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**Datasheet for the decision
of 25 March 2022**

Case Number: T 0391/19 - 3.4.02

Application Number: 14158803.8

Publication Number: 2778645

IPC: G02B23/24, G06T7/00, G01M5/00

Language of the proceedings: EN

Title of invention:
Turbomachine component monitoring system and method

Patent Proprietor:
General Electric Company

Opponent:
Raytheon Technologies Corporation

Headword:

Relevant legal provisions:
EPC Art. 123(3)
RPBA 2020 Art. 13(2)

Keyword:
Amendments - extension of protection (yes)
Amendment after summons - exceptional circumstances (no)

Decisions cited:

T 0190/99

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0391/19 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 25 March 2022

Appellant: Raytheon Technologies Corporation
(Opponent) Pratt & Whitney
400 Main Street
East Hartford, CT 06118 (US)

Representative: Dehns
St. Bride's House
10 Salisbury Square
London EC4Y 8JD (GB)

Respondent: General Electric Company
(Patent Proprietor) 1 River Road
Schenectady, NY 12345 (US)

Representative: Freigutpartners IP Law Firm
Hahnrainweg 4
5400 Baden (CH)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
23 November 2018 concerning maintenance of the
European Patent No. 2778645 in amended form.**

Composition of the Board:

Chairman R. Bekkering
Members: H. von Gronau
T. Karamanli

Summary of Facts and Submissions

- I. The opponent's appeal is directed against the interlocutory decision of the opposition division concerning the maintenance of the European patent No. 2778645 in amended form. The opposition division was of the opinion that the subject-matter of claim 1 of the then main request (patent as granted) extended beyond the content of the application as filed on which the patent was based and that the patent as amended according to the then auxiliary request 1 met the requirements of the EPC.
- II. With the statement setting out the grounds of appeal, the appellant requested that the decision of the opposition division be set aside and that the patent be revoked. As an auxiliary measure it requested that oral proceedings be held.
- III. The respondent (patent proprietor) did not reply to the grounds of appeal of the appellant.
- IV. In a communication pursuant to Article 15(1) RPBA 2020 the board expressed its provisional opinion that, inter alia, the subject-matter of claim 1 considered allowable by the opposition division did not extend the protection it confers according to Article 123(3) EPC.
- V. With letter dated 1 March 2022, the appellant disagreed with the provisional opinion of the board and amongst others specified as to why the subject-matter of the independent claim 1 considered allowable by the opposition division for maintenance of the patent in amended form did not meet the requirement of Article 123(3) EPC.

VI. With letter dated 21 March 2022 the respondent filed auxiliary requests 1 to 3. The respondent also put forward arguments as to why the letter of the appellant dated 1 March 2022 should be disregarded and auxiliary requests 1 to 3 be admitted.

VII. Oral proceedings took place on 25 March 2022. During the oral proceedings, the respondent filed claims 1 to 10 of an auxiliary request 0 and stated that this request preceded auxiliary requests 1 to 3 in the ranking of the auxiliary requests. Later, auxiliary requests 1 to 3 were withdrawn.

The parties stated their final requests as follows:

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request) and, in the alternative, that the decision under appeal be set aside and that the patent be maintained as amended on the basis of the claims of auxiliary request 0 filed at the oral proceedings of 25 March 2022.

At the end of the oral proceedings the chairman announced the board's decision.

VIII. Claim 1 considered allowable for maintenance of the patent in amended form by the opposition division in the interlocutory decision (main request) reads as follows:

"A system comprising:

a borescope probe (22) sized to pass through an opening (14) in a turbomachine (4), the borescope probe for detecting a symbolic data array (18) on a component (6) within the turbomachine; and

at least one computing device (24) operably coupled to the borescope probe and configured to monitor the component (6) within the turbomachine (4) by performing actions including:

obtaining image data (30) about the symbolic data array (18) located on the component within the turbomachine (4) from the borescope probe;

evaluating the image data (30) to determine whether the image data is compatible with a symbolic data array analysis program (28) configured to execute on the at least one computing device (24), and

analyzing the image data (30) using the symbolic data array analysis program (28) in response to determining that the image data is compatible with the symbolic data array analysis program, in order to

determine a characteristic of the symbolic data array (18), which characteristic includes information about the component (6), wherein the information comprises at least one of: an indication of strain, stress, fatigue, material creep, by means of at least one of a symbolic strain rosette, a symbolic strain gauge, a Moiré fringe pattern or another similarly optical-based strain indicator; and

initiating a message indicating that the image data (30) is incompatible with the symbolic data array analysis program (28) in response to determining that the image data is not compatible with the symbolic data array analysis program and obtaining updated image data (40) about the symbolic data array (18) after the initiating of the message and repeating obtaining updated image data (40) until the updated image data

(40) is compatible with the symbolic data array analysis program (28) thereby indicating information of one or more characteristics of the component (6)."

Claim 1 of auxiliary request 0 differs from claim 1 of the main request in that the last two paragraphs read:

"determine a characteristic of the symbolic data array (18), which characteristic includes information about the component (6), wherein the information comprises an indication of strain by means of at least one of a symbolic strain rosette, a symbolic strain gauge, a Moiré fringe pattern or another similarly optical-based strain indicator; and

initiating a message indicating that the image data (30) is incompatible with the symbolic data array analysis program (28) in response to determining that the image data is not compatible with the symbolic data array analysis program thereby indicating information of one or more characteristics of the component (6), wherein the information of one or more characteristics of the component (6) includes a message indicating that the borescope (22) be repositioned from the first position to the second position and obtaining updated image data (40) about the symbolic data array (18) after the initiating of the message and repeating obtaining updated image data (40) until the updated image data (40) is compatible with the symbolic data array analysis program (28) thereby indicating information of one or more characteristics of the component (6)."

Reasons for the Decision

1. The appeal is admissible.
2. Main request - claim 1 - amendments, extension of protection (Article 123(3) EPC)
 - 2.1 In granted claim 1 the last paragraph reads:
"initiating a message indicating that the image data (30) is incompatible with the symbolic data array analysis program (28) in response to determining that the image data is not compatible with the symbolic data array analysis program thereby indicting [sic] information of one or more characteristics of the component."
 - 2.2 The appellant was of the opinion that the features of the last paragraph of granted claim 1 provided an inextricable link between the indication of a component characteristic and the incompatibility message. The word "thereby", which meant "as a result of this", required the incompatibility message of granted claim 1 to also indicate information of one or more characteristics of the component. Therefore, the invention as defined in granted claim 1 was directed to using the incompatibility message to also indicate a component characteristic. For example, the message that was initiated might indicate an incompatibility and also provide information about the component, such as a part number, sequence number or component type. This was supported by the granted specification, for example at column 4, lines 47 to 50, in which the characteristic of the symbolic data array 18 (which was part of the component) could include an identification number, symbol and/or letter. Such a system could

relate to a system by which components were screened using the symbolic data array. For example, if the image data was not compatible with the symbolic data array, a message could be initiated indicating this, and also that the component was of a particular type, e.g., a turbine blade. The appellant did not agree with the opposition division's view on sheet 6, paragraph 4 of the contested decision on the appellant's argument "p1" where the opposition division incorrectly concluded that the wording of granted claim 1 "makes no sense and the skilled person would not consider it". As argued during the first-instance oral proceedings, even if, *arguendo*, the use of the word "thereby" in this context might seem illogical, its use would not be deemed by the skilled person to be nonsensical and it would try to assign a technical contribution to its meaning. It was perfectly plausible that the system of granted claim 1 could initiate a message indicating incompatibility whilst providing information about the component. Therefore, the skilled person would not simply ignore the word "thereby" as making no sense, as argued by the opposition division. This feature, namely initiating an incompatibility message that also indicates a component characteristic, could not be found in claim 1 of the current main request. Instead, claim 1 of this request attempted to associate the wording ("thereby indicating information of one or more characteristics of the component") with the steps of obtaining updated image data. Accordingly, the invention defined in granted claim 1 provided a technical contribution that was not found in claim 1 of current main request. As a result, the protection conferred by amended claim 1 of current main request was extended from that conferred by claim 1 as granted, in violation of Article 123(3) EPC (see statement setting out the grounds of appeal, paragraphs 7 to 10).

During the oral proceedings before the board, the appellant stressed that in amended claim 1 according to the main request it was no longer required to provide information of one or more characteristics of the component as part of the incompatibility message and therefore the scope of protection was extended. When reading granted claim 1, the person skilled in the art would try to give the wording a technically reasonable meaning. If the image of the symbolic data array was optically unclear the message would for example indicate that the borescope be repositioned as disclosed in paragraph [0020] and claim 7 of the granted patent or provide further information about the component other than strain. According to paragraph [0022] of the patent, there could be more than one symbolic data array on the component and if it was not possible to receive information about strain still other information about the component could be obtained. Therefore, in the light of the description, it was plausible to indicate information about characteristics of the component together with the incompatibility message. When assessing a claim one had to adhere to the wording of the claim. Since there was no comma before the word "thereby", one could not simply assume that there was one and change the meaning of the claim wording.

- 2.3 During the oral proceedings before the board, the respondent argued that, in line with decision T 190/99, the person skilled in the art should when considering a claim rule out interpretations which were illogical or which did not make technical sense. It should try to arrive at an interpretation of the claim which is technically sensible and takes into account the whole disclosure of the patent. The patent had to be construed by a mind willing to understand not a mind

desirous of misunderstanding. The appellant had tried to misunderstand the claim. The person skilled in the art would however try to see a reasonable meaning in the claim and consider the whole claim wording. It would construe that also in case of an incompatibility message the information provided related to the whole process, i.e. the information defined in the penultimate paragraph of the granted claim referring to characteristics of the symbolic data array. There might be an obvious error in the claim in that a comma was missing before the word "thereby", because it was evident to a person skilled in the art that the definition following the word "thereby" referred to the entire wording of the claim, in particular to the analysing and determining of the symbolic data array. Paragraph [0035] of the patent specification emphasised that the aim of the invention was to monitor the components within the turbomachine. The information that the borescope be repositioned mentioned in paragraph [0020] of the patent was not a characteristic of the component. Claim 1 of the present main request provided the very same information but was further narrowed by adding a step of obtaining updated image data about the symbolic data array after initiating the incompatibility message. If the image data was incompatible no useful information about the characteristic of the component could be provided. A blurred image of the symbolic data array was not information about the component. It was the aim of the patent to obtain information of the component and also granted claim 4 defined that an updated image was obtained and evaluated whether it was compatible with the analysis program. The information about the component was provided when the image data was found to be compatible with the symbolic data array analysis program. If the data array itself was blurred it would

not make sense to repeat the step of obtaining the image data. If there were more symbolic data arrays on the component as disclosed in paragraph [0022] there was still only one image that was compatible or not with the analysis program. Therefore, it was the image that was not compatible with the analysis program and not the or one data array. When the image was incompatible with the analysis program no information could be gained.

- 2.4 The board shares the view of the appellant. The invention of granted claim 1 is directed to using the incompatibility message to also indicate information about a component characteristic. It is generally possible to indicate some sort of information of a characteristic of the component together with the incompatibility message even if the image data does not allow to analyse the symbolic data array. The expression "characteristics of the component" is so broad that it covers also other information than the information from the symbolic data array. The components within the turbomachine can be monitored by gaining information and indicating for example the kind or position of the component, as the appellant suggested, without using the symbolic data array analysis program. The skilled person does not simply ignore the word "thereby" as making no sense, as argued by the opposition division or add a comma before the word "thereby" so that it could refer to another portion of the claim as the respondent suggested. This feature, namely initiating an incompatibility message that also indicates a component characteristic, cannot be found in claim 1 of the current main request as upheld by the opposition division. As a result, the protection conferred by claim 1 of the present main

request is extended with respect to that conferred by claim 1 as granted.

- 2.5 The board comes therefore to the conclusion that claim 1 of the main request does not meet the requirement of Article 123(3) EPC.
3. Auxiliary request 0 - admittance (Article 13(2) RPBA 2020)
 - 3.1 During the oral proceedings the respondent filed amended claims 1 to 10 of auxiliary request 0.
 - 3.2 The respondent argued that it was surprised by the board's altered opinion that there could be information about one or more characteristics of the component even if the image data was incompatible with the symbolic data array analysis program. The appellant had made the surprising argument that the information of the characteristic of the component could consist in information that the image was optically unclear and that the borescope be repositioned. This argument was first presented during the oral proceedings before the board and it was the only reasonable argument that could have changed the opinion of the board. Amended claim 1 of auxiliary request 0 reintroduced the feature of granted claim 1 that information of one or more characteristics of the component was indicated together with an incompatibility message, as disclosed in originally filed claim 6.
 - 3.3 The appellant was of the opinion that auxiliary request 0 filed during the oral proceedings should not be taken into account in accordance with Article 13(2) RPBA 2020. The objection that the subject-matter of claim 1 of present main request violated Article 123(3)

EPC had already been raised in the grounds of appeal and auxiliary request 0 should have been filed already with a reply to the appeal. The general argument was merely specified in the oral proceedings before the board. The appellant could not recognise cogent reasons that justified exceptional circumstances as required by Article 13(2) RPBA 2020. Furthermore claim 1 of auxiliary request 0 prima facie raised new issues under Articles 123(2) and 84 EPC and did not overcome the previously raised objections. For example, claim 1 recited the steps of obtaining updated image data, and repeating obtaining updated image data, but this feature was recited on page 8 of the originally filed description only in combination with evaluating and analysing (and re-obtaining) the updated image data (see statement of grounds of appeal, paragraph 14), and the amendment to claim 1 was not based on claim 6 as originally filed, as the respondent suggested, or any other part of the originally filed application, because the information of one or more characteristics of the component was not disclosed in combination with the message indicating that the borescope be repositioned.

- 3.4 The board cannot recognise exceptional circumstances which have been justified with cogent reasons by the respondent. The objection under Article 123(3) EPC was already raised in the statement of grounds of appeal and the respondent could and should have filed amended claims already in reply to the statement of grounds of appeal. The board cannot recognise that the appellant has introduced a new objection under Article 123(3) EPC during the oral proceedings. It only has specified its previously raised objection in more detail without introducing any surprising aspects. The fact that the board expressed a provisional opinion or changed it does not constitute exceptional circumstances that

could justify a submission of amended claims at this late stage of the proceedings. In addition, the board cannot see that the subject-matter of amended claim 1 prima facie meets the requirement of Article 123(2) EPC.

3.5 Exercising its discretion under Article 13(2) RPBA 2020, the board therefore decided not to take into account auxiliary request 0.

4. Since none of the respondent's requests on file is allowable, the decision under appeal has to be set aside and the patent has to be revoked in accordance with Article 101(3) (b) EPC.

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:



A. Voyé

R. Bekkering

Decision electronically authenticated