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Datasheet for the decision of 27 August 2020

Case Number: T 1329/16 - 3.2.06

Application Number: 07850903.1

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IPC: F01N3/02, F01N3/18, F02D45/00

Language of the proceedings: EN

Title of invention:
CONTROL METHOD OF EXHAUST EMISSION PURIFICATION SYSTEM AND EXHAUST EMISSION PURIFICATION SYSTEM

Applicant:
Isuzu Motors, Ltd.

Headword:

Relevant legal provisions:
EPC Art. 123(2), 84
RPBA 2020 Art. 25(1), 13(1)

Keyword:
Amendments - added subject-matter (yes)
Claims - clarity - main request (no)
Late-filed auxiliary requests - request clearly allowable (no)

Decisions cited:
T 0634/16

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

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Case Number: T 1329/16 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 27 August 2020

Appellant: (Applicant)	Isuzu Motors, Ltd. 26-1, Minami-Oi 6-chome Shinagawa-Ku Tokyo 140-8722 (JP)
Representative:	WSL Patentanwälte Partnerschaft mbB Kaiser-Friedrich-Ring 98 65185 Wiesbaden (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 25 November 2015 refusing European patent application No. 07850903.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. Harrison
Members:	P. Cipriano
	W. Ungler

Summary of Facts and Submissions

I. The appellant (applicant) filed an appeal against the decision of the examining division, dated 25 November 2015 refusing European patent application No. 07 850 903.1.

II. With its grounds of appeal, the appellant also filed auxiliary requests 1 and 2.

III. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated *inter alia* that the subject-matter of claim 1 of the main request and auxiliary requests 1 and 2 did not fulfil the requirement Article 123(2) EPC.

IV. With letter dated 27 July 2020 the appellant replaced all its previous requests with an amended main request and auxiliary requests 1 to 6.

V. The oral proceedings before the Board took place on 27 August 2020, during which the appellant withdrew the first to sixth auxiliary requests and filed a new first auxiliary request.

The appellant's final requests were that the decision under appeal be set aside and a patent be granted on the basis of the main request filed with letter dated 27 July 2020 or on the basis of the new first auxiliary request filed during the oral proceedings of 27 August 2020.

VI. Claim 1 of the main request reads as follows:
"1. A method of control of an exhaust emission purification system (1) provided with an exhaust emission purification apparatus having a diesel particulate filter (12) in an exhaust passage (11) connected to an internal combustion engine (10) mounted on a vehicle, characterized in that the method comprising the step of opening an exhaust throttle valve (14) if an engine load of the internal combustion engine (10) is equal to or larger than a predetermined first judgment value during execution of a forced regeneration control with said exhaust throttle valve (14) closed when the vehicle speed is zero."

Claim 1 of the new first auxiliary request reads as follows:
"1. A method of control of an exhaust emission purification system (1) provided with an exhaust emission purification apparatus having a diesel particulate filter (12) in an exhaust passage (11) connected to an internal combustion engine (10) mounted on a vehicle, characterized in that the method comprising the step of checking whether the engine load reaches at least a first predetermined judgement value using a fuel injection amount (Q_f) and opening an exhaust throttle valve (14) if the fuel injection amount of the internal combustion engine (10) is equal to or larger than a predetermined first judgment value (Q_{f1}) and lower than a predetermined second judgement value (Q_{f2}), and generating an alarm of failure of said exhaust throttle valve (14) if the fuel injection amount of the internal combustion engine (10) is equal to or larger than the predetermined second judgement value (Q_{f2}) which is larger than said predetermined first judgement value (Q_{f1}) during execution of a forced regeneration of the diesel particulate filter

with said exhaust throttle valve closed when the vehicle speed is zero."

VII. The appellant's arguments relevant to the present decision may be summarized as follows:

Main request - Article 123(2) EPC and Article 84 EPC

The English text of the application perhaps gave rise to certain doubts in understanding, but the skilled person should sensibly interpret various terms by considering what was meant technically. The expressions "is equal to or larger than" and "the vehicle speed is zero" in the new main request did not constitute amendments to claim 1 and were instead only clarifications that did not change its scope. Step 24 in Figure 3 and paragraph [0038] of the description provided a basis for these clarifications.

The feature "forced regeneration control" was clear. The skilled person understood that a forced regeneration control meant the steps that constituted the supervision of a forced regeneration and that it was a diesel particulate filter that underwent this forced regeneration control.

New first auxiliary request - admittance

Claim 1 of the new first auxiliary request included all the necessary steps of the subroutine depicted in Figure 3 and in the corresponding paragraphs of the description. Step S22 corresponded to the feature "when the vehicle speed is zero" and Step 26 was implicit for the skilled person since it was part of all methods of control of an exhaust purification system.

The amendments overcame all the previously raised clarity objections and did not give rise to any new ones. The skilled person reading the claim would understand that the expression "during execution of a forced regeneration of the diesel particulate filter with said exhaust valve closed and when the vehicle speed is zero" applied to all the steps defined in the claim and not just the last step.

Reasons for the Decision

1. Main request

Article 123(2) EPC

1.1 Leaving aside the question of admittance of the request into the proceedings, claim 1 does not fulfil the requirement of Article 123(2) EPC.

1.2 Claim 1 of the main request has been amended such that the method now comprises the following step of opening an exhaust throttle valve (amendments underlined)

"if an engine load is equal to or larger than a predetermined first judgment value during execution of forced regeneration control with said exhaust throttle valve (14) closed when the vehicle speed is zero."

1.3 The appellant argued that the language used in the application as filed was perhaps not ideal, and had probably been the result of translation issues, but the expressions "an engine load is equal to or larger than

a predetermined first judgment value" and "the vehicle speed is zero" were only clarifications of what was meant.

1.3.1 The Board is not persuaded by this argument. The original application was filed in English, one of the official languages under Article 14(1) EPC, and there is no legal basis for applying a different standard under Article 123(2) EPC to applications filed in one of the official languages which were the result of translations prior to filing. Thus, the application as filed provides the only text, upon which the Board can rely during the appeal proceedings, not least since the Board cannot know what else the writer might have intended.

1.3.2 The Board finds that replacing the original expressions "an engine load reaches at least a predetermined first judgment value" and "the vehicle is stopping" by the expressions "an engine load is equal to or larger than a predetermined first judgment value" and "vehicle speed is zero" alter the text of the claim and thus are indeed amendments as stipulated under Article 123 EPC that need to fulfil the requirement of Article 123(2) EPC, regardless of their intended purpose (here argued to be a mere "clarification").

1.3.3 In particular, the meaning of the amended expressions is not the same as the expressions as originally filed. The expression "if an engine load reaches at least a predetermined first judgment value" in the context of the claim implies that the engine load reaches the predetermined first judgment value which is a transient event happening at some unspecific point in time, whilst the expression "if an engine load is equal to or larger than a predetermined first judgment value" is an

instantaneous condition, in this context required to trigger the opening of the exhaust throttle valve.

Further, in the expression "when the vehicle is stopping" as defined in claim 1 as originally filed, the use of the present participle of the verb "to stop" in this way can only be understood in the sense that the vehicle is in the act of stopping and not yet (e.g. fully) stopped, i.e. the speed is not yet zero. On the other hand, the expression "when the vehicle speed is zero" implies that the vehicle is (fully) stopped.

Thus the amendments have altered the subject-matter of the claim and cannot be seen as mere "clarifications".

1.4 The basic principle when applying Article 123(2) EPC is to be found in the jurisprudence of the Enlarged Board of Appeal and was summarised and confirmed in its decision G 2/10 (OJ EPO 2012, 376, point 4.3). Applied to the present case, it thus has to be established whether the subject-matter of the claim is directly and unambiguously derivable by a skilled person, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the documents (i.e. description, claims and figures) as originally filed.

1.5 The appellant argued that step 24 in Figure 3 and paragraph [0038] of the description as originally filed provided a basis for the combination of features of claim 1 of the main request.

The Board finds that both step 24 and paragraph [0038] relate, however, to a control method of the embodiment according to Figure 3, which is more specific than the one defined in claim 1.

1.5.1 As also mentioned in the Board's preliminary opinion (see e.g. item 1.3 second paragraph), step 24 is notably just one part of an entire subroutine for controlling the operation of the exhaust throttle valve, this being described in steps 20a, 20b and 20c, and which comprises further steps which have not been included in claim 1 and to which step 24 is inextricably linked. For example, the steps 22, 24 and 26 of Figure 3, which are explained in paragraphs [0038] to [0040], describe further conditions and steps of the subroutine regarding the specific operation of the exhaust throttle valve that influence the forced regeneration. Due to this influence, they are at least functionally linked to the other steps of the operation of the exhaust throttle valve. However, these steps have been omitted from claim 1. Nowhere can a disclosure be found that only step 24 of the subroutine can be extracted and used in isolation.

Still further, step 24 in Figure 3 depicts the inequality "$Q_f \geq Q_{f1}$", but (as explained also in paragraph [0039]) Qf relates to the fuel injection amount, the only parameter used to establish the engine load in the embodiment according to Figure 3.

1.5.2 Paragraph [0038] of the description also belongs to the description of the specific embodiment of Figure 3 and describes steps 21 and 22 of the subroutine. It discloses not only that the vehicle speed is zero but it describes the vehicle speed merely as a further condition for opening the exhaust throttle valve. Paragraph [0038] therefore also does not provide a basis for the more general combination of features of claim 1.

1.6 For these reasons, claim 1 does not fulfil the requirement of Article 123(2) EPC.

Article 84 EPC

1.7 As already pointed out in the preliminary opinion of the Board (see point 2.7.6), the expression "forced regeneration control" *per se* is not clear; it is also not clear for the skilled person how a "forced regeneration control" (as defined in claim 1) should differ from e.g. the "forced regeneration" (as defined in the system claim 3).

1.8 The appellant argued that the skilled person understood that the two expressions were corresponding apparatus and method features but the Board does not find this argument persuasive. It is not clear for the skilled person reading the claim what a forced regeneration control is as part of the method. It is also not clear whether this forced regeneration control is something which is even directed to a regeneration of the diesel particulate filter (as appears in the description for example), since the filter is not defined in claim 1 in any recognisable connection with the "forced regeneration control".

1.9 Claim 1 therefore also does not fulfil the requirement of Article 84 EPC.

2. Admittance of the new first auxiliary request

2.1 The new first auxiliary request was filed during the oral proceedings.

2.2 According to the transitional provisions stipulated in Article 25(1) RPBA 2020, the RPBA 2020 apply to any

appeal pending on their date of entry into force (see e.g. T 634/16, Reasons 7 to 14). It follows that Article 13(1) RPBA 2020 applies to the present case.

Article 13(1) RPBA 2020 stipulates that any amendment to the case may be admitted only at the Board's discretion. This discretion shall be exercised in view of, *inter alia*, the current state of the proceedings, the suitability of the amendment to resolve the issues which were admissibly raised and whether the party has demonstrated that any such amendment, *prima facie*, overcomes the issues raised by the Board and does not give rise to new objections.

2.3 Claim 1 has been amended to include the underlined and exclude the struck-out features

- checking whether the engine load reaches at least a first predetermined judgement value using a fuel injection amount (Q_f) and
- opening an exhaust throttle valve (14) if ~~engine load~~ the fuel injection amount of the internal combustion engine (10) is equal to or larger than a predetermined first judgment value (Q_{f1}) and lower than a predetermined second judgement value (Q_{f2}), and
- generating an alarm of failure of said exhaust throttle valve (14) if the fuel injection amount of the internal combustion engine (10) is equal to or larger than the predetermined second judgement value (Q_{f2}) which is larger than said predetermined first judgement value (Q_{f1}) during execution of a forced regeneration of the diesel particulate filter with said exhaust throttle valve closed when the vehicle speed is zero.

This corresponds to steps 25 and 27 of Figure 3.

2.4 However, as explained above under points 1.5.1 and 1.5.2 in the context of the main request, the subroutine described in Figure 3 and paragraphs [0038] to [0043] comprises further steps and conditions of the subroutine which are at least functionally linked to the opening of the exhaust throttle valve. These are still not defined in claim 1 of the new first auxiliary request; one such step is step 26.

2.5 The appellant argued that claim 1 included all the "necessary" steps of the subroutine depicted in Figure 3 and in the corresponding paragraphs of the description. Step 26 (closing the exhaust throttle valve) was argued as being implicit for the skilled person since it was part of all methods of control of an exhaust purification system.

The Board does not agree with this argument. Even if it were considered implicit that a forced regeneration of a diesel particulate filter requires a closed exhaust throttle valve, it is not implicit that a step of closing the valve is present if the engine load is lower than a first judgment value using a fuel injection amount as described for steps 24 and 26 in Figure 3 and paragraph [0039]. These steps are (structurally and) functionally linked to the other steps of operation of the exhaust throttle valve and yet find no correspondence in the features of claim 1. Claim 1 of the new first auxiliary request therefore, at least *prima facie*, does not fulfil the requirement of Article 123(2) EPC.

2.6 Further, the amendments carried out in claim 1 have also *prima facie* changed the meaning of the claim such that the conditions of exhaust valve throttle closed and zero vehicle speed might be understood as applying

only to the step of generating an alarm of failure (which would not have been disclosed). At best it is not clear to which steps these conditions apply.

2.7 The appellant argued that the skilled person reading the claim understood that the expression "during execution of a forced regeneration of the diesel particulate filter with said exhaust valve closed and when the vehicle speed is zero" applied to all the steps defined in the claim.

The Board does not accept this. Due to the existence of a joining comma in the wording before the feature "**,** and generating an alarm of failure...", it is at least not unambiguous for the skilled person reading the claim whether the aforementioned expression applies or not to the method steps defined before the comma.

3. The amendment thus introduces an ambiguity into the wording of claim 1. The claim therefore, at least *prima facie*, also does not fulfil the requirement of Article 84 EPC.

3.1 As discussed above, the amendments to the new first auxiliary request do not, at least *prima facie*, overcome the issues raised by the Board regarding Article 123(2) EPC and also give rise to new objections at least under Article 84 EPC. The Board thus exercised its discretion under Article 13(1) RPBA 2020 not to admit this request into the proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

D. Grundner M. Harrison

Decision electronically authenticated