention. Reference is made to paragraph [0008] of the description:

“The systems and methods described herein may improve the functioning of a computing device by reducing computing resources and overhead for transmitting and/or storing updated treatment planning data, thereby improving processing efficiency of the computing device over conventional approaches.” [emphasis added; CoA]

54. The use of the thresholds according to features 1.6 and 1.7 plays an important role in this connection, not only for automatically generating a revised treatment plan when the modification is within the threshold (see e.g. paragraph [0040]), but equally (and from a standpoint of saving computer resources and overhead even more importantly), by not automatically generating a revised treatment plan based on a user requested modification that exceeds the predetermined thresholds. That avoids generating undesirable treatment plans and wasting computer resources and overhead. This interpretation is also in line with the aim of improving efficiency and control to the user, as set out in paragraph [0004]. In the claimed method, when a treatment plan is generated based on the requested modifications, the user knows that these are within the predetermined thresholds. If this is not (yet) the case, the user may tweak its modifications until the applicable conditions are fulfilled, and a revised treatment plan is generated (e.g. paragraph [0045], last sentence).
55. Appellants' reference to dependent claim 7, which includes the feature of sending an indication to the user in case of non-compliance with the threshold, cannot alter this. The point of reference for the indication in claim 7 is the user requested modification that has been checked and determined to exceed the threshold (*“returning an indication .. if the user request to modify .. is outside of the predetermined thresholds..”*). It cannot be inferred from the sending of the indication in claim 7 that a modified treatment plan has (already) been generated. Also according to the description, only an indication is sent in case the user requested modification exceeds the threshold rather than generating a modified treatment plan based on the non-compliant user request (see e.g. paragraphs [0017], [0025], [0056] (*“.. a warning notification that a proposed modification may violate or*

otherwise exceed certain thresholds..”) and [0076], last sentence). Claim 7 is therefore fully in line with the wording and intent of features 1.6 and 1.7, according to which a revised treatment plan will only be generated based on the user requested modification if the requested modification is within the predetermined threshold.

56. In conclusion, in the opinion of the Court of Appeal, the determination step of feature 1.6 and the generation step of 1.7 are two distinct steps that have a specific temporal order and substantive relation, wherein the determination step precedes the generation step, and the generation of the revised treatment plan depends on the outcome of the previous determination.

V. Validity

57. The Court of Appeal considers it more likely than not that claims 1, 13 and 15 are valid.

Admissibility of Exhibits AR09 and AR10

58. In addition to the prior art references submitted in first instance, Appellants submitted with their Grounds of Appeal two further exhibits to substantiate their assertion that claim 1 is likely invalid for lack of novelty: (1) a video entitled “*3Shape Clear Aligner Studio workflow for modifying an existing treatment plan*”, together with an overview of still images of the video (Exhibit AR09), and (2) a witness statement from ██████████ regarding the software that was used in Exhibit AR09 (Exhibit AR10).
59. Appellants state that they could not have filed these exhibits at an earlier stage. They explain in this context that after the failure of their first attempts to obtain evidence of the public prior use of the 3Shape Clear Aligner Studio software shown in the video of D6 (“**3Shape software**”), Appellants were finally able to reach out to ██████████ the creator of the video of D6. Preparational discussions with ██████████ were conducted before Christmas 2025, but were paused over the Christmas break. According to Appellants, the video was finalized after the oral hearing in first instance (14 January 2026). Appellants realize that these facts and evidence were not presented in first instance, but ask the Court of Appeal to use its discretion under R. 222.2 RoP to nevertheless allow the submission of these in appeal.
60. Respondent asks the Court of Appeal to disregard the newly filed evidence and the argumentation based thereon. According to Respondent, Appellants could and should have submitted this evidence in first instance. A similar video from ██████████ was filed in the opposition proceedings at the EPO before the oral hearing in first instance and contained an indication of the year “2025”. Appellants did not explain why they could not have filed Exhibits AR09 and AR10 earlier. Furthermore, the exhibits raise issues of public accessibility of the software before the priority date of the patent, which Appellants have not resolved in their submission. Allowing these new exhibits in this appeal would imply that the Respondent misses one instance to defend against this new invalidity-attack. That would unreasonably damage their procedural position.
61. The Court of Appeal agrees with Respondent and will disregard Exhibits AR09 and AR10.
62. According to R. 222.2 RoP, requests, facts and evidence that have not been submitted by a party in first instance may be disregarded by the Court of Appeal. When exercising its discretion, the Court of Appeal can take into account the justification by the party bringing forward the new submission, the relevance of the new submission for the decision in appeal and the position of the other party.
63. The Court of Appeal accepts that it may have taken some time to find ██████████ and to prepare the video of Exhibit AR09, but Appellants have failed to explain why this could not have been done before filing the Objection (which accompanied a video of ██████████ as D6) or in the period thereafter. As Respondent correctly notes, the (extended) period for filing the Objection lasted over two months after filing the Application. It then took another month until the filing of the Rejoinder and a further two months before the oral hearing in first instance. During this time, Appellants had ample

opportunity to approach ██████████ and to prepare additional evidence. Furthermore, it remains unclear when the first contacts with ██████████ were exactly made and how the discussions and the preparation of the video thereafter progressed. In the Grounds of Appeal (paragraph 91), Appellants state that some initial contacts were made with ██████████ in December 2025 but that the video could not have been completed until after the oral hearing in January 2026. Appellants did not inform the Court of Appeal of the contacts that they already had with ██████████ in the context of the EPO opposition and the circumstances surrounding the preparation of the video for these proceedings. Respondent raised these facts in the Statement of response. This lack of clarity weighs against allowing the submission of the two additional exhibits and the argumentation based thereon in these proceedings.

64. The Respondent is also correct in noting that the submission of these two exhibits constitutes a new invalidity-attack. Although the software in the video of Exhibit AR09 is allegedly the same as in the video of D6, Appellants rely with respect to D6 on the public availability of the *video* (which Respondents do not contest) and with respect to R09 on the public prior use of the *software* shown in the video (which Respondents do contest). The Court of Appeal agrees with the Respondent that the public availability of the software raises a number of important questions that have not yet been answered, such as when and how ██████████ obtained which version of the software and under which conditions that software was obtained. At this late stage of the proceedings, there is insufficient room to deal with these points, even leaving aside that in addition to these points, the substantive question will need to be answered to what extent the software unambiguously discloses all elements of the claimed method.
65. In the opinion of the Court of Appeal, allowing the submission of these exhibits at this stage of the proceedings would be detrimental to the position of the Respondent. Respondent would be forced to defend itself against a new invalidity-attack in one instance and with only limited means to file further arguments and evidence. That is not justified in this case.

Novelty

66. Appellants argue that the subject matter of claims 1, 13 and 15 lacks novelty in view of D2 and D6. For the reasons set out below, the Court of Appeal disagrees.
67. According to Art. 54(1) EPC, an invention is considered new if it does not form part of the state of the art. A technical teaching does not form part of the state of the art if it differs in at least one of its known features from what is already known in the state of the art. Only that which is immediately and unambiguously apparent to a person skilled in the art from the relevant publication or prior use is considered to be anticipated by the prior art (UPC_CoA_182/2024, 25 September 2024, Mammut v Ortovox; UPC_CoA_382/2024, 14 February 2025, Abbott v Sibio).

Novelty in view of D2

68. D2 is another patent of Respondent and discloses a computer-implemented method for generating and modifying orthodontic treatment plans based on a digital model of a patient's teeth. In paragraphs [0004] and [0005], D2 describes the same drawbacks of manual modification of treatment plans according to the prior art, as in paragraphs [0001] and [0002] of the patent. Paragraph [0006] states that the proposed methods and apparatuses for modification of treatment plans in D2 aim to improve treatment planning, potentially improving the speed at which treatment plans may be completed and providing greater choices and control to the dental professional (cf. also paragraph [0011]: "*Manual techniques have been used for treatment planning and may require many hours or days to complete.*"). D2 is thus in the same technical field and addresses a similar problem as the patent.
69. In order to solve the problems associated with manually modifying a treatment plan, D2 describes that a plurality (an array) of potential treatment plan variations may be pre-calculated. These treatment plans are displayed to the user who may then switch (toggle) between the pre-calculated

treatment plans to assess the variations and select the desired modified treatment plan. See e.g. paragraphs [0007], [0058] and [0045]:

“[0045] These methods and apparatus may also allow the user to modify any of the treatment plans. Many of the modifications made by the user may include variations of the treatment plan that are already pre-calculated and included in the array of treatment plans, thus the modifications may be made in real time by switching between the different treatment plan variations. (..)”

70. When a user requested modification is not covered by the pre-calculated treatment plans, the method and apparatuses of D2 may trigger the re-calculation (generation) of one or more new treatment plans based on the user requested modification. See e.g. paragraphs [0045] and [0049]:

“[0049] (..) As mentioned, in some cases, making modifications that are not covered by the pre-calculated treatment plan variations in the array of treatment plans may cause the method or apparatus to trigger generating of new treatment plans that replace or are added to the array of existing treatment plans and include the new modifications. (..)”

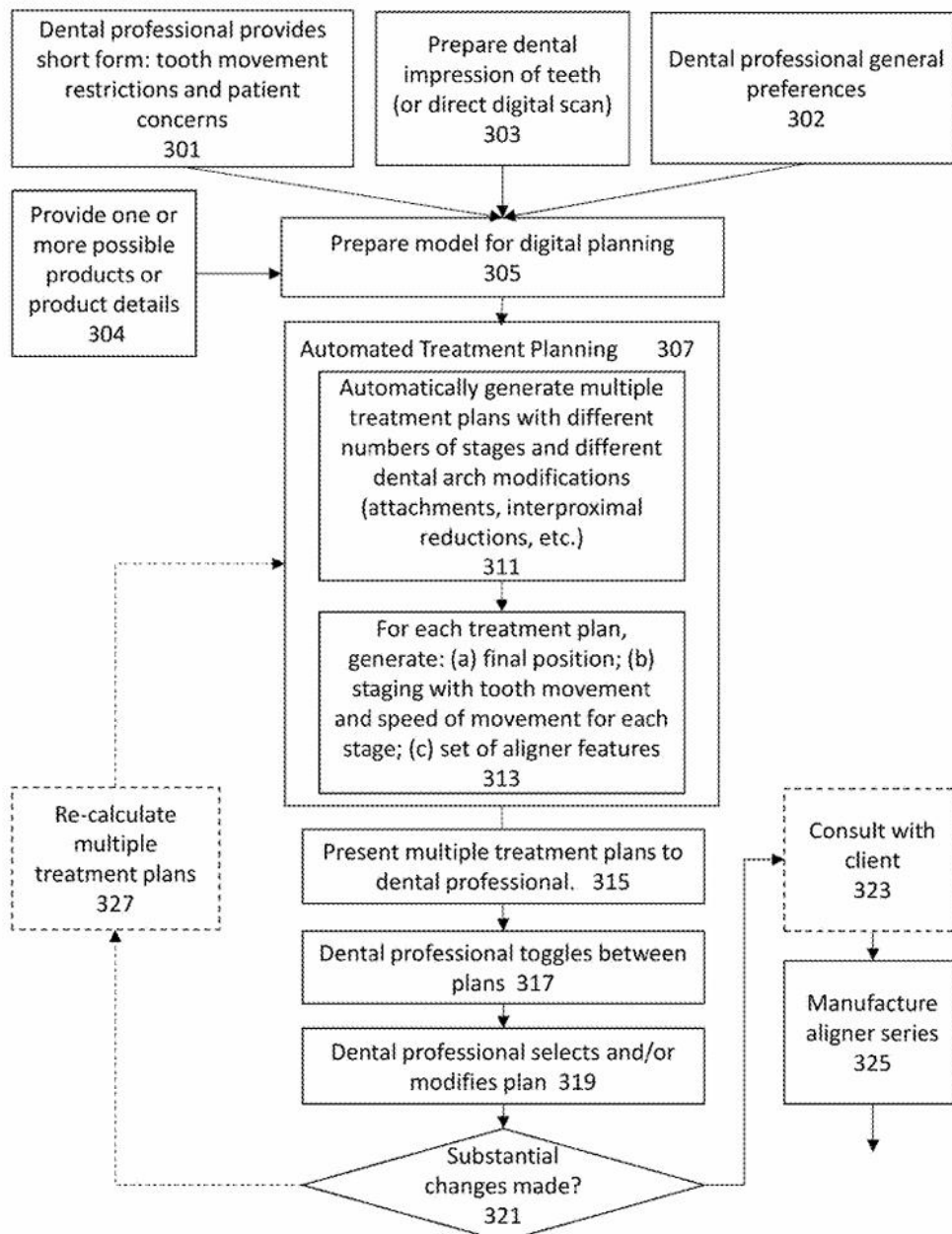
71. D2 explains that the (re-)calculation of the treatment plans can be performed by a treatment plan optimizing generator, for example, located at a remote site. See, for example, paragraph [0062]:

“[0062] Any of the methods may include transmitting the modified one or more treatment plans to the treatment plan optimizing generator (e.g. the remote site where the treatment plan optimizing generator is located) to recalculate the array of treatment plans based on the modifications of the one or more treatment plans.”

72. When (re-)calculating the treatment plans, the treatment plan optimizing generator may take certain constraints into account, such as tooth moving limits, collision constraints, staging constraints or other constraints (including, for example, a “do not harm” constraint which ensures that the planned final position of the teeth does not introduce or worsen orthodontic problems) (see e.g. paragraphs [0284]-[0288]). The constraints may be based on the treatment preferences and the treatment details submitted to the treatment plan optimizing generator (cf. Figure 20C) and may be expressed as specific numeric limits in a constrained optimization algorithm used by the treatment plan optimizing generator. See, for example, paragraphs [0100]-[0105], [0273]-[0278] and [0333]-[0334]:

“[0277] The numeric limits on the single numeric function are understood to be qualities of treatment plan that must never be violated and may be defined as inequality constraints f_i . Constraints enforce mechanical, biomechanical, clinical and aesthetic rules, as well limits imposed by product definitions. Implemented constraints include, but are not limited to, amount of reproximation, maximum velocity of teeth movement, depth of inter-arch collisions, cusp-to-groove occlusion. Example of constraints also include “do-not-harm” constraints that ensure that the movement of the teeth does not result in making the alignment worse or overcorrecting, e.g. midline, overjet, overbite, occlusion, misalignment, spaces, rotations, etc.. Other constraints may include: amount of collisions, movement velocities and separation of movements, etc.”

73. Figure 3 of D2 shows an example of a method for manufacturing a series of aligners for a patient’s teeth in which a plurality of treatment plans is (re-)calculated (cf. paragraph [0121]).



74. Paragraph [0226] of D2 explains that the method of Figure 3 starts by collecting from the patient, a model of the patient's teeth, as well as the applicable treatment conditions and preferences. The user may submit this information to a treatment plan optimizing generator. During the steps of "Automated Treatment Planning" shown in Figure 3, the optimizing generator calculates an array of treatments plans. Paragraph [0227] explains that the optimizing generator may be used multiple times, each time providing slightly different treatment details while annotating each treatment plan with an indication of the constraints that were used to generate the treatment plan. After the generation of these treatment plans, the user may switch (toggle) between the pre-calculated treatment plans on its display and select one or a subset of treatment plans.
75. Figure 3 shows that if a user wishes to modify a treatment plan in a way that is not covered by one of the pre-calculated treatment plans ("Substantial changes made?"), the modification may be transmitted back to the Automated Treatment Planning subsystem to generate additional treatment plans based on the user's modifications ("Re-calculate multiple treatment plans"). The calculation process is then repeated by the optimizing generator based on the user requested modifications.
76. The parties agree that features 1.1 to 1.5 and 1.8 are disclosed in D2. The debate between the parties concentrates on whether features 1.6 and 1.7 are disclosed in D2.

“in real time” (feature 1.7)

77. The LD decided in the Order that feature 1.7 is not disclosed in D2 because there is no direct and unambiguous disclosure that the re-calculation of the revised treatment plans is performed “in real time”. The LD referred in this context to paragraph [0054] which describes that the term “real time” in D2 refers to an immediate response *“for example, a response that is within milliseconds so that it is available virtually immediate when observed by the user”*. According to the LD, D2 only discloses such a “real time” operation when switching between pre-calculated treatment plans, not when re-calculating the treatment plans in case the user requested modifications are beyond the pre-calculated treatment plans. In the Order, the LD referred to the modifications based on the pre-calculated plans as the “first type of modifications” and to the modifications based on the re-calculated treatment plans as the “second type of modifications”.
78. With respect to the first type of modifications, feature 1.7 would not be disclosed according to the LD, because the treatment plans are already pre-calculated and the revised treatment would therefore not be generated based on a user requested modification but on already generated treatment plans. The Court of Appeal agrees.
79. With respect to the second type of modifications, feature 1.7 would not be disclosed according to the LD (and the Respondent), because D2 does not disclose that the re-calculation is done in real time. The Court of Appeal does not agree with this.
80. D2 explains that the switching between pre-calculated treatment plans can be done in “real time” (i.e. according to paragraph [0054] within milliseconds) because these plans are already available to the user, who then merely needs to switch between already calculated plans. See paragraph [0058]:
- “Because the treatment plans have been pre-calculated and are in the array, they may be shown in real time, and the user may easily switch between different versions, allowing the user to pick an optimal treatment for the patient.”*
81. According to D2, the generation of a treatment plan (rather than switching between existing plans) may take longer but still occurs “in real time” as meant feature 1.7 of the patent. Like in the patent, the automated process of D2 is designed to operate efficiently and to support interactive use, such that recalculated treatment plans are made available without manual intervention and within a limited time frame suitable for clinical application. Reference is made in this context to paragraph [0047] of D2 which states that the process of generating treatment plans *“may be automated and may be **fast** (e.g. **within a few seconds, minutes or hours**).”* This directly and unambiguously teaches the automatic generation of the treatment plans “in real time” according to feature 1.7, as exemplified in paragraph [0019] of the patent (*“within 15 minutes or less (e.g., (...) **2 minutes or less, 1 minute or less, etc.**)”*).
82. Respondent’s argument that this passage in D2 is irrelevant for feature 1.7 because it does not specifically refer to the re-calculation of a treatment plan, is unconvincing. Paragraph [0047] refers in general to the automated generation of treatment plans. When reading D2 as a whole, the skilled person will understand that this relates to any automated generation of revised treatment plans, including the re-calculation of treatment plans (e.g. paragraph [0011]). This is confirmed in Figure 3, which describes the exact same process by the Automated Treatment Planning (treatment plan optimizing engine), irrespective of whether the treatment plan is calculated or re-calculated.
83. Respondent’s argument that the generation of revised treatment plans “in real time” would make the use of pre-calculated treatment plans in D2 devoid of purpose, is equally unconvincing. As explained above, in D2 the term “real time” is used in the context of switching between pre-calculated treatment plans and refers to a *“virtually immediate”* response, i.e. within **milliseconds**. This is faster than the re-calculation of treatment plans (corresponding to feature 1.7), which occurs *“fast”* (e.g. within a few seconds), but not as fast as switching between pre-calculated treatment plans. The pre-calculation of treatment plans thus still has a timing advantage over re-calculating the

treatment plans. This does not take away the fact that the latter occurs “in real time” in accordance with feature 1.7.

84. The fact that the treatment plans may be (re-)calculated by an automated treatment planner located at a remote site, is neither a reason to conclude that the (re-)calculated treatment plans are not generated in real time.
85. First of all, similar to the patent, D2 explicitly discloses the possibility that the generation of treatment plans is performed locally, e.g. on a local (“frontend”) computer in the doctor’s office. See, for example, paragraphs [0084] and [0052] of D2:

“In some variations the treatments plans are generated locally, e.g. on software that is running on the user’s computer/processor, which is the same processor containing instructions (e.g. code) for executing the interactive treatment planning, including receiving the array of treatment plans.”

86. Moreover, as indicated above, claim 1 of the patent also covers the situation in which the revised treatment plans are generated at a remote (“backend”) location, for example by a “*service for calculating treatment plans*” (see e.g. paragraph [0065] and claim 12 of the patent). There is no relevant difference between this embodiment and the situation wherein the re-calculation may be done by a treatment optimizing generator located at a remote site. In both instances, the revised treatment plan may be generated in real time as meant in feature 1.7.

Determining and generating “within a predetermined threshold” (features 1.6 and 1.7)

87. In addition to the above, Respondent argues that feature 1.7 would not be disclosed in D2 because the treatment plans would only be re-calculated in case the modification “exceeds” the pre-calculated treatment plans. According to Respondent this implies that the revised treatment plans are not generated when the user requested modification is *within* a predetermined threshold as required by feature 1.7, but instead, when it is *outside* a predetermined threshold (represented by the array of pre-calculated treatment plans). For the same reasons, according to Respondent, feature 1.6 would not be disclosed in D2. The Court of Appeal disagrees.
88. D2 describes that the treatment plans are re-calculated when the user requested modification is not covered by the array of pre-calculated treatment plans (see e.g. paragraph [0049]: “*..modifications that are **not covered** by the pre-calculated treatment plan variations..*”). There is no indication in D2 that this would imply that a threshold would be exceeded by the user requested modification. This merely implies that there is no pre-calculated treatment plan available for the user modification in question. Compliance or non-compliance with a threshold does not come into play in this context.
89. However, the Court of Appeal does agree with Respondent that D2 does not directly and unambiguously disclose the step of determining that the user requested modification is “*within a predetermined threshold*” (feature 1.6) and the separate step of generating the revised treatment plan when the user modification is “*within the predetermined threshold*” (feature 1.7). For these features, Appellants refer to the use of the treatment plan optimizing generator and the role that the constraints play in this regard. However, features 1.6 and 1.7 are not disclosed in this context.
90. As explained above, the determination step of feature 1.6 is a distinct step that precedes the generation step of feature 1.7. Only after it has been determined that a user requested modification is within a predetermined threshold (feature 1.6), a revised treatment plan will be generated based on that modification (feature 1.7). D2 discloses a different mechanism.
91. According to D2, the (re-)calculated treatment plans are generated by solving a constrained optimization problem, in which **clinical targets** (such as a desired rotation of the teeth) are subject to certain **constraints** expressed as **numeric limits** in the optimization algorithm. See, for example, paragraphs [0273]-[0274] and Figure 20C (see also paragraphs [0100]-[0105] and [0333]-[0334]):

“[0273] Once the numeric limits and target functions have been selected (e.g., based on the set of treatment details, the set of treatment preferences and the comprehensive final position of the patient’s teeth) **2015**, resulting in the specialized constraints (limits) **2017** and specialized numerically expressed treatment targets (target functions) **2019**, they may be expressed as a non-linear optimization problem **2021** by first combining the plurality of numerically expressed treatment targets (target functions) to form a single numerical function (single numerical merit function). Each numerically expressed treatment target may be multiplied by a scaling factor. The resulting non-linear optimization problem is a single numerical function subject to the plurality of numeric limits **2023**.

[0274] Thereafter, the optimization problem may be solved using conventional techniques, such as an interior point method. Such nonlinear constrained optimization solution techniques **2025** may minimize the single numerical function subject to the plurality of numeric limits to get a solution vector including all stages forming the treatment plan **2027**.”
[emphasis added; CoA]

92. The system of treatment planning according to D2 is thus formulated as a constrained optimization problem:

- treatment targets are expressed as numerical “target functions”;
- multiple target functions are defined into a “single numerical merit function” (see below: “ $f_0(x)$ ”);
- the single numerical function is subject to “numeric limits” (constraints) derived from treatment preferences and treatment details (see below: “subject to:..”);
- the system then computes a “solution vector” expressing all stages of the treatment plan by minimizing the single numerical merit function under the given numeric limits.

93. Reference is made to Figure 21 and paragraph [0275] for the constrained optimization algorithm:

$$\begin{aligned} &\text{minimize} && f_0(x) \\ &\text{subject to} && f_i(x) \leq 0, \quad i = 1, \dots, m, \\ &&& x_j^{\min} \leq x_j \leq x_j^{\max}, \quad j = 1, \dots, n. \end{aligned}$$

94. The role of the constraints in D2 is therefore not to act as a threshold which is first assessed (feature 1.6) and then governs whether a plan is generated (feature 1.7). Instead, the constraints in D2 define the feasible region of optimization within which the output is to be computed. Accordingly, the system of D2 produces in all cases a constraint-compliant treatment plan, irrespective of whether the requested modification is within or outside the constraints. The difference is only the extent to which the plan matches the user’s input. When the requested revision results in a treatment plan within the admissible limits, the optimization algorithm may produce a solution that is close (or even identical) to the requested revision. On the other hand, when the requested revision results in a treatment plan that would violate one or more constraints, such a configuration is not admissible within the optimization problem, and the treatment plan optimizing generator produces a solution that is the best achievable compromise under the given constraints.

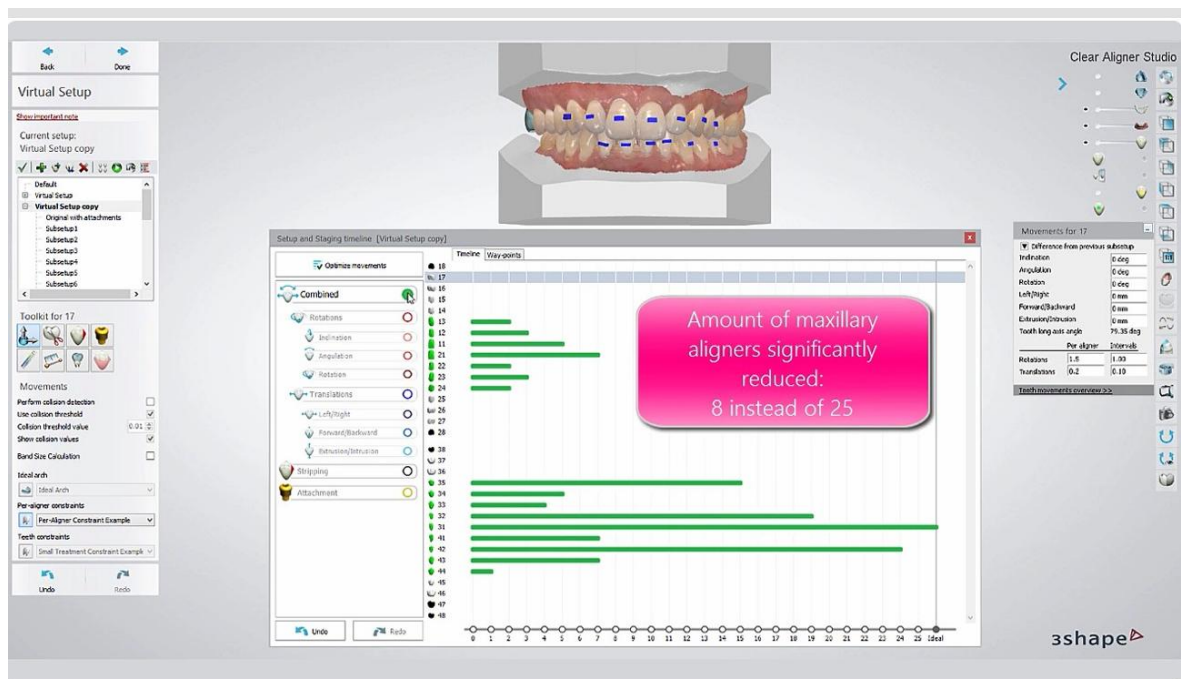
95. Therefore, while D2 contains multiple references to limits and constraints which may be understood as thresholds in a broad sense, it does not disclose the specific mechanism of features 1.6 and 1.7 in which compliance with certain predetermined thresholds is determined in a first distinct step, which then governs whether a revised treatment plan is generated in a second distinct step. Instead, in D2 the constraints are embedded within the optimization process, in which no temporally distinct

determination and generation steps can be distinguished and which always yields a constraint-compliant solution. The role of the constraints in this system is merely to shape the outcome of the calculation, rather than to allow or reject the generation of the revised treatment plan based on the requested user modification.

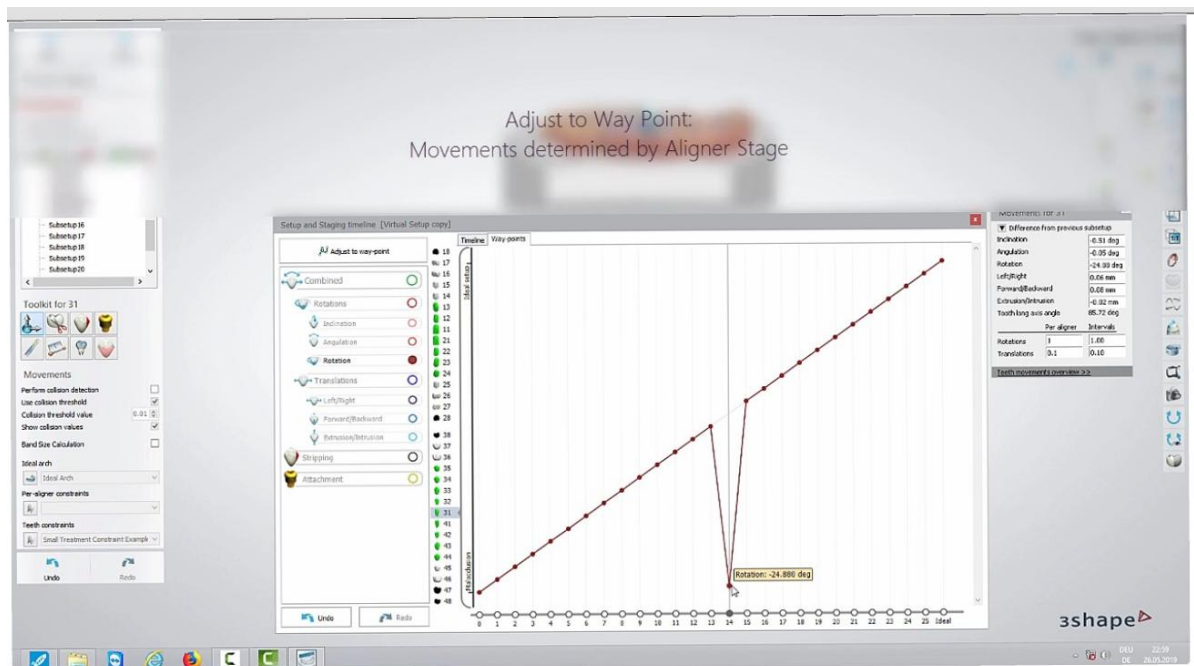
96. The specific mechanism of first assessing the requested modification and then generating a revised treatment plan according to features 1.6 and 1.7 is therefore missing in D2.

Novelty in view of D6

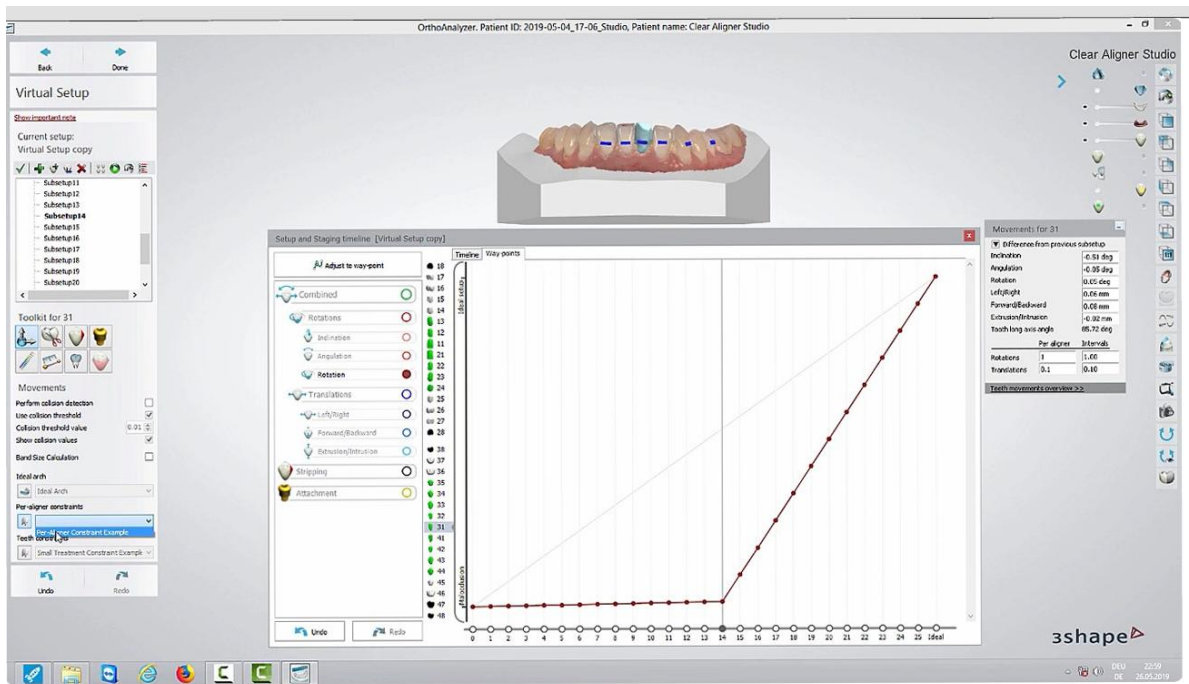
97. Likewise, the Court of Appeal does not consider D6 to anticipate claims 1, 13 and 15 of the patent.
98. D6 contains screenshots and a link to a YouTube video entitled "*3Shape Clear Aligner Studio workflow with [REDACTED]*" dated 9 August 2019. [REDACTED] is a "superuser" of the 3Shape software, described in D6 (page 1).
99. D6 discloses a workflow that starts with the creation of a three-dimensional "model base" of the patient's teeth (page 3, time stamp 00:00:05). An "Ortho Control Panel" allows the user to set the values of certain parameters that must be observed when generating the treatment plan. For example, using the Ortho Control Panel, the user can define the "constraints per tooth" which specify the constraints to the patient's teeth, such as the inclination, angulation, and rotation of the teeth (page 4, time stamp 00:00:59). These constraints can be fine-tuned by defining their "constraints per aligner". In addition, the control panel allows the user to determine the position of attachments for automatically placing the attachments on the patient's teeth (page 5, time stamp 00:01:23 and page 14, time stamp 00:07:18).
100. After setting these values, the "Clear Aligner workflow" is started to determine the final position of the patient's teeth. D6 first shows the segmentation of the teeth which the user wishes to move (page 8, time stamp 00:02:47). In addition, the user can prepare and fine-tune the positioning of the teeth by using one or more of the features provided by the software, such as "ideal arch", "reference planes" and "automated stripping" (page 9, time stamp 00:04:55 to page 12, time stamp 00:05:59). Once this workflow is finished, the number of stages (aligners) of the treatment plan can be determined by using the feature "automated aligner calculation" (page 13, time stamp 00:06:40). By clicking on "subdivide setups" in the virtual setup screen various options are presented to the user. One of these options is the "per-aligner constraints" option. Clicking on this option results in an automatic calculation of the number of aligners based on the patient's biological constraints.
101. The feature "setup and staging timeline" opens a window that displays the teeth movements and their distribution over the aligners (page 15, time stamp 00:07:57). D6 explains that initially the distribution of teeth movements is determined by the tooth which needs the most aligners to be moved into its desired position. By clicking on "optimize movements", the software may reduce the number of aligners (page 17, time stamp 00:08:42). A screenshot of this feature is shown below:



102. The relationship between the ideal setup and the number of aligners is shown on page 18 of D6 (time stamp 00:09:07). With respect to each individual tooth, the user can select a specific aligner to delay or start a certain movement. The screenshot below illustrates that by dragging down a dot in the line, the movement of tooth #31 can be adjusted (page 18, time stamp 00:09:07):



103. D6 explains that this feature may be used if it is necessary to first create space before rotating the tooth in question (page 19, time stamp 00:09:21). The screenshot below shows that as a result of this adjustment, the movement of tooth #31 starts from aligner 14 instead of from aligner 1:



104. D6 explains that this adjustment may, however, result in an insufficient number of aligners to perform the full movement of the tooth (page 20, time stamp 00:09:29). Clicking on “per aligner constraints” will show the user whether more aligners must be added indicated by the text “Possible violation of “Per Aligner Constrains”” in the screenshot below (page 21, time stamp 00:09:35):



105. The last feature shown in D6 is “automated ID tags”. Once the treatment plan is exported for manufacturing, the user can choose ID tags on each model stage (page 22, time stamp 00:09:35).

No disclosure of feature 1.7

106. The Court of Appeal is of the opinion that at least feature 1.7 is not disclosed in D6.

107. In first instance, Appellants referred for features 1.5 to 1.8 to the adjustment of the target position of a tooth shown at time stamp 00:05:56 of D6. The LD noted correctly that it would be unclear to the skilled person from D6 that this modification takes place following the generation of an initial

treatment plan. Hence, according to the LD, feature 1.5 is not disclosed in this embodiment. Appellants did not challenge this finding in their appeal.

108. In addition, Appellants referred for features 1.5 to 1.8 to the modification of the staging timeline for tooth #31 (see above in paragraph 102). The LD concluded that even if this would disclose a user requested modification of an initial treatment plan (feature 1.5), D6 does not disclose generating, automatically and in real time, a revised treatment plan based on the user requested modification, when this modification is within a predetermined threshold (feature 1.7). The Court of Appeal agrees.
109. As the Appellants acknowledge in their Grounds of Appeal, D6 shows that immediately following the modification of the staging timeline (time stamp 00:09:21), the revised treatment plan is generated by clicking on the button “Adjust to way-point” (time stamp 00:09:24). Reference is made to the paragraph 58 of the Grounds of Appeal, where Appellants state: *“At this point already, the treatment plan is revised, in real time and automatically, and based on the user requested modification because the position of tooth #31 is adjusted in all aligners of the treatment plan.”* When generating the revised treatment plan, the 3Shape software did not check whether the adjustment leaves enough aligners to perform the full movement of the tooth. D6 shows that this occurs after the revision of the treatment plan, i.e. upon clicking the “per aligner constraints” (time stamp 00:09:32). This does not comply with feature 1.7.
110. As indicated above (paragraphs 48-50), the step of generating a revised treatment plan *“when the user requested modification is within the predetermined threshold”* (feature 1.7) presupposes a prior determination that the requested modification is within a predetermined threshold (feature 1.6). This excludes an implementation, such as in D6, in which a revised treatment plan is generated without determining that the modification is within the predetermined threshold.
111. During the oral hearing in first instance, Appellants argued that the revised treatment plan would be generated upon clicking a “Done” button after performing the “per aligner constraints” check. The Court of Appeal notes that this action is not disclosed in D6 and it is therefore unclear to the skilled person whether this action is indeed available and how it operates. Moreover, Appellants’ assertion during the oral hearing in first instance is at odds with their current position that the revised treatment plan is already generated upon clicking on “Adjust to way-point”. As indicated above, this occurs before the “per aligner constraints” check is performed.
112. In the Grounds of Appeal, Appellants argue that features 1.6 and 1.7 would be disclosed in two further scenarios when modifying the staging timeline, i.e.
- (i) when generating the revised treatment plan upon clicking on “Adjust to way-point” following the modification of the staging timeline (i.e. at time stamp 00:09:24), and
 - (ii) when generating a (second) revised treatment plan following an alleged modification of the (first) revised treatment plan under (i) consisting of adding more aligners to the treatment plan to correct the violation of the “per aligner constraints” (i.e. after time stamp 00:09:35).
113. As to scenario (i), the Court of Appeal fails to see the disclosure of a step to determine that the modification is within a predetermined threshold (feature 1.6), and, *a fortiori*, a step to generate a revised treatment plan when the modification is within the predetermined threshold (feature 1.7). As indicated above, the “per aligner constraints” check is performed after the generation of the revised treatment plan by clicking on “Adjust to way-point”. Even assuming that the activation of the “per aligner constraints” involves a check of certain predetermined thresholds, as Appellants argue, D6 does not disclose that these thresholds are checked before generating the revised treatment plan. For the reasons set out above, feature 1.7 is not disclosed in this scenario.
114. As to scenario (ii), the Court of Appeal notes that D6 does not disclose the asserted modification of adding more aligners or the way in which a revised treatment plan would then be generated.

Appellants argue that the “virtual setup screen” discussed above in paragraph 100 would then be used, but this is not disclosed in D6 and it is unclear whether or how features 1.6 and 1.7 would be implemented in that scenario. In view of these unclaritys, it cannot be said that the use of features 1.6 and 1.7 is clearly and unambiguously disclosed in this suggested, but undisclosed, scenario (ii).

115. Finally, Appellants rely in the Grounds of Appeal (for the first time) on the feature of “optimize movements” (cf. above in paragraph 101) to argue that features 1.6 and 1.7 would be disclosed in D6. The Court of Appeal agrees with Respondent that also this functionality does not clearly and unambiguously disclose the patented method. As noted in D6 (page 17), clicking on “optimize movements” causes the *software* to complete the movements as quickly as possible. Leaving aside the question whether this is done as part of the generation of the initial treatment plan or by way of a modification of an already generated initial treatment plan (feature 1.5) and whether it is the user that requests the modification or the software (feature 1.5), there is no disclosure in this scenario of any user requested modification being compared to a threshold. Hence, also in this context, D6 does not disclose a step of determining that a user requested modification is within a predetermined threshold (feature 1.6) or that a revised treatment plan is only generated when the modification is within the predetermined threshold (feature 1.7).
116. In conclusion, D6 does not disclose the method according to claim 1 of the patent. The subject matter of this claim is therefore also new in view of D6.

Inventive step

117. Appellants further argue that the patented invention lacks an inventive step. In this appeal, the Appellants rely on the following documents:
1. D1 in combination with common general knowledge,
 2. D2 in combination with common general knowledge or with D6,
 3. D6 in combination with common general knowledge or with D2,
 4. D7 in combination with common general knowledge or with D8.

The principles for assessing inventive step

118. The approach taken when establishing inventive step is set out by this Court in UPC_CoA_528/2024 and UPC_CoA_529/2024 (25 November 2025, Amgen v Sanofi/Regeneron, see also UPC_CoA_646/2024, 25 November 2025, Meril v Edwards).
119. First, the object of the invention (the objective problem) must be established. This must be assessed from the perspective of the skilled person with its common general knowledge at the application or priority date of the patent. In this assessment, it should be established what the invention adds to the state of the art, not by looking at the individual features of the claim, but by comparing the claim as a whole in the context of the description and the drawings, thus also considering the inventive concept underlying the invention (the technical teaching), which must be based on the technical effect(s) that the skilled person on the basis of the patent understands is (are) achieved with the claimed invention. The claimed solution is obvious when at the relevant date, the skilled person, starting from a realistic starting point in the state of the art in the relevant field of technology, wishing to solve the objective problem, *would* (and not only: could) have arrived at the claimed solution (UPC_CoA_528/2024 and UPC_CoA_529/2024, 25 November 2025, Amgen v Sanofi/Regeneron).
120. A starting point is realistic if the teaching thereof would have been of interest to a skilled person who, at the relevant date, wishes to solve the objective problem. This may for instance be the case if the relevant piece of prior art already discloses several features similar to those relevant to the invention as claimed and/or addresses the same or a similar underlying problem as that of the

claimed invention. There can be more than one realistic starting point and the claimed invention must be inventive starting from each of them.

121. The skilled person has no inventive skills and no imagination and requires a pointer or motivation that, starting from a realistic starting point, directs it to implement a next step in the direction of the claimed invention. As a general rule, a claimed solution must be considered not inventive / obvious when the skilled person would take the next step prompted by the pointer or as a matter of routine, and arrive at the claimed invention.

Application to the present case

122. The patent relates to the automated modification of treatment plans. In the patented method, the user can request modifications to the treatment plan in real time. The requested modifications are checked automatically against predetermined thresholds to ensure that the requested modifications are feasible and/or safe and a revised treatment plan is only generated based on the user requested modification if that modification is within the threshold. The automated method according to the patent thus facilitates the user in quickly making safe and reliable modifications to the treatment plan, while reducing computer resources and overhead (paragraphs [0004] and [0008]).
123. The problem to be solved is therefore to provide an improved method to enable modifications to an orthodontic treatment plan with greater control for the user and increased efficiency of planning. This problem is generally in line with the problem formulated by the Respondent, except for the reference therein to “improved treatment outcomes”. The patent provides no basis for this addition.

D1 as a starting point

124. In first instance, Appellants relied on D1 for lack of novelty and inventive step. D1 was not amongst the three invalidity-attacks that Appellants presented as their most promising attacks. In the Order, the LD considered claim 1 to be novel over D1. Appellants did not challenge this decision in their appeal. The LD further considered the obviousness-attack based on D1 in combination with common general knowledge to be insufficiently substantiated. Appellants appealed this part of the decision. In the Grounds of Appeal, they mainly referred to their arguments in first instance.
125. Contrary to the assertion of the Respondent, Appellants did not waive their arguments based on this reference and by specifically objecting against the LD’s rejection of the obviousness-arguments in view of D1, the assessment of these arguments is part of this appeal. The Court of Appeal considers these arguments unfounded.
126. D1 is another patent of Respondent and was considered by the EPO during the examination procedure of the patent. D1 is concerned with collecting information on user preferences to ensure that these preferences are taken into account in future plans (paragraph [0062]). D1’s focus is on interpreting the doctor’s preferences for treatment planning so that the initially generated treatment plan is more likely to be in line with the doctor’s preferences and modifications can be avoided as much as possible.
127. The Court of Appeal is of the opinion that D1 does not clearly and unambiguously disclose features 1.6 to 1.8 of claim 1 of the patent.
128. With respect to feature 1.6, Appellants first refer to paragraph [0013] of D1. This paragraph lists the type of preferences that a user may have. D1 does not disclose, however, that or how these user preferences are used as thresholds, or in a step to determine in real time that a modification is within a threshold. This neither follows from paragraph [0062] on which Appellants rely. This paragraph describes how to ensure that an initially generated treatment plan is as accurate as possible. There is no disclosure in paragraph [0062] of a threshold for modifying an existing treatment plan. Such disclosure can neither be found in paragraph [0084], mentioned by Appellants, which merely states that an indicator may be used to track “*what corrections or requests were made by the user prior to*

finalizing and/or accepting the treatment plan". Nothing is said about thresholds or the comparison in real time of a user requested modification to a threshold. Finally, paragraph [0151] does not disclose the use of feature 1.6. This paragraph only contains a general reference to "modifying parameters" without any further explanation on their use.

129. The LD determined that feature 1.7 is neither disclosed in D1. The Court of Appeal agrees that also this feature is absent, and as a result, D1 neither discloses feature 1.8.
130. In first instance, Appellants only discussed feature 1.7 and argued that this feature would follow from the common general knowledge. In the Grounds of Appeal, Appellants rely on the arguments in first instance and also refer only to feature 1.7. Leaving aside whether Appellants' assertions regarding feature 1.7 are correct, these assertions do not deal with the other missing features in D1. Already for this reason, the obviousness-attack based on D1 is rejected as insufficiently substantiated.
131. To the extent that Appellants wish to rely in this context on their more general assertion that feature 1.6 forms an automation of a manual determination of thresholds in the prior art, they have not made this sufficiently clear in the Grounds of Appeal and have not substantiated how this assertion would impact the validity of claim 1 in view of D1. Even assuming that the assertion of Appellants is correct, the Court of Appeal notes that feature 1.6 does not stand alone and must be read in combination with feature 1.7 which defines how that assessment is used within the system. The invention does not lie in the mere automation of a threshold assessment, but in the way in which that assessment is integrated into a computational workflow governing treatment plan generation.
132. Based on the above, the Court of Appeal concludes that Appellants have not shown that the patented invention is obvious in view of D1 in combination with common general knowledge.

D2 as a starting point

133. Appellants also rely on D2 to argue a lack of inventive step of claim 1. In the appeal, the debate between the parties concentrated on the alleged absence in D2 of feature 1.7, in particular the feature "in real time". As discussed above (paragraphs 77-86), the Court of Appeal is of the opinion that this feature is directly and unambiguously disclosed in D2.
134. The missing elements in D2 involve the determination that the user requested modification is "*within a predetermined threshold for modifications to a treatment plan*" (feature 1.6) and the generation of a revised treatment plan "*when the user requested modification is within the threshold*" (feature 1.7). Although D2 does disclose the use of constraints when generating a solution vector in the constrained optimization process of D2, D2 does not teach a distinct first assessment of whether the user requested modification complies with a threshold and then only generating a revised treatment in a second distinct step when the modification is within the threshold. As explained above, in D2 the constraints do not operate as a separate, binary decision layer, but rather as parameters that define the admissible solution space.
135. The Court of Appeal is of the opinion that D2 is a realistic starting point as it addresses a similar problem as the claimed invention. The fact that D2 also discloses the use of pre-calculated treatment plans does not alter this. However, in the opinion of the Court of Appeal, the patented invention with its different modification mechanism is not obvious in view of D2, neither in combination with common general knowledge, nor in combination with D6.

D2 in combination with common general knowledge

136. As noted above, the skilled person has no inventive skills and requires a pointer or motivation that, starting from a realistic starting point (D2 in this case), directs the skilled person to implement the claimed invention. According to the Appellants, D2 would provide such a pointer, which would direct the skilled person to the claimed invention. The Court of Appeal disagrees.
137. In the Grounds of Appeal, Appellants argue that D2 points the skilled person into the direction of

automating the steps of modifying a treatment plan that were commonly taken manually by a technician in the prior art (e.g. paragraph [0084]). Appellants further argue that D2 points the skilled person to use the treatment plan optimizing generator to re-calculate the treatment plans based on user requested modifications (paragraph [0194]). In the opinion of the Court of Appeal, these passages cannot be considered as pointers to modify the re-calculation process of D2 to arrive at the specific mechanism of features 1.6 and 1.7.

138. Appellants further argue that it would have been a matter of routine for the skilled person to apply the same method of real time calculation of a treatment plan, to re-calculating the treatment plan. While the Court of Appeal agrees that the calculation process is the same in both cases, this does not mean that it would be a matter of routine to modify the process of D2 to include the missing features of claim 1. There is no hint to do this in D2 and this is not a matter of routine.

139. In the absence of a pointer or a routine, it cannot be said that the skilled person would have been prompted, starting from D2, to take the next step to the patented solution. Already for this reason, Appellants' argumentation fails.

140. Moreover, Appellants have not shown why and how the skilled person would have modified the optimization process of D2 to arrive at the patented invention. In the Grounds of Appeal, Appellants merely argue that the step of determining whether a user requested modification is within a threshold would be "*routinely applied*" by the skilled person as "*it is a well known measure that a software checks user input and possibly prevents output.*" The Court of Appeal disagrees. As noted above, the invention does not lie in the mere automation of a threshold assessment, but in the way in which that assessment is integrated into a computational workflow. Appellants have not explained why the skilled person would want to adapt the optimization algorithm of D2, why the skilled person would then apply the measures of features 1.6 and 1.7 and how these measures would be implemented in D2. In short, Appellants have not sufficiently explained why these steps would be obvious in view of D2 and/or the common general knowledge.

D2 in combination with D6

141. For similar reasons, the Court of Appeal does not consider the invention to be obvious in view of D2 in combination with D6. Leaving aside that a pointer in D2 is absent and that taking the next step was neither a matter of routine, the Court of Appeal fails to see why a skilled person would combine D2 with D6 and why the missing elements of the patented invention would be obvious in view of this combination. D6 is a distinct software tool that differs from the software described in D2. The Court fails to see why a skilled person would combine these two software tools and how this combined software tool would function. In addition, as discussed above, also D6 does not disclose the generation of a revised treatment plan when a user requested modification is within a threshold (feature 1.7). Also in combination, these two documents therefore do not provide all features of the patented method, even leaving aside whether and why such a combination would be made.

D6 as a starting point

142. Appellants further rely on D6 to argue a lack of inventive step of claim 1. Appellants argue that D6 is a realistic starting point and that the feature of "optimize movements" would be a pointer to prompt the skilled person to take the next step (which the skilled person would also have taken as a matter of routine). According to Appellants, if it would be held that there is no disclosure in D6 of generating a revised treatment plan in accordance with feature 1.7, this would follow from the common general knowledge or from D2.

143. The Court of Appeal agrees that D6 may also be a realistic starting point as it discloses software for the automated generation and modification of a treatment plan. The Court of Appeal fails to see, however, that D6 contains a pointer to prompt the skilled person to take the next step towards the patented invention. As the Respondent correctly notes, the feature of "optimize movements" in D6 is not a pointer to the patented invention but is merely a description of a specific functionality of the

3Shape software. This functionality lacks a number of features, including features 1.6 and 1.7, and the Court of Appeal does not see how this functionality could then be considered as a pointer to the elements it misses in the first place. Appellants have neither convincingly shown that taking the next step starting from D6 was a matter of routine. This means that also D6 does not lead the skilled person to the patented invention.

144. Moreover, Appellants have not shown how the skilled person would have arrived at the patented invention in an obvious manner starting from D6 and combining it with the common general knowledge or with D2. Merely repeating the process for generating the initial treatment plan to obtain a revised treatment plan does not result in the features of the claim. Also D2 misses the features that are missing in D6. Therefore, even if the skilled person would combine D6 and D2, the patented invention is not obtained.

D7 as a starting point

145. Finally, Appellants argue that D7 in combination with common general knowledge or with D8 would render the patented method obvious.

146. According to the LD, D7 discloses the automatic generation of an initial treatment plan (features 1.2 to 1.4) but does not disclose the modification of the initial treatment plan in accordance with features 1.5 to 1.8. Equally, according to the LD, D8 would not disclose features 1.5 to 1.8 and therefore the combination of D7 and D8 would not lead the skilled person to the patented invention. The Court of Appeal agrees.

Disclosure of D7

147. D7 is another patent of Respondent which protects the basic clear aligner technology. It is not in dispute that D7 discloses features 1.2 to 1.4. The parties do dispute whether D7 also discloses the automated modification of a treatment plan (feature 1.5) and the features in connection with this modification (features 1.6 to 1.8).

148. In the Grounds of Appeal, Appellants refer to paragraphs [0071] and [0072] to argue that D7 also discloses user requested modifications of the initial treatment plan. These paragraphs indicate that the user may change the number of treatment stages. However, as the LD and the Respondent correctly note, against the background of D7 as a whole, these paragraphs do not provide the skilled person with a clear and unambiguous teaching of a user requested modification to an initial treatment plan. Rather, paragraphs [0071] to [0074] of D7 teach the skilled person that before the treatment plan is generated, D7 allows a user to change a number of settings, to control how the treatment plan is generated. These include changing the number of treatment stages (paragraphs [0071] and [0072]), selecting the key frames in the sequence of incremental stages (paragraph [0073]) and specifying non-linear interpolation between the key frames (paragraph [0074]). D7 does not contemplate a user to provide requests to automatically modify an already existing treatment plan. In the absence of feature 1.5, also features 1.6 to 1.8 are missing in D7.

149. Leaving aside the fact that D7 does not contain any pointers to prompt the skilled person to take the next step towards the patented invention, also the combination of D7 with the common general knowledge or D8 does not lead the skilled person to the patented invention.

D7 in combination with common general knowledge

150. With respect to the common general knowledge, Appellants argue that it would be obvious in view of D7 to add a step of real time generation of a revised treatment plan. The Court of Appeal finds no basis for this statement, let alone that this would lead the skilled person to the specific features 1.5 to 1.8 of the claimed method that are equally missing in D7.

D7 in combination with D8

151. Similar to D7, D8 only discloses the generation of an initial treatment plan (features 1.2 to 1.4).
152. D8 relates to the field of orthodontics and describes in paragraphs [0003] to [0021] the drawbacks of orthodontic procedures of the prior art. In paragraph [0010], D8 describes that orthodontic products of the prior art were designed to average anatomy. As a result, orthodontists were faced with the need to select what they perceived to be the appliance that was the closest to the one required by a particular patient. This resulted in a manual feedback system and readjustments of the appliance while the treatment was ongoing. The patient would thus be subjected to treatment over a period that was longer than if the appliance had initially been optimally designed. In addition, the time required by the orthodontist for implementing the treatment was several times greater than if the modification of the appliance during treatment would not be necessary.
153. Against this background, D8 aims to provide a software modeling tool to manipulate digital images of the patient's teeth from their original position to an optimal position and to develop a treatment plan based thereon – i.e. prior to starting the treatment -. See e.g. paragraph [0023] of D8:

“Disclosed herein is a software modeling tool capable of manipulating the digital images of the teeth from their original position and scanned to an optimal position. The tool allows the treating orthodontist to develop a treatment plan based on evaluating tooth movements in the modeling tool.”

154. The changes to the teeth described in D8 and the restrictions to be observed in this respect relate to changes that were made from the original position of the teeth to an optimal position when generating the (one and only) treatment plan. D8 does not disclose automatically modifying this initial treatment plan, let alone applying the steps of features 1.6 and 1.7.
155. Appellants' reference to paragraph [0010] to argue that D8 would also disclose the modification of a treatment plan is incorrect. As described above, this paragraph describes the readjustment of the appliance during treatment. This is different from modifying the treatment plan prior to starting the treatment as meant in features 1.5 to 1.8 of claim 1. Therefore, even if the skilled person would combine D7 and D8, the patented invention would not be obtained.

Conclusion on validity

156. The Court of Appeal concludes that on the balance of probabilities, based on the arguments and documents in these proceedings, it is more likely than not that claim 1 of the patent will be held valid. Because claims 13 and 15 of the patent incorporate the features of claim 1, the same applies to claims 13 and 15. A discussion of the auxiliary request is therefore not needed.

VI. Infringement

157. The Court of Appeal also considers it more likely than not that Appellants directly infringe claims 1 and 13 and indirectly infringe claim 15.

Admissibility of non-infringement arguments

158. Appellants argued for the first time in their Rejoinder that their product is not covered by claim 1. The LD disregarded Appellants' non-infringement arguments as late filed. Appellants now request the Court of Appeal to allow these non-infringement arguments. Respondent opposes this request.
159. As this Court decided in *Mammut v Ortovox* (UPC_CoA_182/2024, 25 September 2024), when exercising its discretion in accordance with R. 222.2 RoP, the Court of Appeal is not bound by a preclusion of exhibits or submissions at first instance. Even if an exhibit or submission was rightly not admitted by the Court of First Instance, the Court of Appeal decides at its discretion, considering all circumstances, whether this is to be taken into account in the appeal proceedings. Given the

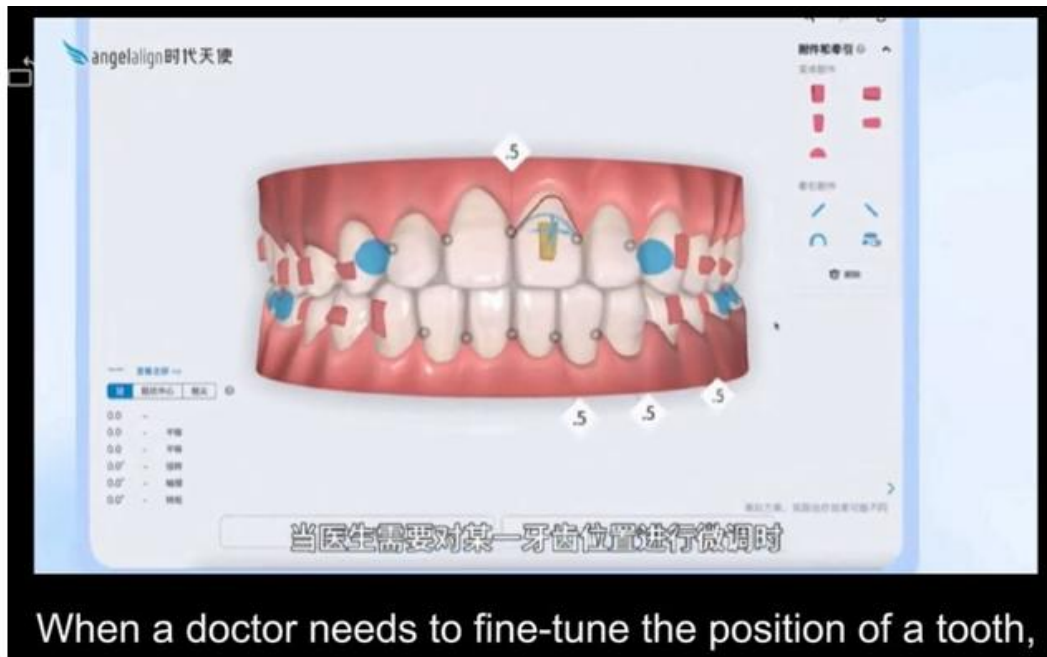
summary nature of proceedings for provisional measures (see R. 205 RoP) and the time periods applicable (R. 209.1 a) RoP) there may in individual cases be reason to take a more lenient approach towards late filed submissions than what would be applicable in a case on the merits. There may, however, be less reason to be lenient towards late submissions by defendants who, while aware of the patent rights, are launching their products at risk and who therefore should have been properly prepared for proceedings for provisional measures (UPC_CoA_917/2025, 26 March 2026, Merz v Viatris; see also UPC_CoA_446/2025 and UPC_CoA_520/2025, 13 August 2025, Boehringer Ingelheim v Zentiva).

160. In this case, Appellants have not provided a justification for not submitting their non-infringement arguments in first instance in time. The non-infringement arguments relate to the functioning of Appellants' own products and the Court of Appeal has no doubt that Appellants could have prepared and included these arguments in their Objection. The time limit for filing the Objection was even extended and lasted more than two months after filing the Application. Appellants have neither substantiated that the submission of the non-infringement arguments in the Rejoinder and the Grounds of Appeal was prompted by a change of position of Respondent after the Application or by a certain decision in the Order.
161. On the other hand, as a general rule, an uncontested submission cannot be rejected on the grounds of late filing (UPC-CoA-534/2024, 3 October 2025, Belkin v Philips; UPC-CoA-622/2025 and UPC_CoA_623/2025, 27 May 2026, Hefei v Grundfos). That is particularly relevant for Appellants' non-infringement arguments with respect to "scenario 1" relied upon by the Respondent to argue infringement of claim 1. Appellants basically confirm the technical functionality of their products as described by Respondent regarding this scenario. The main question is whether Appellants' products with this (undisputed) functionality are covered by the claim, given the claim construction provided by the Court of Appeal.
162. The Court of Appeal adds that Appellants' non-infringement arguments with respect to scenario 1 have already been on file since 28 November 2025 when it filed its Rejoinder in first instance. Respondent therefore had ample opportunity to study these arguments and to respond to these in its Statement of response, filed four months after the Rejoinder.
163. For these reasons, the Court of Appeal will allow the submission of the non-infringement arguments in relation to scenario 1, i.e. paragraphs 13 to 17 of the Rejoinder, paragraphs 27 and 28 of the Grounds of Appeal and Appellants' remarks in relation to scenario 1 during the oral hearing in appeal.
164. The above does not relate to the non-infringement arguments raised by Appellants in relation to scenarios 2 and 3. These arguments were filed late by Appellants without justification, and with respect to these arguments Appellants dispute the technical qualifications by Respondent. These non-infringement arguments will therefore not be allowed and will be disregarded by the Court of Appeal. This implies that the facts regarding scenarios 2 and 3 set out by Respondent in the Application should be regarded as uncontested. Appellants are correct, however, that also in a case of uncontested facts, the Court will need to decide whether the facts advanced justify the legal consequence for which the facts were submitted (UPC_CoA_312/2025 and 325/2025, 17 April 2025, Kodak v Fuji Film). The Court of Appeal will briefly discuss below whether it considers scenarios 2 and 3 to be infringing given the interpretation of claim 1 of the patent.

Assessment of infringement regarding scenario 1

165. Respondent argues that in scenario 1, the iOrtho software infringes claim 1 because it allows the user to request a modification of the initial treatment plan (feature 1.5 in conjunction with features 1.1 to 1.4) by moving one or more attachments on a patient's teeth. According to Respondent, the iOrtho software determines in real time whether the movement of the attachment is within a predetermined threshold shown by a red line close to the gingival (gum) line (feature 1.6). When the modification of the attachment location is within this threshold, the iOrtho software generates a revised treatment plan based on this modification (feature 1.7). To substantiate its arguments,

Respondent refers to a screenshot of the iOrtho software (Exhibit CR PM20, page 5) and a witness statement by ██████████ (Exhibit CR PM 21). The screenshot is inserted below, followed by a quote from the statement of ██████████ (paragraph 54) describing the functionality of the relevant feature of the iOrtho software:



“54. Attachments:

54.1. *The orthodontist added a new attachment to one of the teeth and moved it to different positions by using their mouse. The orthodontist also moved an existing attachment on the tooth using the mouse.*

54.2. *In both cases, while moving the attachment, a red line was shown close to the gum line (as shown in the demo videos which I described above). I also observed the orthodontist try to move the attachment beyond this red line. This was not possible - when the orthodontist tried to move the attachment beyond the red line, the attachment disappeared from the display.*

54.3. *When the attachment was moved within the red line, the orthodontist was able to click the ‘Live Now’ button and the software generated a new draft treatment plan. After clicking the button, a box with the text ‘Generating’ and a progress bar were shown on screen (as shown in the videos which I described above), and after a few seconds a modified treatment plan was shown as a new draft treatment plan.”*

166. Appellants do not contest the described functionality of their software. They neither contest that in the iOrtho software, the gingival line acts as a threshold when requesting modifications to the position of the attachments. Reference is made to paragraph 16 of Appellants’ Rejoinder:

*“Thus, the Defendant’s software only allows the user to **request modifications to the position of attachments** that keep them within the **threshold formed by the gingival line**. This ensures that the modification request will always be **within the predetermined thresholds** at the time it is received by the Defendant’s system pursuant to feature 1.5. In other words: The attacked embodiment will not receive a non-compliant request in the first place.”* [emphasis added; CoA]

167. According to the Appellants there would nevertheless be no infringement because there is no request for modification when the attachment is moved outside the threshold. Because only

compliant requests would be allowed by the iOrtho software, no determination is made pursuant to feature 1.6 and there is no generation of a revised treatment plan according to feature 1.7 (Rejoinder, paragraph 17). In the Statement of response, Appellants appear to argue that also feature 1.5 is absent in their software (paragraph 27). The Court of Appeal disagrees.

168. With the iOrtho software, a user can request a modification of the position of an attachment by moving the attachment using the 3D controls. This concerns a user requested modification according to feature 1.5 (see e.g. paragraph [0056]: “At 416, the frontend system receives instructions to modify the treatment plan through (...) 3D controls (...).”). As the Appellants confirm in their Rejoinder, the gingival line functions as a threshold. The software can determine that the attachment is moved within the threshold – as opposed to outside the threshold – in a first step (feature 1.6) and then, if that is the case, generates a revised treatment plan (feature 1.7).
169. The fact that the attachment is no longer visible when it is moved outside the threshold, does not take away the fact that the software does perform the steps of feature 1.6 and 1.7 when the user requested modification is within the threshold. Moreover, as Respondent correctly notes, paragraph [0056] specifically mentions the possibility that the proposed modification is rejected if it exceeds the warning indicator. A similar situation occurs in the iOrtho software. In view thereof, also Appellants’ argument during the oral hearing in appeal that Respondents would not have shown that no treatment plan is generated in that case, is rejected. By rejecting the modification, there appears to be no basis for a revised treatment plan. Appellants’ unsubstantiated denial in this respect is insufficient to come to a different conclusion.

Assessment of infringement regarding scenarios 2 and 3

170. According to the Respondent, the iOrtho software allows changing the positions of individual teeth (by extrusion, intrusion or rotation) and changing the overall arch shape (by which the positions of the teeth are changed to follow the modified size of the dental arch). If the user changes the tooth position (scenario 2) or the arch shape (scenario 3) for certain amounts, clicking the ‘Live Now’ button of the iOrtho software results in the generation of a modified treatment plan. However, if the user changes the tooth position or the arch shape by too great an amount, clicking the ‘Live Now’ button does not result in the ‘Generating’ dialog box being displayed. Rather, an error message is displayed in a red bar. According to the Respondent, this would show that also in scenarios 2 and 3 features 1.6 and 1.7 are applied. The Court of Appeal disagrees.
171. As discussed above, according to the specific mechanism of claim 1, the determination step of feature 1.6 and the generation step of 1.7 are two distinct steps with a certain temporal order and substantive relationship, wherein first the user requested modification is compared with a predetermined threshold (feature 1.6) and a revised treatment plan is only generated after it has been determined that the user modification is within the predetermined threshold (feature 1.7).
172. The facts presented by Respondent do not show that in scenarios 2 and 3 this mechanism is used. In particular, Respondent has failed to establish that in these scenarios (i) predetermined thresholds are used, (ii) a user requested modification is first checked for compliance with such (undisclosed) thresholds, and (iii) a revised treatment plan is only generated after it has been determined that the user requested modifications are within the thresholds. Unlike in scenario 1, in scenarios 2 and 3 a distinct determination step preceding the generation step has not been identified. All described acts occur after clicking the ‘Live Now’ button, and it cannot be established that or how the iOrtho software uses any predetermined thresholds at that stage. The fact that certain modifications result in an error message does not establish the claimed mechanism, as it remains unclear whether this reflects a threshold-based determination of admissibility of the requested modification rather than a different mechanism within the system. Based on the presented facts, Respondent has therefore not shown that in scenarios 2 and 3, the iOrtho software implements the specific mechanism defined by features 1.6 and 1.7.

Conclusion

173. In view of the above facts and acknowledgements by Appellants with respect to scenario 1, the Court of Appeal is of the opinion that it is more likely than not that Appellants directly infringe claims 1 and 13 with the iOrtho software, directly infringe claim 13 with the Aligners and indirectly infringe claim 15 with the iOrtho software and the Aligners. A discussion of Respondent's (alternative) reliance on the dependent claims is therefore not needed.

VII. Prerequisites of provisional measures and balance of interest

174. The conclusion from the above is that the Court of Appeal considers on the balance of probabilities that it is more likely than not that claims 1, 13 and 15 are valid and infringed. Appellants' argument that an injunction should nevertheless not follow is rejected.

Urgency

175. Appellants do not dispute that the urgency requirements are met. The Court of Appeal agrees and refers in this respect to the uncontested considerations in the Order (paragraph 188).

Necessity of provisional measures and balance of interests

176. Under Art. 62 UPCA and R. 211.1 RoP, the Court may grant provisional measures intended to prevent any imminent infringement, and to prohibit, on a provisional basis and subject, where appropriate, to a recurring penalty payment, the continuation of the alleged infringement or to make such continuation subject to the lodging of guarantees intended to ensure the compensation of the right holder. Such provisional measures are treated by way of summary proceedings (R. 205 RoP). Compared to proceedings on the merits, these proceedings are short and fast and make it possible to bring a patent infringement to an immediate end. The expedited procedure, however, does not allow for full examination of the Applicant's entitlement to commence proceedings, of the validity of the patent and of the alleged infringement as provided for in proceedings on the merits. The expedited procedure can therefore be used only if, considering the nature of the case, proceedings on the merits cannot be awaited.

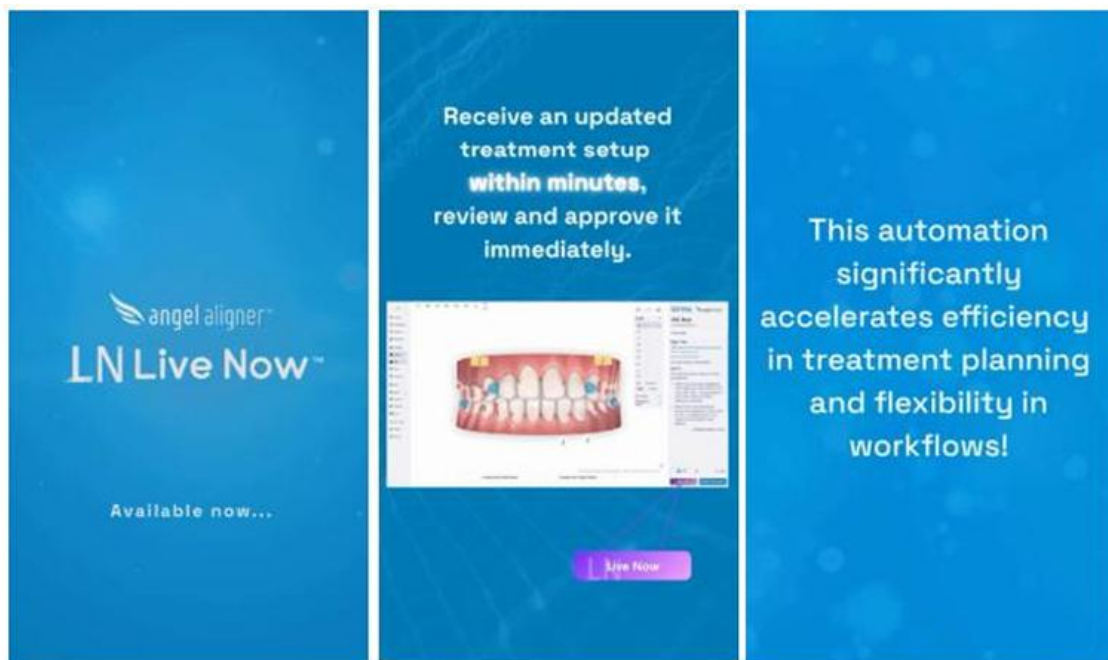
177. Pursuant to Art. 62(2) UPCA and R. 211.3 RoP, the Court shall have the discretion to weigh up the interests of the parties and, in particular, to take into account the potential harm for either of the parties resulting from the granting or the refusal of the injunction. The Court must in addition consider the time factor. More specifically, the Court must assess whether it is possible to await proceedings on the merits, or whether provisional measures are necessary (UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide; UPC_CoA_768/2024, 20 April 2025, EOFlow v Insulet).

178. Accordingly, R. 206.2(c) RoP requires that the Applicant in its Application for provisional measures sets out the reasons why provisional measures are necessary to prevent a threatened infringement, to forbid the continuation of an alleged infringement or to make such continuation subject to the lodging of guarantees. This is not only a formal requirement. It concerns the merits of the Application for provisional measures and must be considered by the judge when issuing an order under R. 211 RoP (UPC_CoA_335/2023, 26 February 2026, NanoString v 10x; UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide).

179. Provisional measures will be necessary, for instance, where any delay would cause irreparable harm to the patent holder. Irreparable harm is, however, not a necessary condition for the ordering of provisional measures (UPC_CoA_182/2024, 25 September 2024, Mammut v Ortovox; UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide; UPC_CoA_768/2024, 20 April 2025, EOFlow v Insulet). The necessity of provisional measures may also follow from the fact that there is direct competition between the attacked embodiment and the product of the patent holder (UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide). In those cases, granting provisional measures may be justified if they are necessary in order to maintain the status quo that existed immediately prior to the alleged infringement until the decision of the Court on the merits

(UPC_CoA_182/2024, 25 September 2024, Mammut v Ortovox; UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide). The necessity for provisional measures may arise in a move from a market situation where only one product is available to one where there are two such competing products. Such a move can be expected to lead not just to price pressure but to a permanent price erosion (UPC_CoA_523/2024, 3 March 2025, Sumi v Syngenta).

180. In a case, where the patented product was already marketed by the infringer before the grant of the patent, necessity may be denied because the requested provisional measures would change the status quo of the market established years before the grant of the patent (UPC_CoA_540/2024, 24 February 2025, Biolitec v Light Guide; UPC_CoA_768/2024, 20 April 2025, EOFlow v Insulet).
181. The Court of Appeal is of the opinion that the Respondent has an (urgent) interest that Appellants are enjoined from bringing the iOrtho software and the Aligners on the market.
182. The parties are direct competitors in the field of clear aligner therapy. Respondent played a leading role in developing this technology and launched its clear aligner therapy in 1999. Since 2022, the treatment planning software tool of Respondent contains a “Live Update” feature which, according to the uncontested statement by Respondent, includes the features of the patent. Appellants have also been active in this field for many years offering a similar software tool under the name “iOrtho”. Only in May 2025, a few months before the grant of the patent, Appellants launched the “Live Now” feature as part of their software. This feature infringes the patent and is similar to the “Live Update” feature in Respondent’s software. According to the uncontested statement of Respondent, until the introduction of this feature by Appellants, Respondent was the only provider of treatment planning software with such a live update feature.
183. Respondent argues that Appellants’ continued use and supply of the iOrtho software and the Aligners produced with this software would cause serious harm to its market position. According to Respondent, in the field of orthodontic treatment with aligners, clinicians typically once choose a provider they want to work with and then adhere to this decision. This means that a clinician who decides to use Appellants’ aligner system and treatment planning software is likely to use this system for all his current and future patients. Appellants generally agree with this description of the market situation but argue that there are many factors that play a role in the decision of the clinician which provider to use. Appellants acknowledge that the offered software is one of the relevant factors, but, according to Appellants, Respondent failed to show that this factor is determinative for the clinician’s decision. The Court of Appeal rejects Appellants’ arguments.
184. The parties agree about the specific market situation for clear aligners and the fact that the offered software tool is a relevant factor in the clinician’s choice which platform to use. According to the Court of Appeal this is sufficient to assume that there is a concrete risk that the continued availability of the iOrtho software with the recently introduced “Live Now” feature will be detrimental to Respondent’s position, as the clinician’s choice for a certain provider may result in a situation that can have a lasting effect on Respondent’s market share. The Court of Appeal notes in this respect that when launching the new release of the iOrtho software in May 2025, the new “Live Now” feature was prominently featured by Appellants to convince clinicians to use its platform. An excerpt from one of Appellants’ marketing materials is included below:



185. Although it is difficult to quantify the exact impact of the treatment planning software in the clinician’s decision-making process, it is clear that the software does play an important role in this respect, as confirmed by Appellants’ own marketing materials. The Court of Appeal therefore agrees with the Respondent that the continued offering of the iOrtho software with the infringing “Live Now” feature poses a concrete risk to its market position that needs to be avoided. The fact that there may be other competitors on the market with competing software, is not decisive. As Respondent has explained, Appellants’ iOrtho software is the only infringing software tool that is similar to Respondent’s software with the “Live Update” feature. This product is therefore in direct competition with Respondent’s ClinCheck software tool.

186. In the opinion of the Court of Appeal, the interests of the Respondent that are to be protected with an injunction outweigh the interests of Appellants to be able to continue to offer the iOrtho software with the infringing “Live Now” feature. As the LD correctly noted, Appellants can still use their software without the “Live Now” feature, which they have offered to their customers until May 2025. In the event that the preliminary injunction would be lifted in proceedings on the merits, as Appellants suggest, Appellants can try to obtain damages due to their later market entry. How Appellants’ position will then have evolved in relation to the position of other competitors, is difficult to predict and cannot now be used as an argument to refuse the requested preliminary injunction. Also the alleged difficulties in quantifying the damages, cannot justify Appellant’s continued infringement in this case.

VIII. Provisional Measures and Costs

187. In view of the above, and because no further issues in this respect have been raised in the appeal, the provisional measures as ordered by the LD are maintained.

188. Pursuant to Art. 69(1) UPCA, reasonable and proportionate legal costs and other expenses incurred by the successful party shall, as a general rule, be borne by the unsuccessful party, unless equity requires otherwise. In this case, as the unsuccessful parties, the Appellants must bear the costs of these proceedings.

189. The fact that the Court of Appeal does not consider scenarios 2 and 3 to be infringing does not alter this. In view of the infringement of scenario 1, the appeal is ultimately rejected, and, moreover, as discussed above, Appellants’ non-infringement arguments regarding scenarios 2 and 3 (and, hence, the costs made in connection thereto) are disregarded. The Court of Appeal also sees no ground to

take into account that in first instance the claims against Defendant 3 in first instance were rejected. No appeal has been lodged in respect of Defendant 3. Therefore, the Order is final with regard to the decision concerning Defendant 3. This includes the decision on costs.

ORDER

The Court of Appeal:

1. rejects the appeal;
2. orders the Appellants to bear the costs of the appeal proceedings;

This order was issued on 8 July 2026.

**Ulrike
Voß**

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Ulrike Voß, presiding judge

**Bartholomeus
Johannes van
den Broek**

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van den Broek
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Bart van den Broek, legally qualified judge and judge-rapporteur

**Nathalie,
Jeanne,
Danielle
SABOTIER**

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Nathalie Sabotier, legally qualified judge

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Stefanie Philipps, technically qualified judge

Alessandro Sanchini, technically qualified judge

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SANCHINI**

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