

**Demonstratives of Petitioner
Samsung Electronics Co., Ltd.**

IPR2023-00441

Oral Hearing: May 6, 2024

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SAMSUNG EXHIBIT 1016

Samsung Electronics Co., Ltd. v. G+ Communications, LLC

IPR2023-00441

Disputed Issues

- 1) Whether claims 1-15, and 17 are unpatentable under the Board's preliminary interpretation of "pre-set UE number"
- 2) Whether the Board should not issue a decision on the merits for claim 18 because the scope of claim 18 cannot be determined with reasonable certainty

“Pre-set UE number”

- Both independent claims 1 and 18 recite “wherein the message 3 comprises a number of UEs having random access requests in the UE group or a number of UEs contained in the UE group or a pre-set UE number.”
- The IPR Petition states that both Li and Kim have a “pre-set UE number” in their respective Message 3 because their Message 3 includes a unique identifier of the UE. (Petition at 16, 47.)
- This mapping was based on Patent Owner’s infringement contentions.

Upon information and belief, the Msg3 comprises a C-RNTI field which is a unique UE identification used as an identifier of the RRC Connection and for scheduling. The C-RNTI MAC CE field contains the C-RNTI of the MAC entity (User Equipment).

Upon information and belief, the C-RNTI MAC CE field comprises a pre-set UE number.

Msg3: Message transmitted on UL-SCH containing a C-RNTI MAC CE or CCCH SDU, submitted from upper layer and associated with the UE Contention Resolution Identity, as part of a Random Access procedure.

Screenshot showing Msg3 definition from standard 3GPP TS 38.321 version 16.4.0 Release 16 (available on page 30 from https://www.etsi.org/deliver/etsi_ts/138300_138399/138321/16.04.00_60/ts_138321v160400p.pdf).

Ex. 1015 (PO Infringement Contentions) at 29

“Pre-set UE number”

- The Board preliminarily construed “pre-set UE number” to “mean one UE identified by a number.” (Decision, 23.)
- Both of Samsung’s primary references (Li and Kim) disclose a “pre-set UE number” under the Board’s construction.
 - ❖ Li discloses that the RRC connection request (message 3) includes “the terminal ID of MTC UE1.” (Ex. 1005 (Li), ¶[0128].) And the “terminal ID may be IMSI, MSISDN, IP address, IMPU, IMPI and any other symbol used to uniquely identify a terminal.” (*Id.*, 0066].) Thus, message 3 in Li includes a “pre-set UE number” under the Board’s construction.
 - ❖ Kim discloses that “[m]essage 3 should include an ID of the UE. This is because the eNB cannot determine which UEs perform the random access procedure in the contention-based random access procedure and the UEs need to be identified for future contention resolution.” (Ex. 1011 (Kim), ¶[0089].) The UE ID may be a “unique ID (e.g., System Architecture Evolution (SAE)-Temporary Mobile Subscriber Identity (S-TMSI) or a random ID).” (*Id.*, ¶[0090].) The UE ID is a “pre-set UE number” under the Board’s construction.

“Pre-set UE number”

- After institution, the District Court construed “pre-set UE number” as a “pre-set number of UEs.” (PO Response at 19.).
- PO asks the Board to adopt the District Court’s construction, without any explanation as to why that construction is correct. (PO Response at 19.)
- If the Board maintains its interpretation of “pre-set UE number,” at least claims 1-15 and 17 are unpatentable. (Petitioner Reply at 4.)

Claim 18

- The scope of claim 18 cannot be ascertained with reasonable certainty.
- Thus, the Board should not reach a decision on the merits with respect claim 18. *Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020) (“[T]he proper course for the Board to follow, . . . , if the indefiniteness issue affects only certain claims, to conclude that it could not reach a decision on the merits with respect to whether petitioner had established the unpatentability of those claims under sections 102 or 103.”).

Claim 18

- Claim 18 recites a “sending unit [] configured to” perform two functions: (a) “send a preamble to an evolved Node B (eNB) over a time-frequency resource, the time-frequency resource comprising a time domain resource and a frequency domain resource,” and (b) “send a message 3 according to a Uplink (UL) grant allocated to the UE, wherein the message 3 comprises a number of UEs having random access requests in a UE group or a number of UEs contained in the UE group or a pre – set UE number.”

18. A User Equipment (UE), comprising: a sending unit and a monitoring unit,
wherein the sending unit is configured to: send a preamble to an evolved Node B (eNB) over a time-frequency resource, the time-frequency resource comprising a time domain resource and a frequency domain resource;
the monitoring unit is configured to: monitor a Random Access Response (RAR) corresponding to the preamble and sent by the eNB; and
the sending unit is further configured to: send a message 3 according to a Uplink (UL) grant allocated to the UE, wherein the message 3 comprises a number of UEs having random access requests in a UE group or a number of UEs contained in the UE group or a pre-set UE number.

Claim 18

- Patent Owner agrees that the “sending unit” limitation is a “means-plus-function” limitation under 35 U.S.C. § 112(f). (PO Response at 22-25.)
- Here, the claimed “sending unit” performs two complex functions (set forth in the previous slide). But the claim does not recite sufficiently definite structure for performing the claimed functions. (Ex. 1014 (Ding Rebuttal Decl.) at ¶¶3-4.)

Dr. Ding (Petitioner’s Expert):

In my opinion, the term “sending unit” does not have such a sufficiently definite meaning in the art and a person of ordinary skill would not have associated that term with a particular circuit or structure. The term “unit” is a generic term that does not provide any indication regarding the structure required to perform the two functions. The term “sending” in front of the word “unit” does not add any clarity regarding any particular structure connoted by a “sending unit” that would have been capable of carrying out the above two functions.

Ex. 1014 (Ding Rebuttal Decl.) at ¶4

Claim 18

- The specification does not provide any structural discussion pertaining to the “send[ing]” function. Instead, the “sending unit” is repeatedly shown as a black box in the drawings (see below) and the corresponding description of the “sending unit” simply tracks the express language of the claimed function.

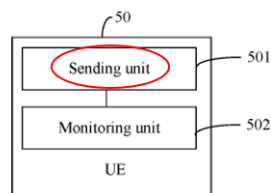


FIG. 5

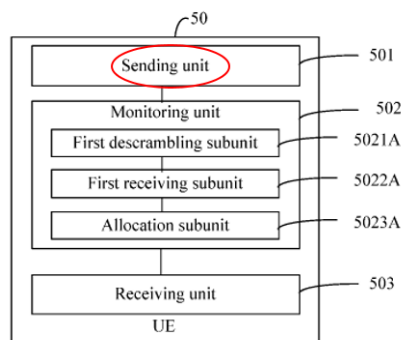


FIG. 6

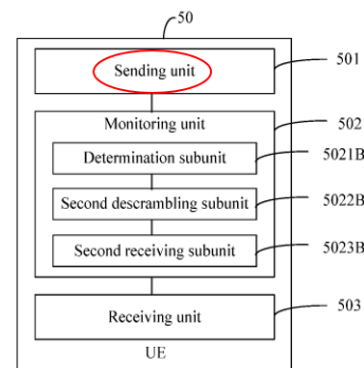


FIG. 7

Claim 18

- While the specification suggests that the embodiments may be implemented via computer program in a processor or an integrated circuit, (Ex. 1001, 28:46-29:62), it fails to disclose any computer program algorithm or an integrated circuit design capable of performing the claimed function.
- Simply disclosing a black box that performs the recited function,” as is the case here, “is not a sufficient explanation of the algorithm required to render the means-plus-function term definite.” *Augme Technologies, Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1338 (Fed. Cir. 2014).