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Datasheet for the decision of 10 October 2022

Case Number: T 2644/18 - 3.5.02

Application Number: 07814863.2

Publication Number: 2062242

IPC: G08C17/02

Language of the proceedings: EN

Title of invention:
Systems and Methods of Remotely Controlling a Materials Handling Vehicle

Patent Proprietor:
Crown Equipment Corporation

Opponents:
Toyota Material Handling Manufacturing Sweden AB
Jungheinrich Aktiengesellschaft

Relevant legal provisions:
EPC Art. 56, 123(2), 111(1)
RPBA Art. 12(2), 12(4), 11, 12(3)

Keyword:

Inventive step - (no) - main and first auxiliary requests
Amendments - extension beyond the content of the application as filed (yes) - second to fifth auxiliary requests
Remittal - (no) - no special reasons
Admittance - (yes) - second to fifth auxiliary requests - no procedural delay

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Case Number: T 2644/18 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 10 October 2022

Appellant: (Patent Proprietor)	Crown Equipment Corporation A Corporation Of The State Of Ohio 40 South Washington Street New Bremen, OH 45869 (US)
Representative:	Moore, Michael Richard Keltie LLP No.1 London Bridge London SE1 9BA (GB)
Appellant: (Opponent 1)	Toyota Material Handling Manufacturing Sweden AB 595 81 Mjölby (SE)
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Appellant: (Opponent 2)	Jungheinrich Aktiengesellschaft Friedrich-Ebert-Damm 129 22047 Hamburg (DE)
Representative:	Hauck Patentanwaltspartnerschaft mbB Postfach 11 31 53 20431 Hamburg (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 20 September 2018 concerning maintenance of the European Patent No. 2062242 in amended form.**

Composition of the Board:

Chairman	R. Lord
Members:	F. Giesen
	A. Bacchin

Summary of Facts and Submissions

I. The present appeals by the patent proprietor, opponent 1, and opponent 2 lie from the interlocutory decision of the opposition division that the patent in the form of the first auxiliary request met the requirements of the EPC.

The following documents will be referred to in this decision:

D1: *US 2005/0247508 A1*
D5: *JP H05 241651 A*

The party status of all three parties is that of an appellant. However, for ease of legibility, they will be referred to as proprietor or opponent 1 or 2.

II. In the statement of grounds of appeal and the reply to the opponents' appeals, the proprietor presented detailed arguments concerning the main request and first auxiliary request but did not present arguments in support of novelty and inventive step of the second to fifth auxiliary requests.

In their respective statements of grounds of appeal, opponents 1 and 2 presented detailed arguments concerning the first auxiliary request. The main request was addressed in their respective replies to the proprietor's statement of grounds of appeal. Opponent 1 additionally raised objections of lack of novelty and lack of inventive step against the second to fifth auxiliary requests in the reply to the proprietor's statement of grounds of appeal dated 12 June 2019.

III. By letter dated 26 March 2021, the patent proprietor presented arguments concerning novelty and inventive step in support of the second to fifth auxiliary request.

IV. In a notification pursuant to Article 15(1) RPBA 2020 dated 5 November 2021, the board informed the parties of their preliminary opinion.

V. Oral proceedings before the board took place on 10 October 2022.

The requests of the parties are as follows:

The patent proprietor requests that
the decision under appeal be set aside and the patent be maintained on the basis of the main request filed on 3 April 2018, or as an auxiliary measure,
on the basis of the claims of one of the first to fifth auxiliary requests, also filed on 3 April 2018.

Opponents 1 and 2 request that
the decision under appeal be set aside and the patent be revoked.

Furthermore, the proprietor requested that the case be remitted if the board were to decide that the main or first auxiliary requests are not allowable.

VI. Claim 1 of the **main request** reads as follows (feature labels were adopted by the board from point 20 of the impugned decision and from the proprietor):

(a) *"A supplemental remote control system for a materials handling vehicle (10) comprising:*

(b) *a wearable wireless remote control device (70) that is donned by an operator interacting with said materials handling vehicle (10), said wearable wireless remote control device (70) comprising:*

(c) *a wireless transmitter (284); and*

(d) *a travel control communicably coupled to said wireless transmitter, wherein actuation of said travel control causes said wireless transmitter to wirelessly transmit a travel request as a first type signal requesting said vehicle to advance in a first direction;*

(e) *a receiver (102) for receiving transmissions from said wireless transmitter at said vehicle; characterised by*

(f) *a controller (103) that is communicably coupled to said receiver and to a traction control system of said vehicle, said controller being responsive to receipt of said first type signal by said receiver to evaluate at least one vehicle condition, to decide whether to implement said travel request based upon the evaluation of said at least one vehicle condition and to cause said traction control system to advance said vehicle if said controller decides to implement said travel request based upon the evaluation of said at least one vehicle condition.*

The claims of the main request correspond to the claims as granted with the exception that the alternatives of

granted dependent claim 5 were split into dependent claims 5 and 9.

VII. Claim 1 of the **first auxiliary request** has in addition to the features (a) to (f) of the main request the feature

(g) *"wherein upon detecting a predetermined stopping event associated with movement of said vehicle under wireless remote control in response to receipt of said first type signal said controller communicates with:*

(a) said traction control system to cause said vehicle to coast to a stop or
(b) a brake control system associated with said vehicle to apply a brake to stop said vehicle."

at the end of the claim.

VIII. Claim 1 of the **second auxiliary request** has in addition to the features (a) to (g) of the first auxiliary request the feature

(h) *"said supplemental remote control system further comprising one or more devices 148 for detecting when the vehicle enters a predetermined location; and*
wherein the predetermined stopping event comprises said controller detecting a signal generated by said one or more devices when said vehicle has entered said predetermined location."

at the end of the claim.

IX. Claim 1 of the **third auxiliary request** has in addition to features (a) to (h) of the second auxiliary request the feature

(i) *"said controller is configured to cause said traction control system to advance said vehicle for as long as maintained actuation of said travel control on said wearable wireless remote control device is detected, unless said vehicle exceeds a predetermined maximum distance or time traveled in response to said first type signal, despite a continued detection of continued actuation of said travel control; wherein"*

inserted between features (g) and (h).

X. Claim 1 of the **fourth auxiliary request** has in addition to the features (a) to (i) of the third auxiliary request the feature

(j) "*at least one sensor communicably coupled to said controller, each said at least one sensor configured to detect the presence of an object located at a position either on a platform of said vehicle from which said vehicle may be operated or proximate to said vehicle:*
wherein said at least one vehicle condition evaluated by said controller comprises a status of each sensor and said controller is configured to decide to not implement said travel request if said status from at least one sensor is indicative of the presence of an object."

at the end of the claim.

XI. Claim 1 of **fifth auxiliary request** has in addition to the features (a) to (j) of the fourth auxiliary request the feature

(k) *"wherein the predetermined stopping event further comprises said controller detecting mechanical, electrical, pneumatic, or hydraulic abnormal conditions of the truck."*

at the end of the claim.

XII. The arguments of the **patent proprietor** that are relevant for the present decision were in essence as follows:

Main Request

The subject-matter of claim 1 of the main request was new and inventive in view of document D1.

D1 did not contain a disclosure of feature (f). Arguably D1 disclosed a materials handling vehicle with remote control capability. D1 disclosed two separate and non-combinable embodiments, namely on the one hand remote control via voice control as in paragraph [0074] with obstacle detection as in paragraph [0097] and on the other hand remote control via a homing beacon with a presence sensor as in paragraph [0098]. The reasons were as follows: Figure 20 showed two different persons, one with a headset indicative of voice control the other with the homing beacon indicating that these were separate embodiments. This was also consistent with the use situations. When using a homing beacon,

the operator had to walk in front of the vehicle on the side of the driving console, and the vehicle would follow the homing beacon at a safe distance without the need to issue travel commands. The operator was in danger of being hit by the vehicle but they could perceive obstacles in the path. Contrary to that, when using a voice command remote control the operator walked behind the vehicle on the fork side. There was no danger of the vehicle running into the operator, but the operator was not able to perceive obstacles in the path. A presence sensor according to paragraph [0098] used together with voice control was not useful in the real world but only when used together with a homing beacon. An operator standing too close to the vehicle would have to move away from it in order to be able to issue voice commands. Furthermore, the presence sensor would shut the vehicle down when the operator was too close or too far away. Contrary to that, the homing beacon would be followed in the distance range allowed by the presence sensor but was necessary to stop the vehicle at a safe distance from an operator. Also the sentence structure of paragraph [0098] made that clear. These arguments showed that the presence sensor of paragraph [0098] was disclosed only in combination with the homing beacon. However, the combination of a homing beacon and a presence sensor did not anticipate feature (f), since a homing beacon was not a controller commanding the vehicle to move in the sense of claim 1 of the main request, since it did not transmit a travel request. Rather it was a passive device. Also the combination of voice control with the obstacle detection of paragraph [0097] did not anticipate feature (f), since the vehicle could not wait for receipt of a travel request in order to scan the path for an object. There was no disclosure in D1 of a vehicle that has been instructed to advance, that

checks conditions between the receipt of the travel request and the decision to implement the travel request or not and to ignore that travel request if it detects an object.

There was no practical reason to combine a presence sensor with a remote voice control functionality for the same reasons as those explaining why D1 did not disclose these two functionalities in combination. The opponents' argument in this respect thus demonstrated only that the skilled person could arrive at the claimed invention, not that they would.

First Auxiliary Request

The subject-matter of claim 1 of the first auxiliary request involved an inventive step.

Paragraph [0097] of D1 did not explicitly disclose the alternatives (a) or (b) of feature (g), i.e. there was no disclosure of how the vehicle was stopped if an obstacle was detected.

Remittal

The case should be remitted to the opposition division for a discussion as to the substance of the second to fifth auxiliary requests. The proprietor has not had an opportunity to present their case in view of these requests before the opposition division. The fact that the board would deviate from the appealed decision in view of the main request and first auxiliary request had not been envisaged. In order to efficiently argue their case in view of the lower ranking requests, the proprietor would have to familiarise themselves with the reasons for deviating from the decision under

appeal. Moreover, opponent 2 had not presented any comments concerning the patentability of the second to fifth auxiliary requests and could therefore not contribute in the debate if the case were not remitted. This presented special reasons for remittal.

Admittance Second to Fifth Auxiliary Requests

The second to fifth auxiliary requests should be admitted. It had not been necessary to discuss any objection concerning the patentability during the opposition proceedings and none had been raised by the opponents at the time of filing of either the proprietor's statement of grounds of appeal or reply to the opponents' appeals. The proprietor had thus no reasons to provide further arguments. Furthermore, no procedural delay was incurred, since the proprietor filed arguments in support of the second to fifth auxiliary requests before the board issued their preliminary opinion and summons.

Second Auxiliary Request

Claim 1 of the second auxiliary request met the requirements of Article 123(2) EPC.

The amendments were based on claims 1, 7, and 9 as originally filed as well as on the passage on page 18, line 31 to page 19, line 21 of the description as originally filed. The mention that "additional features may be incorporated" on page 18 in lines 31 and 32 demonstrated that the features of that passage could be combined with other features of the disclosure. The application as originally filed disclosed two ways of stopping a vehicle, one of which was to coast to a

stop. The phrase "or otherwise come to a rest" therefore clearly referred to coasting to a stop.

XIII. The arguments of **opponent 1** that are relevant for the present decision were in essence as follows:

Main Request

The subject-matter of claim 1 of the main request was not new or inventive in view of document D1.

Paragraph [0097], first sentence stated that with any type of remote control an obstacle detection system was desirable. A skilled person would thus understand D1 to disclose the presence sensor of figure 20 and the remote voice control in combination. The presence sensor of paragraph [0098] on its own would not make sense. It assured that the vehicle could be operated remotely only when the operator was neither too close nor too far. A remote control capability was nevertheless required in the allowed distance range, otherwise the vehicle could not be controlled. Moreover, nothing in D1 indicated that the presence sensor could not be combined with the remote voice control. D1 disclosed both a homing beacon with a presence sensor and a remote voice control with a presence sensor. A homing beacon was also considered to be a remote control since it had the functionality of controlling the vehicle remotely. The expression "the truck would not operate" of paragraph [0098] when the presence sensor senses an operator being too far or too close meant that commands would still be received but not implemented. The proprietor's arguments concerning the relative position of the operator and the vehicle in use were not correct. Order picking was not a one-

dimensional process. Rather an operator would have to be able to go back and forth and operate the vehicle from any position.

Furthermore, the obstacle detection of paragraph [0097] was disclosed in combination with remote voice control. Detection of an obstacle in the travelling path could be seen as evaluation of a vehicle condition in view of paragraph [0066] of the opposed patent and slowing the vehicle until it reaches a predetermined distance and then stopping it could be seen as a decision not to implement a travel request.

If feature (f) were considered to be a distinguishing feature, then the technical problem would be that of improving security. It would merely be straightforward to implement the presence sensor of paragraph [0098] of D1 with the remote voice control in order to prevent the vehicle from moving when an operator was standing too close to it, inadvertently giving a travel command, or also a left and right command. In all of these scenarios an operator could be hurt if they were standing too close to the vehicle.

First Auxiliary Request

The subject-matter of claim 1 of the first auxiliary request did not involve an inventive step in view of D1 alone.

Arranging a controller to check whether an incoming travel command can be securely implemented was merely an alternative way of arranging a control system for remote control of a material handling vehicle. Furthermore, it would be highly dangerous for a remote controlled vehicle to override a detection of an

obstacle and allow the vehicle to travel in that situation. The order of implementation was not important in case an obstacle is detected. A vehicle having detected an obstacle before receiving a travel command could obviously not let the travel command override the obstacle detection but would have to inhibit travelling instead. Paragraph [0097] contained a clear disclosure to the effect that obstacle detection worked with any type of remote control.

Remittal

The case should not be remitted. This would cause an unnecessary delay in obtaining a decision.

Admittance Second to Fifth Auxiliary Requests

The question of admittance of the second to fifth auxiliary requests was difficult to answer. Opponent 1 had raised objections against the patentability of the second to fifth auxiliary requests in their reply to the proprietor's statement of grounds of appeal. These objections could not have been raised in the statement of grounds of appeal of opponent 1, which had to deal with the appealed decision and since the auxiliary requests had not been filed at this time. The most appropriate time for the proprietor to file arguments in support of the patentability of the second to fifth auxiliary requests would have been at the time of their filing, or at the latest in response to the reply of opponent 1 to the proprietor's appeal. The question of admittance should be decided on that basis. The requests were also not *prima facie* allowable. Rather they would have to be examined in detail to verify whether they were allowable.

Second Auxiliary Request

Claim 1 of the second auxiliary request did not meet the requirements of Article 123(2) EPC.

The passage on page 18, line 31 to page 19, line 15 and figure 4 are not a suitable basis for the amendment. This passage merely discloses that wireless remote jog control functionality could be disabled in predetermined locations, but the claim was directed to stopping events. The claim also did not contain any mention of disabling the functionality. The cited passage had further features, from which the claim features had been isolated. The passage also was a description of figure 4, which also contained further features, which were not reflected in the amended claim.

XIV. The arguments of **opponent 2** that are relevant for the present decision were in essence as follows:

Main Request

The subject-matter of claim 1 of the main request was not new or inventive in view of document D1.

It followed from the discussion in their statement of grounds of appeal in view of the first auxiliary request, that also the main request was not new in view of D1. Paragraph [0097] of D1 disclosed obstacle detection of a vehicle under remote control. Stopping when an obstacle was detected could be seen as the decision not to implement a travel request in response to the evaluation of a vehicle condition. According to paragraph [0067] of the opposed patent, an obstacle was

a vehicle condition. The opposed patent did not distinguish between a vehicle condition and a stopping event. An obstacle in the path could thus be both at the same time.

If feature (f) were to be seen as a distinguishing feature, the formulation of the technical problem appeared to be common ground. D1 already disclosed the main ingredients. Even if it did not directly and unambiguously disclose the combination of a remote voice control with a presence sensor, such combination would be immediately obvious from D1 in order to improve safety.

First Auxiliary Request

Opponent 2 had no comments going beyond those made in the context of inventive step of the main request concerning the question of inventive step of the first auxiliary request.

Remittal

The case should not be remitted. This would cause an unnecessary delay in obtaining a decision. While it was correct that opponent 2 had not presented arguments in view of the patentability of the second to fifth auxiliary requests, they could nevertheless take part in the debate.

Admittance Second to Fifth Auxiliary Requests

Concerning the question of admittance of the second to fifth auxiliary request fairness should be a criterion for deciding the question. The second to fifth auxiliary requests should be *prima facie* allowable but

if they were admitted the amendments would have to be discussed in view of the passage on pages 18 and 19 of the application as filed.

Second Auxiliary Request

Claim 1 of the second auxiliary request did not meet the requirements of Article 123(2) EPC.

The passage adduced by the proprietor dealt with wireless remote jog functionality whereas claim 1 of the second auxiliary request dealt with remote control in general. Furthermore, page 19, line 11 mentioned a brake controller 116, which did not appear in the amended claim. The adduced passage did not disclose that the vehicle could be stopped by coasting to a stop or braking. Rather the only thing that was disclosed was that the brake controller was addressed.

Reasons for the Decision

1. *Admissibility*

All three appeals meet the requirements of Articles 106 and 108 EPC, as well as of Rule 99 EPC. They are therefore admissible.

2. *Main Request - Inventive Step in View of D1 Alone*

2.1 The subject-matter of claim 1 of the main request does not involve an inventive step in view of document D1 alone.

2.2 *Starting Point*

The board is satisfied that D1 is a suitable starting point for the assessment of inventive step.

2.3 *Distinguishing Features*

The only point of contention was whether D1 disclosed feature (f), i.e. in essence a controller that is responsive to receipt of a travel request to evaluate a vehicle condition before deciding whether to implement the travel request.

The opponents' first line of argument is based on paragraph [0097] of D1. Paragraph [0097] describes an obstacle detection system that can be added to the remote control system ("With any type of remote control travel and/or steering remote system [...]"). A materials handling vehicle will scan the path it will be travelling for obstacles and then slow down until it reaches a preset distance and then stop.

What is described here is that a materials handling vehicle in motion will slow down and eventually stop if it detects an obstacle. The wording of claim 1 and its sentence structure including the interpunctuation implies that the controller, in response to receipt of a travel signal performs three steps, namely (i) to evaluate at least one vehicle condition, (ii) to decide whether to implement said travel request and (iii) to cause said traction control system to advance said vehicle (depending on the decision in (ii)).

In particular in view of claim 7 of the main request, which deals with stopping the materials handling

vehicle when it is in motion, claim 1 is apparently concerned with inhibiting setting the vehicle in motion by a remote travel request if this is not safe. While the board would agree that claim 1 does not explicitly define this, it is not persuaded that stopping upon detecting an obstacle during movement can be read onto the claim wording.

Opponent 2 argued that the material handling vehicle of D1, when receiving a travel request would detect an obstacle in its path and therefore remain stopped. What claim 1 defines, however, is that the travel request is not implemented. In contrast opponent 2 argues, that the travel request would be implemented but the vehicle would immediately be stopped after implementing the travel request.

Both opponents appear to argue that letting a material handling vehicle slow down and eventually stop as in the penultimate sentence of paragraph [0097] of D1 could be seen as the vehicle's controller deciding not to implement a travel request as defined in claim 1. The board is not persuaded by this argument. In view of claim 7, what paragraph [0097] describes is a stopping event when the vehicle is in motion and hence not a decision not to implement a travel request. Moreover, the opponents had to make tacit assumptions in support of their argument as to whether a travel request is repeatedly transmitted or only once, which cannot be directly and unambiguously derived from D1.

The opponents' second line of argument is based on the disclosure of paragraph [0098] of D1.

According to this paragraph, a homing beacon is worn by the operator and the materials handling vehicle follows

the homing beacon, but is programmed to remain a certain distance away from the homing beacon. Furthermore, a presence detector may be implemented. Under this arrangement, the materials handling vehicle would not operate if the operator is too close to the truck or too far from the truck.

The opponents' argument is mainly based on the assertion of a disclosure of the combination of a remote voice command and the presence sensor. The board agrees that such a combination would at least come very close to the claimed subject-matter. Such a combination would imply that if a materials handling vehicle received a travel request through the voice command system and at the same time detected that it was too close to an operator with a presence sensor, it would not operate.

The parties presented various arguments to argue their view on novelty. To the board, none of these arguments, when viewed individually or together, were conclusive. In the board's view the question of inventive step could be answered much more conclusively, even on the assumption that feature (f) cannot be directly and unambiguously derived from D1. Therefore, the board can accept to the disadvantage of the opponents that some doubts remain as to whether D1 discloses a presence sensor in combination with a voice command control, and thus that feature (f) is not disclosed in D1.

2.4 *Technical Effect and Technical Problem*

A controller according to feature (f) allows the materials handling vehicle to ignore remote travel requests under certain conditions. Although claim 1 is not limited in this respect, exemplary conditions can

be movement of the materials handling vehicle (claim 4 of the main request), an object on or near the vehicle (claim 5 of the main request), or a steering angle outside a predetermined limit (claim 6 of the main request). Furthermore, the distinguishing feature specifies that the vehicle condition is evaluated in response to a travel request.

The board can accept that in a wide variety of vehicle conditions, ignoring the travel request is intended to improve the safety when the vehicle is set in motion under remote control. Indeed, it is apparent that an operator controlling a vehicle remotely might not be able to perceive the vehicle and its surroundings in the same manner as an operator setting the vehicle in motion manually. Vehicle conditions could change over time. For example, an operator standing too close to the vehicle might walk away. Evaluating the vehicle condition in response to a travel request implies that the controller bases its decision to implement or ignore the travel request on the actual vehicle condition in existence at the time the vehicle is commanded to be set in motion.

Opponent 2 argued that they could not discern anything in claim 1 that implied a certain time sequence or that constituted a link between receiving a travel request and evaluating a vehicle condition. The board is not persuaded by this argument, since claim 1 clearly states that the controller is responsive to receipt of a travel request to evaluate a vehicle condition, and to decide whether to implement or ignore the travel request.

The proprietor argued in the context of novelty that the materials handling vehicle according to D1 would

shut down completely, whereas that of claim 1 could still receive requests. This argument was adduced in the discussion of novelty but, if correct, would also imply the technical effect, that the given sequence of controller steps would allow the vehicle to remain responsive to voice commands even if the operator were too close to it. The board cannot discern anything in D1 that would support the proprietor's interpretation of the expression "the truck would not operate" to mean a complete shutdown. Rather, this proposed interpretation seems to be a very unlikely proposition in the context of document D1, which puts emphasis in paragraph [0075] on how fast order picking operators have to work and that the purpose of the remote control system is to save valuable time which would be lost when walking around the vehicle repeatedly. Moreover, claim 1 does not specify the controller behaviour when no travel request is received. Opponent 2 argued correctly, that the proprietor is attempting to adduce a technical effect which is not based on actual limitations of the claim. Such effects cannot be taken into account.

The technical effect of the distinguishing feature is therefore to avoid dangerous situations which could occur if the vehicle were set in motion remotely by an operator who, due to his position, cannot fully perceive the condition of the vehicle and taking into account the vehicle conditions at the time of requesting the vehicle travel remotely.

The technical problem is therefore to increase the safety when a remote controlled vehicle is set in motion.

2.5 *Assessment of the Solution*

Document D1 clearly discloses that safety during remote control operation is important. This is the reason for providing obstacle detection and also a presence sensor.

In the board's view, the presence sensor is an additional safety feature, which similarly to the obstacle detection is disclosed to be used in combination with voice command control.

The proprietor referred to the suggestion of the illustration in figure 20 which depicted voice control, a homing beacon and a presence sensor side by side as equivalent but separate embodiments. However, figure 20 is merely a schematic illustration aimed at informing the reader in an efficient manner and is therefore not conclusive. It is apparent that a homing beacon and a voice command would in principle allow steering a materials handling vehicle whereas a presence sensor would not. It can therefore not be an independent and equivalent embodiment. The illustration in figure 20 would also not support the proprietor's view that a presence sensor was disclosed solely in combination with a homing beacon, since these two measures are also illustrated to be separate.

The board observes that according to the second sentence of paragraph [0098] if a homing beacon is used, the materials handling truck would be programmed to remain a certain distance away from the homing beacon. It follows that a presence sensor is not necessarily required in combination with a homing beacon. Thus, contrary to what the proprietor argued in the context of novelty, the homing beacon and the

presence sensor in fact are not disclosed to be a single embodiment.

The proprietor further argued that an operator using voice commands would be positioned behind the materials handling vehicle, whereas they would be positioned in front of it when using a homing beacon. The presence sensor therefore only needed to be used with the homing beacon, because there was no need for it to be used together with the voice control. The board is not persuaded by this argument. Safety features normally cannot be designed on the assumption that users behave in a particular way. Rather they have to be able to deal with a variety of behaviours. In particular in warehouse order picking it is hardly conceivable that each and every operator using voice commands would be always behind their respective trucks or operators using a homing beacon would always be in front of it.

The board concludes that the presence sensor is an additional safety feature with the purpose of disabling operation when an operator is standing too close to the vehicle that is useful with remote control in general.

It is important to note, that D1 has already recognised that it might be dangerous to set a materials handling vehicle in motion by remote control if an operator is standing too close to it. It follows that by merely identifying this potential danger a skilled person has not yet demonstrated inventive activity. Posing the objective technical problem did not involve an inventive step in view of D1.

In essence, the claimed solution is to check if setting a vehicle in motion remotely would be dangerous before setting the vehicle in motion. The board cannot discern

anything in this solution that could be regarded as non-obvious. The claim uses essentially functional language intermixed with some inherently present technical features, such as a receiver and a controller, to define the above solution somewhat more algorithmically and technically, but nothing in that wording goes beyond a basic functional implementation of the above basic idea.

In particular, a skilled person is informed by D1 that a presence sensor could detect an operator standing too close to the vehicle in which case the vehicle would not operate. The board has already explained that this is a disclosure of the step of evaluating a vehicle condition and then a decision not to implement a travel request. The proprietor argued that there was no practical reason to combine a presence sensor with a headset and voice command functionality. The board is not persuaded by this argument. It does not take much imagination to contemplate that an operator who has finished picking orders in one location and who wants to proceed to the next location would give a voice command to a vehicle while standing too close to it, so that he could be injured if the vehicle were to implement the command to advance. The board re-iterates that a presence sensor is disclosed as being a safety feature, rather than an alternative way of remote controlling the vehicle. As such, it would be clearly and apparently advantageous to use it with the voice command remote control.

There are further possibilities for implementation. In particular, the proprietor argued in the context of the discussion of document D5 that in this document the step of evaluating a vehicle condition was performed before verifying that the received signal was a travel

request. The board is not persuaded that the order plays a particular role. It has to be borne in mind that a skilled person intends to solve the problem of increasing safety when the remote controlled vehicle is set in motion. The vehicle receiver cannot avoid receiving signals. The board concedes that it may be conceivable to implement a controller that is responsive to evaluation of a vehicle condition to decide not to implement a received travel request just as much as it is conceivable to evaluate the vehicle condition in response to receipt of a travel request. However, the board is of the opinion that both options are merely straightforward implementations of the basic idea of checking before implementing the travel request.

The proprietor also argued in the context of novelty that the presence sensor was not useful when used in combination with voice command control because an operator standing too close to a vehicle had to move away from it to be able to command remotely via voice commands. It would follow, if this argument were correct, that it would not have been obvious for a skilled person to combine the presence sensor and the voice command. However, in the board's view it is not unrealistic at all to implement as a safety measure that the vehicle would only respond to certain remote control commands if the operator issuing them were sufficiently far away from the vehicle. In the scenario proposed by the proprietor, the operator would always have to walk around the vehicle to its rear in order to be able to safely remote control it. This seems just as impractical, but additionally there would not even be any measure of ensuring the compliance with this safety requirement. This does not persuade the board.

2.6 Therefore, the board comes to the conclusion that the subject-matter of claim 1 of the main request does not involve an inventive step in view of D1 alone.

3. *First Auxiliary Request - Inventive Step*

3.1 The subject-matter of claim 1 of the first auxiliary request does not involve an inventive step in view of D1 alone.

3.2 Feature (g) of claim 1 according to the first auxiliary request, which is the only feature which has been added compared the main request, is not a further distinguishing feature. Document D1 already discloses in paragraph [0097] an obstacle detection system. If the vehicle detects an obstacle it slows down up to a predetermined distance from the obstacle and then stops. Stopping clearly requires braking. This in turn clearly requires sending an appropriate control to the braking system.

The proprietor argued that D1 did not contain a disclosure of how the vehicle stopped whereas claim 1 of the auxiliary request specified alternatives (a) or (b).

The board is not persuaded by this argument. Detection of an obstacle is a stopping event within the meaning of claim 1 of the first auxiliary request, as it causes the vehicle to stop. This is consistent with dependent claim 8 of the first auxiliary request. Furthermore, the above passage discloses that the vehicle stops if it is at a predetermined distance from the detected object. Alternative (b) of feature (g), i.e. instructing the brake system to stop the vehicle is

merely a description of the function disclosed in D1 which makes reference to inherent features. Clearly if the vehicle of D1 stops, a skilled person would understand the vehicle to have a brake system which is instructed by the controller to brake the vehicle to a stop. The proprietor has not explained what else could be understood by the clear disclosure that the vehicle stops at a predetermined distance from the detected obstacle.

Although not necessary for this conclusion, the board wishes to add its opinion that alternative (a) would also be obvious. D1 already discloses that the vehicle could slow down. In view of this letting the vehicle coast to a stop is merely an obvious implementation of letting the vehicle slow down without braking it.

4. *Remittal*

4.1 The board decides not to remit the case.

4.2 According to Article 11 RPBA 2020 the board shall not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so.

4.3 The board agrees with the opponents that remittal would mean a procedural delay. The board observes, that it is in the very nature of appeal proceedings that a board might deviate from the decision under appeal. Therefore, this does not represent special reasons justifying remittal.

The board is also not persuaded that the parties would have had to familiarise themselves with the detailed

reasons for the board's decision concerning inventive step of the higher ranking requests in order to be in a position to explain why the amendments according to the second to fifth auxiliary requests could potentially establish an inventive step in view of D1.

While it is true that the outcome of the opposition proceedings precluded a discussion of the second to fifth auxiliary requests, according to the case law of the boards of appeal, there is no absolute right to have the case considered before two instances.

Whether opponent 2 could comment on the remaining auxiliary requests to be debated or not also does not represent special circumstances. It was the decision of opponent 2 whether to present arguments concerning the second to fifth auxiliary requests. They contented themselves with commenting on the other parties' appeal cases in this respect, rather than providing an appeal case of their own. It is not apparent how a remittal should affect the consequences of that choice of opponent 2 upon remittal. Moreover, if remaining silent represented special reasons for remittal, any party could force a remittal simply by remaining silent in preparation for oral proceedings.

5. *Admittance - Second to Fifth Auxiliary Requests*

5.1 The board admits the second to fifth auxiliary requests filed on 3 April 2018, as well as the substantiation filed on 26 March 2021.

5.2 The second to fifth auxiliary requests were filed during the proceedings before the opposition division on 3 April 2018. These requests did not need to be

decided upon as the opposition division maintained the patent on the basis of the first auxiliary request. Neither the proprietor's statement of grounds of appeal nor their reply to the opponents' appeals contained arguments in support of the patentability of the second to fifth auxiliary requests, other than the assertions in point 6.2 of the statement of grounds of appeal and point 5.3 of the proprietor's reply dated 5 June 2019 to the effect that the requests were directed to subject-matter that was new and involved an inventive step. After notification of the board's communication indicating the intention to start examination of the appeal but before the board issued a communication pursuant to Article 15(1) RPBA 2020, the proprietor identified the amendments and indicated what they considered to be a basis for the claim amendments.

5.3 According to Article 12(3) RPBA 2020, which is identical in its wording to Article 12(2) RPBA 2007, the statement of grounds of appeal and the reply should contain the parties' complete appeal case. This is generally accepted to mean that a party has to substantiate their requests.

According to Article 12(4) RPBA 2007, which is still applicable to the present case in view of Article 25(3) RPBA 2020, a board of appeal has a discretion to hold inadmissible facts, evidence or requests which could have been presented or were not admitted in the first instance proceedings. Otherwise everything presented by the parties with the statement of grounds or the reply shall be taken into account if and to the extent it relates to the case under appeal and meets the requirements of Article 12(2) RPBA 2007 (now Article 12(3) RPBA 2020) (emphasis added by the board).

In the board's view the contents of the proprietor's statement of grounds of appeal and reply do not meet the substantiation requirement of Article 12(3) RPBA 2020 to present the proprietor's complete appeal case. Article 12(4) RPBA 2007 therefore conferred a discretion to the board not to take into account the second to fifth auxiliary requests. The admittance of the substantiation was at the discretion of the board pursuant to Article 13(1) RPBA 2020.

5.4 In order to exercise the discretion in a fair manner, the board had to take into account the following facts.

In the absence of any objections against the second to fifth auxiliary requests it was indeed difficult for the proprietor to efficiently argue in support of their own requests. The board acknowledges that the proprietor could not have been asked to present support in view of all conceivable objections against the patentability of the requests in question. Indeed, the auxiliary requests remained unchallenged in appeal until the filing of the opponents' replies to the proprietor's statement of grounds of appeal. On the other hand, if it comes to a discussion of a lower ranking request in appeal proceedings, the reason is almost invariably that at least one of the objections raised against the higher ranking requests succeeded. Therefore, it could have been expected from the proprietor to explain at the latest with their reply to the opponents' appeals, why the second to fifth auxiliary requests overcame the objections raised against the higher ranking requests in order to meet the requirements of Article 12(3) RPBA 2020.

5.5 Be that as it may, the proprietor indicated what they considered to be the basis for the claim amendments and

filed arguments in support of novelty and inventive step of the second to fifth auxiliary request before the board issued their preliminary opinion. No procedural delay was therefore incurred due to the point of filing of the substantiation. All parties and the board were in a position to discuss the second to fifth auxiliary requests as to their substance. The situation that presented itself to the board and the parties was in effect no different from the hypothetical situation that would have arisen if the proprietor had filed the substantiation with their reply to the opponent's appeal.

Under these case-specific circumstances, the board considered it appropriate to exercise their discretion to take the second to fifth auxiliary request and the substantiation into account.

6. *Second Auxiliary Requests - Amendments*

6.1 Claim 1 of the second auxiliary request does not meet the requirements of Article 123(2) EPC.

6.2 The proprietor argued that claim 1 of the second auxiliary request had a basis in claims 1, 7 and 9 as originally filed as well as in the passage on page 18, line 31 to page 19, line 21.

In particular, the proprietor adduced the above description passage as support for the feature (h)

"said supplemental remote control system further comprising one or more devices 148 for detecting when the vehicle enters a predetermined location; and

wherein the predetermined stopping event comprises said controller detecting a signal generated by said one or more devices when said vehicle has entered said predetermined location."

6.3 The adduced passage is a description of original figure 4, which contains a great number of details, such as the number and location of RFID sensors at the end of a warehouse aisle, number and location of devices on the materials handling vehicle, and the radius of sensitivity of the RFID sensors compared to dimensions of the warehouse aisle.

The passage itself deals with disabling the wireless remote jog functionality, but claim 1 is not limited to disabling that particular functionality but any movement in response to a travel request. However, a jog function is a particular type of movement from which the amended claim generalises to any remote controlled movement.

Furthermore, the adduced passage discloses RFID tags arranged at the end of aisles of a certain length (15 feet) and devices on the truck being arranged so as to detect the RFID tags in a radius of 13 feet. While the board agrees that the particular dimensions are described to be exemplary, the passage clearly states that the choice of dimensions provides sufficient overlap of coverage in the aisle for detection by the truck and provides ample distance for the exemplary truck to brake or otherwise come to a rest proximate to the end of the aisle.

On the contrary amended claim 1 of the second auxiliary request does not contain the aspect that the stopping event is in fact generated at a distance before

entering the predetermined location which allows the materials handling vehicle to brake or coast to stop.

The board observes that most of the features in the above passage are disclosed as examples or as optional. However, this cannot remedy the fact that there is no pointer to the particular generalisations, omissions and combinations of features of amended claim 1 of the second auxiliary request, in particular disabling any movement rather than wireless remote jog control, entering any predetermined location rather than the specific ones mentioned, and generalising from arranging RFID sensors such that the devices on the materials handling device can detect them at such a distance before entering the predetermined locations that the materials handling vehicle has sufficient room to brake or to stop.

7. *Third to Fifth Auxiliary Requests - Amendments*

The independent claims of the third to fifth auxiliary requests all contain the same feature (h) as the second auxiliary request. The further added feature (i), (j) and (k) according to these requests are not suitable to remedy the non-compliance with Article 123(2) EPC of feature (h). Nor has the proprietor argued that this might be the case.

8. *Conclusions*

The main and first auxiliary requests do not meet the requirements of Article 56 EPC. The second to fifth auxiliary requests do not meet the requirements of Article 123(2) EPC. Therefore, taking into

consideration the amendments made by the proprietor of the European patent during the opposition-appeal proceedings, the patent and the invention to which it relates do not meet the requirements of the Convention.

The board therefore grants the requests of opponents 1 and 2.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

U. Bultmann R. Lord

Decision electronically authenticated