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**Datasheet for the decision
of 9 July 2025**

Case Number: T 1132 / 23 - 3.4.01

Application Number: 16855184.4

Publication Number: 3300083

IPC: G21F9/36, G01T1/167, G21D1/00,
G21F9/28

Language of the proceedings: EN

Title of invention:

METHOD OF DETERMINING CONDITIONS FOR ACCOMMODATING RADIOACTIVE
WASTE IN CONTAINER AND RADIOACTIVE WASTE ACCOMMODATING METHOD

Patent Proprietor:

Mitsubishi Heavy Industries, Ltd.

Opponent:

GNS Gesellschaft für Nuklear-Service mbH

Headword:

Radioactive Waste Accomodation Method / Mitsubishi Heavy
Industries Ltd.

Relevant legal provisions:

EPC Art. 52(1), 56

Keyword:

Inventive step

Patentable invention - computer implemented invention -
technical and non-technical features

Decisions cited:

G 0001/19, G 0002/03, T 0641/00, T 0939/92



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1132/23 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 9 July 2025

Appellant: GNS Gesellschaft für Nuklear-Service mbH
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Representative: Cabinet Beau de Loménie
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
26 April 2023 concerning maintenance of the
European Patent No. 3300083 in amended form.

Composition of the Board:

Chairman P. Scriven
Members: P. Fontenay
L. Bühler

Summary of Facts and Submissions

- I. The opponent appealed the Opposition Division's interlocutory decision. They requested that it be set aside and that the patent be revoked.
- II. The opposition relied on grounds under Article 100(a) in conjunction with Articles, 52(2)(c), 54, and 56 EPC; and under Articles 100(b) and (c) EPC.
- III. In the course of the opposition proceedings, the proprietor requested rejection of the opposition or, in the alternative, maintenance of the patent on the basis of one of amended sets of claims according to auxiliary requests 1 to 5.
- IV. The Opposition Division held that the grounds of opposition under Article 100(c) EPC, as to added subject-matter, and 100(b) EPC, as to sufficiency of disclosure, did not prejudice the maintenance of the patent, but that the subject-matter of claim 1 fell under the exclusion from patentability of methods for performing mental acts, under Article 52(2)(c) EPC: even though the claimed subject-matter involved technical considerations, all the method steps could be performed purely mentally.
- V. The Opposition Division, however, held that auxiliary request 1, in which claim 1 had been amended by

specifying that the claimed method was computer-implemented, met the requirements of the EPC.

- VI. In their reply to the appeal, the proprietor requested, as a main request, dismissal of the appeal. In the alternative, they requested that the patent be maintained on the basis of the claims of any of auxiliary requests 1 to 4, annexed to the letter of reply. Auxiliary requests 1 to 4 are, respectively, identical to auxiliary requests 2 to 5 filed in the course of the opposition proceedings.
- VII. The proprietor's initial request for oral proceedings was later withdrawn.
- VIII. After that the European patent had been surrendered or had lapsed with effect for all the designated Contracting States, the parties were informed, in a communication under Rule 84(1) EPC, that the opposition proceedings might be continued at the request of the opponent, provided that, within two months from notification of the communication, such a request was filed.
- IX. The opponent requested continuation of the proceedings.
- X. Claim 1 of the main request reads:

*A computer-implemented container
accommodation condition determination method
of determining an accommodation condition*

for accommodating a plurality of waste pieces (900), obtained by cutting radioactive waste (9), into at least one storage container (91), for obtaining at least one waste body (950) by accommodating the plurality of waste pieces into the at least one storage container, the method comprising:

a step (S801 , S1205) of obtaining dose information of each of the plurality of waste pieces;

a step of, assuming, for each of a plurality of arrangement condition candidates (122) specifying the storage container (91) in which each of the waste pieces (900) is to be stored and an accommodation position inside the storage container (91), that the waste pieces (900) are arranged inside the storage container (91) in accordance with the arrangement condition candidate (122), and of selecting at least one of the arrangement condition candidates which satisfy a limiting condition required for the waste body in each of the storage containers;

a step (S806, S1210) of calculating a necessary storage container number which is the number of storage containers required to accommodate the plurality of waste pieces in accordance with the selected arrangement condition candidate (122); and

a step of specifying the arrangement condition candidate such that the necessary storage container number is minimum, wherein the step of selecting the arrangement condition candidate includes

obtaining a surface dose rate of the waste body (950) in a case where each of the waste pieces is arranged at the accommodation position in the storage container specified by the arrangement condition candidate (122) on the basis of the dose information of each of the waste pieces (900), and selecting the arrangement condition candidate (122) satisfying the limiting condition at least specifying that the surface dose rate of the waste body (950) is not higher than a threshold.

- XI. Claims 2 to 9 of the main request are dependent claims. Claim 10 is directed to a method of radioactive waste accommodation, comprising a step of accommodating waste pieces inside a storage container, in accordance with the accommodation condition determined by any one of claims 1 to 9.
- XII. Claim 1 of auxiliary requests 1 to 4 incorporates additional steps in claim 1.
- XIII. In a communication under Article 15(1) RPBA, annexed to a summons to oral proceedings, the parties were informed of the Board's provisional opinion.
- XIV. In the absence, in claim 1 of the main request, of any reference to a specific use of the data obtained, (i.e. the necessary storage container number, the specification of the arrangement condition candidate, the surface dose rate of the waste body, ...), the

objective problem to be solved needed to be defined in more general terms than those suggested by the proprietor and Opposition Division, for the disclosed invention and its various embodiments. Even though the effects relied upon were based on technical considerations, no technical effects other than those resulting from the program running on the computer, namely calculating the necessary storage container number or the arrangement condition candidate and the surface dose rate of the waste body, could be derived from the claim language. In the absence of technical effects going beyond the normal interaction of the algorithm with the computer, the claimed subject-matter could not be considered inventive. Similar issues applied to the computer implemented method of auxiliary requests 1 to 4.

- XV. Concretely, the passages of the Board's communication relevant for the present decision read:

General considerations regarding inventive step (all requests)

1. Claim 1 of present main request was amended during opposition proceedings with regard to claim 1 of the patent, so as to specify that what it defines is computer-implemented. The Board concurs with the Opposition Division, that amended claim 1 of the main request involves technical means and constitutes an invention in the meaning of Article 52(1) EPC. The same conclusion applies to claim 1 of auxiliary requests 1 to 4.

2. The absence, however, of clearly identifiable technical effects derivable from the claim that are achieved by the recited method steps, or derivable from their association, implies that the objective problem of minimising the number of containers needed to store the waste, that has been put forward by the patentee and accepted by the Opposition Division, is too specific since it does not apply over the whole ambit of the claim (see point 8 below).

3. Only the technical effects that are at least implied in the claims should be considered in the assessment of inventive step (cf. decision of the Enlarged Board of appeal G 1/19, OJ 2021, 77, Point 124).

4. The method of the various version of claim 1 of the pending requests does not affect the internal functioning of the computer on which it is run. Such implementations are also not addressed in the patent specification. The issue regarding inventive step thus depends on the determination of technical effects that go beyond this mere normal interaction between program and computer.

5. The opponent acknowledged that the amendment in the claim, specifying that the claimed method is "computer-implemented", established the technical nature of the invention, but underlined, under point VI of the statement of grounds, that this did not

affect the inherent nature of the recited method steps which relate to mental activities.

6. *The approach developed by the boards of appeal regarding claims directed to a mix of technical and non-technical features is based on the decision in T 641/00 (COMVIK, OJ 2003, 352) which underlines the necessity, when assessing inventive step, to take account of all those features that contribute to the technical character of the invention, whether they are technical per se or not. Only non-technical features, as such, are ignored. The technical problem to be solved according to the problem-solution approach may be formulated using an aim in a non-technical field.*

7. *The recited method steps contribute in determining an optimised accommodation condition in terms of place and number of containers (see patent application, paragraph 0007). The problem addressed by the invention is technical. It corresponds to the problem addressed in documents D1a, D1b, and D3.*

8. *The objective problem identified by the Opposition Division was, hence, to provide an alternative method for minimising the number of required containers for accommodation of the waste pieces.*

9. *According to an alternative approach, starting from common general knowledge, the*

Opposition Division defined the objective problem as providing for a suitable method of determining the condition of container accommodation, adapted to the accommodation of a plurality of waste pieces, in particular for a method that allows the conditions defined in the guidelines corresponding to D2 to be fulfilled.

10. In the absence, however, in claim 1 of the proprietor's request, of any reference to a specific use of the obtained data, (i.e. the necessary storage container number, the specification of the arrangement condition candidate, the surface dose rate of the waste body..., the objective problem to be solved needs to be defined in more general terms than those suggested by the proprietor and opposition Division for the disclosed invention and its various embodiments (cf. decisions of the Enlarged Board of appeal G 2/03, OJ 2004, 448, point 2.5.2; G 1/19, OJ 2021, 77, point 82, with reference in both decisions to decision T 939/92, OJ 1996, 309). The possible uses of the obtained data regarding the accommodation conditions might well encompass non-technical purposes. This might include, for example, providing the documentation required for administrative authorisations regarding the respect of legal or technical specifications or guidelines as to the storing and transport of waste. The claimed method might also encompass tests for IT experts, asked to elaborate the most efficient algorithm for

the task or to compare the performance of computers on which such algorithms are run.

11. Even though the effects relied upon are based on technical considerations, no technical effects other than those resulting from the program running on the computer, namely calculating the necessary storage container number or the arrangement condition candidate and the surface dose rate of the waste body, can be derived from the claim language. In the absence of technical effects going beyond the normal interaction of the algorithm with the computer, the claimed subject-matter cannot be considered inventive.

12. The parties are invited to elaborate on this aspect of the analysis.

13. Similar issues apply to the computer implemented method according to auxiliary requests 1 to 4.

14. Claim 10 of the main request is a dependent claim. It comprises the step of accommodating the waste pieces inside the storage container in accordance with the container accommodation condition determination method according to any of claims 1 to 9. The added limitation implies that the explicitly recited technical purpose of the claimed method needs to be considered in the definition of the objective problem to be solved. This finding applies, similarly, to the dependent claim

of auxiliary requests 1 to 4 concerning the radioactive waste accommodation method.

- XVI. In reaction to the Board's invitation under point 12 of the communication, the opponent indicated that they shared the Board's analysis. They further underlined that, under the circumstances, a decision could be reached in writing. In the alternative, a request for the oral proceedings to be held by video link was filed.
- XVII. The proprietor did not respond to the Board's communication.
- XVIII. Oral proceedings were cancelled.

Reasons for the Decision

1. The Board indicated, under points 1 to 14 of its communication (reproduced above), why, in its opinion, the main and auxiliary requests did not meet the requirements of inventive step (Articles 52 and 56 EPC).
2. This preliminary assessment was not challenged by the proprietor.

3. The Board does not see any reason to deviate from its preliminary assessment.

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:



S. Sánchez Chiquero

P. Scriven

Decision electronically authenticated