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**Datasheet for the decision  
of 14 September 2023**

**Case Number:** T 1651/21 - 3.5.03

**Application Number:** 13187800.1

**Publication Number:** 2685337

**IPC:** G05D1/00, B66F9/075, G05D1/02

**Language of the proceedings:** EN

**Title of invention:**  
Steer correction for a remotely operated materials handling  
vehicle

**Patent Proprietor:**  
Crown Equipment Corporation

**Opponent:**  
Toyota Material Handling Manufacturing Sweden AB

**Headword:**  
Steer correction/CROWN EQUIPMENT

**Relevant legal provisions:**  
EPC Art. 56, 100(a), 123(2)  
RPBA 2020 Art. 12(4), 12(6)

**Keyword:**

Inventive step - main request, first and second auxiliary requests (no)

Admittance of claim request filed with the appeal - third auxiliary request (no): should have been filed earlier

Added subject-matter - first, fourth and fifth auxiliary requests (yes)

**Decisions cited:**

G 0009/91



**Beschwerdekammern**

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**Case Number: T 1651/21 - 3.5.03**

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.03**  
**of 14 September 2023**

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**Decision under appeal:** **Interlocutory decision of the Opposition**  
**Division of the European Patent Office posted on**  
**12 July 2021 concerning maintenance of the**  
**European Patent No. 2685337 in amended form**

**Composition of the Board:**

**Chair** K. Bengi-Akyürek  
**Members:** R. de Man  
C. Heath

## Summary of Facts and Submissions

- I. The opponent (appellant I) and the patent proprietor (appellant II) appealed against the decision of the opposition division concerning maintenance of the present European patent in amended form on the basis of a "third auxiliary request".
- II. The opposition had been filed on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC) and on the ground of insufficiency of disclosure (Article 100(b) EPC).
- III. The contested decision cited, *inter alia*, the following prior-art documents:
- D1:** WO 2008/039649 A2;  
**D2:** JP 2006-293975.
- IV. With its statement of grounds of appeal, appellant II maintained the first to fourth auxiliary requests filed in the first-instance proceedings as first, second, fourth and fifth auxiliary requests and filed a new third auxiliary request.
- V. Oral proceedings took place as scheduled.

Appellant II requested that the decision under appeal be set aside and that the opposition be rejected, i.e. that the patent be maintained as granted (**main request**) or, in the alternative, that the patent be maintained in amended form on the basis of the claims of one of the **first to fifth auxiliary requests**.

Appellant I requested that the decision under appeal be set aside and that the patent be revoked.

At the end of the oral proceedings, the board's decision was announced.

VI. Claim 1 of the patent as granted (**main request**) reads as follows (board's labelling):

- F1 "A method of automatically applying a steer correction manoeuvre to a materials handling vehicle (10) having a controller (103) and at least one remote sensing device (76', 76'', 76'''), the method comprising:
- F2 receiving first sensor data from at least one remote sensing device (76', 76'', 76'''), by a controller (103) on a materials handling vehicle (10), where the first received sensor data defines a left steer bumper zone (132C) that is proximate to the materials handling vehicle (10), wherein the left steer bumper zone comprises a first, outer steer bumper limit and a second, inner steer bumper limit;
- F3 receiving second sensor data from at least one remote sensing device (76', 76'', 76'''), by the controller (103) on the materials handling vehicle (10), where the second received sensor data defines a right steer bumper zone (132D) that is proximate to the materials handling vehicle (10), wherein the right steer bumper zone comprises a first, outer steer bumper limit and a second, inner steer bumper limit;
- F4 detecting by the controller (103) whether a structure is in at least one of the left and right steer bumper zones (132C, 132D) based upon the received sensor data; and

- F5 performing a steer correction manoeuvre to hug the detected structure if the controller (103) detects a structure in one of the left or right steer bumper zones (132C, 132D) by:
- F6 determining by the controller (103), whether a steer correction manoeuvre should be to the right or to the left of the traveling direction of the materials handling vehicle (10) based upon the received sensor data defining the left and right steer bumper zones (132C, 132D); and
- F7 (i) performing a first steer correction manoeuvre if the controller (103) determines that the structure is to the left of the materials handling vehicle (10) by:
- F8 the controller maintaining a heading by adding a small drift in the left direction of the materials handling vehicle (10) so as to automatically steer the materials handling vehicle (10) towards the structure and, when the left steer bumper zone (132C) is breached, steering the materials handling vehicle (10) away from the structure, whereby the structure is maintained between the first, outer steer bumper limit and the second, inner steer bumper limit of the left steer bumper zone (132C);  
and/or
- F9 (ii) performing a second steer correction manoeuvre if the controller (103) determines that the structure is to the right of the materials handling vehicle (10) by:
- F10 the controller maintaining a heading by adding a small drift in the right direction of the materials handling vehicle (10) so as to automatically steer the materials handling vehicle (10) towards the structure and, when the right steer bumper zone (132D) is breached,

steering the materials handling vehicle (10) away from the structure, whereby the structure is maintained between the first, outer steer bumper limit and the second, inner steer bumper limit of the right steer bumper zone (132D)."

VII. Claim 1 of the **first auxiliary request** differs from claim 1 as granted in that each occurrence of "steer bumper zone(s)" has been replaced with "multi-zone steer bumper zone(s)".

VIII. Claim 1 of the **second auxiliary request** differs from claim 1 as granted in that the following text has been added at the end of both features F8 and F10:

"by steering the vehicle towards the detected structure if the structure is detected outside of the first, outer steer bumper limit; and steering the vehicle away from the detected structure if the structure is detected inside of the second, inner steer bumper limit".

IX. Claim 1 of the **third auxiliary request** differs from claim 1 as granted in that the following text has been added at the end of the claim:

", wherein each of the left steer bumper zone (132C) and the right steer bumper zone (132D) comprises multiple steer bumper sub-zones extending concentrically or laterally away from the materials handling vehicle (10)".

X. Claim 1 of the **fourth auxiliary request** differs from claim 1 of the third auxiliary request in that the following text has been added at the end of the claim:

", wherein each sub-zone is associated with different parameters for steer correction of the materials handling vehicle (10)".

XI. Claim 1 of the **fifth auxiliary request** differs from claim 1 of the fourth auxiliary request in that the following text has been added at the end of the claim:

", wherein the steer correction is:

(i) a lesser amount when the structure is detected in a furthest sub-zone of a respective one of the left and right steer bumper zones (132C, 132D) from the materials handling vehicle (10);

(ii) an intermediate amount when the structure is detected in a middle sub-zone of the respective one of the left and right steer bumper zones (132C, 132D) from the materials handling vehicle (10); and

(iii) a greater amount when the structure is detected in an inner sub-zone of the respective one of the left and right steer bumper zones (132C, 132D) from the materials handling vehicle (10)".

## **Reasons for the Decision**

1. The opposed patent relates to steer correction schemes for remotely operated materials handling vehicles, such as low-level order picking trucks.

2. *Main request - the invention as defined by claim 1*

2.1 **Claim 1 as granted** is directed to a method of automatically applying a "steer correction manoeuvre" to a "materials handling vehicle". The vehicle has a "controller" and at least one "remote sensing device".



- 2.2 The vehicle's controller receives sensor data indicating the presence of structures in zones to the left and to the right of the vehicle (features F2 and F3).
- 2.2.1 More specifically, feature F2 specifies that the controller receives, from at least one remote sensing device, first sensor data which "defines a left steer bumper zone that is proximate to the materials handling vehicle, wherein the left steer bumper zone comprises a first, outer steer bumper limit and a second, inner steer bumper limit". Feature F3 specifies a corresponding step for a "right steer bumper zone".
- 2.2.2 Appellant I questioned whether "sensor data" itself could "define" a zone. In the board's view, however, the skilled reader understands that the "zone" is the area covered by the at least one "remote sensing device". This is also corroborated by paragraph [0072] of the patent itself explaining that sensing devices "provide" steer bumper zones.
- 2.2.3 As for the term "steer bumper zone" and the definition that each zone comprises "a first, outer steer bumper limit and a second, inner steer bumper limit", the board considers that these features are not proper limitations of the two "receiving" steps F2 and F3. Indeed, the term "steer bumper" zone merely reflects the subsequent use of the received sensor data as set out in features F5 to F10. This is confirmed by paragraph [0071] of the patent, which explains that the term is used to distinguish a zone utilised for steer correction from a "detection" zone utilised for maximum speed limiting and stopping the truck as described elsewhere in the patent description. It is further apparent from the wording of features F8 and F10

("whereby the structure is maintained between the first, outer steer bumper limit and the second, inner steer bumper limit") that the outer and inner "steer bumper limits" may be upper and lower limits on the distance from the vehicle to a detected structure rather than intrinsic properties of the "steer bumper zones".

2.3 When, on the basis of the received sensor data, a structure is detected in one of the zones (i.e. feature F4), a "steer correction manoeuvre" to "hug" the detected structure is performed either to the right or to the left of the travelling direction, depending on whether the structure is detected in the *left* bumper zone or in the *right* bumper zone (features F5 and F6).

2.4 If the controller detects the structure in the "left bumper zone", it adds a small drift in the left direction to steer the vehicle towards the structure until the left steer bumper zone is "breached", and then steers the vehicle away from the structure, maintaining the structure between the outer steer bumper limit and the inner steer bumper limit (features F7 and F8). If the controller detects the structure in the "right bumper zone", it performs a similar, but mirrored, steer correction manoeuvre (features F9 and F10).

2.4.1 One point of contention is whether the "small drift" added to steer the vehicle towards the structure, as specified by features F8 and F10, is added only to steer the vehicle towards the structure, or whether the "small drift" is applied continuously.

2.4.2 In this respect, appellant II, referring to paragraphs [0099] and [0101] of the patent, argued that

the invention introduced a "small drift" in the direction of the structure, so as to achieve a slow continuous movement towards the structure, ensuring that the vehicle continued to hug the structure and generally maintained a distance to the structure with only a small amount of control-related ripple, as steer corrections ensured that the vehicle did not approach the structure too closely to risk a collision.

2.4.3 However, features F7 and F8 (and features F9 and F10) refer to a "steer correction manoeuvre" performed in response to the detection of a structure of the vehicle which involves steering the vehicle towards the structure by adding a "small drift" and then steering the vehicle away from the structure when it gets too close to the structure ("when the left steer bumper zone is breached"). In the board's view, the skilled reader would understand, or at least not rule out, that the "small drift" towards the structure is removed once the vehicle needs to be steered away from the structure.

2.4.4 Moreover, although the passages cited by appellant II, in particular the last sentence of paragraph [0099] and the third to fifth sentences of paragraph [0101], do offer some support for appellant II's interpretation, they do not describe an embodiment in which a "small drift" to the left or to the right is added in response to detecting a structure in the left or right steer bumper zone. Furthermore, the "yet another illustrative alternative" described in the third to fifth sentences of paragraph [0101] is separate from the example described in the first and second sentences of paragraph [0101], in which "the controller 103 maintains a heading by keeping the wall, rack or other structure between a first, outer steer bumper limit and

a second, inner steer bumper limit". Hence, the embodiments described in the patent on which appellant II's interpretation relies do not correspond to the invention as claimed.

2.4.5 Hence, features F8 and F10 do not require the "small drift" to be applied continuously.

3. *Main request - inventive step*

3.1 Document **D1** discloses a materials handling vehicle in the form of an order picking truck 10 having a controller 103 (see Figures 1 and 2; page 5, lines 17 to 19). A steer correction manoeuvre can be automatically applied to the vehicle by means of the controller (page 12, lines 19 to 34) in accordance with feature F1. It is common ground that document D1 represents the closest prior art for the subject-matter of claim 1.

3.2 The vehicle 10 comprises one or more remote sensing devices 76 which may be used to detect the presence of objects within predefined detection zones 78, including zones to the left and to the right of the vehicle's power unit 14, which may thus be referred to as "left steer bumper zone" and "right steer bumper zone" within the meaning of features F2 and F3 (Figure 1; page 8, lines 9 to 23).

In this respect, appellant II submitted that the detection zones of document D1 were not "steer bumper zones" and that they did not comprise "outer and inner steer bumper limits", as required by features F2 and F3. However, as explained in point 2.2.3 above, these features are not proper limitations of the "receiving" steps F2 and F3 but merely reflect the further use of

the received sensor data as specified in features F4 to F10. Hence, document D1 also discloses features F2 and F3, i.e. the two "receiving" steps *per se* as opposed to the subsequent use of the received sensor data.

3.3 The board, however, agrees with the opposition division and appellant II that document D1 does not disclose the remaining features of claim 1, i.e. features F4 to F10.

3.4 Hence, the subject-matter of claim 1 differs from the disclosure of document D1 in **features F4 to F10**.

3.5 In its statement of grounds of appeal, appellant II submitted that the objective technical problem should be formulated as "improving the efficiency and productivity of an operator loading a materials handling vehicle". It argued that the distinguishing features provided automatic steering control and eliminated the need for an operator to relocate and reposition the vehicle within an aisle.

The board fails to see, however, how a materials handling vehicle hugging a wall or other structure could improve the efficiency of an operator loading the vehicle. Rather, the distinguishing features merely provide a particular type of steer control. Whether this correction obviates the need to "relocate" and "reposition" the vehicle will depend on external circumstances which are not specified in claim 1.

3.6 At the oral proceedings before the board, appellant II argued that the objective problem should be formulated as that of "providing an alternative method of automatic steer control for heading down an aisle".

However, claim 1 makes no reference to an "aisle", and its scope also encompasses, for example, a "steer correction manoeuvre" for hugging a wall.

3.7 As stated above, the distinguishing features provide a particular type of automatic steer control. Since appellant II did not put forward any technical benefit of this type of steer control other than those discussed above and not accepted by the board, the board considers that the objective technical problem may be formulated as *providing an alternative method of automatic steer control for the system of D1, i.e. providing another feasible steering strategy.*

3.8 Document **D2** discloses a mobile unit which has the functionality to autonomously move along a wall surface (paragraph [0001]). Hence, document D2 addresses the objective problem by proposing a "steer correction manoeuvre" which "hugs" the wall. The mobile unit 1 of document D2 detects the presence of structures 31, 32 and 33 in a right steer bumper zone by means of a remote sensing device 11 (Figure 2; paragraphs [0015], [0016] and [0022]). If the distance to the detected structure is too small, the mobile unit makes a steer correction away from the detected structure (Figures 2(b), (c) and (d); paragraphs [0023] to [0025]). If the distance to the detected structure is too large, a drift to the right is added to steer the unit towards the structure (Figure 3(b) and (c); paragraph [0027]). Furthermore, the mobile unit makes steer corrections to arrive at a predetermined distance  $d$  from the structure (Figures 2 and 3; paragraph [0022]). Although the unit attempts to maintain the predetermined distance  $d$  from the detected structure, there will inevitably be some amount of hysteresis, which means that the distance to the wall

will vary between an upper (or "outer") limit distance and a lower (or "inner") distance limit.

- 3.9 Appellant II argued that the skilled person, starting from the remotely operated materials handling vehicle of document D1, would not consider document D2 because it related to an entirely autonomous cleaning device such as a vacuum cleaner, which typically had to stay close to the wall to clean properly. In addition, document D2 was primarily concerned with obstacle avoidance.

However, the objective technical problem is not specific to a materials handling vehicle or to a remotely operated device. In the board's view, the skilled person would indeed have considered document D2, as it relates to automatically steering a vehicle. Moreover, document D2 is not restricted to "cleaning devices" but relates to "autonomous mobile units" in general (see paragraphs [0001] and [0015] and Figure 1). The board further fails to see why document D2 being concerned with obstacle avoidance would prevent the skilled person from considering document D2. In fact, the present application is also primarily concerned with obstacle detection and avoidance (see, for example, paragraph [0006] of the application as filed), and the method of claim 1 applies the claimed steer correction only in response to detecting a structure and in order to avoid the structure (see features F4 to F6).

- 3.10 Appellant II also argued that the mobile unit of document D2 did not steer or otherwise drift *towards* the structure but only steered *parallel* to the structure. Claim 1 required the vehicle to "continually drift" towards the structure.

However, if the structure is not straight, e.g. if it includes a bump such as object 32 in Figures 2 and 3 of D2, the mobile unit will steer away from or drift towards the structure as necessary to re-establish the desired distance  $d$ . Moreover, the skilled person understands that if the mobile unit starts out at a distance from the structure greater than  $d$ , the unit will initially steer or drift towards the structure. As explained in points 2.4.1 to 2.4.5 above, the board does not consider that features F8 and F10 require the "small drift" to be applied continuously.

- 3.11 Appellant II additionally argued that the mobile unit of document D2 was not deliberately steered such that it oscillated between being positioned too close to and too far away from the structure. In this context, it referred to "the ripple effect produced by the automatic steering control of claim 1".

However, the wording of claim 1 does not require such "deliberate oscillations" or "ripple effect" to occur.

- 3.12 Hence, the board holds that the skilled person, starting from document D1 and faced with the objective problem of *providing an alternative method of automatic steer control for the system of D1*, would have indeed consulted document D2 and would have found and implemented a solution involving features F9 and F10 when a structure is detected in the "right steer bumper zone" of the vehicle. Moreover, since the vehicle of document D1 also has a "left steer bumper zone", the skilled person would have implemented, in the system of D1, a similar hugging functionality, in accordance with features F7 and F8, when a structure is detected in the left steer bumper zone, and would have added a functionality to detect whether the structure is



detected in the left or the right steer bumper zone, in accordance with features F4 to F6.

3.13 Appellant II put forward a number of arguments to the effect that the skilled person could not combine the teaching of documents D1 and D2. First, appellant II argued that applying the teaching of document D2 to the disclosure of document D1 required the inclusion of route generating means 14 of the device of document D2.

In the board's view, implementing the relatively simple "hugging" steer manoeuvre taught by document D2 does not require any "route generating means".

3.14 Second, appellant II noted that document D1 disclosed a control strategy which caused the vehicle to stop in the event that an object was detected. It was not apparent from either document D1 or D2 how the control system of document D1 could be configured to decide which control strategy to follow in any given situation.

The board sees no difficulty here, since the decision which "control strategy" to configure could be left, for example, to the operator.

3.15 Third, appellant II submitted that, starting from document D1, the skilled person would not have made the modifications suggested by document D2 because, in the warehouse context of document D1, large manoeuvres could not be performed. It referred to page 12, lines 28 to 31, of document D1, which disclosed that the controller may limit the steer angle during remote control operations to a range of approximately 5 to 10 degrees.

In that regard, the board notes that document D1 discloses the imposition of a steer angle limit only as an *optional* feature. In any event, the board sees no incompatibility between the type of automatic steer control suggested by document D2 and a limitation on the steer angle.

3.16 In view of the above, the board concludes that the subject-matter of claim 1 as granted lacks an inventive step (Articles 100(a) and 56 EPC).

4. *First auxiliary request - added subject-matter*

4.1 Claim 1 of the **first auxiliary request** differs from claim 1 as granted in that the left and right steer bumper zones are "multi-zone" steer bumper zones.

Appellant II submitted that this amendment was based on paragraph [00114] of the application as filed.

4.2 In fact, paragraph [00114] discloses that "side steer bumper zones" 132C and 132D may be used to maintain the truck 10 generally adjacent to a rack, wall or other heading and that, in this regard, a "multi-zone" steer bumper may be used. Hence, paragraph [00114] discloses that "side steer bumper zones" may be "multi-zone" steer bumper zones. According to paragraph [00113] and Figure 11, the "side steer bumper zones" 132C and 132D are positioned to the sides of the truck 10, whereas other steer bumper zones, such as the steer bumper zones 132A and 132B in Figure 11, may be positioned towards the forward travelling direction of the truck 10.

4.3 Since the left and right steer bumper zones of claim 1 are not limited to "side steer bumper zones" and may,

for example, be positioned towards the forward travelling direction, the board holds that paragraph [00114] does not provide a basis for the amendment.

4.4 Hence, the first auxiliary request does not comply with Article 123(2) EPC.

5. *First auxiliary request - inventive step*

5.1 Document D1 discloses that a detection zone, including those to the left and the right of the vehicle, can be a "multi-zone" in the sense that it is implemented by means of *multiple* object sensors 76 with overlapping detection areas 78 (see page 8, lines 16 to 23, and Figure 1). The features added to claim 1 in the first auxiliary request therefore do not further distinguish the claimed subject-matter from the disclosure of document D1.

5.2 Hence, the first auxiliary request cannot overcome the objection of lack of inventive step (Article 56 EPC).

6. *Second auxiliary request - inventive step*

6.1 Claim 1 of the **second auxiliary request** differs from claim 1 as granted in that, in both features F8 and F10, maintaining the structure between the "outer steer bumper limit" and the "inner steer bumper limit" is achieved:

- by steering the vehicle towards the detected structure if the structure is detected outside of the first, outer steer bumper limit; and steering the vehicle away from the detected structure if

the structure is detected inside of the second, inner steer bumper limit.

- 6.2 Appellant II argued that the added features required the vehicle's controller to test whether the structure was *outside* the outer steer bumper limit or *inside* the inner steer bumper limit and, if so, to steer the vehicle towards or away from the structure. Compared with maintaining a predetermined distance to the structure as proposed by document D2, the use of outer and inner limits reduced the number of required steering interventions.
- 6.3 The board notes that appellant II's arguments are based only on the wording of claim 1 (which was obtained by combining claims 1 and 4 as granted). Paragraph [0101] of the patent, which is the only passage of the description which discusses "steer bumper limits", describes these limits as the result of establishing a hysteresis, i.e. they are not the points at which the steer corrections are actually made but refer to the margin within which a certain distance of the vehicle to the structure is maintained.
- 6.4 Although the board agrees that the features added to claim 1 specify a mechanism of controlling the distance between the vehicle and the structure which is not disclosed in document D2, the board considers that finding a suitable compromise between the number of required steering interventions and the margin within which the distance to the structure is maintained at a desired distance  $d$  by adjusting the vehicle's course only when the measured distance falls *outside* suitably chosen upper and lower limits around  $d$  is well within the abilities of the skilled person.

6.5 Hence, the subject-matter of claim 1 of the second auxiliary request lacks an inventive step (Article 56 EPC).

6.6 During the oral proceedings before the board, appellant II argued that the inventive-step objection against the second auxiliary request had not been raised by the opponent.

However, the opposition division refused the second auxiliary request for lack of inventive step for essentially the same reasons as given above. Moreover, the board recalls that under Article 101(3)(a) EPC any amendments made to the granted patent can be fully examined in appeal proceedings as to their compatibility with the requirements of the EPC (cf. **G 9/91**, OJ EPO 1993, 420, Reasons 19).

7. *Third auxiliary request - admittance into the appeal proceedings*

7.1 Claim 1 of the **third auxiliary request** differs from claim 1 of the then "third auxiliary request" (the current fourth auxiliary request), which the opposition division found allowable, in that the feature "wherein each sub-zone is associated with different parameters for steer correction of the materials handling vehicle" has been deleted.

7.2 The current third auxiliary request was filed for the first time with appellant II's statement of grounds of appeal and represents an "amendment" of its case.

7.3 According to Article 12(4), second and third sentences, RPBA 2020, any amendment to a party's case may be admitted only at the board's discretion, and the party

is to provide reasons for submitting amendments in the appeal proceedings, including reasons why they had not been filed earlier. Moreover, under Article 12(6), second sentence, RPBA 2020, the board may admit a request which should have been submitted in the first-instance proceedings only if the circumstances of the appeal case justify its admission.

- 7.4 In the present case, appellant II did not provide reasons for submitting the present third auxiliary request in the appeal proceedings, and providing such reasons would have allowed appellant I to assess the likelihood of the newly filed request being admitted into the appeal proceedings when preparing its written reply.
- 7.5 Subsequent to the filing of its appeal, appellant II explained that the opposition division's decision that claim 1 of the main request lacked an inventive step over documents D1 and D2 had been a wholly unexpected departure from its preliminary opinion. Its auxiliary requests had been discussed by the opposition division for the first time during the first-instance oral proceedings, and, in view of the opposition division's written reasoning of the decision under appeal, it was apparent that the amendments introduced in what is now the fourth auxiliary request unduly narrowed the scope of protection.
- 7.6 The board notes that drafting claims of the proper scope is the responsibility of the applicant or patent proprietor. Documents D1 and D2 were filed with the notice of opposition, and the current fourth auxiliary request was filed for the first time in response to the notice of opposition (as the then third auxiliary request), i.e. not in response to a late development in

the first-instance proceedings. Even if it could be deduced from the opposition division's written reasoning that its claim 1 included a limiting feature which was not necessary to establish an inventive step, the board is not convinced that this would justify the filing of a broadening amendment at the appeal stage.

7.7 In any event, the board does not agree with appellant II that the presence of the feature "wherein each sub-zone is associated with different parameters for steer correction of the materials handling vehicle" in claim 1 of the claim request allowed by the opposition division unduly narrowed the scope of protection in view of the opposition division's written reasoning. In fact, the opposition division's inventive-step reasoning as regards the third auxiliary request relied on the "technical effect of enabling the vehicle to hug a structure while applying a more subtle steer correction when the structure is sensed further away from the vehicle than when it is sensed more closely to the vehicle according to the patent" (cf. appealed decision, Reasons 26.3), and this can refer only to the feature which has now been removed from claim 1 of the current third auxiliary request.

7.8 In view of the above, the third auxiliary request could and should have been filed already in the opposition proceedings. The board therefore decided not to admit the third auxiliary request into the appeal proceedings (Article 12(4) and (6), second sentence, RPBA 2020).

8. *Fourth auxiliary request - added subject-matter*

8.1 Claim 1 of the **fourth auxiliary request** adds the following features to claim 1 as granted:

F11 wherein each of the left steer bumper zone and the right steer bumper zone comprises multiple steer bumper sub-zones extending concentrically or laterally away from the materials handling vehicle, wherein each sub-zone is associated with different parameters for steer correction of the materials handling vehicle.

8.2 According to appellant II, feature F11 is based on paragraphs [00114] and [00115] of the application as filed.

8.3 In fact, paragraph [00115] mentions "multiple steer bumper sub-zones extending concentrically (or laterally) away from the vehicle, where each sub-zone may be associated with different parameters for steer correction, e.g., to allow subtle steer correction for objects sensed further away from the truck 10 than objects sensed more closely to the truck 10" and thus discloses feature F11 in isolation.

However, paragraph [00115] does not refer to a "steer correction" as claimed, i.e. one which involves "hugging" a structure in response to detecting the structure either to the left or to the right of the vehicle (see features F4 and F5).

8.4 Appellant II argued that the skilled person would appreciate that the "steer correction" referred to in paragraph [00115] related to the same "steer correction manoeuvre" as claimed in view of paragraph [00114], third to fifth sentences of the application as filed.

The passage cited by appellant II reads as follows:



"As yet another illustrative alternative, assume that the truck is to stay just to the right of a rack or other structure, which is to the left of the truck 10. The truck 10 can automatically steer to the left by a small amount so as to steer towards the structure. In this regard, when the left steer bumper zone 132C is breached by the structure, the steer correction described more fully herein will steer away from the structure".

Hence, this passage discloses that if the truck is to hug a structure to the left of the vehicle, the truck first steers towards the structure by steering to the left by a small amount. Then, when the left steer bumper zone is breached, "the steer correction described more fully herein" steers the vehicle away from the structure. The "steer correction described more fully herein", i.e. the object-avoidance steer correction described more fully in the original application, in particular in paragraphs [0080] to [00111], is thus not the "hugging" manoeuvre itself. Instead, it is employed in one of the steps of the hugging manoeuvre, namely in the step of steering the vehicle away from the structure when a steer bumper zone is breached. The board therefore accepts that paragraphs [00114] and [00115] refer to the same "steer correction", but this steer correction does not involve "hugging" a detected structure as claimed.

8.5 Hence, the application as filed does not provide a basis for the claimed combination of features F4, F5 and F11. The fourth auxiliary request therefore does not comply with Article 123(2) EPC.

9. *Fifth auxiliary request - added subject-matter*
- 9.1 Claim 1 of the **fifth auxiliary request** includes feature F11 and further adds features relating to the amount of steer correction to be applied.
- 9.2 Hence, for the reasons given in point 8 above, the fifth auxiliary request does not comply with Article 123(2) EPC either.
10. Since none of the claim requests on file is allowable, the patent is to be revoked.

## Order

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated