Trials@uspto.gov
571-272-7822

Paper No. 14
Entered: January 22, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
GLOBALFOUNDRIES U.S. INC., and
QUALCOMM INCORPORATED,
Petitioner,

v.

KAIST IP US LLC,
Patent Owner.

Case IPR2017-01046
Patent 6,885,055 B2

Before KERRY BEGLEY, MINN CHUNG, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

DECISION
Denying Petitioner's Request for Rehearing
37 C.F.R. § 42.71

I. INTRODUCTION

Samsung Electronics Co., Ltd., Globalfoundries U.S. Inc., and QUALCOMM Incorporated (collectively, "Petitioner") timely filed a request for rehearing (Paper 13, "Request" or "Req.") of our decision denying institution of *inter partes* review (Paper 12, "Decision" or "Dec.") of claims 1–6, 11, 12, and 14–17 (collectively, "the challenged claims") of U.S. Patent No. 6,885,055 B2 (Ex. 1001, "the '055 patent"). The Request seeks rehearing of our determination that the Petition (Paper 1, "Pet.") failed to establish a reasonable likelihood that Petitioner would prevail on its contention that the challenged claims are unpatentable as obvious in view of Inaba[1] and Hieda,[2] alone or in combination with other references. For the reasons given below, we deny the Request.

II. LEGAL STANDARDS

"The burden of showing a decision should be modified lies with the party challenging the decision," and the challenging party "must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed" in a paper of record. 37 C.F.R. § 42.71(d). Because Petitioner seeks rehearing of our Decision denying the Petition, it must show an abuse of discretion. *See* 37 C.F.R. § 42.71(c) ("When rehearing a decision on petition, a panel will review the decision for an abuse of discretion."). An abuse of discretion

---

[1] Inaba et al., U.S. Patent No. 6,525,403 B2, filed September 24, 2001 and issued February 25, 2003, Ex. 1005 ("Inaba").

[2] Hieda, U.S. Patent Application Publication No. 2002/0011612 A1, published January 31, 2002, Ex. 1006 ("Hieda").

occurs when a "decision was based on an erroneous conclusion of law or clearly erroneous factual findings, or . . . a clear error of judgment." *PPG Indus., Inc. v. Celanese Polymer Specialties Co.*, 840 F.2d 1565, 1567 (Fed. Cir. 1988).

III. ANALYSIS

A. Petitioner's Arguments for Rehearing

Petitioner's arguments in support of its request for rehearing are addressed in the subsections below.

1. The Petition Does Not Present an Argument Regarding Claim Element 1(i) Based on Inaba Alone

In the Request, Petitioner argues that the "Board overlooked that Petitioner presented two arguments with regard to claim element 1(i): one based on *Inaba* alone and one based on *Inaba* in combination with *Hieda*." Req. 2.

Petitioner's argument is not supported by the record. Claim element 1(i) is addressed at pages 33–39 of the Petition. There, Petitioner quoted the relevant portion of the claim and asserted "*Inaba* in combination with *Hieda* discloses or suggests this feature." Pet. 33. Petitioner argued that "the Fig. 8 embodiment of *Inaba* discloses both source/drain contacts and a gate contact," and conceded that "*Inaba* does not describe these aspects in great detail." *Id.* at 33, 34. Accordingly, the Petition does not assert that Inaba alone teaches or suggests the limitations of claim element 1(i).

The Request points to Dr. Bokor's testimony that "based on *Inaba*'s overall disclosure, *Inaba* certainly discloses that its Fig. 8 embodiment would include a contact region (*Inaba*'s source/drain contact areas and gate

contact area) and a metal layer (*Inaba*'s interconnect layer) which are formed at said source/drain and gate contact region." Req. 2 (quoting Ex. 1002 ¶ 80). Dr. Bokor did not, however, identify where the features of claim element 1(i) are disclosed in Inaba and testified instead that these features are disclosed by Hieda. Ex. 1002 ¶¶ 80–83. Moreover, as noted above, the Petition relies on "*Inaba* in combination with *Hieda*" (Pet. 33), not Inaba alone, for the limitations of claim element 1(i).

In the Request, Petitioner argues that the Decision "acknowledges" that "*Inaba* discloses claim element 1(i)." Req. 4 (citing Dec. 17–18); *see also id.* at 2 (asserting that the Board found "that *Inaba* discloses gate, source, and drain contacts and connected interconnect layers," citing Dec. 17–18). Petitioner misinterprets the Decision, which states:

> We find that both Inaba and Hieda disclose contacts. For example, Inaba discloses both (1) a contact that electrically connects an interconnect layer to a gate electrode, and (2) contacts that electrically connect interconnect layers to the source and drain diffused layers. Ex. 1005, 4:49–54, 5:8–11, 13:20–23, 13:30–34, Fig. 14.

Dec. 17–18. Our finding that Inaba discloses source/drain contacts is based on Inaba's Figure 6 and 14 embodiments. *Id.* at 18 (citing Ex. 1005, 4:49–54, 13:20–23, 13:30–34, Fig. 14). The Petition, however, does not rely on Inaba's Figure 14 embodiment. The Petition does cite Inaba's discussion of source/drain contacts for the Figure 6 embodiment. Pet. 33 (citing Ex. 1005, 4:49–54). As explained in the Decision, however, the Petition fails to provide reasoning sufficient to support a combination of an optional feature of Inaba's Figure 6 embodiment (top surface source/drain contacts) and a feature of Inaba's Figure 8 embodiment (thick insulating film 22). Dec. 19–20. In other words, even if the Petition could be read as asserting that Inaba

alone discloses claim element 1(i), that disclosure relates to a different embodiment than Petitioner relied upon for other elements of claim 1, and the Petition lacks a sufficient explanation for how or why a person of ordinary skill in the art ("POSA") would have combined features of distinct embodiments.

2. The Board Did Not Misapprehend Petitioner's Proposed Combination of Inaba and Hieda

The Request asserts that "Petitioner never proposed substituting *Inaba*'s contacts with *Hieda*'s." Req. 5–6. That assertion cannot be squared with Petitioner's contention that "both *Inaba* and *Hieda* disclose the claimed contacts." *Id.* at 5. If Inaba discloses the claimed contacts, then Petitioner's proposed combination of Inaba and Hieda necessarily modifies or replaces Inaba's contacts with Hieda's. *See* Pet. 38 ("The POSA would have looked to *Hieda* to implement the gate and source/drain contact areas in *Inaba*'s device . . . .").

We are not persuaded by Petitioner's contention that "*Hieda* provides additional detail regarding contacts that is not specifically disclosed in *Inaba*." Req. 6. As explained in the Decision, Petitioner's contention fails to address Inaba's Figure 14 embodiment. Dec. 18. Both the Petition and the Request ignore Inaba's disclosure of contacts in Figure 14 and rely instead on Hieda's disclosure of source, drain, and gate contacts. In so doing, Petitioner failed to address how or why a POSA would have combined top surface source/drain contacts (as shown in Inaba's Figure 14 and Hieda) and a thick top surface insulation layer, such as thick insulating film 22 of Inaba's Figure 8.

3. The Board Did Not Err in Determining that Petitioner Failed to Explain Sufficiently How the Teachings of Inaba and Hieda Would Have Been Combined

The Decision did not improperly require Petitioner to prove an actual physical substitution or bodily incorporation of Hieda's contacts with Inaba's source/drain regions, as Petitioner contends in the Request. *See* Req. 9; *cf. In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) ("[A] determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements."). Instead, the Decision properly determined that the Petition falls short in explaining *how* and *why* the references would have been combined to produce the claimed invention. *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016).

For example, the Decision states:

> Petitioner does not explain sufficiently how or why a POSA would have combined an optional feature of Inaba's Figure 6 embodiment (source/drain regions formed in the top surface of the projection) with a feature of Inaba's Figure 8 embodiment (thick insulating film 22) that prevents a channel from being formed in the top surface of the substrate projection. Nor does Petitioner explain sufficiently how or why a POSA would have formed contacts to the top surface of a projection or fence, such as contact plug 28 shown in Hieda Figures 2A and 11B, in an embodiment like Inaba's Figure 8, which does not have a source or drain region formed in the top surface of the projection and includes thick insulating film 22 on that surface. Ex. 1005, Fig. 8.
>
> Petitioner nowhere clearly explains, nor cites evidence showing, how the combination of Inaba's Figure 8 embodiment and Hieda's source/drain contacts is supposed to work. For example, Petitioner does not explain how Hieda's top surface contact plugs 28 would have provided an electrical connection to Inaba's side surface source and drain regions 15 and 16. Nor

> does Petitioner present argument or evidence sufficient to show that a POSA would have had a reasonable expectation of success in making the proposed combination.

Dec. 19–20.

Although proof of physical or bodily incorporation is not required, Petitioner was required to identify the particular teachings of each reference that it proposed to combine and explain how and why a POSA would have combined the teachings to produce the claimed invention. *TriVascular*, 812 F.3d at 1066. The Petition relied on Inaba's Figure 8 as disclosing most of the limitations of claim 1, including claim element 1(f), "a first oxide layer which is formed on the upper surface of said Fin active region with a thickness greater or equal to that of the gate oxide," and claim element 1(h), "a source/drain region which is formed on both sides of the Fin active region except where said gate overlaps with the Fin active region." Pet. 30, 32. It was Petitioner's burden to explain how and why a POSA would have combined these features with features of other embodiments, such as Hieda's top surface source and drain contacts.

Contrary to Petitioner's submission, the Board did not overlook Petitioner's evidence regarding the relationship between Inaba Figure 6 and Inaba Figure 8. The Decision specifically addresses that relationship as follows:

> Although not explicitly stated, for claim element 1(i), Petitioner appears to be proposing a modification of Inaba's Figure 8 embodiment. Pet. 33–34. That is the embodiment Petitioner relies upon for claim elements 1(a)–(h). *Id.* at 16–33. In Inaba Figure 8, the source and drain regions 15 and 16 are shown as being formed only in the side surfaces of substrate projection 11A. Ex. 1005, Fig. 8. Petitioner quotes Inaba's description of the Figure 6 embodiment that source and drain

> regions "may also be formed in the top surface of the projection ***as required***." Pet. 38 (emphasis added, quoting Ex. 1005, 4:51–52). Petitioner does not, however, explain whether source and drain regions in the top surface of the projection would be ***required, or even compatible***, with Inaba's Figure 8 embodiment.

Dec. 18–19. The Board did not overlook Petitioner's assertion that Inaba Figure 8 "builds on and incorporates" Inaba Figure 6. Pet. 19. Rather, Petitioner's assertion did not persuade us that source/drain regions in the top surface of the projection—which Inaba discloses as an ***optional*** feature of the Figure 6 embodiment (Ex. 1005, 4:51–52)—would be ***required, or even compatible***, with Inaba's Figure 8 embodiment. Dec. 19–20.

Although the Request attempts to provide a technical explanation for compatibility between top surface source/drain regions and a top surface thick insulating film (Req. 13–14), Petitioner's explanation was not provided in the Petition. Indeed, Petitioner concedes that the explanation is not supported by expert testimony. *Id.* at 14 n.5. A rehearing request is not a supplemental petition. Nor is it an opportunity to present new arguments or evidence that could have been presented and developed in the first instance in the Petition. Simply put, we could not have misapprehended or overlooked arguments or evidence that were not presented or developed in the Petition.

B. Petitioner's Request for an Expanded Panel

In the Request, Petitioner suggests that an expanded panel, including the Chief Judge, consider Petitioner's request for rehearing. Req. 14.

Our governing statutes and regulations do not provide for parties to request, or panels to authorize, an expanded panel. *See generally* 35 U.S.C. § 6; 37 C.F.R. §§ 41.1–42.412. Our standard operating procedures,

however, provide the Chief Judge with discretion to expand a panel to include more than three judges. PTAB SOP 1, 2–5 (§§ II, III) (Rev. 14); *see id.* at 2 (introductory language explaining that the Director has delegated to the Chief Judge the authority to designate panels under 35 U.S.C. § 6); *see also In re Alappat*, 33 F.3d 1526, 1532 (Fed. Cir. 1994) (providing that Congress "expressly granted the [Director] the authority to designate expanded Board panels made up of more than three Board members."). The Chief Judge may consider panel expansions upon a "suggestion" from a judge, panel, or party. PTAB SOP 1, 3–4; *see also Apple Inc. v. Rensselaer Polytechnic Inst.*, Case IPR2014-00319, slip op. at 2 n.1 (PTAB Dec. 12, 2014) (Paper 20) (expanded panel) (per curiam).

The standard operating procedure exemplifies some of the reasons for which the Chief Judge may expand a panel. PTAB SOP 1, 3 (§ III.A). For example, an expanded panel may be appropriate when "[t]he proceeding or AIA Review involves an issue of exceptional importance" or when "[c]onsideration by an expanded panel is necessary to secure and maintain uniformity of the Board's decisions." *Id*. (§ III.A.2, 3).

In this case, the Chief Judge has considered Petitioner's request for an expanded panel, but has determined that an expanded panel is not warranted.

IV. CONCLUSION

After considering Petitioner's arguments for rehearing, we determine that Petitioner has not shown that the Decision denying institution of *inter partes* review of the challenged claims of the '055 patent was an abuse of discretion.

V. ORDER

Accordingly, it is:

ORDERED that Petitioner's request for rehearing is *denied*.

PETITIONER:

Naveen Modi
naveenmodi@paulhastings.com

Allan Soobert
allansoobert@paulhastings.com

Chetan Bansal
chetanbansal@paulhastings.com

Quadeer Ahmed
quadeerahmed@paulhastings.com

PATENT OWNER:

Andrew Choung
achoung@glaserweil.com

Rex Hwang
rhwang@glaserweil.com