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**Datasheet for the decision
of 16 June 2021**

Case Number: T 1262/18 - 3.5.05

Application Number: 10829067.7

Publication Number: 2497217

IPC: H04L1/16, H03M13/09, H04L1/00

Language of the proceedings: EN

Title of invention:

METHOD AND APPARATUS FOR ERROR DETECTION IN A COMMUNICATION SYSTEM

Applicant:

Alcatel Lucent

Headword:

Efficiently calculating a data packet's cyclic redundancy check (CRC) from the CRCs of data segments, where the segments are bridging across data packets

Relevant legal provisions:

EPC Art. 82, 84, 123(2)
EPC R. 43(7)
RPBA 2020 Art. 11

Keyword:

Unity of invention - after amendment (yes)

Claims - clarity after amendment (yes)

Amendments - added subject-matter (no)

Remittal - (yes)



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Case Number: T 1262/18 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 16 June 2021

Appellant: Alcatel Lucent
(Applicant) Site Nokia Paris Saclay
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Representative: Hepworth Browne
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 15 December
2017 refusing European patent application No.
10829067.7 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair A. Ritzka
Members: P. Tabery
D. Prietzel-Funk

Summary of Facts and Submissions

- I. The appeal is directed against the decision of the examining division dated 15 December 2017 refusing European patent application No. EP 10829067.7.
- II. The examining division referred to, *inter alia*, the following document:
D1 GB 2 360 177 A, 12 September 2001
- III. The examining division decided that the application did not fulfil the requirements of Articles 82, 123(2), 52(1) and 84 EPC.
- IV. In its statement setting out the grounds of appeal, the appellant (applicant) requested that a patent be granted on the basis of the claims in accordance with a main request or an auxiliary request, both submitted with the statement setting out the grounds of appeal.
- V. The board issued a summons to oral proceedings and set out its provisional opinion on the case in an annex (Article 15(1) RPBA 2020).

The board held that the requests submitted upon appeal remedied the objections raised in the appealed decision. However, due to apparent editing errors, the board considered that there was a lack of clarity and that an incorrect reference sign had been used. The board indicated that it intended to admit the main request into the proceedings and to remit the case to the examining division once these issues had been resolved.
- VI. With a letter of reply dated 14 May 2021, the appellant provided an amended request to replace the pending requests. The appellant emphasised that all objections

raised in the impugned decision as well as those raised with the board's summons had been addressed. In the event of the board being unable to immediately grant the application for reasons of lack of proper prior examination under Article 52 EPC, the appellant requested that the case be remitted to the examining division.

- VII. In a communication dated 1 June 2021 (dispatched in advance by email on 27 May 2021), the board informed the appellant that it would cancel the scheduled oral proceedings and remit the case to the examining division, provided that further clarity issues, regarding claim 2, were remedied.
- VIII. With a letter of reply dated 27 May 2021, the appellant filed a new request where claim 2 had been deleted.
- IX. **Claim 1** (sole claim) of the sole request comprises the following features:

A method of processing a sequence (510) of consecutive disjoint data segments (522, 524, 626, 528) of equal length, the sequence including a data packet, comprising:

- (i) forming, at a masking unit (420), a masked data segment (536, 546, 556, 566) of corresponding length to each disjoint data segment by masking a portion of one of the disjoint data segments with a mask, wherein a portion of the data packet is in the one of the disjoint data segments and outside of the masked portion and the start of the data packet is in a first one of the disjoint data segments and being after a first symbol of said first one of the disjoint data segments and the mask is arranged to set the portion of the segment outside of the data packet to zero and to bit-wise invert a portion of length m at the end of the data packet; and

(ii) calculating, at a cyclic redundancy check unit (425, 430, 435), a cyclic redundancy check sequence for the data packet by performing a calculation with the masked data segments.

Reasons for the Decision

1. The application concerns a cyclic redundancy check (CRC) calculation for a data packet containing a part of a data stream. The data stream consists of data segments which are not aligned with the borders of the data packet, i.e., the segments are bridging across data packets. From here the problem emanates that the data packet's CRC cannot be derived from the CRCs of all the segments it contains. However, the segments' CRCs may be re-used if the CRCs for the first and last segment are re-calculated while appropriately masking these segments. This reduces the computational effort when calculating the packet's CRC.

2. Unity of invention (Article 82 EPC)

The board notes that the new request filed on 27 May 2021 contains one independent claim. In the absence of any alternatives therein, this sole claim necessarily relates to a single inventive concept.

Hence, the sole request fulfils the requirements of Article 82 EPC.

3. Clarity (Article 84 EPC)

As regards claim 1, the examining division found that the terms "*disjoint*" and "*particular*" were not clear, since they had no well-defined meaning in the art. The board notes that the term "*disjoint*" has been clarified by the qualifying amendment "*consecutive*". The term "*particular*" has been deleted by the appellant.

Furthermore, the examining division held that it was not clear whether the claimed masking operation involved any processing which would actually determine a change in the masked data.

The board notes that the processing performed by the masking operation is now explicitly defined in the claim.

The examining division noted too that it was not clear whether characteristics of the claimed "*portion*" were a consequence of the masking. Likewise, the "*forming*" and "*calculating*" steps were formulated in a way that raised doubts as to the claimed calculations.

The board considers that these objections are remedied by the comprehensive reformulations in the claim.

In view of the above, the board holds that claim 1 now fulfils the requirements of Article 84 EPC.

4. Added subject-matter (Article 123(2) EPC)

The board finds that the application as published discloses the features of claim 1 as follows (the references in parentheses referring to the application as published):

A method of processing a sequence of consecutive disjoint data segments (522, 524, 526, 528; see *fig. 5*) of equal length, the sequence including a data packet (see *fig. 5* and *page 26, lines 5-9*), comprising:

(i) forming, at a masking unit, a masked data segment (536, 546, 556, 566; see *fig. 5*) of corresponding length to each disjoint data segment by masking a portion of one (*unnumbered leftmost portion of 528; see fig. 5*) of the disjoint data segments with a mask (532 & 562; see *fig. 5* and *page 26, line 22 - page 27, line 1*), wherein a portion of the data packet is in the one of the disjoint data segments (528; see *fig. 5*) and outside of the masked portion (518; see

fig. 5) and the start of the data packet is in a first one (522; see *fig. 5)* of the disjoint data segments and being after a first symbol (512; see *fig. 5)* of said first one of the disjoint data segments and the mask is arranged to set the portion (518; see *fig. 5)* of the segment outside of the data packet to zero (*left part of 536, right part of 566; see fig. 5)* and to bit-wise invert a portion (*dashed part of 566; see fig. 5)* of length *m* at the end of the data packet (*see page 27, lines 1-5; and page 29, line 1)*;

(ii) calculating, at a cyclic redundancy check unit, a cyclic redundancy check sequence for the data packet by performing a calculation with the masked data segments (*see page 32, line 7 - page 33, line 10)*.

Thus, the board ascertains that claim 1 complies with the requirements of Article 123(2) EPC.

5. Reference signs

The objected reference sign 514 has been deleted.

6. Remittal to the department of first instance

Under Article 11 RPBA 2020 the board may remit the case to the department whose decision was appealed if there are special reasons for doing so.

In the present case, with respect to claim 1, the examining division decided only on the questions of Articles 82, 84 and 123(2) EPC. In the impugned decision, novelty and inventive step (Article 52(1) EPC) were only discussed regarding independent claim 3. However, the examining division's considerations regarding the lack of novelty of the subject-matter of claim 3 in view of document **D1** might not be directly applicable to claim 1, since the examining division also found in its decision that claims 1 and 3 related to different inventive concepts.

Under these circumstances, the board does not consider it appropriate to decide on the issues of novelty and inventive step without a decision of the examining division. Thus, a special reason exists for remittal of the case.

Since the appellant withdrew its request for oral proceedings on the assumption that the case would be remitted, the board finds it appropriate to remit the case to the examining division for further prosecution on the basis of the claim submitted on 27 May 2021 without holding oral proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution on the basis of the claim submitted on 27 May 2021.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated