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**Datasheet for the decision
of 13 December 2016**

Case Number: T 2373/12 - 3.5.03

Application Number: 08706222.0

Publication Number: 2198541

IPC: H04H20/72, H04L12/18,
H04W84/00, H04W16/00

Language of the proceedings: EN

Title of invention:

MULTIMEDIA BROADCAST MULTICAST SERVICE CHANNEL MAPPING AND
MULTIPLEXING

Applicant:

BlackBerry Limited

Headword:

Multicast channel mapping/BLACKBERRY

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step - (no)

Decisions cited:

Catchword:



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Case Number: T 2373/12 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 13 December 2016

Appellant: BlackBerry Limited
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 20 July 2012 refusing European patent application No. 08706222.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman F. van der Voort
Members: T. Snell
P. Guntz

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 08706222.0, with international publication number WO 2009/033254 A.
- II. The refusal was based essentially on the ground that the subject-matter of the independent claims of a main request and two auxiliary requests did not involve an inventive step principally having regard to the disclosure of the document
- D1: Nokia Siemens Networks, "MCCH Content and Transmission", document R2-073086, 3GPP TSG-RAN WG2 Meeting #59, 20-24 August 2007.
- III. The board's decision also refers to the following document cited during the examination procedure:
- D4: Nortel, "Hierarchical MCCH", Tdoc R2-072477, 3GPP TSG-RAN WG2 Meeting #58bis, 25-29 June 2007.
- IV. The appellant filed a notice of appeal against the above decision. New sets of claims of respectively a main request and a first auxiliary request were filed together with the statement of grounds of appeal.
- Oral proceedings were conditionally requested.
- V. In a communication accompanying a summons to oral proceedings, the board gave its preliminary opinion that, inter alia, the subject-matter of claim 1 of the main request did not involve an inventive step in the light of document D1, and that the subject-matter of claim 1 of the first auxiliary request did not involve

an inventive step in the light of documents D1 and D4 taken in combination.

VI. The appellant indicated by a fax dated 12 December 2016 that it would not attend the oral proceedings, which it however still wished to be held. No substantive response to the board's objections has been received.

VII. Oral proceedings were held on 13 December 2016 in the absence of the appellant.

On the basis of the written submissions, the appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of claims of a main request or, in the alternative, claims of an auxiliary request, both requests as filed with the statement of grounds of appeal.

At the end of the oral proceedings, after due deliberation, the chairman announced the board's decision.

VIII. Claim 1 of the **main request** reads as follows:

"A method for mapping multimedia broadcast multicast services, comprising:

mapping a plurality of multicast transport channels, MCHs, to a plurality of multicast/broadcast single frequency networks, MBSFNs, (420, 430, 440) such that any one of the MBSFNs (420, 430, 440) has only one MCH and further where each one of the MCHs is different."

Claim 1 of the **first auxiliary request** reads as follows:

"A method for mapping multimedia broadcast multicast services, comprising:

mapping a plurality of multicast transport channels, MCHs, to a plurality of multicast/broadcast single frequency networks, MBSFNs, (420, 430, 440) such that any one of the MBSFNs (420, 430, 440) has only one MCH and further where each one of the MCHs is different,

wherein a multicast control channel, MCCH, portion of a multimedia broadcast multicast service, MBMS, transmission includes a primary MCCH, P-MCCH, portion containing information related to a secondary MCCH, S-MCCH, portion, and the S-MCCH portion containing information related to receiving at least one of a plurality of MTCHs, (322),

wherein, when the S-MCCH portion and at least one of the MTCHs (322) are transmitted in the same one of the MBSFNs, (420, 430, 440) the S-MCCH portion and the at least one of the MTCHs (322) are mapped to the same MCH, and

wherein, when information in the P-MCCH portion is specific to a single cell, the P-MCCH portion is mapped to a downlink shared channel."

Reasons for the Decision

1. *Main request - claim 1 - inventive step*

1.1 The present application concerns multicast transmission in an LTE ("Long-Term Evolution")-based network. This decision uses the following LTE-specific acronyms appearing in the application and in the prior art documents D1 and D4:

MBMS: Multimedia broadcast multicast services.
MBSFN: Multicast/broadcast single frequency network.
SFN: Single frequency network.
MCH: Multicast transport channel.
MTCH: Multicast traffic channel.
MCCH: Multicast control channel.
P-MCCH: Primary MCCH.
S-MCCH: Secondary MCCH.
DL-SCH: Downlink shared channel.

1.2 Claim 1 concerns a method for mapping MBMS. In accordance with claim 1, this is done in such a way that any one of the MBSFNs has only one MCH, where each one of the MCHs is different.

1.3 The closest prior art document is considered to be D1, which is a discussion document submitted to an LTE working group. Fig. 1 of D1 depicts a simple scenario in which signals for three MBSFN areas are scheduled: service 3 is mapped to Area 1, services 4, 5 and 6 to Area 2, and service 7 to Area 3.

1.4 The problem to be solved can be seen as how to implement this scheduling scheme with regard to mapping the services to channels in an LTE-based network.

1.5 The board firstly notes that D1 does not explicitly state how many MCHs are to be scheduled per MBSFN. In this respect, it uses the ambiguous wording "on MCH" (cf. page 2, section 2.3.1, 2nd paragraph, and page 3, 5th paragraph). The board neither agrees with the examining division, which considered that this wording by itself implied only one MCH per MBSFN, nor agrees with the appellant, who considers that the skilled person would understand this term to mean one

out of a plurality of MCHs per MBSFN (cf. point 1.7 below). In the board's view, D1 leaves this matter open.

1.6 In order to solve the aforementioned problem, the skilled person would in the board's view immediately recognise that for Areas 1 and 3, there is no need to provide more than one MCH, since there is respectively only one service to be scheduled. Consequently, when considering these two Areas, it is already obvious to map the traffic channels MTCH to only a single MCH per MBSFN. As regards Area 2, it follows from the description of the present application that at the priority date it was well-known that several MTCHs, i.e. channels bearing multimedia services, could be mapped to one MCH (cf. page 6, third paragraph and Fig. 3). Therefore it would have been obvious for the skilled person that the three services 4, 5 and 6 for Area 2 could also be transported via a single MCH. As in each case the service data to be transmitted in each MCH is different, it follows that the MCHs themselves are different. Consequently, the skilled person would have arrived in an obvious manner at a method falling within the terms of claim 1.

1.7 In the statement of grounds, the appellant argues that the skilled person would infer from D1 that the wording "on MCH" means "[on] an MCH out of a plurality of MCHs". However, the board can find no support for this interpretation. Furthermore, even if this interpretation were plausible in the general case, for the simple case shown in Figure 1 of D1, the skilled person would recognise that there is no need for a plurality of MCHs in each SFN area, as explained above.

The board therefore finds the appellant's argument unconvincing.

1.8 Consequently, the board concludes that the subject-matter of claim 1 does not involve an inventive step (Articles 52(1) and 56 EPC).

2. *First auxiliary request - claim 1 - inventive step*

2.1 Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the following features are added:

"wherein a multicast control channel, MCCH, portion of a multimedia broadcast multicast service, MBMS, transmission includes a primary MCCH, P-MCCH, portion containing information related to a secondary MCCH, S-MCCH, portion, and the S-MCCH portion containing information related to receiving at least one of a plurality of MTCHs, (322),

wherein, when the S-MCCH portion and at least one of the MTCHs (322) are transmitted in the same one of the MBSFNs, (420, 430, 440) the S-MCCH portion and the at least one of the MTCHs (322) are mapped to the same MCH, and

wherein, when information in the P-MCCH portion is specific to a single cell, the P-MCCH portion is mapped to a downlink shared channel".

2.2 The three added features with respect to claim 1 of the main request define essentially that:

(i) a portion of a multicast control channel MCCH portion includes a primary MCCH (P-MCCH) portion

containing information relating to a secondary MCCH (S-MCCH) portion, the S-MCCH portion containing information related to MTCHs;

(ii) the S-MCCH and at least one MTCH are transmitted in the same MBSFN and mapped to the same MCH; and

(iii) single-cell-related information in the P-MCCH is mapped to a downlink shared channel.

2.3 Re (i): D1 discloses that "a cell may contain a single primary MCCH, transmitted on DL-SCH or MCH, or a combination of a primary MCCH in combination with one or more additional secondary multi-cell MCCH" (board's underlining; cf. page 4, 2nd paragraph). It is regarded as implicit in D1 that a secondary multi-cell MCCH would comprise control information relating to the MBMS services, i.e. the MTCHs.

Re (ii): D4 discloses a proposal for the MCCH which is compatible with D1 but is more specific. Consequently, the skilled person would be in a position to incorporate the proposal of D4 into D1. D4, page 4, section 4, discloses that the MCCHs comprise a P-MCCH and "SFN combinable S-MCCHs", whereby "The scheduling of the SFN combinable S-MCCHs should actually be very simily *[sic]* to the scheduling of SFN combinable MBMS traffic. Therefore we believe the scheduling of SFN combinable S-MCCH should be handled the same way as the rest of SFN combinable data". Considering the discussion in respect of claim 1 of the main request concerning MBSFN combinable traffic being mapped to a single MCH in the MBSFN, it follows that both the S-MCCH and the MTCHs in an MBSFN would be mapped to the same MCH, i.e. the single MCH of the MBSFN.

Re (iii): D1 discloses that a cell may contain a single P-MCCH transmitted on a downlink shared channel DL-SCH (cf. "Re(i)" above), which is understood as meaning that each P-MCCH is specific to a single cell.

Consequently, none of these added features contribute to inventive step.

- 2.4 The appellant argues essentially that "D1's silence on any conditions for when to map (only *"when information in the P-MCCH portion is specific to a single cell"*) rather point [*sic*] a skilled person away from the present invention" (board's underlining; cf. the statement of grounds, page 6, 2nd paragraph).

The board notes however that claim 1 does not include the condition "only when", and therefore this feature does not define anything more than the combination of information in the P-MCCH portion specific to a single cell and the P-MCCH portion mapped to a downlink shared channel. As indicated above, this combination is also disclosed in D1. The board therefore finds the appellant's argument unconvincing.

- 2.5 The board concludes that the subject-matter of claim 1 of the auxiliary request does not involve an inventive step either (Articles 52(1) and 56 EPC).

3. *Conclusion*

As there is no allowable request, it follows that the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Rauh

F. van der Voort

Decision electronically authenticated