

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AT&T MOBILITY LLC, AT&T SERVICES INC., ERICSSON INC.,
NOKIA OF AMERICA CORPORATION, AND T-MOBILE USA, INC.,
PETITIONERS,

v.

DAINGEAN TECHNOLOGIES LTD.,
PATENT OWNER.

CASE IPR2024-00402
PATENT 10,841,958

PATENT OWNER'S PRELIMINARY RESPONSE
37 C.F.R. § 42.107

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CURRENT EXHIBIT LIST

No.	Brief Description
1001	U.S. Pat. No. 10,841,958 (“’958 Patent”)
1002	Expert Declaration of Dr. Wayne Stark
1003	Curriculum Vitae of Dr. Wayne Stark
1004	U.S. Pat. Publication No. 2019/0158988 (“Lee”)
1005	U.S. Pat. Publication No. 2015/0382284 (“Brismar”)
1006	U.S. Provisional Patent Application No. 62/334,418 (“Lee Provisional”)
1007	’958 Patent File History
2001	Declaration of Mr. Michael McBride in Support of Patent Owner’s Motion for Admission <i>Pro Hac Vice</i> of Michael McBride
2002	Expert Declaration of Dr. Karthikeyan Sundaresan
2003	US20150223148A1 to Shi et al. (“Shi”)
2004	U.S. Patent Pub. No. 2018 0049024 to Schliwa-Bertling <i>et al.</i> (“Schliwa-Bertling”)
2005	ETSI TS 125 211 V3.1.1 (2000-01) Technical Specification, Universal Mobile Telecommunications System (UMTS); Physical channels and mapping of transport channels onto physical channels (FDD) (3G TS 25.211 version 3.1.1 Release 1999)

CLAIM LISTING

	Limitation
[1pre]	1. An access node of a radio access network that communicates over a radio interface with a wireless terminal, the access node comprising:
[1a]	processor circuitry configured:
[1b]	to generate a first type system information block (SIB) comprising information and a value tag, the information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand, the value tag being updated upon a change of a corresponding second type SIB, the first type SIB being required for the wireless terminal to perform an initial access to the radio access network;
[1c]	upon a change of a second type SIB whose associated information indicated before the change that the second type SIB was provided on-demand, to include in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast;
[1d]	transmitter circuitry configured to:
[1e]	transmit the first type SIB;
[1f]	transmit a message that triggers the wireless terminal to receive the first type SIB, wherein;
[1g]	whether or not the second type SIB has changed is determined based on a value tag, associated with the second type SIB, stored in the wireless terminal, and the value tag included in the first type SIB corresponding to the second type SIB.
[2]	The access node of claim 1, wherein the transmitter circuitry is further configured to transmit the second type SIB by broadcast after the change.
[3pre]	A method for an access node of a radio access network that communicates over a radio interface with a wireless terminal, the method comprising:
[3a]	generating a first type system information block (SIB) comprising information and a value tag, the information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand, the value tag being updated upon a change of a corresponding second type SIB, the first type SIB being required for the wireless terminal to perform an initial access to the radio access network;

	Limitation
[3b]	upon a change of a second type SIB whose associated information indicated before the change that the second type SIB was provided on-demand, including in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast;
[3c]	transmitting the first type SIB;
[3d]	transmitting a message that triggers the wireless terminal to receive the first type SIB, wherein;
[3e]	whether or not the second type SIB has changed is determined based on a value tag, associated with the second type SIB, stored in the wireless terminal, and the value tag included in the first type SIB corresponding to the second type SIB.
[4]	The method of claim 3, further comprising transmitting the second type SIB by broadcast after the change.

I. INTRODUCTION

Petitioners first allege that the Lee reference anticipates U.S. Patent No. 10,841,958 (“’958 Patent” or “Patent-at-Issue”) claims 1–4, because Lee’s Figure 13 shows the “network may broadcast all system information or changed on-demand system information without a request by the UE.” However, during prosecution the patentee differentiated the prior art that also broadcast system information without a request by the UE, adding/modifying limitations 1c/3c, and making clear that the claimed invention requires more: that information in an “associated second type system information block[]” to be “essentially **switched from ‘on-demand’ to ‘by broadcast.’**” Moreover, Lee’s Figure 13 simply shows that “on demand” system information remains on demand, even if the base station chooses to broadcast it, as the relied-upon figure shows the UE requesting the changed information.

Petitioners tacitly acknowledge that Lee does not teach the limitation and fails to anticipate any challenged claim because Petitioners immediately argue that it would have been obvious to modify Lee to meet the claim limitation so that a first type SIB would indicate a change of distribution from on demand to by broadcast. But Petitioners’ motivation to make this change, that this is the only way a UE would know that changed system information is being broadcast, is clearly not true. Lee discloses the same method of alerting UEs to the changed information as the prior

art cited during prosecution used: “includ[ing] a system information modification indicator in a paging message.” Therefore, there is no motivation to arrive at the claimed limitation, and Petitioners have not shown Lee would render the claims obvious.

As a backstop, Petitioners allege that the Brismar reference anticipates the ’958 Patent challenged claims. However, Petitioners’ anticipation theory fails for at least two reasons. First, Petitioners incorrectly allege that Brismar’s dynamic SIBs have a value tag; however, Brismar teaches that its dynamic SIBs *exclusively* use expiration timers, not value tags. Second, Brismar does not teach any indication of a distribution type, much less that it would switch, which makes sense because Brismar does not teach that its base station ever changes a SIB’s distribution method and UEs should always get broadcasted dynamic SIB information when a corresponding timer expires.

As such, the best Petitioners can do is point to Brismar’s “distribution in progress flag” and allege that this is a change of dynamic SIB scheduling type. But the distribution in progress flag fails to meet the claims for at least three reasons.

First, the distribution in progress flag only applies to static SIBs, not the Petitioners’ relied-upon dynamic SIBs.

Second, the claims require that information *in a first type SIB* indicate a second type SIB has switched distribution method, and Brismar explicitly teaches

not to put the distribution in progress flag in a first type SIB, saying instead to place the flag in unused bits to maintain backwards compatibility. Petitioners concede the point, but argue Brismar would be modified to place the flag in the first identified SIB because Brismar teaches transmission on the P-CCPCH where the first type SIB is located. This rationale is illogical because Brismar recognizes that the first type SIB is located on the P-CCPCH channel and still explicitly teaches **to avoid** the first type SIB and place the flag on unused bits to maintain backwards compatibility.

Additionally, Petitioners' motivation to modify Brismar in an attempt to meet the claim limitations is the same reason Petitioners allege a POSITA would change Lee: so that UEs are given "an indication that the changed system information is now broadcast so that they would know to receive it." However, Petitioners do not address that Brismar does not use value tags for dynamic SIBs, so the proposed change does not ameliorate this deficiency. And Petitioners do not explain why this is necessary, even for static SIBs, because Brismar already has a mechanism to alert UEs to new information: sending scheduling information in a scheduling block and broadcasting static SIBs and value tags on a broadcast channel.

Third, the distribution in progress flag is set **upon a UE's request** for a static SIB, not **upon a change to a SIB provided on-demand** as required by the claims. Petitioners do not address this missing limitation at all.

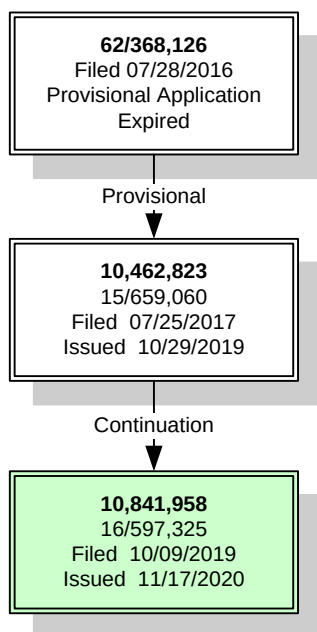
These and other issues are described in more detail within. As the Board will

see, Petitioners have not shown a likelihood that any of the challenged claims are unpatentable as anticipated or obvious.

II. OVERVIEW OF THE PATENT-AT-ISSUE

A. Family and Effective Filing Date

The '958 Patent is a continuation of U.S. Patent No. 10,462,823 (filed July 25, 2017) that claims priority to Provisional Patent Application No. 62/368,126 (filed July 28, 2016) as shown below. Ex. 1001 at (63), (60).



As such, the '958 Patent has an earliest possible effective priority date of July 28, 2016, and is judged under AIA provisions.

B. Brief Overview of the Patented Invention

The '958 Patent is at a high-level concerned with “methods and apparatus for requesting, transmitting, and using system information (SI) in wireless communications.” Ex. 1001 1:13–16. But, as now discussed, the claims are more

particularly directed to indicating in a first type system information block (“SIB”) a “value tag” and “distribution method” of a second type SIB, indicating the version and distribution type of the second type SIB, respectively.

The ’958 Patent explains the invention using an example wireless communication system having “a radio access network . . . compris[ing] one or more access nodes (such as a base station) which communicate on radio channels over a radio or air interface with plural wireless terminals . . . also called User Equipment (UE).” *Id.* 1:20–25. The specification teaches that a “base station broadcasts on the radio channels certain information which is required for mobile stations to access . . . the network . . . called ‘system information’ (‘SI’).” *Id.* 1:35–39. This SI is broadcast “via several System Information Blocks (SIBs).” *Id.* 1:39–41. The ’958 Patent further divides SIBs into two categories: (1) SIBs that a UE “is required to obtain [and] which are necessary to access . . . the system”; and (2) “SIBs relevant for offered services, not . . . required for access to the system.” *Id.* 1:43–48. Historically, an access node “periodically broadcasts all SIBs” of both types. *Id.*

However, “[t]his all-broadcast-based periodic delivery method (e.g. collective broadcast[ing] of all SIBs, not just those necessary for system access) . . . may result in wasting valuable radio resources.” *Id.* 51–58. Therefore, the ’958 Patent conceives of handling the two types of SIBs differently.

To that end, the ’958 Patent defines “the first type of system information

(1TYP SIB) [as] ‘essential system information,’ which means system information (SI) which is essential to or minimally required by the wireless terminal 26 for initial access to the radio access network and to radio interface 24.” *Id.* 8:34–39. The ’958 Patent defines a “second type of system information (2TYP SIB) [as] . . . ‘Non-essential’ system information (SI) [that] is . . . all other types of information” such as SI that “facilitate utilization of certain features or services provided by or through [a] radio access node.” *Id.* 8:41–50.

The ’958 Patent further contemplates the use of a “value tag which is associated with the system information (SI) . . . [and] is configured to provide an indication of the version or vintage of system information with which the value tag is associated.” *Id.* 7:11–16. The value tag is “changed . . . when a parameter of the [associated] system information changed.” *Id.* 7:24–26.

In some embodiments a first type SIB (essential) may identify available second type SIBs (non-essential) and their corresponding value tags. For example, Figure 7 below shows an “[e]ssential System Information message . . . include[ing] the value tags for the latest contents of non-essential SIBs . . . [where] the value tag changes when any configuration parameters in the corresponding SIB gets updated.” *Id.* 10:50–55.

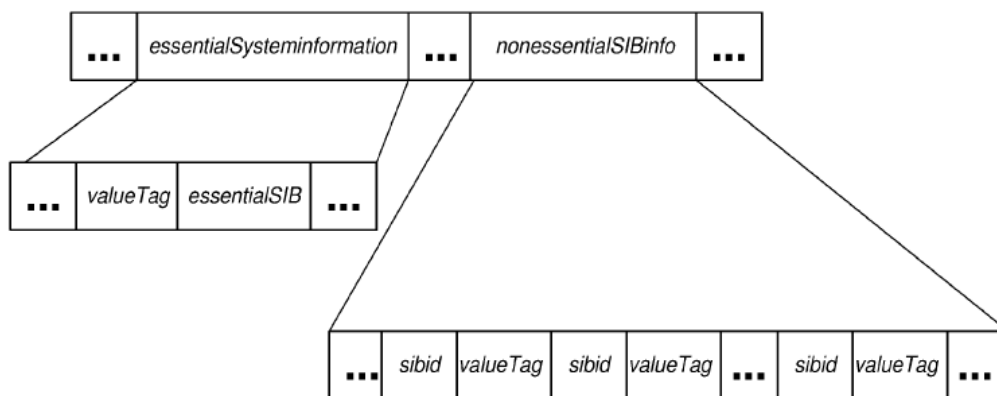


Fig. 7

Id. Fig. 7.

“[A]s a result of receiving the first type of system information (1TYP SIB)[, a wireless terminal may] recognize or appreciate that the wireless terminal 26 may need the second type of system information (2TYP SIB) . . . [and] make a special request for the second type of system information (2TYP SIB).” *Id.* 9:9–14. When the second type system information is available by request, this is “an example of the radio access node 22 providing second type system information ‘on demand.’” *Id.* 9:14–16.

Some embodiments of the ’958 Patent refer to a particular SIB as number “n” having a corresponding value tag “m,” where m and n are numbers. *See, e.g., id.* 11:55–59. A wireless terminal may use value tags to determine if a type two SIB is “current.” That is, “the wireless terminal 26 may not need to take further action respecting the second type of system information if the wireless terminal 26 has

previously received the SIB # n and the value tag for the previously-received SIB # n as stored at the wireless terminal 26 is current (e.g., is “m”). Otherwise, if the wireless terminal 26 has a value tag for the SIB # n which is older than ‘m,’ the wireless terminal 26 may proceed to request the SIB # n.” *Id.* 11:64–12:5.

In another aspect of the invention, as shown below, the first type SIB, Essential System Information, may not only include value tags for the second type SIBs, but may also include “SchedulingInfo,” an “information element . . . used for indicating the broadcast schedules for Non-essential System Information message with the updated SIB # n content.” *Id.* 15:38–43.

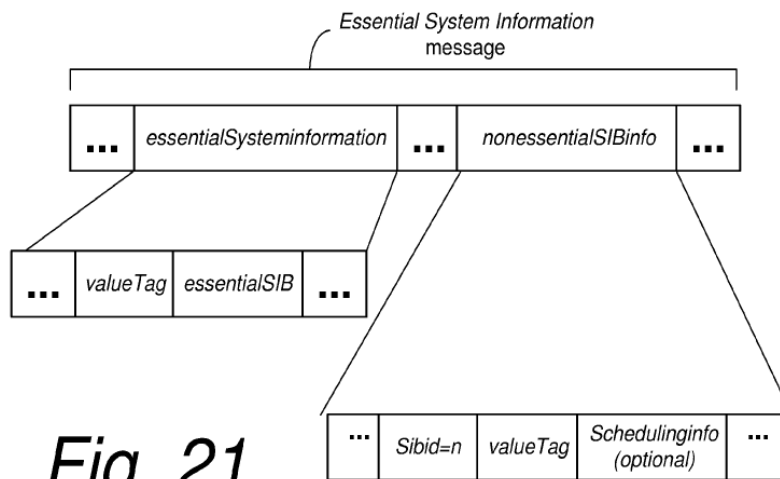


Fig. 21

Id. Fig. 21. When SchedulingInfo is present, “wireless terminals may receive the Essential System Information message 20-6 and know that the SIB #n is scheduled to be transmitted,” i.e., the wireless terminal will not send a request message for SIB #n. *Id.* 15:44–52.

C. Key Prosecution Events

The patentee explained during prosecution that the limitation “upon a change of a second type SIB whose associated information indicated before the change that the second type SIB was provided on-demand, to include in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast,” means that “‘associated second type system information blocks’ is essentially **switched from ‘on-demand’ to ‘by broadcast’** according to the change of the ‘associated second type system information blocks.’” Ex. 1007 at 1756.¹

The patentee further clarified this limitation by differentiating the prior art. Specifically, the Examiner cited U.S. Patent Pub. No. 2015 0223148 A1 to Shi et al. (“Shi”) for its disclosure that “[u]ser equipment 102 can include a SIB/MIB receiving component 106 for receiving one or more MIBs and/or SIBs broadcast by network entity 104, and a parameter analyzing component 108 for analyzing one or more parameters of system information to determine whether the one or more SIBs and/or MIBs for network entity 104 have changed relative to one or more previously received SIBs and/or MIBs from network entity 104.” Ex. 2003 [0028]; Ex. 1007 1727–28 (citing Ex. 2003 [0028]). That is, “[i]nformation that is broadcast in a SIB

¹ Patent Owner refers to the last four digits of the Bates number of the prosecution history found in Exhibit 1007.

can change, and a value tag in a SIB is used to indicate change of the SIB to a UE.”

Ex. 2003 [0004].

But the Examiner noted that Shi did not teach that its base station could trigger the UEs to receive changed information by broadcast. Ex. 1007 1728–29 (recognizing that Lee “is silent on details about (1) transmit a message that triggers the wireless terminal to receive the first type SIB”).

Therefore, the Examiner cited U.S. Patent Pub. No. 2018 0049024 to Schliwa-Bertling *et al.* (“Schliwa-Bertling”) because the reference taught:

UEs in a cell of the connected eNB will be triggered to receive broadcast system information in the cell. This can be achieved by transmitting paging messages in all cells of the connected eNB, indicating that all UEs (i.e. not only UEs addressed in the paging message) shall start to receive broadcast system information. [...]

Id. 1729 (citing Ex. 2004 [0020]).

In response to the rejection, the patentee amended limitation 1c to clarify that it requires that “the method of delivery of the ‘associated second type system information blocks’ is essentially **switched from ‘on-demand’ to ‘by broadcast’** according to the change of the ‘associated second type system information blocks.’” Ex. 1007 at 1756. The patentee explained that Schliwa-Bertling’s paragraph 20 fails to teach that the method of delivery for a second type SIB is switched from “on-

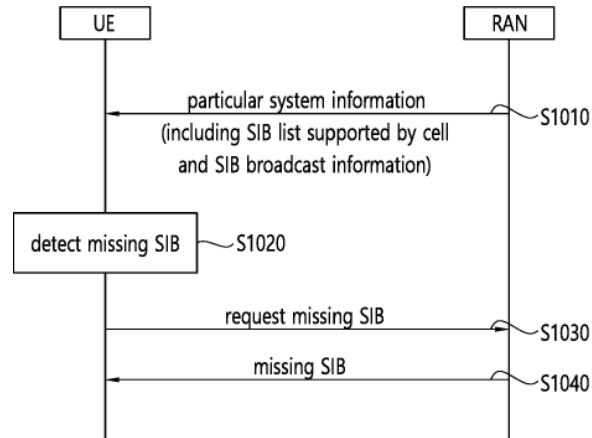
demand” to “by broadcast” based on a change to that SIB. *See id.* 1757. That is, the applicant made clear that limitation 1c requires the method of delivery of the second type SIB to be switched from “on-demand” to “by broadcast” based on a change to the second type SIB information. The fact that a base station indicates in a paging message that SIB information will be broadcast is insufficient to meet this limitation.

III. OVERVIEW OF THE CITED REFERENCES

A. U.S. Pat. Publication No. 2019/0158988 (“Lee”)

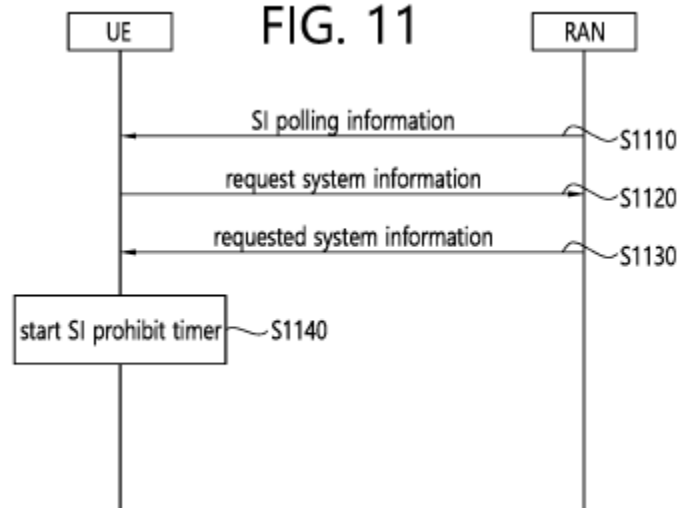
Lee generally concerns “a method for a terminal for requesting a system information block (SIB.)” Ex. 1004 at Abstract. One method Lee discloses is where a wireless device “receiv[es] a[] SIB list including one or more SIBs supported by a cell from a radio access network (RAN); receiving, from the RAN, SIB broadcast information indicating whether a[] SIB supported by the cell is broadcast in a broadcast control channel (BCCH) period; detecting a missing SIB based on the SIB list and the SIB broadcast information; and requesting the missing SIB from the RAN.” *Id.* [0009]. This is illustrated in Figure 10.

FIG. 10

*Id.* Fig. 10.

Another method includes a RAN sending polling information, a wireless device requesting missing information, the RAN providing the missing information, and the RAN then sending a “SI prohibit timer.” This method is illustrated in Lee’s Figure 11.

FIG. 11

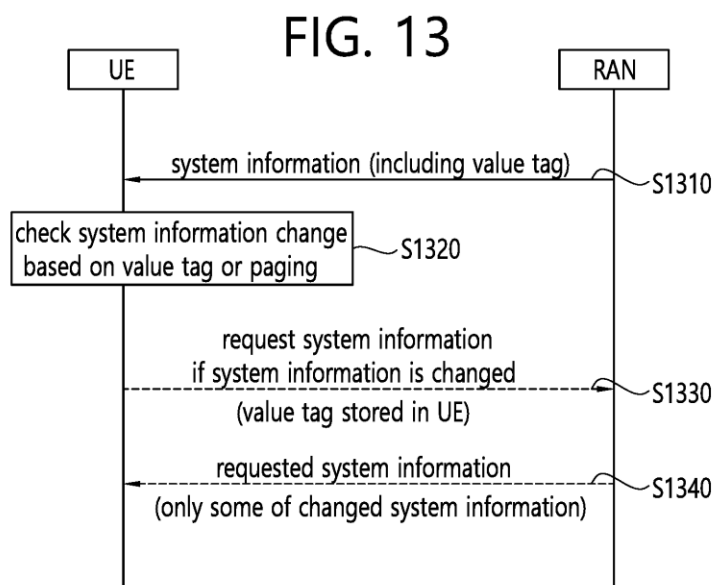


Id. Fig. 11. The SI prohibit timer sets the time for which “the UE cannot initiate[] and transmit[] a system information request even though at least one of

the above elements in the SI polling information triggers a system information request unless the UE makes uplink access due to other reasons.” *Id.* [0157].

Lee also contemplates using polling information, but having the requests for SI and delivery of the same via radio resource control (“RRC”) messages as shown in Figure 12.

However, it is Lee’s Figure 13, shown below, that Petitioners rely upon for their unpatentability argument.



Id. Fig. 13. “FIG. 13 illustrates a procedure in which a UE requests changed system information when system information is changed.” *Id.* [0166]. “[I]n step S1310, the network may indicate to the UE that on-demand system information is to be changed by broadcast signaling during a specified period . . . [and] include a value tag for a particular type of system information.” *Id.* [0168]. “In

step S1320, the UE may check whether the on-demand system information is changed,” “based on the value tag.” *Id.* [0169] & Fig. 12 (item S1320). “In step S1330, when the UE recognizes that the on-demand system information is changed and the on-demand system information is not scheduled to be broadcast, the UE may trigger a system information request for the on-demand system information.” *Id.* [0170]. Finally, “[i]n step S1340, the UE may receive the changed system information.” *Id.* [0171].

B. U.S. Pat. Publication No. 2015/0382284 (“Brismar”)

1. State of the Art

Brismar notes that generally, in the state of the art at the time, “to acquire the necessary SIBs transmitted on the broadcast channel, the UE must first read the MIB² to get references to the first level of SIBs. After that the UE needs to read the Scheduling Block to get references to the remaining SIBs.” Ex. 1005 [0007]. However, as “the number of SIB segments increases on the broadcast channel, the scheduling overhead grow[s] as well.” *Id.* [0019]. Brismar also teaches that, at the time of its filing, “the scheduling information [already] occupie[d] approximately 25% of the total BCH capacity.” *Id.*

2. Goals

Therefore, Brismar’s main goals were to “[a]ccommodate distribution of new

² MIB refers to the Master Information Block. *Id.*[0005].

system information; [m]aintain compatibility with legacy UEs; [and] [m]inimize latencies.” *Id.* [0066–69].

To this end, Brismar proposes creating “SI distribution using [a] first (legacy) and second (extended) SI distribution channel[.]” *Id.* [0071]. “[T]he existing SI distribution mechanism for SI broadcast may be referred to as ‘Broadcast 1’ or ‘BC1’ . . . [and] [t]he SI broadcast for the extended distribution may be referred to as ‘Broadcast 2’ or ‘BC2.’” *Id.* [0072–73]. Brismar then proposes four embodiments each with “mechanisms to extend the SI distribution,” *id.* [0074], shown in Figures 2–5 corresponding to embodiments 1–4, *id.* [0035–46].

3. Embodiments

In the first embodiment, “the existing BC1 mechanisms are reused as much as possible,” *id.* [0074], and “the scheduling block in the MIB in the first distribution channel may be extended to refer to the SIBs transmitted on the second distribution,” *id.* [0082].

In the second “embodiment, the scheduling block (SB-BC1) or the MIB in the first distribution channel may point to a new extended scheduling block (SB-BC2) on the second distribution channel.” *Id.* [0088].

In the third “embodiment, the presence of BC2 may be indicated in the MIB or in SB-BC1 on the first distribution channel using a new ‘BC2 indicator’ (second distribution channel indicator) . . . and [when] the ‘BC2 indicator’ is set, the network

node may repeat the scheduling block on BC2.” *Id.* [0094].

In the fourth embodiment, “[u]nlike the first three embodiments, the new system information to be transmitted on BC2 may be grouped into two separate SIBs depending on how frequent the information is changed by the network [and] all static information may be provided in one SIB (denoted SIB-S in FIG. 5a) and all dynamic information may be provided in one SIB (denoted SIB-D in FIG. 5a).” *Id.* [0098].

4. Update Mechanisms

Brismar teaches that “[d]ifferent update mechanisms apply for the SIBs depending on whether they contain static or dynamic information.” Ex. 1005 [0012]. Specifically, “[f]or SIBs containing static information, a value tag is used to indicate when there is a need for the UE to read new information on the broadcast channel.” *Id.* But “[f]or SIBs containing dynamic information, an expiration timer is used as an update mechanism.” *Id.* [0013].

5. Scheduling Types

Brismar also discloses four different types of scheduling of system information: “predetermined scheduling,” “flexible scheduling,” “semi-flexible scheduling,” and “on-demand scheduling.” Ex. 1005 [0121–25].

In the first three, the system information is only broadcast and “the UE must monitor the second distribution until all required system information is received.” *Id.* [0122]. The difference between the first three scheduling types is that (1) in

predetermined scheduling, the UE knows the SI messages' "exact position," (2) with "flexible scheduling" the network transmits SI information "with a predetermined frequency, but apart from that, the network may have full flexibility when this information is transmitted," and (3) with "semi-flexible scheduling" the "UE is aware of the scheduling window for the SI Message" and the "UE must monitor all potential transmission instan[ce]s." *Id.* [0121–24].

Only the fourth scheduling scheme is "on-demand" where a UE may request a static SIB. *Id.* [0125]. The fourth scheduling scheme is described in detail in the "On-Demand SI Distribution" Section beginning with paragraph [0159] using embodiment four. As Brismar explains:

The system information can be divided into static parts that remain unchanged over long times, and dynamic parts that are updated quite frequently. See fourth SIB embodiment above. In practice, the UE will need to read static SI quite seldom[ly], typically when entering cells the UE has not been in recently (UEs typically remember the SI from cells it has recently visited, to avoid having to read the SI again when returning to the cell). In order to save downlink capacity, one idea is to not continuously distribute *the static SI*, but instead only distribute it when a UE requests it (referred to as on demand SI distribution). This can avoid the

continuous transmission of information that no UE is listening to, which is a waste of resources.

Id. [0159] (emphasis added).

Brismar recognizes that by allowing UEs to request static SIB information, situations can arise where the uplink channel will be flooded with such requests.

Id. [0170] (“[C]onsider a case of a train with many UEs arriving into a new cell. All UEs on that train would like to read SI for the new cell.”). As such, Brismar “introduce[es] an RBS controlled flag in the downlink denoted as SI distribution in progress flag” that, when asserted, “block[s] UEs from sending SI distribution requests.” *Id.* [0171].

IV. LEVEL OF ORDINARY SKILL IN THE ART

Petitioners propose a person of ordinary skill in the art (“POSITA”) “would have had a B.S. in Electrical Engineering or a related field with at least three years of experience designing, developing, and/or testing telecommunication systems. More education may supplement practical experience or *vice versa*.” Pet. 8 (citations omitted). Patent Owner generally concurs with this description, though would propose that a POSITA only needs two years of experience, and believes that the appropriate field is what the ’958 Patent explicitly sets forth in the “TECHNICAL FIELD” section: “wireless communications, and particularly . . . methods and apparatus for requesting, transmitting, and using system information

(SI) in wireless communications.” Ex. 1001 1:11–16.

Patent Owner does not believe any difference between Patent Owner’s view and Petitioners’ affects the unpatentability analysis.

V. CLAIM CONSTRUCTION

Patent Owner does not believe the Board needs to expressly construe any term for the purposes of deciding whether to institute, and should give all terms their plain and ordinary meaning to one of ordinary skill in the art at the effective priority date.

VI. PETITIONERS’ PRIOR ART REFERENCES FAIL TO ANTICIPATE OR RENDER OBVIOUS ALL CLAIMS

A. Lee Fails to Anticipate or Render Obvious All Claims

1. Petitioners Fail to Show that Lee Teaches Limitation 1c’s Requirement that Information in a First Type SIB Regarding the Delivery Method for a Second Type SIB Switches from On Demand to By Broadcast or That a POSITA Would Be Motivated to Modify Lee to Do So

[1c] upon a change of a second type SIB whose associated information indicated before the change that the second type SIB was provided on-demand, to include in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast;
--

As explained above (*see supra* Section II.C), during prosecution the patentee amended limitation 1c and clarified that it requires “the method of delivery of the ‘associated second type system information blocks’ is essentially **switched from ‘on-demand’ to ‘by broadcast’** according to the change of the ‘associated second type system information blocks’” in the first type SIB. Ex. 1007 at 1756.

The “associated information” of limitation 1c refers back to the “information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand,” which is included in a first type system information block. *See* Ex. 1001 at 27:32–46. Thus, the “associated information” is information included in a first type SIB. Petitioners identify the “System information (including value tag), S1310 in Figure 13” as “first type” system information blocks. Pet. 23.

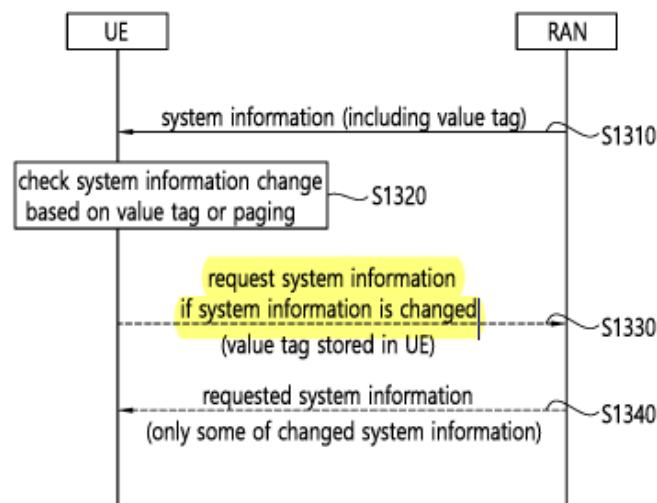
Therefore, Petitioners must show “upon a change of a second type SIB” that the second type SIB’s “associated information” in Lee’s S1310 system information “indicated before the change that the second type SIB was provided on-demand,” and, after the change, the “associated information” “indicat[es] that the second type SIB is provided by broadcast.” Petitioners have not done this.

Petitioners argue that Lee “discloses as shown in Figure 13 . . . that ‘the network may broadcast all system information or changed on-demand system information without a request by the UE’” and, “[t]herefore, Lee explicitly discloses that when on-demand system information has changed, that information may be broadcast.” Pet. 25 (citing Ex. 1004 [0168]; Ex. 1002 ¶ 109). First, the patentee made clear during prosecution that, for limitation 1c, merely having a base station trigger UEs to receive broadcast system information in the cell without request was insufficient to meet this limitation. Ex. 1007 at 1756–57; *see also supra* Section II.C

(detailing the relevant prosecution history).

Second, as Lee explains, “FIG. 13 illustrates a procedure in which *a UE requests changed system information* when system information is changed according to an embodiment of the present invention.” Ex. 1004 [0166] (emphasis added). This is illustrated below.

FIG. 13



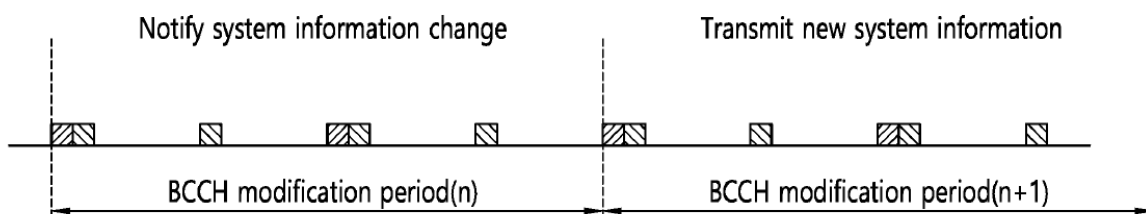
Id. Fig. 13 (highlighting added). So, Figure 13 does not illustrate a case where the base station is broadcasting a message, but shows that the changed SI is on demand, and the UE requests the changed information.

Petitioners implicitly concede that this limitation is missing by arguing that “[t]o the extent that Lee does not expressly disclose limitation [1c], it would be obvious to a POSITA.” Pet. 25. Specifically, Petitioners argue for modifying Lee

to meet the claim limitation such that “upon a change of the second type SIB . . . [a] first type SIB . . . would indicate to the UE that the changed on-demand system information will be broadcast.” Pet. 26 (citations omitted). And Petitioners say a POSITA would be motivated to make this modification to Lee “because the UE would require an indication that the changed system information is now broadcast so that they would know to receive it. Otherwise, the UE would have no way to know to receive such changed system information.” *Id.*

Lee already solves the purported problem, identified by Petitioners, that a “UE would have no way to know to receive such changed system information.” Lee recognizes that “[w]hen system information is changed, UEs need to know in advance the time the BS transmits new system information.” Ex. 1004 [0076]. To solve this problem, Lee explicitly teaches—as currently implemented and without change—that a base station may “include[] a system information modification indicator in a paging message” ahead of a modification period. Ex. 1004 [0078]. That is, the base station gives notification in the n th period and information is sent/received in the $n+1$ period, as shown in Figure 4 below. *Id.*

FIG. 4



Id. Fig. 4. This is the same method of the Schliwa-Bertling reference that the patentee differentiated during prosecution. Ex. 1007 1756–57 (“UEs in a cell of the connected eNB will be triggered to receive broadcast system information in the cell . . . by transmitting paging messages in all cells of the connected eNB, indicating that all UEs . . . shall start to receive broadcast system information”).

Given that Lee already has a mechanism to alert the UE of changed information that will be broadcast during a modification period, a POSITA would not have been motivated to modify Lee in the manner proposed by Petitioners.

In sum, Petitioners do not show Lee teaches limitation 1c or that a POSITA would modify Lee to do so.

2. Petitioners Fail to Show that Lee Teaches Limitation 3b’s Requirement that Information in a First Type SIB Regarding the Delivery Method for a Second Type SIB Switch from On Demand to By Broadcast or That a POSITA would Be Motivated to Modify Lee to Do So

[3b] upon a change of a second type SIB whose associated information indicated before the change that the second type SIB was provided on-demand, including in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast;

Petitioners solely rely upon their argument put forth for limitation 1c for limitation 3b. Pet. 36. Petitioners’ argument for 3b fails for the same reasons set forth above for limitation 1c in Section VI.A.1.

3. Petitioners Fail to Show Lee that Anticipates or Renders Obvious the Challenged '958 Patent Dependent Claims

Because Petitioners have not shown independent claims 1 and 3 are anticipated or obvious in view of Lee, Petitioners have also failed to meet its burden to show a reasonable likelihood that Lee renders any claims dependent on claims 1 and 3 unpatentable. *Corning Glass Works v. Sumitomo Elec. USA, Inc.*, 868 F.2d 1251, 1256 n.4 (Fed. Cir. 1989) (“Because we conclude that claim 1 is not anticipated, claim 2, which is dependent on claim 1, need not be separately discussed.”); *In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (“Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious.”).

B. Brismar Fails to Anticipate or Render Obvious All Claims

1. Petitioners Fail to Show that Brismar Teaches Limitation 1b’s Requirement that a First Type SIB has a Value Tag Updated upon a Change of a Corresponding Second Type SIB

[1b] to generate *a first type system information block (SIB) comprising* information and *a value tag*, the information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand, *the value tag being updated upon a change of a corresponding second type SIB*, the first type SIB being required for the wireless terminal to perform an initial access to the radio access network;

Brismar does not disclose “a first type system information block (SIB) comprising . . . a value tag . . . the value tag being updated upon a change of a corresponding second type SIB.”

Petitioners identify Brismar’s “SIBs containing **static** information [as] correspond[ing] to the **first** type system information block, and the SIBs containing **dynamic** information [as] correspond[ing] to the **second** type system information block.” Pet. 40–41 (emphasis added). Brismar’s SIBs containing static information (“static SIBs”) are referred to as SIB-S, while SIBs containing dynamic information (“dynamic SIBs”) are referred to as SIB-D. See Ex. 1005 [0098] (“[A]ll static information may be provided in one SIB (denoted SIB-S in FIG.5a) and all dynamic information may be provided in one SIB (denoted SIB-D in FIG. 5a).”).

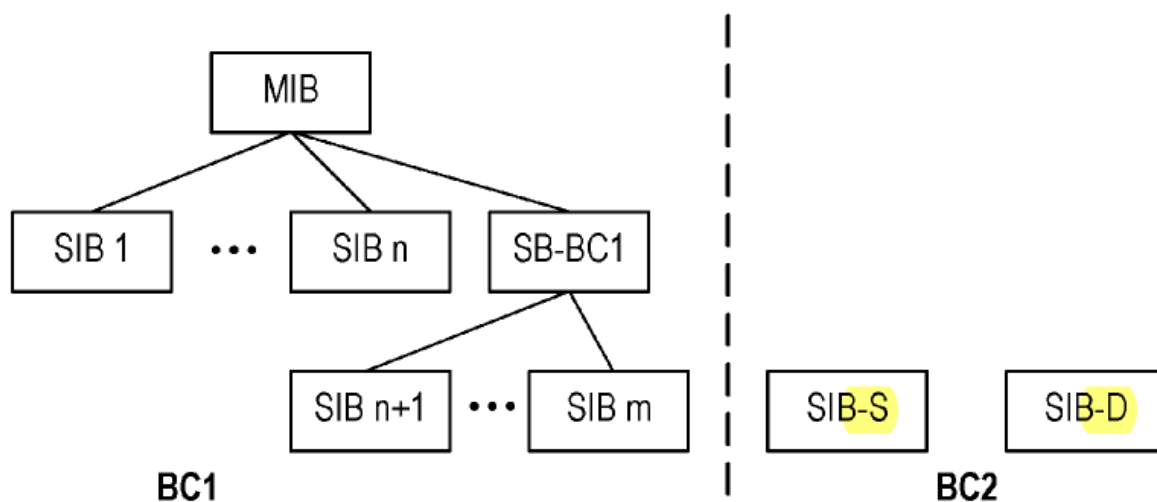


FIG. 5A

Id. Fig. 5a (highlighting added).

However, while static SIBs may contain “[a] value tag to indicate the version of the contained information **in SIB-S**,” *id.* [0101], these static SIB value tags have no relation to the dynamic SIBs, which Petitioners have identified as the claimed

“second type SIB.” See Pet. 41. Thus, the static SIB value tags are not “updated upon a change of a corresponding **second type** SIB,” as the claims require.

This is so because in Brismar **only SIBs containing static information (or static SIBs) use value tags**, while SIBs containing dynamic information (or dynamic SIBs) use a timer mechanism.³ Brismar teaches that “[d]ifferent update mechanisms apply for the SIBs depending on whether they contain static or dynamic information.” Ex. 1005 [0012]. Specifically, “[f]or SIBs containing static information, a value tag is used to indicate when there is a need for the UE to read new information on the broadcast channel.” *Id.* But “[f]or SIBs containing dynamic information, an expiration timer is used as an update mechanism.” *Id.* [0013]; see also *id.* [0074–79] (noting for the Extended SI Distribution embodiment the scheduling block (“SB”) may have “a value tag if the SIB includes static information; an expiration timer if the SIB includes dynamic information”); *id.* [0087] (“For dynamic SIBs, expiration timers may be used.”); *id.* [0106] (“The content of SIB-D can be associated with one or several expiration timers controlling how often the UE must re-read the information.”). Therefore, the static SIB value

³ The expiration timers used for dynamic SIBs work as follows: “When the timer expires, the corresponding SIB information which the UE has stored is considered to be invalid and the UE must acquire the system information block again.” Ex. 1005 [0013].

tags are not related to the dynamic SIBs and do not update when dynamic SIBs change. Ex. 2002 ¶¶20–22. In fact, there is good reason Brismar instructs a POSITA not to use a value tag with dynamic SIBs: as the name implies dynamic SIBs are changing relatively quickly and value tags are most appropriate with items that change relatively seldom. *Id.*

Indeed, Petitioners and their expert do not say otherwise, merely saying “Brismar also teaches that ***for the SIBs containing static information***, or the first type SIBs recited in the Challenged Claims, the SIB includes . . . ‘a value tag . . . used to indicate when there is a need for the UE to read new information on the broadcast channel.’” Pet. 41 (citing Ex. 1005 at [0012]⁴) (emphasis added); Ex. 1002 ¶157 (“Brismar also teaches that ***for the SIBs containing static information, or the first type SIBs recited in the Challenged Claims***, the SIB includes scheduling information and ‘a value tag . . . used to indicate when there is a need for the UE to read new information on the broadcast channel.’”) (citing Ex. 1005 at [0012]⁵) (emphasis added). That is, all of Petitioners’ citations regarding value tags ***only concern static SIBs, not the dynamic SIBs*** that Petitioners identified as the claimed “second type SIB.”

⁴ Petitioners cite Ex. 1006 at [0104]; however, the quote is actually from Brismar (Ex. 1005) at [0012].

⁵ Dr. Stark also mistakenly cites [0104].

Petitioners' observation that "[w]hen SIB content is modified, the corresponding value tag is updated," Pet. 41 (citing Ex. 1005 at [0012] or possibly [0104]), is also referring to static SIBs. If Petitioners are pointing to paragraph 0012, when Brismar notes that "[w]henver the SIB content is modified, the corresponding SIB value tag is updated by the network," Brismar is clear that this discussion is limited to "SIBs containing **static information**." Ex. 1005 [0012] (emphasis added). If Petitioners are instead pointing to paragraph 0104, Brismar is again distinctly talking about the case "when the **static information** is grouped in the same SIB" and "when the SIB-S content is changed." *Id.* (emphasis added). These teachings do not show that a value tag in a static SIB is updated when the information contained in a dynamic SIB is modified as would be required to meet the claim limitation under Petitioner's identified SIB types.

Petitioners also cite Brismar's disclosures that "[t]he value tag may be included in Paging Type 1 and System Information Change Indication messages," Pet. 41 (citing Ex. 1005 [0109]), but Brismar's paragraph 0109 is talking about "a new SIB-S value tag" (i.e., a single **static** SIB in the second broadcast channel in the fourth embodiment) saying, "**a new SIB-S value tag** may be included in the Paging Type 1 and System Information Change Indication messages" and "[t]his value tag may be sent to the UE **whenever the content of a SIB-S is modified**." Ex. 1005 [0109] (emphasis added). This is not a value tag that updates upon a change of

dynamic SIBs, which Petitioners identify as second type SIBs.

Therefore, Petitioners fail to show this limitation is present in Brismar and have not suggested any modifications that would make this limitation obvious.

2. Petitioners Fail to Show that Brismar Teaches Limitation 1b's Requirement that a First Type SIB Has Information Indicating Whether One or More Associated Second Type SIBs Are Provided by Broadcast or On Demand

[1b] to generate a first type system information block (SIB) comprising information and a value tag, the information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand, the value tag being updated upon a change of a corresponding second type SIB, the first type SIB being required for the wireless terminal to perform an initial access to the radio access network;

a. Brismar's Base Station Does Not Change SIB Distribution Type, So There Is No Reason to Have an Indication of SIB Distribution Type

Brismar does not disclose another aspect of limitation 1b, requiring “a first type system information block (SIB) comprising . . . information indicating whether one or more associated second type system information blocks are provided by broadcast or on-demand.” As a reminder, Petitioners identify static SIBs as the claimed first type system information block and dynamic SIBs as the claimed second type system information block. See Pet. 40–41.

To meet this limitation, Petitioners allege that Brismar discloses “system information may be requested by the UE in on-demand scheduling scenarios.” Pet. 41 (citing Ex. 1005 [0125]). However, with “on-demand” scheduling, Brismar

only contemplates that **static** SIBs may be requested. Ex. 1005 [0159] (“In order to save downlink capacity, one idea is to not continuously distribute the **static SI**, but instead only distribute it when a UE requests it (referred to as on demand SI distribution).”) (emphasis added).

Brismar teaches that **dynamic** SIBs are distributed via broadcast, not on-demand. *See, e.g., id.* [0108] (“Once the SIB-S is acquired, the UE then can find out whether any dynamic data **is broadcasted** in the cell, and where this information is scheduled on BC2.”) This is reinforced by Brismar’s reliance on expiration timers for dynamic SIBs. *See id.* [0013] (“For SIBs containing dynamic information, an expiration timer is used as an updated mechanism.”). The expiration timers are used by the UE to determine how often to read the dynamic system information from the broadcast channel (BC2 in Fig. 5A). *See id.* [0106] (“[E]xpiration timers control[] how often the UE must re-read the [SIB-D] information”). Brismar also explains that the expiration timer can be set based on the repetition period for SIB-D data. *Id.* This “repetition period” indicates “how often the SIB is repeated on the broadcast channel.” *Id.* [0081].

As such, Brismar’s static SIBs (or even dynamic SIBs) do not include an indication “whether one or more associated second type system information blocks [that Petitioners identify as dynamic SIBS] are provided by broadcast or on-demand” in a first type SIB, because Brismar teaches that dynamic SIBs are only broadcast.

Assuming, *arguendo*, that Brismar’s dynamic SIBs were provided on-demand—they are not—even in this imagined scenario there would still be no indication in a static SIB (the identified first-type SIB) that dynamic SIBs (the identified second type SIB) are broadcast or on demand, because Brismar teaches with on-demand scheduling that “***the system information is not sent periodically on the broadcast channel***[;] [r]ather, UE may request the information.” Ex. 1005 [0125] (emphasis added). That is, any SIBs (including dynamic SIBs) provided via on-demand scheduling are always type on demand. So, again, there would be no indication “whether one or more associated second type system information blocks are provided by broadcast or on-demand” in a first type SIB, because there would ***only*** be on-demand dynamic SIB information in this hypothetical. In short, Brismar teaches that the distribution method (broadcast or on-demand) for each type of system information is predetermined, and there is no need for the claimed “indicating” of a distribution method.

b. Petitioners’ Alleged Type Indication Is Not Applicable to Petitioners’ Identified Second Type SIBs and Is Not Located in a First Type SIB

Petitioners allege Brismar’s teaching that “when the value tag has changed . . . if SI distribution is not already in progress . . . the UE may then send its SI distribution request” satisfies the requirement that “the second type SIB may be provided by broadcast or on- demand.” See Pet. 41 (citing Ex. 1002 ¶158); *see also*

Pet. 42 (“A POSITA would understand that this distribution in progress flag is an indication of whether the second type SIBs are (a) in process or (b) need to be requested.”). This is incorrect.

First, Petitioners’ expert relies upon Brismar’s “on demand” scheduling, Ex. 1002 ¶¶158–59, that is only applicable to static SIBs, not Petitioner-identified “second type” dynamic SIBs, as already discussed, and indicated below:

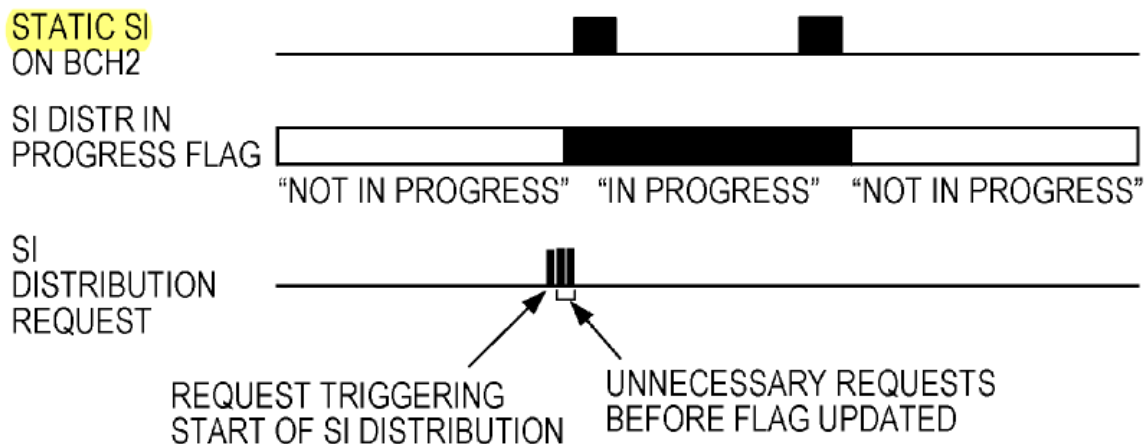


FIG. 12

Ex. 1005 Fig. 12 (highlighting added).

Second, Brismar does not teach that the “SI distribution in progress flag” that Petitioners allege is information indicating whether a dynamic SIB is provided by broadcast or on-demand is part of a Petitioner-identified “first type system information block (SIB)” as required by the claim. See limitation 1b (“[A] first type system information block (SIB) comprising information . . .”). To the contrary, Brismar suggests “send[ing] the SI distribution in progress flag over the Uu

interface . . . [using] the **currently unused bits** on an already existing channel such as the Paging Indicator Channel (PICH) or Acquisition Indicator Channel (AICH)” or “us[ing] DTX-parts of the P-CCPCH to carry the flag.” Ex. 1005 [0175, 0177] (emphasis added).

Petitioners concede that Brismar does not disclose the SI distribution in progress flag in the Petitioner-identified first type SIB (static SIBs) and rely solely upon their expert’s testimony that a POSITA “would have considered it obvious to include the information provided by the distribution in progress flag in the [first identified static] SIB transmitted,” merely because Brismar suggests sending the flag via the P-CCPCH channel where SIBs are transmitted. Pet. 42 (citing Ex. 1002 ¶159). This reasoning is unsound.

Brismar explicitly recognizes that SIBs are sent on a first physical channel, P-CCPCH, Ex. 1005 [0023–24] & [0192], yet Brismar did **not** suggest using existing SIBs. Instead, Brismar suggested **avoiding** using bits already allocated to SIBs. Ex. 1005 [0177] (“Yet another embodiment would be to use the DTX parts of the P-CCPCH to carry the flag. A P-CCPCH slot is 2560 chips long, but out of these, **the first 256 chips are currently not transmitted**, and can house 2 bits of information. **The SI distribution in progress flag can be mapped to these bits** in one or several slots (see FIG. 15).”) (emphasis added).

Brismar suggests using the unused bits on the P-CCPCH, because SIBs

transmitted on BC1 are “legacy information,” Ex. 1005 [0103], i.e., “[t]he existing system information distribution mechanism [that] was introduced in 3GPP Rel-99 and has not been changed since then,” *id.* [0015]. *See also* [0192] (“[T]he first physical channel is configured to be read by a . . . second group of wireless terminals (e.g., the ‘legacy distribution channel’ discussed above).”). And Brismar teaches the importance of maintaining backwards compatibility with this legacy information. Ex. 1005 [0065] (touting its inventions “extend the system information capacity, **while maintaining backwards compatibility for the existing UEs**”) (emphasis added); [0064] (“But note that the broadcast channel is read and needs to be understood by all UEs currently deployed in the networks. All SIBs needed for these legacy UEs need to be transmitted using the existing Rel-99 framework for system information distribution.”). Because Brismar “[m]aintain[s] compatibility with legacy UEs,” *id.* [0068], that only understand “the existing SI distribution mechanism for SI broadcast . . . ‘Broadcast 1’ or ‘BC1’ . . . [such as] specified by 3GPP Rel-99 framework,” *id.* [0072], Brismar teaches to use unused bits to avoid backwards compatibility problems. Ex. 2002 ¶¶23–25. In short, Brismar’s disclosure to **not** put the distribution in progress flag in static SIBs teaches away from using the static SIBs.

While not in the Petition proper, Petitioners’ expert says that “[in] addition, since system information blocks are subject to channel coding, including the

distribution in progress flag in a system information block would make it more resilient to noise and interference in the downlink channel to the UE.” Ex. 1002 ¶159. However, while the relevant standard does not dictate that broadcast channels in the primary channel explicitly have channel coding, how the remaining/unused bits are used depends on the implementation, and coding can be included as suggested in Brismar’s teaching. See Ex. 2002 ¶26 (citing Ex. 2005); see also Ex. 1005 [0175] (“The SI distribution in progress flag can be mapped on the remaining 12 bits (or some parts thereof), ***for example with simple repetition coding*** of one bit of information (see FIG. 13).”) (emphasis added). That is, the unused bits may be equally “subject to channel coding,” as are other places where the base station could place the SI distribution in progress flag, without interfering with legacy devices. Ex. 2002 ¶26. Therefore, Petitioners’ expert’s remark is also no motivation to place the SI distribution flag in a static SIBs, because channel coding availability provides no additional advantage, but does have the backwards compatibility disadvantage Brismar warns against. *Id.*

3. Petitioners Fail to Show that Brismar Teaches Limitation 1c's Requirement that Information Regarding the Delivery Method of a Second Type SIB in a First Type SIB Switch "Upon a Change of a Second Type SIB "

[1c] *upon a change of a second type SIB* whose associated information indicated before the change that the second type SIB was provided on-demand, to include in the first type SIB the information associated with the second type SIB indicating that the second type SIB is provided by broadcast;

As set forth for limitation 1b, Brismar does not teach or make obvious limitation 1c's requirement that information "in the first type SIB [static SIB]. . . associated with the second type SIB [dynamic SIB] indicating that the second type SIB is provided by broadcast" or "on-demand," because Brismar's base station does not change SIB distribution type, so there is no reason to have an indication of SIB distribution type, *see supra* Section VI.B.2.a, and Petitioners' alleged type indication—"on demand" scheduling—is not applicable to petitioners' identified second type SIBs (dynamic SIBs) and is not located in a first type SIB (static SIB), *see supra* Section VI.B.2.b.

Additionally, Petitioners fail to show Brismar discloses or renders obvious limitation 1c, because what Petitioners point to as allegedly "indicating that the second type SIB is provided by broadcast," Brismar's system information distribution in progress flag, does not switch "***upon a change of a second type SIB,***" what Petitioners identify as a dynamic SIB. Pet. 40–41.

The plain and ordinary meaning of "upon" is "a reaction to." *See, e.g., Google*

LLC v. BlackBerry Ltd., 825 F. App'x 830, 832 (Fed. Cir. 2020) (“The plain and ordinary meaning of ‘upon’ . . . is conditional and not merely temporal.”); *Pragmatus Telecom, LLC v. Volkswagen Grp. of Am., Inc.*, No. 12-cv-1533, 2014 WL 4447272, at *3 (D. Del. Sept. 9, 2014) (“[T]he patentee, in common with the dictionary definition, used the term ‘upon’ to refer to an immediate reaction.”). But *Brismar* teaches the SI distribution in progress flag issues ***upon a UE request, not upon a dynamic information change***. Ex. 1005 [0172] (“[A] SI distribution request may trigger the RBS to block further SI distribution requests using the SI distribution in progress flag.”). This is shown below:

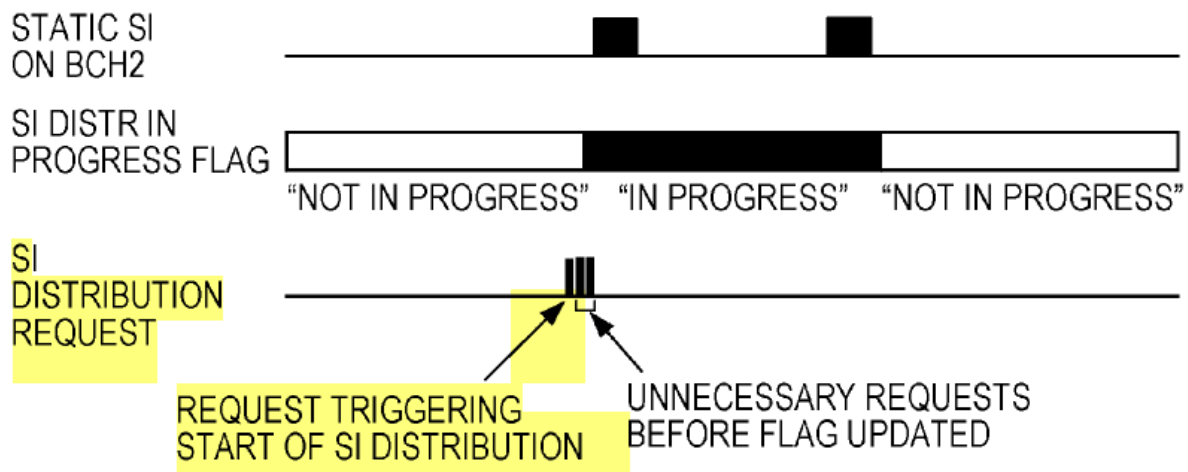


FIG. 12

Ex. 1005 Fig. 12 (highlighting added).

Petitioners arrive at a different conclusion by making several mistakes. First, Petitioners say that “[a] POSITA would understand that a change of value tag indicates a change ***of second type SIB***, which would require retransmission of the

second type SIB,” citing to Brismar’s third embodiment. Pet. 43 (citing Ex. 100[5] [0097] and Ex. 1002 ¶161) (emphasis added). But Brismar teaches that the value tag in the third embodiment is in the **scheduling block** (“SB”), **not a static SIB**. Ex. 1005 [0095] (“**SB-BC2** may include a value tag to indicate the version of the contained information as well as a list of the SIBs transmitted on BC2.”) (emphasis added). Brismar’s SI distribution in progress flag is disclosed in Brismar’s **fourth** embodiment, not the third embodiment to which Petitioners cite, Ex. 1005 [0159], and Petitioners have failed to show that features from the “various embodiments are interchangeable or that one skilled in the art would have combined those features in the manner proposed by Petitioner[s].” *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, No. IPR2017-01028-8, at 10 (PTAB Sept. 20, 2017); *In re Stepan Co.*, 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2017) (reminding examiner that even if “a rejection is based on . . . combining multiple embodiments from a single reference . . . there must be a motivation to make the combination and a reasonable expectation that such a combination would be successful, otherwise a skilled artisan would not arrive at the claimed combination.”).

Second, Petitioners are additionally incorrect because, as explained above, Brismar teaches that dynamic SIBs, which Petitioners identify as second type SIBs, do not use value tags. *See, e.g.*, Ex. 1005 [0012–13]. Indeed, Brismar notes that the second broadcast channel scheduling block (“SB-BC2”) of the third embodiment

“may include some or all scheduling information elements listed for the first and/or second embodiments,” Ex. 1005 [0095], and the scheduling block in the first embodiment contains information including “a value tag if the SIB includes static information [and] an expiration timer if the SIB includes dynamic information.” *Id.* [0074–79]. The first embodiment also notes that the “SIB value tag contained in SB-BC1,” i.e., the corresponding scheduling block (not SIB), only recognizes changes of the static SIBs and that “[f]or dynamic SIBs, expiration timers may be used.” *Id.* [0087]. As such, Brismar’s third embodiment, just like the first, does not use value tags for dynamic SIBs. Ex. 2002 ¶¶20–23.

Third, assuming Petitioners are correct for the sake of argument that “a change of value tag indicates a change of second type SIB”—it does not—just because a UE would recognize a need for updated dynamic SIB information, does not mean that the method of distribution that the network and UEs use to obtain updated dynamic SIB information changes from “on demand” to “by broadcast” as required by limitation 1c. Ex. 2002 ¶¶27–28. Brismar and Petitioners do not say otherwise, only noting that upon a change “the UE will need to reacquire the modified SIB,” Pet. 43 and “the UE may read and store a new version of the second type SIB,” *id.* Pet. 44, not that the method of initiating the reacquisition switches.

Next, Petitioners write that “[a]s discussed above, the first type SIB includes an indication ***that the second type SIB has been changed.***” Pet. 43 (citing

discussion for limitation 1b) (emphasis added). This is incorrect. For limitation 1b, Petitioners and their expert only discussed how “**SIBs containing static information, or the first type SIBs recited in the Challenged Claims** include[] . . . ‘a value tag . . . used to indicate when there is a need for the UE to read new information on the broadcast channel,’” Pet. 41; Ex. 1002 ¶157 (same), not that the value tag is an indication that **a second type** SIB has been changed. And Patent Owner has explained for limitation 1b that Brismar teaches value tags are only for static SIBs and would not indicate a dynamic SIB has changed, as dynamic SIBs use expiration timers. So, Petitioners have not discussed how a first type SIB includes an indication that the second type SIB has been changed, and Brismar does not teach this feature.

Next, Petitioners say that “[w]hen the value tag is changed, the SI distribution may be requested absent SI distribution already in progress.” Pet. 43. This teaching does not show a request based “upon a change of a second type SIB,” that Petitioners identify as a **dynamic** SIB. As already noted, Brismar only contemplates that a “UE . . . may send its SI distribution request” for a **static** SIB, *id.* [0159] & Fig. 12, and a changed “value tag” reflects a change of a **static** SIB, *id.* [0012]. So, to the extent a value tag triggers a SI distribution request that, in turn, triggers the SI distribution in progress flag, this is a change of a static SIB, not a dynamic SIB (which Petitioners identify as the second type SIB).

Petitioners tacitly admit that Brismar is missing this limitation, by suggesting that “it would be obvious to a POSITA based on Brismar’s disclosures” because “[u]pon the change of the value tag, [a] POSITA would understand that the first type SIB needs to communicate that the changed system information is now broadcast (and include the updated value tag) so that the UE’s [sic] in need of the updated system information know to update it.” Pet. 44 (citing Ex. 1002 ¶¶ 164–65).
Petitioners elaborate:

In particular, upon a change of the second type SIB as indicated by a change in value tag, the static SIB (first type SIB) would indicate to the UE that the changed system information will be broadcast. *Id.* [Ex. 1002 0164–65.] A POSITA would interpret and/or modify Brismar’s disclosure in light of this knowledge, because the UE would require an indication that the changed system information is now broadcast so that they would know to receive it. *Id.* Otherwise, the UE would have no way to know to receive such changed system information. *Id.*

Pet. 44. There are at least two problems with this position.

First, as detailed above (see discussion in Section VI.B.1), value tags are only applicable to static SIBs, so a changed value tag is irrelevant for this limitation that concerns switching delivery methods “upon a change of a second type SIB,” which Petitioners identify as dynamic SIBs.

Second, a “communicat[ion] that the changed system information is [being] broadcast” does not have to be “communicate[d]” by a “first type SIB.” As Brismar teaches, the network usually notifies UEs of available SI information on the broadcast channel with a **scheduling block** (“SB”), not SIBs. *Id.* [0174–81] (“The information included in the **SB-BC1** may include . . . a start position (e.g., SFN) on the second distribution channel where the first SIB segment (e.g., SIB *m*+1) is scheduled.”) (emphasis added); [0186] (“In one or more embodiments, the method 100 also includes the network node transmitting, via the second physical channel, scheduling information for reception of the additional SIBs (e.g., **SB-BC2** in FIGS. 3a and 4a).”) (emphasis added). Therefore, Petitioner’s alleged motivation to modify Brismar has no support.

Petitioners have not shown Brismar teaches or renders obvious limitation 1c.

4. Petitioners Are Again Mistakenly Relying upon Value Tags for Static SIBs in a Scheduling Block, So Fail to Show Limitation 1g Is Present or Obvious

[1g] whether or not the second type SIB has changed is determined based on a value tag, associated with the second type SIB, stored in the wireless terminal, and the value tag included in the first type SIB corresponding to the second type SIB.

For this limitation, Petitioners and their expert make the same mistaken argument that value tags indicate whether the dynamic system information blocks have changed citing the same paragraph previously discussed. Pet. 47 (citing

Ex. 100[5] [0097] and Ex. 1002 ¶173); Ex. 1002 ¶173 (also citing Ex. 1005 [0097]). As previously explained, see Section VI.B.2, Brismar teaches (1) this value tag is in the ***scheduling block***, not a “value tag included ***in the first type SIB***” that Petitioners identify as a static SIB; and (2) the value tag is only applicable to static system information, and does not change if a “second type SIB [that Petitioners identify as dynamic SIBs] has changed,” because Brismar’s dynamic system information blocks use expiration timers, not value tags. *See, e.g.*, Ex. 1005 [0012–13], [0074–78], [0087], [0106]. As such, a UE would also not have a value tag corresponding to a dynamic SIB to compare. Therefore, Petitioners have failed to show Brismar discloses limitation 1g as well.

5. Petitioners Fail to Show that Lee Teaches Limitations 3a, 3b, and 3e

Because Petitioners solely rely upon their arguments for 1b, 1c, and 1g for 3a, 3b, and 3e, respectively, *see* Pet. 50–51, Petitioners arguments for these Claim 3 limitations likewise fail.

For limitation 3a, Petitioners fail to show that Brismar teaches a (1) first type SIB (static SIB) has a value tag updated upon a change of a corresponding second type SIB (dynamic SIB), *see* Section VI.B.1, or that (2) a first type SIB (static SIB) has information indicating whether one or more associated second type SIBs (dynamic SIB(s)) are provided by broadcast or on demand, *see* Section VI.B.2.

For limitation 3b, Petitioners fail to show that Brismar teaches that

information regarding the delivery method of a second type SIB in a first type SIB switch “upon a change of a second type SIB.” *See* Section VI.B.3.

For limitation 3e, Petitioners fail to show that Brismar teaches “whether a second type SIB [dynamic SIB] has changed is determined based on a value tag, associated with the second type SIB,” or a “value tag included in the first type SIB (static SIB) corresponding to the second type SIB.” *See* Section VI.B.4.

6. Petitioners Fail to Show Brismar Anticipates or Renders Obvious the Challenged '958 Patent Dependent Claims

Because Petitioners have not shown independent claims 1 and 3 are anticipated or obvious in view of Brismar, Petitioners have also failed to meet their burden to show a reasonable likelihood that Brismar renders any claims dependent on claims 1 and 3 unpatentable. *Corning Glass Works*, 868 F.2d at 1256 n.4; *In re Fine*, 837 F.2d at 1076.

VII. CONCLUSION

Petitioners do not show that Lee has an indication in a first type SIB for a second type SIB a base station switches from “on demand” to “by broadcast” upon a change a second type SIB. Instead, Petitioners point to functionality in Lee that is the same as the prior art that the patentee differentiated during prosecution.

Therefore, Petitioners retreat to the position that it would have been obvious to modify Lee to let UEs know that changed information is being broadcast; however, Lee already has such a mechanism, and it is again the same as the prior art

the patentee distinguished during prosecution.

Patent Owner will not recount the many reasons Brismar fails to anticipate or render obvious the Patent-at-Issue again; however, Petitioners fail to show a likelihood of unpatentability at least because Petitioners fail to recognize or address that their relied upon dynamic SIBs do not used value tags as would be required to meet the claim limitations, and the Petitioners' relied upon SI distribution in progress flag is (1) not applicable to dynamic SIBs, (2) not an indication of distribution type, (3) is not sent in a first SIB, and (4) is not set "upon a change of a second type SIB."

Petitioners have failed to meet their threshold showing that there is a reasonable likelihood that at least one of the claims challenged in the Petition is unpatentable because the references are missing limitations found in every claim and Petitioners fail to show a POSITA would modify Lee or Brismar to arrive at the claim limitations. Therefore, Patent Owner respectfully submits that the Board should deny Petitioners' request for institution.

Dated: April 22, 2024

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Per § 42.24(a)–(b) the undersigned certifies that the number of words in the paper, PATENT OWNER’S PRELIMINARY RESPONSE, is:

9,727

The word count does not include the table of contents, table of authorities, certificate of service, word count, exhibits list, or claim listing.

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Dated: April 22, 2024

/R. Allan Bullwinkel/
R. Allan Bullwinkel (Reg. No. 77,630)

CERTIFICATE OF SERVICE

The undersigned certifies that on the twenty-second day of April, 2024, a complete and entire copy of the foregoing “PATENT OWNER’S PRELIMINARY RESPONSE,” including exhibits, if any, was served on the following counsel of record via email per Petitioners’ consent to electronic service, see Paper 2 at 1:

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