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**Datasheet for the decision  
of 27 January 2022**

**Case Number:** T 1359/19 - 3.5.03

**Application Number:** 12872197.4

**Publication Number:** 2830233

**IPC:** H04B7/06, H04B7/02

**Language of the proceedings:** EN

**Title of invention:**

Downlink channel quality information acquisition method and device

**Applicant:**

Huawei Technologies Co., Ltd.

**Headword:**

CQI acquisition/HUAWEI

**Relevant legal provisions:**

EPC Art. 54, 56, 111(1), 116(1)

EPC R. 103(1)(a)

RPBA 2020 Art. 11, 12(8)

RPBA Art. 12(4)

**Keyword:**

Decision in written proceedings: cancellation of hearing following appellant's announcement of non-attendance  
Novelty - main request (yes)  
Inventive step - main request (no): obvious alternative  
Admittance of requests filed with the grounds of appeal - auxiliary requests (no): could have been filed in examination proceedings  
Remittal (no): no fundamental deficiency in first-instance proceedings  
Reimbursement of the appeal fee (no): appealed decision sufficiently reasoned

**Decisions cited:**

T 0698/10



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Case Number: T 1359/19 - 3.5.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.03**  
**of 27 January 2022**

**Appellant:**  
(Applicant)

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**Decision under appeal:**

**Decision of the Examining Division of the  
European Patent Office posted on 13 December  
2018 refusing European patent application  
No. 12872197.4 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair** K. Bengi-Akyürek  
**Members:** J. Eraso Helguera  
C. AlMBERG

## Summary of Facts and Submissions

- I. The appeal was lodged against the decision of the examining division to refuse the present European patent application for lack of novelty (Article 54 EPC) with respect to the independent claims of a sole set of claims.
- II. During the examination proceedings, the examining division referred *inter alia* to the following prior-art documents:
- D1:** US 2010/0317355 A1;
- D2:** "Multi-layered Rate Control for SIC-based CoMP", R1-094178, October 2009.
- III. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of a **main request** subject to the appealed decision or one of **three auxiliary requests** filed with the statement of grounds of appeal.
- IV. In a communication pursuant to Article 15(1) RPBA 2020, the board stated its negative preliminary opinion on the allowability of the main request and on the admittance of the auxiliary requests into the appeal proceedings.
- V. In their reply of 20 December 2021, the appellant indicated that they would not be attending the scheduled oral proceedings.
- VI. By another letter dated 22 December 2021, the appellant submitted comments on the substance of the board's

communication, and also indicated that "currently neither the Applicant nor the Representative intends attending the hearing".

VII. In response to a telephone conversation with the rapporteur, the appellant confirmed in a written submission that neither the appellant nor the representative would attend the oral proceedings.

VIII. The board then cancelled the scheduled oral proceedings.

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

"A method for obtaining downlink channel quality information, comprising:

obtaining (S101), by a transmission node in a cooperative node set, a received noise power of a user equipment, UE, (11), and an interference power to the user equipment (11) by a node in a non-cooperative node set;

obtaining (S102), by the transmission node in the cooperative node set, an inter-user interference power during a multi-user scheduling of the transmission node in the cooperative node set, and a power of received useful signal of the user equipment (11);

obtaining (S103), by the transmission node in the cooperative node set, an interference power to the user equipment (11) by a non-transmission node in the cooperative node set, by interacting with the non-transmission node in the cooperative node set, wherein the transmission node sends information to said user equipment (11) and a further user equipment (12) served by the transmission node directly and the non-transmission node does not send information to the

user equipment (11) and the further user equipment (12) served by the transmission node; and

calculating, (S104), a ratio of the power of received useful signal to a sum of an interference source power and the received noise power of the user equipment (11), the ratio being taken as a value of the downlink channel quality information CQI of a downlink channel between the transmission node and the user equipment (11), wherein the interference source power comprises the inter-user interference power during the multi-user scheduling of the transmission node in the cooperative node set, the interference power to the user equipment (11) by the node in the non-cooperative node set, and the interference power to the user equipment (11) by the non-transmission node in the cooperative node set."

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

"A method for obtaining downlink channel quality information, comprising:

a) obtaining (S101), by a transmission node in a cooperative node set, a received noise power of a user equipment, UE, (11), and an interference power to the user equipment (11) by a node in a non-cooperative node set;

b) obtaining (S102), by the transmission node in the cooperative node set, an inter-user interference power during a multi-user scheduling of the transmission node in the cooperative node set, and a power of received useful signal of the user equipment (11);

c) obtaining (S103), by the transmission node in the cooperative node set, an interference power to the user equipment (11) by a non-transmission node in the cooperative node set, by interacting with the

non-transmission node in the cooperative node set, wherein the transmission node sends information to said user equipment (11) and a further user equipment (12) served by the transmission node directly and the non-transmission node does not send information to the user equipment (11) and the further user equipment (12) served by the transmission node; and

d) calculating, (S104), a ratio of the power of received useful signal to a sum of an interference source power and the received noise power of the user equipment (11), the ratio being taken as a value of the downlink channel quality information CQI of a downlink channel between the transmission node and the user equipment (11), wherein the interference source power comprises the inter-user interference power during the multi-user scheduling of the transmission node in the cooperative node set, the interference power to the user equipment (11) by the node in the non-cooperative node set, and the interference power to the user equipment (11) by the non-transmission node in the cooperative node set, and

e) wherein the obtaining (S101), by a transmission node in a cooperative node set, a received noise power of user equipment (11) and an interference power to the user equipment (11) by a node in a non-cooperative node set comprises:

f1) receiving an interference power to the user equipment (11) by P nodes in the non-cooperative node set, and the received noise power  $\mathbf{n}_{UE11} \mathbf{n}_{UE11}^H$  of the user equipment (11), wherein both of the interference power to the user equipment (11) by P nodes in the non-cooperative node set and the received noise power of the user equipment (11) are fed back by the user equipment (11), and

f2) wherein the obtained interference power to the user equipment (11) by the node in the non-cooperative

$$\text{node set is } \sum_{p=1}^P \sum_{q=1}^{Q_p} P_{Non\_s\_pq} \left| \mathbf{w}_{UE11}^H (\mathbf{H}_{Non\_p} \mathbf{P}_{Non\_pq}) \right|^2,$$

$\mathbf{w}_{UE11}^H$  is a conjugate transpose of a receiver vector  $\mathbf{w}_{UE11}$  of the user equipment (11),  $\mathbf{H}_{Non\_p}$  is a channel matrix of an arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set and the user equipment (11),  $\mathbf{P}_{Non\_pq}$  is a pre-coding vector employed in beamforming for user equipment  $UE_{Non\_pq}$  which is served by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set,  $P_{Non\_s\_pq}$  is a power assigned to the user equipment  $UE_{Non\_pq}$  by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set, and

$$\sum_{q=1}^{Q_p} P_{Non\_s\_pq} \left| \mathbf{w}_{UE11}^H (\mathbf{H}_{Non\_p} \mathbf{P}_{Non\_pq}) \right|^2 \text{ is an interference}$$

power to the user equipment (11) by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set, wherein  $q$  is in a range of  $1, 2, \dots, Q_p$ ."

Claim 1 of **auxiliary request 2** is identical to claim 1 of auxiliary request 1.

Claim 1 of **auxiliary request 3** reads as follows (board's highlighting indicating amendments vis-à-vis claim 1 of auxiliary requests 1 and 2):

"A method for obtaining downlink channel quality information, comprising:

a) obtaining (S101), by a transmission node in a cooperative node set, a received noise power of a user equipment, UE, (11), and an interference power to the user equipment (11) by a node in a non-cooperative node set, wherein the cooperative node set is a set of



multiple wireless network nodes which are adjacent to each other on geographical positions in coordinated multiple point technology, and the cooperative nodes transmit information to, or receive information from, a certain wireless terminal and process information from the certain wireless terminal by cooperating with each other;

b) obtaining (S102), by the transmission node in the cooperative node set, an inter-user interference power during a multi-user scheduling of the transmission node in the cooperative node set, and a power of received useful signal of the user equipment (11);

c) obtaining (S103), by the transmission node in the cooperative node set, an interference power to the user equipment (11) by a non-transmission node in the cooperative node set, by interacting with the non-transmission node in the cooperative node set, wherein the transmission node sends information to said user equipment (11) and a further user equipment (12) served by the transmission node directly and the non-transmission node does not send information to the user equipment (11) and the further user equipment (12) served by the transmission node; and

d) calculating (S104), by the transmission node in the cooperative node set, a ratio of the power of received useful signal to a sum of an interference source power and the received noise power of the user equipment (11), the ratio being taken as a value of the downlink channel quality information CQI of a downlink channel between the transmission node and the user equipment (11), wherein the interference source power comprises the inter-user interference power during the multi-user scheduling of the transmission node in the cooperative node set, the interference power to the user equipment (11) by the node in the non-cooperative

node set, and the interference power to the user equipment (11) by the non-transmission node in the cooperative node set, and

e) wherein the obtaining (S101), by a transmission node in a cooperative node set, a received noise power of user equipment (11) and an interference power to the user equipment (11) by a node in a non-cooperative node set comprises:

f1) receiving an interference power to the user equipment (11) by P nodes in the non-cooperative node set, and the received noise power  $\mathbf{n}_{UE11}\mathbf{n}_{UE11}^H$  of the user equipment (11), wherein both of the interference power to the user equipment (11) by P nodes in the non-cooperative node set and the received noise power of the user equipment (11) are fed back by the user equipment (11), and

f2) wherein the obtained interference power to the user equipment (11) by the node in the non-cooperative

node set is 
$$\sum_{p=1}^P \sum_{q=1}^{Q_p} P_{Non\_s\_pq} \left| \mathbf{w}_{UE11}^H (\mathbf{H}_{Non\_p} \mathbf{P}_{Non\_pq}) \right|^2,$$

$\mathbf{w}_{UE11}^H$  is a conjugate transpose of a receiver vector  $\mathbf{w}_{UE11}$  of the user equipment (11),  $\mathbf{H}_{Non\_p}$  is a channel matrix of an arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set and the user equipment (11),  $\mathbf{P}_{Non\_pq}$  is a pre-coding vector employed in beamforming for user equipment  $UE_{Non\_pq}$  which is served by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set,  $P_{Non\_s\_pq}$  is a power assigned to the user equipment  $UE_{Non\_pq}$  by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set, and

$$\sum_{q=1}^{Q_p} P_{Non\_s\_pq} \left| \mathbf{w}_{UE11}^H (\mathbf{H}_{Non\_p} \mathbf{P}_{Non\_pq}) \right|^2$$
 is an interference

power to the user equipment (11) by the arbitrary node  $N_{Non\_p}$  in the P nodes of the non-cooperative node set, wherein  $q$  is in a range of  $1, 2, \dots, Q_p$ ."

## Reasons for the Decision

1. *Decision in written proceedings*
  - 1.1 According to established case law, where oral proceedings are appointed upon a party's request and that party subsequently expresses its intention not to attend, such statement is normally considered to be equivalent to a withdrawal of the request for oral proceedings.
  - 1.2 As the board does not consider holding oral proceedings to be expedient in this case (see Article 116(1) EPC), these were cancelled and a decision was handed down in written proceedings (Article 12(8) RPBA 2020).
  - 1.3 Given that the appellant's indication of non-attendance was not submitted within one month of notification of the board's communication under Article 15(1) RPBA 2020, the appeal fee cannot be partially reimbursed under Rule 103(4) (c) EPC.
2. MAIN REQUEST

Claim 1 of the **main request** comprises the following limiting features (outline introduced with the statement of grounds of appeal):

A method for obtaining downlink channel quality information CQI, comprising:

- (a) obtaining, by a transmission node in a cooperative node set, a received noise power of a user equipment and an interference power to the user equipment by a node in a non-cooperative node set;
- (b) obtaining, by the transmission node in the cooperative node set, an inter-user interference power during a multi-user scheduling of the transmission node in the cooperative node set, and a power of received useful signal of the user equipment;
- (c) obtaining, by the transmission node in the cooperative node set, an interference power to the user equipment by a non-transmission node in the cooperative node set, by interacting with the non-transmission node in the cooperative node set, wherein the transmission node sends information to said user equipment and a further user equipment served by the transmission node directly and the non-transmission node does not send information to the user equipment and the further user equipment served by the transmission node;
- (d) calculating a ratio of the power of received useful signal to a sum of an interference source power and the received noise power of the user equipment, the ratio being taken as a value of the CQI of a downlink channel between the transmission node and the user equipment, wherein the interference source power comprises the inter-user interference power during the multi-user scheduling of the transmission node in the cooperative node set, the interference power to the user equipment by the node in the non-cooperative node set, and the

interference power to the user equipment by the non-transmission node in the cooperative node set.

2.1 *Claim 1- claim interpretation*

2.1.1 The board finds the expression "interference power to the user equipment by [another node]" used in features (a), (b) and (d) syntactically confusing and semantically ambiguous. In the following analysis, it will be interpreted as "interference power caused by [another node] imposed on the user equipment", in line with the explanations provided in paragraph [0027] of the application as published.

2.1.2 As to the expression "directly" used in feature (c), the board considers that the wording of the claim does not render apparent which kind of limitation is actually intended, whether a structural one (e.g. without traversing intermediary units), a temporal one (e.g. without any further processing delays) or both. In the appellant's favour (see point 1.2 of the statement of grounds of appeal), the board will use the first interpretation in the following analysis.

2.1.3 In their reply dated 22 December 2021, the appellant agreed with the board's interpretation of the claim.

2.2 *Claim 1 - novelty in view of D1 (Article 54 EPC)*

2.2.1 Using the wording of claim 1, **D1** discloses:

A method for obtaining downlink channel quality information (CQI), comprising:

(a) obtaining, ~~by a transmission node~~ in a cooperative node set ([0018] and Fig. 1: "first CoMP cell 12, denoted CoMP cell zero"), a received noise power

([0018]: " $W_0(k;t)$ ", with variance " $N_0(k;t)$ ") of a user equipment ([0018] and Fig. 1: "first UE 18, denoted UE<sub>0</sub>") and an interference power ([0018]: as created by " $I_{oth}(k;t)$ ", with variance " $\sigma_{oth}^2(k;t)$ ") to the user equipment by a node in a non-cooperative node set ([0018]: " $I_{oth}(k;t)$  is inter-CoMP cell interference (that is, interference from CoMP cells other than CoMP cell zero) observed by UE<sub>0</sub>");

- (b) obtaining, ~~by the transmission node~~ in the cooperative node set, an inter-user interference power during a multi-user scheduling of the transmission node in the cooperative node set ([0018]: included in the interference created by " $x_i(k;t)$ ", see point 2.2.7 below), and a power of received useful signal of the user equipment ([0019]: " $|H_0(k;t)|^2 \sigma_0^2(k;t)$ ");
- (c) obtaining, ~~by the transmission node~~ in the cooperative node set, an interference power to the user equipment by a non-transmission node in the cooperative node set ([0018]: included in the interference created by " $x_i(k;t)$ ", see point 2.2.7 below), ~~by interacting with the non-transmission node in the cooperative node set~~, wherein the [a] transmission node ([0018] and Fig. 1: "network transceivers 16") sends information to said user equipment and a further user equipment served by the transmission node directly and the non-transmission node does not send information to the user equipment and the further user equipment served by the transmission node ([0023]: for a given sub-cell 14, its network transmitter 16 is the "transmission node" for the UEs in that sub-cell, whereas the network transmitters 16 in the other sub-cells 14 of the CoMP cell 12 are "non-transmission nodes");

(d) calculating a ratio of the power of received useful signal to a sum of an interference source power and the received noise power of the user equipment ([0019]: equation (1)), the ratio being taken as a value of the CQI of a downlink channel between the transmission node and the user equipment ([0030]: the network-centric link adaptation effectively replaces CQI reporting), wherein the interference source power comprises the inter-user interference power during the multi-user scheduling of the transmission node in the cooperative node set ([0019]: included in " $|H_0(k;t)|^2$ " multiplying the sum of " $\sigma_i^2(k;t)$ ", where  $i$  belongs to  $S_0(k;t)$ , see point 2.2.7 below), the interference power to the user equipment by the node in the non-cooperative node set ([0019]: " $\sigma_{oth}^2(k;t)$ ", the interference from CoMP cells other than CoMP cell zero), and the interference power to the user equipment by the non-transmission node in the cooperative node set ([0019]: included in " $|H_0(k;t)|^2$ " multiplying the sum of " $\sigma_i^2(k;t)$ ", where  $i$  belongs to  $S_0(k;t)$ , see point 2.2.7 below).

2.2.2 The examining division held in point 15.3.1 of the reasons of the impugned decision that, according to D1, the "network transceivers 16" were base stations and the "CoMP cell controller" was a base station with evolved functionality. Both elements 16 and 20 in Figure 1 of D1 were base stations and, consequently, also transmission nodes in the sense of claim 1, they just had different capabilities. Furthermore, the examining division explained in point 15.3.2 of the appealed decision that, in Figure 1, it could be assumed that only the terminals in the central cell had the CoMP cell controller as serving base station.

2.2.3 Paragraph [0015] of D1 states (emphasis added):

"FIG. 1 depicts a Coordinated Multi-point (CoMP) cell 12 comprising, in this example, seven conventional cells, referred to herein as sub-cells 14. Each sub-cell 14 includes a network transceiver 16 (also known as a base station, NodeB, Access Point, or the like) providing wireless communications to subscribers within the sub-cell 14, including mobile UEs 18. A CoMP cell controller 20 (also known as Evolved NodeB or eNodeB) coordinates transmissions to UEs 18 within the CoMP cell to maximize data rates to selected UEs, while maintaining intra-CoMP cell interference below a predetermined level. The CoMP cell controller 20 may accomplish this through scheduling, and/or by combining weighted transmissions from two or more network transceivers 16 to any UE 18."

Although the CoMP cell controller 20 is depicted within the central sub-cell of Fig. 1, each sub-cell 14 in a CoMP cell 12, including the central sub-cell, has its own network transceiver 16 and they are all connected to the CoMP cell controller 20. Hence, in the board's view, the CoMP cell controller 20 of D1 cannot be identified as the claimed "transmission node".

2.2.4 The examining division considered the CoMP cell controller 20 as a "transmission node" and assumed that "not all terminals in Figure 1 have the CoMP cell controller as serving base station" and "only the terminals in the central cell have the CoMP cell controller as serving base station" (see point 15.3.2 of the appealed decision, emphasis added), concluding that the UEs in the central sub-cell were served by the



CoMP cell controller 20 "directly".

The board disagrees with this assumption. D1 merely discloses one CoMP cell controller 20 connected to a set of network transceivers 16, one per sub-cell, as confirmed by paragraph [0026] (emphasis added):

"... the UE 18 measurement of total inter-CoMP cell interference is facilitated by the CoMP cell controller 20 transmitting no symbols from any of its network transceivers 16 during a certain known interval ...".

A CoMP cell controller 20 serves UEs in all the sub-cells 14 of the CoMP cell 12 through respective network transceivers 16 and performs multi-user scheduling for the whole CoMP cell 12. It cannot be implied that the CoMP cell controller 20 should serve the UEs in the central sub-cell any more "directly", irrespective of how this term is interpreted, than in the other sub-cells.

2.2.5 The appellant submitted that:

- (i) D1 disclosed or suggested that the CoMP cell controller 20, rather than the network transceiver 16, *determined* the desired signal to be received at the first UE 18, the interference caused to the first UE 18 and the thermal noise observed at the first UE 18, and *received* a measure of interference from one or more other CoMP cells. In contrast, the obtaining steps of claim 1 were performed by the transmission node which could send information to the user equipment "directly". The claimed "transmission

node" was different from the CoMP cell controller 20 of D1.

- (ii) D1 failed to disclose an interaction with a non-transmission node (**feature (c)**) and failed to consider a multi-user scheduling of the transmission node (**feature (b)**).
  
- (iii) The intra-CoMP cell of D1 corresponded to a cooperative node set as shown in Figure 2 of the present application, so that the intra-CoMP cell interference of D1 roughly corresponded to the interference by a non-transmission node in the cooperative node set in present claim 1, and the inter-CoMP cell interference of D1 roughly corresponded to the interference by a node in a non-cooperative node set in claim 1. That is, in the refusal decision of the examining division, it was not correct to read the intra-CoMP cell interference of D1 onto the inter-user interference power of claim 1 (**feature (d)**).

The appellant concluded that none of **features (a) to (d)** were disclosed by **D1**.

2.2.6 With respect to the appellant's arguments, the board agrees that:

- (i) In D1, the network transceiver 16 rather than the CoMP cell controller 20 should be identified as the claimed "transmission node".
  
- (ii) D1 fails to disclose an interaction with a non-transmission node as required by **feature (c)**.

(iii) The CoMP cell 12 of D1 corresponds to the claimed *cooperative node set* and the inter-CoMP cell interference of D1 corresponds to the claimed *interference power to the user equipment by a node in a non-cooperative node set*.

2.2.7 Contrary to the appellant's arguments, the board holds that D1 also considers, at least implicitly, both *inter-user interference power during multi-user scheduling of the transmission node and interference power to the user equipment by a non-transmission node in the cooperative node set*. According to paragraph [0018] of D1:

"...  $x_i(k;t)$  is the signal transmitted from the transmit antennas of the network transceivers 16 in cell zero to the  $i^{th}$  UE served by cell zero, with variance  $\sigma_i^2(k;t)$ ;  
 $S_0(k;t)$  is the set of UEs that are served simultaneously with UE<sub>0</sub> by cell zero; ...".

These signals are subsequently considered in the SINR (Signal to Interference and Noise Ratio) calculation of equation (1) in paragraph [0019]. For each UE<sub>*i*</sub> being served simultaneously, i.e. at the same time "t" in the same TTI, with UE<sub>0</sub> by cell zero, the signal  $x_i(k;t)$  can be decomposed in two components:

- the signal transmitted from the transmit antennas of the network transceivers in cell zero serving both UE<sub>0</sub> and UE<sub>*i*</sub> simultaneously, which creates the claimed *inter-user interference power during the multi-user scheduling of the transmission node*, and
- the signal transmitted from the transmit antennas of network transceivers in cell zero serving UE<sub>*i*</sub>,

but not  $UE_0$ , while  $UE_0$  is being served by other network transceivers in *cell zero* simultaneously, which generates the claimed *interference power to the user equipment by a non-transmission node in the cooperative node set*.

It is to be noted that OFDM(A) provides, at the very least, multi-user scheduling through the use of time-frequency multiplexing in the downlink since the inception of LTE (Release 8) and that spatial user multiplexing for the downlink in the form of MU-MIMO was proposed together with CoMP already in 2008 in the studies for LTE-Advanced (Release 10). The applicability of the equations of paragraphs [0018] and [0019] of D1 is not constrained by any particular assumptions or simplifications with respect to inter-carrier interference in OFDM or inter-beam interference in MU-MIMO.

2.3 In summary, the subject-matter of claim 1 is new (Article 54 EPC) in view of D1, the only differences being that the steps of features (a), (b) and (c) are carried out by a transmission node, which interacts with the non-transmission node in the cooperative node set to obtain an interference power to the user equipment by a non-transmission node in the cooperative node set, rather than by a "CoMP controller".

2.4 *Claim 1 - inventive step (Article 56 EPC)*

2.4.1 The CoMP (coordinated multi-point) technology, as proposed for LTE as early as 2008, was known to consider two different scenarios: a first one in which a central eNB uses a plurality of remote radio equipment, RREs, also known as access points, and a second one using independent eNBs collaborating with

each other. **D1** relates to the first scenario, whereas the claimed subject-matter, following the appellant's argumentation, addresses the second scenario. Incidentally, the second scenario is also generally acknowledged in the second paragraph of the introduction section of **D2** (emphasis added):

"One of main concepts for CoMP is that multiple eNBs collaborate ... These collaboration levels could be different according to the data and the channel state information (CSI) sharing scenarios ...".

In view of this, the board considers that the technical effect associated with the difference identified in features (a), (b) and (c) is the resulting possibility of obtaining accurate CQI information in a scenario using separate, independent transmission nodes in a CoMP set.

The objective technical problem can thus be formulated as "how to obtain accurate downlink channel quality information in a scenario using *independent* transmission nodes in a CoMP set".

2.4.2 Document D1, like the present application, proposes a *network-centric* CQI calculation to mitigate the problems created by *UE-centric* CQI reporting in CoMP. Starting from this document, the person skilled in the field of cellular communications would easily have realised that, in order to adapt the system of D1 to a scenario using independent nodes without a central CoMP cell controller 20,

1) each transmitting "network transceiver 16" must perform the CQI calculation independently,

2) for this purpose, it can only obtain the CSI concerning other non-transmitting "network transceivers 16" in the same CoMP cell (previously available in the CoMP cell controller 20) from the other non-transmitting network transceivers 16.

These considerations would inevitably have led to the incorporation of the above distinguishing features into the system of D1 without the exercise of any inventive skills.

2.4.3 The appellant submitted that already the fact that the alleged objective technical problem was not mentioned in D1 showed the very different operation principle in D1 and that the present independent claims were already inventive, since, if the problem was not known, the solution could not be obvious.

2.4.4 The board disagrees. Notwithstanding the fact that the board considers a *different* objective technical problem, the general argument that "if the objective technical problem is not mentioned in D1, the solution cannot be obvious" is not persuasive. Firstly, the closest prior art needs not disclose the objective technical problem (see e.g. T 698/10, Reasons 3.4). Secondly, as explained in point 2.4.1 above, *both* scenarios were well-known in the CoMP scheme, and the skilled person would have needed no explicit hint in D1 to consider the *alternative* scenario.

2.5 It follows that the main request is not allowable under Article 56 EPC.

3. AUXILIARY REQUESTS

Claim 1 of **auxiliary requests 1 and 2** comprises all the limiting features of claims 1 and 2 of the main request, i.e. it comprises further features (original outline):

- (e) obtaining, by a transmission node in a cooperative node set, a received noise power of user equipment and an interference power to the user equipment by a node in a non-cooperative node set comprises:
- (f1) receiving an interference power to the user equipment by P nodes in the non-cooperative node set, and the received noise power  $n_{UE11}n_{UE11}^H$  of the user equipment, wherein both of the interference power to the user equipment by P nodes in the non-cooperative node set and the received noise power of the user equipment are fed back by the user equipment,
- and feature (f2) includes the formula used to obtain the interference power to the user equipment by the node in the non-cooperative node set (see point IX above).

Claim 1 of **auxiliary request 3** comprises all the features of claim 1 of auxiliary requests 1 and 2 and the following additional feature (board's outline and highlighting):

- (g) the cooperative node set is a set of multiple wireless network nodes which are adjacent to each other on geographical positions in coordinated multiple point technology, and the cooperative nodes transmit information to, or receive information from, a certain wireless terminal and process information from the certain wireless terminal by cooperating with each other.

3.1 *Admittance into the appeal proceedings*

3.1.1 Claim 1 of each of the three present **auxiliary requests** allegedly corresponds to a combination of claims 1 and 2 of the main request, which was neither decided nor discussed in the appealed decision.

3.1.2 In accordance with Article 12(4) RPBA 2007, the board has the power to hold inadmissible requests which could have been presented in the first instance proceedings.

3.1.3 The examining division was not obliged to give a final decision on the merits of this combination of features (cf. point 4 below). Even though corresponding features had been explicitly addressed in point 3.1 of the official communication pursuant to Article 94(3) EPC dated 15 March 2016 and in point 4.1 of the annex to the summons to oral proceedings dated 29 May 2018 in connection with the sets of claims later replaced, the minutes of the telephone conversation of 26 November 2018, concerning specifically the main request subject to the appealed decision, state in point 4 that

"... the examiner noted that the other amendments to the independent claims are of minor nature and, prima facie, do not solve the objection concerning novelty with respect to D1."

If admitted into the proceedings, the board would thus be compelled to give a first ruling on the issues of novelty and inventive step for this subject-matter, contrary to the primary object of appeal proceedings, which is to give a judicial decision on the correctness of the appealed decision (see Article 12(2) RPBA 2020).

3.1.4 Moreover, in view of the fact that the examining division had advanced a preliminary opinion on this



subject-matter, it is apparent that the present auxiliary requests *could* and *should* have been filed already before the examining division, at the latest during their oral proceedings.

- 3.1.5 The appellant submitted that it had been discovered only by reading the appealed decision that there was a basic misconception in that the present invention relates to scenario two (hence raising incorrect arguments on novelty as the board had also confirmed). This was one reason why the auxiliary requests could only be filed during appeal and not during the first-instance oral proceedings.
- 3.1.6 This is not convincing. The then applicant's reply to the summons for oral proceedings already included these arguments (cf. the letter of 2 November 2018, page 3):

"The examiner indicates in section 3.3 of the summons that both elements 16 and 20 in Fig.1 of D1 are base stations and consequently also transmission nodes in the sense of claim 1. D1 discloses that the CoMP cell controller 20 receives from the first UE 18 a measure of interference from one or more other CoMP cells 22, 24 (paragraph [0026] of D1). However, **nowhere D1 teaches or suggests that the CoMP cell controller 20 sends information to the UE 18.**

In contrast, according to the amended claim 1, the transmission node sends information to said user equipment (11) and a further user equipment (12) served by the transmission node directly. Thus, the CoMP cell controller 20 of D1 is not a transmission node. The method of network-centric link adaptation is performed by the controller 20 (paragraph [0023] of D1). In contrast, the

obtaining steps (S101, S102, S103) of claim 1 are performed by the transmission node."

Hence, it is apparent that the then applicant was aware of the alleged "misconception" well before the written decision was issued by the examining division.

3.1.7 The appellant further submitted that, since auxiliary request 3 emphasised the difference between scenario one (D1) and scenario two (present invention), at least this request which had been filed early with the statement of grounds of appeal could exceptionally and without undue burden be admitted into the appeal proceedings since at least the amendments in this auxiliary request 3 fully supported the arguments presented by the appellant in reply to the board's preliminary opinion.

3.1.8 This argument is not persuasive either. Notwithstanding the fact that this request was filed *before* the notification of the board's preliminary opinion, the addition of feature (g) merely stresses a difference which has already been acknowledged by the board.

3.2 In view of the above, the board does not admit any of the three **auxiliary requests** on file into the appeal proceedings (Article 12(4) RPBA 2007).

#### 4. *Remaining procedural issues*

4.1 As a consequence of the fact that the examining division was not inclined to grant the appellant's request for interlocutory revision, the appellant further requested that the board either remits the case to the examining division "for revision of its [d]ecision", or sets aside the appealed decision (cf.

notice of appeal, point 1.2; statement of grounds of appeal, point 1; letter of 22 December 2021, point 2). Since the board, up to this point, is not minded to set aside the appealed decision, the remittal request stands.

In support of its request for remittal, the appellant asserted that the examining division made a procedural error in omitting to decide on, including to reason in respect of, the dependent claims of the then sole request (cf. statement of grounds of appeal, points 2 and 3.2; letter of 22 December 2021, point 7).

- 4.2 After having examined whether the European patent application and the invention to which it relates meet the requirements of the EPC, the examining division shall grant or refuse the application and give reasons for its decision (see e.g. Articles 94 and 97 in conjunction with Rule 111(2) EPC).

In the present case, the examining division decided to refuse the application on the basis that claims 1 and 5 of the sole request lacked novelty over document D1, while giving detailed reasons for this. Since the failure of one of these independent claims to meet the requirements of the EPC would have led to refusal of the application, the examining division, strictly speaking, decided and reasoned more than they had to. Any assessment of the dependent claims would not have had any impact on the outcome, let alone been essential for the decision. Hence, the board sees no procedural error in not discussing the dependent claims in the appealed decision, and also no special reasons for remittal (Article 11 RPBA 2020; Article 111(1) EPC), or any basis here for setting the decision aside.

- 4.3 Additionally, the appellant requested reimbursement of the appeal fee (cf. notice of appeal, point 3), however, without any substantiation. In the context of the appeal, and in the appellant's favour, the board understands that this request rests on the same alleged omission by the examining division. It follows that no substantial procedural violation has occurred in the first-instance proceedings. Therefore, and since the appeal is not allowable, no reimbursement is granted on this basis either (Rule 103(1) (a) EPC).
5. Since there is no allowable request on file, the appeal must be dismissed.

## Order

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

1. The appeal is dismissed.
2. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated