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Datasheet for the decision of 12 May 2025

Case Number: T 0753/22 - 3.5.01

Application Number: 17922912.5

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Language of the proceedings: EN

Title of invention:
CONTEXT-BASED PROGRAMMABLE SAFETY RULES FOR PERSONAL PROTECTIVE EQUIPMENT

Applicant:
3M Innovative Properties Company

Headword:
Location-based safety rules/3M INNOVATIVE PROPERTIES

Relevant legal provisions:
RPBA 2020 Art. 12(4), 12(6)
EPC Art. 54, 56

Keyword:
Novelty - triggering a safety rule tied to a work environment when a worker has entered it (no - not novel) - triggering the safety rule when the worker approaches the environment and reaches a threshold distance from it (no - the claim covers the above non-novel scenario)
Inventive step - detecting the worker's position using GPS (no - obvious alternative)

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Boards of Appeal

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Case Number: T 0753/22 - 3.5.01

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 12 May 2025

Appellant: (Applicant)	3M Innovative Properties Company 3M Center Post Office Box 33427 Saint Paul, Minnesota 55133-3427 (US)
Representative:	Mathys & Squire Theatinerstraße 7 80333 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 27 October 2021 refusing European patent application No. 17922912.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	W. Chandler
Members:	W. Zubrzycki
	L. Basterreix

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division to refuse European patent application No. 17922912.5.

II. The examining division held *inter alia* that claim 1 of the main, first and second auxiliary request then on file lacked novelty over D1 (WO 2016/118690 A1). They did not admit the late-filed third auxiliary request into the proceedings, arguing that a GPS feature added in claim 1 was disclosed in D1.

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 main request, or one of the first to eighth auxiliary requests filed therewith.

IV. In the communication pursuant to Article 15(1) RPBA, the Board informed the appellant that it was inclined not to admit these requests into the proceedings under Article 12(4) RPBA. Furthermore, the Board set out that it tended to consider that the main request was not novel over D1 and the first auxiliary request lacked an inventive step over it.

V. Oral proceedings per videoconference took place on 15 November 2024. The appellant maintained the requests of the grounds of appeal. At the end of the oral proceedings the Chairman announced that the decision would be issued in writing.

VI. Claim 1 of the main request reads:

"*A system comprising:*
an article of personal protective equipment (PPE) configured to be worn by a user that includes a communication component;
a data hub configured to be worn by the user and communicate with the article of PPE, wherein the data hub is physically separate from the article of PPE and includes a computing device configured to:

determine context data that is based at least in part on one or more of the article of PPE, at least one of a first or second work environment for the article of PPE, or the user associated with the article of PPE, wherein at least a portion of the context data comprises positional information determined by the data hub;

in response to the user moving from the first work environment to a second work environment that corresponds to the positional information determined by the data hub, select, based at least in part on the portion of the context data comprising the positional information from the data hub, a set of programmable safety rules for the second work environment that are contextually associated with the one or more of the article of PPE, the second work environment for the article of PPE, or the user associated with the article of PPE; and

configure the set of programmable safety rules at one or more of the article of PPE or the data hub to perform one or more operations based at least in part on PPE data generated by data hub and/or the article of PPE wherein the PPE data generated by the article of PPE are received from the communication component of

the article of PPE."

VII. Claim 1 of the first auxiliary request adds "*of the user*" after "*information*" in the "determine..." feature and the wording "*using a Global positioning system (GPS)*" at the end of this feature.

VIII. Claim 1 of the second auxiliary request reads:

"*A system comprising:*

an article of personal protective equipment (PPE) configured to be worn by a user that includes a communication component;

a data hub configured to be worn by the user and communicate with the article of PPE, wherein the data hub is physically separate from the article of PPE and includes a computing device configured to:

determine, context data that is based at least in part on one or more of an article of PPE, a work environment for the article of PPE, or a user associated to the article of PPE wherein at least a portion of the context data comprises positional information determined by the data hub;

select, based at least in part on the context data comprising the positional information determined by the data hub, a set of programmable safety rules that are contextually associated with the at least one article of PPE;

configure, the set of programmable safety rules to perform one or more operations based at least in part on PPE data generated by data hub and/or the article of PPE wherein the PPE data generated by the article of PPE are received from the communication component of the article of PPE; and

in response to receiving the PPE data of the article of

PPE and determining that at least one of the set of programmable safety rules has been satisfied, perform the one or more operations based at least in part on PPE data generated by data hub and/or the article of PPE wherein the PPE data generated by the article of PPE are received from the communication component of the article of PPE wherein determine a second context data, select a second set of programmable safety rule, configure the second set of programmable safety rules and perform the one or more operation occurs in response to a user moving from the first work environment to the second work environment wherein the user moving from the first work environment to the second work environment corresponds to positional information determined by the data hub."

IX. Claim 1 of the third auxiliary request adds the wording "*and wherein the data hub enables and facilitates communication between articles of PPE and personal protection equipment management system (PPEMS) for managing personal protection equipment in the first and the second work environment*" at the end of claim 1 of the second auxiliary request.

X. Claim 1 of the fourth auxiliary request adds the same amendments of the first auxiliary request to claim 1 of the second auxiliary request (see point VII).

XI. Claim 1 of the fifth auxiliary request introduces the same amendments to claim 1 of the third auxiliary request.

XII. Claim 1 of the sixth auxiliary request differs from claim 1 of the main request by the deletion of the

wording "*or the data hub*" in the last feature.

XIII. Claim 1 of the seventh auxiliary request adds *"at the one or more of the article of PPE*" after "*configure*" in the penultimate feature of claim 1 of the second auxiliary request.

XIV. Claim 1 of the eighth auxiliary request introduces the same amendment to claim 1 of the third auxiliary request.

XV. The appellant argued as follows:

The system in claim 1 of the main request specified a "complex" scenario where a data hub carried by a worker continuously detected their exact position and movement direction. Upon determining that the worker was moving towards a work environment and reached a predefined threshold distance from it, safety rules for the environment were triggered. This scenario was supported, for instance, by paragraph [41] of the application, which described a safety rule instructing the system to bar a worker without a properly configured respirator from entering a contaminated environment.

The claim wording, "*in response to the user moving from the first work environment to a second work environment that corresponds to the positional information determined by the data hub, select ... a set of programmable safety rules for the second work environment*" implied the continuous detection of the worker's exact position and movement direction. It also implied that the safety rules were triggered while the worker was still outside the work environment, excluding the "simple" scenario disclosed in D1, where

safety rules were fired only after the worker had entered a work environment.

Furthermore, unlike the position-detection mechanism in claim 1, the method in D1, that relied on measuring the strength of a radio signal emitted by a transmitter in a work environment, could not continuously provide information about the worker's exact position or movement direction. Consequently, the claimed position-detection method was novel.

Claim 1 of the first auxiliary request further reinforced this aspect by adding that the positional information was detected using GPS, which explicitly defined the capability to continuously detect the worker's position and movement direction. While D1 mentioned that the wearable device could receive a GPS signal, it did not disclose using this feature to track the worker's movements at the work site. Such a use of the GPS feature was not obvious, especially considering that GPS could also have been employed for other purposes, such as locating a lost wearable device.

Regarding admissibility, the appellant argued that the amendments in claim 1 of the second and third auxiliary requests addressed the examining division's oversight of the continuous position detection aspect of the invention. The amendment in claim 1 of the sixth to eighth auxiliary request merely restricted these claims to one of the three alternatives already present in the refused claims. Consequently, those amendments introduced no new matter.

Reasons for the Decision

1. The invention

1.1 Looking at Figure 1, the invention relates to the automatic activation of safety rules relevant to an industrial worker's 10 article of personal protective equipment (PPE) and a new environment that the worker enters 8B (referred to as the "second work environment" in the claims), see paragraphs [4] and [36] of the original application. The worker is equipped with a wearable device 14 ("*data hub*") that determines their position ("*positional information*").

1.2 The second work environment might be contaminated, and a safety rule, set for it, requires the worker to carry a respirator including a particular set of filters suitable for the environment, see [36] and [39] to [41].

1.3 However, claim 1 of the appellant's requests is not limited to any specific scenario and merely states that the worker wears an article of personal protective equipment (PPE) and a safety rule is contextually associated with this article, the second work environment, or the workers themselves. The rules are selected, configured and perform one or more operations "*in response to the user moving from the first work environment to a second work environment*". The claims do not specify the nature of these operations, merely stating that they are based on unspecified PPE data.

1.4 The appellant argued that the claims implied that the safety rule was triggered when the worker reached a threshold distance from the second work environment,

see section XV above.

1.5 However, the Board judges that the claims equally cover the "simple" scenario mentioned in paragraph [41], where safety rules — such as triggering an alert on the data hub — are executed when the data hub detects that the worker has merely entered the second work environment.

Contrary to the appellant's reading of the claims, the Board considers that they do not specify that the safety rules are triggered at a threshold distance from the second work environment and therefore do not exclude the simple scenario. Furthermore, contrary to the appellant's arguments, the Board considers that the "*determine*" feature covers any method of detecting that the data hub is within the second environment, rather than implying that the data hub continuously detects the worker's position and movement direction. In fact, detecting the direction of movement is not even disclosed in the application.

2. Admittance

2.1 Main and first auxiliary requests

The Board admits the main and first auxiliary requests into the proceedings under Article 12(4) RPBA. These requests concern subject-matter already discussed in the first instance proceedings and do not introduce new issues.

More particularly, apart from a minor amendment addressing an objection of added subject-matter, claim 1 of the main request corresponds to claim 1 of the refused main request. Claim 1 of the first auxiliary

request adds the use of GPS, which the examining division discussed in connection with the non-admitted third auxiliary request then on file, see section II above.

2.2 Second to eighth auxiliary requests

The Board does not admit these auxiliary requests into the proceedings for the following reasons:

2.2.1 Claim 1 of the second and third auxiliary requests adds to claim 1 of the refused first and second auxiliary request, respectively, that "*the user moving from the first work environment to the second work environment corresponds to positional information determined by the data hub*". The fourth and fifth auxiliary requests further combine this amendment with the use of GPS.

The Board judges that this amendment should have been filed during the first-instance proceedings (Article 12(6) RPBA). The appellant's argument that the amendment was a response to the examining division's oversight of the continuous position detection aspect of the invention does not explain why the amendment was postponed until the appeal stage and is therefore not convincing.

Furthermore, since the amendment is already part of the "*determine*..." feature in claim 1 of the refused main request, the Board cannot see how it would be suitable for overcoming the examining division's objection of lack of novelty (Article 12(4) RPBA, third paragraph).

2.2.2 Claim 1 of the sixth auxiliary request differs from claim 1 of the refused main request by removing the wording *"or the data hub*" from the feature stating that

the data hub is configured to "*configure the set of programmable safety rules at one or more of the article of PPE or the data hub to perform one or more operations*". Originally, this feature specified three alternatives for where the safety rules could be configured: at the data hub, at the article of PPE, or at both. The amendment removed the first and third alternatives, so claim 1 of the sixth auxiliary request now includes only the second alternative, i.e., configuring the safety rules at the article of PPE.

Claim 1 of the seventh and eighth auxiliary requests is likewise limited to the second alternative. This limitation was achieved by adding the wording "*at the one or more of the article of PPE*" to the "*configure*..." feature of claim 1 of the refused first and second auxiliary request, respectively. The effect of this addition is the same as the deletion of the OR alternative in claim 1 of the sixth auxiliary request.

2.2.3 The Board considers that this amendment also should have been filed during the first-instance proceedings (Article 12(6) RPBA).

2.2.4 The appellant argued that since the second alternative had been present in claim 1 of the refused main request, a claim limited to it adds no new matter.

However, the Board judges that what counts here is that this limitation raises new issues that were not discussed during the first-instance proceedings. Specifically, since the second alternative was not addressed at that time, its examination at the appeal stage would require a new discussion of clarity and inventive step, which would go against the principle of procedural economy (Article 12(4) RPBA, third

paragraph).

2.2.5 If the appellant intended to pursue the second alternative specifically, they should have limited the claim to this alternative during the first-instance proceedings, compelling the examining division to decide on it, rather than postponing the amendment to the appeal stage.

3. Main request, Article 54 EPC

3.1 Claim 1 of this request essentially corresponds to claim 1 of the refused main request, which the examining division found to lack novelty over D1. The Board agrees with this assessment.

3.2 More specifically, as essentially outlined in the decision at points 2.1 and 2.3, D1 discloses that workers carry a wearable device that wirelessly detects articles of PPE they are equipped with, see [60]. A worker moves between different workstations ([39] and [47]), which correspond to the work environments in claim 1. Each workstation emits a wireless signal, and the wearable device determines when the worker enters the proximity of a workstation by measuring the signal strength of the wireless signal emitted by the workstation, see [48]. Upon entering the workstation's proximity, the wearable device detects and graphically indicates whether any articles of PPE required for working at the workstation are missing, see [62].

3.3 The Board judges that this disclosure reads onto the simple scenario, outlined at point 1.5 above, rendering claim 1 not novel over D1.

3.4 The appellant's arguments are based on the interpretation of the more complex triggering of the safety rules and attempt to prove in particular that D1 does not disclose the method for detecting the worker's position and the moving direction implied by it.

However, these arguments are not sufficient to overcome the lack of novelty of the simple scenario. In cases like this, where the claim covers multiple scenarios, the lack of novelty of one of them cannot be remedied by the argument that the others are novel.

3.5 Hence, claim 1 lacks novelty over D1 (Article 54 EPC).

4. First auxiliary request, Article 56 EPC

4.1 Claim 1 of the first auxiliary request adds that the user's positional information is determined using GPS. From the appellant's arguments, the Board understands that this amendment aims to limit the claim to position-detection hardware that provides capabilities required by the complex scenario on which they rely.

4.2 However, the Board judges that, starting from D1, the use of GPS to detect the worker's position would have been an obvious design alternative, especially considering that, as stated in the decision (point 7), D1 already discloses that the wearable device may receive a GPS signal, see paragraph [93].

Although the Board agrees that the GPS feature might serve various purposes and that D1 does not specifically suggest using it to track the worker's position, employing GPS for this purpose would have been obvious, even without any explicit mention of this technology in D1. The fact that D1's wearable device is

already equipped with a GPS unit only makes this solution even more obvious, as it eliminates the need for the skilled person to integrate such a unit into the device.

4.3 Hence, claim 1 lacks an inventive step (Article 56 EPC).

5. Since neither of the appellant's admitted requests are allowable, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

T. Buschek W. Chandler

Decision electronically authenticated