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**Datasheet for the decision
of 8 February 2022**

Case Number: T 3019/18 - 3.5.07

Application Number: 13879073.8

Publication Number: 2978135

IPC: H03M7/40, H03M7/30, G06F17/22,
G06F17/30

Language of the proceedings: EN

Title of invention:

Compression Device, Compression Method, Decompression Device,
Decompression Method, and Information Processing System

Applicant:

Fujitsu Limited

Headword:

Compression device/FUJITSU

Relevant legal provisions:

EPC Art. 84
RPBA Art. 12(4)
RPBA 2020 Art. 13(1)

Keyword:

Claims - clarity - main request (no)

Amended claims filed with the statement of grounds of appeal -
first and second auxiliary requests - not admitted

Amendment to appeal case - suitability of amendment to resolve
issues raised - third and fourth auxiliary requests (no)



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Case Number: T 3019/18 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 8 February 2022

Appellant: Fujitsu Limited
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 3 July 2018
refusing European patent application No.
13879073.8 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair J. Geschwind
Members: M. Jaedicke
P. San-Bento Furtado

Summary of Facts and Submissions

- I. The applicant (appellant) appealed the decision of the examining division refusing European patent application No. 13879073.8 (published in accordance with Article 153(4) EPC as EP 2 978 135 A1) filed on 22 March 2013.
- II. The documents cited in the contested decision included:
D1: EP 0 584 992 A2, published on 2 March 1994.
- III. The examining division refused the application since it considered that claims 1, 4 to 6 and 9 to 11 did not comply with Article 84 EPC. Under the heading "Obiter Dictum", the examining division raised objections under Articles 123(2) and 56 EPC.
- IV. In its statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request considered in the contested decision and resubmitted with the grounds of appeal, or one of the first to fourth auxiliary requests submitted with the grounds of appeal.
- V. In a communication under Article 15(1) RPBA 2020 accompanying the summons to oral proceedings, the board expressed among other things its provisional opinion that claim 1 of the main request did not comply with Article 84 EPC and that its subject-matter lacked an inventive step in view of document D1. Furthermore, the board expressed the preliminary opinion that the first to fourth auxiliary requests were not admissible under Article 12(4) RPBA 2007, that claim 1 of the third auxiliary request violated Article 123(2) EPC, that

claim 1 of the fourth auxiliary request was unclear and that the subject-matter of claim 1 of all auxiliary requests lacked an inventive step (Article 56 EPC) in view of the disclosure of document D1.

- VI. By letter of 6 October 2021, the appellant submitted arguments and an amended main request and amended third and fourth auxiliary requests replacing its corresponding prior requests.
- VII. Oral proceedings were held as scheduled and the appellant was heard on the relevant issues. At the end of the oral proceedings, the Chair announced the board's decision.
- VIII. The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the main request submitted with the letter of 6 October 2021 or one of the first or second auxiliary requests submitted with the statement of grounds of appeal, or the third or fourth auxiliary requests submitted with the letter of 6 October 2021.
- IX. Claim 1 of the main request reads as follows (itemisation of the features added by the board):
- [A] "A compression device (11) comprising:
 - [B] a storage unit (15) configured to store therein a compression dictionary listing a correlation between a first compressed code and a first symbol string,
 - [B1] the first compressed code representing a combination of the first symbol string and a first delimiter, the first symbol string being one of a plurality of symbol strings constituting input data, the first delimiter being one of delimiters delimiting the plurality of symbol

- strings in the input data and succeeding the first symbol string in the input data,
- [B2] the compression dictionary further including a control code representing a combination of a control symbol and a further delimiter, the control symbol indicating an instruction to delete the first delimiter;
 - [C] a reading unit (113) configured to read a sequence of the first symbol string and the first delimiter from the input data;
 - [D] an acquisition unit (112) configured to acquire, from the storage unit, the first compressed code in response to reading the sequence and the control code in response to reading the further delimiter; and
 - [E] a writing unit (114) configured to store compressed data of the input data by writing the first compressed code and a first control code at a position following the first compressed code according to the plurality of symbol strings and delimiters in the input data into a storage area;
 - [F] the compression dictionary data having a structure that includes, for each type of data elements, information for compression processing in which one compressed code corresponding to a combination of a delimiter following one data element and representing a break between elements in data and the one data element separated by the delimiter is associated with the data element."

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that it reads after feature B as follows:

" the first symbol string being one of a plurality of text words constituting input text data,
the first compressed code representing a combination

of the first symbol string and a space symbol,
the space symbol being one of delimiters delimiting the plurality of symbol strings in the input text data, and the space symbol succeeding the first symbol string in the input text data,

the delimiters representing spaces or special characters between the symbol strings,

the compression dictionary further including a control code representing a combination of a control symbol and a special character,

the control symbol indicating an instruction to delete the immediately preceding space symbol, and

the special character being a delimiter other than a space symbol;

a reading unit (113) configured to read a sequence of the first symbol string and the space symbol from the input text data, and further configured to read the special character from the input text data;

an acquisition unit (112) configured to

acquire, from the storage unit, the first compressed code, in response to reading the sequence, and

acquire, from the storage unit, the control code, in response to reading the special character; and

a writing unit (114) configured to store compressed data of the input text data by

writing the first compressed code at a writing position in response to acquiring the first compressed code into a storage area, and

writing the control code at a position following the first compressed code in response to acquiring the control code into a storage area,

according to results of the plurality of symbol strings and delimiters in the input text data sequentially acquired by the acquisition unit (112); the compression dictionary data having a structure that includes, for each symbol string and delimiter

constituting the input text data, information for compression processing in which the first compressed code is associated with the first symbol string, the first compressed code corresponding to a combination of the first symbol string and a space symbol following the first symbol string."

- X. Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that it comprises the following amendments.
- The first occurrence of "text data" was amended to "comma-separated values, CSV, data ([118])" and all further occurrences were amended to "CSV data".
 - The text "space symbol" was amended to "comma symbol" and "spaces" was amended to "commas".
- XI. Claim 1 of the third auxiliary request differs from claim 1 of the main request in that the text "the first control code" in feature E was amended to "a first control code" and the following text was added at the end of the claim:
- " , wherein
the first compressed code is a compressed code registered on a control symbol compression dictionary (D13) in the compression dictionary, and the compressed code is used for all words registered on a symbol string compression dictionary (D12)."
- XII. Claim 1 according to the fourth auxiliary request is derived from claim 1 of the main request by amending the text "the first control code" in feature E to "a first control code" and by adding the following text at the end of the claim:
- " , wherein
the writing unit (114) is configured to shift a writing position into the storage area (A4) instead of deleting

a space symbol in the storage area (A4) to write a symbol following the control symbol over a position where the space symbol is written, and configured to perform conversion processing according to the control symbol."

XIII. The appellant's arguments, where relevant to the decision, are discussed in detail below.

Reasons for the Decision

The invention

1. The application relates to data compression (description as published, paragraph [0001]).

In its background section (paragraph [0002]), the application explains that a compression algorithm such as Huffman coding is used to assign variable-length compressed codes each correlated with a word. The proposed invention addresses the technical problem that certain languages such as English use a space symbol to represent a break between words. As a compressed symbol is also assigned to each space symbol, the number of compressed codes increases and the compression ratio decreases (paragraph [0004]).

The application proposes to solve this problem by encoding words together with the following break/delimiter symbol (i.e. the space symbol) to store corresponding codes in a compression dictionary. As a word in a text is sometimes followed not by a space, but by a different delimiter (for example, ":", ";", ",", or "."), the application proposes to introduce special control symbol codes in the compression dictionary. Such a control symbol code signals that the

space (delimiter) following the preceding word is to be replaced by a different symbol (see Figures 1 and 2; paragraphs [0014] to [0039]).

Main request

2. *Clarity*

2.1 In the contested decision, point 2, the examining division objected that features C and D of claim 1 were unclear in combination. Moreover, it was unclear how to interpret "in response to reading the further delimiter" in feature D. It was unclear in which situations this delimiter was read. Moreover, the examining division argued in the contested decision, point 5, that it was unclear which input data was actually preserved and which was disregarded and for what purpose since the written first control code indicated an instruction to delete the first delimiter.

2.1.1 In its statement of grounds of appeal, the appellant argued that the features C and D clearly specified acquiring the first compressed code after reading the first symbol string and the first delimiter, and acquiring the control code in response to reading the further delimiter. In its reply to the summons, the appellant argued that the reading unit read from the input data, and in response to reading the sequence of the first symbol string and the first delimiter the acquisition unit acquired the first compressed code, and in response to reading the further delimiter the acquisition unit acquired the control code. Consequently, not specifying that the reading unit was configured to read the further delimiter did not render claim 1 unclear.

In the oral proceedings, the appellant also argued that the reading of the further delimiter could happen either in combination with the reading of the sequence according to feature C or a reading of a different sequence.

- 2.1.2 The board agrees with the examining division that feature C does not specify that the reading unit is configured to read the further delimiter, which is inconsistent with feature D that specifies "in response to reading the further delimiter". As argued by the board in the oral proceedings, this inconsistency raises questions as to the function of the reading unit.

Moreover, in the oral proceedings, the board also questioned whether the functioning of the compression device could be understood from the wording of features C and D when also considering feature E. In particular, these claim features did not specify that the control code is acquired in response to reading a symbol sequence (such as a word in a text) immediately followed by a further delimiter (e.g. a semicolon being different from the first delimiter such as a space symbol). However, feature E specified that the first control code is written after a position following the first compressed code, which seemed to indicate that the further delimiter follows the sequence read according to features C and D.

In the oral proceedings, the appellant argued that features C and D of claim 1 covered also reading the further delimiter after sequences different from the one specified in feature C. As argued during the oral proceedings, the board considers that features C, D and E render claim 1 unclear as the reader cannot

understand why, when reading the further delimiter in different situations (when the further delimiter immediately follows a first delimiter such as a space symbol, for example), the written first control symbol indicates an instruction to delete the first delimiter. It follows that claim 1 is unclear.

- 2.2 As to feature F of claim 1, the examining division objected that it was unclear what the "data element types" were.
- 2.2.1 In its statement of grounds of appeal the appellant argued that it was clear to the skilled person that the data elements of claim 1 related to the symbol strings and delimiters constituting the input data. In the oral proceedings the appellant explained that the types of data elements related to data elements with and without a delimiter in the compression dictionary.
- 2.2.2 The board is not convinced that the meaning of feature F can be understood based on the wording of claim 1. Both symbol strings and delimiters are composed of symbols and it is not understandable from claim 1 that the types of data elements refer either to symbol strings with and without delimiters or, alternatively, to delimiters and symbol strings. In this context, it does not help that the claim does only refer in feature E to "types of data elements" or "data elements", whereas other claim features refer to "input data", "symbol strings" and "delimiters".
- 2.2.3 Moreover, feature F specifies that the compression dictionary comprises for each type of data element information in which one compressed code corresponds to a combination of a delimiter following one data element. It is however not understandable what this

implies for the compression dictionary for the "delimiter" type of data elements, when using the appellant's first interpretation. Moreover, the wording of feature F is inconsistent with the second interpretation of this feature provided by the appellant in the oral proceedings since each type of data element is apparently associated with a delimiter. Moreover, the appellant's different interpretations of the feature F are an indication that the wording of this feature is unclear. Consequently, the board is not convinced by the appellant's arguments and considers that claim 1 is unclear.

- 2.3 In view of the above, the board concludes that claim 1 of the main request does not meet the requirements of Article 84 EPC.

Auxiliary requests

3. *First and second auxiliary requests - admissibility under Article 12(4) RPBA 2007*
- 3.1 Claim 1 of the first auxiliary request differs from claim 1 of the main request among other things in that it limits the claimed subject-matter to text data as input data and the first delimiter to a space symbol and in that it further clarifies the structure of the compression dictionary based on paragraphs [0010], [0014], [0041] and [0067] of the application as filed.
- 3.2 Claim 1 according to the second auxiliary request differs from claim 1 of the first auxiliary request in that it limits the input data to comma-separated values data using a comma symbol as the first delimiter. In

support of the amendments, the appellant cited paragraphs [0118] and [0120] of the application as filed.

- 3.3 The first and second auxiliary requests were filed for the first time with the statement of grounds of appeal and limit, for the first time, in particular the kind of input data and the kind of delimiters to specific embodiments disclosed in the description.
- 3.4 Since the statement of grounds of appeal in this case was filed on 2 November 2018, i.e. before the RPBA 2020 entered into force on 1 January 2020 (Article 24(1) RPBA 2020), Article 12(4) RPBA 2007 applies to the statement of grounds of appeal according to the transitional provisions (Article 25(2) RPBA 2020).
- 3.5 According to Article 12(4) RPBA 2007, the board has the power to hold inadmissible facts, evidence or requests which could have been presented in the first instance proceedings. The first and second auxiliary requests add features taken from the description which could and should have been added in requests submitted during the first instance proceedings, for example at the latest in reply to the summons to oral proceedings before the examining division. In its communication annexed to the summons, point 1, the examining division had argued that the claims were not supported by the description, were unclear and violated Article 123(2) EPC, since they were not limited to text input data with the space symbol being the first delimiter. These objections should have prompted the appellant to file amended claims with corresponding limitations. However, the appellant filed suitable amendments only with its

statement of grounds of appeal (in the first auxiliary request; the second auxiliary request was limited to an alternative embodiment).

- 3.6 In the oral proceedings, the appellant argued that it was only convinced at the time when it filed its statement of grounds of appeal that the clarity objections raised by the examining division were so serious that it was necessary to file amended claims. All auxiliary requests filed with the statement of grounds of appeal overcame the remaining issues raised and thus should be admitted in the appeal proceedings.
- 3.7 The board is not convinced by the appellant's arguments in favour of admissibility as the relevant issue is not when the appellant was convinced that the filing of amended requests was necessary, but when amendments could and should have been filed in view of the objections raised and the state of the proceedings. In particular, new claim requests that are filed for the first time with the statement of grounds of appeal may be admissible under Article 12(4) RPBA 2007, if they are a legitimate reaction to the reasoning of the decision under appeal. However, in view of the primary object of the appeal proceedings to review the decision under appeal in a judicial manner (Article 12(2) RPBA 2020), it is not a legitimate choice of an appellant to postpone the filing of amended claim requests until the beginning of the appeal stage (see also the decisions cited in Case Law of the Boards of Appeal of the EPO, 9th edition 2019, V.A.4.11.4 b).
- 3.8 In view of the above, the first and second auxiliary requests are not admitted under Article 12(4) RPBA 2007.

4. *Third and fourth auxiliary requests - admissibility under Article 13(1) RPBA 2020*
- 4.1 Claim 1 according to the third auxiliary request differs from claim 1 of the main request in that it limits the claimed subject-matter by specifying further properties of the first compressed code defined in claim 1. The appellant submitted that the amendments were based on paragraph [0019] of the description.
- 4.2 Claim 1 according to the fourth auxiliary request differs from claim 1 of the main request by specifying, allegedly based on the description, paragraphs [0033] and [0034], that the writing unit is configured to shift a writing position into the storage area instead of deleting a space symbol in the storage area to write a symbol following the control symbol over a position where the space symbol is written, and to perform conversion processing according to the control symbol.
- 4.3 The third and fourth auxiliary requests were filed in reply to the board's communication, amending and replacing the prior third and prior fourth auxiliary requests filed with the statement of grounds of appeal. These prior auxiliary requests added features taken from the description for the first time in the appeal proceedings. The board informed the appellant in point 15 of its communication of its provisional opinion that the then third and fourth auxiliary requests were not admissible under Article 12(4) RPBA 2007 since these requests could and should have been filed earlier and raised fresh issues.

4.3.1 The board also informed the appellant in point 16.1 of its communication that claim 1 of the prior third auxiliary request appeared not to comply with Articles 123(2) and 84 EPC for the following reasons:

"Claim 1 of the third auxiliary request adds that 'the first compressed code is [...] registered on a control symbol compression dictionary (D13) in the compression dictionary'. However, the 'first compressed code' according to the claim represents 'a combination of the first symbol string and a first delimiter' and such a compressed code is rather stored in the symbol string compression dictionary (D12) (see Figure 1 and the description, paragraph [0014]). Hence, claim 1 adds subject-matter violating the requirements of Article 123(2) EPC.

Moreover, claim 1 of the third auxiliary request specifies that 'the compressed code is used in common for all words registered on a symbol string compression dictionary (D12).' Paragraph [0019], which allegedly supports this feature, states: 'The compressed codes registered on the control symbol compression dictionary D13 are used in common for all words registered on the symbol string compression dictionary D12 [...]'. Again, this statement does not refer to compressed codes corresponding to the first compressed code defined in claim 1. Consequently, claim 1 does not comply with Article 123(2) EPC. Moreover, the board doubts that the wording 'used in common for all words registered on the symbol string compression dictionary' is understandable (Article 84 EPC). In particular, it is unclear what 'used in common' should mean in the context of claim 1."

4.4 Furthermore, the appellant was informed in point 16.2 of the board's communication that claim 1 of the prior fourth auxiliary request appeared not to comply with Articles 123(2) and 84 EPC for the following reasons:

"Claim 1 of the fourth auxiliary request specifies that 'the writing unit (114) [...] performs conversion processing according to the control symbol.' It is unclear what is meant by 'conversion processing' in the context of claim 1 (Article 84 EPC). Moreover, the writing unit performs certain method steps ('shifts', 'performs'), whereas the claim is directed to a device. Thus the category of claim 1 is unclear (Article 84 EPC)."

4.5 According to Article 13(1) RPBA 2020 any amendment to a party's appeal case after it has filed its grounds of appeal is subject to the party's justification for its amendment and may be admitted only at the discretion of the board. Article 12(4) to (6) RPBA 2020 applies *mutatis mutandis*. The party must provide reasons for submitting the amendment at this stage of the appeal proceedings. The board exercises its discretion in view of, *inter alia*, the current state of the proceedings, the suitability of the amendment to resolve the issues which were raised by the board, whether the amendment is detrimental to procedural economy, and, in the case of an amendment to a patent application, whether the party has demonstrated that any such amendment, *prima facie*, overcomes the issues raised by another party in the appeal proceedings or by the board and does not give rise to new objections. According to Article 12(6) RPBA 2020, the board must not admit requests, facts, objections or evidence which should have been submitted

in the proceedings leading to the decision under appeal, unless the circumstances of the appeal case justify their admittance.

- 4.6 In its letter dated 6 October 2021 the appellant argued that the third and fourth auxiliary requests met all requirements of the EPC and were therefore admissible. The third auxiliary request was clarified by amending the feature "used in common for all words" to "used for all words" in line with paragraph [0019] of the description and complied with Article 123(2) EPC. The fourth auxiliary request amended the wording of claim 1 as appropriate for a device and was thus clear.

In the oral proceedings, the appellant also argued that the third and fourth auxiliary requests were submitted with the statement of grounds of appeal when the appellant was convinced for the first time that further distinguishing features may be needed to overcome all objections raised.

- 4.7 The board considers that the third and fourth auxiliary requests could and should have been filed earlier in the first-instance proceedings in view of the objections raised by the examining division for substantially the same reasons as for the first and second auxiliary requests (see above, point 3.7) since Article 12(6) RPBA 2020 applies under Article 13(1) RPBA 2020.

Furthermore the board does not see that the amended third and fourth auxiliary requests were suitable to overcome the issues raised by the board. With respect to the raised objection against the admissibility of

these requests, they still add fresh features from the description which were not, but should have been submitted in the first-instance proceedings.

Regarding the amendment made in the third auxiliary request, deleting the words "in common" may be suitable to address the board's corresponding objection under Article 84 EPC. However, the board does not see that merely deleting the words "in common" is suitable to overcome the board's objection under Article 123(2) EPC being that there is no basis in the cited paragraph [0019] that the first compressed code is registered on a control symbol compression dictionary (D13) in the compression dictionary. Nor is the appellant's reference to paragraph [0019] as basis *prima facie* convincing and the board already dealt with the cited paragraph in its communication.

The amendments made in the fourth auxiliary request address the clarity issues raised by the board with respect to an unclear claim category by amending the claim to a writing means being "configured to" carry out certain activities. However, these amendments are not suitable to address the board's objection that the phrase "conversion processing" is unclear.

Furthermore, the amended third and fourth auxiliary requests have been filed at a very late stage of the proceedings and are not even convergent, so that their admission would also be against the need for procedural economy.

4.8 Consequently, the board exercises its discretion under Article 13(1) RPBA 2020 not to admit the third and fourth auxiliary requests into the proceedings.

5. As the appellant's sole request admitted into the appeal proceedings, i.e. the main request, is not allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



S. Lichtenvort

J. Geschwind

Decision electronically authenticated