

**Internal distribution code:**

- (A)  Publication in OJ  
(B)  To Chairmen and Members  
(C)  To Chairmen  
(D)  No distribution

**Datasheet for the decision  
of 21 April 2009**

**Case Number:** T 1341/07 - 3.5.03  
**Application Number:** 04005041.1  
**Publication Number:** 1429577  
**IPC:** H04Q 7/38  
**Language of the proceedings:** EN

**Title of invention:**

Allocation of a radio access bearer with a lower rate than desired in case of lack of resources, if an indicator in the assignment request indicates that the communication rate is negotiable

**Applicant:**

NEC CORPORATION

**Opponent:**

-

**Headword:**

Allocation of a radio access bearer/NEC

**Relevant legal provisions:**

EPC Art. 56

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**

"Inventive step - main and auxiliary requests (no)"

**Decisions cited:**

T 1554/05

**Catchword:**

-



Case Number: T 1341/07 - 3.5.03

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.03  
of 21 April 2009

**Appellant:** NEC CORPORATION  
7-1, Shiba 5-chome  
Minato-ku  
Tokyo 108-8001 (JP)

**Representative:** Betten & Resch  
Patentanwälte  
Theatinerstrasse 8  
(Fünf Höfe)  
D-80333 München (DE)

**Decision under appeal:** Decision of the examining division of the  
European Patent Office posted 20 March 2007  
refusing European patent application  
No. 04005041.1 pursuant to Article 97(1) EPC  
1973.

**Composition of the Board:**

**Chairman:** A. S. Clelland  
**Members:** F. van der Voort  
R. Moufang

## Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 04 005 041.1 (publication number EP 1 429 577 A) on the ground that the subject-matter of the independent claims of the main request lacked an inventive step (Articles 52(1) and 56 EPC).
- II. The following document which was referred to in the decision under appeal is relevant to the present decision:
- D1: WO 96/10320 A.
- III. In the notice of appeal the appellant requested that the decision be set aside and that the application be allowed. Oral proceedings were conditionally requested. With the statement of grounds of appeal the appellant filed a revised set of claims and submitted arguments in support.
- IV. The appellant was summoned to oral proceedings. In a communication annexed to the summons to oral proceedings the board raised, without prejudice to its final decision, objections under, *inter alia*, Article 52(1) EPC in combination with Article 56 EPC (lack of inventive step).
- V. In preparation for the oral proceedings, the appellant filed with a letter dated 20 March 2009 claims of a main request and four auxiliary requests, replacing the request on file, and presented arguments in support of these requests.

VI. Oral proceedings were held on 21 April 2009. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 16 of the main request as filed with the letter dated 20 March 2009 or, in the alternative, of the first, second, third or fourth auxiliary request as filed with the same letter. At the end of the oral proceedings the board's decision was announced.

VII. Claim 1 of the main request reads as follows:

"A W-CDMA (Wide band Code Division Multiple Access) communication system including a user terminal (4), a plurality of base stations (3-1 to 3-4) having cells (A1 to A4) serving as radio service areas, respectively, base station control stations (2-1, 2-2) for managing and controlling said base stations, and a core network (1) having a switching function for said base station control stations and a communication network, characterized in that:

said core network (1) comprises means for receiving a request including a type of service of the request from said user terminal (4) present in said cells,

means for determining whether a desired communication rate in accordance with the type of service of the request is negotiable or not, and,

means for sending first information about the desired communication rate and second information indicating negotiable communication rates other than the desired communication rate when sending an RAB (Radio Access Bearer) assignment request message to said base station control station.

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that in the penultimate paragraph, after "negotiable or not", the wording "based on the type of service of the request" is inserted.

Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that in the penultimate paragraph, after "based on the type of service of the request", the wording "and based on stored information about communication rate negotiability for each of a plurality of types of service" is inserted.

Claim 1 of the third auxiliary request differs from claim 1 of the first auxiliary request in that in the last paragraph, "other" is replaced by "of a plurality of stages lower".

Claim 1 of the fourth auxiliary request differs from claim 1 of the first auxiliary request in that in the penultimate paragraph, after "based on the type of service of the request", the wording "and a pre-stored table assigning communication negotiability to a plurality of types of service" is inserted.

## **Reasons for the Decision**

1. *Inventive step - claim 1 of the main request*
- 1.1 The prior art as acknowledged in the application in suit with reference to Figs 1 and 2 is considered to represent the closest prior art (cf. T 1554/05,

point 2.1, not published in OJ). Fig. 2 is a sequence diagram which shows an example of a prior art operation of a W-CDMA type communication system as illustrated in Fig. 1 (see the application as published, col. 1, lines 8 and 9, paragraphs [0002] and [0006], col. 6, lines 36 and 37, and paragraph [0029]). The communication system includes a user terminal 4 (see Fig. 1), a plurality of base stations 3-1 to 3-4 having cells A1 to A4 serving as radio service areas, respectively, base station control stations 2-1, 2-2 for managing and controlling the base stations, and a core network 1 which is also referred to as a switching centre and which has a switching function for the base station control stations and a communication network (see paragraphs [0003] to [0005]). The core network 1 includes means for receiving a request from a user terminal 4 present in the cells for one of a plurality of types of service, e.g. an image data service or an image voice data service (see paragraphs [0007] and [0010] and Fig. 2). Further, the core network 1 includes means for determining a desired bit rate in accordance with the requested type of service and for sending information about the desired communication rate when sending a Radio Access Bearer (RAB) assignment request message to the base station control station (see paragraph [0007] and Fig. 2).

If the base station control station determines that, due to a lack of resources, it can not assign a line that satisfies the desired communication rate, it will inform the core network 1 that it intends to substitute a lower bit rate (paragraphs [0008] and [0009]). If, in response, the core network determines that this intended lower bit rate is too low for the requested

type of service, e.g. real-time video data transmission (paragraph [0011]), it will transmit a resource release request message to the base station control station which, in turn, will respond by sending a resource release response message.

The above procedure therefore involves additional control signal processing, even though the call is already regarded as unacceptable by the core network (paragraph [0013]). Alternatively, if the lower bit rate were nevertheless accepted by the core network, this may result in a data transmission which, in the case of a real-time video data service, is not smooth (paragraphs [0011] and [0012]).

- 1.2 The subject-matter of claim 1 of the main request differs from this prior art system in that:

the core network further includes means for determining whether a desired communication rate in accordance with the type of service of the request is negotiable or not;

and in that the means for sending information about the desired communication rate is also for sending second information which indicates negotiable communication rates other than the desired communication rate, when sending the RAB assignment request message to the base station control station.

- 1.3 By additionally sending to the base station control station second information which indicates the determined negotiable communication rates, the base station control station is in a position to either

assign a communication rate which is always acceptable, i.e. a communication rate which, depending on the resources available, is either the desired communication rate or one of the negotiable communication rates, or to inform the core network that it cannot assign an acceptable rate. An intended assignment by the base station control station of a communication rate which is too low and the corresponding additional control signal processing and unsatisfactory image quality, as referred to above, are therefore avoided.

- 1.4 The objective technical problem when starting out from the prior art as acknowledged in the application in suit may therefore be seen in improving the known system such that, in use, an assignment of a communication rate which is too low and, hence, results in unnecessary control signal processing or an unsatisfactory image quality is avoided.

The formulation of this problem does not contribute to an inventive step, since in the development of communication systems suitable for real-time video data transmission it is a common aim to achieve a satisfactory image quality and to reduce control signal processing in favour of an increase in traffic signal capacity.

- 1.5 A person faced with the above technical problem would consider D1, since D1 also relates to problems caused by capacity restrictions in a mobile communication network (see the abstract and page 3, lines 17 to 20).

Although the specific embodiment described in D1 relates to a GSM communication system, D1 also discloses that the communication system may be of a different type, e.g. a UMTS communication system (see page 6, lines 27 to 35). In the board's view, in the case of a UMTS communication system, it is implicit that use is made of wideband CDMA technology. Further, in UMTS communication systems the mobile services switching centre is commonly referred to as a core network and the assignment request message as a radio access bearer (RAB) assignment request message.

More specifically, D1 discloses that in response to receiving a call set-up message from a mobile station MS, a mobile services switching centre MSC sends an assignment request message to a base station controller BSC, in which the assignment request message contains a maximum desired data transfer rate DRMAX as well as a minimum required data transfer rate DRMIN (see page 11, line 16, to page 12, line 23, and Figs 1 and 6). The parameters DRMIN and DRMAX may either be provided directly by the mobile station MS or be selected by the serving mobile communication network on the basis of a level of service as indicated by the mobile station (page 5, lines 27 to 33, and page 9, line 33, to page 10, line 9). In response to the assignment request message, the base station controller assigns, if sufficient capacity is available, a data transfer rate which is within the limits of the parameters DRMIN and DRMAX, i.e. assigns an acceptable communication rate, in which the parameter DRMIN indicates the lowest communication rate which is still acceptable for the desired service, e.g. a video service (page 2, line 22, page 11, lines 30 to 35). If this is not possible, the

base station controller sends an Assignment Failure message to the switching centre (page 12, lines 18 to 23). Hence, an assignment of, or intention to assign, a communication rate which is too low is thereby avoided.

1.6 Faced with the above problem the person skilled in the art would therefore have sought to apply the teaching of D1 to the above-mentioned prior art system and modify the core network such that the assignment request which is sent to the base station control station includes, in addition to the information about the desired communication rate, second information indicating a minimum required communication rate. Hence, the core network would receive the request for a type of service from the user terminal and determine in accordance with the type of service the desired and minimum required communication rates. The minimum required communication rate and the desired communication rate specify a range of negotiable communication rates from which the base station control station may then choose. Since the size of the range is a measure for the extent to which the desired communication rate is negotiable or not, the core network, when determining these communication rates, implicitly determines whether the desired communication rate in accordance with the type of service is negotiable or not on the basis of the type of service requested.

1.7 Consequently, when applying the teaching of D1 to the above-mentioned prior art system, the person skilled in the art would have arrived, without the exercise of inventive skill, at a communication system which

includes all the features of claim 1 of the main request.

1.8 The subject-matter of claim 1 of the main request does not therefore involve an inventive step (Articles 52(1) and 56 EPC).

2. *Inventive step - claim 1 of the auxiliary requests*

2.1 The appellant submitted that claim 1 of the first and third auxiliary requests (see point VII above) included amendments by way of a clarification of the claimed subject-matter.

2.2 In the board's view, the reasoning set out at point 1 in relation to claim 1 of the main request applies to the subject-matter of claim 1 of the first auxiliary request as well, given that in the system referred to at point 1.6 above the determination of whether a desired communication rate in accordance with the type of service of the request is negotiable or not is based on the type of service of the request.

2.3 In relation to claim 1 of the third auxiliary request the board notes that in the communication system as discussed at point 1.6 above the range of negotiable communication rates constitutes second information indicating negotiable communication rates of a plurality of stages lower than the desired communication rate.

2.4 In relation to claim 1 of the second and fourth auxiliary requests the board notes that, as pointed out at point 1.6 above, in the modified system the core

network receives the request for a type of service from the user terminal and, in accordance therewith, determines the desired and required communication rates and thereby implicitly whether or not the desired communication rate is negotiable. In order to be able to carry out this determination, the core network must have available, for each one of the plurality of types of service, information which assigns the requested type of service to desired and required communication rates, i.e. to the respective communication rate negotiability as determined by the range of rates.

Hence, the determination by the core network whether or not the desired communication rate in accordance with the type of service of the request is negotiable is to be based on the type of service of the request and on information about communication rate negotiability for each of the plurality of types of service. Making this information available at the core network by storing it in a pre-stored table is considered to be well within the ordinary skills of a person skilled in the art in the field of communication systems.

- 2.5 In view of the above and the reasons as given in respect of claim 1 of the main request, the board concludes that the subject-matter of claim 1 of each one of the first to fourth auxiliary requests does not involve an inventive step (Articles 52(1) and 56 EPC).
3. It follows that none of the requests on file is allowable.
4. In view of the foregoing, it has not proved necessary to consider any of the further objections according to the preliminary opinion given by the board in the

communication accompanying the summons to oral proceedings.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland