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**Datasheet for the decision  
of 20 October 2023**

**Case Number:** T 1986/20 - 3.5.01

**Application Number:** 17848363.2

**Publication Number:** 3401241

**IPC:** B65G1/137, G06Q10/08

**Language of the proceedings:** EN

**Title of invention:**

STORAGE/RETRIEVAL WORK ASSISTANCE SYSTEM, STORAGE/RETRIEVAL  
WORK ASSISTANCE METHOD, AND PROGRAM

**Applicant:**

Sato Holdings Kabushiki Kaisha

**Headword:**

System for providing route-guidance in a warehouse/SATO

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

Inventive step - providing route-guidance based on pre-stored  
location data without continuous position measurement (no -  
not technical)

**Decisions cited:**

T 2035/11



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Case Number: T 1986/20 - 3.5.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.01**  
**of 20 October 2023**

**Appellant:** Sato Holdings Kabushiki Kaisha  
(Applicant) 7-1 Shimomeguro 1-chome  
Meguro-ku  
Tokyo 153-0064 (JP)

**Representative:** Grünecker Patent- und Rechtsanwälte  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 20 July 2020  
refusing European patent application No.  
17848363.2 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** M. Höhn  
**Members:** R. Moser  
C. Schmidt

## Summary of Facts and Submissions

- I. This case concerns the applicant's appeal against the decision of the examining division to refuse the European patent application No. 17848363.2.
- II. The examining division found that the technical features of claim 1 of all requests were known from D1 (JP 2010-018411 A) or D2 (US 8 423 431 B1). The remaining features, such as using signs for guiding an operator and storage locations of articles as position information, were, in the division's view, not based on technical considerations and, thus, could not contribute to inventive step.
- III. In the statement setting out the grounds of appeal, the appellant requested that the decision be set aside and that a patent be granted on the basis of the refused main, or one of the refused first to fourth auxiliary requests. The appellant also made an auxiliary request for oral proceedings.

The appellant argued, *inter alia*, that the invention solved the same technical task, albeit by different technical means, as stated in reason 5.2.1 of T 2035/11 - *Navigation system/BEACON NAVIGATION*, namely "providing real-time route-guidance information to a user in dependence on the user's real world position".

- IV. In the communication accompanying the summons to oral proceedings, the Board tended to agree with the examining division's conclusions.

In particular, the Board considered that the case was different from T 2035/11, *supra*, as the system of the

invention was not continuously measuring the operator's position, but merely precalculated an itinerary using the operator's (measured) initial position as starting point. This itinerary was based on logistics data, namely a warehouse plan including signs and article storage location information, and an optimisation (shortest path) algorithm and not applied in a technical process (see point 7 of the preliminary opinion).

V. Oral proceedings took place by videoconference on 20 October 2023. The appellant's final requests were those submitted in writing. At the end of the oral proceedings the Chairman announced the Board's decision.

VI. Claim 1 of the main request reads as follows:

*A warehousing/shipping-operation support system (1) for warehousing a plurality of articles to a storage area (6) or shipping a plurality of articles from a storage area (6), the system (1) comprising:*

*a map-information saving unit (59, 59A) configured such that map information of the storage area (6) is saved in the map-information saving unit (59, 59A);*

*a storage-location information saving unit (59, 59B) configured such that storage-location information indicating a storage location of each of the articles in the storage area (6) are saved in the storage-location information saving unit (59, 59B);*

*a positional information acquisition unit (3, 4) configured to acquire positional information of a start position of an operator (W) in a warehousing/shipping*

operation; and

a processing unit (55);

characterized in that

*the map-information saving unit (59, 59A) is further configured such that positional information of a plurality of signs (M) set in the storage area (6) is saved in the map-information saving unit (59, 59A); the processing unit (55) is configured to select, based on storage-location information of a specific article among the plurality of articles and positional information of the operator (W), a sign positioned on the operator (W) side among the signs (M) in a vicinity of a storage location of the article from the plurality of signs, wherein*

*the processing unit (55) is configured to use, for a first article at a time of the warehousing/shipping operation, the positional information of the start position of the operator (W) acquired by the positional information acquisition unit (3, 4) as said positional information of the operator (W) on which said selecting is based,*

*the processing unit (55) is configured to set, for a second and following articles at the time of the warehousing/shipping operation, the storage location information of the immediately preceding article that has been warehoused or shipped as said positional information of the operator (W) on which said selecting is based, and*

*the processing unit (55) is configured to calculate a shortest path from the positional information of the*

*operator (W) to the selected sign (M) and to present the shortest path.*

VII. Claim 1 of the third auxiliary request, which is a combination of claim 1 of the first and second auxiliary requests, differs from claim 1 of the main request as follows:

*The feature configured to acquire positional information of a start position of an operator (W) in a warehousing/shipping operation has been moved to the characterising portion.*

*The characterising portion has been further amended and reads as follows (Board's underlining indicating changes vis-à-vis claim 1 of the main request):*

*a communication terminal (2) that is carried by an operator (W); and in that*

*said positional information acquisition unit (3, 4) is configured to acquire positional information of said communication terminal (2) as positional information of a start position of said operator (W) in a warehousing/shipping operation;*

*the map-information saving unit (59, 59A) is further configured such that positional information of a plurality of signs (M) set in the storage area (6) is saved in the map-information saving unit (59, 59A);*

*the processing unit (55) is configured to select, based on storage-location information of a specific article among the plurality of articles and positional information of the operator (W), a sign positioned on*

the operator (W) side among the signs (M) in a vicinity of a storage location of the article from the plurality of signs, wherein

the processing unit (55) is configured to use, for a first article at a time of the warehousing/shipping operation, the positional information of the communication terminal (2) acquired by the positional information acquisition unit (3, 4) as positional information of a start position of the operator (W) in the warehousing/shipping operation, as the positional information of the operator (W) on which said selecting is based,

the processing unit (55) is configured to determine whether there is a second or following article on a list of target articles and the processing unit (55) is configured to set, if it is determined that there is a second or following article, for the second and following articles at the time of the warehousing/shipping operation, the storage location information of the immediately preceding article that has been warehoused or shipped as positional information of the communication terminal (2), for using said positional information of the communication terminal (2) as said positional information of the operator (W) on which said selecting is based, and

the processing unit (55) is configured to calculate a shortest path from the positional information of the operator (W) to the selected sign (M) and to present the shortest path.

- VIII. Claim 1 of the fourth auxiliary request combines claims 1 and 2 of the main request. It, thus, adds the following features at the end of the claim:



*and the processing unit (55) is configured to, in a state in which the operator (W) moves through the shortest path and faces the sign before reaching the sign (M), calculate a direction of the storage location of the article from the sign and to present the direction.*

- IX. The appellant's arguments are discussed in detail in the reasons for the decision.

## **Reasons for the Decision**

### **Background of the invention**

1. The invention concerns a system for supporting an operator in the tasks of shipping or warehousing articles, specifically by offering guidance to the designated articles.

Existing systems, such as the one disclosed in D1, offer real-time guidance by, for example, determining the shortest path from the operator's present location to a specific article (see paragraphs [0003] and [0004] of the A1-publication). This, however, necessitates the installation of positioning devices on every rack, leading to a complicated wireless communication set-up (see paragraphs [0006] to [0008]).

2. As shown in Figure 1, the operator's initial position is acquired by "a positional information acquisition unit (3, 4)" (in claim 1), for example at the access gate to the warehouse (see paragraphs [0033], [0034] and [0130]).

A central server (5) stores both the location of each

article ("storage-location information") and the positions of signs "M" affixed to the warehouse ceiling ("map information of the storage area (6)"). These signs serve as guides for the operator, as illustrated in Figure 11.

3. Based on the operator's initial position, the server identifies a sign close to the first article to be shipped or warehoused ("positioned on the operator (W) side among the signs (M) in a vicinity of a storage location of the article"). The server then computes the shortest path between these two points and presents it on the operator's terminal 2.
4. In subsequent iterations, the operator's position is not measured anew. Instead, it is assumed to correspond to the storage location of the previously warehoused or shipped article ("set, for a second and following articles ... the storage location information of the immediately preceding article that has been warehoused or shipped as said positional information of the operator (W)").

**Main request, inventive step (Article 56 EPC)**

5. The appellant argued that, leveraging the storage location of articles and signs, offered real-time guidance with just one position measurement. This led to a simplified system and hardware architecture compared to D1.

The Board had assumed, possibly influenced by Figure 11, that the system in claim 1 pre-computed a route. However, claim 1 explicitly stated that the position of the "preceding article that had been warehoused or shipped" was obtained, possibly through flashing signs.

This was further elucidated in paragraphs [0111] to [0115] and Figure 12, which indicated that, much like a car navigation system, the inventive system determined the operator's position and utilised it for real-time guidance.

The appellant, therefore, concluded that the invention solved a technical task, aligning with the first sentence of reasons 5.2.1 of T 2035/11, *supra*. The second sentence, which should be considered in isolation, mentioned a technical solution – continuous measurements – distinct from the invention and akin to D1. Nevertheless, this did not diminish the inventive step, as the invention achieved the same technical outcome using different, simplified technical means.

6. The appellant further argued that T 2035/11, *supra*, made a distinction between a broader (see reasons, 5.1 and sub-items) and a narrower interpretation of a navigation system (see reasons, 5.2 and sub-items).

The broader interpretation encompassed a personal computer programmed to execute an optimisation algorithm for route calculation, which did not make a technical contribution. On the other hand, the narrower interpretation concerned a real-time navigation system, comprising route-planning functionality as well as a position-determining device, which coincided with the scope of the claimed system. T 2035/11, *supra*, further stated that the navigation, despite involving user intervention, was still facilitated by a technical tool and did not hinge on subjective considerations or psychological effects. Consequently, the optimisation algorithm also contributed to the technical character of the claimed system (see reasons, 5.2.2).

7. The Board does not concur with the appellant's arguments and judges that claim 1 does not specify a real-time navigation system under the narrower interpretation.

When reading reasons 5.2 to 5.2.2 of T 2035/11, *supra*, collectively, it establishes that providing real-time route-guidance information is a technical task solely if the navigation system encompasses *route-planning functionality as well as a position-determining device [...] configured to provide route-guidance information in dependence on the actual real-world position of the system*. Further, this involves an interaction between the user and the navigation system, wherein the navigation system **continuously measures the user's position using technical means and, on the basis of these measurements**, provides the user with information aimed at enabling the user to manage the technical task of moving a vehicle to a desired destination (Board's emphasis). It is only in the context of such a system that a route-planning algorithm contributes to its technical character.

8. This stands in contrast to the claimed system, where the operator's actual position is only measured once, specifically at the outset of the shipping/warehousing procedure. All subsequent positions are either predetermined or at the very least derived from locations stored in a database. In the event that the operator diverges from the provided guidance, the system's ability to provide accurate real-time route guidance is compromised, given that the positional information of the preceding article becomes erroneous. This differs from a real-time navigation system, which, regardless of the user's decisions or interactions, autonomously establishes the user's current position

and offers corresponding route-guidance information.

This distinction does not stem from a variance in time granularity for position determination, nor does it pertain to measurement inaccuracies, as argued by the appellant. In the Board's assessment, the fundamental disparity lies in the fact that the system outlined in claim 1 does not constitute a closed loop, wherein, irrespective of the user's actions, a position measurement is automatically fed back to the system for the purpose of updating route guidance information.

Conversely, the claimed system relies on predetermined positions and the presumption that the user adheres to them in a predetermined sequence. Any deviations from this sequence are not relayed to the system and thus cannot be employed for the updating or rectification of route guidance information.

9. Hence, the Board concludes that the narrower interpretation of a navigation system, as outlined in T 2035/11, *supra*, does not apply to the present case, making the appellant's arguments on this matter irrelevant.
10. The appellant further argued that, except in rare cases where operators neglected their duties, the invention offered a mechanism to rectify the situation where the operator mistakenly shipped or warehoused an incorrect article from the list. Once the operator completed the process with a different article, the system was promptly notified. Armed with the knowledge of the article's position, it resumed normal operation seamlessly.

11. The Board finds this argument unconvincing for the following reason: Claim 1 does not include any provisions for offering feedback regarding which article the operator has either shipped or warehoused. Once the system receives the operator's initial position, it computes the shortest path using a predetermined sequence of articles and their location information stored in a database, all without the need for additional (measured) data indicating the operator's real-time position.
  
12. In view of the above, the Board judges that claim 1 essentially differs from existing (real-time) warehouse navigation systems, as seen in examples like D1 or D2, by not offering real-time navigation. Instead, it pre-computes route-guidance information based on predefined storage locations of articles and the positions of signs within the warehouse. It is self-evident that, given the absence of real-time navigation, no technical means for achieving it are necessary.

As a result, this difference does not yield any technical effect. The route-guidance is not derived from continuous measurements, but instead, it is computed using an algorithm and pre-existing data. Furthermore, it depends on the user's decisions and interactions, and is not directly applied in a technical process. Consequently, the route-guidance information and the algorithm used to generate it do not make a technical contribution (see T 2035/11, *supra*, reasons 5.1.3).

As the features of the claim are known from either D1 or D2 or do not contribute to its technical character, the Board concludes that claim 1 lacks inventive step (Article 56 EPC ).

**Third auxiliary request, inventive step (Article 56 EPC)**

13. The appellant explained that claim 1 was modified to counter objections raised under Article 123(2) EPC during the examination procedure.

*Additionally, the inclusion of the feature the processing unit (55) is configured to determine whether there is a second or following article on a list of target articles and ... to set, if it is determined that there is a second or following article was intended to highlight that the computation of route-guidance was independent of whether the shipped/warehoused articles were in the correct sequence, thus emphasising the real-time nature of the guidance.*

14. The Board has already considered these amendments to be present in claim 1 of the main request. Therefore, for the reasons given with respect to the main request, claim 1 lacks an inventive step (Article 56 EPC).

**First and second auxiliary request, inventive step (Article 56 EPC)**

15. Claim 1 of the first and second auxiliary request are broader than claim 1 of the third auxiliary request and, therefore, also lack an inventive step (Article 56 EPC).

**Fourth auxiliary request, inventive step (Article 56 EPC)**

16. The appellant argued that the inclusion of the additional features made the system more closely resemble a real-time navigation system.

16.1 The Board notes that calculating and presenting a direction, such as "B-3 and Go Forward" or "D-3 and Right", is typically part of any route-guidance information and, in the present case, does not contribute to the technical character of the invention.

Therefore, also the fourth auxiliary request lacks inventive step (Article 56 EPC).

### **Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:



T. Buschek

M. Höhn

Decision electronically authenticated