

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NOKIA OF AMERICA CORPORATION,  
Petitioner,

v.

ALEXANDER SOTO AND WALTER SOTO,  
Patent Owners.

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IPR2023-00960  
Patent No. 8,238,754

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**PATENT OWNERS' PRELIMINARY RESPONSE**

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**Patent Owner's Exhibit List**

| <b>Exhibit</b> | <b>Description</b>                                                                                                              |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| 2001           | Email from PTAB, dated July 20, 2023                                                                                            |
| 2002           | Chain of Emails Between Counsel for Nokia and Special Appearance Counsel for Patent Owners, Redacting the Username and Password |
| 2003           | Excerpt of JOSEPH W. GLANNON, <i>Civil Procedure, in</i> EXAMPLES & EXPLANATIONS (Aspen Publishers, 6th ed. 2008).              |
| 2004           | U.S. Pat. No. 6,778,339 to Medina et al. (“Medina”)                                                                             |
| 2005           | U.S. Pat. Pub. No. 2002/0067529 to Yokomoto et al. (“Yokomoto”)                                                                 |
| 2006           | U.S. Pat. Pub. No. 2002/0006111 to Akita et al. (“Akita”)                                                                       |
| 2007           | U.S. Pat. Pub. No. 2003/0091045 to Choi et al. (“Choi”)                                                                         |
| 2008           | U.S. Pat. No. 5,572,349 to Hale et al. (“Hale”)                                                                                 |
| 2009           | U.S. Pat. Pub. No. 2004/0052274 to Wang et al. (“Wang”)                                                                         |
| 2010           | U.S. Pat. No. 7,031,343 to Kuo et al. (“Kuo”)                                                                                   |
| 2011           | U.S. Pat. No. 6,023,467 to Abdelhamid et al. (“Abdelhamid”)                                                                     |
| 2012           | U.S. Pat. No. 6,498,667 to Masucci et al (“Masucci”)                                                                            |

## **I. Introduction**

The Board should decline to institute review because many claimed elements are missing in Ground I, the Ground II references fail to qualify as prior art, the proposed motivation to combine is explicitly described as wrong in the background of the challenged patent, and the Petition merely presents the same types of references that the Examiner repeatedly considered.

The brothers Alexander and Walter Soto invented a new type of pluggable optical transceiver module for use in passive optical networks, packed with features not previously found in pluggable optical transceiver modules. Claim 1 of challenged U.S. Patent 8,238,754 (“’754 Patent”) begins, “A network client optical transceiver module for a passive optical network” that has “one or more passive optical splitters.” Ex. 1001, 16:46–17:14. Claim 1 mostly focuses on the optical transceiver module. *Id.* For example, “the network client optical transceiver module having a pluggable form factor and configured to removably couple to an optical module port of a switch or router.” *Id.* The optical transceiver module comprises many other components described including “an optical port... a bi-directional optical interface block... a control module... and an electrical network interface port.” *Id.*

The background of the ’754 Patent explains how existing optical modules only had basic components. *Id.*, 1:25–2:20; *see also* Petition at 5–6 (describing

background optical transceiver module without detailing internal components). They performed one basic task: to convert between optical and electrical signals. Ex. 1003

¶ 55. None of Petitioner's cited references describing optical transceiver modules disclose a pluggable optical transceiver module with anything close to the claimed internal components and functionality.

The new functionality and components being claimed in a pluggable optical transceiver module departed from the existing trend of pluggable transceiver modules becoming smaller and simpler. In fact, the '754 Patent explains in its background:

The evolution of optical modules has been to reduce the size, power, and number of components in optical modules for the purpose of increasing port densities. The very nature of the intent of the invention is contrary to the evolution of MSA 10 Gb/s optical modules in that an increase in power and number of components result while enabling point-to-multipoint networks.

Ex. 1001, 2:14–20. The Petition ignores this explanation to argue, in hindsight, that miniaturization was the goal of the invention and the motivation to combine references, which is not accurate. *E.g.*, Petition at 21 (“Decreasing the transceiver size was a goal of a POSITA,” and “it is desirable to miniaturize the physical size of the transceiver module to increase the port density.”)

In Ground I, Petitioner's best prior art on optical transceiver modules,

Togami, focuses on an improved latching mechanism. Ex. 1007, *passim*. Togami discloses almost nothing about the internal opto-electrical components and operations within its device. *Id.* Even though claim 1 of the '754 Patent focuses mostly on what a pluggable optical transceiver module includes, the Petition contends that only a few of the many claimed elements are found within Togami's optical transceiver module. In fact, the Petition affirmatively argues that several claimed components are missing from Togami's pluggable module and instead found elsewhere in an optical network, outside of the pluggable optical transceiver module (in Shraga, Ex. 1005). To remedy this, Petitioner's expert, Dr. Prucnal, proposes a combination where Togami's device replaces Shraga's "optical interface." Ex. 1003 ¶ 106. But even this combination results in a system where the claimed components remain outside of Togami's pluggable module.

Ground II inherits the same problems identified in Ground I, but Ground II further fails as a matter of law because the cited references do not qualify as prior art. None of the additional art relied-upon in Ground II is alleged as describing the internal components or operation of a pluggable optical transceiver module.

In summary, the weak Petition should be denied on the merits because the claimed elements are missing from the proposed combination, the combination is proposed in hindsight using an explicitly rejected motivation, and the Petition relies on references that fail to qualify as prior art. Additionally, the Board should deny

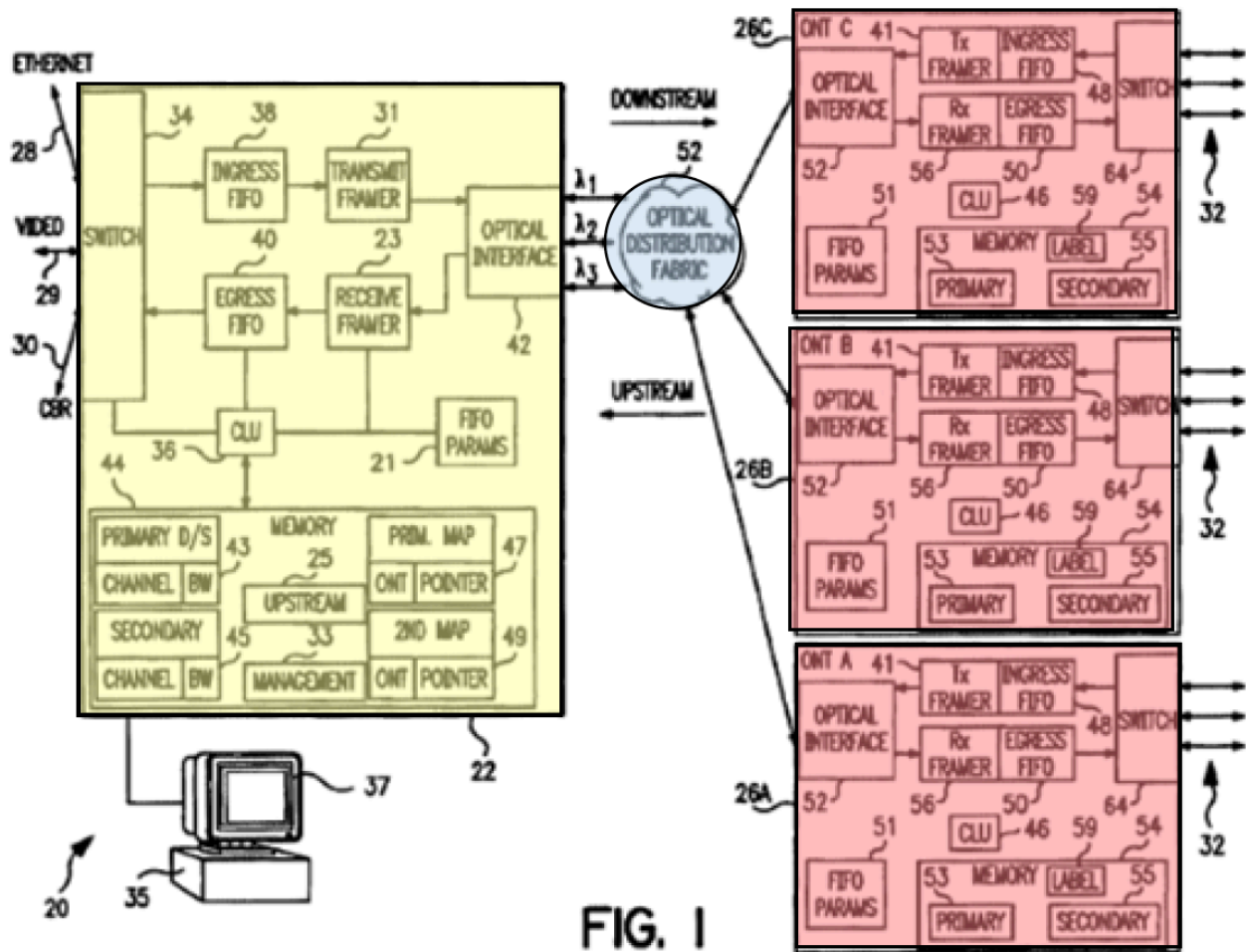
under *Fintiv* because the Final Written Decision will come well after trial and after the patent expires, and the Board should deny under Section 325(d) because the Petition uses references that contain cumulative teachings to what the Examiner considered.

## **II. Summary of the Prior Art**

Subsections A and B summarize the relevant aspects of the prior art as relied-upon and as characterized by Petitioner.

### **A. Patent 6,697,374 to Shraga (Ex. 1005)**

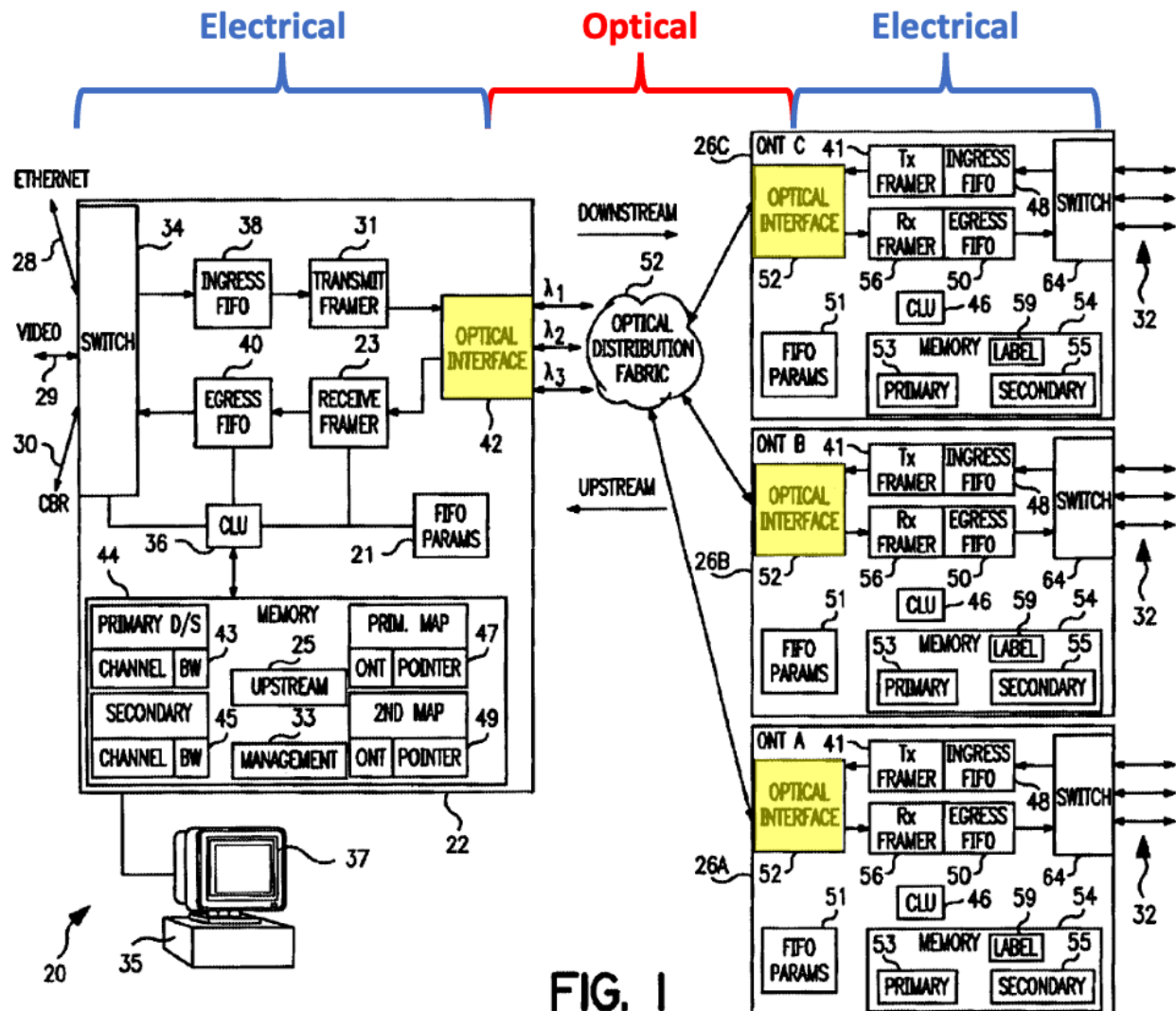
Shraga describes a traditional optical network communication system, one that does **not** use pluggable optical transceiver modules. Ex. 1005. Figure 1 shows the system as annotated by Petitioner:



Petition at 12. An OLT (Optical Line Terminal, shaded yellow) connects to ONTs (Optical Network Terminals, shaded red) via “optical distribution fabric” (shaded blue). Blocks inside the ONT include a “switch,” ingress and egress “FIFO” blocks, Tx and Rx “Framer” blocks, an “optical interface,” and a “CLU” (control logic unit).

“To interface with user devices that operate on electrical signals, the fiber-optic network must have an opto-electrical interface that converts electrical signals to optical signals, and vice versa.” Petition at 5. In Figure 1, this means that the following parts of Shraga are optical and electrical, with the “optical interface”

blocks performing electrical-optical conversion:



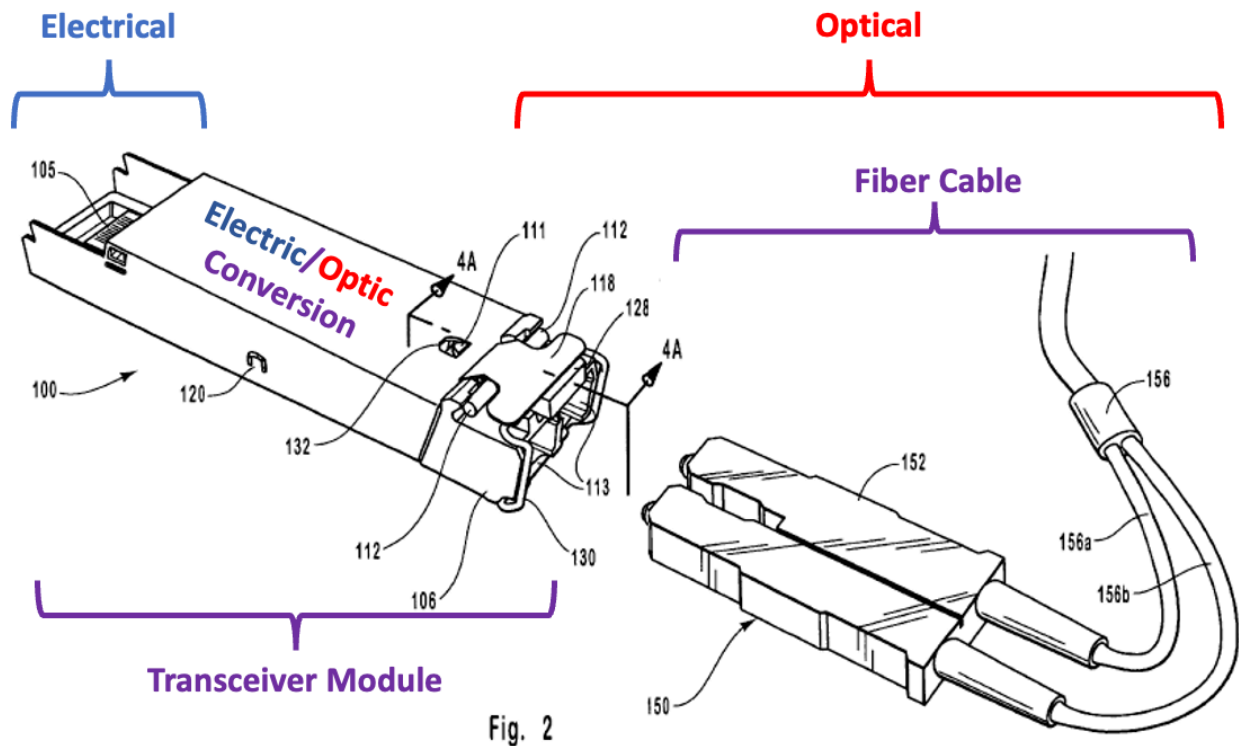
Ex. 1005, Fig. 1 (annotated); *see also* Ex. 1009 (showing similar separation of electrical and optical domains). Thus, Shraga’s “optical interface” blocks 42 and 52 (highlighted above) are the “opto-electrical interface that converts electrical signals to optical signals, and vice versa,” so that the optical signals in the network can be converted into and processed as electrical signals inside Shraga’s OLT and ONT.

Petition at 5.

Shraga does not teach or disclose a pluggable optical transceiver module. Ex. 1003 ¶ 106 (“Shraga does not, however, expressly disclose a pluggable optical transceiver module as taught in Togami”). For this reason, none of Shraga’s OLT, ONT, or ONU are alleged to be, include, or otherwise represent a pluggable optical module. Instead, the Petition relies exclusively on Togami for allegedly teaching a pluggable optical transceiver module.

**B. Patent 6,439,918 to Togami (Ex. 1007)**

Togami allegedly teaches a pluggable optical transceiver module as pictured below. Petition at 23. In a network, an optical transceiver module is used to connect an electrical interface to fiber cables. Ex. 1003 ¶ 56. Thus, “the optical transceiver module converts between optical and electrical signals” to allow the electrical interface and fiber cables to communicate with one another, just like the “optical interface” blocks of Shraga. *Id.*



Petition at 23 (annotated by Patent Owners to show Petitioner’s summary). The Petition’s summary of Togami does not otherwise describe its internal components or internal operation. Petition at 12–13.

### III. The Priority Date of the ’754 Patent is June 3, 2003

The ’754 Patent claims priority to provisional application 60/485,072, filed on June 3, 2003 and also to provisional application 60/515,836 filed on October 30, 2003. Ex. 1001, cover. At least for the purposes of the Petition, Petitioner does not deny that the ’754 Patent is entitled to its “earliest alleged priority date in 2003” (Petition at 9). Accordingly, Petitioner has admitted that the ’754 Patent is entitled to its earliest 2003 priority date: June 3, 2003. The Petition’s reference to October 30, 2003 appears to be a typo and is inconsistent with Petitioner’s admission.

**A. The G.984.3 Draft Recommendation (Ex. 1010) and Contribution 104 (Ex. 1011-2) In Ground II Are Not Prior Art**

The effect of the Petition's faulty priority date analysis is that the G.984.3 Draft Recommendation and/or Contribution 104 relied on in Ground II no longer qualify as prior art. The Petition argues that the G.984.3 Draft Recommendation was publicly posted by October 17, 2003, and that Contribution 104 was publicly posted by August 25, 2003. Petition at 15. Neither of these dates precede June 3, 2003, the earliest 2003 priority date claimed by the '754 Patent and admitted by the Petitioner. Ex. 1001, cover; Petition at 9. Thus, neither the G.984.3 Draft Recommendation nor Contribution 104 qualifies as prior art because neither predate the priority date.

**IV. Institution Should Be Denied Because the References Lack Claimed Elements, And Ground II Uses References That Are Not Prior Art**

The Board should deny institution because the Petition fails to identify critical claim elements in each ground and thus has not established a reasonable likelihood of prevailing on the merits. Many elements are missing, but this Preliminary Response focuses only on the claimed "control module." Ground II also fails because the references it adds are admitted by the Petitioner to not be prior art.

**A. Ground I: Shraga and Togami**

The Petition has two fundamental flaws. First, the claims require that several components be a part of a pluggable optical transceiver module. The Petition cites Togami for a pluggable optical transceiver module, but then the Petition argues that

the claimed components are instead found in Shraga's ONT/ONU, not in Togami's optical transceiver module. Thus, neither individual reference teaches the claimed components in an optical transceiver module.

Second, the Petition fails to explain how the references, even if considered in combination, would meet the claimed limitations. The Petition dedicates Section VII(A)(1) to describing the proposed combination and the motivation to combine, but this section only vaguely states:

A POSITA would have been motivated to combine the optical transceiver module of Togami with the optical network data communications system of Shraga to create a pluggable optical transceiver module for use in transmitting data communications over a PON for several reasons. Ex. 1003, ¶¶106–07.

Petition at 18–19.<sup>1</sup>

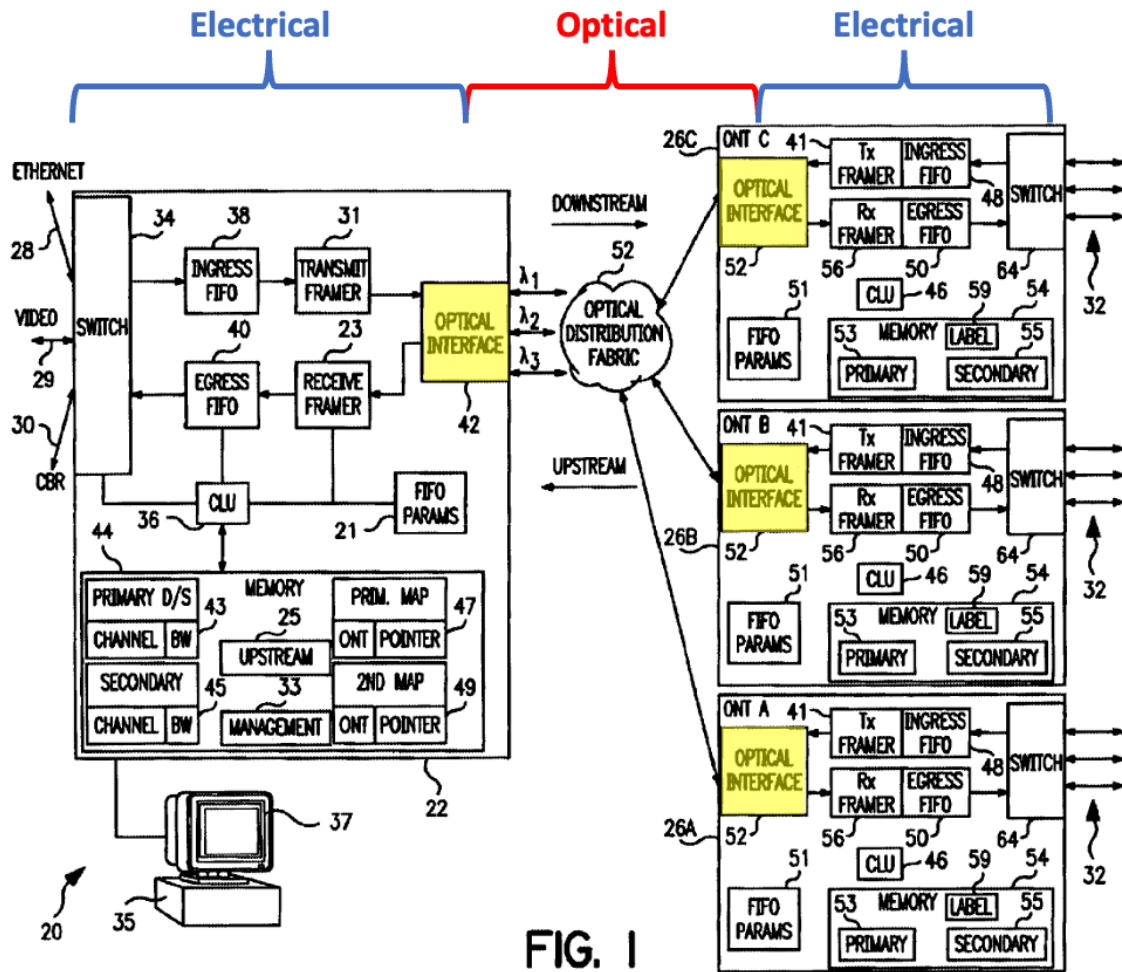
In cited paragraph 106 of the expert declaration, Dr. Prucnal explains the proposed combination: replacing (or modifying) Shraga's "Optical Interface" block with Togami's pluggable optical interface. He relies on Shraga for teaching "a passive optical network between a head-end OLT and client-end ONTs." Ex. 1003 ¶ 106. He then admits, "Shraga does not, however, expressly disclose a pluggable

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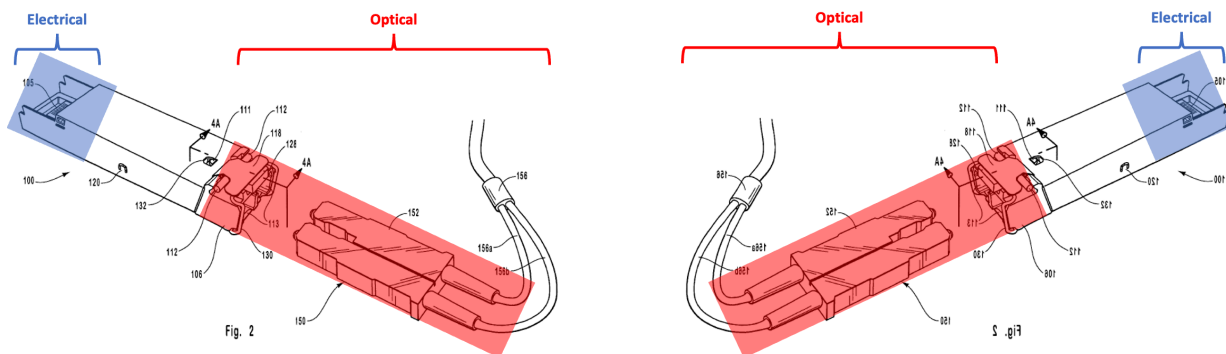
<sup>1</sup> The rest of this section of the Petition explains the motivation for making the combination without further explaining what the combination is. Petition at 18–21.

optical transceiver module as taught in Togami.” *Id.* Dr. Prucnal then proposes that Togami’s pluggable optical transceiver module would replace (or perhaps plug into) the “Optical Interface” block of Shraga Figure 1. *Id.* He relies on Shraga’s ONT/ONU because “Shraga’s ONT/ONU has an optical interface that transmits and receives data to and from the optical distribution fabric, operating as a transceiver in a passive optical network.” *Id.* Then, Dr. Prucnal argues for replacing Shraga’s optical interface with Togami’s pluggable transceiver module because “Togami’s pluggable transceiver would be successful at performing this function because it ‘contains a laser transmitter circuit capable of converting electrical signals to optical signals and an optical receiver capable of converting received optical signals back into electrical signals.’” *Id.* In other words, he argues that Togami’s pluggable optical transceiver module is a replacement for Shraga’s “Optical Interface” block because Togami’s pluggable optical transceiver module is designed to successfully do the same thing: opto-electrical conversion. Dr. Prucnal does not opine that Togami’s pluggable transceiver would be successful at performing any other function of Shraga’s ONT/ONU. *Id.*

Neither the Petition nor Dr. Prucnal show the resulting combination, so Patent Owners provide the following figures to show an annotated network of Shraga, an annotated transceiver module from Togami, and then their combination.

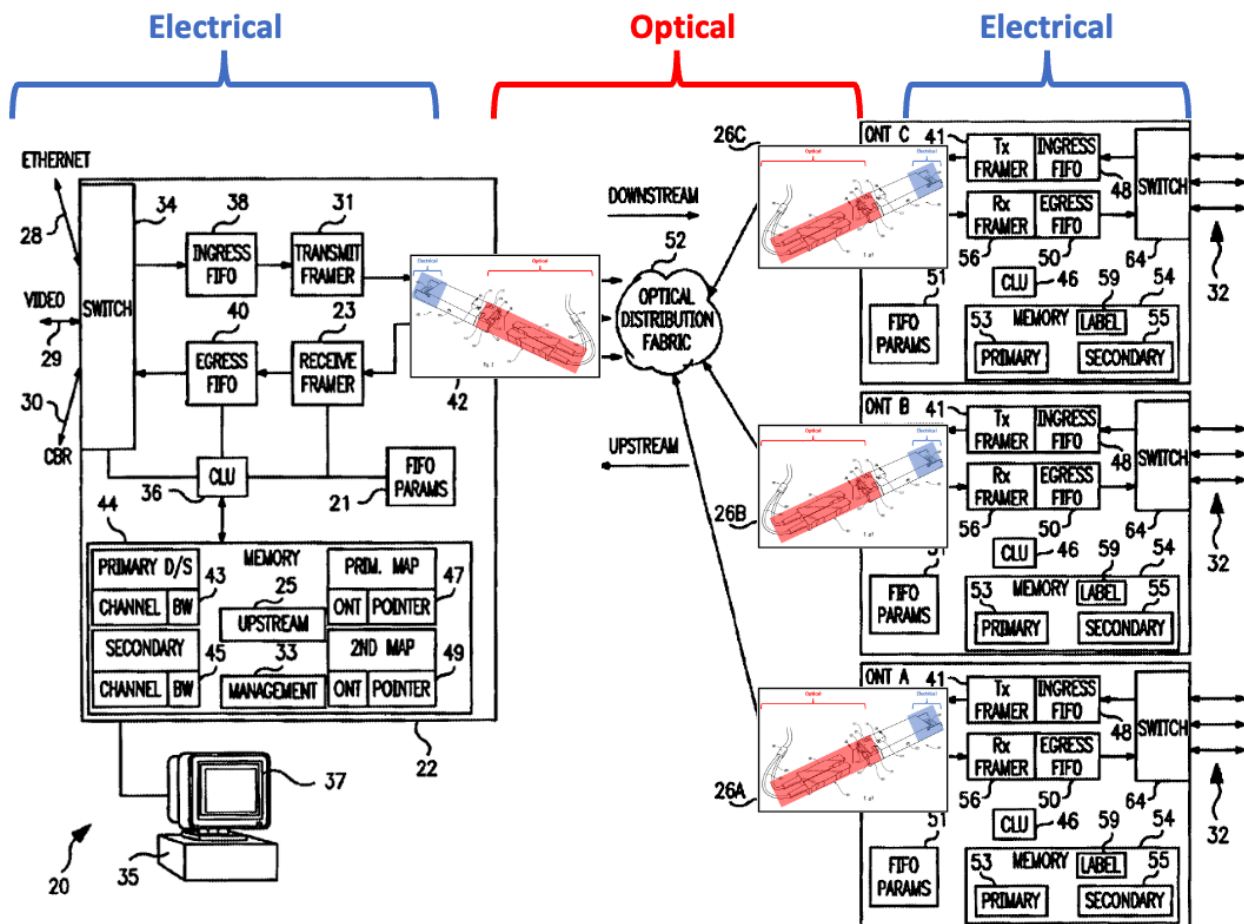


Ex. 1005, Fig. 1 (annotated). As summarized above in Section II(A) above, Shraga Figure 1 shows a system where opto-electrical conversion occurs in the “Optical Interface” block.



Ex. 1007 Fig. 2 (annotated, along with mirrored version). As summarized in Section II(B) above, Togami's pluggable transceiver "converts between optical and electrical signals." Ex. 1003 ¶ 56.

When Togami's device replaces the "Optical Interface" block of Shrags as proposed by Dr. Prucnal, the following system results:



By replacing (or plugging into) the existing "Optical Interface" block, Togami's device is thus "used to interface an optical transmission cable medium ... to a host device, such as a network switch." Petition at 23, 33.

As explained below, this combination does not result in the claimed invention.

### 1. Independent Claim 1: Missing Element 1.C

In full context, claim element 1C recites:

*the network client optical transceiver module having a pluggable form factor and ... comprising:*

...

*a control module* electrically coupled to the bi-directional optical interface block and configured to receive from the head end of the passive optical network data communications representing one or more start times for transmitting data communications to the head end of the passive optical network and configured to transmit the data communications to the head end of the passive optical network responsive to the start times;

Ex. 1001, 16:54–17:2 (emphasis added). This requires the claimed pluggable network client optical transceiver module to include the claimed control module. The Petition overlooks this requirement and does not therefore establish a likelihood of success in demonstrating that the combination of Shraga and Togami disclose this element.

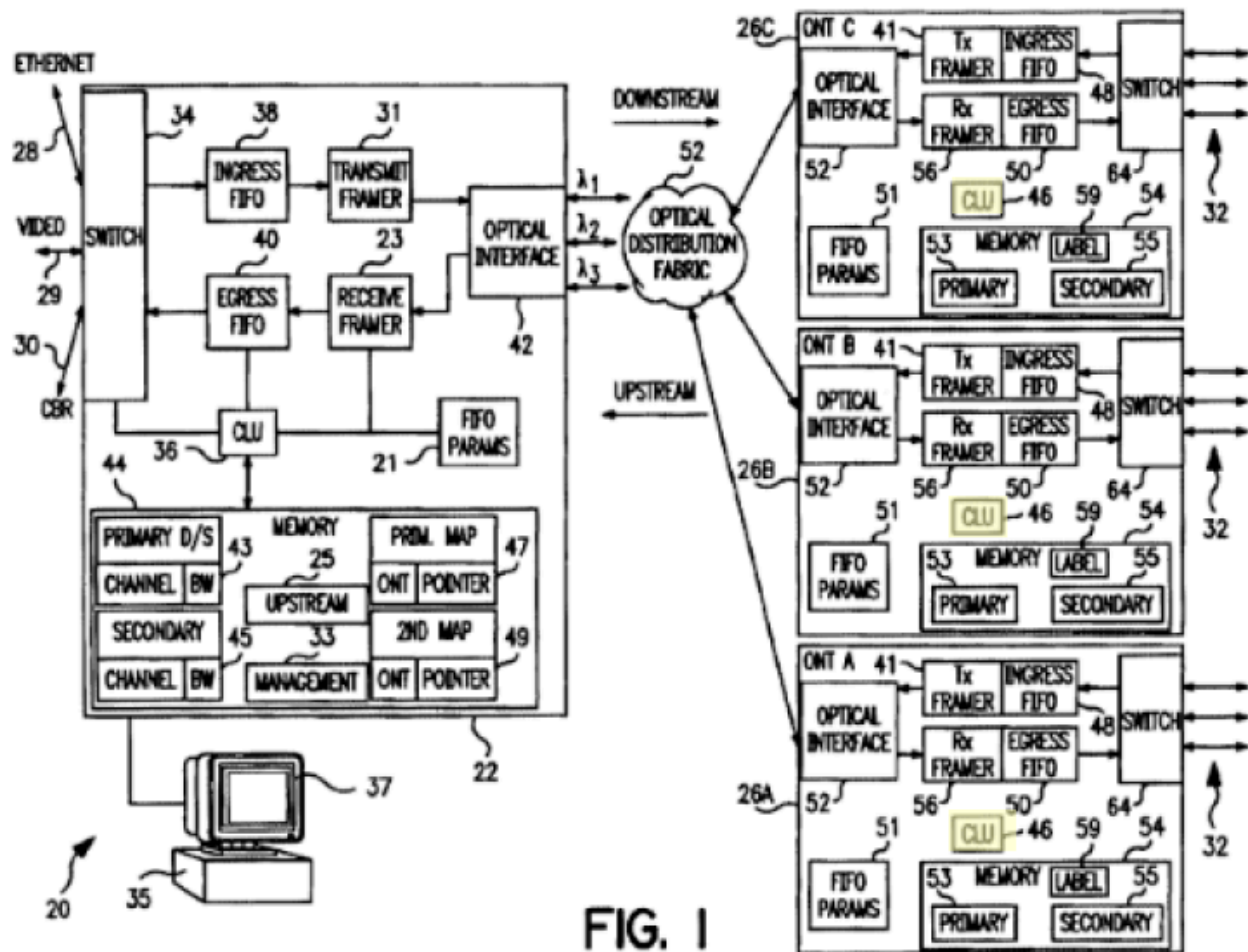
According to Petitioner, Shraga’s non-pluggable ONT/ONU device discloses the “control module” through Shraga’s disclosure of a CLU, but Shraga’s CLU is not comprised within the “Optical Interface” block and not comprised within a pluggable optical transceiver module. Petition at 27–31. The Petition does not argue that Togami’s pluggable optical transceiver module has the claimed controller. *Id.*

Finally, Petitioner has not explained why the combination of Shraga and Togami (replacing or modifying the “Optical Interface” block with Togami’s pluggable) would result in the CLU being installed on a pluggable transceiver module as opposed to remaining in Shraga’s OLT/ONU. Thus, neither reference individually teaches the claim element, and the combination does not teach the claim element either.

**a. The Petition Argues That Shraga Teaches The “Control Module” Outside a Pluggable Optical Transceiver Module**

The Petition argues that the claimed components **are not in** the pluggable optical transceiver module as required by the claims, but instead in Shraga’s OLT and ONU/ONU. *Id.* at 27–31. Petitioner’s expert admits that Shraga’s OLT and ONU/ONU are not pluggable optical transceiver modules. Ex. 1003 ¶ 106 (“Shraga does not, however, expressly disclose a pluggable optical transceiver module as taught in Togami”). The Petition argues that Shraga teaches the claimed control module because Shraga’s “OLT and ONU/ONU contains a control and logic unit (shown below in yellow).” *Id.* The Petition argues that “A POSITA would have understood ... the CLU would necessarily be ... the internal components of the ONU/ONU,” not the internal components of a pluggable optical transceiver module. *Id.* at 28; *see also id.* at 36–37 (“The CLU of each ONU/ONU” of Shraga that meets the control module element); *id.* at 38 (“Shraga explicitly teaches that each

ONT/ONU contains a CLU (i.e. control module).”)



Petition at 28 (with Petitioner’s annotations of Ex. 1005, Fig. 1).

Because Shrags’s ONT/ONU are admitted by Petitioner’s expert as not being pluggable optical transceiver modules, the Petition has affirmatively argued that the Shrags prior art teaches a POSITA to put the claimed “control module” in a different device from what is claimed. Shrags independently does not meet this limitation.

**b. The Petition Makes No Argument That Togami Teaches This Element**

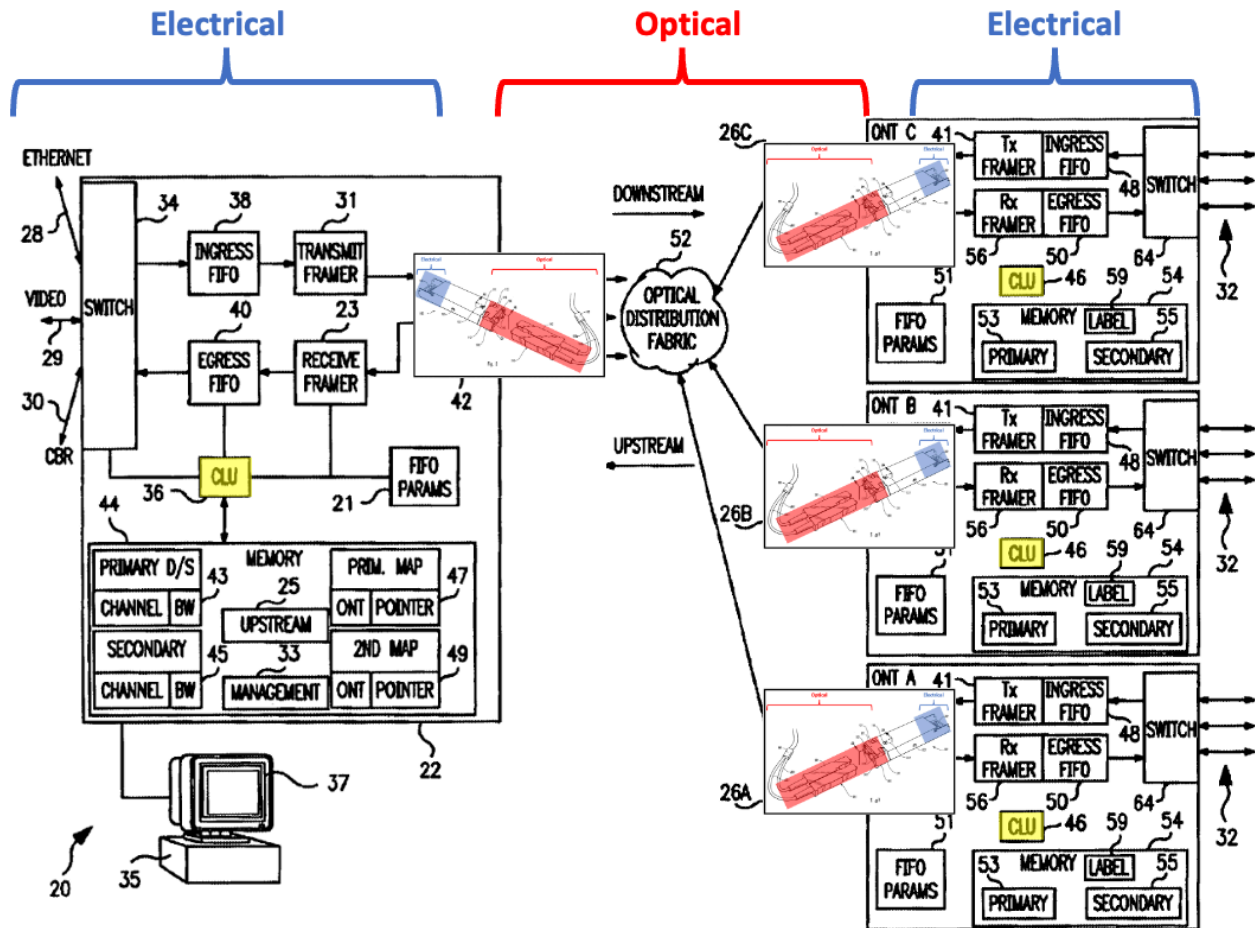
The Petition relies exclusively on Togami for teaching an optical transceiver

module, but the Petition has no argument, analysis, or expert opinion about how Togami's optical transceiver module includes the claimed components. Petition at 27–31. Indeed, Togami is titled “Electronic Module Having an Integrated Latching Mechanism,” so Togami's disclosure focuses on the improved latch. Ex. 1007. Thus, Togami contains minimal discussion of its internal components and makes no mention of internal controllers. *Id.* In summary, Togami's pluggable optical transceiver module lacks the claimed “control module,” and the Petition makes no effort to argue otherwise.

**c. No Combination of Shraga and Togami Teaches Element [1.C]**

The Petition fails to explain how the claimed element would be obvious in view of the combination of Shraga and Togami. Neither the Petition nor Dr. Prucnal make any argument for moving Shraga's CLU into Togami's optical transceiver module. Petition at 18–21 (describing combination), 27–31 (addressing element [1.C]); Ex. 1003 ¶¶ 105–15 (describing combination), 133–38 (addressing element [1.C]).

As discussed above in Section IV(A), Dr. Prucnal argued that it would have been obvious for a POSITA to replace Shraga's “optical interface” in the ONT/ONU with Togami's pluggable optical transceiver module. Petition at 18 (citing Ex. 1003 ¶ 106). The resulting combination is shown below:



Even if Togami's pluggable optical transceiver module were to replace (or be plugged into) the optical interface in Shrags, this would not change the internal components within Togami's pluggable optical transceiver module, and the CLU still remains outside of Togami's pluggable optical transceiver module. Plugging Togami's pluggable optical transceiver module into one of Shrags's ONTs/ONUs would not change the fact that the CLU would still be in Shrags's ONT/ONU but outside of Togami's pluggable optical transceiver module.

In conclusion, the Petition allegedly identifies the claimed components in the wrong place (in the ONT/ONU of Shrags, which is not an optical transceiver

module). This fails to meet the claim, which instead requires these components be comprised within “the network client optical transceiver module having a pluggable form factor.” Ex. 1001 at 16:51–63. Even in combination, the resulting system lacks a “control module” that is comprised within the pluggable optical transceiver module, as claimed. The Petition needed to find the claimed components in Togami’s optical transceiver module, but it did not.

**d. The Petition Gives No Motivation To Move  
Shraga’s CLU Into Togami’s Device**

Petitioner’s motivations to combine at best support its argument for replacing *only* the “optical interface” block of Shraga with a port capable of receiving Togami’s optical transceiver module. Petition at 18–21; Ex. 1003 ¶¶ 105–15. But these motivations would not have caused a POSITA to move Shraga’s CLU into Togami’s pluggable module, nor is there any explanation of how the other components in Shraga’s ONT/ONU could successfully continue to function without a CLU if the CLU is moved into a pluggable optical transceiver module. In fact, most of the stated motivations weigh against the idea of moving a CLU into Togami’s device.

The Petition gives four reasons for making this combination. Petition at 19–21. First, it was allegedly “well-known and implemented in the art” to plug small form-factor pluggable devices into various devices in an optical network as shown in the following picture.

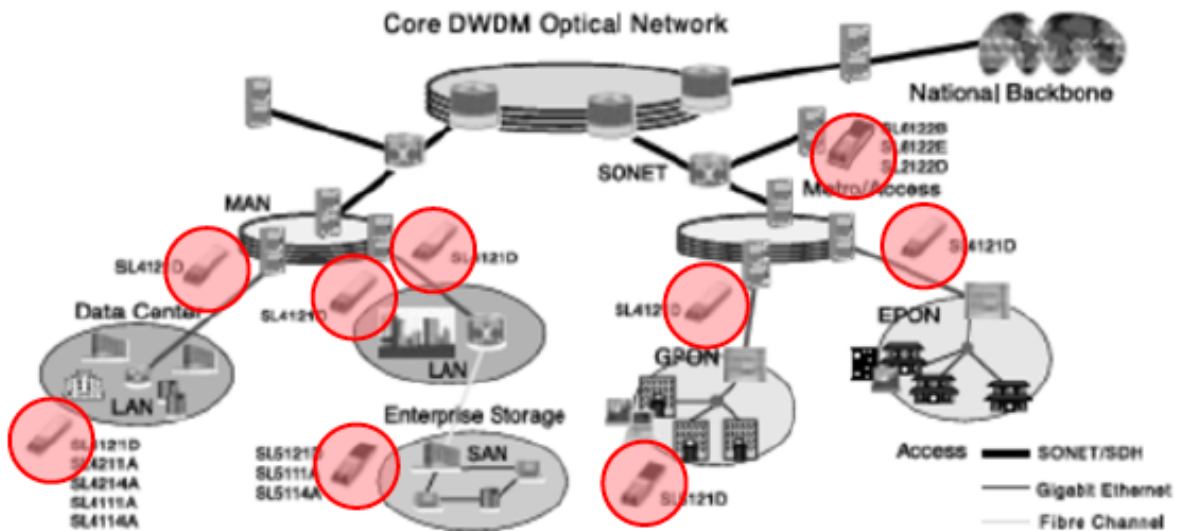


Fig. 1 Optical communications network for the broadband era

*Id.* at 19 (annotations by Petitioner). Second, using a pluggable optical module as standardized by MSAs was easier to install, repair, or replace. *Id.* at 20. Third, Togami's pluggable optical transceiver is more compact and takes up less room than traditional transceivers, thereby increasing port densities. *Id.* at 20–21. Fourth, it is cost effective to use standardized small form factor pluggable optical modules during installation, repair, and replacement. *Id.* at 21.

The first motivation, that it was well-known to use pluggable modules by plugging them into large host devices such as shown in the picture below, is not a motivation for a POSITA to then disassemble the large host devices and start moving their other internal components into the pluggable module.

The second motivation, that using standardized form factors compliant with industry standard MSAs would make systems easier to repair, weighs against non-

standard ideas such as moving unique components (like a CLU) into a pluggable optical transceiver module. Petition at 20. The Petition and Dr. Prucnal do not show that any of the MSAs required implementing a CLU in a compliant pluggable optical transceiver module, so doing this would go against the industry standard. *See* Exs. 1016–1018.

The third motivation, to make transceiver module sizes more compact than existing optical modules, also weighs against the idea of adding anything sizable (like Shraga’s ONT/ONU, or even the CLU itself) into Togami’s pluggable optical transceiver because doing so requires more room. Petition at 20–21. Indeed, such a hindsight motion is explicitly described as incorrect by the ’754 Patent. Ex. 1001 at 2:14–20 (“The very nature of the intent of the invention is contrary to the [size-shrinking] evolution of MSA 10 Gb/s optical modules in that in increase in power and number of components will result while enabling point-to-multipoint networks.”).

The fourth motivation, to use standard pluggable optical modules to reduce manufacturing and replacement costs, also weighs against the idea of adding non-standard, expensive components (like Shraga’s CLU) into Togami’s pluggable optical transceiver. Petition at 21. Adding non-standard components like a CLU would increase manufacturing costs compared to manufacturing a standard pluggable optical transceiver module without a CLU. Compared to other static

system components, pluggable optical transceiver modules are relatively disposable interfaces that may suffer physical wear or damage out when they are repeatedly inserted into or removed from a host device, or when fiber optic cables are repeatedly inserted into or removed from the pluggable optical transceiver modules. Dr. Prucnal explained that technicians would not have to repair and replace larger equipment (like Shraga's CLU, ONT, or ONU) when an opto-electrical component in a mounted transceiver fails (like Togami's optical transceiver). Ex. 1003 ¶ 113. A POSITA would not been motivated to add a CLU into a pluggable optical transceiver module because whenever a pluggable optical transceiver module needs to be replaced as a result of damage or physical wear, the replacement cost would be further increased by the cost of replacing a CLU that would not have otherwise needed replacement. There is no explanation how this motivation would have resulted in a POSITA adding other components (such as Shraga's ONT/ONU) to Togami's pluggable. Indeed, it would have had the opposite motivation because it would increase the cost of the replacement component.

Finally, there is evidence of a reasonable expectation of success for the system to work if Shraga's CLU were moved into Togami's optical transceiver device. Dr. Prucnal **only** opined that there was a reasonable expectation of success of replacing Shraga's "Optical Interface" block with Togami's optical transceiver device because "Togami's pluggable optical transceiver module would be successful at performing

this function,” referring to the same function of transmitting and receiving data from an optical distribution fabric and operating as an electro-optical transceiver. Ex. 1003 ¶ 106. There is no evidence that the other components in Shraga’s ONT/ONU (e.g., the memory, the framer blocks, or the FIFO blocks) would have been expected to continue to operate successfully if the CLU were removed and relocated to a pluggable optical transceiver module.

**2. Dependent Claims 10 and 16: Petitioner Improperly Relies On References That Are Not Prior Art**

Though not acknowledged in Petitioner’s definition of Ground I, Ground I also relies on the G.984.3 Draft Recommendation and/or Contribution 104 references in its arguments for claim 10 and claim 16. Petition at 44-45 (claim 10), 51 (claim 16). Because neither of these references has been established as prior art, Petitioner has not shown a likelihood of success in Ground I regarding claims 10 and 16 of the ’754 Patent.

**3. Dependent Claim 16: Petition Erroneously Assumed Shraga Disclosed an Optical Transceiver Module**

Claim 16 recites, in part:

The network client optical transceiver module of claim 1,<sup>2</sup> wherein the network client optical transceiver module is an optical network terminal

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<sup>2</sup> Referring to the same “network client optical transceiver module having a pluggable form factor” from element [1.pre].

(ONT)

Ex. 1001, 18:39–41. This claim requires, in part, not just any network client optical transceiver module, but one that “is an optical network terminal (ONT).”

The Petition argues, “As discussed in claim [1.pre], Shruga discloses an optical transceiver module that is an ONT/ONU.” Petition at 51. But the Petition’s discussion of claim [1.pre] contains no such discussion of Shruga disclosing an optical transceiver module, and certainly not the same one that has a pluggable form factor. Petition at 22–24. In fact, Petitioner’s expert admits this is not the case: “Shruga does not, however, expressly disclose a pluggable optical transceiver module.” Ex. 1003 ¶ 106. In the Petition’s argument for claim [1.pre], the Petition argues that Shruga teaches ONTs in a PON while Togami teaches a separate pluggable optical transceiver module that is missing from Shruga. Petition at 22–24 (“Togami discloses a pluggable optical transceiver module”). There was no evidence or argument whatsoever in [1.pre] about how Shruga discloses an optical transceiver module that is an ONT/ONU.

For these reasons, not only is dependent claim 16 not obvious, but Petitioner’s discussion of this dependent claim lacks any evidence for arguing that Shruga teaches an optical transceiver module.

#### **4. Dependent Claims 2–16**

None of Petitioner’s arguments regarding dependent claims 2–16 cure the

deficiencies discussed for Claim 1. Because these dependent claims are nonobvious for at least the reasons discussed for independent claim 1, the Petition's arguments are unlikely to succeed on the merits.

### **5. Independent Claim 18 Suffers the Same Problems**

Independent claim 18 begins “A network client optical transceiver module for a passive optical network,” and the claim preamble [18.pre] requires, in part:

the network client optical transceiver module having a pluggable form factor and adapted to removably couple to an optical module port of a switch or router...

the network client optical transceiver module having a control module electrically coupled to the optical interface block and for communicating with the head end...

Ex. 1001, 18:51–67. Like claim 1, claim [18.pre] requires the pluggable optical transceiver module to have a control module. The Petition provides no independent argument for this element, instead solely referring back to its argument for claim 1. Petition at 52.

For the same reasons discussed for claim 1, Petitioner failed to show this element was obvious because Petitioner instead argued that Shraga's CLU is the claimed “control module” that is located in the ONT in Shraga's Figure 1, not in Togami's pluggable optical transceiver module. *See* Section IV(A)(1) above.

Indeed, the Petition reinforces its erroneous interpretation when it discusses

claim elements [18.C] and [18.D], both of which refer back to the claimed “control module.” In its discussion of claim element [18.C], the Petition argues that “Shraga and Togami disclose a control module” but cites only to Ex. 1005 (Shraga), not to Ex. 1007 (Togami). Petition at 53. In its discussion of element [18.D], the Petition again argues that “as discussed in Claim [1.D], Shraga discloses a CLU (i.e., control module)...,” not Togami. Petition at 54. The Petition then argues, “A POSITA would have understood that Shraga teaches ... the CLU controls data transmission...” *Id.* (citing Shraga, Ex. 1005).

Thus, the Petition repeats over and over how the prior art teaches the control module in the ONT of Shraga’s Figure 1, not in the pluggable optical transceiver module of Togami. As discussed for claim 1, Petitioner has articulated no theory, explanation, understanding, or proposed modification that would somehow add or move this CLU from Shraga’s ONT into Togami’s optical module transceiver. *See* Section IV(A)(1), above. Thus, the Petition has failed to provide a *prima facie* argument for why this element is obvious.

## **6. Dependent Claims 19–30**

None of Petitioner’s arguments regarding dependent claims 19–30 cure the deficiencies discussed for claim 18. Because these dependent claims are nonobvious for at least the reasons discussed for independent claim 18, the Petition is unlikely to succeed on the merits.

**B. Ground II: Shraga, Togami, and G.984.3 Draft Recommendation and/or Contribution 104**

**1. All Challenged Claims 1–16 and 18–30:  
Petitioner Failed to Prove G.984.3 Draft  
Recommendation and/or Contribution 104 Are Prior  
Art**

The difference between Ground I and Ground II is the additional citation of G.984.3 Draft Recommendation or Contribution 104. Petitioner has failed, however, to show that either reference was publicly available before the earliest priority date in 2003. The earliest provisional from which the '754 Patent claims priority is July 3, 2003. Ex. 1001, cover, 1:5–16. Petitioner wrote that “for purposes of this Petition, no determination as to intervening priority need be made; all the prior art relied upon herein is prior art to the earliest alleged priority date in 2003.” Petition at 9. Thus, Petitioner waived its right to challenge the July 3, 2003 earliest priority date of the '754 Patent.

Petitioner asserts that the earliest publication of the G.984.3 Draft Recommendation was October 17, 2003, and that Contribution 104 was published on August 25, 2003. Petition at 14. Because both of these alleged dates of publication post-date the earliest claimed priority date of July 3, 2003, they fail to qualify as prior art under pre-AIA 35 U.S.C. § 102(a), which requires that “the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant

for patent.”

Petitioner has therefore failed to show that G.984.3 Draft Recommendation or Contribution 104 are prior art.

**2. All Challenged Claims 1–16 and 18–30:  
Without G.984.3 Draft Recommendation or  
Contribution 104, Petitioner Repeats the Same  
Arguments From Ground I**

The Petition’s Ground II arguments for claims 1–16 and 18–30 generally cite back to Ground I for the corresponding argument, except that Ground II further relies on G.984.3 Draft Recommendation and/or Contribution 104 to address details of timing and protocol.<sup>3</sup> Petition at 62–81. The Petition’s Ground II does not further clarify the Shraga/Togami combination, nor does it use G.984.3 Draft Recommendation and/or Contribution 104 to address the deficiencies identified in Section IV(A) of this Petition.

Thus, Ground II does not provide any independent argument about why it would have been obvious for a pluggable optical transceiver module to have a control module as recited in the claims.

- For independent claim 1, the Petition’s Ground II discussion of claim

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<sup>3</sup> Due to the highly technical nature of these arguments, Patent Owners will address them in its formal response if this IPR is instituted.

element [1.C]<sup>4</sup> cites back to Section VII.A.2.d (Ground I) in the Petition before relying on the non-prior art references for further disclosure about the “StartTime field,” and Ground II makes no separate argument about the location of the claimed “control module.” Petition at 65–66.

- For independent claim 18, the Petition’s Ground II discussion of claim element [18.pre]<sup>5</sup> merely cites back to claim elements [1.pre] and [1.A]–[1.E], without further analysis. Petition at 76.

For the same reasons discussed above in Section IV(A), the Petition has failed to show why independent claims 1 and 18 and all their dependent claims 2–16 and 19–30 would have been obvious.

## **V. Prosecution History**

The ’754 Patent continues from Application 10/886,514 (“Parent Application”), which issued as U.S. Patent 7,925,162. Patent Owners agree that the substantive examination occurred during examination of the Parent Application. *See*

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<sup>4</sup> In context, “the network client optical transceiver module comprising: ... a control module ...” referring to the same network client optical transceiver module “having a pluggable form factor”

<sup>5</sup> In part, “the network client optical transceiver module having a pluggable form factor ... the network client optical transceiver module having a control module...”

Petition at 8 (noting same). However, the Petition’s summary of the file history omits important events. Examiner Li examined both the Parent Application and the application for the ’754 Patent.

**A. Parent Application 10/886,514 (Pat. 7,925,162, Ex. 1002-2)**

The originally filed claims of the Parent Application varied in scope. Ex. 1002-2 at 471–79. Still, they recited many related elements that required examination of technology closely related to the claims that ultimately issued in the ’754 Patent.

Many of the original claims articulate, in some way, an optical network, optical-electrical conversion, and a control module. For example, claim 1 is directed to “A method for broadcasting data” by receiving optical signal at a first port of a plurality of ports, converting the optical signal to an electrical signal, and processing the electrical signal. *Id.* at 471. Claim 9 requires “transmitting the broadcast optical signal ... over an optical distribution fabric; and receiving the broadcast optical signal at network client adapters in a plurality of clients.” *Id.* at 472. Claim 12 was an independent apparatus claim requiring, “a plurality of ports, a passive optical coupler ... an optical-electrical converter ... and a control module.” *Id.* Claim 13 required that the “control module is operable to schedule a slot for receiving a signal ... and to schedule a time for broadcasting ....” *Id.* Claim 17 required:

An optical local area network comprising:

A plurality of optical waveguides;  
A network manager that comprises  
    an optical-electrical converter in optical communication with the  
        plurality of optical waveguides; and  
    a control module in electrical communication with the optical-electrical  
        converter for scheduling slots for incoming and outgoing signals  
        transmitted over the plurality of optical waveguides; and  
a plurality of network client adapters coupled to the plurality of optical  
    waveguides, each network client adapter including an optical-electrical  
    converter for processing transmitted and received optical signals at a  
    client.

*Id.* at 473. Other elements from various claims included a “passive optical coupler,” that the “control module is operable to schedule a slot,” or “to dynamically schedule ... in response to a message,” “wherein the client is ... a switch,” and a “passive optical transmission fabric.” *Id.* at 473–76 (claims 18–20, 32, 39). Thus, the claims of the Parent Application were structured differently but still included many related aspects to the claims of the ’754 Patent.

In the first office action of May 3, 2005 rejecting these various claims, Examiner Li cited Akita (U.S. Pub. 2002/0006111), Yokomoto (U.S. Pub. 2002/0067529), Choi (U.S. Pub. 2003/0091045), Ethridge (U.S. Pub. 2002/0163921), and other references. *Id.* at 408–15.

Applicants then canceled the pending claims and added new claims. *Id.* at 386–91. Exemplary new claim 64 is directed to “A Network Manager (NM),” and

requires, in part, “a plurality of NM optical ports for transferring optical signals representing both control and message data,” “a solitary opto-electrical converter (OEC),” “a passive optical coupler,” and “a control module in electrical communication with the NM OEC electrical port for scheduling the optical signals.” *Id.* at 387–88.

In the final office action of October 18, 2005, Examiner Li rejected the new claims, citing Yokomoto, Hale (U.S. Pat. 5,572,349), Choi, Ethridge, and other references. *Id.* at 369–74.

Applicants then canceled the pending claims and added new claims in a request for continued examination. *Id.* at 348–58, 365. Exemplary new claim 77 is directed to an “optical Local Area Network” comprising, in part, “a network manager including an optical interface having means for converting received optical signals into electrical signals ... a plurality of optical ports, a passive optical coupler ... and a control module,” “a plurality of network client adapters including an optical interface having means for converting received optical signals to electrical signals ... an optical port coupled to the optical interface, and a control module,” and “a plurality of optical waveguides each coupled between one of the network client adapter optical ports and the network manager.” *Id.* at 348. Dependent features included “the network control module includes means for dynamically scheduling,” “each downstream subframe including a second number of down-stream slots of

time,” “communicating schedule or provisioning information,” “the network clients are selected from the group consisting essential of ... a server, a switch, and a router,” and “wherein the form factors of the optical ports are selected from the group consisting essentially of: the optical Multi-Source Agreements (MSA) specifications, including XFP, XENPAK, XPAK, and SFP.” *Id.* at 349–52 (claims 83, 89, 90, 100, 108).

In the non-final office action of April 4, 2006, Examiner Li rejected the new claims, citing Medina (U.S. Pat. 6,778,399), Hale, and other references. *Id.* at 326–38. Medina was cited in the rejection of claim 108<sup>6</sup> for teaching the “small form pluggable (SFP) transceiver multisource (MSA) standard.” *Id.* at 336. The Examiner believed that “[o]ne of ordinary skill in the art would have been motivated to combine the teaching of Medina et al. with the optical LAN of Modiano et al. and Brisson et al. and use SFP type connector for the optical port because SFP has small form factor and allows high port density and, therefore, saves space.” *Id.*

Subsequent applicant amendments and arguments emphasized the local area network (LAN) aspects, as opposed to wide area networks (WAN). *Id.* at 310.

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<sup>6</sup> “wherein the form factors of the optical ports are selected from the group consisting essentially of: the optical Multi-Source Agreements (MSA) specifications, including XFP, XENPAK, XPAK, and SFP.” Ex. 1002-2 at 352.

Examiner Li was not persuaded and maintained the rejections in a final office action. *Id.* at 285–88. Applicants then filed another round of amendments and arguments with an RCE. *Id.* at 244, 250–67.

In the non-final office action of May 7, 2007, Examiner Li rejected the claims, citing Wang (U.S. Pub. 2004/0052274), Kuo (U.S. Pat. 7,031,343), Abdelhamid (U.S. Pat. 6,023,467), Masucci (U.S. Pat. 6,498,667), Medina, Hale, and others. *Id.* at 207–15. Again, Examiner Li explicitly relied on a combination using Medina for claims related to the MSA form factors such as SFP. *Id.* at 213–15.

The Applicants filed arguments in response (*id.* at 197–202), but Examiner Li maintained the rejections in a final office action. *Id.* at 188.

Applicants then filed an after-final amendment and arguments emphasizing the optical LAN aspect of the claims. *Id.* at 155–74. Examiner Li responded with an advisory action noting that the after-final amendments would not be entered because they raised new issues, and would require further searching and consideration. *Id.* at 151.

Subsequently, Applicants appealed. *Id.* at 104. As noted in the Petition, the critical issue on appeal was whether the optical WAN of the primary reference, Wang, was the claimed optical LAN. *Id.* at 24–31; Petition at 8. The Board reversed the rejections, and the Examiner subsequently allowed the claims. Ex. 1002-2 at 11, 31.

**B. Application 12/982,872 ('754 Patent, Ex. 1002-1)**

The inventors filed Application 12/982,872 as a continuation of Application 10,886,514. Examiner Li issued a first action allowance without a substantive rejection. Thus, the as-filed claims issued in their original form as the '754 Patent.

In the Reasons for Allowance, Examiner Li noted how Ethridge (U.S. Pub. No. 2002/0163921)

teaches in FIG. 4 a passive optical network with ONUs coupled to a fast Ethernet switch. However, Ethridge et al. fails to teach “an electrical network interface port electrically coupled to the control module and for electrically coupling into the optical module port of the switch or router” as recited in claim 1.

Ex. 1002-1 at 18. In the full context of the claim, this means that Examiner Li found that the prior art lacked, **in a pluggable optical transceiver module**, the claimed control module coupled to the electrical network interface port that is for coupling into the optical module port of the switch or router. Petitioner admits that the Examiner did not find this control module in a pluggable form factor. Petition at 7–8.

**VI. The Board Should Deny Institution Under Section 325(d)**

The Board should deny institution under 35 U.S.C. § 325(d) because the USPTO already carefully examined the type of combination that Petitioner proposes: a first reference cited for an signal processing components in an ONT/ONU in an

optical network combined with a second referenced cited for the pluggable optical transceiver form factor.<sup>7</sup>

In *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, the PTAB denied institution under Section 325(d) after evaluating the petition under a two-part test:

- 1) whether the petition presents to the Office the same or substantially the same art or arguments previously presented to the Office; and,
- 2) if either condition is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to patentability of the challenged claims.

IPR2019-01469, Paper 6 (PTAB Feb. 6, 2020) (precedential). As part of this analysis, the Board considers the non-exclusive *Becton, Dickinson* factors:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination [or any proceeding];
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination [or any proceeding];
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner

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<sup>7</sup> The Board declined to institute Petitioner's related petitions that made a similar argument in *Nokia of Am. Corp. v. Alexander Soto*, IPR2023-00680, -00681, -00682, Paper 10 (PTAB Nov. 3, 2023) (denying institution under § 325(d)).

distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

*Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential); *Advanced Bionics* at 10.

**A. The Petition Reargues the Combination Of A Pluggable Transceiver Patent With A Reference About ONTs/ONUs in an Optical Network**

Examiner Li cited Medina for teaching an MSA-compliant SFP optical transceiver, just like how the Petition relies on Togami. Also, Examiner Li explicitly cited multiple references that have the same teachings as Shruga about 1) a PON, 2) the components in an ONT/ONU, and/or 3) scheduling. Finally, the relied-upon teachings of Shruga and Togami are already described in the '754 Patent. Thus, the Petition, Togami, and Shruga do not offer anything new.

As explained in Section V(B) above, Examiner Li found that claims allowable because the prior art lacked, in a pluggable optical transceiver module, the claimed control module coupled to the electrical network interface port that is for coupling into the optical module port of the switch or router. Ex. 1002-1 at 18. The issue was not whether a PON existed, what components were in a ONT/ONU, scheduling, or whether a pluggable optical transceiver existed separately. The issue

was whether the claimed control module was disclosed in a pluggable optical transceiver module for plugging into a switch or router. To address this, the Petition cites the same type of prior art cited by the Examiner.

**1. Examiner Li Cited Medina for a Pluggable Optical Transceiver Substantially Similar to Togami**

Petitioner cites the Togami reference for teaching an “opto-electronic transceiver module ... formed as a small form-factor pluggable (‘SFP’) device in accordance with industry standards, such as the hot-pluggable MSA standard.” Petition at 13 (summarizing Togami). This is essentially all the Petition relies on Togami for. *See id.* at 23–24 (cited for summarized features), 25 (cited for an optical port on one side), 27 (cited for opto-electronic conversion), 33 (cited for the electrical port on the other side). Petitioner argues that a POSITA would have been motivated to use a device like Togami’s in combination with a host because of a variety of benefits that arise from MSA standardization and because “it is desirable to miniaturize the physical size of the transceiver module to increase the port density.” *Id.* at 19–20.

As previously explained, Togami is titled “Electronic Module Having An Integrated Latching Mechanism,” so Togami focuses on an improved latching mechanism while disclosing little, if anything, about its internal electronics. Ex. 1007.

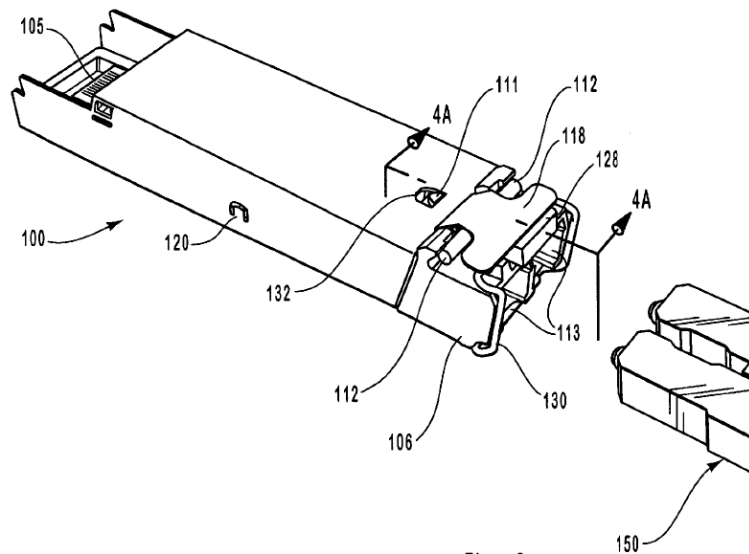


Fig. 2

Ex. 1007 at Fig. 2 (Togami, cropped).

The examiner cited Medina for the same type of disclosures. Medina's Figure 1 shows the same type of industry-standard SFP optical transceiver module of Togami, albeit without Togami's improved latch on the optical end.

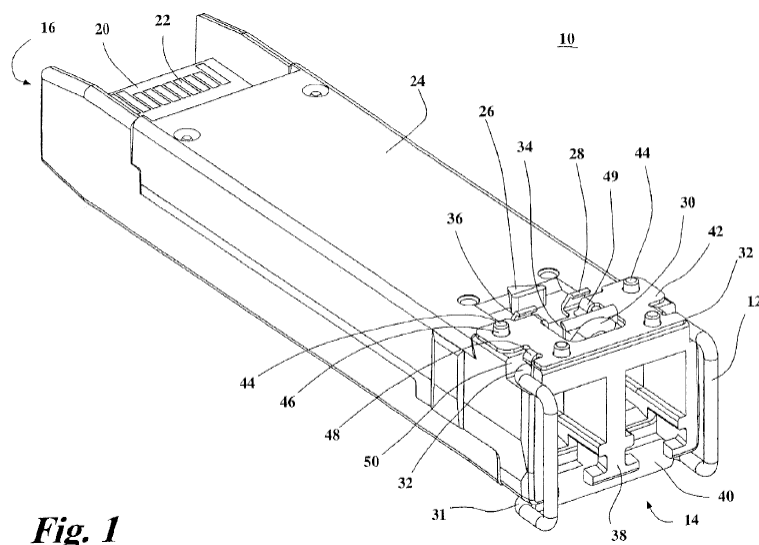


**Fig. 1**

Ex. 2004 at Fig. 1. Medina's abstract begins, "A pluggable transceiver module," and

its field of invention “relates generally to optical transceiver modules, and more particularly, to a pluggable optical transceiver module ... from a host device, receptacle, or port.” *Id.* at Abstract, 1:5–12. Medina describes how “[m]iniaturization of these transceivers is desirable to increase the port density,” and how “[t]he specific standards for SFP transceivers are set forth in the ‘Small Form-Factor Pluggable (SFP) Transceiver Multisource Agreement (MSA),’ dated Sept. 14, 2000, which Applicants hereby incorporate by reference.”

In the rejections, Examiner Li repeatedly cited Medina for rejecting pending dependent claim 108<sup>8</sup> for teaching the “small form pluggable (SFP) transceiver multisource (MSA) standard.” *Id.* at 336, 213–15, 186–88, 58–59. The Examiner argued that “[o]ne of ordinary skill in the art would have been motivated to combine the teaching of Medina et al. with the optical LAN of Modiano et al. and Brisson et al. and use SFP type connector for the optical port because SFP has small form factor and allows high port density and, therefore, saves space.” *Id.*

Petitioner now uses Togami in the same way—merely for teaching a pluggable SFP optical transceiver module. Because Examiner Li had such a

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<sup>8</sup> “wherein the form factors of the optical ports are selected from the group consisting essentially of: the optical Multi-Source Agreements (MSA) specifications, including XFP, XENPAK, XPAK, and SFP.” Ex. 1002-2 at 352.

reference and made rejections combining this type of pluggable module with other network systems, Examiner Li was well aware of the same teachings in Togami.

*Becton, Dickinson* factors (a)–(d) favor denial. Petitioner uses Togami (a) similarly to the previously considered Medina reference, (b) for cumulative teachings of SFP “pluggable” optical transceiver modules and the motivations to use them, (c) when Examiner Li repeatedly issued rejections combining a similar reference with other optical network patents. Now, (d) Petitioner makes the same type of combination by substituting Togami in place of the previously examined SFP form factor optical transceiver reference.

## **2. The Togami Reference Is Cumulative of Background Disclosure in the ’754 Patent**

As discussed in the preceding subsection, the Petition merely uses Togami for disclosing an optical transceiver module in a small, pluggable, MSA-compliant form factor. The existence of such devices was already described in the ’754 Patent itself.

The “Background” section of the ’754 Patent explains that “[o]ptical modules integrate components used in the transmission and reception of optical signals,” and that “Multi-source agreements (MSA) developed” to support these such that “[o]ptical modules can be purchased off the shelf.” Ex. 1001 at 1:39–55. The Background continues to describe the internal components of “a typical optical module” shown in Figure 11, which is more than what Togami describes about its internal components. *Id.* at 1:56–2:10. Figure 13 of ’754 Patent even shows an XFP

transceiver module as “Prior art,” which is similar to the SFP transceiver module allegedly taught by Togami.

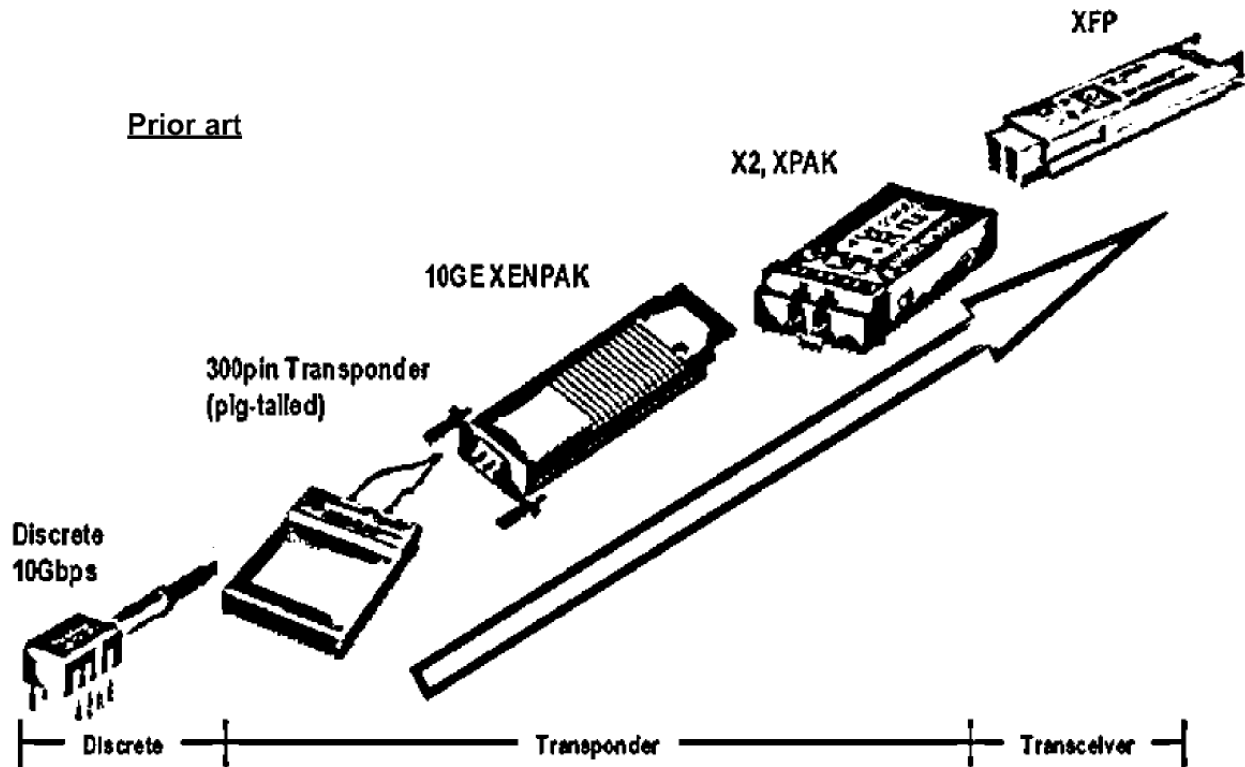
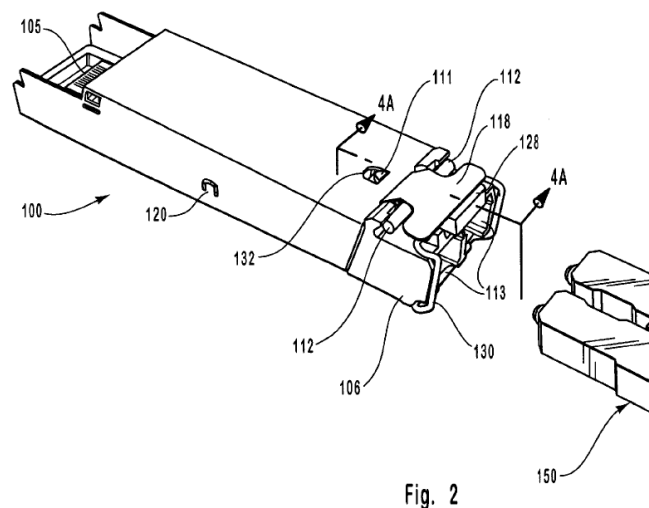


FIG. 13

Ex. 1001 at Fig. 13 (showing XFP transceiver on the right).



Ex. 1007 at Fig. 2 (Togami, cropped to show SFP transceiver).

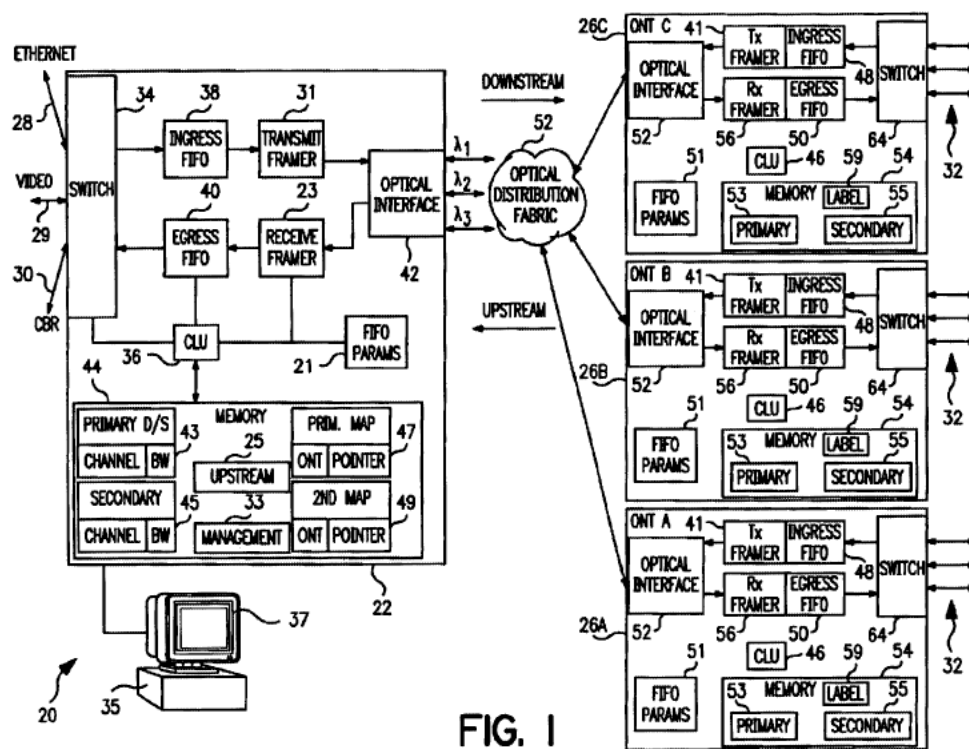
Finally, the Background describes “the evolution of MSA 10 GB/s optical modules,” including “XENPAK, X2, and XPAK transponders and finally with XFP transceivers,” and how this was “to reduce the size, power, and number of components in optical modules for the purpose of increasing port densities.” The Petition relies on Togami for this same teaching about decreasing sizes to increase port densities. Petition at 21.

Thus, the relied-upon aspects of Togami, including Petitioner’s argument about how using MSA-compliant transceivers reduce size, would have been known to Examiner Li from merely reading the specification and drawings of the pending application that issued as the ’754 Patent. After reading the part of the specification that would issue as column 2, lines 11–20 of the ’754 Patent describing how the invention goes against the trend of shrinking transceiver sizes, Examiner Li was correct to issue the Notice of Allowance without proposing a hindsight rejection using the opposite motivation like the Petitioner attempts to do now. Petition at 21 (“Decreasing the transceiver size was a goal of a POSITA,” and “it is desirable to miniaturize the physical size of the transceiver module to increase the port density.”)

### **3. Examiner Li Cited Many References Like Shraga**

During prosecution of the family at issue, Examiner Li repeatedly considered many references cumulative of Shraga’s teachings. Petitioner alleges that Shraga

teaches 1) a passive optical network, 2) the components in an ONT/ONU, and 3) scheduling. Petition at 22–34. The Petition cites to Figures 1, 2, 3, and 7 of Shraga. *Id.* Shraga Figure 1 shows 1) an optical distribution fabric connecting to an optical interface of an ONT, where 2) the ONT has a CLU, framer blocks, FIFO blocks, and a switch (“electrical signal processing elements”) inside the ONT but outside of its “Optical Interface” block.



Ex. 1001 at Fig. 1. Shraga Figures 2, 3, and 7 allegedly show 3) scheduling because the illustrated frame formats allegedly provide information telling each ONT when they may respond. Petition at 29–30.

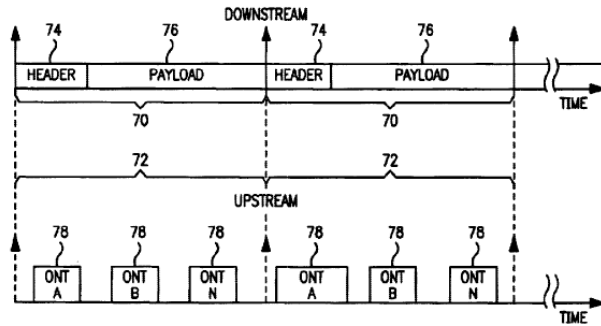


FIG. 2

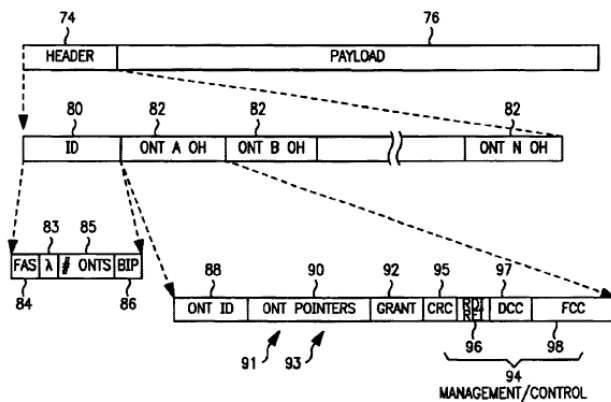


FIG. 3

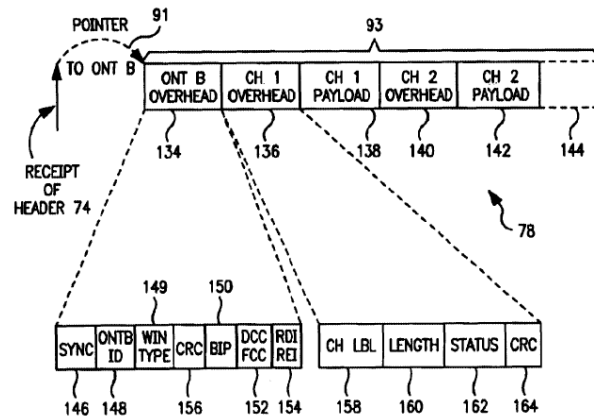


FIG. 7

*Id.* at Figs. 2, 3, 7.

But Examiner Li already had prior art teaching all of these disclosures. During examination, Examiner Li issued rejections explicitly citing Akita, Yokomoto, Choi, Hale, Medina, Wang, Kuo, Abdelhamid, Masucci, and other various references. *See* Section V(A), above (summarizing prosecution history).

*Becton, Dickinson* factors (a)–(d) favor denial. Petitioner uses Shrags (a) similarly to the previously considered references listed in the following subsections, (b) for cumulative teachings, (c) when Examiner Li repeatedly issued rejections combining these references with other references, including Medina. Now, (d)

Petitioner makes the same type of combination by substituting Shrags.

**a. Yokomoto is Substantially Similar to Shrags**

Examiner Li cited Yokomoto in multiple rejections in combination with multiple other references. Ex. 1002-2 at 409–17, 369–74. Examiner Li specifically cited Figure 6 for teaching “converting optical signal into electrical signal for processing and for converting processed electrical signal into optical signal for transmitting,” and “[s]ignal processors such as STM-SW 2-4 and ATM-SW 2-3 of FIG. 6 operate in the electrical domain.” *Id.* at 410, 370.

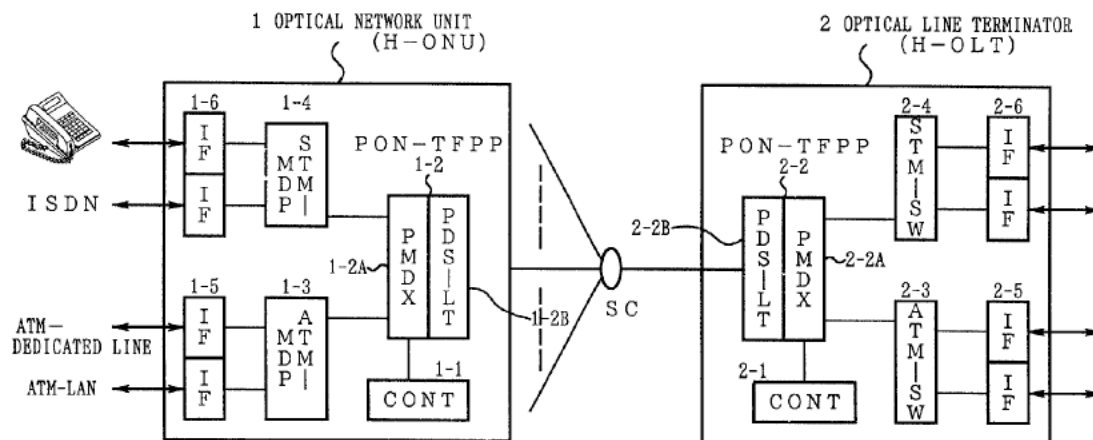


Fig. 6

Ex. 2005 at Fig. 6.

Like Figure 1 of Shrags, Figure 6 of Yokomoto also shows a “PON” (passive optical network) with an OLT and an ONU on opposite sides. Yokomoto’s ONU and OLT also have controllers “CONT” like the CLU in Shrags’s OLT/ONU. *Id.* at [0081]–[0082], [0094]–[0095]. Yokomoto’s OLT also has ATM switch “ATM-SW”

and STM switch “STM-SW,” similar to Shraga’s “Switch” block in the ONT/ONU. *Id.* at [0094], [0098]–[0101]. In Yokomoto’s ONU and OLT, optical signals are received or sent at the PDS-LT block after optic/electric or electric/optic conversion, just like the “Optical Interface” block of Shraga’s ONT/ONU. *Id.* at [0084], [0097]. Yokomoto’s ONU and OLT also have PMDX blocks, which separates signals “according to directions from the control section,” similar to the FIFO blocks of Shraga are allegedly “electrically connected to the CLU.” Petition at 31–32. Thus, Shraga’s Figure 1 is used for teachings cumulative of cited Figure 6 of Yokomoto.

Additionally, the Examiner would also have likely been aware of Yokomoto Figures 7 and 10–12, which show transmission frame formats and how they include “control information,” “time slot,” and a frame “header.” These figures of Yokomoto resemble the relied-upon Figures 2, 3, and 7 of Shraga for the alleged teachings of a frame “header” and “transmission window” used as control information by the CLU. Petition at 29–31.

**b. Akita is Substantially Similar to Shraga**

Examiner Li cited Akita in a Section 102 rejection. Ex. 1002-2 at 408–09. Examiner Li specifically cited Figures 1 and 8 for teaching “a communication control device with an optical coupler 23 having a plurality of ports,” where “[t]he communication control device converts the receiving signal into electrical signal with signal transmitting and receiving unit 18, and processes the electrical signal,”

to “convert[] the information into a slot allocation information,” and for the “reading-out control unit for controlling.” *Id.*

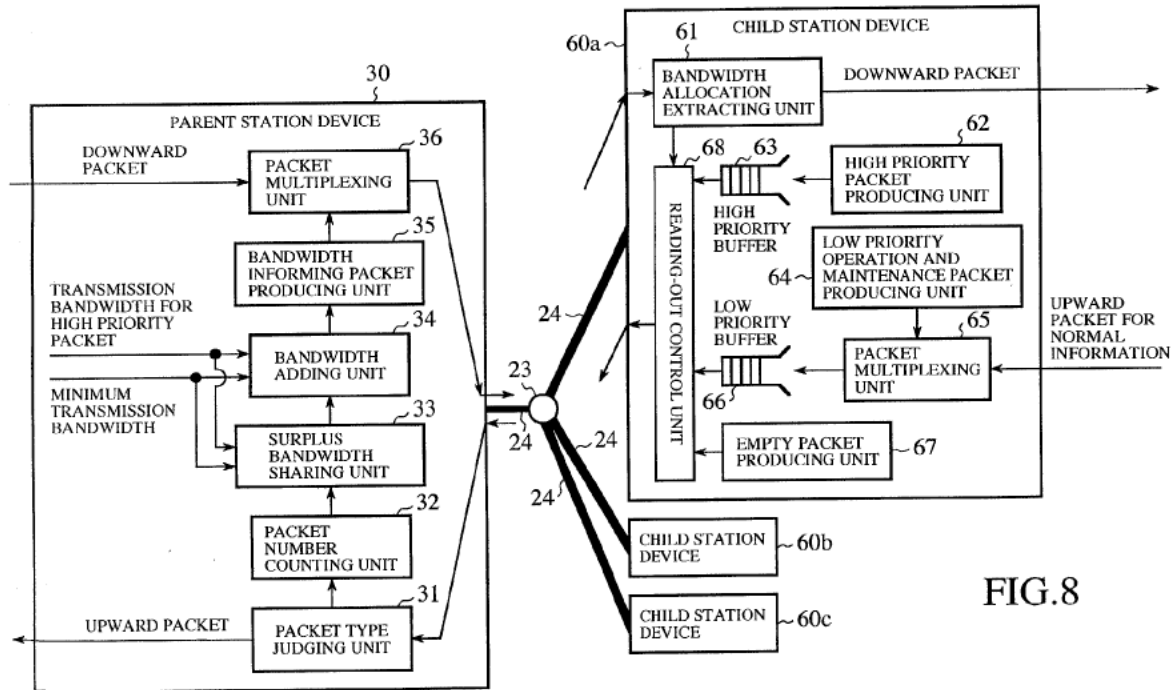


FIG. 8

Ex. 2006 at Fig. 8.

Like Figure 1 of Shrags, Figure 8 of Akita also shows a “passive optical network (PON) in which the plurality of child station devices connected with the parent station device share a transmission bandwidth, and a method of allocating slots of an upward signal, which is sent from the child station devices to the parent station device, among the child station devices,” where child station devices are “for example, an optical network terminator (ONT) or an optical network unit (ONU).” *Id.* at [0002]. Thus, Figure 8 of Akita shows a similar PON as Figure 1 of Shrags. Akita’s child station device ONT/ONU includes a control unit like the CLU in the

ONT/ONU of Shraga. *Id.* at Fig. 8. Akita's child station device ONT/ONU also includes a buffer that is electrically connected to the control unit, similar to the framing blocks and FIFO blocks allegedly connected to the CLU in the ONT/ONU of Shraga. *Id.* Thus, Shraga's Figure 1 is used for teachings cumulative of cited Figure 8 of Akita.

Additionally, the Examiner would also have likely been aware of Akita Figures 4–7 and 11 that show transmission frame and their corresponding “range,” “delay time,” “packet interval,” and “allocation interval.” These figures of Akita resemble the relied-upon Figures 2, 3, and 7 of Shraga for the alleged teachings of syncing transmissions, “frame timing,” “frame alignment,” and “transmission window.” Petition at 29–31.

**c. Choi is Substantially Similar to Shraga**

Examiner Li cited Choi in multiple rejections in combination with multiple other references and explicitly cited Figure 2A. Ex. 1002-2 at 414, 372–73.

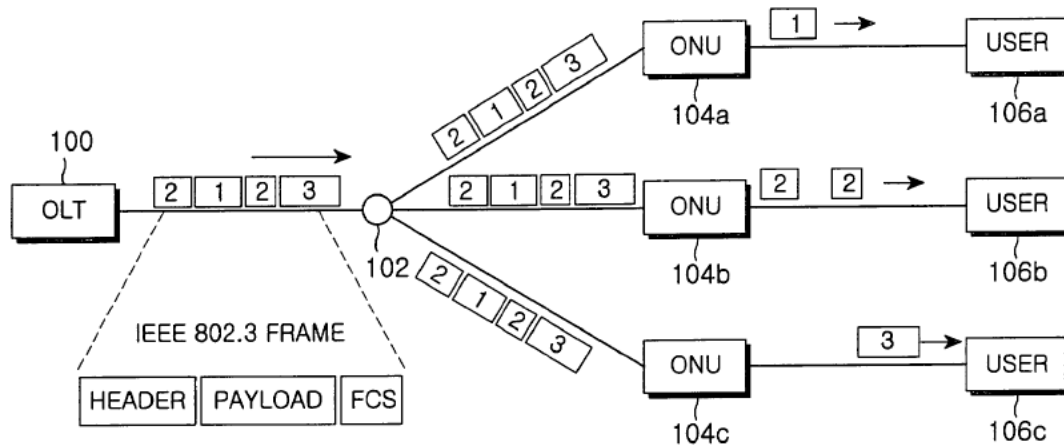


FIG.2a

Ex. 2007 at Fig. 2a.

Figure 2a shows “a GE-PON system” with “an OLT 100, an ODN [Optical Distribution Network] 102 made of an optical splitter being a passive component, a plurality of ONUs 104.” *Id.* at [0028]. Thus, Figure 2a of Choi is like Figure 1 of Shruga, which also shows a PON with an OLT, a “Optical Distribution Fabric,” and a plurality of ONUs. After the frames destined for ONUs 1, 2, or 3 are delivered to their destinations, Figure 2b shows how the responsive frames from ONUs 1-3 travel back upstream in allocated timeslots. *Compare id.* at Fig. 2b (showing frames traveling according to ONU time slots) *with* Fig. 1b (showing prior art without time slots). Choi Figure 4 shows how frame has a control block with an ONU ID and timeslot information, similar to how Shruga allegedly teaches that a frame has a

header with an ONT/ONU ID and “start transmission time.” Petition at 30.<sup>9</sup> Thus, Figure 4 of Choi shows similar information to what is allegedly shown in Figure 3 of Shraga.

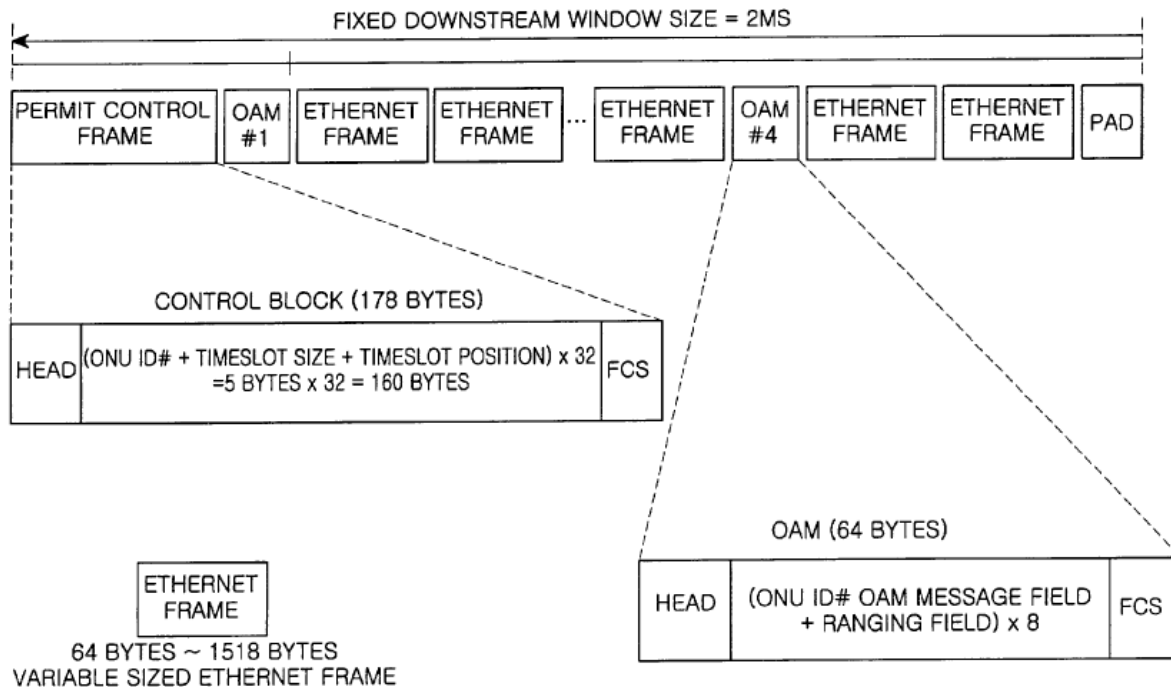


FIG.4

Ex. 2007 at Fig. 4. In response to the timeslot information, upstream frames are constructed for each ONU as shown in Choi Figure 5, similar to how the Petition argues that Shraga’s upstream frames are constructed for each ONT/ONU as shown

<sup>9</sup> Cited element 91 in Figure 3 of Shraga does not say “start transmission time” as argued on page 30 of the Petition. Petitioner disagrees with many of Petitioner’s characterizations of Shraga’s on pages 29–31, but these are unnecessary for the Board to resolve for purposes of institution.

in Figure 7. Ex. 2007 at Fig. 5; Petition at 30–31 (citing Shraga Figure 7).

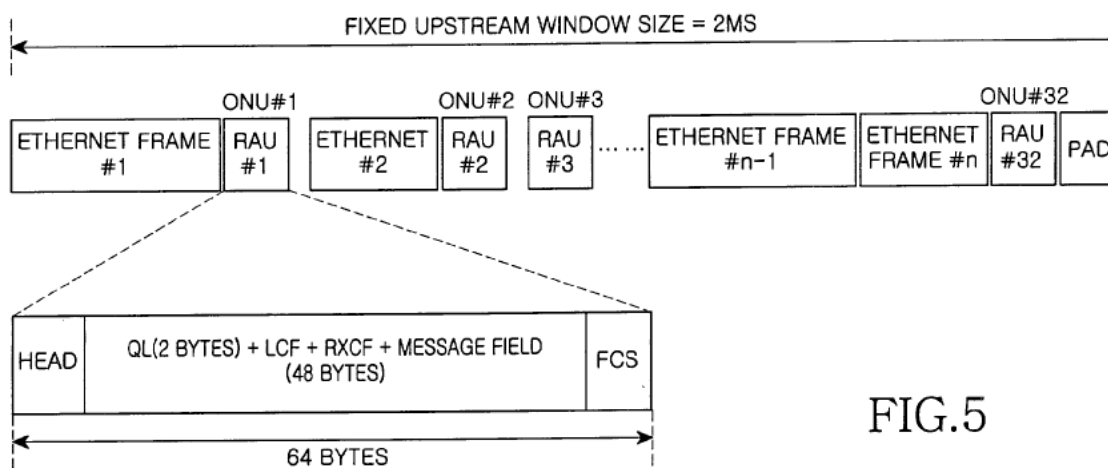
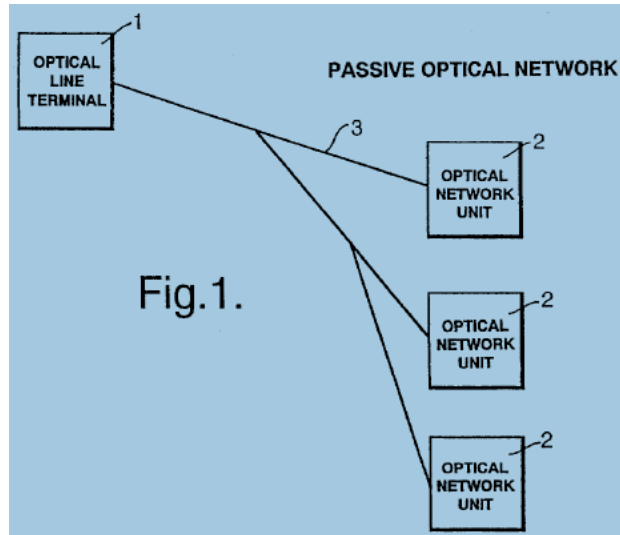


FIG.5

Ex. 2007 at Fig. 5; *see also* Fig. 6 and 7 (further showing effects of time slots on network traffic). Thus, Shraga’s alleged teachings of the construction of upstream frames for each ONT/ONU in response to time slot position sent in headers are cumulative of the teachings of Choi.

**d. Hale is Substantially Similar to Shraga**

Examiner Li cited Hale in multiple rejections in combination with multiple other references and explicitly cited Figure 1. Ex. 1002-2 at 372, 335–36. According to Examiner Li, Hale “teaches in FIG. 1 a passive optical network comprising an OLT and a plurality of ONUs,” just like how Shraga allegedly shows a PON with an OLT/ONUs in Figure 1. *Id.* at 372, 336.



Ex. 2008 at Fig. 1. Hale describes how “[t]he frames include control channels addressed to specific ones of the ONUs 2 to control ... timing of the optical signals transmitted onto the PON 3 by the ONUs.” *Id.* at 4:48–53. Then, “In the upstream direction, each ONU 2 transmits data in a predetermined time slot, which data is assembled into a TDMA multiframe at the OLT 1. Since the TPON system is synchronous in operation, it is necessary to control the timing of the ONUs.” *Id.* at 4:54–58. This is similar to how the Petition alleges that Shruga sends “overhead sections directed to specific ONTs/ONUs ... acting as a starting marker” so that “the ONT/ONU transmits the window upstream at the start time allocated to it.” Petition at 29–30.

Additionally, the Examiner would also have likely been aware of Hale Figures 3–5 and 8. Hale Figures 3 and 8 show how electro-optic blocks are used in a PON, just like the optical interface blocks in the PON of Shruga Figure 1. Ex. 2008 at Figs.

3, 8. Hale figures 4 and 5 show downstream frame and superframe formats, including “Multiframe Sync” information and “Sync.Frame” information, similar to how the Petition alleges that downstream frames include a “start transmission time.” *Id.* at Figs. 4, 5; Petition at 30.

**e. Wang is Substantially Similar to Shrags**

Examiner Li cited Wang in multiple rejections in combination with multiple other references for all pending claims and explicitly cited Figures 1 and 3–9. Ex. 1002-2 at 207–13, 180–88, 52–67.

Examiner Li noted how “Wang et al. teaches in FIG. 1 a point-to-multipoint network comprising a optical line terminal (OLT) ... a plurality of optical network units (ONU). FIG. 1 shows a splitter (equivalent to passive coupler of instant claim) for connecting an optical interface of the OLT to a plurality of optical ports.” *Id.* at 207, 180, 52. Thus, Wang’s FIG. 1 is substantially similar to the OLT and ONU/OLTs in Shrags.

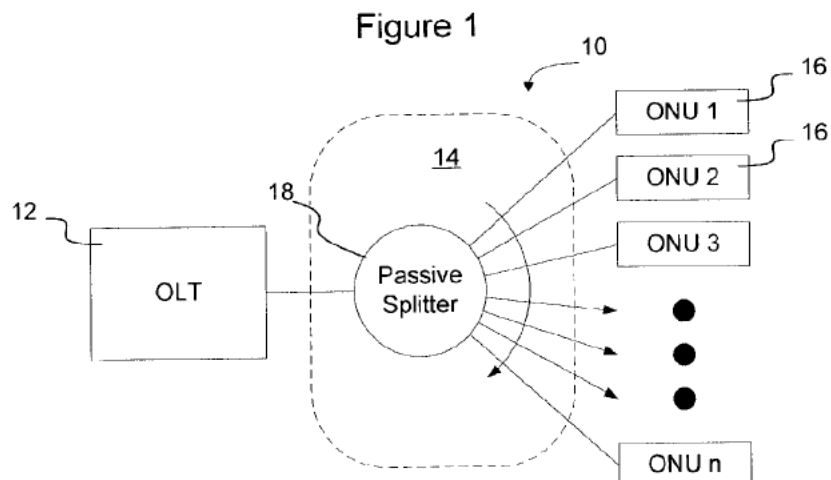


Figure 8

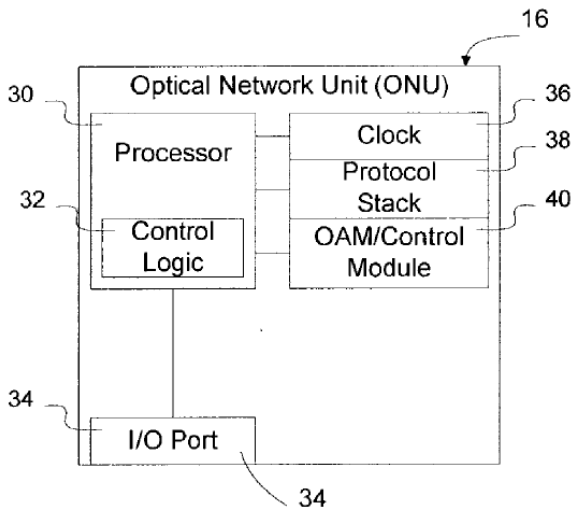
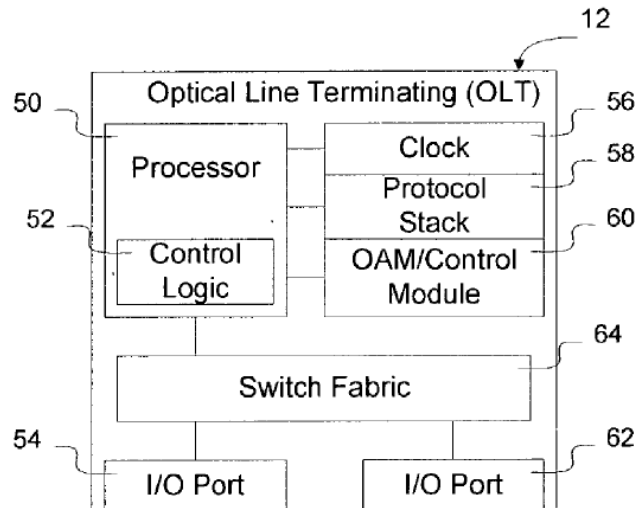


Figure 9



Ex. 2009 at Figs. 1, 8, 9. The ONU and OLT in Figures 8 and 9 of Wang are also substantially similar to the ONU/ONT and OLT in Figure 1 of Shrager. In Figures 8 and 9, Wang shows “control logic” and a “Control Module” like Shrager’s CLU; Wang shows optical I/O ports<sup>10</sup> like Shrager’s “Optical Interface” block; Wang shows a “Protocol Stack” like Shrager’s “FIFO” blocks; Wang shows a “Switch Fabric” like Shrager’s “Switch” block. Examiner Li also wrote that “Wang et al. teaches in FIG.3 through FIG. 7 that an optical signal has OAM/control timeslots and data timeslots,” substantially similar to how Shrager is alleged to provide “a frame alignment signal,”

<sup>10</sup> Examiner Li noted that these optical I/O ports of Wang are not explicitly described as performing optical/electrical conversion, but Examiner Li relied on a combination with Kuo to explain how they would perform optical/electrical conversion. Ex. 1002-2 at 180, 208, 52–53.

and “a reference point for syncing upstream transmissions.” Ex. 1002-2 at 207–08, 180, 52, Petition at 29.

The Board ultimately found the Parent Application allowable because Wang taught an optical WAN, not an “optical LAN” as recited in the pending claims. Petition at 8; *See* Ex. 1002-2 at 26, 29. But when Examiner Li examined the application for the '754 Patent, Examiner Li chose not to reject the claims of the '754 Patent using Wang, even though the claims of the '754 Patent do not recite “optical Local Area Network (LAN)” like the claims of the Parent Application.

#### f. Kuo is Substantially Similar to Shrags

Examiner Li cited Kuo in multiple rejections in combination with multiple other references and explicitly cited Figures 9 and 10. Ex. 1002-2 at 207–13, 180–88, 52–67. Although Figures 1A and 2B of Kuo were not explicitly cited, they provide context that shows the system in which the OLT and ONU of Figures 9 and 10 are deployed.

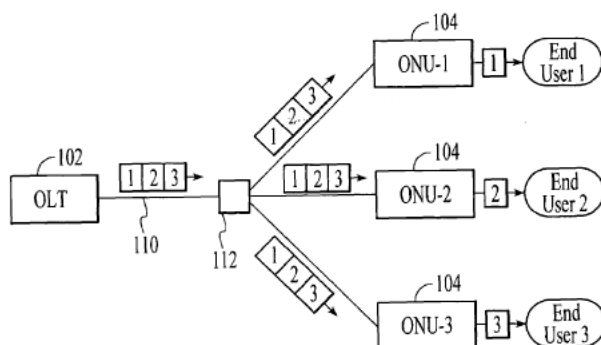


FIG. 1A

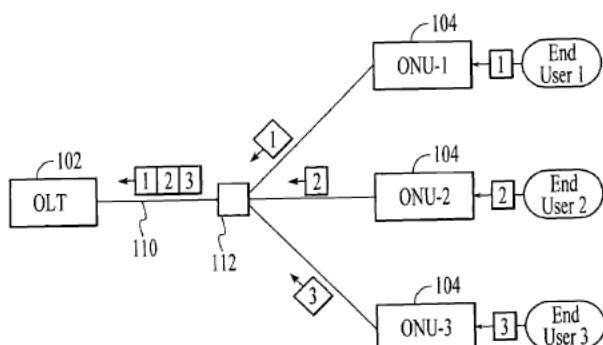


FIG. 1B

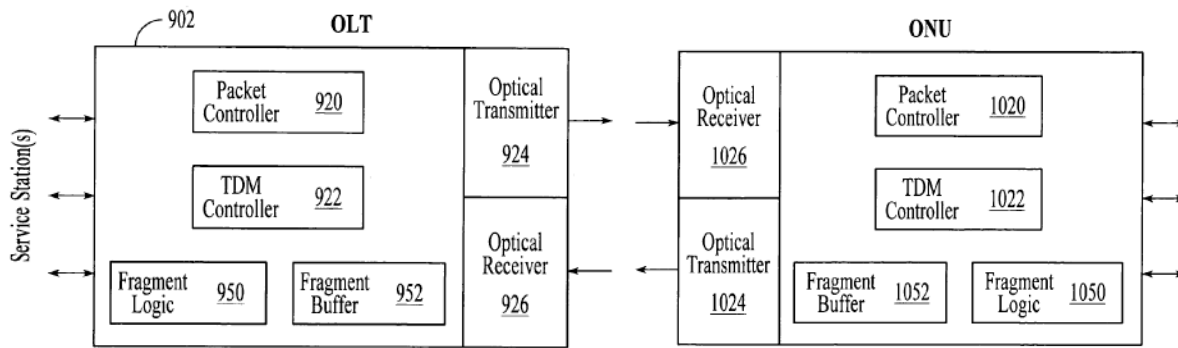


FIG. 9

FIG. 10

Ex. 2010 at Figs. 1A, 1B, 9, 10. Kuo Figures 1A and 1B show a passive optical network with an OLT and ONUs, similar to Figure 1 of Shrags. Kuo Figures 9 and 10 show the internal components of the OLT and ONU, similar to Figure 1 of Shrags. As noted by Examiner Li, Kuo's ONU shows an "Optical Receiver" and "Optical Transmitter" that operate as optical/electrical converters, just like the "Optical Interface" block of Shrags's ONU. Ex. 1002-2 at 207-08, 180-81, 52-53. Figures 9 and 10 of Kuo also show controllers similar to Shrags's CLU and a "Buffer" like Shrags's FIFO blocks. Both the "Packet Controller" and "TDM Controller" in Kuo's ONT and ONU are outside of the "Optical Receiver" and "Optical Transmitter," just like how Shrags's CLU is outside of its "Optical Interface" block.

**g. Abdelhamid is Substantially Similar to Shrags**

Examiner Li cited Abdelhamid in multiple rejections in combination with multiple other references and explicitly cited Figures 3 and 4. Ex. 1002-2 at 209, 181-82, 53-55. Specifically, Examiner Li wrote that Abdelhamid teaches "downstream and upstream frame structure for a passive optical network," including

“FRAME/SYNC BYTES.” *Id.*

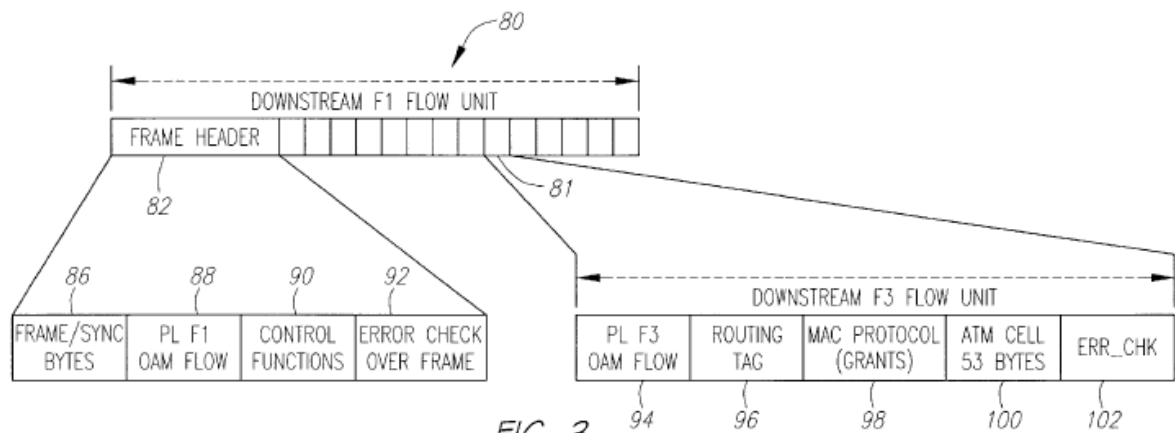


FIG. 3

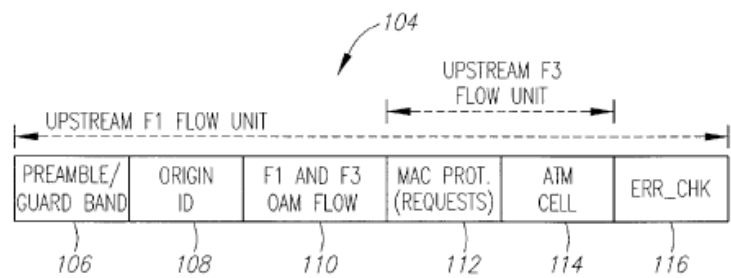


FIG. 4

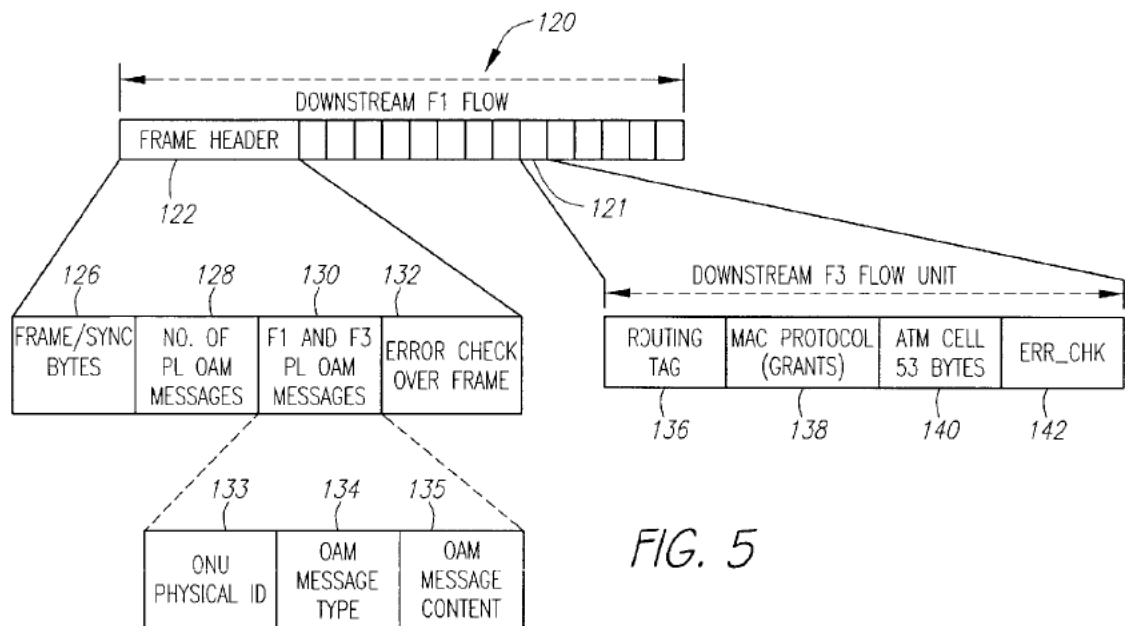


FIG. 5

Ex. 2011 at Figs. 3–5. These figures of Abdelhamid are thus substantially similar to

Shraga's alleged teaching where downstream frames provide "a reference point for syncing upstream transmissions." Petition at 29.

#### h. Masucci is Substantially Similar to Shraga

Examiner Li cited Masucci in multiple rejections in combination with Wang and Kuo specifically to provide "the details of the downstream traffic format." Ex. 2002-2 at 210–12, 183–84, 55–57. Masucci shows such formats in Figures 3–5.

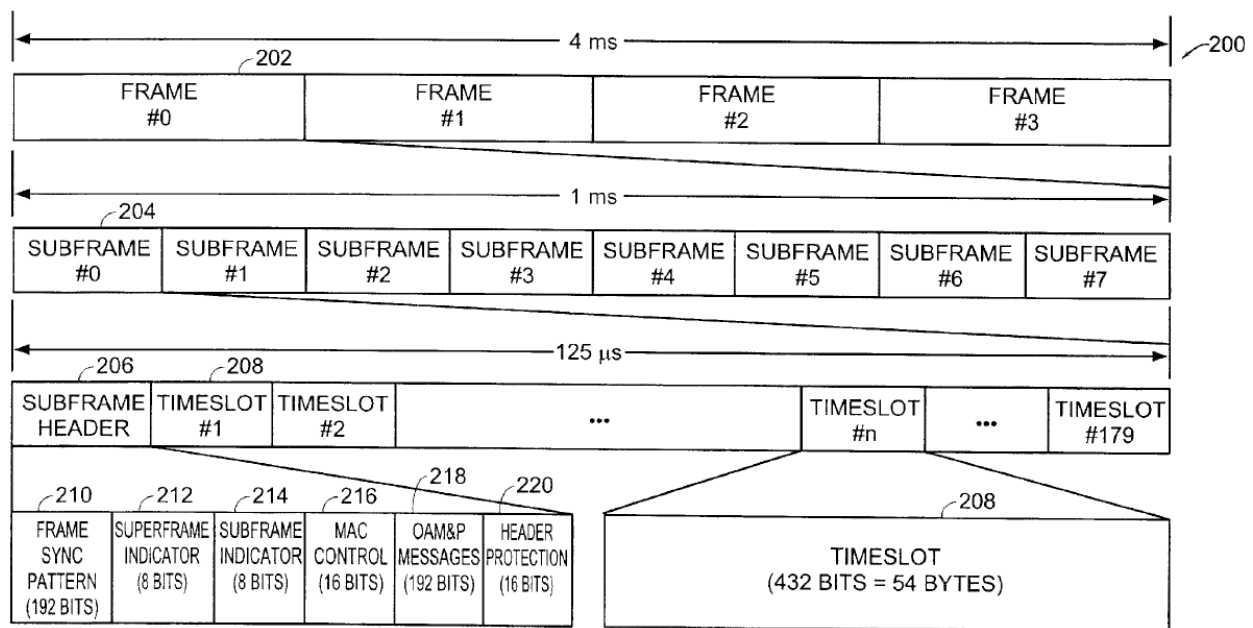


FIG. 3

Ex. 2012 at Fig. 3. Masucci uses Figures 3–5 to generally describe "[t]he method of communication between a central terminal and plural remote terminals over a passive optical network includes transmitting downstream data from the central terminal to the plural remote terminals in successive downstream frames over a downstream network portion and transmitting upstream data from the plural remote

terminals to the central terminal in respective upstream timeslots over an upstream network portion, the upstream timeslots forming successive upstream frames.” *Id.* at abstract. Thus, Masucci is yet another reference where the downstream frames provide information used to coordinate responses from remote terminals in respective upstream timelines. This disclosure is substantially similar to Shraga’s alleged teachings of providing “a frame alignment signal ... as a reference point for syncing upstream transmissions.” Petition at 29.

#### **4. Examiner Li Considered Similar Combinations of PON Systems And Optical Transceivers**

During examination of the Parent Application, Examiner Li repeatedly cited Medina for rejecting pending dependent claim 108<sup>11</sup> for teaching the “small form pluggable (SFP) transceiver multisource (MSA) standard” optical transceiver in combination with a PON network reference like Wang or Modiano.<sup>12</sup> Ex. 1002-2 at 336, 213–15, 186–88, 58–59.

The similarity of Wang to Shraga is discussed above in preceding Section

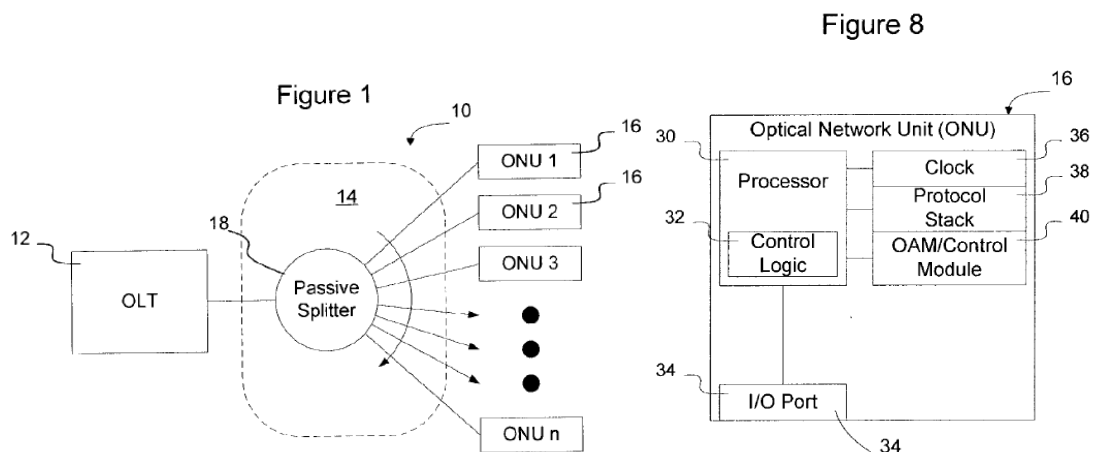
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<sup>11</sup> “wherein the form factors of the optical ports are selected from the group consisting essentially of: the optical Multi-Source Agreements (MSA) specifications, including XFP, XENPAK, XPAK, and SFP.” Ex. 1002-2 at 352.

<sup>12</sup> The Modiano-Medina combination also is like the Wang-Medina combination described below, but Modiano’s Figures are less detailed.

VI(A)(3)(e). The similarity of Medina to Togami is discussed above in preceding Section VI(A)(1). Examiner Li explicitly considered a Wang-Medina combination, nothing that “[o]ne of ordinary skill in the art would have been motivated to combine the teaching of Medina et al. with the modified point-to-multipoint network of Wang et al. and Kuo et al. and use SFP type connector for the optical port because SFP has small form factor and allows high port density and, therefore, saves space.” Ex. 1002-2 at 213–15, 186–88, 58–59.

Examiner Li did not show a diagram of this combination, so Patent Owners provide the following figures from Wang and Medina to show the resulting combination:



Ex. 2009 at Figs. 1, 8.

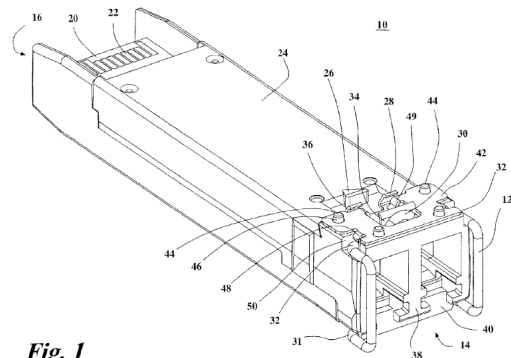
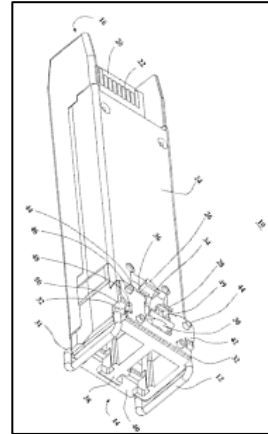
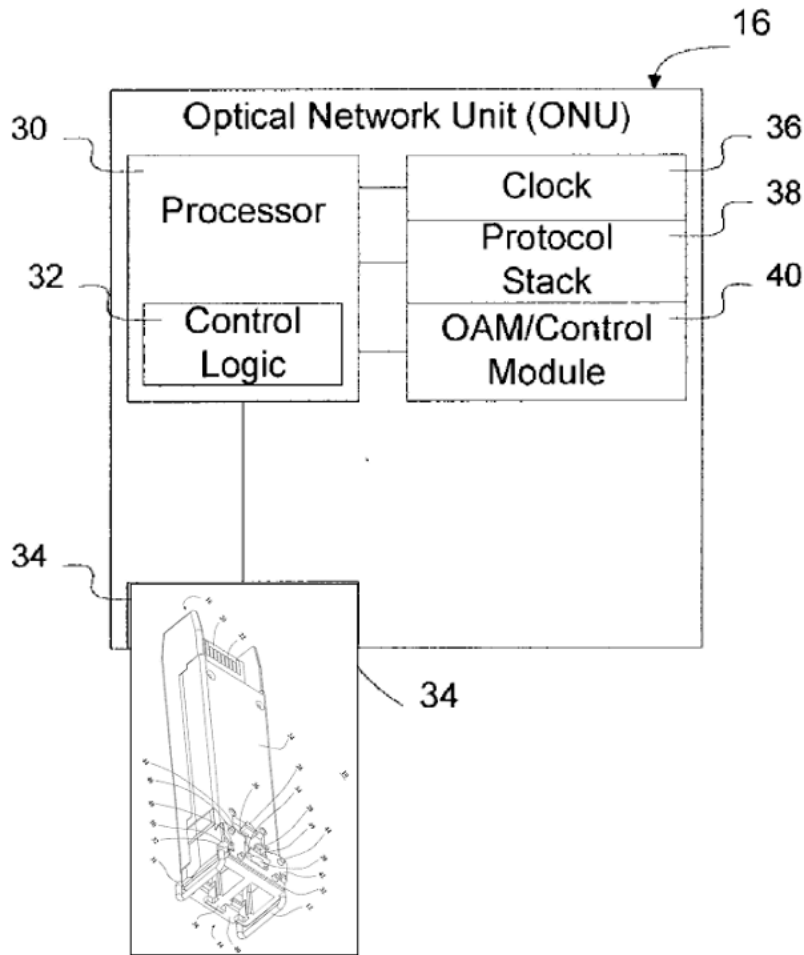


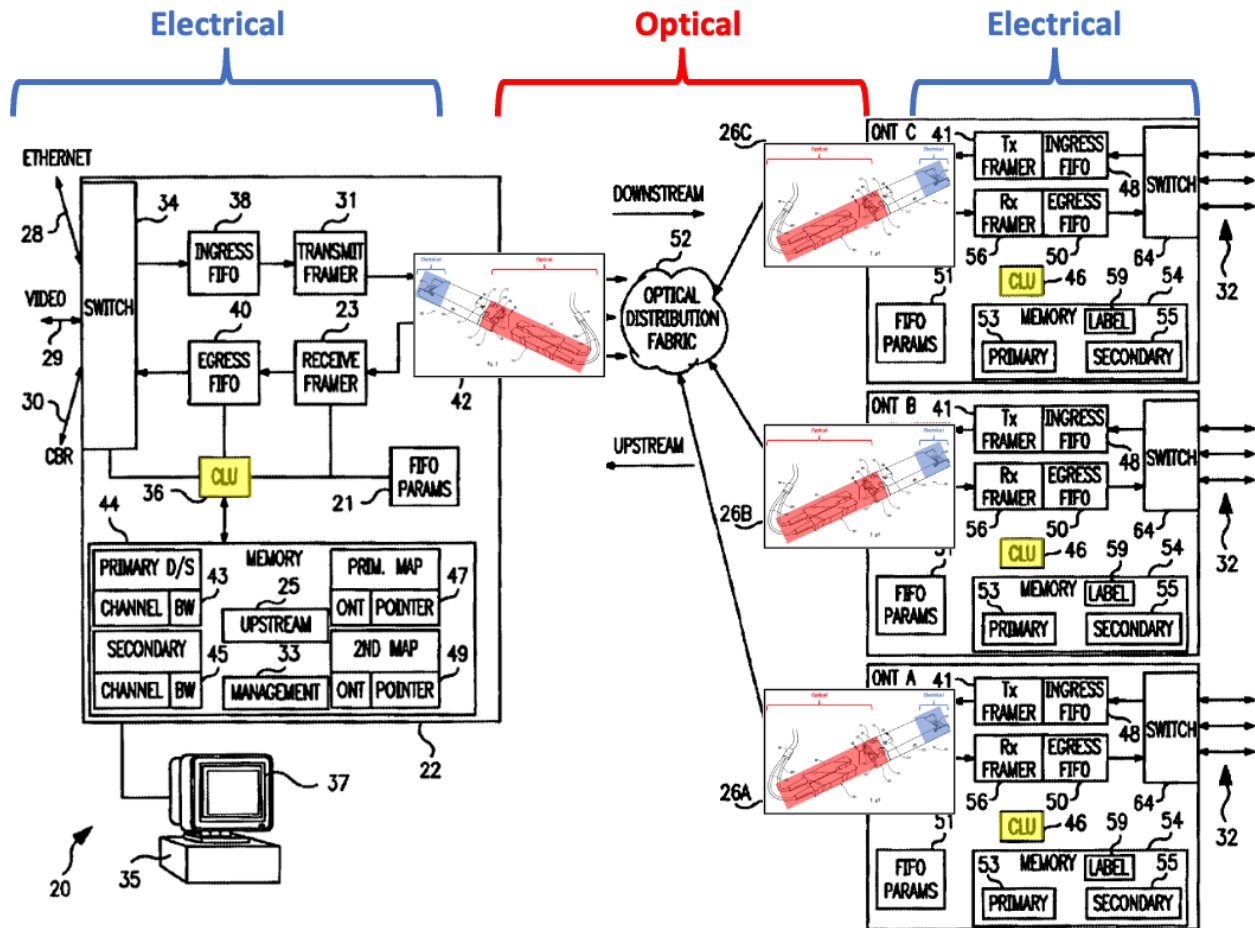
**Fig. 1**



Ex. 2004 at Fig. 1 (original on left, rotated version on right). The resulting combination considered by Examiner Li is shown below, where the control logic and control module of the ONU remain outside of the pluggable optical transceiver module:



Thus, Examiner Li already considered a combination like Shraga-Togami pictured below, where the CLU is outside of the pluggable optical transceiver module.



## B. The USPTO Made No Errors During Prosecution or Reexamination

Examiner Li made no errors when examining the challenged patent. In its brief summary of the file history, the Petition does not explicitly identify any errors, except for incorporating paragraphs 88–92 of Dr. Prucnal’s declaration. Petition at 7–8 (citing Ex. 1003 at ¶¶ 88–92).

Paragraphs 88–90 of Dr. Prucnal’s declaration discuss differences between Wang and Shrager that are irrelevant to the claims of the ’754 Patent. For example, Dr. Prucnal explains that Wang does not disclose “an optical LAN,” whether or not

there are “multiple customer premises,” or whether or not Wang discloses “amplifying” a signal. These minor distinctions have no relevance to the claims of the ’754 Patent and/or the stated reasons for allowance.

In paragraph 91, Dr. Prucnal first argues that Wang did not disclose how its OLT and ONU “are operative as transceivers in a passive optical network and does not disclose optical-to-electrical and electrical-to-optical conversion.” Ex. 1003 ¶ 91. But this is not an error by Examiner Li, who made the same conclusion and relied on the teachings of Kuo in combination with Wang to explain that a POSITA would know that “[t]hese devices provide conversion between optical signal sand electrical signals.” Ex. 1002-2 at 208. Thus, it is not an error by Examiner Li, especially because Kuo Figures 9 and 10 show how, even in combination with Wang, the controllers are outside of the Optical Receiver and Optical Transmitter.

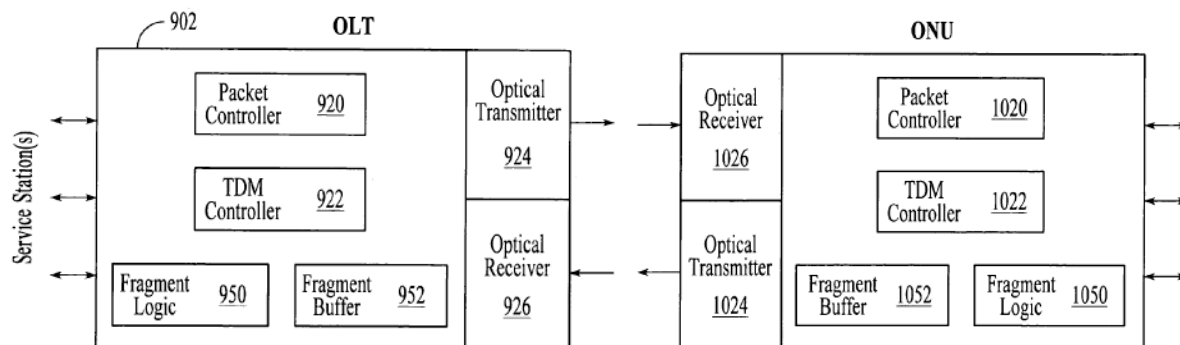


FIG. 9

FIG. 10

Ex. 2010 at Figs. 9, 10 (showing the Controllers outside of the Optical Receiver and Optical Transmitter).

Dr. Prucnal then argues that “Wang does not disclose a method for

compensating for delay in transmission between the ONTs/ONUs and the OLT.” Ex. 1003 ¶ 91. Regardless of whether this is true, it has no relevance to the claims of the ’754 Patent and/or the stated reasons for allowance.

Finally, Dr. Prucnal argues that “Wang does not disclose the use of start times to indicate the beginning of upstream transmission from the ONTs/ONUs to the OLT.” Ex. 1003 ¶ 91. Regardless of whether this is true, Examiner Li was well aware of multiple references like Yokomoto, Akita, Choi, Hale, Kuo, Abdelhamid, and Masucci that all teach various ways for using frames to coordinate upstream transmission, similar to how Petitioner argues Shraga does. *See* Section VI(A)(3)(a)-(d), (f)-(h). Moreover, this is not an error related to the stated reason for allowance.

As described in preceding subsection VI(A), Examiner Li extensively examined the Parent Application, including many claim elements similar to various aspects of the claims of the ’754 Patent. Examiner Li considered the references in combination with each other, including combinations of PON systems with the MSA-compliant optical transceiver module of Medina that looks almost identical to that of Togami’s (because they comply with the same standards).

When allowing the ’754 Patent, Examiner Li noted in the Reasons for Allowance of the ’754 Patent that a reference taught “a passive optical network with ONUs coupled to a fast Ethernet switch,” but failed to teach “an electrical network interface port electrically coupled to the control module and for coupling into the

optical module port of the switch or router” as recited in claim 1. Ex. 1002-1 at 18.

In the full context of the claims, Examiner Li found that the prior art lacked, **in a pluggable optical transceiver module**, the claimed control module coupled to the electrical network interface port that is for coupling into the optical module port of the switch or router.

Petitioner has not shown that Examiner Li erred. Shraga admittedly lacks a pluggable optical transceiver module. Ex. 1003 ¶ 106 (“Shraga does not, however, expressly disclose a pluggable optical transceiver module as taught in Togami”). The Petition does not allege that Togami’s pluggable optical transceiver module has a control module inside. Thus, Petitioner has provided no reference that shows this missing element.

All Petitioner has done is add to the existing mountain of evidence that prior art systems had their control modules outside of pluggable optical transceiver modules:

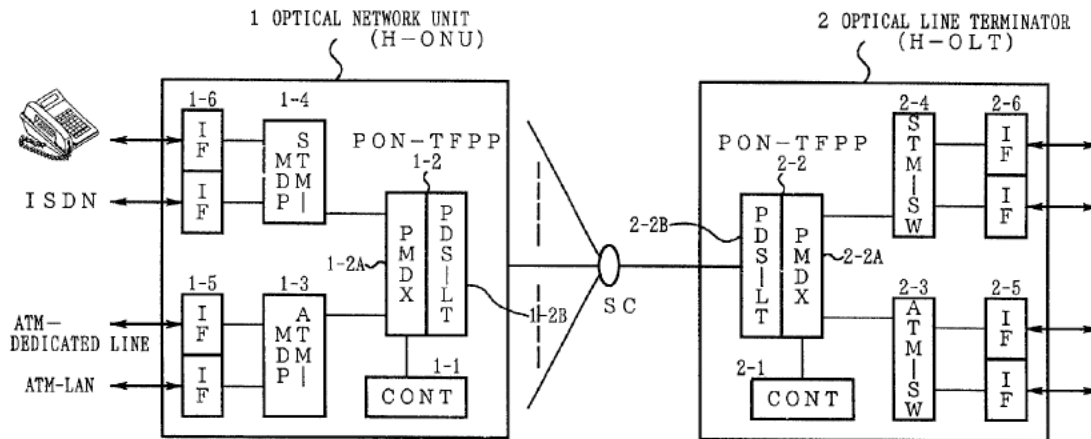


Fig. 6

Ex. 2005 at Fig. 6 (Yokomoto showing the controller “CONT” in the ONU and OLT, not in a pluggable optical transceiver module).

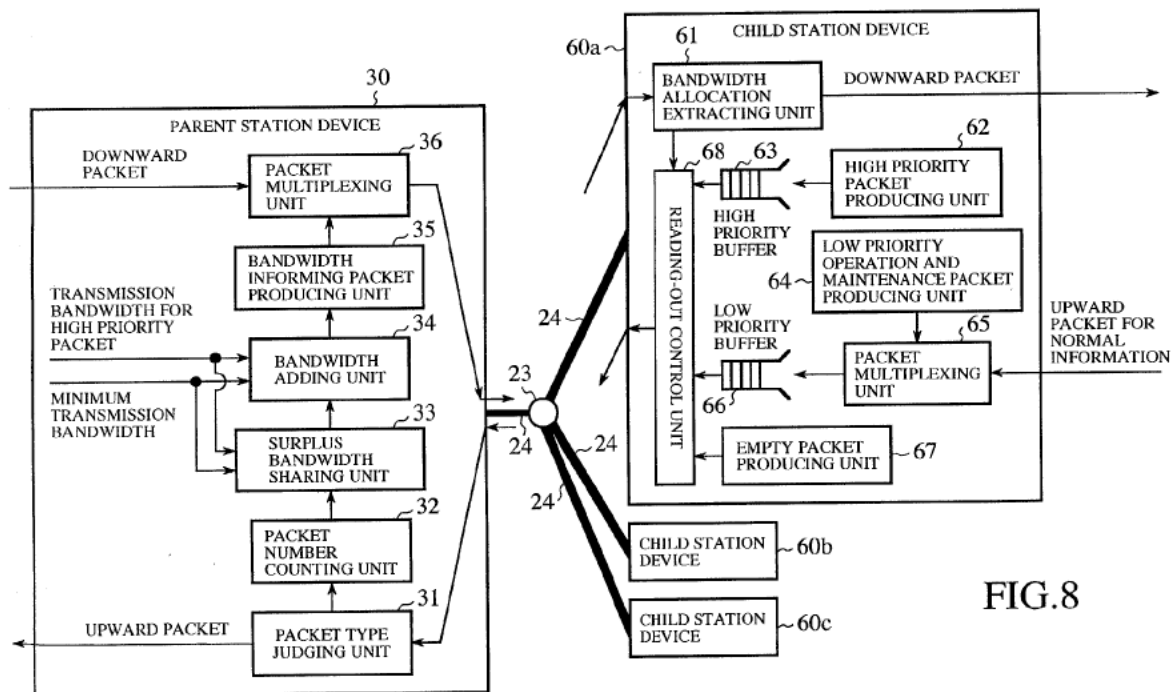


FIG. 8

Ex. 2006 at Fig. 8 (Akita showing “Control Unit” in the ONT Child Station Device, not in a pluggable optical transceiver module).

Figure 8

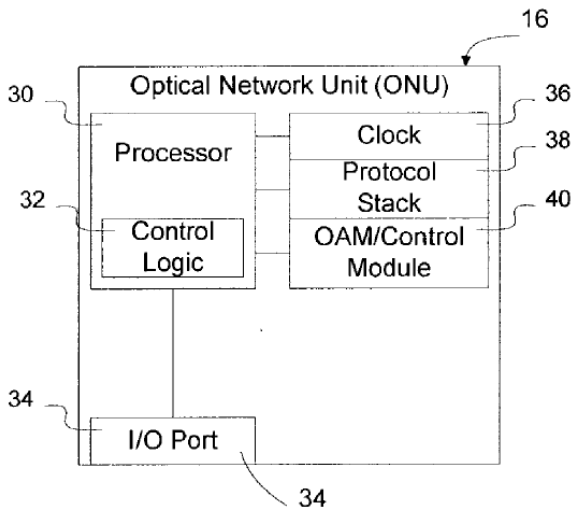
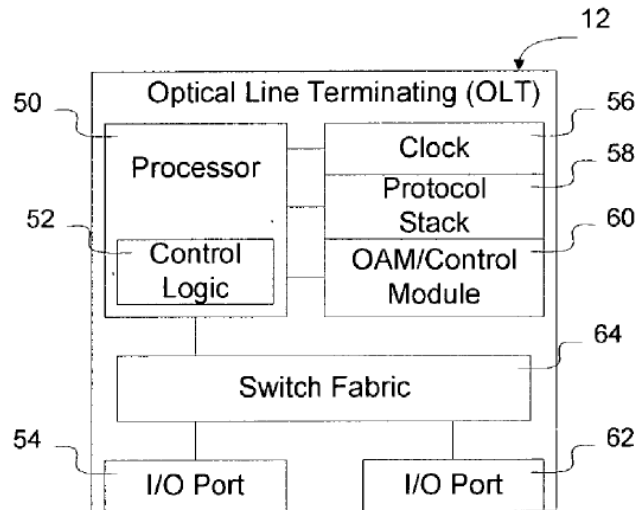


Figure 9



Ex. 2009 at Figs. 8, 9 (Wang showing “Control Logic” and “Control Module” outside of the I/O Port and not in a pluggable optical transceiver module).

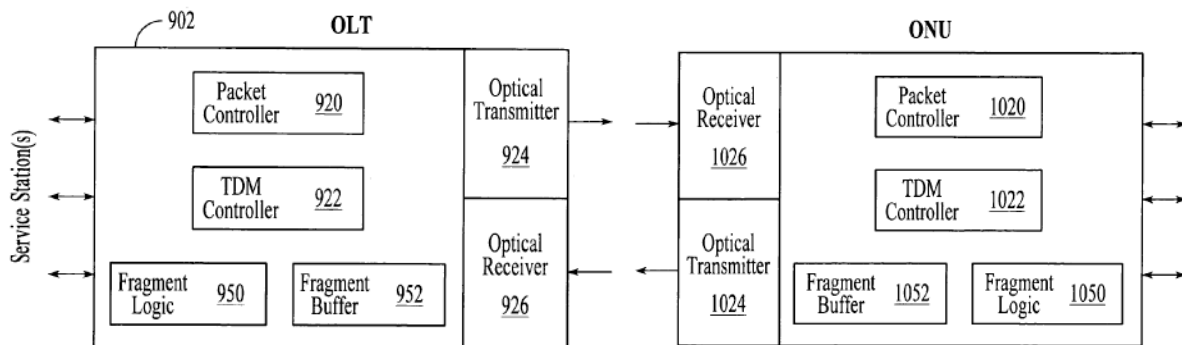
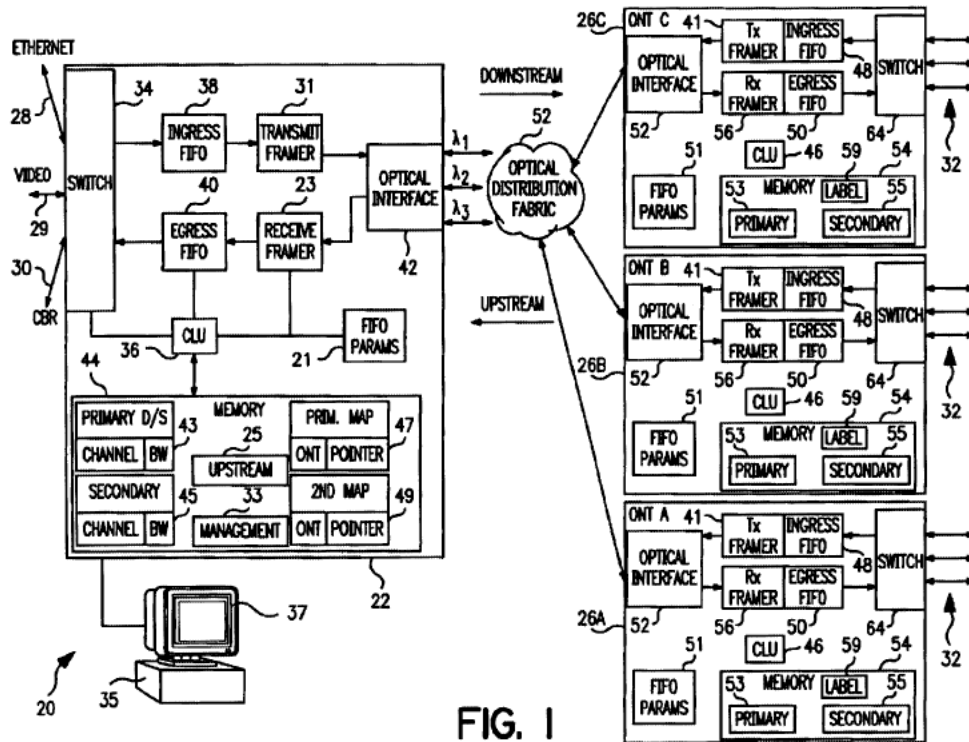


FIG. 9

FIG. 10

Ex. 2010 at Figs. 9, 10 (Kuo showing the Controllers outside of the Optical Receiver and Optical Transmitter).

Shraga and Togami only reinforce Examiner Li’s conclusion of allowability by showing yet another system where the alleged control module is not in a pluggable optical transceiver module.



Ex. 1005 at Fig. 1 (showing CLU outside of the non-pluggable “Optical Interface”).

### C. The Petition Has No New Evidence or Facts Warranting Reconsideration

Under *Beckton, Dickinson* factor (f), Petitioner does not submit any new evidence for consideration, except an expert declaration that does little more than repeat the Petition in different words. The MSA agreements are not new because MSA agreements were already incorporated by reference through Medina and described in the background of the pending application. Ex. 2004 at 1:36–40; Ex. 1001 at 1:39–55.

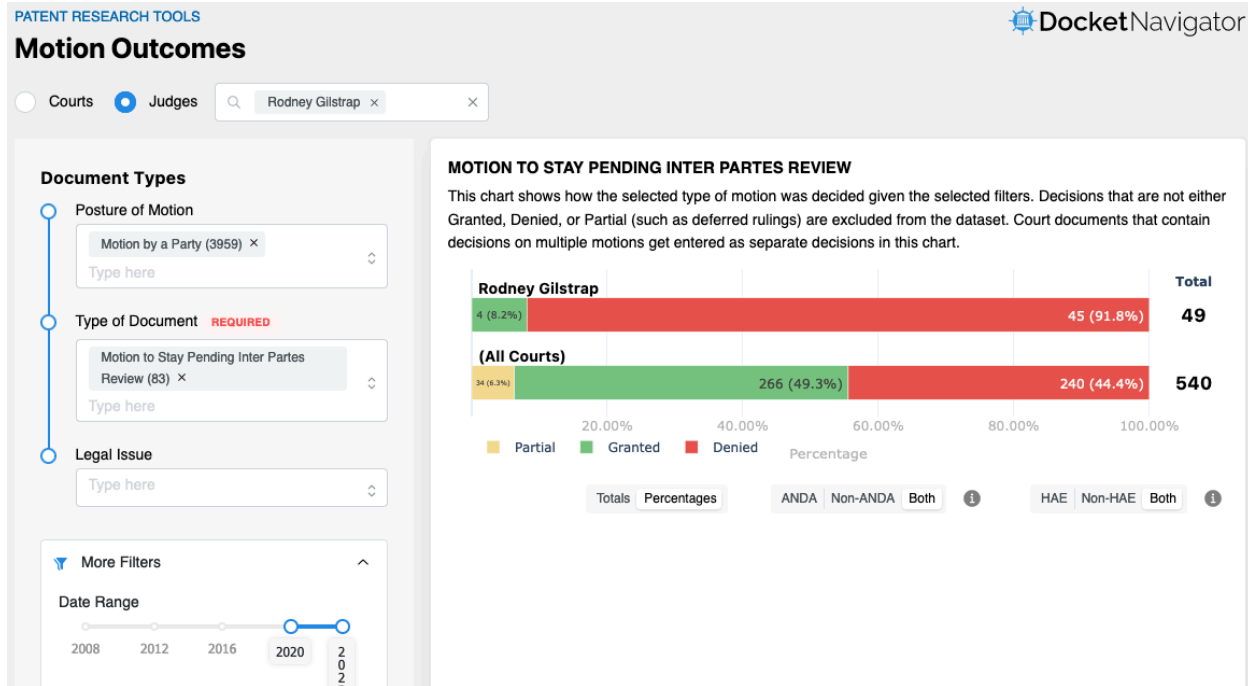
### VII. The Board Should Deny Institution Under *Fintiv*

The Board should not waste its limited resources when, under the *Fintiv*

factors, the Board's decision will likely have no effect—not against anyone, ever. Trial is scheduled for May 6, 2024. The final written decision is not expected until January 20, 2025. *See* Paper 9 (setting filing date of July 20, 2023). Twenty years from the July 6, 2004 filing of the parent application, plus 40 days of extension, sets the expiration date at August 15, 2024. Ex. 1001, cover. Thus, the final written decision will come months after not only the trial, but also months after the patent expires. A final written decision will arrive too late to possibly help Petitioner at trial and too late after expiration to benefit the general public. The USPTO should not waste its limited resources on such pointless endeavors.

The *Fintiv* factors are: 1) whether the court granted a stay, or evidence exists that one may be granted if a proceeding is instituted; 2) a comparison of the district court trial date to the Board's statutory deadline; 3) an investment in the district court proceedings; 4) overlap between issues raised in the petition and in the parallel proceeding; 5) overlapping parties; and 6) other considerations. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 13-14 (PTAB Mar. 20, 2020) (precedential).

Factor 1 (a stay) weighs against institution. Judge Gilstrap has rarely stayed a patent case pending *inter partes* review, only granting 4 of 49 motions to stay pending an IPR (8.2%) according to a report from Docket Navigator:



### Docket Navigator Motion Outcomes Report (October 28, 2023)

Because of the 91.8% chance that a stay will be denied, this factor weighs against institution.

Factor 2 (the trial and written decision deadlines) also weighs heavily against institution. Trial is set for May 6, 2024 (Ex. 1032 at 1), which is consistent with Petitioner's time-to-trial statistics (Petition at 84). The final written decision is not expected until January 20, 2025, about 8 months later. Paper 9 (setting filing date of July 20, 2023). Nothing suggests that trial will deviate from the schedule or mean statistics by more than 8 months, especially because Petitioner has not moved to stay the case. The COVID-delay concerns from *Dish Network v. Broadband iTV*, IPR2020-01280, Paper 17 at 16 (PTAB Feb. 4, 2021) no longer apply. Precedent

weighs these facts in favor of denying institution. *Fintiv* at 9.

Factor 3 (investment in court proceedings) favors denial. The parties have already invested heavily in the litigation, including serving contentions, taking discovery, discovery motion practice, and claim construction. By the deadline for an institution decision on January 20, 2023, expert reports will have been served and the parties' case-dispositive motions will be due just 9 days later. Ex. 1032 at 3. Petitioner could have filed the Petition earlier—it served invalidity contentions in the litigation months prior to the Petition (February 2, 2023) and likely had identified these grounds well before its contentions were served. Indeed, Petitioner filed and served its other petitions IPR2023-00680, -00681, -00682 months earlier, in March 2023. Petitioner offers no good reason for delaying this Petition until July. This factor weighs against institution. *Fintiv* at 9–10.

Factor 4 (overlap of the issues) weighs against institution. Petitioner attempts to minimize this issue by arguing to the Board that it would not pursue the identical, “specific combination of prior art references set forth in the grounds presented in this Petition.” Petition at 85. This is a deceptive and meaningless empty promise because, other than Shraga, Petitioner's litigation invalidity contentions do not cite the same references. Petitioner's invalidity contentions assert Patent No. 7,066,741 to Togami, which is a continuation of Pat. 6,439,918 to Togami as presented in this Petition. Contentions at 24, line D-03. The G.984.3 Draft Recommendation and/or

Contribution 104 are not cited Petitioner contentions at all currently.<sup>13</sup> Thus, Petitioner has expressly designed its contentions such that the grounds it will present at trial will necessarily be different than those in the Petition.

Petitioner's representation of the Board is a far cry from a *Sotera*-type stipulation in which a petitioner stipulates to a court (not the Board) that it will not pursue in district court the same grounds in the petition as well as "any other ground . . . that was raised or could have been reasonably raised in an IPR." *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 13–14, 18–19 (PTAB Dec. 1, 2020) (precedential). In cases such as this, where Petitioner's stipulation amounts to an "empty promise," recent PTAB decisions find this factor neutral. *Ericsson Inc. v. Godo Kaisha IP Bridge 1*, IPR2022-00726, Paper 11 at 12–13 (PTAB. Nov. 2, 2022) (addressing differences in *Sotera* and *Sand Revolution* stipulations). However, Petitioner's deceptive attempt involving substitution of a parent Togami application here should further cause this factor to weigh against institution.

Factor 5 is agreed to be neutral.

The final *Fintiv* factor considers the merits and other circumstances. For the

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<sup>13</sup> Petitioner has a pending motion to amend to add the Contribution 104 reference.

Patent Owners are informed that this motion is unlikely to succeed.

reasons in Section IV above, the Petition is not likely to succeed on the merits, much less reach any level of compelling merit. Ground I is unlikely to succeed because Petitioner does not cite evidence that the combination of Shraga and Togami would result in a pluggable optical transceiver module with a control module. Instead, Petitioner's combination would still result in the control module remaining outside of the pluggable module. Ground II is unlikely to succeed for the same reasons, and additionally because Ground II relies on references that Petitioner has failed to show are prior art.

Petitioner's empty promise stipulation suggests that Petitioner<sup>14</sup> will try to raise similar invalidity arguments in the litigation even if the Petition is instituted or after a Final Written Decision is issued. Instituting this Petition is a waste of everyone's resources and will not benefit anyone. The Final Written Decision is not expected until after trial **and** after patent expiration. Any member of the public looking to the Final Written Decision for permission to start using the patented technology will stop caring once the patent expires. Rather than promote the progress of science and the useful arts per constitutional mandate, instituting review

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<sup>14</sup> Unlike in related IPR2023-00680, -00681, -00682, the '754 Patent is not asserted against all of Petitioner's co-defendants in trial, so the real party-in-interest issues do not affect this Petition.

here will only result in a wastefully late decision that will deter future inventors from seeking patent protection due to such wasteful costs.

### **VIII. Conclusion: The Board Should Deny the Petition**

The Board should deny the Petition on the merits. Ground I fails to articulate a *prima facie* theory of obviousness after repeatedly arguing that the prior art teaches how the claimed “control module” is not in a pluggable optical transceiver module. Ground II suffers from these same defects and additionally suffers from relying on references that did not publish until after the earliest priority date.

Alternatively, the Board should deny institution under section 325(d) or *Fintiv* to avoid wasting its limited resources on rehashing the same, extensively-examined combination to write a decision that will not issue until well after trial and expiration.

Respectfully submitted,

Dated: November 27, 2023

/ Qi Tong /

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**CERTIFICATION REGARDING WORD COUNT**

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 12,719 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

Dated: November 27, 2023

/s/ Qi Tong  
Qi Tong

**CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))**

The undersigned hereby certifies that the above document was served on November 27, 2023, by filing this document through P-TACTS as well as delivering a copy via electronic mail upon the following attorneys of record for Petitioners:

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