



IPR2024-01287 – Charter Comms. Inc. v. Iarnach Techs. Ltd.



Petitioner's Demonstrative Exhibits

Presented by

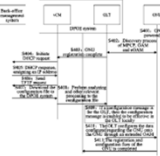
Raymond R. Ricordati III

Counsel for Charter Communications

November 20, 2025

Challenged Patent Concerns Providing DOCSIS Services via passive optical network (PON) equipment (DPoE Systems)

U.S. Patent No. 9,287,982 (Ex. 1001)

United States Patent		(10) Patent No.: US 9,287,982 B2
Zang et al.		(45) Date of Patent: Mar. 15, 2016
 US009287982B2		
(54) DPOE SYSTEM AND SERVICE AUTO-CONFIGURATION METHOD AND NETWORK BASED THEREON	104J 14/0239; 104J 14/0242; 104J 14/0243; 104J 14/0245; 104J 14/0246; 104J 14/0247; 104J 14/025; 104J 14/0252; 104J 14/0249	
(75) Inventors: Melyan Zang, Shenzhen (CN); Liqian Yuan, Shenzhen (CN); Chaolin Zhang, Shenzhen (CN)	USPC — 398/71, 70, 72, 66, 58 See application file for complete search history.	
(73) Assignee: ZTE CORPORATION, Shenzhen (CN)	(56) References Cited U.S. PATENT DOCUMENTS 8,023,820 B2 * 9/2011 Denard — 104J 3/1604 398/66 (Continued)	
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 168 days.	FOREIGN PATENT DOCUMENTS CN 101741712 6/2009 CN 101888575 A 11/2010 (Continued)	
(21) Appl. No.: 14/009,703	OTHER PUBLICATIONS International Search Report mailed Jan. 28, 2012 in International Application No. PCT/CN2012/072633. (Continued)	
(22) PCT Filed: Mar. 20, 2012		
(86) PCT No.: PCT/CN2012/072633		
§ 371 (c)(1), (2), (4) Date: Oct. 3, 2013		
(87) PCT Pub. No.: WO/2013/19453		
PCT Pub. Date: Oct. 18, 2012		
(65) Prior Publication Data US 2014/0023366 A1 Jan. 23, 2014	Primary Examiner — M. R. Sedghian (74) Attorney, Agent, or Firm — Pham Law Group, LLC	
(30) Foreign Application Priority Data Apr. 13, 2011 (CN) — 2011 1 00921130	(57) ABSTRACT A DPOE system and a service auto-configuration method and network based on that system are provided, wherein, the DPOE system includes an acquisition unit, an analyzing unit and a configuration unit; the service auto-configuration network includes a DPOE system, a back-office management system and an ONU; the service auto-configuration method based on that system includes: the DPOE system acquiring a configuration file from the back-office management system, wherein the configuration file includes configuration information of the ONU and configuration information of an OLT in the DPOE system; the DPOE system analyzing the configuration file and obtaining the configuration information of the ONU and the configuration information of the OLT; configuring the OLT locally and configuring the ONU via a management channel between the OLT and the ONU. Thus the service can be opened without performing further configuration to the OLT individually after the process of the ONU initialization is completed.	
(51) Int. Cl. H04L 14/00 (2006.01) H04B 10/27 (2013.01) (Continued)	11 Claims, 3 Drawing Sheets	
(52) U.S. Cl. CPC — H04B 10/27 (2013.01); H04L 12/4641 (2013.01); H04L 41/04 (2013.01); (Continued)		
(58) Field of Classification Search CPC — H04B 10/27; H04B 10/271; H04B 10/272; H04B 10/275; H04B 10/2755; H04B 10/278; H04L 12/24; H04L 12/4641; H04L 41/04; H04L 41/0806; H04L 41/0232; H04L 61/2015; H04Q 11/00; H04Q 11/0067; H04J 14/023; H04J 14/0232; H04J 14/0238;		
		

“DPOE SYSTEM AND SERVICE AUTO-CONFIGURATION METHOD AND NETWORK BASED THEREON”

Filed: March 20, 2012

Priority Date: April 13, 2011

MARSHALL
GERSTEIN *ip*

EX1001, *inter alia*.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

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Prior Art Already Provided DOCSIS Services via PON, Automatically Configured ONU

The '982 Patent describes a method of using a conventional passive ethernet optical network (PON) to deploy conventional services using Data Over Cable Service Interface Specification (DOCSIS), a system commonly known as DOCSIS Provisioning over Ethernet (DPoE).

ADMITTED
PRIOR ART

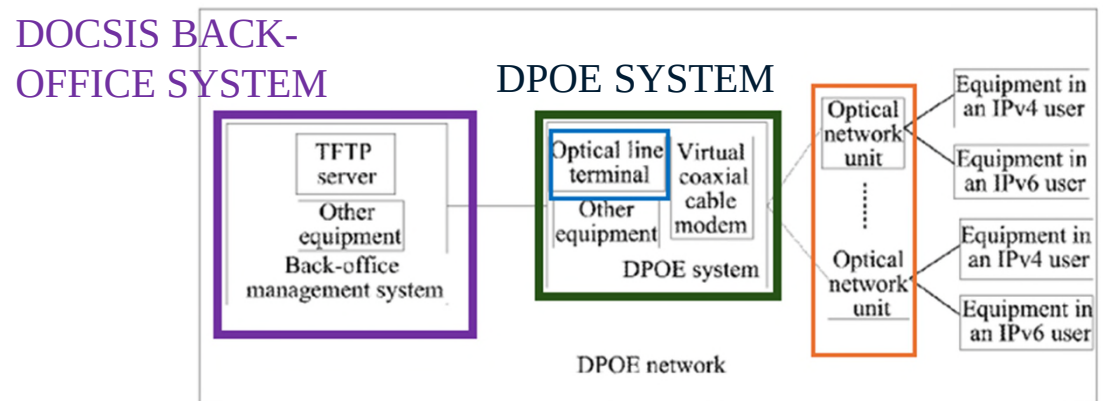


FIG. 1

Prior Art Already Provided DOCSIS Services via PON, Automatically Configured ONU

The **admitted prior art** DPOE system automatically configured the **ONU** based on information in the confirmation file:

- **ONU** powers-on, registers with **OLT/DPOE system**
- An IP address is obtained using DHCP (not pictured)
- **DPOE system** requests configuration file from **TFTP server**
- **DPOE system** configures **ONU** through management channel.

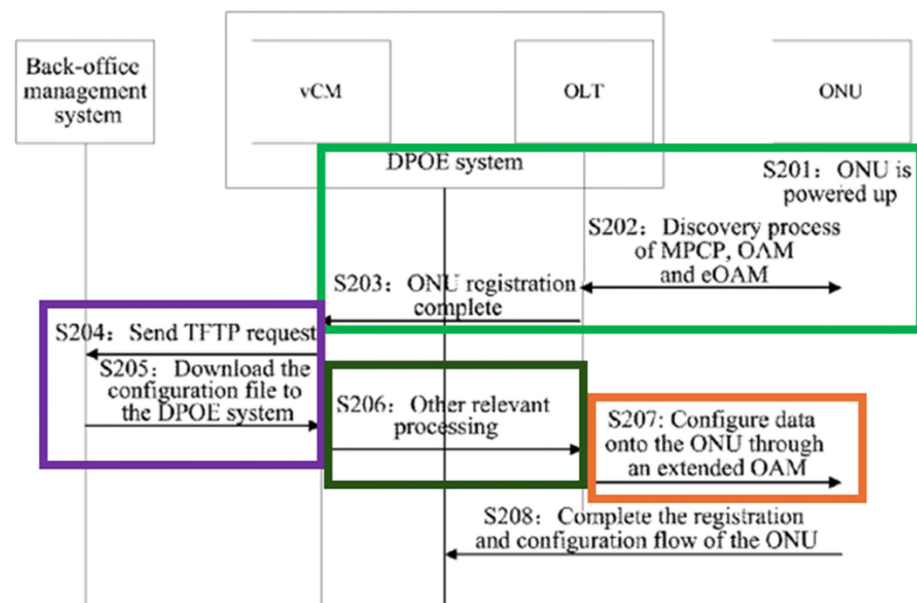


FIG. 2

Invention Concerned Providing DOCSIS Services via PON

In the invention, the **DPOE system** configures the **OLT** at the same time as the **ONU** based on information in the same confirmation file (S409):

- An IP address is obtained using DHCP (unchanged)
- **DPOE system** requests configuration file from **TFTP server** (unchanged)
- **DPOE system** configures **ONU** through management channel and **OLT** “**locally**” (allegedly new)

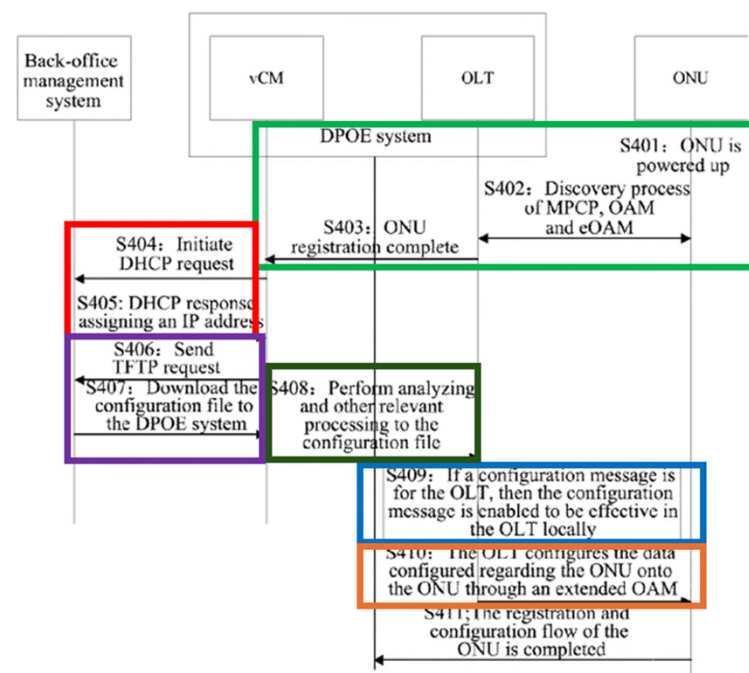


FIG. 4

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Prior Art References

Exhibit	Patent No./Title	Inventor/Author	Filed	Issued/Published
1006	US 8,831,425	Bernstein	Jan. 9, 2008	Sep. 9, 2014
1007	MEF 6.1	Metro Ethernet Forum		Apr. 2008
1008	US 8,160,448	Tsuge	Mar. 17, 2009	Apr. 12, 2012

Challenged Claims of U.S. Patent No. 10,683,882 B2

Independent Claims	Dependent Claims
1	2-3
4 (no longer asserted)	5
6	7-11

Claim 1

1. A service auto-configuration method of a DOCSIS Provisioning Of EPON (DPOE) system, comprising:

the DPOE system acquiring a configuration file from a back-office management system, wherein the configuration file comprises both configuration information of an optical network unit (ONU) and configuration information of an optical line terminal (OLT) in the DPOE system;

the DPOE system analyzing the acquired configuration file, and obtaining both the configuration information of the ONU and the configuration information of the OLT; and

the DPOE system configuring the OLT locally according to the configuration information of the OLT and meanwhile configuring the ONU according to the configuration information of the ONU via a management channel between the OLT and the ONU;

wherein, the method is performed in a process of ONU initialization; and

wherein, when analyzing the acquired configuration file, the DPOE system further converts the configuration information of the ONU into a message format which can be identified by the ONU, and converts the configuration information of the OLT into a message format which can be identified by the OLT.

IPR2021-01287 – Instituted Grounds

VI. ORDER

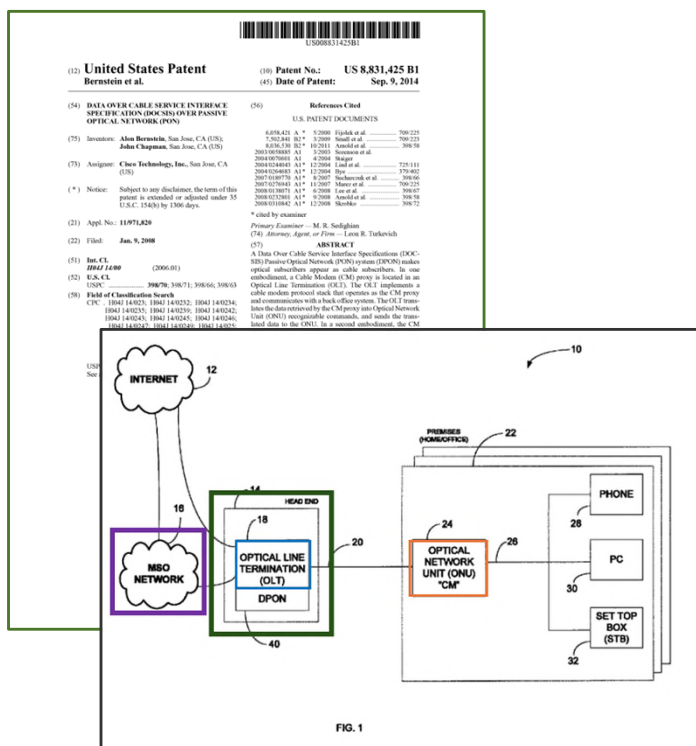
It is

ORDERED that, pursuant to 35 U.S.C. § 314(a) an *inter partes* review of the challenged claims in the '982 patent is hereby instituted on the asserted grounds set forth in the Petition; and

The challenged claims are unpatentable based upon the following grounds:

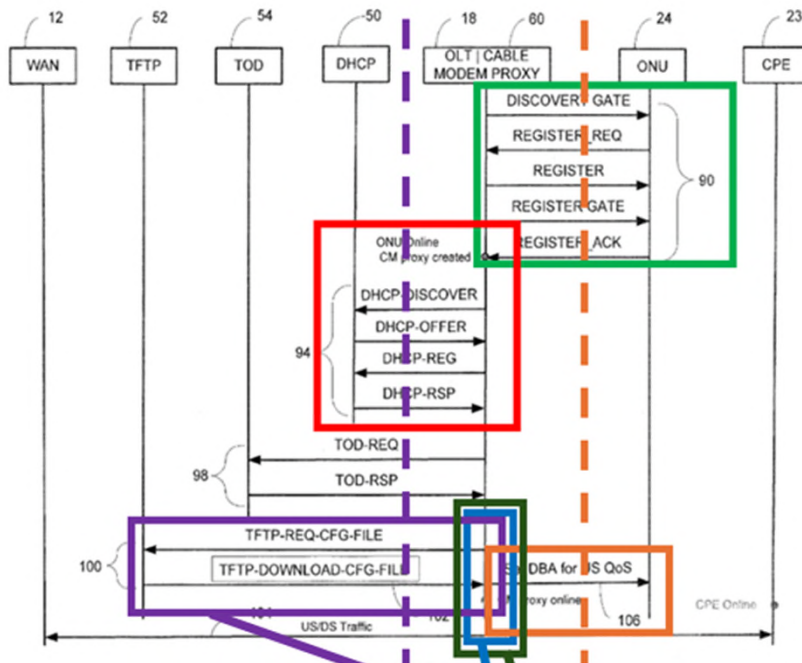
Ground	Claims	Basis (Pre-AIA 35 U.S.C. §§ 102, 103)
1	1-2, 4-9 and 11	Obvious under 35 U.S.C. § 103 over U.S. Patent No. 8,831,425 alone or in combination with MEF 6.1 U.S. Patent No. 8,160,448
2	3 and 10	Obvious under 35 U.S.C. § 103 over U.S. Patent No. 8,831,425 in combination with MEF 6.1 and/or in U.S. Patent No. 8,160,448
3	1-2, 4-9 and 11	Obvious under 35 U.S.C. § 103 over U.S. Patent No. 8,160,448 alone or in combination with U.S. Patent No. 8,831,425
4	3 and 10	Obvious under 35 U.S.C. § 103 over U.S. Patent No. 8,160,448 in combination with MEF 6.1 and/or in U.S. Patent No. 8,831,425

Grounds 1 and 2—Bernstein (EX1006)



- Entitled “Data over cable service interface specification (DOCSIS) over passive optical network (PON)”
- Bernstein’s system uses software executed on the OLT as a cable modem proxy (i.e., virtual cable modem) to simulate the functionality of conventional DOCSIS CMTS and CM hardware components. EX1005, ¶49 (citing EX1006, 3:37-63).
- The cable modem proxy may communicate with any of the back-office MSO servers to “effectively allow any of the services normally supported in a [DOCSIS] cable network to also be used in PON 10.”

Bernstein—“Data over cable service interface specification (DOCSIS) over passive optical network (PON)”



- “DOCSIS-to-PON translator 84” processes the configuration file and converts parameters “into associated PON parameters 63 that can be used by the OLT 18 and ONU 24.” EX1005, ¶51 (citing EX1006, 3:53-63).
- “[T]he ONU 24 gets programmed through the OAM channel,” or the Operation and Maintenance Channel [ORANGE]. *Id.* (citing EX1006, 5:49-58).

Bernstein—DPoE System Configures ONU and OLT at Same Time

- “The single description in Figure 7 of ‘Set DBA for US QoS’ requires configuration parameters be set on both the OLT and ONU in order to enable upstream communications between the two devices. The figure discloses this occurs as a single step. EX1005, ¶75 (citing EX1006, Fig. 7).
- Configuration file information relevant to the OLT (e.g., bandwidth allocation and service priority information) is converted into a format appropriate to the OLT [DARK GREEN] and loaded into and thereafter used by the OLT for communications with the ONU [BLUE].

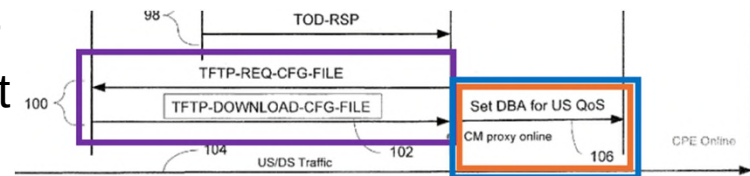


FIG. 7

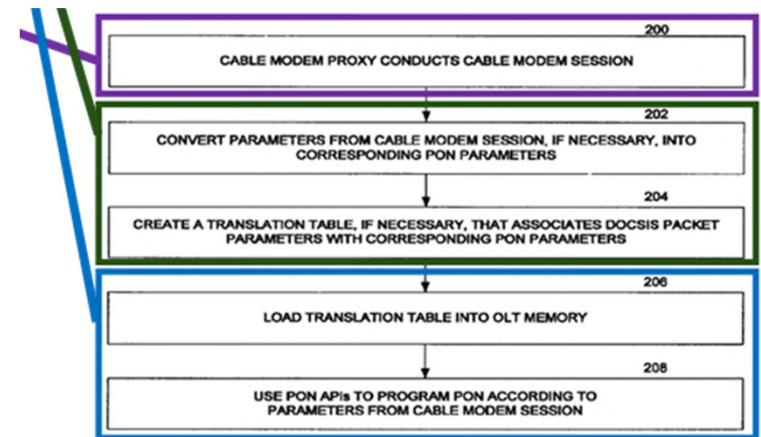


FIG. 8

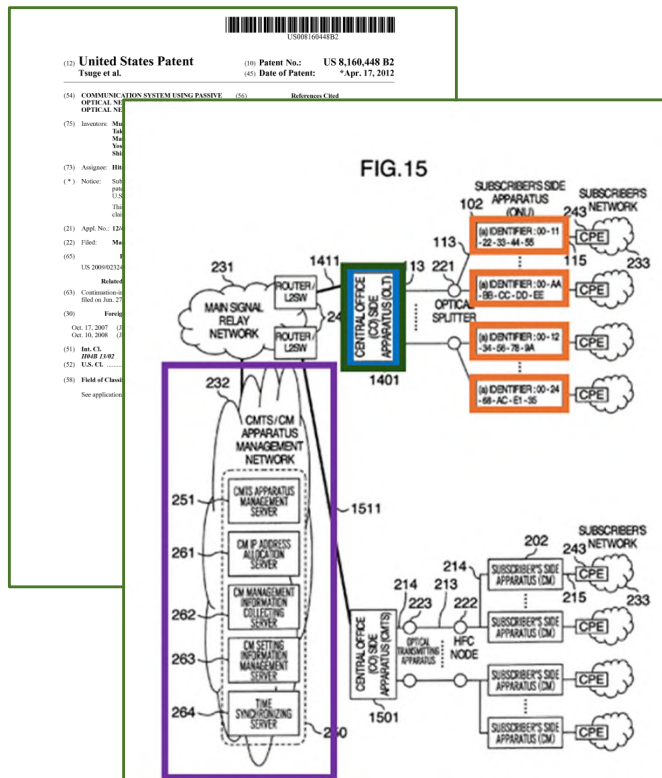
Bernstein—Uncontested Elements

- “a DOCSIS Provisioning Of EPON (DPOE) system” (component of preamble)
- “the DPOE system acquiring a configuration file from a back-office management system, wherein the configuration file comprises both configuration information of an optical network unit (ONU) and configuration information of an optical line terminal (OLT) in the DPOE system;” (element 1[a])
- “the DPOE system . . . obtaining both the configuration information of the ONU and the configuration information of the OLT;” (component of element 1[b])
- “the DPOE system configuring the OLT locally according to the configuration information of the OLT (element 1[c])

Bernstein—Uncontested Elements (con't.)

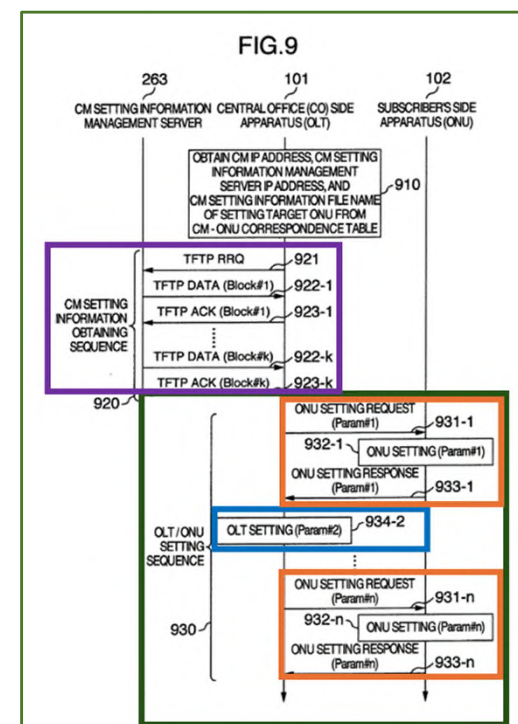
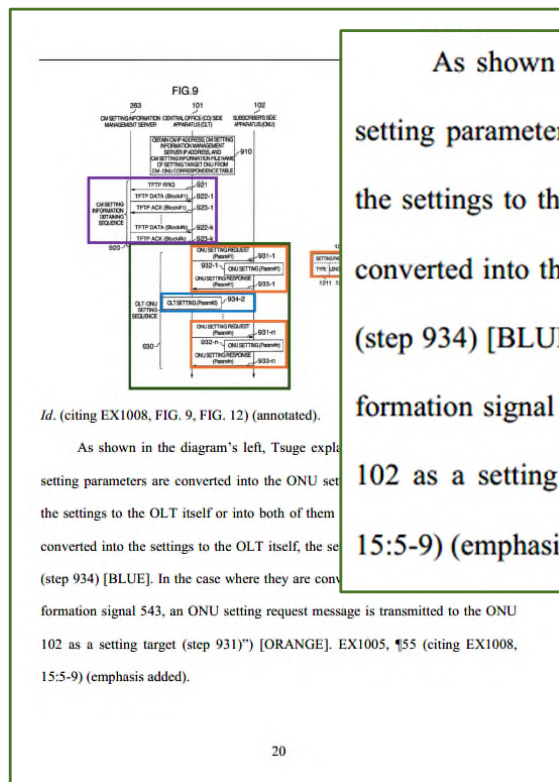
- and meanwhile configuring the ONU according to the configuration information of the ONU via a management channel between the OLT and the ONU;” (element 1[d])
- “wherein, the method is performed in a process of ONU initialization;” (element 1[e])
- “wherein, when analyzing the acquired configuration file, the DPOE system further converts the configuration information of the ONU into a message format which can be identified by the ONU, (element 1[f])
- and converts the configuration information of the OLT into a message format which can be identified by the OLT” (element 1[g])
- Back-office system (claim 6)

Grounds 3 and 4—Tsuge (EX1008)



- Entitled “Communication system using passive optical network and passive optical network”
- Tsuge discloses a DPoE system (illustrated in FIG. 15) including a “CMTS/CM Apparatus Management Network 232” comprising a conventional DOCSIS back-office management system [PURPLE] that, inter alia, stores and provides DOCSIS configuration files used for configuring communications between a DPoE System/OLT [DARK GREEN/BLUE] and one or more an ONU [ORANGE]

Tsuge—DPoE System Configures ONU and OLT at Same Time



Tsuge—Uncontested Elements

- “a DOCSIS Provisioning Of EPON (DPOE) system” (component of preamble)
- “the DPOE system acquiring a configuration file from a back-office management system, wherein the configuration file comprises both configuration information of an optical network unit (ONU) and configuration information of an optical line terminal (OLT) in the DPOE system;” (element 1[a])
- “the DPOE system analyzing the acquired configuration file, and obtaining both the configuration information of the ONU and the configuration information of the OLT;” (element 1[b])

Tsuge—Uncontested Elements (con't.)

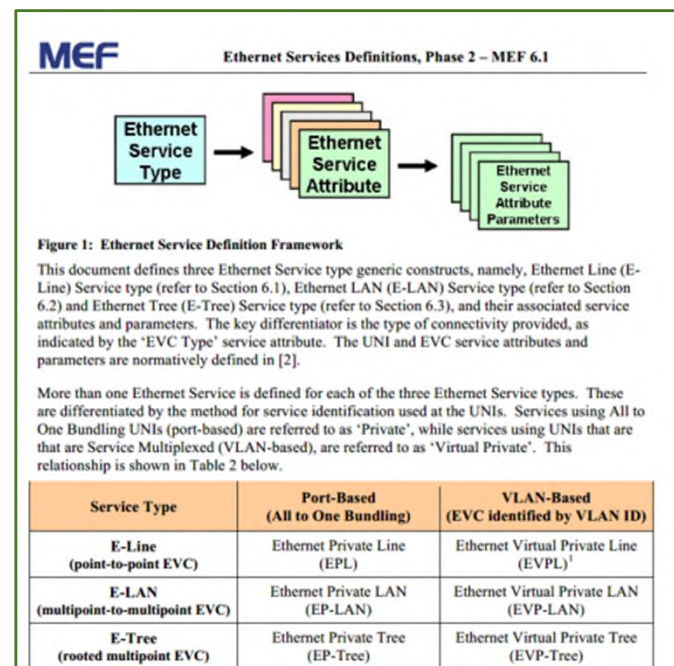
- “the DPOE system configuring the OLT locally according to the configuration information of the OLT (element 1[c])
- and meanwhile configuring the ONU according to the configuration information of the ONU via a management channel between the OLT and the ONU;” (element 1[d])
- “wherein, the method is performed in a process of ONU initialization;” (element 1[e])
- “wherein, when analyzing the acquired configuration file, the DPOE system further converts the configuration information of the ONU into a message format which can be identified by the ONU, (element 1[f])

Grounds 2 and 4—MEF 6.1 (EX1007)

- The Metro Ethernet Forum’s MEF 6.1, Ethernet Services Definitions - Phase 2 discloses definitional frameworks for several types of generic Ethernet services that “Service Providers” may provide over a Metro Ethernet Network to “subscribers.” (EX1007 at 7 and fn. 1; EX1005, ¶56)
- PO does not contest Grounds 2 or 4 beyond those identified in Grounds 1 and 3

MARSHALL
GERSTEIN *ip*

Pet. at 21, 55-60, 84-87, *inter alia*.



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

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Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “**Analyzes**” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “**services opened by the ONU**” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “**Convert[s] configuration information for the OLT into a message format**” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “**services opened by the ONU**” (Claims 2, 8-9)

Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “Analyzes” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “services opened by the ONU” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “Convert[s] configuration information for the OLT into a message format” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “services opened by the ONU” (Claims 2, 8-9)

The Petition directly alleges Bernstein provides a “service auto-configuration” method/network in VIII(A)(1)(a)

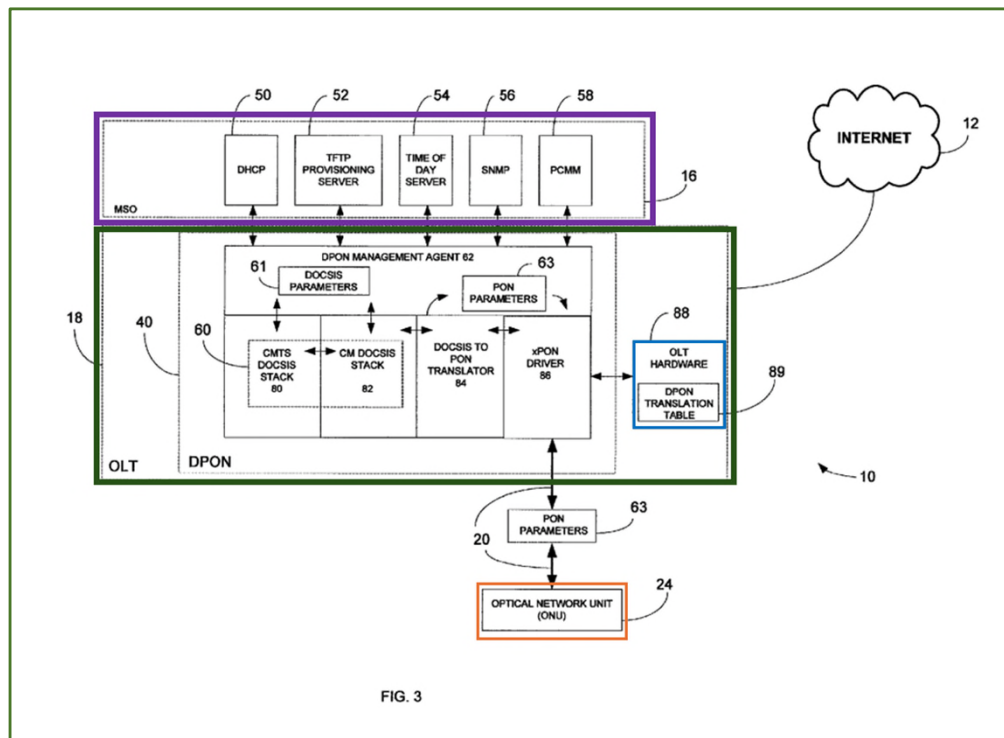
1. Independent Claim 1

a. Preamble

1. A service auto-configuration method of a DOCSIS Provisioning Of EPON (DPoE) system, comprising:

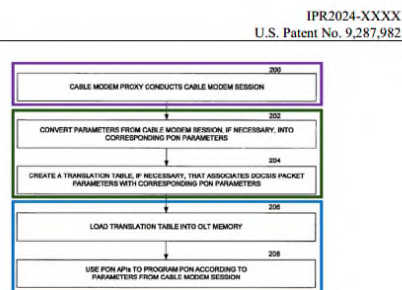
To the extent the preamble is limiting, Bernstein discloses this element. Bernstein discloses “A Data Over Cable Service Interface Specifications (DOCSIS) Passive Optical Network (PON) system[.]” EX1005, ¶59 (citing EX1006, Abstract). Bernstein also explains that his system is implemented on an “Ethernet PON (EPON).” *Id.*, (citing EX1006, 2:2-5, 2:44-3:36). In Figure 3, Bernstein depicts a DPoE system comprising OLT 18 including DPON 40 and Cable Modem Proxy 60 (a virtual cable modem.) *Id.* (citing EX1006, 3:37-46).

The Petition directly alleges Bernstein provides a “**service auto-configuration**” method/network in VIII(A)(1)(a)



- Figure 3 shows the Bernstein “DPoE System”:
 - “DOCSIS-to-PON Translator 84”
 - “DPON Translation Table 89”
 - Acquires DOCSIS configuration file with “DOCSIS Parameters 61” from “TFT Server” 52 (uncontested)
 - Translates to “PON Parameters 63” (uncontested)
 - Configures OLT and ONU at the same time (uncontested)
 - During initialization of ONU (uncontested)

The Petition directly alleges Bernstein provides a “service auto-configuration” method/network in VIII(A)(1)



Id., (citing EX1006, Fig. 8) (annotated).

For example, the embodiments shown in FIGs. 3, 7 and 8, show an OLT being configured locally with OLT configuration information from a downloaded configuration file. Bernstein explains that EPON systems use the conventional Ethernet model for managing quality of services requirement, such that instead of individual “pipes,” each service is assigned a “priority” within a shared “pipe.” EX1005, ¶71 (citing EX1006, 5:59-6:6). In one example, the downloaded configuration file “may contain a request for a video service at 10 million bits per second (Mbps), a voice service of 100 thousand bps (Kbps), and data service of 50 million bits per second (Mbps).” *Id.* (citing EX1006, 6:7-16). Bernstein’s system translates these requirements into an overall bandwidth requirement for the “pipe” to a given

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ing configured locally with OLT configuration information from a downloaded configuration file. Bernstein explains that EPON systems use the conventional Ethernet model for managing quality of services requirement, such that instead of individual “pipes,” each service is assigned a “priority” within a shared “pipe.” EX1005, ¶71 (citing EX1006, 5:59-6:6). In one example, the downloaded configuration file “may contain a request for a video service at 10 million bits per second (Mbps), a voice service of 100 thousand bps (Kbps), and data service of 50 million bits per second (Mbps).” *Id.* (citing EX1006, 6:7-16). Bernstein’s system translates these requirements into an overall bandwidth requirement for the “pipe” to a given

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ONU, along with priorities for each service. *Id.* (citing EX1006, 6:17-31). This information is formatted into the translation table referenced above and loaded into the OLT to be used when communicating with a given ONU. *Id.* (citing 6:32-57).

For the foregoing reasons, Bernstein discloses “the DPoE system configuring the OLT locally according to the configuration information of the OLT.” EX1005, ¶72.

The Petition directly alleges Bernstein provides a “service auto-configuration” method/network in VIII(A)(1)

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U.S. Patent No. 9,287,982

ONU, along with priorities for each service. *Id.* (citing EX1006, 6:17-31). This information is formatted into the translation table referenced above and loaded into the OLT to be used when communicating with a given ONU. *Id.* (citing 6:32-57).

For the foregoing reasons, Bernstein discloses “the DPoE system configuring the OLT locally according to the configuration information of the OLT.” EX1005, ¶72.

e. Element 1[d]

and meanwhile configuring the ONU according to the configuration information of the ONU via a management channel between the OLT and the ONU;

Bernstein discloses that the ONU is meanwhile configured according to the configuration information of the ONU. For example, Bernstein explains that at the same time the OLT is configured locally by DPON 40 from PON parameters obtained by Proxy 60, the ONU 24 is also configured by DPON 40 using PON parameters 63 translated by the DOCSIS-to-PON translator 84 from the configuration file 102. EX1005, ¶73 (citing EX1006, 3:55-56 (“PON parameters 63 that can be used by the OLT 18 and ONU 24.”)) (emphasis added.)

FIG. 7 shows an ONU being configured at the same time as an OLT with information from the same downloaded configuration file. Bernstein explains “[t]he information in the TFTP file 102 is then translated and used for configuring schedulers/classifiers or other features on the OLT 18 and ONU 24. For example, the in-

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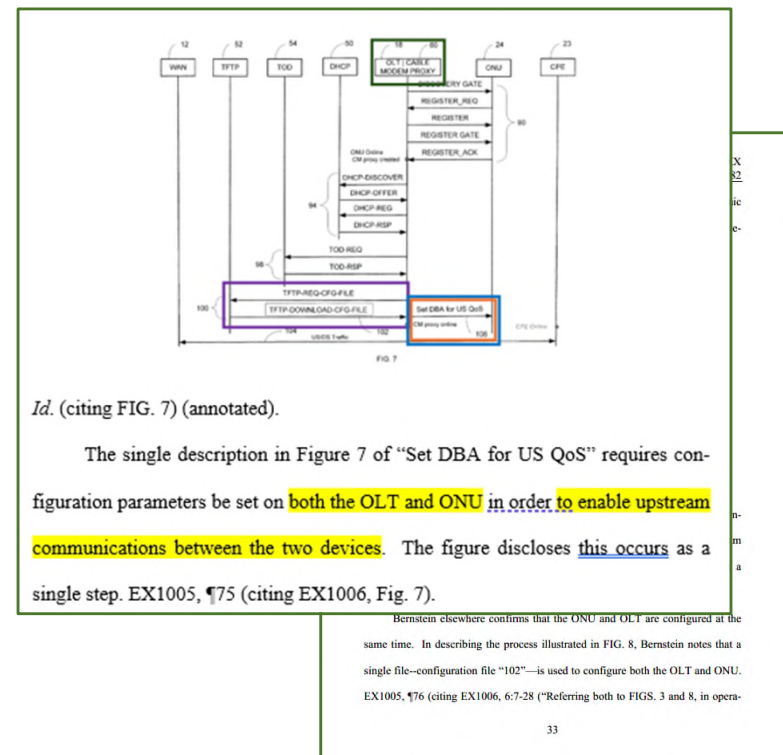
Bernstein discloses that the ONU is meanwhile configured according to the configuration information of the ONU. For example, Bernstein explains that at the same time the OLT is configured locally by DPON 40 from PON parameters obtained by Proxy 60, the ONU 24 is also configured by DPON 40 using PON parameters 63 translated by the DOCSIS-to-PON translator 84 from the configuration file 102. EX1005, ¶73 (citing EX1006, 3:55-56 (“PON parameters 63 that can be used by the OLT 18 and ONU 24.”)) (emphasis added.)

FIG. 7 shows an ONU being configured at the same time as an OLT with information from the same downloaded configuration file. Bernstein explains “[t]he information in the TFTP file 102 is then translated and used for configuring schedulers/classifiers or other features on the OLT 18 and ONU 24. For example, the in-

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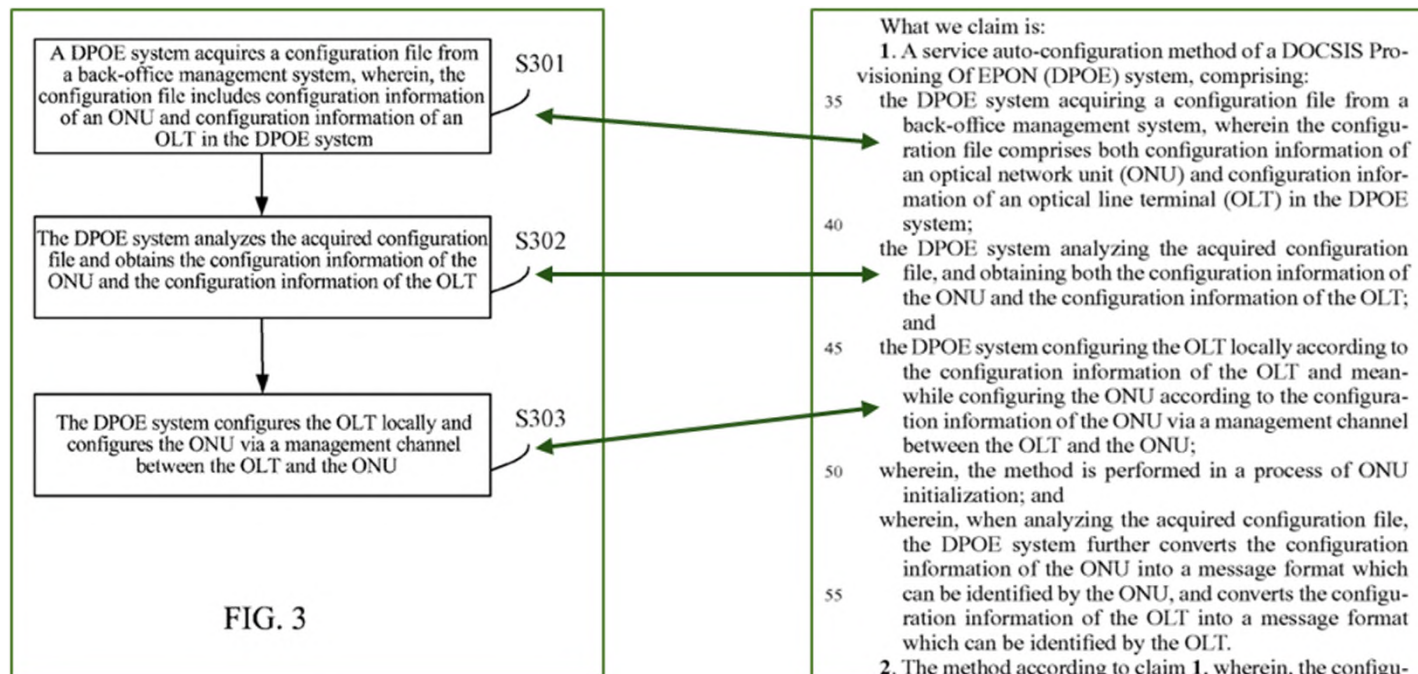
formation in TFTP configuration file 102 may be used to configure Dynamic Bandwidth Allocation (DBA) 106 for Upstream (US) Quality of Service (QoS) between the OLT 18 and ONU 24[.]” *Id.*, ¶74 (citing EX1006 5:31-40).



PO's Vague Specification Cites Provide No More Detail Than Already Defined In The Body Of The Claims

- Despite multiple opportunities, PO has yet to provide a construction for the term “service auto-configuration,” only cite a few paragraphs of specification
 - Dr. Litvin cites EX1001 at 8:19-31 (“configuration of the OLT and the ONU at the same time through a configuration file including the configuration information of the ONU and the configuration information of the OLT in the DPOE system; [during] the process of the ONU initialization.”) (EX2008 at ¶42)
 - PO alternatively cites EX1001 at 7:65-8:2 (“the present document adds the configuration information about the OLT of the DPOE system in the configuration file, and completes the automatic configuration on the OLT and the ONU at the same time; [during] the process of the ONU initialization[.]”)
- Three already-claimed characteristics:
 - (1) configuration by the DPOE system of both the ONU and OLT at the same time;
 - (2) using a configuration file that includes configuration information of both the ONU and OLT; and
 - (3) configuration of the ONU and OLT occurs during ONU initialization

FIG. 3 Defines a “Service Auto-Configuration” Method Reciting The Same Language As The Body Of Claim 1



PO and Dr. Litvin Applied the Wrong “Newness” Standard

- 35 U.S.C. § 312(a)(3)
 - “...the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.”
- Petitioner’s are NOT required to divide the invalidity analysis of a claim into discrete, self-contained sub-sections divorced from the remainder of the analysis of that claim using verbiage from which it may never deviate.
- It is the “legal ground” (i.e. Ground 1 or obvious over Bernstein in combination with Tsuge and/or knowledge in the art) that controls, not the precise wording of the argument.
- Federal Circuit has held that a petitioner's reply asserts the same “legal ground” as its petition when it relies on the “same prior art” to support the “same legal argument.” *Apple Inc. v. Andrea Electronics Corp.*, 949 F.3d 697, 706 (Fed. Cir. 2020);
- Federal Circuit has cautioned the Board to NOT view reply arguments “with too fine a filter.” *Ericsson Inc. v. Intell. Ventures I LLC*, 901 F.3d 1374, 1380 (Fed. Cir. 2018) (vacating Board exclusion of reply argument directed to whether feature was insubstantial to a POSA)

Additional argument and evidence is not “new” if it relates to obviousness over same prior art references

- “[T]he petitioner in an inter partes review proceeding may introduce new evidence after the petition stage if the evidence is a legitimate reply to evidence introduced by the patent owner, or if it is used ‘to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.’) *Anacor Pharms., Inc. v. Iancu*, 889 F.3d 1372, 1380-81 (Fed. Cir. 2018)
- It is **NOT** new argument to rephrase an argument, *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019) (“Parties are not barred from elaborating on their arguments on issues previously raised.”); *Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1384 (Fed. Cir. 2023) (“[T]he very nature of the reply and sur-reply briefs are to respond (whether to refute, rebut, explain, discredit, and so on) to prior raised arguments within the confines of 37 C.F.R. § 42.23(b).”)
- It is **NOT** new argument to cite previously uncited portions of cited prior art reference. *Apple*, 949 F.3d at 706 (finding abuse of discretion where Board excluded a previously uncited “another example” of the same prior-art reference’s algorithm used in both the petition and reply to “further explain” its legal argument); *Genzyme Therapeutic Prods. Ltd. P’ship v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1366 (Fed. Cir. 2016) (“the introduction of new evidence in the course of the trial is to be expected in [IPR] trial proceedings” and permissible “as long as the opposing party is given notice of the evidence and an opportunity to respond to it.”)

Additional argument and evidence is not “new” if it relates to obviousness over same prior art references

- It is **NOT** new argument to expand upon a previously raised argument in respond to an argument in PO’s response.
 - *Rembrandt*, 76 F.4th at 1384-85 (a petitioner was **allowed to expand on an argument** in the petition that modifying a reference would result in “**efficiency**” by elaborating that the modification would “**save cost and time by allowing for rapid, efficient, simultaneous testing for multiple analytes.**”)
 - *Corephotonics, Ltd. v. Apple Inc.*, 84 F. 4th 990, 1009-1012 (Fed. Cir. 2023) (previously unrecited argument that prior art was analogous art to patent-in-suit was **not “new”** because it “**relied on “the same references, the same disclosures, and the same obviousness theories advanced by the petition and debated by the parties”**”: “**There is nothing ‘entirely new’ about arguing that the same combination of prior art references identified in a petition as being in the same field of endeavor as the patent being challenged are also pertinent to the same problem faced by the inventor of the challenged patent**”; “”)
- It is NOT new argument to supplement already presented arguments with **additional** supporting evidence, such as new exhibits. *Wildcat Licensing WI LLC v. Atlas Copco Tools & Assembly Sys. LLC*, No. 2022-1304, 2024 WL 89395, *3 (Fed. Cir. Jan. 9, 2024)
 - In *Wildcat*, the petition asserted that a hall effect sensor “measured” torque to which patent owner responded that a hall effect sensor alone cannot measure torque. In reply, petitioner **cited deposition testimony of its expert clarifying** that a person of ordinary skill in the art would consider the hall effect sensor to collect the data necessary to measure torque and thus satisfy the relevant aspect of the claim. Petitioner also introduced **additional prior art references** regarding use of hall effect sensors in the measurement of torque.

PO and Dr. Litvin Applied the Wrong “Newness” Standard

- **PO’s Position:** The Board may not consider any argument outside of those explicitly recited within the lowest particular sub-section used to organize the petition in evaluating whether an argument changes a legal ground.
- PO’s argument defies common sense, allows a PO to apply selective amnesia and forget what it just read
- PO’s reliance on *Microsoft* and *Intelligent Bio-Systems* is misplaced
 - Petitioner sought to incorporate by reference arguments relating to **anticipation** into a **separate ground** challenging **a different claim** for **obviousness**. *Microsoft Corp. v. FG SRC, LLC*, 860 F. App’x 708, 713 (Fed. Cir. 2021).
 - Petitioner attempted to argue **obviousness** over a particular reference **in reply where it had only argued anticipation** over that reference in the petition. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016).
- Nothing in *Microsoft* or *Intelligent Bio-Systems* bars the Board from considering other arguments and evidence provided within the same claim or legal ground.

PO's Position Is Unsupported By Caselaw

- **PO's Position:** The Board may not consider any argument outside of those explicitly recited within the lowest particular sub-section used to organize the petition in evaluating whether an argument changes a legal ground.
- PO's remaining caselaw is also unavailing
 - *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1336 (Fed. Cir. 2020) (Board allowed to add its own entirely new ground of obviousness)
 - *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d at 1372-73, 1377 (Fed. Cir. 2016) (the Board was found to have improperly mixed arguments raised in two different grounds of obviousness in the petition to craft its own new theory of unpatentability)
 - *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330-31 (Fed. Cir. 2019) (Petitioner wrongly attempted to discuss a prior art feature that was not discussed at all in the petition)
- Nothing in these case bars the Board from considering other arguments and evidence provided within the same claim or legal ground.

Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “**Analyzes**” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “**services opened by the ONU**” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “**Convert[s] configuration information for the OLT into a message format**” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “**services opened by the ONU**” (Claims 2, 8-9)

The Petition and Dr. Min directly allege that Bernstein “analyzes” the configuration file

c. Element 1[b]

the DPoE system analyzing the acquired configuration file, and obtaining both the configuration information of the ONU and the configuration information of the OLT; and

Bernstein discloses that its DPoE system analyzes the acquired configuration file and obtains both configuration information for the ONU and configuration information for the OLT. Following downloading of the configuration file, Bernstein describes that DPON 40 includes a “DOCSIS-to-PON translator 84” that analyzes the configuration file, obtaining configuration information of both the OLT and ONU, that it then converts “into associated PON parameters 63 that can be used by the OLT 18 and ONU 24.” *Id.*, ¶66 (citing EX1006, 3:53-63).

66. Bernstein discloses that its DPOE system analyzes the acquired configuration file and obtains both configuration information for the ONU and configuration information for the OLT. Following downloading of the configuration file, Bernstein describes that DPON 40 includes a “DOCSIS-to-PON translator 84” that analyzes the configuration file, obtaining configuration information of both the OLT and ONU, that it then converts “into associated PON parameters 63 that can be used by the OLT 18 and ONU 24.” EX1006, 3:53-63.

The Board already acknowledged Petitioner's argument that Bernstein's translator must "analyze" the file

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(together with limitation 1f) that claim 1 differentiates between "analyzing" and "converting," and "[b]ecause analyzing and converting are two separate steps in the claims of the '982 Patent, the terms must mean different things." *Id.* at 29. Patent Owner further argues that Petitioner does not explain why it contends that 'converting' in Bernstein renders obvious 'analyzing' in claim [limitation] 1f." *Id.*

On this record, we agree with the Patent Owner that limitation 1f indicates that the terms analyzing and converting are not the same. Prelim. Resp. 29. Nevertheless, Patent Owner has not cited any language in claim 1, and we do not see any, that precludes the step of analyzing from being part of the process in limitation 1f that performs conversion. *Id.* Limitation 1f, in fact, sets forth that the recited analysis is part of the same process as the recited conversion. Further, here, we have expert testimony on behalf of Petitioner that Bernstein's process, which converts parameters, also analyzes the configuration file. Ex. 1005 ¶ 96. Patent Owner's contrary argument is based on mere attorney argument, which is not evidence. Prelim. Resp. 29; *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974). We determine that, on this record, Petitioner provides a sufficient showing for the recitation of analyzing the acquired configuration file in limitation 1b.

c. Summary

As discussed above, we have not determined whether the recitation of a service auto-configuration method in the preamble of claim 1 is a claim limitation. Thus, we have not determined whether Petitioner has demonstrated a reasonable likelihood of proving that claim 1 would have been obvious over Bernstein alone or in combination with Tsuge. As mentioned, we do not need to make that determination because, as set forth below, we have determined that Petitioner has demonstrated a reasonable

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On this record, we agree with the Patent Owner that limitation 1f indicates that the terms analyzing and converting are not the same. Prelim. Resp. 29. Nevertheless, Patent Owner has not cited any language in claim 1, and we do not see any, that precludes the step of analyzing from being part of the process in limitation 1f that performs conversion. *Id.* Limitation 1f, in fact, sets forth that the recited analysis is part of the same process as the recited conversion. Further, here, we have expert testimony on behalf of Petitioner that Bernstein's process, which converts parameters, also analyzes the configuration file. Ex. 1005 ¶ 96. Patent Owner's contrary argument is based on mere attorney argument, which is not evidence. Prelim. Resp. 29; *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974). We determine that, on this record, Petitioner provides a sufficient showing for the recitation of analyzing the acquired configuration file in limitation 1b.

PO concedes that Bernstein's DPoE system "obtains" both ONU and OLT configuration information from the file

The cited section of Bernstein discusses a "DOCSIS-to-PON translator" that converts parameters from DOCSIS parameters to PON parameters for the OLT or ONU:

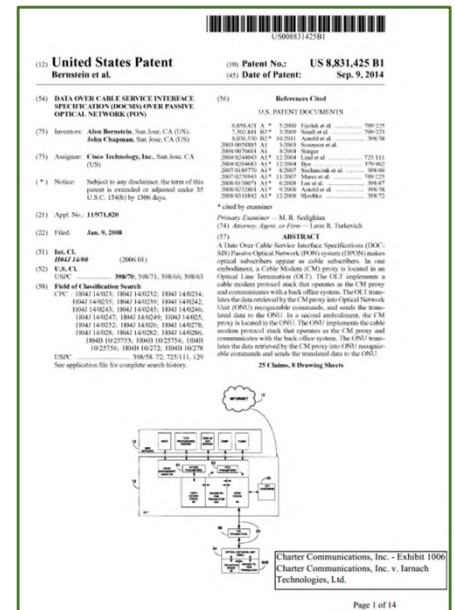
A DOCSIS-to-PON translator 84 is then used for converting any of the parameters 61 obtained by the cable modem proxy 60 into associated PON parameters 63 that can be used by the OLT 18 and ONU 24. Some of the translated PON parameters 63 are programmed into a PON driver 86 for either communicating with the ONU 24 or sent over the optical cable 20 for configuring the ONU 24. The PON driver 86 represents any of the EPON 64, GPON 66, or WDM 68 previously shown in FIG. 2. The translated PON parameters 63 may also be used for operating or configuring OLT hardware 88.

EX1006, 3:53-63; EX2008 ¶47. Though this section describes "converting" and "translating" parameters obtained by a cable modem proxy, it does not discuss "analyzing" that information. EX2008 ¶48. Other than conclusory attorney-argument statements that the "DPOE system analyzes the acquired configuration file," Petitioner has not attempted to explain how Bernstein's disclosure describes the claimed "analyzing." *Id.* Certainly, Petitioner has not introduced evidence from Bernstein proving the claimed "analyzing." *Id.*

- Each claim recites "analyzing" and "obtaining" a single step both ONU/OLT configuration information
 - Claim 1: "the DPOE system analyzing the acquired configuration file, and obtaining both the configuration information of the ONU and the configuration information of the OLT"
 - Claims 5, 6 and 11: "the analyzing unit is configured to analyze the acquired configuration file and obtain both the configuration information of the ONU and the configuration information of the OLT"
- PO concedes ONU/OLT configuration information is obtained by Bernstein's "cable modem proxy" (i.e. DPoE System)

PO also concedes that Bernstein uses DOCSIS configuration files

- The Petition specifically states that Bernstein uses prior art, standard DOCSIS-compliant configuration files, and PO has not contested this fact. Pet. at 38 (citing EX1005, ¶¶86), 44 (citing EX1005, ¶¶97).
- Bernstein is entitled “Data over cable service interface specification (DOCSIS) over passive optical network (PON)
- The '982 Patent itself acknowledges that DOCSIS-compliant configuration files relate to services opened by an ONU. EX1001 at 1:33-2:47 (describe configuration file including service definitions such as “a VLAN identifier of the specific service” and the like).



PO's expert concedes DOCSIS configuration files—like those used in Bernstein—require “analysis” for translation

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51. In contrast, an example of “analyzing” can be seen in the modern DOCSIS specification. For example, DOCSIS 3.1 specifies the cable modem binary configuration file format. EX2011 at 23. In that specification, the configuration file “consists of a number of configuration settings (1 per parameter) each of the form: Type Length Value.” *Id.* For each of the configuration settings, “Type” is a single octet long, “Length” is also a single octet long, but “Value” may range in length from 1 to 254 octets long. *Id.* And within this binary configuration file, “[t]he configuration settings follow each other directly in the file, which is a stream of octets (no record markers).” *Id.* This file structure is given by Figure 253.

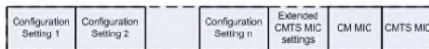


Figure 253 - Binary Configuration File Format

Id.

52. There is no particular order specified in which the individual configuration settings must be arranged (they can be randomly ordered) and, as stated above, the configuration settings run in a stream (a continuum) with no record markers (breaks). *Id.* The DPOE system does not know in advance what is contained in the file nor the order of these settings. *See id.* Hence, prior to any potential needed format converting, and before any provisioning can take place, the file must be “analyzed” so that the DPOE system can parse through the content of the file. Only

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Figure 253 - Binary Configuration File Format

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PO's expert concedes DOCSIS configuration files—like those used in Bernstein—require “analysis” for translation

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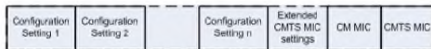


Figure 253 - Binary Configuration File Format

Id.

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13 Q. What are you describing in Paragraph
14 51?

15 A. I am describing analyzing a
16 configuration file and contrasting that to
17 conversion.

18 Q. What type of configuration file are
19 you discussing in Paragraph 51 of your
20 declaration?

21 A. It's the TLV binary config file
22 discussed in DOCSIS 3.1.

6 Q. So the TLV format that you are
7 describing in Paragraph 51 was in effect at the
8 time of the invention, is that correct?

9 A. Yes.

10 Q. And the TLV format you describe in
11 Paragraph 51, that's mandated by DOCSIS, is that
12 correct?

13 A. In Paragraph 51?

14 Q. Yes.

15 A. Yes.

7 Q. You are not contesting that the
8 Bernstein reference discloses a DPOE system,
9 correct?

10 MR. COLLIER: Objection, scope.

11 THE WITNESS: Bernstein discusses
12 their version of a DOCSIS-PON. I believe that's
13 what he called it.

Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “**Analyzes**” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “**services opened by the ONU**” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “**Convert[s] configuration information for the OLT into a message format**” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “**services opened by the ONU**” (Claims 2, 8-9)

The Petition directly alleges that Bernstein teaches “services opened by an ONU” in Sub-Section 1[c]

2. Claim 2

2. The method according to claim 1, wherein, the configuration information of the OLT is configuration information related to services opened by the ONU.

Bernstein discloses that “the configuration information of the OLT is configuration information related to services opened by the ONU.” *See* element 1[c].

For example, the embodiments shown in FIGs. 3, 7 and 8, show an OLT being configured locally with OLT configuration information from a downloaded configuration file. Bernstein explains that EPON systems use the conventional Ethernet model for managing quality of services requirement, such that instead of individual “pipes,” each service is assigned a “priority” within a shared “pipe.” EX1005, ¶71 (citing EX1006, 5:59-6:6). In one example, the downloaded configuration file “may contain a request for a video service at 10 million bits per second (Mbps), a voice service of 100 thousand bps (Kbps), and data service of 50 million bits per second (Mbps).” *Id.* (citing EX1006, 6:7-16). Bernstein’s system translates these requirements into an overall bandwidth requirement for the “pipe” to a given

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ONU, along with priorities for each service. *Id.* (citing EX1006, 6:17-31). This information is formatted into the translation table referenced above and loaded into the OLT to be used when communicating with a given ONU. *Id.* (citing 6:32-57).

PO's expert concedes "services opened by the ONU" are typical services like data, voice and the like

1 A. You're asking me -- rephrase that, please. 2 Q. Sure. 3 After the process defined in 4 Steps S201 through S208 are complete, is the 5 service described in the configuration file 6 operational? 7 A. I did not provide an opinion on this. 8 However, as you can clearly read starting on 9 Line 57, it also indicates that the OLT will also 10 need to be correspondingly configured. 11 Q. So according to this description, 12 configuration of the ONU alone does not make a 13 service operational? 14 A. That's correct. 15 Q. According to this description, a 16 service is only opened after both the ONU and OLT 17 are configured, correct? 18 A. That's what this is implying. 19 Q. What does the phrase services opened 20 by the ONU mean to you? 21 MR. COLLIER: Objection, scope. 22 MR. RECORDATI: Again, he's got an entire 23 argument section related to this limitation.	1 forming an opinion as to what those words 2 MR. COLLIER: Are you asking 3 you asking -- 4 MR. RECORDATI: I'm asking 5 witness. 6 BY MR. RECORDATI: 7 Q. Did you come to a conclusion 8 what the words services opened by the 9 in preparing your declaration? 10 A. Typically, services opened by 11 relates to the technical aspects of the 12 say, requested by a customer. So a customer 13 makes a request for particular services, 14 business office enters those into the system. A 15 configuration file one way or another is 16 generated that would allow those services to be 17 opened. So services opened by the ONU relates to 18 the technical setup of the ONU to allow for 19 whatever services that were subscribed to to take 20 place or to be initiated.	8 examples. 9 Q. Would internet service be an example 10 of a service that a customer may request from 11 within the context of a DPOE system? 12 A. Well, splitting hairs, but obviously 13 if you subscribe to a service provider, you are 14 going to get internet service, subscribing to 15 particular services, for example, IPTV or a 16 multicast service. 17 Q. Would voice over IP be an example of 18 another service a customer may subscribe to? 19 A. Yes. The patent specifically gives 20 sort of enterprise-type services as examples of 21 enterprise-type services with regard to metro 22 ethernet.
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19 (Pages 70 - 73)

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PO's expert concedes the '982 Patent uses existing DOCSIS infrastructure (e.g. services and configuration files)

line terminal ("OLT") via fiber. *Id.* OLTs provide functions of a PON. *Id.* at 1:57-2:47. The ONUs also transmit upstream data to the OLT. The ONUs receive upstream data transmitted by the OLT to the devices connected to these ONUs. *Id.* There are no active connections between a PON between the OLT and the ONUs it services (typical of a PON is a single fiber and an optical splitter). These connections form the

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27. The '982 Patent concerns these types of network architectures. Although many types of PONs exist, but the '982 Patent particularly concerns EPONs ("EPON"). *Id.* The '982 Patent describes provisioning of EPON utilizing DOCSIS Provisioning of Ethernet PON (EPON) for cable multiple system operators ("MSOs") to deploy EPON to their customers while still maintaining their extensive DOCSIS network that was originally designed for legacy HFC networks. *Id.*

28. Provisioning of PON equipment is required so that the equipment is configured to deliver the services that a customer requires at the service levels contracted. *See id.* at 1:16-56. Both the equipment and the configuration are configured to permit transmission of data across the network. The configuration includes establishing service level agreements, including the maximum number of CPE that may be connected to an OLT.

27. The '982 Patent concerns these types of networks. *Id.* at 1:7-12. Various types of PONs exist, but the '982 Patent particularly discuss ethernet PON ("EPON"). *Id.* The '982 Patent describes provisioning the OLT and ONU of an EPON utilizing DOCSIS Provisioning of Ethernet PON ("DPOE") which allows cable multiple system operators ("MSOs") to deploy an all-fiber PON to their customers while still maintaining their extensive DOCSIS back-office infrastructure that was originally designed for legacy HFC networks. *Id.*

28. Provisioning of PON equipment is required to ensure that the equipment is configured to deliver the services that a customer has subscribed to at the service levels contracted. *See id.* at 1:16-56. Both the ONU and OLT must be configured to permit transmission of data across the network. *Id.* at 1:57-64. This configuration includes establishing service level agreements (SLA), data rates, the maximum number of CPE that may be connected to an ONU, packet classifications,

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etc. This process was performed manually, particularly at the OLT, and the configuration process was split into two sperate provisioning steps: one configuration file for the OLT; and a second configuration file to provision the ONU. *Id.* at 1:60-64. Both files were constructed in accordance with the DOCSIS specification using “type length value” (TLV) formats. *See id.* at 1:57-2:47.

Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “**Analyzes**” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “**services opened by the ONU**” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “**Convert[s]** configuration information for the OLT into a message format” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “**services opened by the ONU**” (Claims 2, 8-9)

*The Petition directly alleges that Tsuge provides a “**service auto-configuration**” method/network in VIII(C)(1)(a)*

a. Preamble

To the extent the preamble is limiting, **as discussed herein, Tsuge discloses an auto-configuration method** of a DOCSIS Provisioning Of EPON (DPoE) system. **Tsuge discloses a method for provisioning DOCSIS services on ONU/OLT hardware** in a “GE-PON” (*i.e.*, Gigabyte Ethernet PON), or any other type of PON. EX1005, ¶132 (citing EX1008, 6:47-55 and 14:40-15:22).

MARSHALL
GERSTEIN *ip*

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Pet. at 60, Reply at 2-5 and 14-15, EX1008 at 6:47-55 and 14:40-15:22, *inter alia*.

Subsequently, the OLT **101** executes an OLT/ONU setting sequence by using the obtained CM setting information file (step **930**). Specifically speaking, by using an algorithm 65 shown in FIG. **13** which will be described in detail hereinafter, the OLT **101** sequentially interprets setting parameters included in the CM setting information file. The contents of

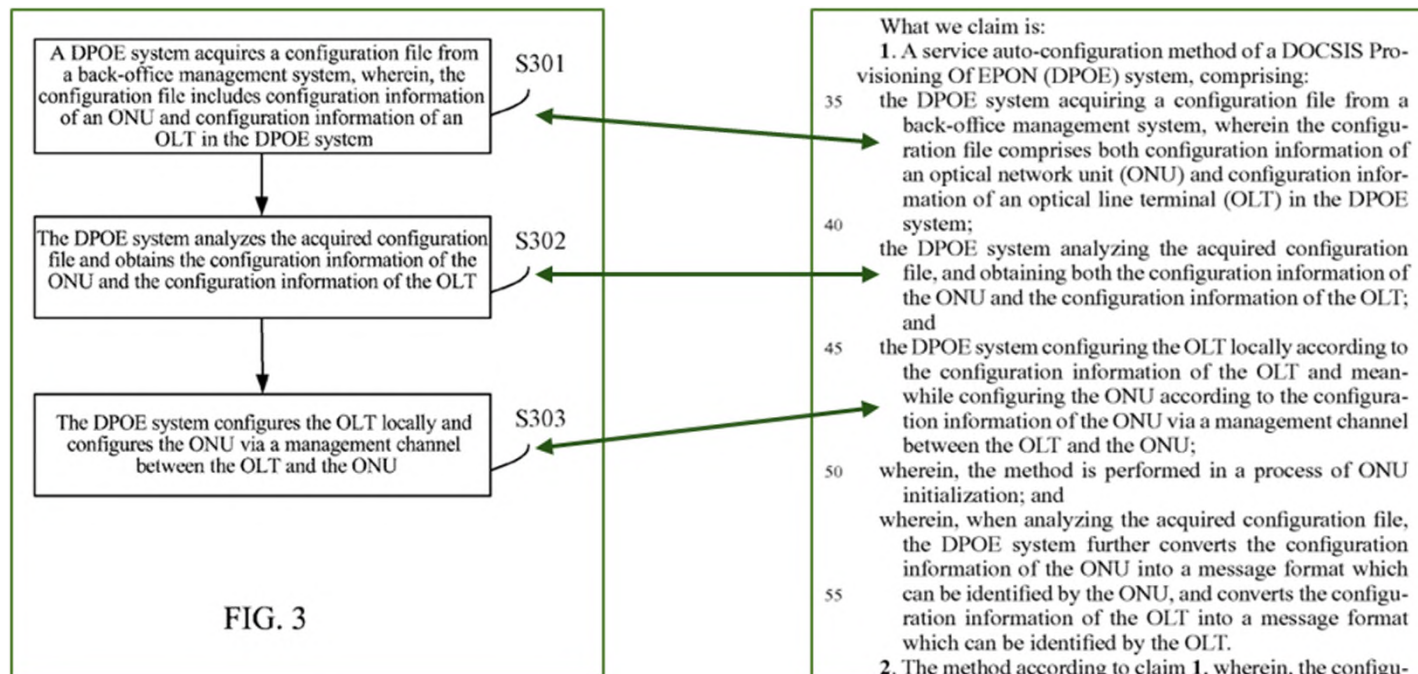
FIG. 10 is a sequence diagram showing an example of the

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PO's Vague Specification Cites Provide No More Detail Than Already Defined In The Body Of The Claims

- Despite multiple opportunities, PO has yet to provide a construction for the term “service auto-configuration,” only cite a few paragraphs of specification
 - Dr. Litvin cites EX1001 at 8:19-31 (“configuration of the OLT and the ONU at the same time through a configuration file including the configuration information of the ONU and the configuration information of the OLT in the DPOE system; [during] the process of the ONU initialization.”) (EX2008 at ¶42)
 - PO alternatively cites EX1001 at 7:65-8:2 (“the present document adds the configuration information about the OLT of the DPOE system in the configuration file, and completes the automatic configuration on the OLT and the ONU at the same time; [during] the process of the ONU initialization[.]”)
- Three already-claimed characteristics:
 - (1) configuration by the DPOE system of both the ONU and OLT at the same time;
 - (2) using a configuration file that includes configuration information of both the ONU and OLT; and
 - (3) configuration of the ONU and OLT occurs during ONU initialization

FIG. 3 Defines a “Service Auto-Configuration” Method Reciting The Same Language As The Body Of Claim 1



Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “Analyzes” the configuration file when converting its contents (Claims 1, 5, 6, 11)
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- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “services opened by the ONU” (Claims 2, 8-9)

The Petition directly alleges that Tsuge “converts configuration information for the OLT” as claimed

h. Element 1[g]

Tsuge's system converts the configuration information of the OLT into a message format which can be identified by the OLT. EX1005, ¶152. Tsuge ex-

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plains the CM setting information is converted “into settings to the OLT itself[.]” *Id.* (citing EX1008, 4:46-51). Figure 9 depicts storage of upstream communication bandwidth setting information as a setting for the LLID in the OLT as part of the OLT-ONU setting sequence 930 (step 1810). *Id.* (citing EX1008, 18:25-36).

tion management server (step 923).

Subsequently, the OLT 101 executes an OLT/ONU setting sequence by using the obtained CM setting information file (step 930). Specifically speaking, by using an algorithm shown in FIG. 13 which will be described in detail hereinafter, the OLT 101 sequentially interprets setting parameters included in the CM setting information file. The contents of

- Petitioner inadvertently cited EX1008 at 4:46-51 instead of at 14:65-15:22 (cited at pp. 60, 62-63, 65-66, EX1005 ¶¶132, 135, 137 and 141)
- *Unified Patents, LLC v. Voice Tech Corp.*, IPR2020-0108, Paper 46 at 13, fn. 4 (P.T.A.B. December 13, 2021)
- Section 1[g] is still explicitly linked to this disclosure through “OLT-ONU setting sequence 930”
- Use of word “reflected” does not exclude conversion

MARSHALL
GERSTEIN *ip*

Pet. at 60, 63, 66, 72-73, Reply at 15-17, EX1005 ¶¶132, 135, 137 and 141, EX1008 at 14:65-15:22, 18:25-36, *inter alia*.

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the setting parameters are converted into the ONU setting information signal 543 or the settings to the OLT itself or into both of them (there is also a possibility that the contents of the setting parameters are not converted into any of them). In the case where they are converted into the settings to the OLT itself, the settings are reflected to the OLT (step 934). In the case where they are converted into the ONU setting information signal 543, an ONU setting request message is transmitted to the ONU 102 as a setting target (step 931). The ONU 102 which received the ONU setting request message reflects the requested setting to itself (step 932) and returns an ONU setting response message toward the OLT (step 933). Each of the ONU setting request message and the ONU setting response message is one of the ONU setting information signal 543.

A specific protocol and a detailed message transmitting and receiving sequence which are used for the ONU setting request message and the ONU setting response message differ depending on the setting contents. For example, in the case of in the GE-PON, the MPCP and the OAM sub-layer of IEEE 802.3ah standard are used as an ONU setting request message and the ONU setting response message accordingly.

FIG. 10 is a sequence diagram showing an example of the

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

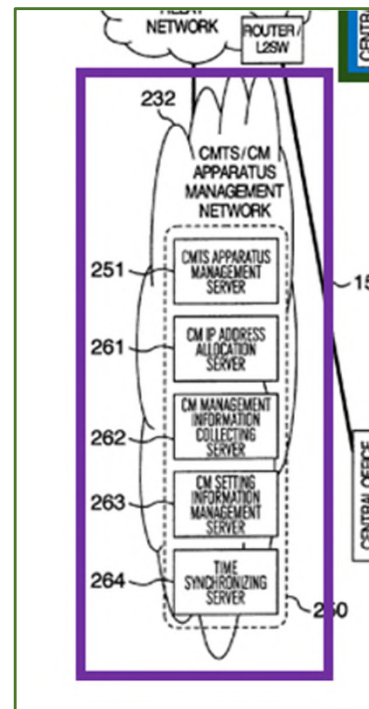
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Contested Issues

- 1 Bernstein provides a “**service auto-configuration**” method/network (Claims 1 and 6)
- 2 Bernstein’s DPoE system “Analyzes” the configuration file when converting its contents (Claims 1, 5, 6, 11)
- 3 Bernstein’s services are “services opened by the ONU” (Claims 2, 8-9)
- 4 Tsuge provides a “service auto-configuration” method/network (Claims 1 and 6)
- 5 Tsuge’s DPoE system “Convert[s] configuration information for the OLT into a message format” (Claims 1 and 5)
- 6 Tsuge’s “**back-office system**” both includes a “DHCP server” (Claims 1, 5, 6 and 7) and “**saves**” configuration files (claim 6)
- 7 Tsuge’s services are “services opened by the ONU” (Claims 2, 8-9)

The Petition directly alleges that Tsuge's back-office system includes a "DHCP Server" and "saves" configuration files

- Neither party has asserted a claim construction requiring the "back-office system" [PURPLE] include a DHCP server
 - Nonetheless, Tsuge's "back-office system" includes a DHCP server labeled "CM IP Address Allocation Server 261"
 - DOCSIS requires a DHCP server
- Dr. Litvin admits DHCP servers allocate IP addresses (EX1017 at 75:3-17)



3 Q. Is it your understanding that a
4 back-office management system must include a DHCP
5 server?
6 A. I didn't form an opinion as to whether
7 or not a back-office system must include a DHCP
8 server.
9 Q. What is a DHCP server?
10 A. It's the device that provides
11 essentially IP addresses as requested.
12 Q. So is it fair to say that a DHCP
13 server allocates IP addresses as requested?
14 MR. COLLIER: Objection, form.
15 THE WITNESS: That's the typical
16 function of a DHCP server, to provide available
17 IP addresses.

The Petition directly alleges that Tsuge's back-office system includes a "DHCP Server" and "saves" configuration files

- The Petition explains how Tsuge's traditional DOCSIS back-office includes a TFTP server that stores saved configuration files for later retrieval during ONU initialization

g. Element 6[f]

Tsuge discloses "the back-office management system is configured to: save the configuration file, and download the configuration file to the DPoE system, wherein the configuration file comprises the configuration information of the ONU and the configuration information of the OLT in the DPoE system." EX1005, ¶171. As explained in more detail above in element 1[a] above, Tsuge discloses a conventional DOCSIS back-office TFTP server [PURPLE] that saves configuration files [DARK GREEN] that contain both configuration information of the ONU

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[ORANGE] and of the OLT, and download that file to the DPoE system in response to a request for a configuration file:

FIG. 11

551	1101	1102	1103	1104
	CMIP ADDRESS	CM SETTING INFORMATION SERVER IP ADDRESS	CM SETTING INFORMATION FILE NAME	ONU INTRINSIC IDENTIFIER
	10.1.2.3	10.100.1.253	default.cm	00-11-22-33-44-55
	10.1.2.4	10.100.1.253	default.cm	00-AA-BB-CC-DD-EE
	10.1.2.129	10.100.1.253	premium.cm	00-12-34-56-78-9A
	...	...	...	...

Id., ¶171 (citing EX1008, 14:40-61, 15:59-62, Figs. 11 and 12 (annotated)). Tsuge further explains the OLT requests and obtains the file using "the TFTP" in accordance with DOCSIS. *Id.* See element 1[a] above.

- File name and server address in columns 1103 and 1102 are provided during an IP address allocation process for an ONU (1101, 1104); previously **saved** file (denoted by name 1102) can be subsequently retrieved from listed server (1102) during ONU initialization

- *Dr. Litvin admits TFPT servers save files (EX1017 at 63:22-66:6)*

22 Q. Is it possible that the TFTP server
23 may store a file and transmit it in response to a
24 request?

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1 MR. COLLIER: Objection, scope,
2 relevance, and foundation.

3 THE WITNESS: The file may be stored.
4 But, as I said, TFTP simply refers to the
5 protocol for requesting and sending a file. It
6 doesn't address file management or storage.

3 Q. Okay. And that traditional DOCSIS
4 configuration file request is in the form of a
5 TFTP request, correct?
6 A. Yes.

Contested Issues

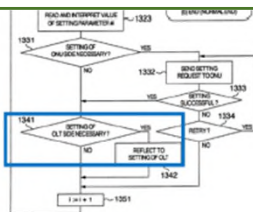
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- 7 Tsuge’s services are “**services opened by the ONU**” (Claims 2, 8-9)

*The Petition directly alleges that Tsuge teaches “**services opened by an ONU**”*

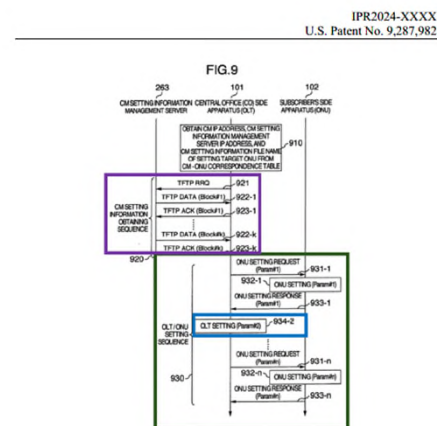
2. Claim 2

Claim 2 is obvious over Tsuge in view of Bernstein and/or the knowledge of one of skill in the art. Tsuge discloses “the configuration information of the OLT is configuration information related to services opened by the ONU.” EX1005, ¶154; *see* element 1[c].

- The '982 Patent did not invent or alter DOCSIS configuration files or services



Id. (citing EX1008, 16:53-17:24, Fig. 13 (annotated)); *see also id.* (citing 14:62-15:22 (“In the case where they are converted into the settings to the OLT *itself*, the settings are reflected to the OLT (step 934).)”



Id., ¶142 (citing EX1008 FIG. 9) (annotated).

A POSA would understand step 934-2 is performed locally because, as shown, “OLT Setting” is conducted on OLT 101 without outside communications. EX1005, ¶143 (citing EX1008, Fig. 9) (annotated); *see also* EX1005, ¶143 (citing EX1008, 18:25-38 (“upstream communication bandwidth setting information is

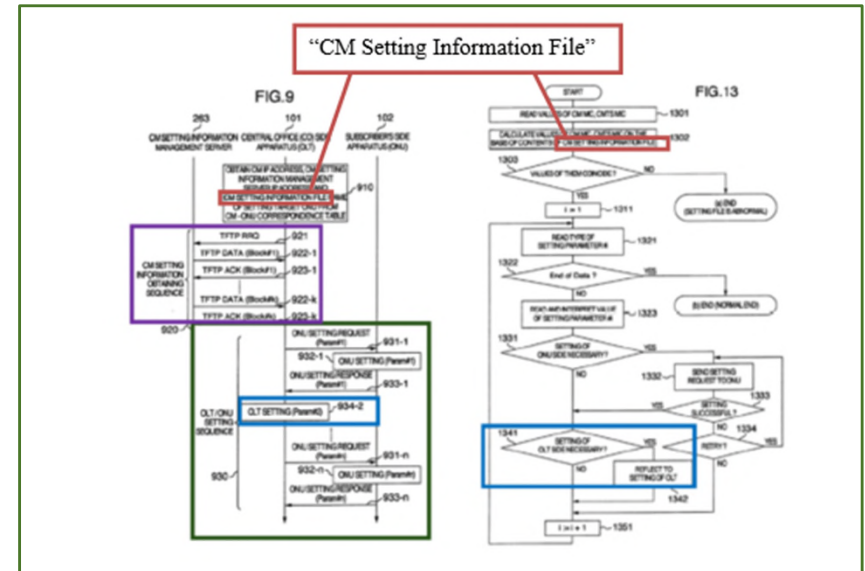
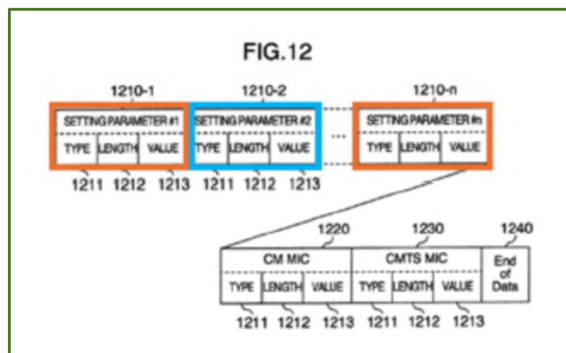
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25 The OLT 101 obtains a CM setting information file corresponding to a certain ONU by the CM setting information obtaining sequence 920 shown in FIG. 9. The setting information of the upstream communication bandwidth of the service flow corresponding to the LLID allocated to the ONU is included in the CM setting information file. Based on the DOCSIS standard, information such as continuous upstream maximum communication bandwidth, upstream maximum burst length, and upstream minimum reservation communication bandwidth is included in the upstream communication
30 bandwidth setting. Those upstream communication bandwidth setting information is stored as setting for the LLID into the OLT by the OLT•ONU setting sequence 930 shown in FIG. 9 (step 1810).

stored as setting for the LLID into the OLT by the OLT-ONU setting sequence 930 shown in FIG. 9 (step 1810)[.]”, Fig. 18 (step 1810)).

The Petition directly alleges that Tsuge teaches “services opened by an ONU”

- Tsuge’s use of the term “CM setting information file” in FIGS. 9 and 13, which refers to Cable Modem settings, confirms that Tsuge uses the DOCSIS configuration format. EX1016, ¶¶67.



- In Fig. 12, Tsuge further describes the format of the “CM Setting Information File” as using the same DOCSIS-standard TLV (Type, Length, Value) format identified by Dr. Litvin (EX2008 ¶¶51-53)

PO's expert concedes "services opened by the ONU" are typical services like data, voice and the like

1 A. You're asking me -- rephrase that, please. 2 Q. Sure. 3 After the process defined in Steps S201 through S208 are complete, is the service described in the configuration file operational? 4 A. I did not provide an opinion on this. However, as you can clearly read starting on Line 57, it also indicates that the OLT will also need to be correspondingly configured. 5 Q. So according to this description, configuration of the ONU alone does not make a service operational? 6 A. That's correct. 7 Q. According to this description, a service is only opened after both the ONU and OLT are configured, correct? 8 A. That's what this is implying. 9 Q. What does the phrase services opened by the ONU mean to you? 10 MR. COLLIER: Objection, scope. 11 MR. RICORDATI: Again, he's got an entire argument section related to this limitation. 12 MR. COLLIER: Well, if you can point him to where it's in his declaration, but I don't think he provided an opinion specifically on a claim term like that. 13 BY MR. RICORDATI: 14 Q. Well, let's take a look. 15 Paragraph 54, Section C in your declaration says, Claim 2 recites "the method according to Claim 1, wherein, the configuration information of the OLT is configuration information related to services opened by the ONU." 16 MR. COLLIER: Can you point to his opinion on that? 17 MR. RICORDATI: In the very next paragraph he says, I have reviewed the petition and Dr. Min's declaration and cannot identify any meaningful discussion of these elements. 18 MR. COLLIER: Okay. So as he described what he believes that claim language means there. 19 BY MR. RICORDATI: 20 Q. Do you have an opinion that they did not meaningfully discuss those elements without	1 forming an opinion as to what those 2 MR. COLLIER: Are you asking -- 3 you asking -- 4 MR. RICORDATI: I'm asking -- 5 witness. 6 BY MR. RICORDATI: 7 Q. Did you come to a conclusion as to what the words services opened by the ONU means in preparing your declaration? 8 A. Typically, services opened by the ONU relates to the technical aspects of the services, say, requested by a customer. So a customer makes a request for particular services, the business office enters those into the configuration file one way or another, generated that would allow those services to be opened. So services opened by the ONU relates to the technical setup of the ONU to allow for whatever services that were subscribed to or to be initiated. 9 Q. Referring again to the patent Column 6, Line 40, it refers to an "enterprise-type service"? 10 A. Yes. 11 Q. Is that an example of a service that a customer might subscribe to? 12 A. It's an enterprise-type service. 13 Q. As you sit here today, are there other examples of services that might be opened by a customer within a DPOE system? 14 A. There are. I don't have any examples. 15 Q. Would internet service be an example of a service that a customer may request from within the context of a DPOE system? 16 A. Well, splitting hairs, but if you subscribe to a service provider going to get internet service, subscribing to particular services, for example, IPTV or a multicast service. 17 Q. Would voice over IP be another service a customer may subscribe to? 18 A. Yes. The patent specifically gives sort of enterprise-type services as examples of enterprise-type services with regard to metro ethernet. 19 Q. I would like to turn to the Tugue reference, which was marked as Exhibit 3.	8 examples. 9 Q. Would internet service be an example of a service that a customer may request from within the context of a DPOE system? 10 A. Well, splitting hairs, but obviously if you subscribe to a service provider, you are going to get internet service, subscribing to particular services, for example, IPTV or a multicast service. 11 Q. Would voice over IP be an example of another service a customer may subscribe to? 12 A. Yes. The patent specifically gives sort of enterprise-type services as examples of enterprise-type services with regard to metro ethernet.
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Thank you
