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**Datasheet for the decision
of 5 February 2020**

Case Number: T 2087/17 - 3.5.03

Application Number: 02024039.6

Publication Number: 1313228

IPC: H04B1/707, H04J11/00, H04B7/26,
H04J13/00

Language of the proceedings: EN

Title of invention:

Method for compact representation of multi-code signaling in communication systems

Applicant:

SISVEL International S.A.

Headword:

Multi-code signalling/SISVEL

Relevant legal provisions:

EPC Art. 87(1), 56
RPBA Art. 13(1)

Keyword:

Priority - "same invention" (no)
Inventive step - main and 1st to 4th auxiliary requests (no)
Admission of late-filed requests - 5th to 7th auxiliary
requests (no): not clearly allowable
Admission of request filed during oral proceedings - 8th
auxiliary request (no): fresh case and against procedural
economy

Decisions cited:

G 0002/98, G 0002/10, T 0685/90, T 2072/16



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 2087/17 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 5 February 2020

Appellant: SISVEL International S.A.
(Applicant) 6 Avenue Marie Thérèse
2132 Luxembourg (LU)

Representative: Baroni, Matteo
Metroconsult S.r.l.
Foro Buonaparte, 51
20121 Milano (IT)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 16 March 2017
refusing European patent application
No. 02024039.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman K. Bengi-Akyürek
Members: T. Snell
J. Geschwind

Summary of Facts and Submissions

I. The present decision, which was announced by the chair of the board at the end of the oral proceedings held on 5 February 2020, concerns an appeal lodged by the applicant against the decision of the examining division refusing the patent application on the ground that the subject-matter of claim 16 of the only request was not new with respect to prior-art document

D1 = Nokia, "Compact signalling of multi-code allocation for HSDPA", 3GPP TSG RAN WG1 MEETING #22, Jeju, Korea, 19-23 November 2001, TSGR1#(22)01-1184.

Document D1 was taken to be state of the art under Article 54(2) EPC because the examining division held that the applicant was not entitled to enjoy the right to claim the priority date derived from US application

PR1 = US 60/331,391 (filed on 15 November 2001),

on the grounds that the priority application did not relate to the "same invention" within the meaning of Article 87(1) EPC.

II. The appellant requests that the decision under appeal be set aside and a patent granted on the basis of one of the following claim requests:

- a main request and first to fourth auxiliary requests as filed with the statement of grounds of appeal (noting that the main request corresponds to the main request refused by the examining division),

- fifth to seventh auxiliary requests as filed with the letter dated 4 December 2020,
- an eighth auxiliary request as filed during the oral proceedings before the board.

III. Claim 4 of the **main request** and the **first to fourth auxiliary requests** reads as follows:

"A method, comprising:
allocating a number of multi-codes, M, and a code offset, P; and
formulating (S2) a codeword, the codeword comprising a code group indicator and an offset indicator, the code group indicator being equal to the minimum of M-1 and 15-M, the offset indicator being equal to the absolute value of $P-1-((M/8 \text{ rounded to the nearest lowest integer}) \text{ multiplied by } 15)$,
wherein the formulated codeword comprises a compact representation of multi-code signaling, is decodable without the need for a look-up table, and comprises seven bits."

IV. Claim 2 of the **fifth to seventh auxiliary requests** reads as follows:

"A method, wherein 15 multi-codes are available for one or more mobile devices, wherein the multi-codes are allocated to each of said one or more mobile devices are all consecutive, wherein a spreading factor is equal to 16, comprising:
allocating a number of multi-codes, M, and a code offset, P; and
formulating (S2) a codeword, the codeword comprising a code group indicator and an offset indicator, the code group indicator being equal to the minimum of M-1 and

15-M, the offset indicator being equal to the absolute value of $P-1$ -(a parameter multiplied by 15), wherein said parameter is equal to 0 if $M \leq 7$, wherein said parameter is equal to 1 if $M > 7$, wherein the formulated codeword comprises a compact representation of multi-code signaling, and consists of seven bits, wherein the offset indicator consists of three bits, wherein the code group indicator consists of four bits."

V. Claim 1 of the **eighth auxiliary request** reads as follows:

"A method for compact representation of multi-code signaling, wherein 15 multi-codes are available for one or more mobile devices, wherein the multi-codes are allocated to each of said one or more mobile devices are all consecutive, wherein a spreading factor is equal to 16, the method comprising:
determining (S1) a number of multi-codes;
determining (S1) a code offset; and
formulating (S2) a codeword (S2), the codeword comprising a code group indicator of the number of multi-codes and an offset indicator of the code offset
by
determining (S3) a first term, the first term comprising a minimum of the multi-code number and sixteen minus the multi-code number;
determining (S4) a first part of a codeword by subtracting one from the first term, the first part representing the code group indicator;
determining (S5) a second term, the second term being equal to zero if seven is larger than or equal to the multi-code number, the second term being equal to one if the multi-code number is larger than seven;

determining (S7) a third term by calculating (S6) a fourth term by multiplying the second term by fifteen and subtracting the fourth term from the code offset minus one;
determining (S8) a second part of the codeword by taking an absolute value of the third term, the second part representing the offset indicator;
forming (S9) the codeword by concatenating the first part of the codeword with the second part of the codeword, and
formulating the codeword without the need for a look-up table,
wherein the formulated codeword comprises a compact representation of multi-code signaling, and consists of seven bits, wherein the offset indicator consists of three bits, wherein the code group indicator consists of four bits."

VI. For reasons of conciseness, the wording of other claims of the various claim requests is not reproduced.

Reasons for the Decision

1. *Background of the invention*

1.1 The present application concerns spread-spectrum communications and in particular a method for forming a codeword representing the number of multi-codes M or m (i.e. spreading codes) to be used within a set of available multi-codes, as well as a code offset P or Δ which indicates the position in the code set of the first multi-code in compact form. The codeword formed in accordance with the application has seven bits and is a concatenation of two values, a "code group indicator CW1" (four bits) and an "offset indicator CW2" (three bits).

1.2 In the application as filed, essentially two encoding schemes and one decoding scheme are disclosed. The first encoding scheme (hereinafter to be referred to as "encoding scheme 1") is represented by equations (1) and (2) (cf. paragraph [0029] of the application as published). The second encoding scheme (hereinafter to be referred to as "encoding scheme 2") is represented by equations (5) and (6) (cf. paragraph [0034]). The decoding scheme, associated with encoding scheme 1 and represented by equations (3) and (4), is not relevant to this decision.

2. *Main request - claims 4, 11 and 16 - validity of the priority claim*

2.1 In accordance with established jurisprudence of the boards of appeal, the test for the "same invention" requirement of Article 87(1) EPC is the same as that for compliance with Article 123(2) EPC, namely that the claimed subject-matter must be directly and unambiguously comprised in the priority document, taking into account the priority document as a whole and using common general knowledge as regards matters which are implicit (cf. G 2/98, Reasons 1 and 9; G 2/10, Reasons 4.3). It is further established jurisprudence that the introduction of previously non-disclosed equivalents infringes Article 123(2) EPC (cf. e.g. T 685/90, Reasons 2.4.2). This principle applies, *mutatis mutandis*, to determining whether a claim enjoys the right to priority from the earlier application in accordance with Article 87(1) EPC.

2.2 The priority document **PR1** describes essentially one detailed encoding embodiment beginning on page 8, last

line, which corresponds to encoding scheme 1 of the present application.

2.3 Claims 4, 11 and 16 are however based on encoding scheme 2. This scheme includes the requirement to determine (i) the minimum of $M-1$ and $15-M$, and (ii) $M/8$ rounded to the nearest lower integer, for respectively determining the group code indicator and the offset indicator. These formulae are not disclosed in PR1. In this respect, they are at most equivalent to the equations in the priority document (corresponding to encoding scheme 1), but are not the same, despite the resulting codeword being the same. As an example to illustrate this point, calculating $a = (19 + 31)$ using longhand arithmetic (e.g. by adding $9 + 1$, carrying 1, adding $1 + 3 + 1$ to form the result 50) is not the same method as calculating $a = (20 - 1) + (30 + 1)$. This is corroborated by the description, which presents the embodiment based on equations (5) and (6) as "another encoding embodiment" (cf. paragraph [0034] of the application as published). Therefore, there is no basis in the priority document for the subject-matter of claims 4, 11 and 16.

2.4 The appellant counter-argued essentially that PR1 is not intended to be limited to encoding scheme 1, as shown by the following disclosures of PR1: claim 1; page 3, lines 9-11; and the paragraph bridging pages 10 and 11. From these hints to broaden the disclosed scheme, the encoding scheme 2 was directly and unambiguously derivable by the person skilled in the art.

2.5 However, the board notes that a hint to broaden the disclosed scheme is not the same as the disclosure of a specific mathematical equivalent out of many possible

equivalents. The appellant's argument is therefore not convincing.

3. *Main request - claims 4, 11 and 16 - novelty and inventive step*

3.1 In view of the invalid priority for claims 4, 11 and 16, **D1** (published 19 November 2001) is comprised within the state of the art under Article 54(2) EPC for assessing novelty and inventive step (Articles 54 and 56 EPC).

3.2 D1 discloses equations (1) and (2) of the present application (encoding scheme 1), but not equations (5) and (6) on which claims 4, 11 and 16 are based (encoding scheme 2). The subject-matter of those claims is therefore new with respect to the disclosure of D1.

3.3 However, the difference with respect to D1 concerns merely the use of a simple alternative, mathematically equivalent expression (as indeed already argued by the appellant in connection with the right to claim priority, see point 2.4 above). The appellant made no argument that the use of encoding scheme 2 involved an inventive step starting out from encoding scheme 1. The board can also see no reason to attribute the second encoding scheme with an inventive step, *inter alia* as there is no suggestion that any technical problem has credibly been solved with respect to encoding scheme 1.

The board concludes that the subject-matter of claims 4, 11 and 16 does not involve an inventive step (Articles 52(1) and 56 EPC).

4. *First to fourth auxiliary requests - inventive step*

The same objection applies, *mutatis mutandis*, to claims 4, 11, and 16 of the first to fourth auxiliary requests respectively.

5. *Fifth to seventh auxiliary requests - admissibility*

5.1 According to Article 13(1) RPBA 2007 (which still applies in this case under the transitional provisions, cf. Article 25 RPBA 2020), any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the board's discretion. The discretion shall be exercised in view of, *inter alia*, the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy. Other well-established criteria relevant to the admissibility issue may also be taken into account, such as the question whether a request is likely to overcome the objections in response to which it has been filed or whether it is "clearly allowable".

5.2 In claims 2, 6 and 11 of the fifth and sixth auxiliary requests (which correspond to claims 4, 11 and 16 of the higher-ranking requests) and claims 2 and 6 of the seventh auxiliary request, the expression

"P-1-((M/8 rounded to the nearest lower integer) multiplied by 15)"

has been replaced by:

"P-1-(a parameter multiplied by 15),
wherein said parameter is equal to 0 if $M \leq 7$
wherein said parameter is equal to 1 if $M > 7$ ".

5.3 An expression which was part of encoding scheme 2 has been replaced by an expression taken from encoding scheme 1, so that these claims comprise a mixture of encoding schemes 1 and 2, a combination which is not disclosed in the application as filed. Although the appellant argued that the expression "the minimum of $M-1$ and $15-M$ " is the same as the expression " $\min(m, 16-m)-1$ " of encoding scheme 1, so that these claims now concern only encoding scheme 1 and thus comprise subject-matter directly and unambiguously disclosed in the application as filed, the board notes that it is at least arguable that they are only mathematically equivalents but not identical, however trivial the difference. These claims are therefore not clearly allowable with respect to Article 123(2) EPC.

5.4 Furthermore, for the sake of argument, even if the appellant's argument that there is no difference were accepted, the board sees no reason at this late stage of the proceedings to admit amendments shifting the scope of the above claims from encoding scheme 2 to encoding scheme 1, because the latter is already claimed in claim 1, albeit expressed in a different way. If the appellant had wished to claim encoding scheme 1 in the form now proposed in claim 2 et al, this should have been done at a far earlier stage of the proceedings.

5.5 The board therefore decides to not admit the fifth to seventh auxiliary requests into the appeal proceedings (Article 13(1) RPBA 2007).

6. *Eighth auxiliary request - admissibility*

6.1 The appellant submitted this request late at the oral proceedings before the board on being informed by the

chair that the fifth to seventh auxiliary requests were not to be admitted. It consists of only claim 1 of the fifth to seventh auxiliary requests.

- 6.2 The appellant however has hitherto expressed no interest in filing a request directed only at encoding scheme 1 (cf. points 10-12 of the minutes of the oral proceedings before the examining division). There can be no justification for filing this request at such a late stage of the appeal proceedings.
- 6.3 Furthermore, if the board were to admit the request, examined claim 1 and concluded that it was clear and complied with Article 123(2) EPC as well as being entitled to claim priority from P1 under Article 87(1) EPC, the issues of novelty and/or inventive step would still have to be considered. For the board, this would mean effectively having to deal with a fresh case based on other documents as potentially representing the closest prior art, on the assumption that D1 is not comprised within the state of the art. Alternatively, the case would have to be remitted to the examining division, but this would run entirely contrary to the need for procedural economy.
- 6.4 The appellant argued that the request was filed in response to the discussion at the oral proceedings at which the objections of the board had been better understood. It also referred to the excessive length of the examination proceedings (18 years) which had not been the applicant's fault, and to the fact that a divisional application has now been filed, which could be withdrawn if the present case were remitted.
- 6.5 However, the board considers that it is clear from its communication under Article 15(1) RPBA 2007, points 5.4

and 5.7, why the board held that encoding scheme 2 lacked an inventive step. The fact that the board confirmed its preliminary opinion in the oral proceedings after having heard the parties on this issue cannot thus be taken as a surprising or an unforeseeable event. In other words, the earliest point in time at which a party should make new submissions (such as an amended claim set) cannot be the instant at which it eventually believes that it cannot indeed convince the board. Rather, it must be the time at which - on an objective basis - an unforeseeable event becomes apparent during the proceedings (see e.g. T 2072/16, Reasons 4.1.7). Accordingly, at the very latest, the eighth auxiliary request should have been submitted in response thereto. Moreover, neither the length of the examination proceedings nor the filing of a divisional application justify the filing of the eighth auxiliary request at such a late stage of the oral proceedings. The reasons given by the appellant are therefore not convincing.

- 6.6 For these reasons, the board decides to not admit the eighth auxiliary request into the appeal proceedings (Article 13(1) RPBA 2007).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated