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Datasheet for the decision of 20 January 2022

Case Number: T 1254/19 - 3.5.03

Application Number: 16164602.1

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Title of invention:
Local internet protocol access capability indication

Applicant:
Qualcomm Incorporated

Headword:
Local IP access capability indication/QUALCOMM

Relevant legal provisions:
EPC Art. 56

Keyword:
Novelty - (yes)
Inventive step - (no): application of could-would approach

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Case Number: T 1254/19 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 20 January 2022

Appellant: (Applicant)	Qualcomm Incorporated 5775 Morehouse Drive San Diego, CA 92121-1714 (US)
Representative:	Bardehle Pagenberg Partnerschaft mbB Patentanwälte Rechtsanwälte Prinzregentenplatz 7 81675 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 12 December 2018 refusing European patent application No. 16164602.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	J. Eraso Helguera
	R. Romandini

Summary of Facts and Submissions

I. The appeal was lodged by the applicant 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 main (and sole) request.

II. During the examination proceedings, the examining division referred *inter alia* to the following prior-art document:

D1: US 2008/0285492 A1.

III. Oral proceedings before the board were held on 20 January 2022 by videoconference.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the **main request** subject to the impugned decision.

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

"A method (300) performed by a user terminal for obtaining local Internet Protocol, IP, access capability information, comprising:

receiving (302) from an access point an indication over broadcast common signaling that comprises capability of the access point to provide local IP access connectivity to a mobile device and, wherein the indication is received via an overhead channel that comprises system information blocks, wherein the local IP access connectivity enables access to at least one

locally available node by the mobile device, and wherein the indication is received before the mobile device has connected to the access point; and

requesting (304) the local IP access connectivity only when the indication specifies that the access point has the capability to provide the local IP access connectivity."

Reasons for the Decision

1. MAIN REQUEST

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

1. A method performed by a user terminal for obtaining local IP access capability information, comprising:
1.1 receiving from an access point an indication over broadcast common signalling
1.1.1 that comprises capability of the access point to provide local IP access connectivity to a mobile device,
1.1.2 the indication is received via an overhead channel that comprises SIBs,
1.1.3 the local IP access connectivity enables access to at least one locally available node by the mobile device,
1.1.4 the indication is received before the mobile device has connected to the access point;
1.2 requesting the local IP access connectivity only when the indication specifies that the access

point has the capability to provide the local IP access connectivity.

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

1.1.1 Paragraph [0060] of **D1** discloses:

> "In a step 901, cell system information is received in the user equipment (designated "UE") from a serving base station (designated "eNB") of a public mobile network. The serving base station periodically transmits cell system information data on a broadcast channel in order to advertise LTE radio coverage availability, network identifiers and physical properties of the radio link ... The cell system information may contain information elements that advertise the availability of a local IP breakout service (e.g., pre-configured in the base station in its radio network configuration data)".

This teaching corresponds to **features 1 to 1.1.3** of claim 1.

1.1.2 The appellant submitted that neither **feature 1.1.4** nor **feature 1.2** were disclosed in **D1**. The skilled person might not deduce directly and unambiguously that the "availability of a local IP breakout service" was received by the UE already in step 901 of Figure 9 of D1. Paragraph [0060] of D1 did not directly and unambiguously disclose that the "availability of a local IP breakout service" was actually advertised in the cell system information sent in step 901. Rather, paragraph [0060] only very generally mentioned that "the cell system information may contain information elements that advertise the availability of a local IP

breakout service". No reference was made to the particular cell system information actually sent in step 901 of Fig. 9. The skilled person had to conclude that the user equipment in step 901 was unaware of whether or not the base station had a local IP breakout service, as was confirmed by paragraphs [0064] and [0065] of D1.

1.1.3 The examining division held that features 1.1.4 and 1.2 were also disclosed in D1, referring to paragraphs [0060], [0061] and [0064] to [0068] of D1 (cf. appealed decision, Reasons 11.1). The board does not share this view.

Although according to the technologies to which D1 explicitly relates, namely LTE and IMT-Advanced/4G systems, system information is broadcast periodically by the base station, not all the system information blocks (SIBs) have the same periodicity. In the board's view, indeed, the information elements that advertise the availability of a local IP breakout service mentioned in paragraph [0060] of D1 are not strictly necessary to connect to the base station. As a consequence, it cannot be implied that the user terminal must have necessarily received them as part of the cell system information of step 901 *before* the RRC connection establishment of step 902 or the radio bearer establishment of steps 911 and 912, as required by **feature 1.1.4**. *A fortiori*, it cannot be inferred that the user terminal is supposed to make a request *only* when these information elements specify that the access point has indeed the capability to provide the local IP access connectivity, as mandated by **feature 1.2**.

1.2 Therefore, and contrary to the finding of the appealed decision, the subject-matter of claim 1 is new over the disclosure of D1 (Article 54 EPC).

1.3 Claim 1 - inventive step starting out from D1 (Article 56 EPC)

1.3.1 As explained above, the board concurs with the appellant that the subject-matter of claim 1 differs from D1 in **features 1.1.4 and 1.2.**

1.3.2 The board also agrees with the appellant that the technical effect associated with the distinguishing features is the avoidance of unnecessary triggering of signalling each time the mobile device discovers an access point in order to find out if that access point supports local IP access. Such activity would unnecessarily consume system resources (see e.g. paragraph [0039] of the present description).

1.3.3 The objective technical problem can thus be defined as "how to save system resources in the context of local IP access in the system of D1".

The subject-matter of claim 1 does not involve an inventive step for the following reasons:

1.3.4 The skilled person would have been well aware that, at least in LTE and IMT-Advanced/4G systems, information broadcast by an access point in SIBs can be decoded *without* having to connect to this access point first. This allows the user terminal, among other things, to verify whether the access point in question provides support for certain features. In this particular case, D1 clearly discloses in paragraph [0060] the possibility of advertising the availability of a local

IP breakout service through a SIB (see point 1.1.1 above).

Hence, the skilled person starting out from **D1** and seeking to avoid unnecessary triggering of signalling in the described system would have easily realised that it is more efficient to connect to an access point and to request local IP access connectivity *only if* the SIB that comprises the information on the access point's capability to provide local IP access connectivity according to paragraph [0060] has been received beforehand.

1.3.5 According to the appellant there are no hints towards the solution of the above objective problem in D1. This was because D1 was directed to a completely different problem, namely to the use of an IP address/access point name for local IP breakout service in LTE/SAE that is an alternative to the default user IP address/ access point name. The appellant further submitted that:

(a) Although paragraph [0060] of D1 disclosed that the *cell system information* may contain elements that advertise the availability of a local IP breakout service, this information was not considered by the user equipment UE. Rather, the UE selected an LTE/ SAE operator and an LTE cell having the best signal quality based on the received system information. Therefore, the indication of that availability data by the cell system information "was not always the case".

(b) The skilled person was not faced with the problem of having to detect which cell supported a local IP breakout service because D1 already provided a

mechanism for this in paragraph [0033], according to which

> "... [t]he communication system can indicate the list of neighboring cells and tracking area identification in conjunction with an initial attaching procedure, network entry to local IP breakout service, or in ordinary handover related measurement control from the LTE base station to the user equipment ...".

(c) D1 disclosed the establishment of a further network connection (default IP connectivity via SAE gateway) before the UE considered checking for availability of a local IP breakout service (cf. D1, steps 902 to 906 and Fig. 9, paragraphs [0004], [0028], [0054] and [0072]). As a consequence, starting from D1 and in view of the above objective problem, the skilled person would not have indicated the availability of a local breakout service in the *cell system information*. It was rather apparent that the skilled person would have used the established network connection, which was not released afterwards, to indicate the availability to the UE. In particular, using the established connection avoided the waste of bandwidth capacity loss with respect to the *cell system information*. This connection was established irrespective of whether a local IP breakout service was available. Therefore, the skilled person would not have chosen the solution of the claimed subject-matter to solve the above identified problem.

1.3.6 This is not convincing. The relevant question to be dealt with here is the proper application of the

"could-would approach". According to the board, the trade-off involved in the selection among the above two options is apparent for the skilled person in the field of 3GPP-based mobile networks: connecting *without* waiting to receive the respective SIB may indeed speed up the connection establishment, but at the risk of establishing unwanted and thus unnecessary connections to access points in which local IP access connectivity eventually turns out to be unavailable, i.e. at the cost of reduced bandwidth efficiency and additional processing delays.

- With respect to argument (a), the board considers that the fact that the best signal quality is to be selected would not have deterred the skilled person from establishing *additional* constraints, in particular, when aiming to save system resources.

- As to argument (b), the disclosure of paragraph [0033] of D1 concerns specifically information about *neighbouring* cells in order to provide mobility within the local IP breakout area, rather than the selection of a certain cell for the *initial* attachment.

- The alternative proposed by the appellant in argument (c) would not solve the objective technical problem defined.

According to Figure 9 of D1, the user unconditionally establishes a RRC connection with an eNB (step 902) and obtains default IP connectivity via the SAE gateway on the user-plane (step 906). Moreover, according to paragraph [0064]:

> "... at this moment, the user equipment may detect that a local IP breakout service is available on the basis of received information in the cell system information, or non-access stratum ("NAS") level signaling received from the MME ...".

If the skilled person relied exclusively on the MME to obtain an indication of the availability of a local IP breakout service, there would be occasions when the UE undergoes the whole RRC connection and SAE bearer establishment procedure only to find out that the eNB does not have a local IP breakout service in the end. This, however, constitutes an unnecessary consumption of system resources, in contrast with the posed objective technical problem. In other words, the skilled person not just *could* but also *would* apply the option hinted at in paragraph [0060] of D1 to solve that problem.

1.4 In consequence, the subject-matter of claim 1 of the main request does not involve an inventive step (Article 56 EPC).

2. Since there is no allowable set of claims, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated