Unified Patent Court
Einheitliches Patentgericht
Juridiction unifiée du brevet

Action n°s:
UPC_CFI_214/2023, Infringement
UPC_CFI_403/2025, Counterclaim for revocation

DECISION

of the Court of First Instance of the Unified Patent Court
Local Division Helsinki
delivered on 29 April 2026
concerning EP 3295663

HEADNOTES:

1. When assessing an issue where there is no Court of Appeal case law, such as equivalence, and where both parties have argued based on the same Court of First Instance case law, legal certainty and/or the right of defence guides the local division to adopt a similar approach unless there are reasons that require diverging from it.
2. In order to assess the infringement by equivalence, the criteria set up by the Court of First Instance are cumulative. If any one of the criteria is not met, there is no need to assess the other criteria.
3. If a party presents an allegation, the Court will have to respond to this allegation only in so far as the party has presented substantiated arguments.

KEYWORDS:

Added matter, novelty, inventive step, infringement, infringement by equivalent means.

CLAIMANT IN INFRINGEMENT ACTION UPC_CFI_214/2023
COUNTERDEFENDANT IN COUNTERCLAIM FOR REVOCATION UPC_CFI_403/2025
(HEREINAFTER AIM SPORT OR CLAIMANT):

AIM Sport Development AG (hereinafter AIM Sport)
Schwanenplatz 4, 6004 Luzern, Switzerland
Replacing AIM Sport Vision AG based on the decision of the UPC Local Division Helsinki on 26 February 2024.

Represented by:
Johanna Flythström, Attorney-at-law, Roschier Attorneys Ltd
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DEFENDANTS IN INFRINGEMENT ACTION UPC_CFI_214/2023
COUNTERCLAIMANTS IN COUNTERCLAIM FOR REVOCATION UPC_CFI_403/2025
(HEREINAFTER TGI OR THE DEFENDANTS):

1. **TGI Sport Suomi Oy (previously Supponor Oy)**
   Vaisalantie 6, 02130 Espoo, Finland

2. **TGI Sport Virtual Limited (previously Supponor Limited)**
   Office 310, 12 Hammersmith Grove, London W6 7AP, United Kingdom

3. **TGI SPORT FRANCE SASU (previously Supponor SASU)**
   Spaces, Les Templiers, 950 Route des Colles, 06410 Biot, France

4. **TGI Sport Italia S.r.l. (previously Supponor Italia SRL)**
   Via Castiglioni, 1, Busto Arsizio, VA 21052, Italy

5. **TGI SPORT MARKETING ESPAÑA, S.L. (previously Supponor España SL)**
   Rambla Catalunya 25P PR. 08026, Barcelona, Spain

6. **TGI Sport Virtual UK Limited**
   Office 310, 12 Hammersmith Grove, London W6 7BA, United Kingdom

   All represented by:
   Dr. Henrik Lehment, Attorney-at-law, Hogan Lovells International LLP
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PATENT AT ISSUE:

European patent n° **EP 3 295 663** (hereinafter referred to by its last three digits, EP 663 or as the Patent)

DECIDING JUDGES:

This decision has been issued by
Petri Rinkinen, presiding judge and judge-rapporteur
Samuel Granata, legally qualified judge
Mélanie Bessaud, legally qualified judge
Eric Augarde, technically qualified judge

1 PROCEDURAL BACKGROUND OF THE CASES

1. The infringement case UPC_CFI_214/2023 was initially lodged by AIM Sport on 5 July 2023 together with a preliminary injunction application. A preliminary objection concerning the infringement case as well as an objection to the competence and jurisdiction of the Court along with a response to the preliminary injunction application was lodged by TGI (at that time Supponor) on 18 August 2023. The Court heard the preliminary objection and the preliminary injunction case in an oral hearing on 20 September 2023, allowed the preliminary objection and dismissed the infringement action as well as the preliminary injunction lodged by AIM Sport based on lack of competence and jurisdiction. Written decision was issued on 20 October 2023.

2. AIM Sport filed an appeal to the Court of Appeal (CoA), which decided on 12 November 2024 to set aside the decision of the Helsinki Local Division and referred the actions back to the Helsinki Local Division.

3. AIM Sport indicated at that time that there was no purpose to continue the preliminary injunction application and that procedure was discontinued at that time.

4. As the statement of defence by TGI had not been filed during the first stage of the infringement action and as time had passed, and after consulting the parties, the Court invited first AIM Sport to provide an up-to-date statement of claim, which AIM Sport provided on 8 January 2025, along with an application under R. 263 of the Rules of procedure of the UPC (RoP) to make certain amendments. At that time, AIM Sport also introduced a new defendant, TGI Sport Virtual UK Limited. TGI opposed the introduction of the new defendant and certain amendments made by AIM Sport. On 11 February 2025, the Helsinki Local Division accepted the new defendant and the amended statement of claim. TGI appealed this order. The CoA accepted the new defendant and the amended statement of claim in its order dated 11 April 2025.

5. The statement of defence along with the counterclaim for revocation (UPC_CFI_403/2025) was filed by TGI on 12 May 2025.

6. On 12 July 2025, AIM Sport filed an application to amend the patent.

7. Correspondence on the matter was then conducted according to the timelines based on the Rules of Procedure.

8. The Court agreed with the parties that the interim conference was to be held on 11 February 2026 and the oral hearing on 20 March 2026.

2 PARTIES REQUESTS

2.1 PARTIES REQUESTS IN THE INFRINGEMENT CASE UPC_CFI_214/2023

9. AIM Sport requests the Court to order

(1) Original request 1 has been withdrawn and the following request was presented in the AIM Sport submission on 3 March 2026:

(1A) The preliminary injunction application has become devoid of purpose and there is no need to adjudicate it (Rule 360 RoP).

In the alternative, if the Court decides that the preliminary injunction has not become devoid of purpose: Preliminary injunction

(1B) Until the written decision on the merits of the Helsinki Local Division in these proceedings is issued in accordance with R. 118(6) RoP:

1) The Defendants shall not make available for operation, or operate, the artificial intelligence digital content replacement system (known as the AIR System) in France, Italy, Germany and/or Spain.

2) The prohibition in paragraph 1) above does not apply in relation to the remaining unextended terms of contracts with third parties, made prior to date of initiation of these proceedings, under which the AIR System is already made available.

Permanent injunction

(2) While EP 663 remains in force:

1) The Defendants (whether acting by their directors, officers, servants, agents or otherwise howsoever) shall be restrained from infringing claim 12 of EP 663 (including using or offering a digital overlay system, such as the SVB System, using the process) in Spain, Germany, France and/or Italy.

2) The Defendants (whether acting by their directors, officers, servants, agents or otherwise howsoever) shall be restrained from using, offering, or importing into Germany, France and/or Italy any product obtained by the process according to claim 12 of EP 663 (such as television footage which includes digital overlays generated using the process according to claim 12 of EP 663).

3) The Defendants shall not make available for operation, or operate, the artificial intelligence digital content replacement system known as the AIR System in Spain, France, Italy, and/or Germany.

In the alternative: Permanent injunction restraining intermediaries

(2A) While EP 663 remains in force, prohibit each of TGI Sport France SASU, TGI Sport Italia SRL, TGI Sport Marketing España SL, and TGI Sport Virtual UK Limited with immediate effect after service of the order to be rendered in this matter, to render sales, marketing, contracting or other services to TGI Sport Suomi Oy, TGI Sport Virtual Limited, and TGI Sport Virtual UK Limited in relation to the AIR System and/or the SVB System. (Article 63(1) UPCA);

Provision for periodic penalty payment in case of non-compliance

(3) Any failure to comply with orders (1B) and/or (2) and/or (2A) above will render each of the Defendants liable to pay the Court a recurring penalty payment of up to €100.000,00 for each violation (possibly repeated), or such other amount as found appropriate by the Court.

(4) Request withdrawn.

Declaration of infringement

(5) It is declared that:

a. The SVB System infringes claim 12 of EP 663.

b. The AIR System is derived from infringing use of the SVB System.

Order to give information

(6) The Defendants shall give information within three weeks after service of the judgment to be issued in these proceedings, on:

a. the distribution channels of the infringing processes and products obtained by the use of the infringing processes; and

b. the identity of any third person involved in the use of the infringing process and of the products obtained by the use of the infringing processes.

supported by relevant documentation, such as orders, order confirmations, invoices and copies of other purchase and sales documents and an independent accountant's declaration providing that the information provided is correct and complete, all at the expenses of the Defendants and each of them.

Publication of decision

(7) The Claimant is permitted, at each of the Defendants' expense, to display the decision and publish it in full or in part in ten (10) public media outlets of its choice, including newspapers, industry press and relevant industry websites including

www.sportbusiness.com, www.tech.sportbusiness.com, www.broadbandtvnews.com, www.dazn.com, www.insideworldfootball.com and www.tvbeurope.com.

Enforceable notwithstanding appeal

(8) The orders to cease and desist at paragraph (1B) and (2) above is immediately enforceable.

Damages

(10) The Defendants and each of them are liable for all damages resulting from the patent infringement referred to in requests (2) and (2A), committed since 17 November 2016. The actual amount of damages to be determined in separate follow-up damage proceedings pursuant to Chapter 4 of the Rules of Procedure.

Costs

(11) The Defendants and each of them are to bear the legal costs of these proceedings.

10. TGI requests that:

I. The infringement action is dismissed.

II. The Claimant has to bear the costs of the proceedings.

by way of an auxiliary request, in case the infringement action is not dismissed in full:

III. The proceedings are separated and stayed with regards to the Spanish part of EP 3 295 663 B1 (ES 2 743 491 T3) until a final decision on validity has been issued in the Spanish revocation proceedings filed on 12 May 2025 with the Commercial Courts of Barcelona.

IV. The enforcement of the Claimant's requests under (5a), (5b) and (6) is subject to the condition that the judgment has become final.

by way of an auxiliary request, in the further event that the decision is to be at least in part declared enforceable notwithstanding appeal against the Defendants:

V. The enforcement of the decision is dependent on the provision of security in the amount of EUR 15,000,000 or in the alternative in an amount specified within the discretion of the Court.

2.2 PARTIES REQUESTS IN THE COUNTERCLAIM FOR REVOCATION UPC_CFI_403/2025

11. TGI Sport Suomi Oy (Defendant and Counterclaimant 1) requests that:

I. The European patent EP 3 295 663 is revoked in its entirety with effect in Italy and the Republic of France.

II. AIM Sport shall bear the costs of the revocation proceedings.

TGI Sport Virtual Limited, TGI SPORT FRANCE SASU, TGI Sport Italia S.r.l., TGI SPORT MARKETING ESPAÑA, S.L. and TGI Sport Virtual UK Limited (Defendants and Counterclaimants 2–6) request that:

I. The European patent EP 3 295 663 is revoked in its entirety with effect in the Federal Republic of Germany, Italy and the Republic of France and

II. AIM Sport shall bear the costs of the revocation proceedings.

In addition, the Defendants request that the application to amend the patent (auxiliary requests 1–3) is dismissed.

12. AIM Sport requests that

- the Court dismisses the Defendants' requests;

- the Patent is maintained as granted, in the alternative as specified in auxiliary request 1 (AR1), in further alternative as specified in auxiliary request 2 (AR2), in the yet further alternative as specified in auxiliary request 3 (AR3);

- the Defendant 1's defences to Auxiliary requests be dismissed as inadmissible.

3 SUMMARY OF THE PARTIES POSITION AND THE MOST RELEVANT FACTS

13. The infringement action was initiated in 2023 against the Defendants then called Supponor. TGI Group acquired all Supponor group companies in July 2024 and since then the names of the defendant companies have been changed to reflect that change of ownership. The Defendants are referred to in this decision as TGI for the sake of clarity.

14. The infringement claim is based on the allegation that TGI is using in its SVB System the technology protected by the independent method claim 12 of the Patent and that the data from the use of the SVB System has been used to train TGI's new AI based technology, AIR System. Based on this, AIM Sport requests that the use of the AIR System is also injuncted.

15. TGI refutes such infringement and alleges that the patent is invalid. According to TGI the Patent is neither infringed by the SVB System nor infringed or exploited by the AIR System. TGI alleges that the use of the SVB System by then Supponor dates back to 2010, i.e. long before the priority date of the Patent and hence TGI has prior rights to the use of the SVB System. Furthermore, according to TGI, the request to injunct the use of the AIR System is not based on any accepted legal principles. TGI's arguments can be

summarized that either the patent is not valid or, if the patent is valid, it is not infringed by the SVB System (so-called “squeeze defence”).

16. The title of the patent is “Digitally overlaying an image with another image”.

17. The technology introduced in the patent is especially used to overlay court-side advertisements with other advertisements in televised football matches, hence allowing region-specific advertising in televised football games and similar events.

18. The priority date on the Patent is 13 May 2015 and it was published on 29 May 2019.

19. The Patent has independent claims 1, 12 and 13 but the requests of AIM Sport are solely based on method claim 12.

20. The independent method claim 12 of the patent EP 663 is being asserted in this action and can be broken down into the following features:

12	A method of digitally overlaying an image with another image,
12.1	comprising creating (200) a model of a real world space,
12.1.1	wherein the model includes an overlay surface to be overlaid with an overlay image,
12.1.1.1	wherein the overlay surface in the model represents a display device in the real world,
12.1.1.2	wherein the display device is configured to display a moving image on the display device in the real world by emitting radiation in one or more pre-determined frequency ranges;
12.2	identifying (201) camera parameters, which calibrate at least one camera with respect to coordinates of the model;
12.3	capturing (202) at least one image with respective said at least one camera substantially at the same time, said at least one captured image comprising a detection image,
12.3.1	wherein the camera used to capture the detection image is configured to detect radiation having a frequency outside all of the one or more predetermined frequency ranges and distinguish the detected radiation outside all of the one or more pre-determined frequency ranges from radiation inside the one or more pre-determined frequency ranges;
12.4	positioning (203) the overlay surface within said at least one captured image based on the model and the camera parameters;

12.5 detecting (204) an occluding object at least partially occluding the overlay surface in a selected captured image of said at least one captured image based on an image property of the occluding object and the detection image;

12.6 overlaying (205) a non-occluded portion of the overlay surface in the selected captured image with the overlay image, by overlaying the moving image displayed on the display device in the real world with the overlay image in the selected captured image.

21. TGI used the SVB System from 2011 until 2022. It started using the AIR System in 2021.

22. TGI's use of the SVB System has been found to infringe claim 12 in an amended form of the UK part of the Patent.

23. An infringement case based on the German part of the Patent against e.g. Supponor Holding Limited, which is not a party in the present case, was dismissed on appeal by the the Munich Higher Regional Court.

24. TGI previously challenged the competence and jurisdiction of the Court but has since withdrawn all such claims.

GROUNDS FOR THE DECISION

25. The infringement claim, as well as the counterclaim for revocation, are admissible.

26. The Patent is found to be valid but not infringed based on the following.

4 THE PERSON SKILLED IN THE ART AND COMMON GENERAL KNOWLEDGE

27. In order to evaluate the infringement and validity of a patent it is necessary to define the person skilled in the art. See also below in section 6.4 Inventive step for a definition of the person skilled in the art.

28. AIM Sport suggests that the person skilled in the art is someone with an interest in cameras and associated displays and computer systems for overlaying advertisements at live events, in particular sporting events, and with relevant academic training, probably a computer science degree, and practical experience implementing computer graphics rendering and image processing.

29. TGI suggests that the person skilled in the art is typically an electrical engineer, computer scientist, or physicist with a university degree and several years of professional experience in the field of digital image capture, processing, and alteration. Further, TGI

holds that the person skilled in the art understands optics for imagery and spectral properties of visible light and that the person skilled in the art may consist of a team of experts.

30. The parties agreed in the Interim Conference that there is no difference whether the Court accepts either of these definitions. The Court is of the opinion that the common general knowledge of the person skilled in the art is the same regardless of whether such person is defined as AIM Sport or TGI suggests. Hence the Court considers that in this situation, based on the Patent as a whole, the person skilled in the art is considered to be an electrical engineer with professional experience in the field of image capture and image processing.

31. The parties have agreed in the interim conference that the common general knowledge of the skilled person on the priority date and already in year 2010 included LED boards with moving images. For further content of the common general knowledge of the person skilled in the art a reference is made to the submissions of the parties.

5 THE PATENT

5.1 TECHNICAL BACKGROUND AND PROBLEM SOLVED

32. The invention relates to the field of digitally overlaying a captured image with another image (hereinafter referred to as an overlay image). It can be applied in particular in live broadcasting of sports events where billboards display advertisements that are targeted at the local audience in the stadium. In the case of international broadcast, the image displayed on the billboard (e.g. an advertisement) can be overlaid with another image (e.g. an alternative advertisement) targeted at the audience watching the broadcast. When the billboard is occluded by an occluding object (player, ball etc.), only that part of the billboard which is not occluded is to be overlaid by the overlay image.

33. The prior art systems and methods used for overlaying a captured image have been based on the detection of the non-occluded portion of the billboard by using an artificially generated light signature of the billboard (such as an infrared light). This signature being only present in the non-occluded part of the billboard, the overlay is restricted to this non-occluding part.

34. Such system (and corresponding method) requires special types of billboards using infrared backlighting and perform poorly under bright sunlight.

35. The claimed invention solves this problem by detecting the occluding objects, based on “an image property” of these objects rather than detecting the non-occluded part of the billboard based on a light signature thereof.

5.2 CLAIM CONSTRUCTION

36. Claim construction is a matter of law (UPC_CoA 768/2024, 20 April 2025, Insulet v. EOFlow). Claim construction must be uniform regarding the revocation and infringement claims. Hence, the Court shall first cover the claim construction.

37. The principles applicable to claim construction have been set out by the Court of Appeal in its final order in case UPC_CoA_335/2023 (Order of 26 February 2024, NanoString v. 10x Genomics). The 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. However, this does not mean that the patent claim merely serves as a guideline and that its subject-matter also extends to what, after examination of the description and drawings, appears to be the subject-matter for which the patent proprietor seeks protection. The patent claim is to be interpreted from the point of view of a person skilled in the art. In applying these principles, the aim is to combine adequate protection for the patent proprietor with sufficient legal certainty for third parties.

38. Features 12, 12.1, with subfeatures 12.1.1, 12.1.1.1, 12.1.1.2, as well as features 12.2 and 12.3 do not give rise to diverging interpretations between the Parties.

39. Feature 12 “A method of digitally overlaying an image with another image,”

    “An image” can be, for example, a television camera image in which e.g. billboards at a football stadium appear. Such an image may include e.g. players. “Another image” can be, for example, a territory-specific advertisement to replace the advertisement on the billboards with advertisements that are better suited to another territory.

40. Feature 12.1 “comprising creating (200) a model of a real world space,”

    This model is to be understood as a 3D mathematical model representing the real world, e.g. the football field or stadium.

41. Feature 12.1.1 “wherein the model includes an overlay surface to be overlaid with an overlay image,”

    The “overlay surface” is a surface (e.g. the billboard, see 12.1.1.1) in the model, which is to be overlaid, i.e. replaced by an “overlay image”, e.g. another advertisement for another geographical territory.

42. Feature 12.1.1.1 “wherein the overlay surface in the model represents a display device in the real world,”

A “display device” can include, for example, an active board such as an LED board. Hence the “overlay surface” represents an LED board in the real world.

43. Feature 12.1.1.2 “wherein the display device is configured to display a moving image on the display device in the real world by emitting radiation in one or more pre-determined frequency ranges;”

The “moving image” is a dynamically changing image being displayed in the real world on the display device, e.g. a commercial on an LED board in a football stadium. The emission of radiation in one or more pre-determined frequency ranges includes, for example, the emission of light in red, green and blue (RGB) frequencies, which can create any colour for the audience in the stadium to see.

44. Feature 12.2 “identifying (201) camera parameters, which calibrate at least one camera with respect to coordinates of the model;”

The “camera parameters” comprise the position and the orientation angles of the camera in the real world (extrinsic parameters) and the zoom parameters (intrinsic parameters). Camera parameters belong to common general technical knowledge. The model refers to the real world model created and defined in feature 12.1.

45. Feature 12.3 “capturing (202) at least one image with respective said at least one camera substantially at the same time, said at least one captured image comprising a detection image,”

The camera captures a “detection image” (further specified in feature 12.3.1 below) and a selected captured image (further defined in feature 12.5 below) substantially at the same time. Referring to the description (para. 15) and the drawings (fig. 1), it is understood that the camera(s) capture(s) at substantially the same time a selected captured image (output from camera 1) and a detection image (output from camera 2), the selected captured image and the detection image being collectively designated as a captured image.

46. The Parties at least partially disagree on the interpretation of features 12.3.1, 12.4, 12.5 and 12.6. Hence, these features require specific clarification.

47. Feature 12.3.1 “wherein the camera used to capture the detection image is configured to detect radiation having a frequency outside all of the one or more predetermined frequency ranges and distinguish the detected radiation outside all of the one or more pre-determined frequency ranges from radiation inside the one or more pre-determined frequency ranges;”

The camera used for capturing the detection image is configured to detect radiation having a frequency lying outside all the predetermined frequency ranges, that is outside the frequency ranges used by the display device (e.g. and especially the red,

green and blue light of an RGB-LED board) for displaying the moving image (the advertisement).

The situation is illustrated on Fig. 5b of the Patent, where the predetermined frequency ranges used by the display device are labelled 601, 602, 603 and the radiation frequency for obtaining the detection image lies in 604 or 605 (para. 34).

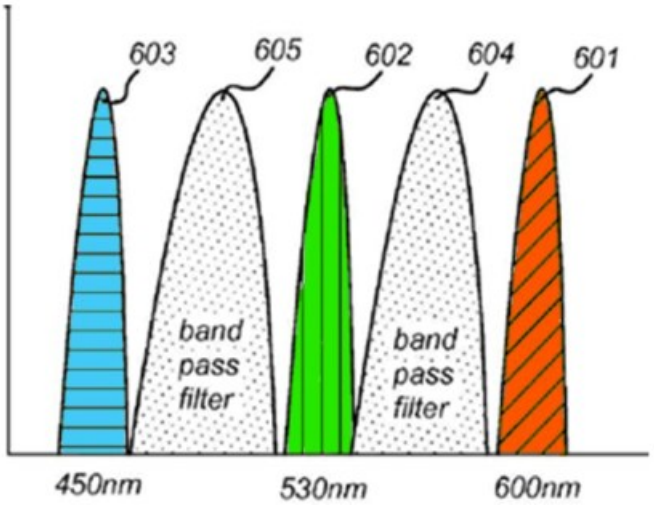


Fig. 5b of the Patent, colour added by AIM Sport

It results from these two features that the display device (e.g. the LED board) appears as a surface of uniform and monotonous distribution in the detected image.

48. Feature 12.4 ("positioning", see figure below) "positioning (203) the overlay surface within said at least one captured image based on the model and the camera parameters;"

The positioning of the overlay surface, e.g. the LED board within the captured image, the TV camera's image, is based on the model of the real world and the camera parameters. This step is to be construed as independent from the occluding object detection step (feature 12.5). Indeed, neither the description (para. 13) nor the drawings (Fig. 1, the positioner 8 and the detector 9 are arranged to work in parallel, i.e. the positioner 8 is not located upstream of detector 9) restrict the claimed invention to a detection of occluding objects within the previously positioned overlay surface.

49. Feature 12.5 ("detecting", see figure below) "detecting (204) an occluding object at least partially occluding the overlay surface in a selected captured image of said at least one captured image based on an image property of the occluding object and the detection image;"

"Occluding object" means e.g. a player who is in front of the overlay surface, e.g. in front of the LED board. The method detects such an occluding object in a captured

image based on (i) an image property of the occluding object and (ii) the detection image.

The description of the Patent gives a definition of said image property of an occluding object at three locations: the first one at para. 16 which states that the image property of an occluding object relates to a descriptor of a neighbourhood of a pixel, wherein the descriptor comprises a spatial frequency.

This definition aligns with the embodiments described under paras. 34–43 of the description. The occluding objects are distinguished from the overlay surface since the former exhibit a complex spatial frequency distribution ("complex frequency response curves", para. 34) whereas the latter has a uniform, monotone spatial frequency distribution.

This first definition is consistent with the wording of dependent claim 2.

The second definition is given at para. 21, which states that the image property of the occluding object may relate to a disparity (of this object) between two stereo images.

This second definition is consistent with the wording of dependent claim 7.

Furthermore, para. 19 of the description seems to use a third criterion for detecting an occluding object, namely a change in a current detection image compared to an earlier detection image. This criterion is based on the assumption that occluding objects often move with respect to the background.

This criterion is consistent with the wording of dependent claim 5.

The person skilled in the art would understand that in feature 12.5, the detection is based upon an image property of the occluding object, this image property depending on an intrinsic characteristic of the object, irrespective of external factors (e.g. lighting conditions, characteristics of the billboard). Such an "intrinsic" image property may be a basic image property of reflecting light across the frequency spectrum or a more complex property such as one based on spatial frequencies. The image property can be regarded as a signature of the occluding object in the detection image. The expression "intrinsic image property of occluding objects" used by AIM Sport in its submissions is understood by the Court as an image property describing an intrinsic property of the occluding object, which it will possess, irrespective of external factors.

While some image properties referred to by AIM Sport (e.g. spatial frequencies) do indeed qualify as intrinsic image properties of an (occluding) object, image properties according to the second and third definitions given above clearly do not: the intrinsic properties of the object remain the same irrespective of whether the object is moving or not, nor do they depend on the stereo viewing angles or the distance between two cameras.

The brightness of pixels in the detection image alone cannot be regarded as an intrinsic image property of an occluding object since the brightness value of a pixel depends not only upon the reflectivity of this object at the detected radiation frequency but also upon an external factor, namely the intensity of the ambient light illuminating the object at this frequency.

The proper support of feature 12.5 is in fact to be found in para. 34, which is the sole passage of the description specifically relating to the detection of occluding objects when the display device displays a moving image (feature 12.1.1.2) and the detection image is captured at a radiation frequency lying outside the predetermined frequency ranges used by the display device (feature 12.3.1). Examples of feature 12.5 are provided by algorithms 1 to 3 described in paras. 36–43.

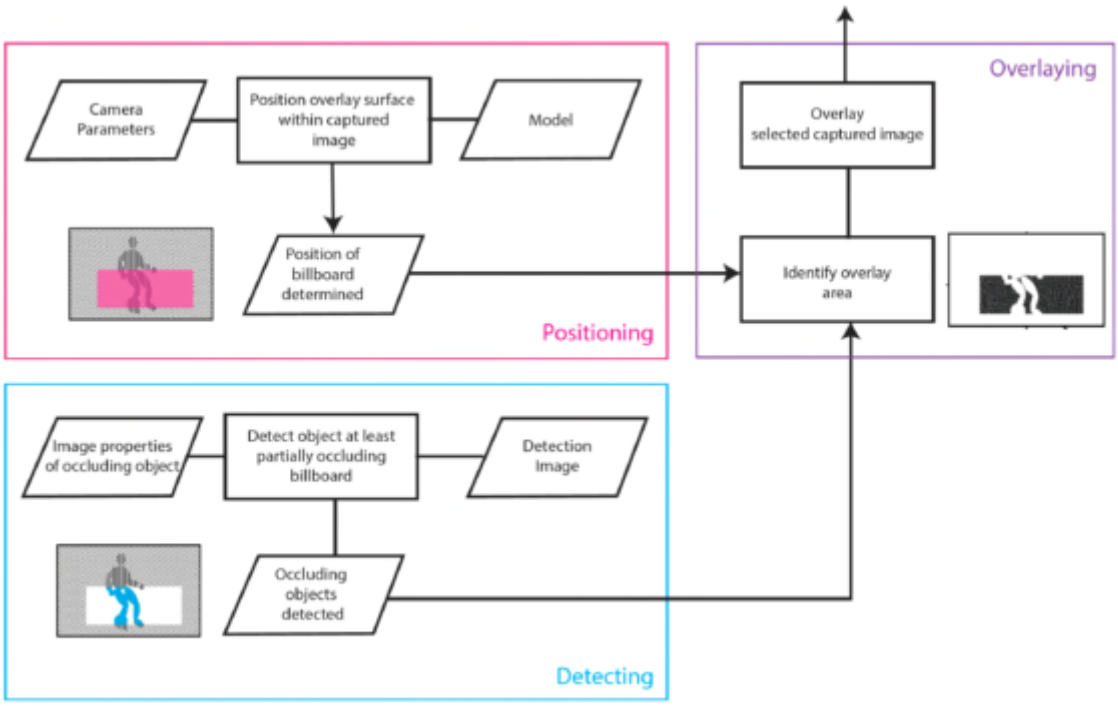
Hence, for the person skilled in the art, the image property of the occluding object can be construed at best as based on an intrinsic property (or characteristic) of the object which can be identified from the detected image. Such a characteristic makes it possible to distinguish occluding objects from the overlay surface in the detected image.

50. Feature 12.6 (“overlaying”, see figure below) “overlaying (205) a non-occluded portion of the overlay surface in the selected captured image with the overlay image, by overlaying the moving image displayed on the display device in the real world with the overlay image in the selected captured image.”

“Non-occluded portion of the overlay surface” means those parts of the display device which are not occluded by something in front of them. The “overlay image” is e.g. an advertisement not shown in the real world but only in the broadcast. “The moving image displayed on the display device in the real world” is the real-world advertisement shown on the display device. Hence, the last step in the claimed method is to replace the visible parts of the real-world advertisement displayed by the LED board with another advertisement intended for the targeted territory.

The overlaying necessarily occurs downstream of the positioning of the overlay surface in the captured image (feature 12.4) and the detection of the occluding objects (feature 12.5). The overlaying is not concerned with the detection of the occluding objects (which is the subject-matter of step 12.5). Feature 12.6 does not specify either how the non-occluded portion of the overlay surface is obtained. Para. 13 of the description indicates that an overlayer has two functions: first, it combines the output of a positioner (namely, the position of the overlay surface within the selected captured image) with the output of a detector (namely, the detected occluding objects) to determine the non-occluded portion of the overlay surface; second, it replaces the non-occluded portion of the overlay surface thus obtained, by the overlay image. Feature 12.6 only refers to the second function of the overlayer and leaves open how the first function is performed.

51. In summary, the Court agrees that the positioning, detecting and overlaying steps of claim 12 of the Patent can schematically be represented as follows (figure provided by TGI):



Operation of the method of claim 12 of the Patent – figure provided by TGI

6 COUNTERCLAIM FOR REVOCATION

52. The Court considers that evaluating first the counterclaim for revocation is procedurally efficient.

6.1 POINTS AT ISSUE

53. Based on TGI's claims it needs to be decided whether the granted claims of the Patent include added matter and if the method defined in claim 12 is novel and inventive.

54. AIM Sport refutes the allegations and considers the Patent valid. It has provided Auxiliary requests 1–3 in case the Court finds the Patent invalid.

55. As the Patent is considered valid based on the grounds presented below there is no need to adjudicate on those Auxiliary requests.

6.2 ADDED MATTER

56. Pursuant to Art. 138(1)(c) EPC, a European patent may be revoked if its subject-matter extends beyond the content of the application as filed or, if it was granted on a divisional application, beyond the content of the earlier application as filed.

57. In order to assess whether there is added matter contrary to Art. 123(2) EPC, the Court must thus first ascertain what the skilled person would derive directly and unambiguously using his common general knowledge and see objectively and relative to the date of filing, from the whole of the application as filed, whereby implicitly disclosed subject-matter, i.e. matter that is a clear and unambiguous consequence of what is explicitly mentioned, shall also be considered as part of its content (Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amgen v. Sanofi, para. 54; order of 14 February 2025, UPC_CoA_382/2024, Abbott v. Sibio, para. 52). Accordingly, literal support is not required to comply with Art. 138(1)(c) EPC. Neither is it required that all features of the claim can be found in one paragraph or one example of the application (Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amgen v. Sanofi, para. 90). The assessment of whether there is added matter is a question of law to be decided on the basis of the facts brought forward by the parties. The facts are the relevant claims and the application as filed. Since the test is whether the relevant claims have basis in the application as a whole, the Court is allowed to look at the entire document (Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amgen v. Sanofi, headnote no. 4).

58. According to TGI, the claims have been amended during the examination, with the result that the combination of original claim 10 and any of claims 2, 3, 5, 6, 15, and 16 is not directly and unambiguously disclosed in the application WO 2016/180827 A1 (WO'827) as originally filed, and hence contravenes Art. 123(2) EPC.

59. The following four underlined features have been introduced into claim 1 of the original application (WO'827) during the examination:

1	A system for digitally overlaying an image with another image, comprising
1.1	a storage (4) for storing a model of a real-world space,
1.1.1	wherein the model includes an overlay surface to be overlaid with an overlay image,
1.1.1.1	<u>wherein the overlay surface in the model represents a display device in the real world</u>,
1.1.1.2	<u>wherein the display device is configured to display a moving image on the display device in the real world by emitting radiation in one or more pre-determined frequency ranges</u>;

1.2 a camera parameter interface (2) for receiving camera parameters, which calibrate at least one camera with respect to coordinates of the model;

1.3 a camera image interface (3) for receiving at least one image captured with respective said at least one camera substantially at the same time, said at least one captured image comprising a detection image,

1.3.1 wherein the camera used to capture the detection image is configured to detect radiation having a frequency outside all of the one or more pre-determined frequency ranges and distinguish the detected radiation outside all of the one or more pre-determined frequency ranges from radiation inside the one or more pre-determined frequency ranges;

1.4 a positioner (8) for determining a position of the overlay surface within said at least one captured image based on the model and the camera parameters;

1.5 a detector (9) for detecting an occluding object at least partially occluding the overlay surface in a selected captured image of said at least one captured image based on an image property of the occluding object and the detection image;

1.6 an overlayer (10) for overlaying a non-occluded portion of the overlay surface in the selected captured image with the overlay image to obtain an output image, wherein the overlayer is configured to overlay the moving image displayed on the display device in the real world with the overlay image in the selected captured image; and

1.7 an output interface (11) for outputting the output image.

60. The following is noted:

Feature 1.1.1.1 is based on original claim 10 which was dependent on claim 1 in the original application WO'827.

Feature 1.1.1.2 is based on the first feature of claim 11, dependent on claim 10 and on the first feature of claim 13, dependent on claim 10 in WO'827.

Feature 1.3.1 is based on the remaining features of claim 13.

The underlined portion of feature 1.6 is based on the remaining feature of claim 11 i.e. the second part of claim 11.

61. Hence, there is no added matter in claim 1, and this has not even been argued by TGI.

62. Original claims 2, 3, 5, 6, 7 and 12 to 16 only depend upon claim 1 and therefore, as argued by TGI, amending claim 1 could give rise to undisclosed combinations of features especially in relation to claim 10, which was only dependent on claim 1.

63. The Court notes that TGI has presented the allegation of added matter in its counterclaim for revocation, using just over one page for the grounds and has not returned to this allegation, either later in its submissions or in the oral hearing. Nevertheless, TGI stated in the oral hearing, in response to the Court's question, that it is not withdrawing this allegation, and for that reason the Court will have to respond to this allegation as well, but only in so far as TGI has presented substantiated arguments. TGI has in its submissions only substantiated the lack of disclosure with respect to the subject-matter of granted claim 5: "the detector is configured to detect the occluding object by detecting a change in a current detection image compared to an earlier captured detection image" and hence only the objection concerning this claim is discussed hereinafter.

64. The dependency of claim 5 on claim 1 in the original application can only be interpreted as the conjunction of two criteria for detecting an occluding object, the first criterion being based on an image property of the occluding object and the detection image, the second being based on a change in a current detection image compared to an earlier captured detection image. The way these two independent criteria are combined is not described explicitly in the original application, but various solutions would implicitly be envisaged by the person skilled in the art.

65. Adding to the original claim 1 the underlined features which were already explicitly disclosed in combination by the original application (dependency of claim 10 upon claim 1, claims 11 and 13 upon claim 10) does not alter the contents thereof since the solutions that would have been implicitly envisaged by the person skilled in the art for combining the two criteria are also equally applicable to the amended claim.

66. The same reasoning applies prima facie to claims 2, 3, 6, 7, 12 to 16, and the Court sees no reason to investigate this objection further on its own motion.

67. Hence, and contrary to the objection of TGI, the subject-matter of the granted set of claims does not entail added matter.

6.3 NOVELTY

68. For the purposes of Art. 54(1) EPC, an invention shall be considered to be novel if it does not form part of the state of the art. The state of the art, in accordance with Art. 54(2) EPC, shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.

69. The assessment of novelty within the meaning of Art. 54(1) EPC requires the determination of the whole content of the prior art publication. It is decisive whether

the subject matter of the claim with all its features is directly and unambiguously disclosed in the prior art citation (see UPC CoA, Order of 25 September 2024, UPC_CoA_182/2024, Mammut v. Ortovox, para. 123).

70. In addition, the disclosure also may be implicit when a person skilled in the art would objectively consider such disclosure as necessarily implied in the explicit content of a prior-art document or would arrive, inevitably and without any reasonable doubt, at the result falling within the scope of the claim by applying the teaching of the prior-art document (see e.g. LD Paris, 10 April 2026, UPC_CFI_1594/2025, SharkNinja v. Groupe SEB, and LD Düsseldorf, 28 January 2025, UPC_CFI_355/2023, FujiFilm v. Kodak).

71. Based on TGI's arguments, the Court needs to decide whether the invention of claim 12 is novel over documents Rantalainen (WO 2013/132032 A1) and Nevatie (WO 2013/186278 A1).

6.3.1 Novelty over Rantalainen

72. Rantalainen (WO 2013/132032 A1) is a prior art document to be taken into account when evaluating the novelty of the invention of the Patent. The document is an earlier patent application of the then Supponor.

73. Rantalainen discloses a method of digitally overlaying an image with another image (paras. 33 and 43 of the description of Rantalainen; Fig. 2), more specifically a method for replacing a content displayed on a billboard by another content.

74. In the following, the Court evaluates whether the features of claim 12 of the Patent are disclosed directly and unambiguously in Rantalainen. AIM Sport argues that features 12.1, 12.1.1.2, 12.3.1, 12.4 and 12.5 are not disclosed by Rantalainen.

75. Feature 12.1

In order to perform the overlaying, Rantalainen needs to know/determine the location of the billboard with respect to the camera and the dimensions of the billboard, otherwise the replacement of the content displayed on the billboard with another content would not be realistic. For example, the same apparent height of the billboard in the image might correspond to different actual heights in the real world, where the billboard is viewed by the camera at different tilt angles. Similarly, as the same apparent width of the billboard may correspond to different actual widths in the real world, where the billboard is viewed at different pan angles. Even if the billboard has the same apparent height/width, the representation of the content of the billboard will depend inter alia on the attitude of the camera (tilt and pan angles) with respect to the billboard. The method makes use of a telemetry signal providing the position and pan, roll, tilt and zoom (PRTZ) camera parameters (para. 56) with respect to a reference frame in the real world. However, the PRTZ-parameters and the position of the camera would not suffice to perform a realistic overlay if the position and altitude of the

billboard with respect to the reference frame were not known (or determined in a calibration phase).

Feature 12.1 is therefore considered to be implicitly disclosed (the position and attitude of the billboard pertaining to a model of a real-world space), although not directly and unambiguously.

The argumentation put forward by AIM Sport in relation to feature 12.1 is not found to be convincing: the two-channel signature of the billboard makes it possible to determine only the apparent dimensions of the billboard in the detected image. However, as explained above, the method still requires, in addition to the position and PRTZ-parameters of the camera, the position and attitude of the billboard in the real world in order to perform a realistic overlay.

76. Features 12.1.1, 12.1.1.1

Both features are known from Rantalainen, the billboard being the display device (para 33) and the overlay surface being the surface of the billboard. This is not disputed by AIM Sport.

77. Feature 12.1.1.2

The display device in Rantalainen i.e. the billboard 10 in Fig. 5 of Rantalainen (see below) is backlit by LED units 17 (paras. 75–76) which emit IR radiation These LEDs illuminate a printed sheet 14 from behind (paras. 59 and 63). The printed sheet includes a static text or picture. Hence billboard (10) is not configured to display a moving image. The mere fact that the LEDs can be turned on and off does not provide the billboard the capability of displaying moving images.

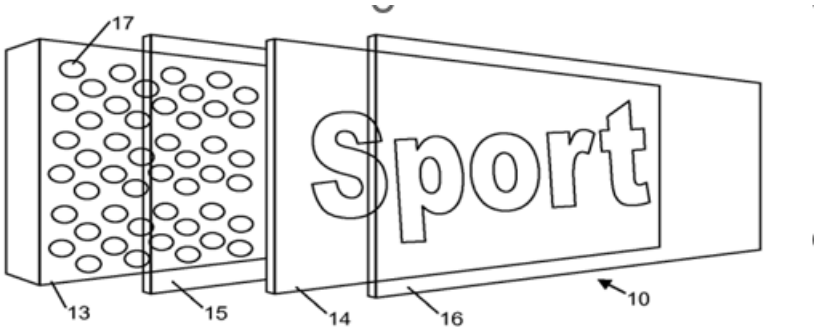


Figure 5 of Rantalainen

78. Feature 12.2

There is no doubt that PRTZ-camera parameters are identified (para 56). Since the model of the real space is implicit (feature 12.1), the PRTZ parameters necessarily calibrate the camera with respect to the coordinates of the model. This is not challenged by AIM Sport.

79. Features 12.3 and 12.3.1

The camera (20) (see Fig. 3 of Rantalainen below) can be equipped with a plurality of detectors (60) (para. 55), which are sensitive to at least two different and distinguishable wavelength bands (paras. 57–58), the first detector signal (61a) corresponding to a first near infra-red wavelength band (NIR1=780–810 nm) and the second detector signal (61b) corresponding to a second infra-red wavelength band (NIR2=820–900 nm). The video signal 21 is a classical camera feed, the detector signals (61a, 61b) and the camera feed are synchronized (para. 80) and therefore captured at the same time.

Feature 12.3.1 detects radiation having a frequency outside all of the one or more predetermined frequency ranges and distinguishes this radiation from the radiation defined in feature 12.1.1.2 (radiation inside the one or more pre-determined frequency ranges). The latter radiation is the radiation of the moving image on the display device in the real world.

It is agreed with TGI that some of the LEDs performing the chromatic compensation referred to under feature 12.1.1.2 would emit in the visible range. However, they are configured to illuminate the billboard from behind and cannot display a moving image. Furthermore, there is no evidence that the emission bands of these LEDs would not overlap the infrared band.

At any rate, the LEDs performing chromatic compensation are unable to display a moving image (feature 12.1.1.2 above). Based on this, as there is no moving image in Rantalainen, it is not possible to make such a distinction as required by feature 12.3.1. Hence, Rantalainen does not disclose feature 12.3.1.

Hence, feature 12.3. is found in Rantalainen, but feature 12.3.1 is not.

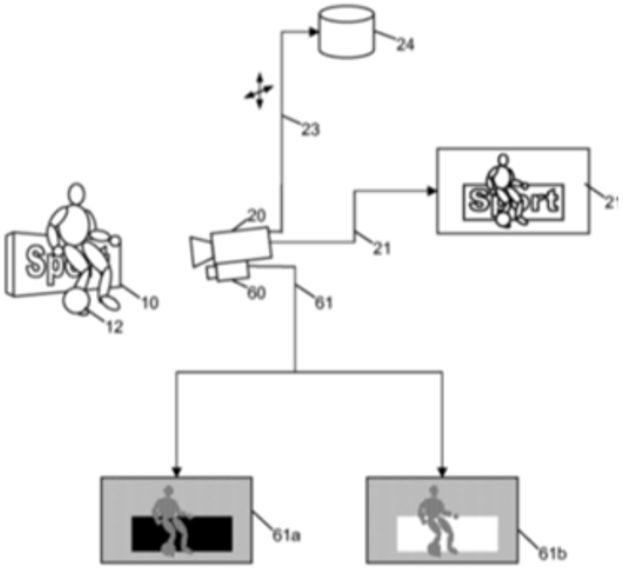


Figure 3 of Rantalainen

80. Feature 12.4

Although Rantalainen does not explicitly disclose that the overlay surface (10) is positioned within the captured image (21, 61a, 61b) based on the camera parameters, this feature is deemed implicit, but not directly and unambiguously disclosed, since it is necessary to determine the position and orientation of the target area (overlay surface) in the real world prior to the substitution with the alternate content (the overlay image). The camera parameters in the telemetry signal (23) transmitted to content replacement apparatus (24) are considered to serve this purpose.

81. Feature 12.5

The spectrum of the radiation signal emitted by the billboard (passive in Figs. 4 and 6A or backlit in Figs. 5 and 6B) is characterized by a high contrast between the NIR1 band and the NIR2 band in both embodiments (para. 67 for the passive billboard, para. 73 for the active billboard). This high contrast between the two bands is used as a signature of the billboard.

In Rantalainen (Fig. 7, see below and para. 80), one image is captured in the NIR1 band (detector signal 61a) and one corresponding image in the NIR2 band (detector signal 61b).

The mask signal generating unit (Fig. 7, para. 46) then calculates the difference NIR2-NIR1 (for a pixel or group of pixels) and compares the result with a given threshold T (para. 81). If the difference lies above T, in other words if the intensity of the NIR2 signal is significantly above the intensity of the NIR1 signal, then the mask signal indicates that the pixel (or group of pixels) belongs to the target area. In the terms of the claims of the Patent, Rantalainen determines directly the non-occluded portion of the overlay image based on the criterion (NIR2-NIR1) > T.

Assuming that (NIR2-NIR1) > T can be regarded as an image property of the billboard, (NIR2-NIR1) $\leq$ T simply means that the pixel (or group of pixels) does not belong to the billboard, but does not necessarily imply that the pixel corresponds to an occluding object. It simply means that it belongs to a “non-target area” (i.e. lies outside the target area 75, para. 81). In order to relate to an occluding object, the pixel has also to be located in the image within the surface of the billboard (the overlay surface in terms of the patent claims). Consequently, (NIR2-NIR1) $\leq$ T cannot be regarded as an image property of an occluding object.

This is all the more justified because such an image property should describe an intrinsic property of the occluding object, which it will possess, irrespective of external factors. If, for example, the intensity of LEDs in the NIR2 band is varied, the threshold value T may need to be adapted whereas the intrinsic properties of the occluding object remain the same (and the pixels representing the occluding objects in NIR1 and NIR2 would not change). Hence, feature 12.5 is not disclosed by Rantalainen.

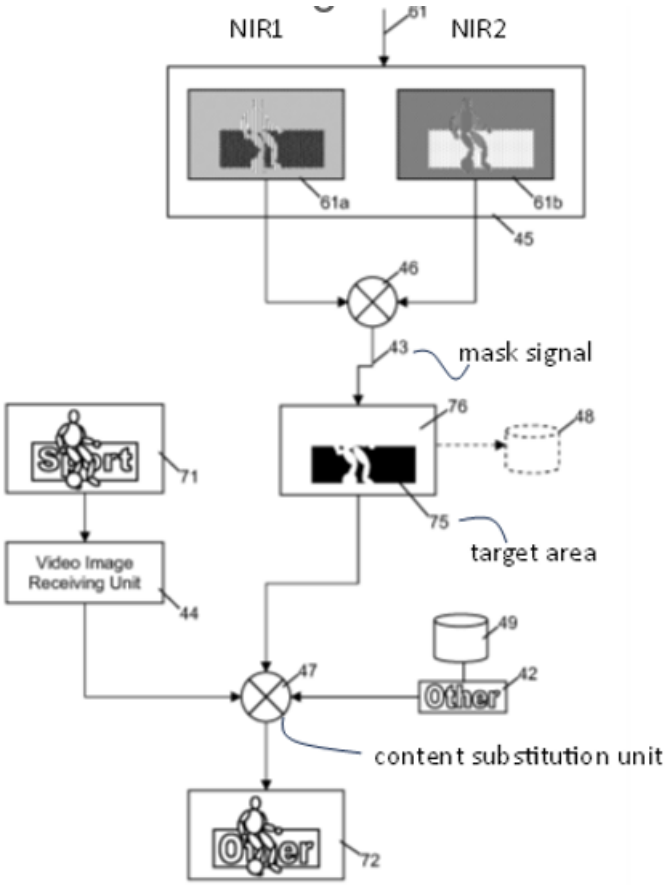


Figure 7 of Rantalainen

82. Feature 12.6

As described in para 83 and shown in Fig. 7, the content substitution unit (47) digitally substitutes the target area (75) with the alternate content (42). In other words, the non-occluded portion of the overlay surface (target area) in a selected captured image (72) is overlaid with an overlay image (alternate content) by overlaying the image ("Sport") displayed on the display device (billboard) in the real world with the overlay image ("Other") in said selected captured image.

It can therefore be concluded that feature 12.6 is known from Rantalainen, which is not disputed by AIM Sport.

83. Conclusion on Rantalainen

It results from the above discussion that Rantalainen does not disclose the subject-matter of claim 12 of EP'663 with all its features.

6.3.2 Novelty over Nevatie

84. Nevatie (WO 2013/186278 A1) is a prior art document to be taken into account when evaluating the novelty of the invention of the Patent.

85. AIM Sport has argued that Nevatie does not disclose features 12.1.1.2, 12.3.1 and 12.5.

86. Features 12, 12.1

Nevatie concerns a method of digitally overlaying an image (21, Fig. 3, see below) with another image (42, and page 12, lines 1–4 of the description of Nevatie).

Telemetry signals (22), including PRTZ camera parameters, are used to determine the position of the billboard (10) within the field of view of the video image. In order to do so, the telemetry processing unit (45b) is provided in advance with 3D coordinates defining the location of the billboard and the camera within a 3D spatial environment. A pinhole camera model is then applied to map the real world onto the image plane in the field of view of the camera (page 11, lines 10–23). Hence, the overlaying method relies upon a model of a real-world space.

Hence, features 12 and 12.1 are disclosed in Nevatie, which is not disputed by AIM Sport.

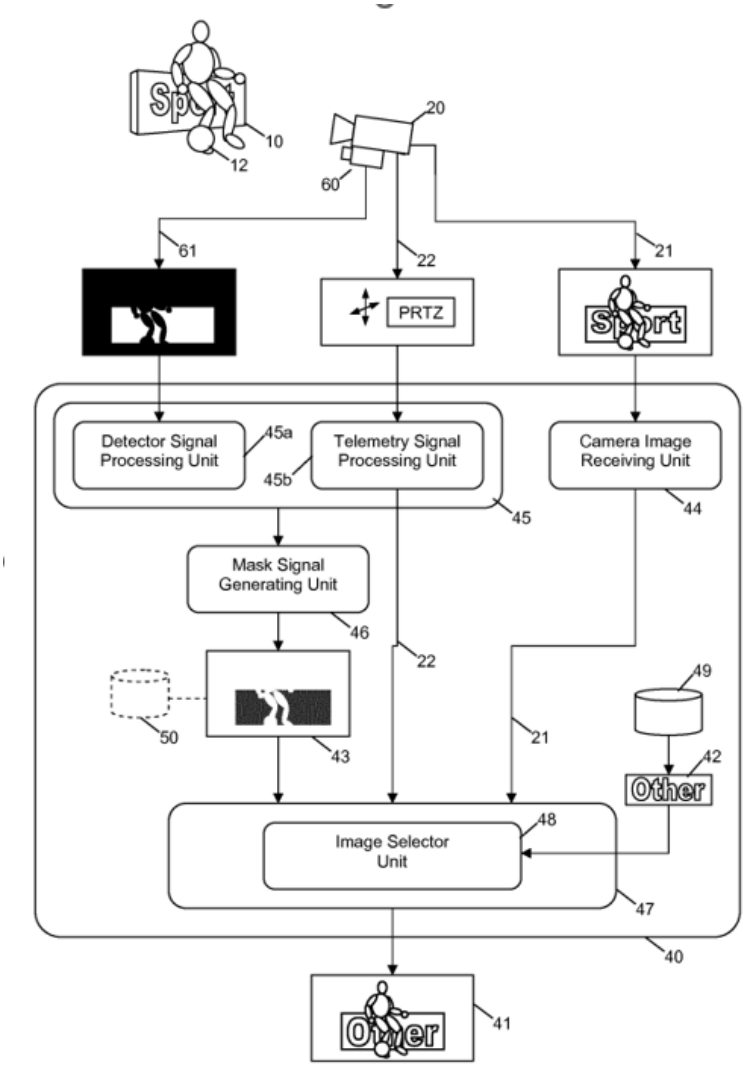


Figure 3 of Nevatie

87. Features 12.1.1, 12.1.1.1

In Nevatie, the real-world model explicitly comprises 3D coordinates defining the location of the billboard. Hence, the model includes an overlay surface representing a display device (billboard) in the real world, this overlay surface being intended to be overlaid with an overlay image (42).

Hence, features 12.1.1 and 12.1.1.1 are disclosed in Nevatie, which is not disputed by AIM Sport.

88. Feature 12.1.1.2

The billboards in Nevatie can be either passive (e.g. made of a printed sheet only illuminated by the ambient sunlight or stadium light) or active in the sense that the printed sheet can be illuminated by infrared LEDs from behind (page 9, lines 28–35).

The fact that the LEDs could be controlled, e.g. merely switched on/off, does not enable the billboard to display a moving image. The printed sheet remains static and so does the displayed content.

Hence, feature 12.1.1.2 is not disclosed by Nevatie.

89. Feature 12.2

The telemetry signals (22) comprise PRTZ camera parameters which indicate the orientation of the camera with respect to the real-world model. Furthermore, the telemetry processing unit (45b) is provided in advance with 3D coordinates specifying the position of the billboard and the camera within the real-world model (3D spatial environment, page 11, lines 12-16), thus making it possible to calibrate the position of the (optical centre of the lens of the) camera with respect to the coordinates of the model.

Hence, feature 12.2 is disclosed by Nevatie, which is not disputed by AIM Sport.

90. Features 12.3 and 12.3.1

The camera (20) is equipped with an IR detector (60), the scene observed by this detector (detector signal 61) being consistent with the scene in the video image (21) captured by the camera. The detector signals (spatially and) temporally correlate with the video images (para. bridging pages 10 and 11). Feature 12.3.1 detects radiation having a frequency outside all of the one or more predetermined frequency ranges and distinguishes this radiation from the radiation defined in feature 12.1.1.2 (radiation inside the one or more pre-determined frequency ranges). The latter radiation is the radiation of a moving image on the display device in the real world.

When the billboard is active, the LEDs in Nevatie produce IR radiation that illuminates the overlay surface (printed sheet) from behind, which IR radiation is captured and distinguished by the detector (60).

The IR LEDs enhance here the detection of the billboard but fail to display a moving image. Even assuming that the LEDs could be controlled (e.g. switched on and off), they would emit in the IR range, and the “predetermined frequency range” (in the sense of feature 12.1.1.2) would overlap the frequency band of the detector (contrary to 12.3.1).

Based on the above, as there is no moving image in Nevatie, it is not possible to make such a distinction as required by feature 12.3.1. Hence, Nevatie does not disclose feature 12.3.1.

Hence, feature 12.3. is disclosed by Nevatie but feature 12.3.1 is not.

91. Feature 12.4

The positioning of the overlay surface (target area corresponding to the billboard) in the video image is obtained by processing the telemetry signal (including the PRTZ camera parameters) on the basis of the known 3D coordinates of the billboard in the real-world model (page 11, lines 10–15).

Hence, feature 12.4 is disclosed by Nevatie, which is not disputed by AIM Sport.

92. Feature 12.5

Nevatie is primarily concerned with the detection of a billboard which can be obscured partially or totally by an intervening (i.e. occluding) object, such as ball or player (page 6, lines 14–22) therefore making difficult to determine the position of the billboard within the captured feed.

To mitigate this problem, a mask signal generating unit (46) generates a mask signal (43), based on an IR image (61) (captured by the IR detector 60) and telemetry signals (22) of the camera (20). A signal processing unit (45) includes a detector signal processing unit (45a) for processing the IR image and a telemetry signals processing unit (45b) for processing the telemetry signals (page 11, lines 24–26; page 10, lines 26–29).

The telemetry signals are used to estimate an approximate position of the billboard within the video image (page 11, lines 20–23) while the mask signal is obtained from the IR image, the non-obscured portion of the billboard being detected by the intensity of the IR radiation it emits.

Hence, Nevatie, like Rantalainen, detects the non-occluded part of the billboard upon an image property of the billboard and does not detect occluding objects upon an

image property describing an intrinsic property of these objects within the meaning of claim 12 of the Patent.

A pixel of low intensity in the IR image is not necessarily ascribed to an occluding object but simply to an object which does belong to the billboard (non-target area in Rantalainen). The presence of an occluding object can then be derived from its location in the video image, but the occluding object is not detected as such based on an image property thereof.

Hence, Nevatie does not disclose feature 12.5.

93. Feature 12.6

The content replacement apparatus (40) and more specifically the content substitution unit (47) replaces the portion of the billboard identified by the mask signal (43) within a video image (21) with an alternate content (42) (Fig. 2 and page 7, lines 19–25; Fig. 3 and page 12, lines 12–14).

It can therefore be concluded that feature 12.6 is known from Nevatie, which is not disputed by AIM Sport.

94. Conclusion on Nevatie

It results from the above discussion that Nevatie does not disclose the subject-matter of claim 12 of EP'663 with all its features.

95. Based on the above, the invention of claim 12 of the Patent is novel over the presented prior art.

6.4 INVENTIVE STEP

96. A European patent is only validly granted for an invention if it involves an inventive step. An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art (Art. 56 EPC).

97. Based on CoA decisions from 25 November 2025, in cases Meril v. Edwards Lifesciences and Amgen v. Sanofi, the UPC approach is as follows.

98. It first has to be established what the object of the invention is, i.e. the objective problem. This must be assessed from the perspective of the person skilled in the art, with their common general knowledge, as at the application or priority date (also referred to as the effective date) of the patent. This must be done by establishing 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 specification 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 person

skilled in the art, on the basis of the application, understands is (are) achieved with the claimed invention.

99. In order to avoid hindsight, the objective problem should not contain pointers to the claimed solution. The claimed solution is obvious when at the effective date the person skilled in the art, starting from a realistic starting point in the state of the art in the relevant field of technology and wishing to solve the objective problem, would (and not only "could") have arrived at the claimed solution.

100. The relevant field of technology is the specific field relevant to the objective problem to be solved as well as any field in which the same or similar problem arises and of which the person skilled in the art of the specific field must be expected to be aware.

101. A starting point is realistic if the teaching thereof would have been of interest to a person skilled in the art who, at the effective 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.

102. The person skilled in the art has no inventive skills and no imagination and requires a pointer or motivation that, starting from a realistic starting point, directs them 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 person skilled in the art would take the next step, prompted by the pointer or as a matter of routine, and arrive at the claimed invention.

103. For an inventive step to be present, it is not necessary to show improvement of the technical teaching as defined by the patent claims over the prior art. Inventive step may also be found if the patent claims disclose a non-obvious alternative to solutions known in the prior art.

104. Based on TGI's arguments, the Court needs to decide whether the invention defined in claim 12 is inventive:

- starting from Rantalainen (TGI exhibit HLCC7), in view of
    - the common general knowledge of the person skilled in the art
    - any of documents HLCC8, HLCC9, HLCC10, Gupta (US patent application no. US 2014/0097963 A1, HLCC11), Nevatie (HLCC12)
- starting from Nevatie (HLCC12) in view of Rantalainen (HLCC7)
- starting from Gupta (HLCC11) in view of Rantalainen (HLCC7).

105. The claimed invention solves the problem of replacing content of an LED billboard, especially in TV broadcasts, by detecting the occluding objects based on "an image property" of these objects, rather than by detecting the non-occluded part of the

billboard based on a light signature thereof as was the case in the prior art. Based on this, the Court considers that the problem underlying the claimed invention of the Patent is how to replace content of an LED billboard without the need to use specific light signatures of the LED billboards and hence allow the use of so called “normal” LED billboards.

106. All the documents are part of the prior art. Documents Rantalainen, Nevatie and Gupta all belong to the same technical field as the Patent and they are all realistic starting points as they all relate to replacing advertisements in TV broadcasts, which as such has not been challenged by AIM Sport.

6.4.1 Inventive step starting from Rantalainen

107. While assessing the novelty of the invention in relation to Rantalainen, the Court has found that features 12.1.1.2, 12.3.1 and 12.5 cannot be found in Rantalainen. Features 12.1 and 12.4 are found implicitly disclosed in Rantalainen. Hence, when evaluating the inventive step, the Court can focus on these missing features.

108. TGI argues that the invention is not inventive starting from Rantalainen and combined with Nevatie or combined with the knowledge of LED boards displaying moving images, which is agreed between the parties to be a part of the common general knowledge as well as found in TGI exhibits HLCC 8–11. TGI argues that it would have been obvious for the person skilled in the art, starting from Rantalainen, to adopt features 12.1 and 12.1.1.2, based on his general technical knowledge or at least by combining Nevatie with Rantalainen. However, with respect to feature 12.5 TGI has not presented as such that feature 12.5 would be found in Rantalainen, in any of the additional documents or within the common general knowledge. Instead, TGI argues that, if the claim interpretation presented by AIM Sport in the infringement case is accepted, then also feature 12.5 is disclosed by Rantalainen. TGI’s argument relating to the inventive step starting from Rantalainen is based on this “squeeze argument”, that if the patent is valid, then it is not infringed.

109. AIM Sport refutes the allegation that the invention presented in claim 12 of the Patent is not inventive and argues that the invention is inventive when starting from Rantalainen regardless of whether the common general knowledge or whatever prior art documents presented by TGI are combined with Rantalainen.

110. As mentioned above, Rantalainen is a realistic starting point and combining Nevatie from the same technical field and even from the same patentee would be obvious for the person skilled in the art.

111. As already mentioned above, feature 12.1 is found to have been implicitly disclosed in Rantalainen. There is therefore no need for the Court to discuss the obviousness of this feature.

112. Feature 12.1.1.2 of the claim requires that the display device (billboard) is configured to display a moving image. The parties agree that LED billboards capable of showing dynamic content, e.g. moving images, were well known and widely used already at the priority date of the Patent as well as that of Rantalainen, as evidenced inter alia by HLCC8, HLLCC9, HLLC10 and HLCC11 (Gupta). Hence, there is no need to deal with these separately but they can be considered as one group.

113. The Court considers that adapting Rantalainen to display a moving image would not have been obvious for the person skilled in the art since Rantalainen is already provided with two types of IR LEDs irradiating a printed sheet from behind. Replacing all or some of the specific IR LEDs with general RGB LEDs to display a moving image would not only necessitate removal of the printed screen, which includes the advertisement, but would also deteriorate the detection of the billboard, which is precisely the problem Rantalainen aims to solve (para 37). Hence, Rantalainen is pointing away from the invention of the Patent. There is no pointer in Rantalainen to change the specific LEDs used there to another type of LEDs capable of displaying moving images.

114. Feature 12.3.1 cannot be found in Rantalainen, especially based on the lack of moving images as explained in relation to novelty. It is linked to the feature 12.1.1.2 and hence, as feature 12.1.1.2 is not obvious to the person skilled in the art, neither is feature 12.3.1.

115. Regarding feature 12.5, AIM Sport argues that detecting occluding objects instead of the billboard would be a considerable paradigm shift for the person skilled in the art, the logical trend set in the prior art (Nevatie, Rantalainen, Gupta) being instead to recognize the billboard by a characteristic thereof, e.g. an IR signal it emits. The Court agrees with this.

116. Even assuming that Rantalainen could be equipped with a dynamic billboard instead of a static one, this would not mean that an occluding object would be detected based on its image property. In Rantalainen the purpose of the invention is not the detection of the occluding object, but the detection of the LED board based on the specific characteristics of that board. The person skilled in the art would not have arrived at the invention of the Patent starting from Rantalainen.

117. Hence, the invention of claim 12 of the Patent is inventive over Rantalainen in combination with Nevatie, the other documents presented by TGI and the common general knowledge of the person skilled in the art.

6.4.2 Inventive step starting from Nevatie in view of Rantalainen

118. Referring to the above regarding the novelty of the invention in relation to Nevatie, the Court has come to the conclusion that features 12.1.1.2, 12.3.1 and 12.5 cannot be found in Nevatie. Hence when evaluating the inventive step, the Court can focus on these missing features.

119. TGI argues that the invention is not inventive starting from Nevatie combined with Rantalainen. Regarding feature 12.5, TGI's arguments are also based on the "squeeze argument" as presented above in relation to Rantalainen.

120. AIM Sport considers the invention inventive over this combination.

121. As mentioned above, Nevatie is a realistic starting point and combining Rantalainen from the same technical field and even from the same patentee would be obvious for the person skilled in the art.

122. Feature 12.1.1.2 of the claim requires that the display device (billboard) is configured to display a moving image. This is not to be confused with the active billboard described in Nevatie (page 9, lines 32–35) since illuminating a printed sheet from behind as in Nevatie does not create a moving image.

123. TGI argues that replacing static billboards with dynamic billboards would have been obvious for the person skilled in the art. While this argument can be accepted for a billboard equipped with LEDs emitting in the visible range for the purpose of displaying a moving image in the real world instead of a static one, it falls short in the present case. In Nevatie and Rantalainen the LEDs emit in the infrared range for the purpose of differentiating the billboard (in the process of overlaying it with other content). Replacing these IR LEDs by visible RGB-range LEDs would rather be counterproductive, since there would be no way to distinguish the LED-board from the occluding objects as the spectrum of the radiation received from the RGB-range LEDs would then overlap the spectrum of the radiation received from the occluding objects. Hence, the person skilled in the art would rather be deterred from taking such a step.

124. Feature 12.3.1 cannot be found either in Nevatie or Rantalainen. Hence, this combination does not include feature 12.3.1.

125. Regarding feature 12.5, AIM Sport argues that detecting occluding objects instead of the billboard would be a considerable paradigm shift for the person skilled in the art, the logical trend set in the prior art (Nevatie, Rantalainen, Gupta) being instead to recognize the billboard by a characteristic thereof, e.g. an IR signal it emits. The Court agrees with this.

126. Hence, even assuming that Nevatie could be equipped with a dynamic billboard instead of a static one, this would not mean that an occluding object would be detected based on its image property. In Nevatie the purpose of the invention is not the detection of the occluding object, but the detection of the LED board based on the specific characteristics of that board. The person skilled in the art would not have arrived at the invention of the Patent starting from Nevatie.

127. Hence, the invention of claim 12 of the Patent is inventive over Nevatie in combination with Rantalainen.

6.4.3 Inventive step starting from Gupta in view of Rantalainen

128. TGI argues that the invention is not inventive starting from Gupta combined with Rantalainen.

129. AIM Sport considers the invention inventive over this combination.

130. Gupta and Rantalainen belong to the same field of technology as the Patent. Gupta can be considered a realistic starting point.

131. Gupta concerns a method for overlaying parts of an LED banner display (paras. 32-33; Figs. 1–2) in broadcast images. Such display may comprise a plurality of IR LEDs transmitting an identification signal which is invisible with respect to the visible image that is displayed on the display area (para. 37). The display also comprises RGB LEDs which can display a moving image (paras. 2, 3 and 36) such as an advertisement. The density of the IR LEDs is chosen high enough to provide a resolution which is sufficient for a detector to identify the location, size and position of the display. With such a sufficiently high resolution it becomes possible to detect not only the outline of the display but also the outline of an occluding object (para. 38).

132. Based on para. 9 of Gupta: "It is an object of the present inventive concept to provide an alternative manner of identifying a surface for dynamic control of external content, like e.g. targeted advertisements in a broadcast image of a scene comprising the display, in a simple and robust manner."

133. Starting from Gupta, and assuming that the person skilled in the art would wish to further enhance the robustness of identifying the display area / overlay surface (statement of the problem in para 9), he would consider the enhancement solution proposed in Rantalainen, that is to use the contrast between two IR channels instead of the intensity of the received signal in one IR channel only. These two IR channels would then necessarily need to be outside the R, G, B frequency bands of the RGB LEDs.

134. However, combining Rantalainen with Gupta would still fail to suggest a detection of an occluding object in the video image based on an image property of the occluding object (as construed above) describing an intrinsic characteristic in the detected image (in either of the two IR channels) because neither of these documents includes such detection.

135. Hence, even if the person skilled in the art were to have combined Rantalainen with Gupta, he would not have arrived at the invention of the Patent and hence the invention of the claim 12 of the Patent is inventive over this combination.

6.5 CONCLUSION ON INVALIDITY

136. It results from the foregoing that the Patent as granted is valid and that there is no need to address auxiliary requests AR1, AR2, AR3 to conditionally amend the Patent.

7 INFRINGEMENT ACTION

7.1 POINTS AT ISSUE

137. AIM Sport alleges that the use of TGI's SVB System infringes – either literally or by equivalent means – independent method claim 12 of the Patent. It further alleges that as the AIR System is trained using data obtained by infringing use of this method, the use of the AIR System must be injuncted.

138. TGI counters that the SVB System infringes neither literally nor by equivalent means because it does not detect occluding objects based on their image properties (feature 12.5). It further argues that the use of the AIR System cannot be injuncted as that system does not infringe the Patent and that the injunction requested by AIM Sport is not based on law.

139. The parties specifically disagree about the interpretation of certain features of the Patent as described above. Such terms are specifically the meaning of the term "image property" at feature 12.5 and the meaning of the term "detecting an occluding object" at the same feature.

7.3 SVB SYSTEM

140. The SVB System is a digital overlay system marketed by TGI. It is a development of an earlier overlay system (DRBLive system) originally designed for replacing static content on static non-LED billboards. The development work of the DBRLive system started in 2000 and has since then been in use from 2011 to 2020. From 2010 to 2016 the then Supponor worked with partners to develop a billboard which was actively illuminated with infrared light LEDs, so that the system could be used to digitally replace images displayed on the billboard. The expression "SVB System" is understood as an equivalent to a DRBLive system using an LED billboard.

141. TGI argues that the SVB System targets the visible parts of the LED billboard in contrast to the Patent, which teaches the detection of objects that occlude the LED billboard, such as players, in order to prevent them from also being overlaid by the alternative content. Hence, the SVB System does not detect the "image property of the occluding object" (in feature 12.5). The SVB System merely performs a continuous mapping on a pixel-by-pixel basis, leading to mask values that indicate whether the pixel concerned is to be overlaid. In order to do so, the SVB System is dependent on the infra-red light emitted by the LED billboards specifically designed for this purpose. In practice, the SVB System detects the visible parts of the LED billboard.

142. According to TGI, the SVB System does not work with customary LED billboards. In contrast to regular commercial LED billboards, an LED billboard suitable for the SVB System must be equipped – in addition to the RGB LEDs which display the advertisement – with LEDs that (actively) emit near-infrared ("NIR") light of a specific short wavelength

in a narrow band ("NIR Short Band"). In addition, the LED billboard must be painted a specific colour or equipped with a particular film that reduces reflectivity of the surface of the billboard in NIR of a specific long wavelength in a range above the NIR Short Band ("NIR Long Band"). These specifically designed LED billboards were developed by Supponor in cooperation with technology partners over multiple years. The proper functioning of the SVB System is dependent on these specifically designed LED billboards, which shows that the SVB System is programmed to target the visible parts of the LED billboards (instead of detecting occluding objects based on their image properties).

143. According to TGI, the operational principles of the SVB System are already described in documents Rantalainen and Nevatie, which are earlier patent applications of the then Supponor. Hence, according to TGI, if the SVB System infringes the Patent, then Rantalainen and Nevatie already disclose the invention and the Patent is invalid.

144. AIM Sport argues that the SVB System operates differently than the systems described in Nevatie and Rantalainen and that in the SVB System occluding objects are detected based on their image properties.

145. According to AIM Sport, regardless of certain differences in the SVB System compared to the invention of the Patent, the SVB System ultimately detects the occluding objects based on their image properties because in sunny conditions the so-called Secondary Key Value overrides the Primary Key Value and this only means that there are occluding objects in the SVB System mask, i.e. occluding objects are detected based on their image properties.

146. The main issue for the Court to assess is whether the SVB System detects occluding objects based on their image properties.

147. As submitted by AIM Sport, the description of the SVB System can be found in the PPD (Product and Process Description, exhibit AIM-16) and in an amended version thereof, provided by TGI (exhibit HL-13). The Court refers to these documents for further information of the functioning of the SVB System.

148. The SVB System is intended to work with billboards specifically produced for this purpose and equipped with NIR (Near Infra-Red) LEDs. Such billboards are designed to emit in a first infra-red band (NIR1 or "NIR Short Band") and to be non-reflective in a second infra-red band (NIR2 or "NIR Long Band"), at a frequency below / a wavelength above that of the NIR1 band.

149. The SVB System comprises (i) a visible optical path where a TV-camera captures images in the visible frequency range (TV-images), (ii) a NIR1 optical path where a first IR camera captures images in the NIR1 range (NIR1 images) and a (iii) NIR2 optical path where a second IR camera captures images in the NIR2 range (NIR2 images).

150. The SVB System generates a (non-binary) masking signal (also referred to as Mask Key Value or "MK") for overlaying the TV-image with an overlay image. Where MK=0, the TV-image is left unchanged at the pixel position and where MK=1, the overlay image replaces the TV-image at that pixel position. Where 0<MK<1, the overlay image and the TV-image are combined at that pixel position.

151. For each pixel, the MK value is derived from a primary key value (MK1) and a secondary key value (MK2).

152. The SVB System can be described as follows (figure provided by AIM Sport with the Court's MK-markings):

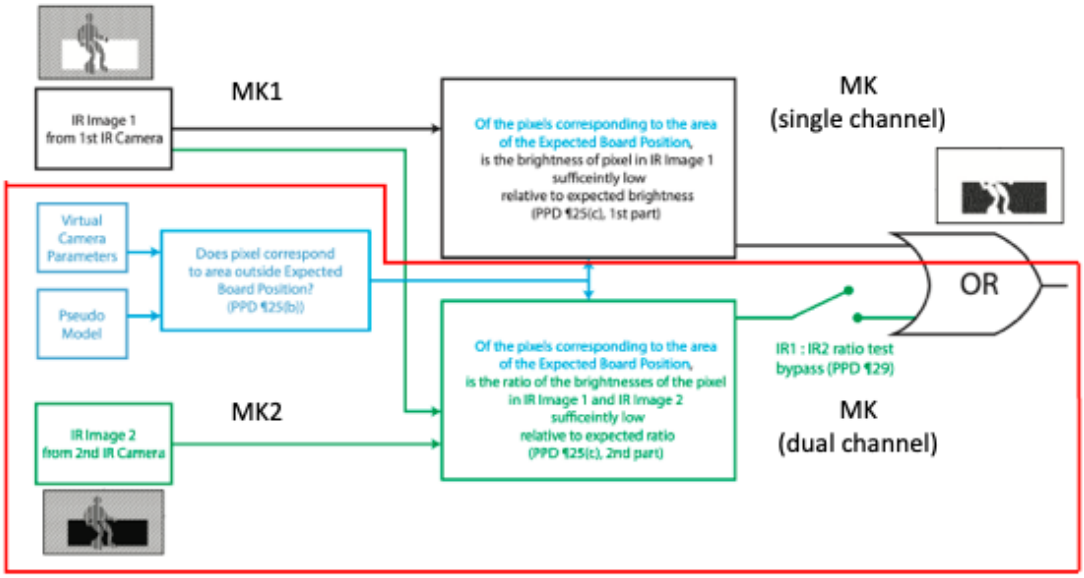


Figure how SVB System operates, provided by AIM Sport

153. The upper part of the figure represents a first channel (or first infrared radiation detection pathway) processing the NIR1 image and the lower part a second channel (or second infrared radiation detection pathway) processing the NIR2 image. The middle part provides camera parameters and a real-world model to determine whether a pixel is (geometrically) expected to be inside or outside a board position. This information is used to trim down the mask to the expected board position.

154. The SVB System can operate either in single channel mode or in dual channel mode, the generation of the MK value being detailed as presented by TGI in the table reproduced hereinafter.

155. In either mode, the MK value can be represented as the product of the primary key value MK1 and the secondary key value MK2, i.e. MK=MK1*MK2, where MK2=1 in the single channel mode.

<table>
<tr><th colspan="3">Single Channel Mode</th><th colspan="3">Dual Channel Mode</th></tr>
<tr><th colspan="2">Primary Key Values</th><th>Secondary Key Values</th><th>Primary Key Values</th><th colspan="2">Secondary Key Values</th></tr>
<tr><td colspan="2">Value between “0” to and including “1” depending on two threshold values set based on how the specially-modified LED billboard is expected to appear in the IR1 Image (Primary NIR Optical Path, NIR Short Band), i.e., relatively bright:</td><td rowspan="4">Always “1”</td><td rowspan="4">As in Single Channel Mode</td><td colspan="2">Value between “0” to and including “1” depending on two threshold values based on the difference in how the specially-modified LED billboard is expected to appear in the captured IR1 Image (Primary NIR Optical Path, NIR Short Band) and in the captured IR2 Image (Secondary NIR Optical Path, NIR Long Band), i.e. high contrast value due to the LED billboard being expected to appear relatively bright in the captured IR1 Image and relatively dark in the captured IR2 Image:</td></tr>
<tr><td>Actual brightness value of a given pixel in the captured IR1 Image matches the expected brightness, i.e., is ≥ first threshold value</td><td>Primary Key Value of “1” for that pixel position</td><td>Actual IR1 / IR2 contrast value closely matches the expected IR1 / IR2 contrast value, i.e. is ≥ first threshold value</td><td>Secondary Key Value of “1” for that pixel position</td></tr>
<tr><td>Actual brightness value of a given pixel in the captured IR1 Image does not match the expected brightness, i.e. is ≤ second threshold value</td><td>Primary Key Value of “0” for that pixel position</td><td>Actual IR1 / IR2 contrast value does not match the expected IR1 / IR2 contrast value, i.e. is ≤ a second threshold value</td><td>Secondary Key Value of “0” for that pixel position</td></tr>
<tr><td>Actual brightness value of a given pixel in the captured IR1 Image is in between the two threshold values</td><td>Primary Key Value between 0 and 1 for that pixel position</td><td>Actual IR1 / IR2 contrast value is in between the two thresholds</td><td>Secondary Key Value between 0 and 1 for that pixel position</td></tr>
</table>

Operation of the SVB System – image provided by TGI

156. Single channel mode

In the single channel mode, the pixel brightness IR1 is compared with a first and a second thresholds to determine the primary key value:

$IR1 \geq T1 \Rightarrow MK1=1$ (1st criterion of presence of the billboard)

$IR1 \leq T2 \Rightarrow MK1=0$ (1st criterion of absence of the billboard)

$T2 < IR1 < T1 \Rightarrow 0< MK1 <1$

The secondary key value MK2 is set to 1 and therefore MK=MK1.

157. Dual channel mode

In the dual channel mode, the primary key value MK1 is calculated as in single channel mode. However, the secondary key value MK2 is calculated on the basis of the respective brightness values IR1 and IR2 of the pixel. MK2 is expressed as the brightness ratio IR1/IR2 and therefore reflects the contrast between the IR1 and the

IR2 image. This ratio is then compared with a third and a fourth thresholds to determine the secondary key value:

IR1/IR2 $\geq$ T3 $\Rightarrow$ MK2=1 (2nd criterion of presence of the billboard)

IR1 /IR2 $\leq$ T4 $\Rightarrow$ MK2=0 (2nd criterion of absence of the billboard)

T4 < IR1 /IR2 < T3 $\Rightarrow$ 0< MK2 <1

the resulting mask value being then obtained as MK = MK1 * MK2.

158. The operation in the single channel mode or the dual channel mode depends on the intensity of the ambient light: if the intensity of the ambient light is low, the system operates in single channel mode, whereas, if the intensity of the ambient light is high, it operates in dual channel mode. In either mode, the mask is trimmed down to the expected position of the board (middle part of the figure "Operation of the SVB System"), that is the MK value is made equal to zero outside this expected position (hence there is no pixel replacement outside the expected position of the board).

7.3.1 Literal infringement

159. According to Art. 25(b) UPCA:

> "A patent shall confer on its proprietor the right to prevent any third party not having the proprietor's consent from the following:
> (b) using a process which is the subject matter of the patent or, where the third party knows, or should have known, that the use of the process is prohibited without the consent of the patent proprietor, offering the process for use within the territory of the Contracting Member States in which that patent has effect".

160. AIM Sport argues that, in operating the SVB System, TGI is using the method protected by claim 12 of the Patent, whereas TGI disputes this. Hence, the Court needs to evaluate whether the method used in the SVB System and as explained above corresponds to the features, and especially feature 12.5, of claim 12 of the Patent.

161. If the SVB system operates in the second mode and MK=1 (meaning that the pixel in the board expected position is to be replaced), this means that MK1=1 and MK2=1, i.e. both the first criterion of presence of the billboard (IR1 $\geq$ T1) and the second criterion of presence of the billboard (IR1/IR2 > T3) are met. Hence, the SVB system determines positively if a replacement of a pixel is to be carried out (if not, the pixel is not replaced or the pixels of the overlay image and the TV image are combined). Hence, what is detected here is a pixel of the billboard based on an "image property" of the billboard, this "image property" being described by the threshold values T1 and T3. In other words, as correctly noted by TGI, the operation of the SVB system in dual mode relies on an artificially created signature of the billboard defined by IR1 $\geq$ T1 and IR1/IR2 $\geq$ T3.

162. Conversely, it suffices that one of the two criteria of absence of the billboard (IR1 $\leq$ T2) or (IR1/IR2 $\leq$ T4) is met for the pixel to be left unchanged (MK=0). The detection of an occluding object in dual mode would require to positively determine the presence of such an object. Even arguing as put forward by AIM Sport that the first and second criteria of absence of the billboard would make it possible to detect the presence of an occluding object, such a detection would not be based on an "image property" or "image characteristic" of an occluding object but rather by parameters (threshold values) T2 and T4 which are characteristics of the billboard and not of this object.

163. Finally, the decision to overlay (feature 12.6) does not follow a step of detection of an occluding object (12.5), it is rather and merely the consequence of IR1 $\geq$ T1 and IR1/IR2 $\geq$ T3, in which threshold values T2 and T4 play no role.

164. AIM Sport further contends that the brightness of a pixel in the IR2 image would be an image property of an occluding object. However, it is noted that the IR2 brightness is not used as such in the determination of the secondary key value MK2 but merely intervenes in the ratio IR1/IR2. The IR2 brightness depends on the intensity of the ambient light and cannot be regarded alone as describing the intrinsic property of an object (contrary to reflectivity at a given wavelength, which is indeed an intrinsic property).

165. It follows that the operation of the SVB system, be it in the single or the dual channel mode, does not reproduce feature 12.5 of claim 12.

166. Based on the above, the operation of the SVB System does not literally infringe claim 12 the Patent.

7.3.2 Infringement by equivalence

167. According to AIM Sport, the operation of the SVB System at least infringes claim 12 of the Patent under the doctrine of equivalence.

168. According to TGI, the operation of the SVB System does not infringe claim 12 of the Patent under the doctrine of equivalence.

169. The UPCA contains no provision on the doctrine of equivalence. Art. 2 of the Protocol on the Interpretation of Art. 69 EPC makes clear that equivalence must be considered when assessing the scope of protection:

> "Equivalents
>
> For the purpose of determining the extent of protection conferred by a European patent, due account shall be taken of any element which is equivalent to an element specified in the claims."

170. The Court of Appeal of the UPC does not have any case law concerning infringement by equivalence.

171. UPC Local Division The Hague has in its decision (22 November 2024, UPC_CFI_239/2023) used the following criteria for evaluating infringement by equivalent means:

- Technical equivalence: does the variation solve (essentially) the same problem that the patented invention solves and perform (essentially) the same function in this context?

- Fair protection for the patentee: is extending the protection of the claim to the equivalent proportionate to a fair protection for the patentee in view of his contribution to the art and is it obvious to the skilled person from the patent publication how to apply the equivalent element (at the time of infringement)?

- Legal certainty for third parties: does the skilled person understand from the patent that the scope of the invention is broader than what is claimed literally?

- Novelty and inventiveness: is the allegedly infringing product novel and inventive over the prior art? (i.e. no successful Gillette/Formstein defence)

172. The parties have argued equivalence based on these grounds. The Court is also aware that diverging criteria for evaluating equivalence have been used in the various divisions of the Court of First Instance. Absent any Court of Appeal decision concerning equivalence and for the sake of legal certainty, and as there are no compelling reasons why this Court should adopt a diverging interpretation of equivalence than those argued by the parties, and already applied by some of the Divisions of the UPC, the Court shall apply these criteria in the evaluation of infringement by equivalent means.

173. The Court especially notes that it is for the claimant to prove the infringement. If the claimant's legal arguments are based on a certain understanding of the content of the law, and if the defendant does not challenge these, and if there is no reason for the Court not to accept that interpretation, and such application of the law results in the dismissal of the claimant's requests, there is even more reason to accept the claimant's understanding of the content of the law.

174. The criteria are cumulative, hence in order for the infringement to be equivalent, it is necessary for all the above criteria to be met. If any one of the criteria is not met, there is no need to assess the other criteria.

175. Regarding the technical equivalence, AIM Sport argues that the SVB System operating in the dual channel mode solves the same problem as the Patent, namely the detection of objects occluding the overlay surface by performing the same function, i.e. by using image properties of these occluding objects. It further argues that the overall effect of the SVB System is the same as the invention, i.e. non-occluded sections of the billboard are overlaid.

176. This is disputed by TGI, who argues that none of the requirements for equivalent infringement are met.

177. It is first to be noted that the invention of the Patent is not that the non-occluded sections of the billboard are overlaid. This was already known from e.g. Rantalainen, Nevatie and Gupta. The invention of the Patent is that the method uses an image property of the occluding object in order to detect them instead of detecting the display device i.e. the LED board.

178. The issue of equivalence concerns feature 12.5, the question to be answered being specifically whether the SVB System operating in dual channel mode comprises an element which performs the same function as feature 12.5, for achieving the same overall effect, in the same context, i.e. whether the SVB System detects the occluding object based on its image properties by equivalent means.

179. First, the context addressed by claim 12 cannot be regarded as the same as the SVB System since the Patent is aimed at working with regular billboards instead of specifically modified billboards equipped with IR LEDs, a capability which is considered by AIM Sport itself as a major advantage of the invention.

180. The function of feature 12.5 is not found to be present in the SVB System since the latter does not detect an occluding object based on an image property describing an intrinsic characteristic thereof. Instead, the function performed by the SVB System in the dual channel mode (as well as in the single channel mode), is to rely on a signature of the billboard ($IR1 \geq T1$ and $IR1/IR2 \geq T3$ for the dual channel mode, where T1 and T3 are characteristics of the billboard) to detect pixels of the billboard and substitute them with corresponding pixels of the overlay image.

181. In this respect, the SVB System is rather to be regarded as a logical development of billboard detection methods of the prior art (such as disclosed in Rantalainen and Nevatie) where billboards are equipped with infrared LEDs, the improvement consisting in a more robust signature (by adding the condition $IR1/IR2 \geq T3$) when the ambient light is strong. By contrast, the Patent represents a shift to a new paradigm based on the detection of occluding objects based on an image property (in the detection image) describing an intrinsic characteristic of these objects, such as the distribution of spatial frequencies (paras 36–39 of the Patent).

182. It can be concluded that there is no technical equivalence, and therefore the operation of the SVB system in either mode does not infringe claim 12 of the Patent by equivalent means.

7.3.2 Prior use

183. According to TGI, the Defendants have prior use rights because the SVB System was developed and used before the priority date of the Patent.

184. As the Court has concluded above that there is neither literal infringement nor infringement by equivalence, there is no need to adjudicate on the issue of prior use.

7.4 AIR System

185. It is undisputed between the parties that the AIR System does not as such itself make use of the teaching of the Patent.

186. It is also undisputed between the parties that if the use of the SVB System is not found to infringe the Patent, then there are no grounds to injunct the use of the AIR System. As the Court has found that the SVB System is not infringing, there is no need to further evaluate whether the use of the AIR System could be injuncted. Hence also all requests relating to the AIR System shall be rejected.

7.5 The new Preliminary Injunction request

187. In its submission dated 3 March 2026, AIM sport filed a new preliminary injunction request (1) even though it has earlier announced that it does not have preliminary injunction requests. On the oral hearing it was again confirmed that AIM Sport does not request the Court to adjudicate on that request.

188. The Court finds the request (1) inadmissible already for the reason that it was re-filed after AIM Sport had already confirmed that it does not have a preliminary injunction request and also for the reason that it was filed after the interim conference, just before the oral hearing, without providing any argument that the situation had changed since the original hearing in September 2023.

8 COSTS

189. Pursuant to Art. 69(1) UPCA, reasonable and proportionate legal costs and other expenses incurred by the successful party shall be borne by the unsuccessful party, up to a ceiling set in accordance with the Rules of Procedure. Based on R. 118.5 RoP, a decision in principle on costs has to be made when deciding the case on the merits.

190. The parties reached a partial agreement before the oral hearing related to the costs. However, the parties have not been able to agree how the costs are to be divided if the patent is found valid but not infringed, as is the case at hand.

191. The value of the infringement action is set at EUR 15 million and the value of the counterclaim for revocation at EUR 15 million as already decided in an order dated 16 February 2026. The total value of the cases is hence EUR 30 million, which corresponds to the maximum of costs of EUR 1.2 million based on the Scale of ceilings for recoverable costs adopted by the Administrative Committee on 24 April 2023.

192. AIM Sport argues that the ceiling of EUR 1.2 million should be allocated equally between the infringement action and the counterclaim for revocation, with each party entitled to claim its respective filing fees.

193. TGI agrees with the ceiling of EUR 1.2 million and argues that AIM Sport should bear all costs and, if that is not accepted, then TGI should be ordered to bear max. 5/12 of the costs (1/12 for the Opt-out + 1/3 for the Counterclaim for Revocation).

194. The outcome of these proceedings means that AIM Sport, as the unsuccessful party, shall bear the costs incurred by TGI in the infringement action, and the opposite is true for the counterclaim for revocation, where TGI (claimant in the counterclaim), as the unsuccessful party, shall bear the costs incurred by AIM Sport (defendant in the counterclaim). The Court does not see any reason to deviate from this main rule. Even though TGI has argued that the outcome of the Infringement Action should be the decisive factor, it has been the decision of TGI to start also the revocation action and hence it bears the risk for those costs. The Court determines that the costs to be recovered cannot exceed the ceiling set for the combined case value in the infringement action and the counterclaim for revocation, i.e. EUR 1.2 million in total. 50% of the ceiling amount is allocated to the infringement action and 50% to the counterclaim for revocation, thus EUR 600,000 to each. The costs that the parties agreed to be compensated against each other cannot be claimed.

195. The Helsinki Local Division issued in the infringement action (UPC_CFI_214/2023) and provisional measures application (with CMS-number 551054/2023) a final decision on 20 October 2023 based on TGI's preliminary objection, in which decision the Helsinki Local Division accepted the preliminary objection and dismissed the cases. AIM Sport appealed this decision, and the Court of Appeal accepted the appeal on 12 November 2024 and returned the cases to the Helsinki Local Division. The cost for the appeal of that Helsinki Local Division decision has to be decided by this Court based on the Court of Appeal order dated 12 November 2024. AIM Sport has requested that the Court order these costs to be borne by the unsuccessful party, i.e. TGI, who is of the opinion that there should be no separate cost decision nor ceiling for these costs.

196. The Helsinki Local Division allowed the Claimant to amend the Statement of Claim in its order dated 11 February 2025. The Defendants appealed that order and the Court of Appeal issued its order on 11 April 2025, rejecting the appeal. The Court of Appeal ordered that the Local Division shall decide which party shall bear the costs of the proceedings, including those appeal proceedings. The parties have not specifically argued how to deal with the costs of this procedure.

197. The Court of Appeal has ruled that "Rule 242.1 RoP is to be interpreted to mean that if the decision of the Court of Appeal is not a final order or decision concluding an action, the Court of Appeal, in the case at hand, will not issue an order for costs in respect of the proceedings at first instance and at appeal. However, the outcome of the appeal must be considered when, in the final decision on the action at hand, the Court

determines whether and to what extent a party must bear the costs of the other party because it was unsuccessful within the meaning of Article 69 UPCA" (UPC_CoA_433/2023, 3 April 2024, Juul v. NJOY).

198. The Hamburg Local Division has on 11 February 2026 (UPC_CFI_274/2023, Fives v. REEL) decided that in a situation where the local division dismissed the case based on lack of jurisdiction and the Court of Appeal overturned the decision and returned the case to the local division (which situation is similar to the Infringement Action at hand), it is the end result of the case that shall define who shall bear the costs of that procedure, unless there are certain specific reasons, as identified in the decision, to come to a different conclusion.

199. According to Art. 1(3) of the Scale of ceilings for recoverable costs, adopted by the Administrative Committee on 24 April 2023, the ceiling shall be applied to each instance of the Court proceedings regardless of the number of parties, claims or patents concerned. The Court notes that this document leaves open the question of whether the ceiling should be applied in a situation where the Court of Appeal proceedings are just a step in between the First Instance proceedings.

200. The Court adopts the approach taken by the Hamburg Local Division i.e. that the end result of the Infringement Action shall define who shall bear the costs of that action. Hence, it is AIM Sport who shall bear the costs of the Infringement Action. Nevertheless, based on the Court of Appeal decision in case UPC_CoA_433/2023 (see above), AIM Sport shall not be responsible for the costs incurred by TGI in relation to the appeal on the preliminary objection to the Court of Appeal as AIM Sport was successful on that appeal. Hence, AIM Sport shall bear the costs of the Court of First Instance procedure up to the ceiling of EUR 600,000.

201. Although parties did not reach a final cost agreement, the Court expresses the expectancy that an agreement may be reached with these further clarifications. Remaining issues, if any, will need to be addressed in separate cost proceedings. The Court notes that it was agreed between the parties in the interim conference that cost applications submitted earlier, after the decision on 20 October 2023, have become devoid of purpose and there is no longer any need to adjudicate on those.

202. The costs of the original application for provisional measures (CMS no 551054/2023) are decided in a separate order.

DECISION

1. The infringement action (UPC_CFI_214/2023) is dismissed.

2. The counterclaim for revocation (UPC_CFI_403/2025) is dismissed.

3. The value of the infringement action is set at EUR 15 million and the value of the counterclaim for revocation at EUR 15 million.

4. The costs of the Infringement Action in the Court of First Instance up to the ceiling of EUR 600,000 shall be borne by the Claimant i.e. AIM Sport.

5. The costs of the Counterclaim for Revocation up to the ceiling of EUR 600,000 shall be borne by the Counterclaimants i.e. TGI.

Delivered on 29 April 2026

NAMES AND SIGNATURES	
Petri Rinkinen Presiding judge and judge-rapporteur	Petri Rinkinen Allekirjoittaja Petri Olavi Rinkinen Päivämäärä: 2026.04.29 08:02:15 +03'00'
Samuel Granata Legally qualified judge	Samuel Rocco M Granata Digitally signed by Samuel Rocco M Granata Date: 2026.04.28 20:29:46 +02'00'
Mélanie Bessaud Legally qualified judge	MÉLANIE, JEANNE, LISON BESSAUD Digitally signed by MÉLANIE, JEANNE, LISON BESSAUD Date: 2026.04.28 20:46:21 +02'00'
Eric Augarde Technically qualified judge	Eric, Philippe, Gilles, Thierry AUGARDE Signature numérique de Eric, Philippe, Gilles, Thierry AUGARDE Date : 2026.04.28 21:21:49 +02'00'
On behalf of the registry	Digitally signed Nåhls Mikko Erik Jonas 2026-04-29 07:12:11 +0200 Unified Patent Court Einheitliches Patentgericht Juridiction unifiée du brevet

Information about appeal

An appeal against the present Decision may be lodged at the Court of Appeal, by any party which has been unsuccessful, in whole or in part, in its submissions, within two months of the date of its notification (Art. 73(1) UPCA, R. 220.1(a), 224.1(a) RoP).