

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO., LTD.,  
Petitioner

v.

WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,  
Patent Owner

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Case IPR2025-00935  
U.S. Patent No. 11,129,163

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**AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST**

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## I. Introduction

Patent Owner's Request for Director Review ("the Request") of the Decision Granting Institution of *Inter Partes* Review ("the Institution Decision") (Paper 13) fails to establish any abuse of discretion, important issues of law or policy, erroneous findings of material fact, or erroneous conclusions of law and should thus be denied. Director Review Process, Section 2.B, *available at* <https://www.uspto.gov/patents/ptab/decisions/director-review-process>.

In its Institution Decision, the Board thoroughly assessed Lee's disclosure and found that, when Lee's coloring disable bit *disables* a Basic Service Set (BSS) color, "the BSS color *is not used*." Paper 13, p. 11 (emphasis added). Thus, Patent Owner's contention that Lee is limited to "not performing a color-dependent operation" is incorrect. The prosecution history does not suggest that more is required and Lee is clearly different from the Noh reference considered during prosecution, which does not disable BSS color.

As to Choudhury, the PTAB has twice considered Choudhury's disclosure and each time found it to disclose the features of the Challenged Claims. Paper 12 (Referral Decision), p. 3 ("Petitioner persuasively argues that the patent examiner overlooked certain *teachings in Choudhury that appear to disclose features of the challenged claims*."); *see also* Paper 13 (Institution Decision), pp. 12-14. Thus, Patent Owner's contention that the Board failed to sufficiently consider Choudhury's

disclosure is incorrect.

For these reasons, Patent Owner’s request for Director Review should be denied and the present proceeding should continue to a Final Written Decision.

## **II. Lee’s Coloring Disable Bit Disables Use Of BSS Color And Thus Causes A Receiving Station Not To Use A BSS Color**

As discussed in the Petition, Lee discloses a “coloring *disable* bit ... included in a HE-SIG field” of the PPDU. SAMSUNG-1005, [0017] (emphasis added). Lee’s coloring disable bit does exactly what Lee says it does—it disables BSS color such that BSS color is not used. Specifically, “if the coloring disable bit indicates that the frame corresponds to a trigger frame related to multiuser transmission, the STA may not perform the change of the CCA level *irrespective of information indicated by the coloring bit.*” SAMSUNG-1005, [0068] (emphasis added). In this way, Lee’s “coloring disable bit” disables use of the BSS color and the STA operates “*without regard to information indicated by the coloring bit.*” *Id.*, Abstract, [0007]-[0008], cls. 1, 6 (emphasis added). Through this disclosure, Lee renders obvious that the “coloring bit” is not used when the “coloring disable bit” (i.e., signaling information) indicates that a CCA level change (i.e., an operation based on the BSS color) is not allowed. SAMSUNG-1003, ¶89.

The Board considered this precise disclosure from Lee and found it sufficient to meet the Challenged Claims:

we are persuaded by Petitioner’s contentions in this regard because Lee discloses that a certain value of the coloring disable bit means that there is no change to the CCA level “*irrespective of* information indicated by the coloring bit” and “*without regard to* information indicated by the coloring bit.” Ex. 1005, code (57), ¶ 7. Therefore, *the BSS color is not used*. Paper 13, p. 11 (emphasis added).

For these reasons, Patent Owner’s contention that Lee is limited to “not performing a color-dependent operation” is incorrect.

The prosecution history does not impact this analysis because Lee is clearly different from the Noh reference considered during prosecution, which does not disable BSS color. During prosecution, Patent Owner argued that “Noh uses a Basis Service Set (BSS) color to determine ‘[i]f the BSS color indicated in the HE-SIG-A field does not match the BSS associated with the receiving STA.’” SAMSUNG-1002, p. 177. With these statements, the arguments during prosecution were not limited to lack of performance of a color-dependent operation, but, instead, directed to the fact that Noh *uses BSS color* to determine whether or not the color-dependent operation is performed.

In contrast, Lee does not use BSS color when BSS color is disabled. As the

Board noted, when BSS color is disabled, Lee’s device operates “*irrespective of* information indicated by the coloring bit” and “*without regard to* information indicated by the coloring bit.” Paper 13, p. 11 (emphasis added). Thus, Lee is different from Noh because Noh uses BSS color to determine its operation whereas Lee does not. Indeed, when Lee’s coloring disable bit is set, Lee disables BSS color and the BSS color is not used at all. For these reasons, the arguments made during prosecution do not distinguish Lee and instead support the analysis offered by the Board in its Institution Decision.

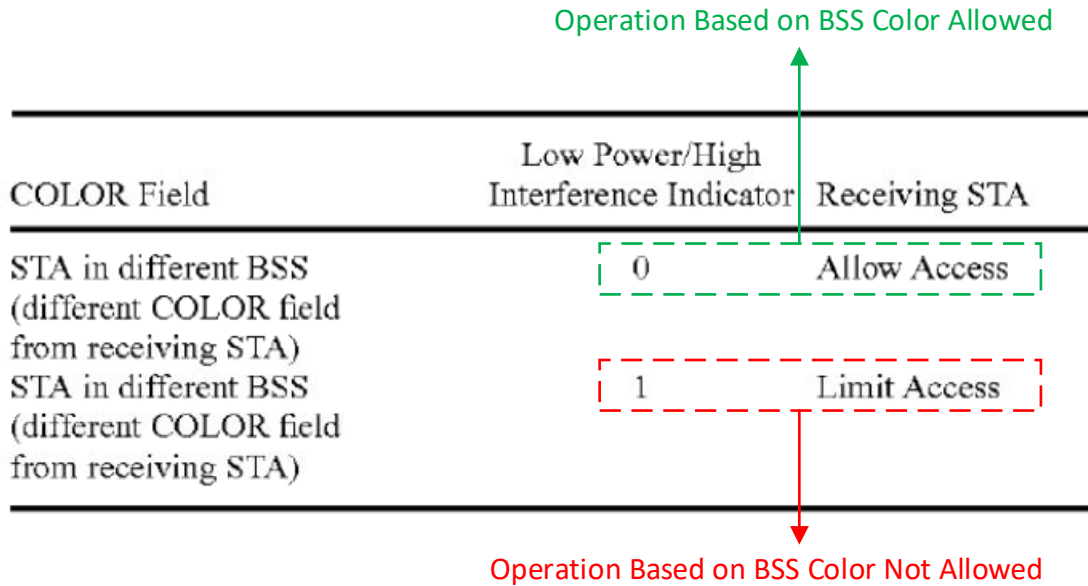
For these reasons, Patent Owner’s argument should be rejected and Lee’s disclosure should be considered during the trial phase of this IPR.

### **III. Choudhury Has Twice Been Found To Disclose The Features Of The Challenged Claims**

Patent Owner contends that the Board ignored its arguments related to the Choudhury reference. Not so. In fact, the PTAB has twice considered Choudhury’s disclosure and each time found it sufficient to disclose the feature of the Challenged Claims that Patent Owner alleges is missing from Choudhury. Specifically, in the decision referring this petition to the Board, Chief Judge Deshpande considered Choudhury’s disclosure and found that “Petitioner persuasively argues that the patent examiner overlooked certain *teachings in Choudhury that appear to disclose features of the challenged claims.*” Paper 12, p. 3. In the Institution Decision, the

Board agreed. Paper 13, pp. 12-14 (finding “merit in Petitioner’s position that an ‘operation based on BSS COLOR (e.g., allowing access and re-using the channel) is not allowed’ based on [Choudhury’s] Low Power/High Interference Indicator” and that “Choudhury’s reserved value disclosures appear to teach *this* subject matter.”) Thus, contrary to Patent Owner’s assertion, the PTAB has twice considered its arguments related to Choudhury and both times found Choudhury’s disclosure sufficient to teach the features of the Challenged Claims.

Indeed, Choudhury’s Low Power/High Interference Indicator meets the feature argued to be missing by Patent Owner—signaling information that indicates that an operation based on the BSS color is not allowed. As explained in the petition at pages 51-54, Choudhury’s Low Power/High Interference Indicator is signaling information that controls whether operations based on BSS color are performed. As shown below, the table discussed at pages 52-54 of the petition shows how BSS color is used to “Allow Access” when the Low Power/High Interference Indicator is set to 0, but not when the Low Power/High Interference Indicator is set to 1. SAM-SUNG-1114, [0043].



Choudhury also describes the exact same embodiment—a BSS color value of 0—that the '163 patent uses to indicate that BSS color should not be used.

**The '163 Patent (col. 21:16-30)**

Specifically, the wireless communication terminal may transmit the PPDU by including signaling information indicating that the operation based on the BSS color is not allowed in the signaling field of the PPDU. At this time, the wireless communication terminal receiving the PPDU including the signaling information indicating that the operation based on the BSS color is not allowed may not perform the operation based on the BSS color. In a specific embodiment, the wireless communication terminal may transmit the BSS color value indicated by the signaling field of the PPDU by setting it to a predetermined value. At this time, the predetermined value may be a reserved value which is not used in the BSS color when the BSS color is selected by the AP. For example, the predetermined value may be zero.

**Choudhury ([0043])**

[0043] In a third exemplary variant, the COLOR field concept can be generalized to achieve the functionality of both the low power indicator and the COLOR field as defined by 802.11ah. For example, the first three bits of the COLOR bit can be used to set the basic service set identification (BSS ID) and the fourth bit can be used as a low power/high interference indicator. To take a more general view, the fourth bit may be seen simply as an indicator defining channel access. It can be set or cleared based on whatever appropriate criteria are desired, and may constitute a command to defer or allow access to a channel, not a specific indicator of device characteristics. It will be recognized, however, that the bit can be set for a low power device or a device causing or experiencing high interference so that it actually does serve as an indicator of device capability and network capacity can be defined to indicate network conditions or device characteristics. In addition or as an alternative, reserved values may be used for the entire 4-bit field. For example, 1111 may be used for low power devices or 0000 may be used for high interference devices. Every STA that could successfully decode these values could be required to defer channel access. The following table shows the functionality of the combined COLOR bit and low power indicator.

As explained in the petition at pages 54-55:

a COLOR field value of “0000” does not represent a valid BSS identifier, but rather serves as signaling information that BSS color-based operations should not be performed. SAMSUNG-1003, ¶172. When a device receives a PPDU with this reserved value, it cannot use the BSS color for its intended purpose of BSS identification because no valid BSS color has been provided. SAMSUNG-1009, [0025], [0029]; SAMSUNG-1003, ¶172. Accordingly, when the COLOR field is set to the reserved value of “0000,” it indicates that operations based on BSS COLOR are not allowed and the receiving STA does not use BSS COLOR.

*Id.*

For these reasons, Choudhury discloses signaling information that indicates that an operation based on the BSS color is not allowed. Thus, Patent Owner’s argument should be rejected and Choudhury’s disclosure should be considered during the trial phase of this IPR.

#### **IV. Conclusion**

Patent Owner’s Request for Director Review of the Institution Decision should be denied. The Director should permit the instituted IPR in this proceeding to proceed.

Respectfully submitted,

Dated December 1, 2025

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**CERTIFICATE OF SERVICE**

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on December 1, 2025, a complete and entire copy of this Authorized Response to Director Review Request was provided by email to the Patent Owner by serving the correspondence email address of record as follows:

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