

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>		Attorney Docket No. _____	
		First Named Inventor Joseph L. Vilella	
		Title Mutually secure optical data network and method	
		Priority Mail Express® Label No. EFS-Web	

APPLICATION ELEMENTS <i>See MPEP chapter 600 concerning utility patent application contents.</i>	Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450										
1. ☒ Fee Transmittal Form (PTO/SB/17 or equivalent) 2. ☒ Applicant asserts small entity status. See 37 CFR 1.27 3. ☐ Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 4. ☒ Specification [Total Pages <u>14</u>] Both the claims and abstract must start on a new page. (See MPEP § 608.01(a) for information on the preferred arrangement) 5. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>6</u>] 6. Inventor's Oath or Declaration [Total Pages <u>1</u>] (including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e)) a. ☐ Newly executed (original or copy) b. ☒ A copy from a prior application (37 CFR 1.63(d)) 7. ☒ Application Data Sheet * See note below. See 37 CFR 1.76 (PTO/AIA/14 or equivalent) 8. CD-ROM or CD-R in duplicate, large table, or Computer Program (Appendix) ☐ Landscape Table on CD 9. Nucleotide and/or Amino Acid Sequence Submission (if applicable, items a. – c. are required) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies	ACCOMPANYING APPLICATION PAPERS 10. ☐ Assignment Papers (cover sheet & document(s)) Name of Assignee _____ 11. ☐ 37 CFR 3.73(c) Statement ☐ Power of Attorney (when there is an assignee) 12. ☐ English Translation Document (if applicable) 13. ☐ Information Disclosure Statement (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached 14. ☐ Preliminary Amendment 15. ☐ Return Receipt Postcard (MPEP § 503) (Should be specifically itemized) 16. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 17. ☐ Nonpublication Request Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent. 18. ☒ Other: <u>Request for First Action Interview</u> <u>Certification and Request for Prioritized Examination</u> _____ _____ _____										
*Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 must be included in an Application Data Sheet (ADS). (2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).											
19. CORRESPONDENCE ADDRESS											
☒ The address associated with Customer Number: <u>175346</u> OR ☐ Correspondence address below											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Name</td> </tr> <tr> <td colspan="2">Address</td> </tr> <tr> <td>City</td> <td>State</td> </tr> <tr> <td>Country</td> <td>Telephone</td> </tr> <tr> <td>Zip Code</td> <td>Email</td> </tr> </table>		Name		Address		City	State	Country	Telephone	Zip Code	Email
Name											
Address											
City	State										
Country	Telephone										
Zip Code	Email										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Signature</td> <td>/Joseph L Vilella/</td> <td>Date</td> <td>2020-12-19</td> </tr> <tr> <td>Name (Print/Type)</td> <td>Joseph L. Vilella</td> <td>Registration No. (Attorney/Agent)</td> <td></td> </tr> </table>		Signature	/Joseph L Vilella/	Date	2020-12-19	Name (Print/Type)	Joseph L. Vilella	Registration No. (Attorney/Agent)			
Signature	/Joseph L Vilella/	Date	2020-12-19								
Name (Print/Type)	Joseph L. Vilella	Registration No. (Attorney/Agent)									

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Joseph	L.	Vilella			
Residence Information (Select One) • US Residency Non US Residency Active US Military Service						
City	San Diego	State/Province	CA	Country of Residence	US	
Mailing Address of Inventor:						
Address 1		Spada Innovations, Inc.				
Address 2		2031 Second Avenue				
City	San Diego	State/Province	CA			
Postal Code	92101	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	175346		
Email Address	joevilella@gmail.com	Add Email	Remove Email

Application Information:

Title of the Invention	Mutually secure optical data network and method		
Attorney Docket Number		Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number			

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16600302	2019-10-11

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Prior Application Status	Pending		<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16600302	Continuation of	16431602	2019-06-04
Prior Application Status	Abandoned		<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16431602	Continuation in part of	15351315	2016-11-14
Prior Application Status	Abandoned		<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15351315	Continuation in part of	14419092	2015-02-02
Prior Application Status	Expired		<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14419092	a 371 of international	PCT/US2013/053389	2013-08-02
Prior Application Status	Expired		<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/053389	Claims benefit of provisional	61678977	2012-08-02
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			<input type="button" value="Remove"/>
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.				
Applicant		1		<input type="button" value="Remove"/>
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.				
<input type="button" value="Clear"/>				
Assignee		Legal Representative under 35 U.S.C. 117		☒ Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:				
<div></div>				
Name of the Deceased or Legally Incapacitated Inventor: <div></div>				
If the Applicant is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Mailing Address Information For Applicant:				
Address 1		<div></div>		
Address 2		<div></div>		
City		State/Province		<div></div>
Country	<div></div>		Postal Code	<div></div>
Phone Number		Fax Number		<div></div>
Email Address		<div></div>		
Additional Applicant Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
<input type="button" value="Remove"/>				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1		<input type="text"/>		
Address 2		<input type="text"/>		
City	<input type="text"/>	State/Province	<input type="text"/>	
Country	<input type="text"/>	Postal Code	<input type="text"/>	
Phone Number	<input type="text"/>	Fax Number	<input type="text"/>	
Email Address		<input type="text"/>		
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Joseph L Vilella/		Date (YYYY-MM-DD)	2020-12-19
First Name	Joseph	Last Name	Vilella	Registration Number
Additional Signature may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Mutually secure optical data network and method		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

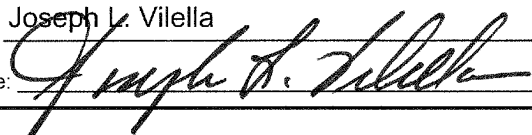
The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
- 2 A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4 A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
- 5 A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
- 6 A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7 A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8 A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
- 9 A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	Mutually secure optical data network and method
<p>As the below named inventor, I hereby declare that:</p> <p>This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____</p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p style="text-align: center;">WARNING:</p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.</p> <p>LEGAL NAME OF INVENTOR</p> <p>Inventor: Joseph L. Vilella Date (Optional): 10/11/2019 Signature: </p> <p>Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.</p>	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e)** (Page 1 of 1)

First Named Inventor:	Joseph L Vilella	Nonprovisional Application Number (if known):	
Title of Invention:	Mutually secured optical data network and method		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:
 - I. ☒ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**
 - i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
 - (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
 - ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.
- II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Joseph L Vilella/	Date 2020-12-18
Name (Print/Typed) Joseph L Vilella	Practitioner Registration Number
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*	
☐ *Total of _____ forms are submitted.	

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

REQUEST FOR FIRST ACTION INTERVIEW (FULL PILOT PROGRAM)

Attorney Docket Number:	Application Number (if known):	Filing date: 2020-12-18
First Named Inventor: Joseph L Vilella	Title: Mutually secure optical data network and method	
<p>APPLICANT HEREBY REQUESTS A FIRST ACTION INTERVIEW IN THE ABOVE-IDENTIFIED APPLICATION. See Instruction Sheet on page 2.</p> <p>1. The application must contain three (3) or fewer independent claims and twenty (20) or fewer total claims.</p> <p>2. The application must not contain any multiple dependent claims.</p> <p>3. By filing this request:</p> <p>Applicant is agreeing to make an election without traverse if the Office determines that the claims are not obviously directed to a single invention; and</p> <p>Applicant is agreeing not to request for a refund of the search fee and any excess claims fee paid in the application after the mailing or notification of the pre-interview communication prepared by the examiner.</p> <p>4. Other attachments: _____</p>		

Signature: /Joseph L Vilella/	Date: 2020-12-18
Name (Print/Typed): Joseph L Vilella	Registration Number
<p>Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>	
☐ *Total of _____ forms are submitted.	

The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Instruction Sheet for Request for First Action Interview (Full Pilot Program)
(Not to be Submitted to the USPTO)

A grantable request must meet the following conditions:

1. The application must be a new non-reissue utility application filed under 35 U.S.C. 111(a) or an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The application must contain three (3) or fewer independent claims and twenty (20) or fewer total claims. The application may not contain any multiple dependent claims.
3. The request must be filed electronically using the Office's electronic filing system, EFS-Web.
4. The claims must be directed to a single invention. If the Office determines that the claims are directed to multiple inventions (e.g., in a restriction requirement), the applicant must make an election without traverse.
5. The request must be filed at least one day before a first Office action on the merits of the application appears in the Patent Application Information Retrieval (PAIR) system (i.e., at least one day prior to the date when a first Office action on the merits, notice of allowability or allowance, or action under Ex parte Quayle, 1935 Dec. Comm'r Pat. 11 (1935) appears in the PAIR system). Applicant may check the status of the application using the PAIR system.
6. The request for a first action interview must include a statement that applicant agrees not to file a request for a refund of the search fee and any excess claims fees paid in the application after the mailing or notification of the Pre-Interview Communication. Any petition for express abandonment under 37 CFR 1.138(d), and request for a refund of the search fee and any excess claims fees, filed after the mailing or notification of the Pre-Interview Communication will not be granted.

For more information, see notice "Full First Action Interview Pilot Program" available on the USPTO web site at http://www.uspto.gov/patents/init_events/faipp_full.jsp

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Mutually secure optical data network and method

Prior Application

This is a continuation of co-pending US Patent Application Serial No. 16600302, filed 2019-10-11, which is a continuation of co-pending US Patent Application Serial No. 16431602, filed 2019-06-04, which is a continuation-in-part of US Patent Application Serial No. 15351315, filed 2016-11-14, which is a continuation-in-part of US Patent Application Serial No. 14419092, filed 2015-02-02, which is a 371 of International Application Serial No. PCT/US2013/053389, filed 2013-08-02, which claims the benefit of U.S. Provisional Patent Application Serial No. 61678977, filed 2012-08-02 all of which are incorporated herein by reference.

Field of the Invention

The instant invention relates to computer networks and more particularly to optical data network traffic routing to multiple users in a local area.

Background

Nowadays a wide variety of entities are moving towards the use of Passive Optical Networks (“PON”) and benefit from the interconnectivity provided by local and wide area networks, and connection to the Internet. Many entities depending on their purpose have many types of devices connected to the network including personal computers, wireless controllers, application servers, printers, scanners, ambient control systems, security cameras and sensors, phone systems, gaming consoles and television sets. The digital signals carried by the PON include converged voice, data and video signal content traffic.

Many individual and business users send and receive digital information which is intended to remain private and can be confidential to the individual users. Such users can be businesses located in the same office building as co-tenants, guests located in a hotel, users located in a commercial, local, state, federal or similar entity, subscribers in a residential entity such as owners or tenants. In the past, reasonable privacy and security can be accomplished by each user connecting directly to a secure service provider carrier using a dedicated headend located in the entity space including a modem, workgroup switches and routing equipment. This equipment typically requires its own cooling equipment. Often the connection throughout the local network and to the carrier is through copper wiring which, due to its electrical resistance, can generate additional heat requiring cooling. All this equipment and cooling capability is

often multiplied by the number of individual tenants in a building, leading to high power consumption.

A typical limiting factor using copper wiring for digital connection lines is bandwidth. Thus, a particular business tenant may elect to upgrade its individual local network and its connection to the carrier using high bandwidth equipment. Increasing the bandwidth often requires additional copper wiring, and more air conditioning.

With the development of optical fiber technology, photonic networks which are typically referred to as Passive Optical Networks can deliver significantly higher bandwidth and lower power consumption. This need for increased speed and sustainability by reduced power consumption has promoted the accelerated adoption of PON in most commercial and residential sectors.

The higher available bandwidth has led to network designs where one or more PON interface routers can distribute data streams to a multiplicity of users through an Optical Line Terminal (“OLT”). Further, this can eliminate the need for a dedicated router for each user. Unfortunately however, this creates an increased cyber-security risk for all those users connected to the PON interface routers since the global routing table can be surreptitiously accessed by a nefarious user, or some cyber-entity mimicking a user on the PON.

The instant invention results from efforts to provide an improved passive optical networking system that addresses one or more of the above problems.

Summary

The primary and secondary objects of the invention are to provide an improved optical networking system. These and other objects are achieved by providing an optical network interface router including at least one virtual routing table for each of a plurality of optical network units to which the interface router is connected.

In some embodiments there is provided a multi-user optical data network apparatus comprises: a plurality of network service carrier lines connected to a passive optical network interface router; at least one uplink connecting said interface router to an optical line terminal; said optical line terminal being connected to a number of passive optical network feeds for carrying a common data feed to a plurality of optical network units each supporting at least one of a plurality of private user devices; said interface router being configured to have at least one virtual routing table for each one of said plurality of optical network units; and, wherein each of

said optical network units is adapted to extract data packets intended for a supported one of said devices.

In some embodiments said interface router is a premise router.

In some embodiments said interface router is further configured to have a routing table routine generating said at least one virtual routing table for each one of said plurality of optical network units.

In some embodiments each of said optical network units provides service to a separate number of private users.

In some embodiments said uplink carries data including digitized voice and video data.

In some embodiments there is provided a multi-user optical data network apparatus comprises: a plurality of network service carrier lines connected to a plurality of passive optical network interface routers; a plurality of uplinks connecting said interface routers to an optical line terminal; said optical line terminal being connected to a number of passive optical network feeds for carrying a common data feed to a plurality of optical network units each supporting at least one of a plurality of private user devices; wherein each of said interface routers is configured to have at least one virtual routing table for each one of said plurality of optical network units to which said each of said interface routers is connected; and, wherein each of said optical network units is adapted to extract data packets intended for a supported one of said devices.

In some embodiments there is provided a digital data network communication method comprises: accepting a plurality of private data streams into a passive optical network interface router serving a plurality of private users through a plurality of optical network units; aggregating said private data streams into a combined data feed; routing said data feed to at least two of said plurality of optical network units; extracting from said data feed a first one of said private data streams; wherein said routing comprises: generating an independently unique virtual routing table for each of said plurality of optical network units; tagging ethernet frames intended for a first one of said plurality of optical network units according to entries in a first one of said virtual routing tables associated with a first one of said optical network units; distributing said tagged ethernet frames according to said first one of said virtual routing tables.

In some embodiments said distributing comprises associating destinations listed in said first one of said virtual routing tables with said first one of said optical network units.

In some embodiments each of said optical network units provides service to a separate number of private users.

In some embodiments said accepting comprises: interfacing a plurality of service provider data lines through a single headend.

In some embodiments said interfacing comprises: utilizing at least one premise router and a radio frequency video converter; and, feeding an output of said at least one premise router through an optical line terminal.

In some embodiments said interfacing further comprises: feeding an output of said converter through said optical line terminal.

In some embodiments said aggregating comprises using an enterprise aggregating switch.

The text of the original claims is incorporated herein by reference as describing features in some embodiments.

Brief Description of the Drawings

Fig. 1 is a functional block diagram of several data service providers supplying multi-tenant building through a single headend according to an exemplary embodiment of the invention.

Fig. 2 is a functional block diagram of main point of entry room for the data network servicing a multi-tenant building according to an exemplary embodiment of the invention.

Fig. 3 is a functional block diagram for a premise router according to an exemplary embodiment of the invention.

Fig. 4 is a functional block diagram of an optical line terminal servicing multiple tenant users with a common data feed according to an exemplary embodiment of the invention.

Fig. 5 is a functional block diagram of an optical line terminal aggregating data and video streams into a common optical data feed according to an exemplary embodiment of the invention.

Fig. 6 is a functional block diagram of an optical network unit interfacing a tenant private network with a common optical data feed according to an exemplary embodiment of the invention.

Description of the Exemplary Embodiments

Referring now to the drawing, there is illustrated in Figs. 1 - 6 the components of a system **1** used to provide a mutually secure, shared Local Area Network ("LAN") implementation which can supply a multi-tenant site such as an office building **100** with

converged voice, data and video signal content traffic at gigabit speeds to a plurality of mutually secure end point users such as building tenants having multiple end user devices such as computers, access points and wireless controllers, application servers and printers, and television sets.

As shown in Figure 1, a single building **100** can have multiple tenants **102, 104, 106** such as individual companies, each potentially having multiple digital network devices. The system offers each tenant the ability to specify and use their own private address space even if the data feed overlaps with neighboring tenant on the same network, and the transmission of converged content traffic over the shared infrastructure while maintaining the separation and security of the individual tenant content traffic.

The system relies upon a collection of standards-based technologies that are designed and implemented to provide a point-to-multipoint networking through a single aggregation switch that is capable of providing thousands of IP voice, data, and video connection ports.

In a basic configuration, the aggregate downstream rate can be 2.5 Gbps, while the upstream rate can be 1.25 Gbps. Each of the connections can be adapted to support high-bandwidth multimedia applications on a single optical fiber over a distance of 20km or more. Telecommunications service traffic that includes Internet, public switched telephone networks, and broadcast/cable television **108, 110, 112** for the building are provided by one or more commercial carriers **114, 116, 118**. The telecommunications services carrier lines **120,122,124** enter the building **100** at a Main Point Of Entry (MPOE) room **126** and terminate into headend equipment **128**. From the headend equipment, the voice, video and data content traffic can be distributed to each of the tenants **102, 104, 106** over data feeds carried by fiber optic cabling **130, 132, 134**.

As shown in Figure 2, the secure, shared multi-tenant LAN architecture can include a Passive Optical Network (“PON”) interface router, which for clarity in this embodiment is a single premise router **140**, an aggregation switch referred to as an Optical Line Terminal (OLT) **146**, a plurality of end user terminal devices such as computers, telephones and televisions located within the physically separate tenant **102, 104, 106** spaces, and an optical distribution network that consists of splitters and fiber cabling infrastructure. It shall be understood that a plural number of interface routers such as premise routers can be used.

The headend equipment **128** receives the plurality of telecommunications service carrier lines **120,122,124** from the separate carrier providers **114, 116, 118**. An RF-based video signal can be supplied by one or more of the carriers to the headend equipment via a broadband coaxial

cable **130**. The interface to the carrier lines within the headend equipment is the premise router **140**.

The premise router **140** can be configured with Virtual Routing and Forwarding (VRF) as described in RFC 4381 and RFC 4382, and utilizes Virtual Local Area Network (VLAN) tagging to separate and manage the distribution of the voice, video and data content traffic to each of the users. The VLAN-tagged voice, video, and data content traffic is connected to the Optical Line Terminal (OLT) **146** through an uplink **142** that provides primary communication. Optionally, a secondary uplink **144** may be employed as a backup communication path.

The OLT **146** can be powered by dual 48 VDC power feeds **148**, **150** from rectifier modules **152**, **154** that are attached to separate AC Mains **156**, **158** through an uninterruptible power supply **160**. The OLT has a minimum of eight optical ports, but can have well over fifty such ports. Each port delivers a beam of light that contains the aggregated data for a multiplicity of users. The aggregated data may or may not be encrypted based on the type of PON.

The OLT **146** takes the VLAN-tagged voice, video, and data content traffic **142**, **144** and processes each of the ethernet frames by first optionally encrypting them, then converting them into light, and outputting them as a photonic broadcast stream to the appropriate initial passive optical network feeds **162**, **164**, **166**, **168**, **170** that connects to an optical distribution patch panel **172**. The optical distribution patch panel **172** is used to provide the ability for cross-connecting the initial feeds **162**, **164**, **166**, **168**, **170** to the distribution feeds **174**, **176**, **178**, **180** that traverse the distance to the remotely located tenants **102**, **104**, **106**. A tenant **106** requiring larger bandwidth can accept multiple distribution feeds **178**, **180**.

In the case where a carrier provider **114** supplies an RF-based video signal **130**, the headend equipment **128** receives the RF-based video signal and converts it into light by processing the electrical analog signal and using it to modulate a laser which outputs the equivalent video photonic stream. This new video photonic stream is then combined with an initial feed **162** which results in a modified initial feed **164** that contains a photonic broadcast stream that contains the voice, video and data content traffic that is then fed into the optical distribution patch panel **172**. Of course in some instances the initial feed can contain digitized voice, video and data in which case no bypass of the OLT is necessary.

As shown in Figure 3, the premise router **140** can be the interface to each of the commercial carrier providers **114**, **116**, **118** through either a packet-switched or a leased-line Wide Area Network (WAN) interface in order to utilize the telecommunications services provided over carrier lines **120**, **122**, **124**. Logical circuits can make connections between the

premise router **140** and carrier providers **114, 116, 118**, utilizing a shared-bandwidth connection that may be shared with other carrier customers and could potentially affect quality of service and bandwidth availability. The leased-line connection provides a direct interface access to the carrier and eliminates the possibility of being affected by other carrier customers. The premise router **140** can be configured to run a routing table routine **412** that accesses the virtual routing table instantiations to create virtual routing tables **420, 422, 424, 426** for each Optical Network Unit (ONU) serving a tenant. This configuration provides for creation of multiple routing tables, one for each ONU, within the single premise router **140**. This capability supports the overlapping of IP addresses for any of the tenants because the routing instances are independent. In this way, data traffic intended for one tenant is automatically isolated from traffic intended for other tenants. Furthermore, queries emanating from one tenant are identified so that one tenant cannot mimic the identity of another. In other words, unique routing for each tenant effectively isolates its traffic from other tenants, vastly improving the networks defense against cyber-attack.

Thus, the premise router processor **410** gets and puts the tenant-specific routing information through the routing table routine **412** into the appropriate virtual routing tables **420, 422, 424, 426**. The updated virtual routing tables are used to uniquely VLAN-tag the voice, video, and data content traffic that is sent and received through the uplinks **142**, to the OLT **146**.

In this way, the overlapping IP address on a single PON infrastructure allows each tenant connected to the infrastructure to transmit and receive information to any of the carriers. Thus all the tenants in a building can simply connect to the PON infrastructure without the need for their own dedicated headend.

A configuration file loaded into the premise router contains the commands to implement the virtual routing tables for each of the ONUs providing service to the tenant users. By way of example, the following pseudo-code implements independent virtual routing tables for two ONUs serving two users, namely “Tenant A” and “Tenant B”. Comment lines begin with an exclamation point (“!”):

!-- Begin gateway configuration and programming

!-- Configure gateway identity

!-- Establish express forwarding to optimize network performance and scalability

!-- For each tenant (1..n) Do

```
!--- Instantiate virtual route table for the Tenant
!--- Enable VPN (Virtual Private Network) for the Tenant
!--- Establish routing and forwarding for the virtual routing table
!--- Creates lists of import and export route-target extended communities
!--- End Do

!--- Set IP (Internet Protocol) address, netmask and enable IS-IS routing

!--- For each tenant (1..n) Do
!--- Establish loopback identifier for the Tenant
!--- Enable VRF (Virtual Routing and Forwarding) for the Tenant
!--- Associate the VRF instance with an interface or sub-interface.
!--- Loopbacks use the same IP address because they belong to different
    Tenant VRF's
!--- Broadcast to all hosts on the subnet
!--- End Do

!--- Define and configure the gateway ingress interface
!--- Set bandwidth
!--- Config IP address and netmask
!--- Enable MPLS (MultiProtocol Label Switching)

!--- Enables logging of BGP (Border Gateway Protocol) neighbor resets.
!--- Adds an entry to the BGP or multiprotocol BGP neighbor table
!--- Enables BGP sessions to use a specific operational interface for TCP
    (Transmission Control Protocol) connections

!--- Enter address family configuration mode

!--- Sends the community attribute to a BGP neighbor

!--- For each tenant (1..n) Do
!--- Set the address family for the tenant
!--- End Do

!--- Use longest prefix matching or default route

!--- end gateway configuration and programming
```

The above example shows that the premise router **140** can be programmed to create an independent virtual routing table for each user ONU. Thus, each user is effectively encased within its own separate routing environment, vastly restricting access by cyber attackers to the PON.

Figure 4 represents the Passive Optical Network infrastructure which is an optical distribution network used to convey the photonic broadcast stream feeds that contain the

encrypted data packets such as VLAN-tagged ethernet frames **300, 302, 304, 306** that are distributed back and forth between the various tenant spaces **102, 104, 106** and the OLT **146**. Essentially, the OLT can broadcast the combined encrypted VLAN-tagged ethernet frames **300, 302, 304, 306** over the distribution feeds **174, 176, 178, 180** to a number of splitters **308, 310, 312, 314**.

Each splitter **308** can replicate the incoming photonic broadcast stream equally over each of its drop lines **320, 322, 324**. The splitter **308** can attach to the simplex, single-mode fiber from the OLT **146** and can passively redistribute the incoming light stream up to 64 times. The splitter is a Planar Lightwave Circuit (PLC) that is constructed using silica glass waveguide circuits and aligned fiber optic pigtailed that are all integrated inside of a single package. The attenuation of the light signal through the PLC of the splitter **308** is symmetrical in both directions. The signal loss from a 1x8 PLC splitter is expected to be less than one dB greater than what would be expected from a perfect splitter, approximately 10 dB. A typical 1x32 PLC splitter shall have approximately 17 dB or less.

Each of the outputs from the optical splitter can be an individual simplex, single-mode fiber called a drop line **320, 322, 324**. The drop lines can be routed and fed into the appropriate tenant physical space **102, 104, 106** and terminated into the tenant's dedicated Optical Network Unit (ONU) **330, 332, 334**.

Each ONU **330, 332, 334** is operated so that it utilizes the VLAN-tagging to select those of the incoming ethernet frames assigned to the particular tenant, and then removes the encryption from the selected ethernet frames. Thus, each ONU strips out or extracts only those incoming frames that are intended for the particular tenant. The decrypted ethernet frames **301, 303, 305** are then made available **340, 342, 344** for the tenant's IP/ethernet end-user equipment. Those frames not assigned to the particular tenant are ignored and cannot be decrypted by the particular tenant. In other words, a first subset of the frames can be associated with a first piece of end-user equipment and a second subset of the frames is associated with a second piece of end-user equipment. The first and second pieces of equipment can be common to a single tenant or can be split among separate tenants.

In other words, for example, tenant A **102** gets supplied to its ONU **330** all incoming encrypted frames **300, 302, 304, 306** via its drop line **320** including those frames that are intended for it **300, 306** and those frames that are unintended for it **302, 304**. The ONU strips out its intended encrypted frames **300, 306** and decrypts them to form its intended decrypted

frames **301** which it makes available to Tenant A's dedicated, private data line **340**. The ONU also encrypts outgoing frames.

As shown in Figure 5, the OLT **146** that typically resides in the MPOE room **126** can be a key component of the headend equipment **128**. The OLT **146** can perform as the Layer-2 workgroup switching mechanism for voice, video and data content traffic that is sent and received from the individual tenants.

The OLT **146** equipment can be a chassis having multiple slots used to host circuit boards that perform various functions. Operations of the OLT are managed and controlled by a processor **500**. A backplane **502** of the OLT can provide the communication path for all of the control, management, and data signals between the circuit boards installed within the OLT. A network interface **504** provides the interface to/from the primary uplink **142** and backup uplink **144** connections to the premise router **140**. A switching fabric component **506** can be used to encrypts the VLAN-tagged ethernet frames using the appropriate symmetric key for a specific tenant and sends the result to an optical conversion component **508** for transmission to the tenant. The content traffic on the switching fabric component **506** is encrypted for each tenant location before being transmitted over the shared optical distribution network. Encryption of the layer-2 ethernet frames is used to provide the confidentiality of each tenant's signal traffic.

A symmetric-key algorithm can be used for the encryption of the ethernet frame data packets. This particular implementation utilizes a fixed block size of 128-bits and a key size of 128-bits that operate on a 4x4 column-major order matrix of bytes. It performs 10 cycles of transformation rounds that convert the input plaintext into the final output of ciphertext. Each round can consists of:

- a. First, a byte substitution function is performed where each byte in the state matrix is replaced using an 8-bit substitution.
- b. Next, each of the rows of the state are shifted by a certain number of steps. The first row is left unchanged. Each byte of the second row is shifted one to the left. Similarly, the third and fourth rows are shifted by offsets of two and three respectively. Row n is shifted left circular by n-1 bytes.
- c. Finally, the columns of the state are mixed by combining the four bytes in each column. The four bytes of each column of the state are combined using linear transformation. Encryption is used to specifically prevent man-in-the-middle attacks. Additionally, the PON configuration also supports IEEE 802.1x authentication in order to provide provide port based

Network Access Control to limit network access, with features like IP//MAC address limiting to secure the network from unauthorized/malicious users.

The optical conversion component **508** of the OLT **146** can convert the electrical signals of the encrypted VLAN-tagged ethernet frames and output them over the initial feeds **162, 166, 168, 170** as modulated optical signals.

In the case where a carrier provider **114** supplies an RF-based video signal **130** to the headend equipment **128**, the signal is connected to a laser transmitter **520** where the input broadband signal is used to modulate a laser. The modulated output of the laser is a low-level photonic light stream. The photonic light stream is sent to an erbium-doped fiber amplifier **522**, where the signal is increased to approximately 30 dBmV. The resulting amplified video signal is then overlayed on an initial feed **162** through the use of a wave division multiplexor combiner **524**. The output from the wave division multiplexor combiner **524** is a feed line **164** that contains encrypted VLAN-tagged ethernet frames and a laser-modulated, RF-based video signal.

As shown in Figure 6, each tenant can have one or more of an ONU **330** that accepts drop line **320** connections. The ONU **330** terminates optical fibers from a splitter **308** and sends/receives decrypted ethernet frames **340** to the tenant's IP/ethernet equipment, and RF video signals **656** to the tenant's television. The ONU has a processor **600** which controls and manages all activity of the ONU by directly communicating all of the control and management signals **602, 604, 606** to/from its internal components **610, 612, 640**. The ONU receives the photonic light stream transmitted over the drop line **320**. The optical converter **610** examines the encrypted photonic light stream that enters the component. If the VLAN-tagged ethernet frame has been encrypted with the same symmetric key, it indicates that the VLAN-tagged frame belongs to the tenant of that ONU. After the optical converter **610** performs the decryption, the VLAN-tagged ethernet frame is sent to the network interface **612** of the ONU via the direct communication path **608**. The network interface **612** demultiplexes the electrical signal to divide out baseband telephony/data signals from broadband video channels. The network interface sends/receives the VLAN-tagged ethernet frames to the appropriate physical connection interface **622, 632, 652**. The ONU can supply a basic 802.3 ethernet interface **622**, or an 802.3 ethernet interface that include power-over-ethernet (PoE) capability **632**, or an RF-based video F-Type interface **652** to transmit the RF-based video signal **656**. The PoE port injector **640** implements the Power-Over-Ethernet and Power-Over-Ethernet Plus based upon the IEEE 802.3af-2003 and IEEE 802.3at-2009 standards respectively.

In this way, the above described system empowers a multi-tenant building **100** with an environment to securely host individual tenant data traffic with overall network flexibility. This ability of the system allows it to leverage the high bandwidth and energy efficiency of passive optical network equipment for the entire building. Because optical bandwidth is comparatively unlimited, existing systems often do not utilize this capacity. Thus, the high bandwidth capability of optical fiber can be leveraged to route all traffic optically and uniformly throughout the building on an aggregated feed. Each tenant can extract its share of the traffic from the feed. In this way, a single headend having reduced air conditioning requirements can be located at the building's main point of entry, and no additional air conditioning is needed at the individual tenant spaces for what would have been headend-type network equipment.

While the preferred embodiment of the invention has been described, modifications can be made and other embodiments may be devised without departing from the spirit of the invention and the scope of the appended claims.

What is claimed is:

CLAIMS

1. A multi-user optical data network apparatus comprises:

accepting at least one private data stream of a plurality of data streams into at least one passive optical network interface router serving a plurality of private user devices through a plurality of optical network units (ONUs);

configuring said at least one passive optical network interface router to virtually separate the information intended for at least one of said plurality of private user devices, wherein said configuring comprises:

generating an independently unique virtual routing table for said at least one of said plurality of private user devices using Virtual Routing and Forwarding (VRF);

uniquely tagging the ethernet frames contained in said at least one private data stream and intended for said at least one of said plurality of private user devices according to the entries of said virtual routing table associated with said at least one private user device using Multi Protocol Label Switching (MPLS) to form MPLS tagged data packages;

sending said MPLS tagged data packages to a passive optical networks optical line terminal (OLT);

aggregating within said OLT said MPLS tagged data packages into a common data feed that also contains ethernet frames without MPLS tags;

distributing said common data feed to said plurality of ONUs;

wherein said distributing comprises:

replicating said common data feed using at least one optical splitter connected to said plurality of ONUs;

extracting, from at least one of said plurality of ONUs, from said common data feed, those MPLS tagged data packages intended for said at least one of said plurality of private user devices.

2. The method of Claim 1, wherein said at least one of said plurality of optical network units provides services to at least one of a separate number of private users.

3. The method of Claim 1, wherein said accepting further comprises:

interfacing at least one of a plurality of service data lines through a single headend.

Mutually secure optical data network and method

ABSTRACT

A digital optical data network system for improving information security in Passive Optical Networks (“PON”) by providing virtual information separation in the router, such as a premise router, or routers interfacing the entire PON, such as by utilizing virtual routing and forwarding, thus allowing safe data traffic between multiple carriers, service providers accessing the PON and multiple end users on the PON such as tenants in a building, employees of a business entity, or subscribers in a residential community.

190072

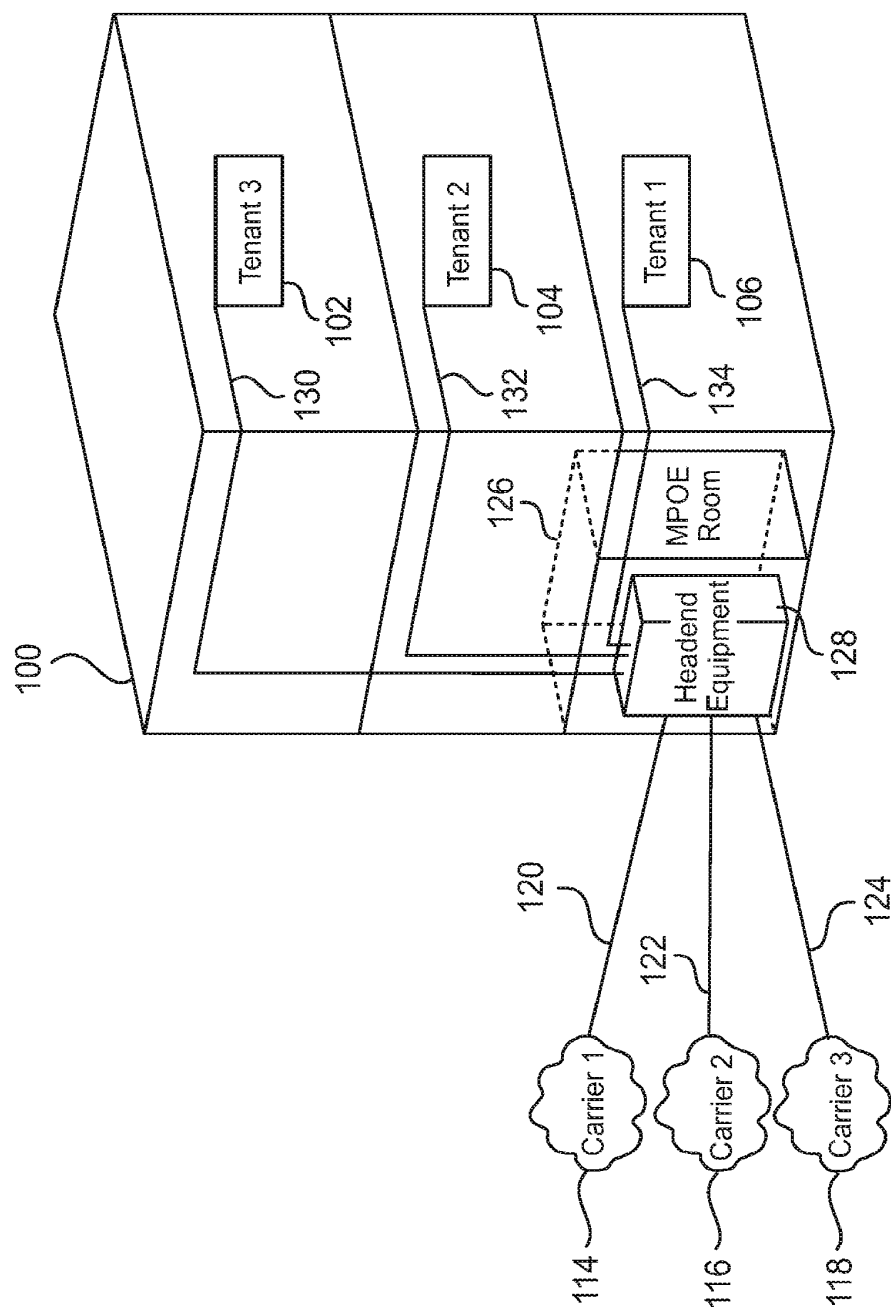


FIG. 1

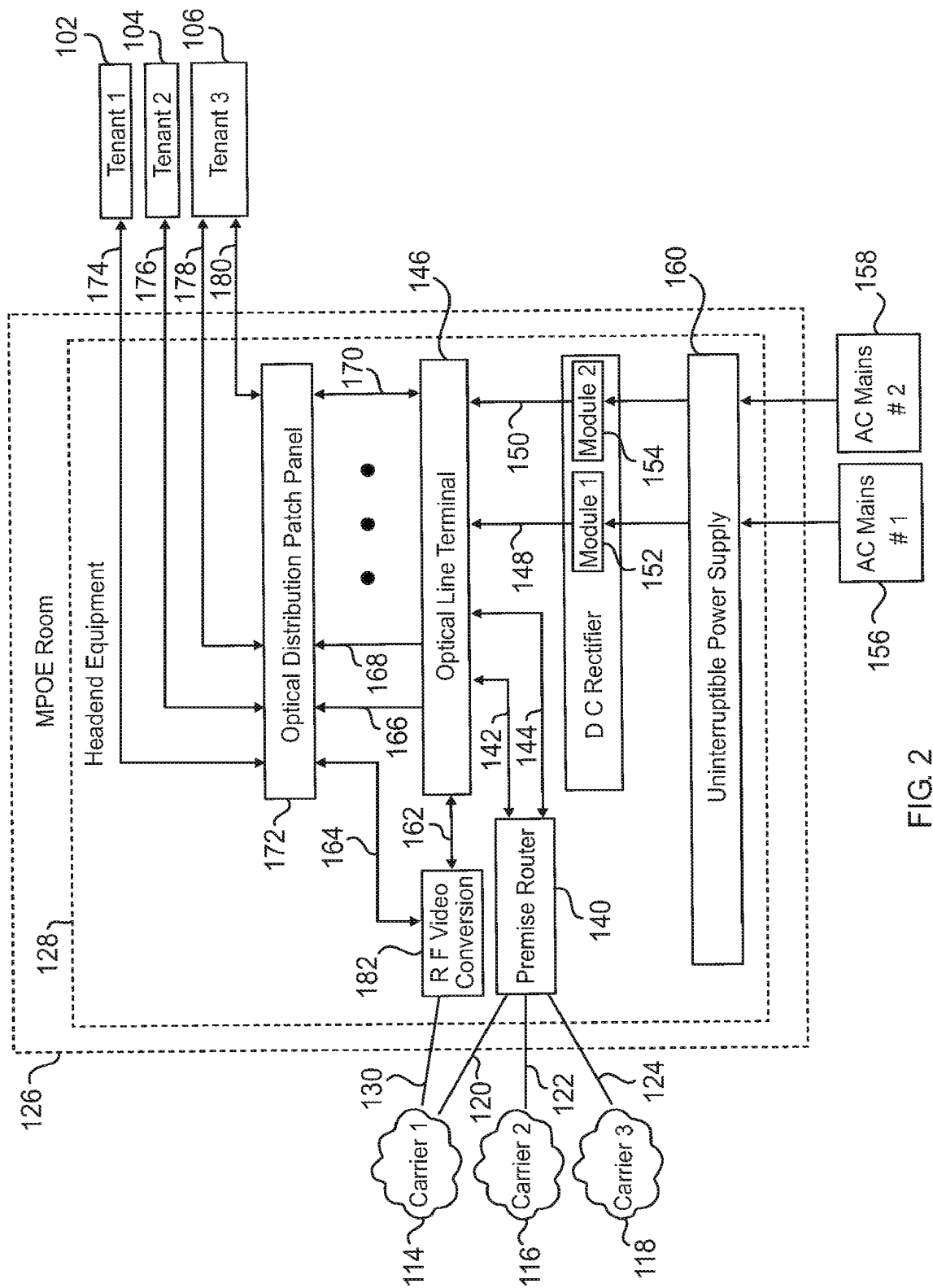


FIG. 2

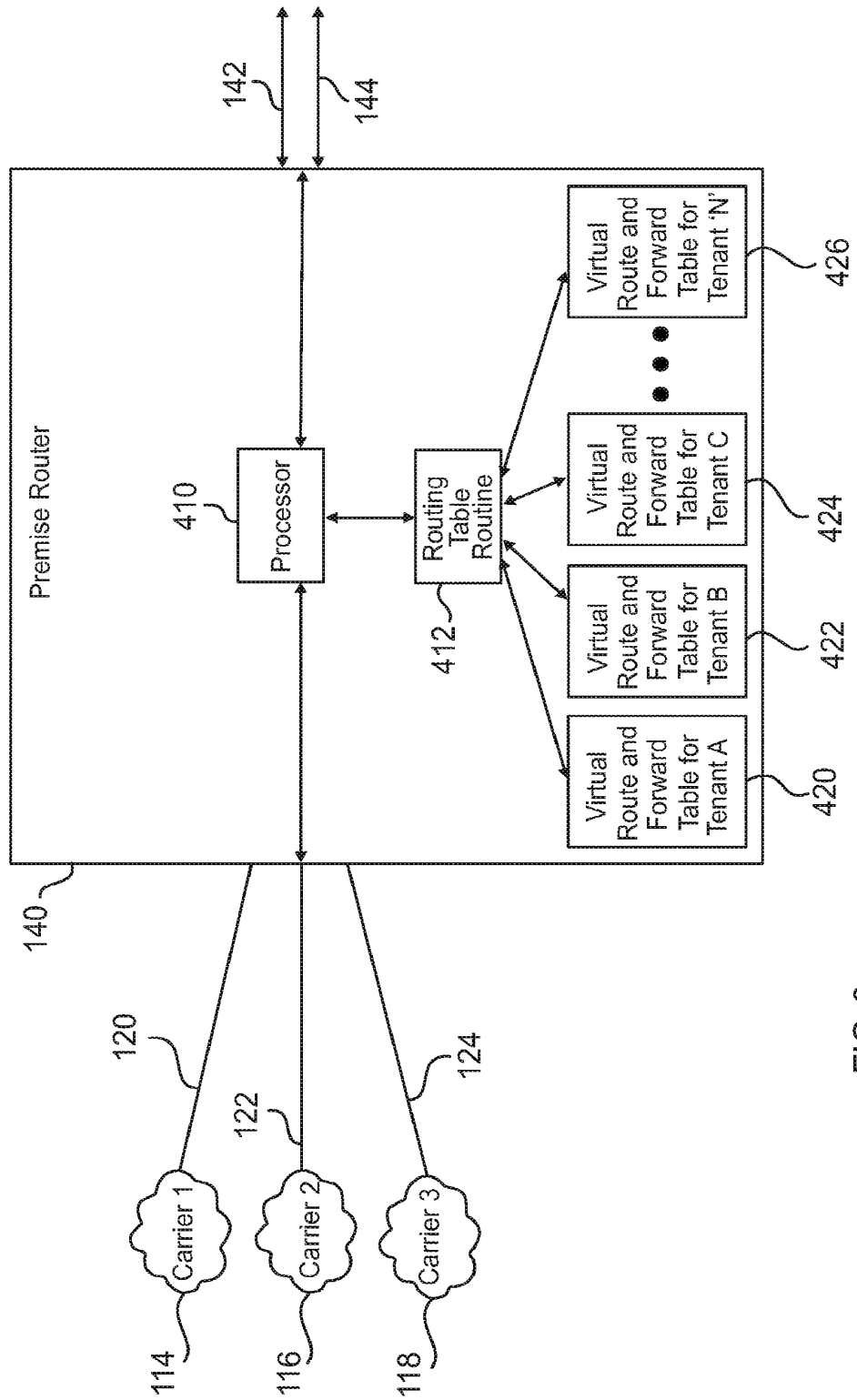


FIG. 3

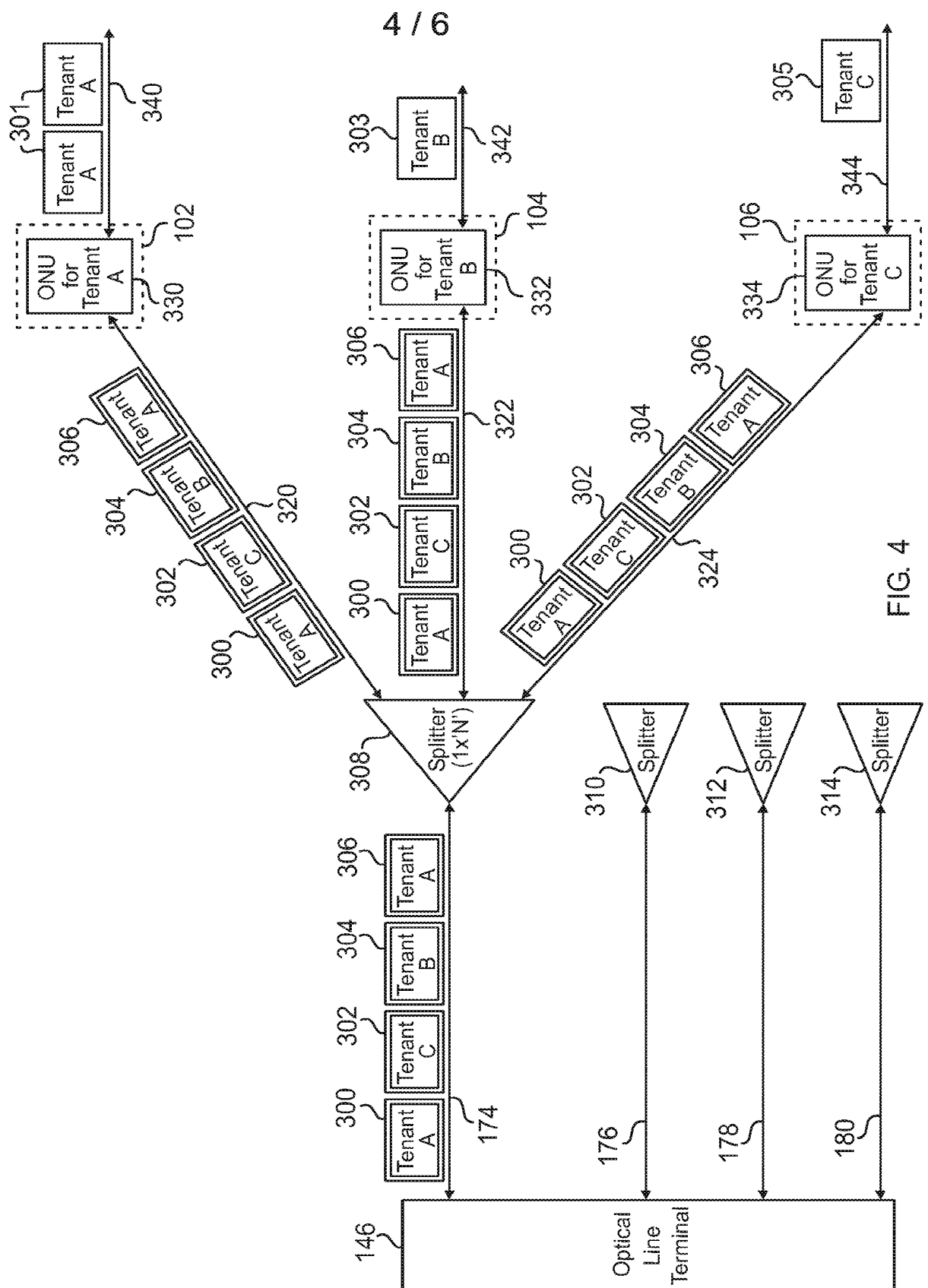


FIG. 4

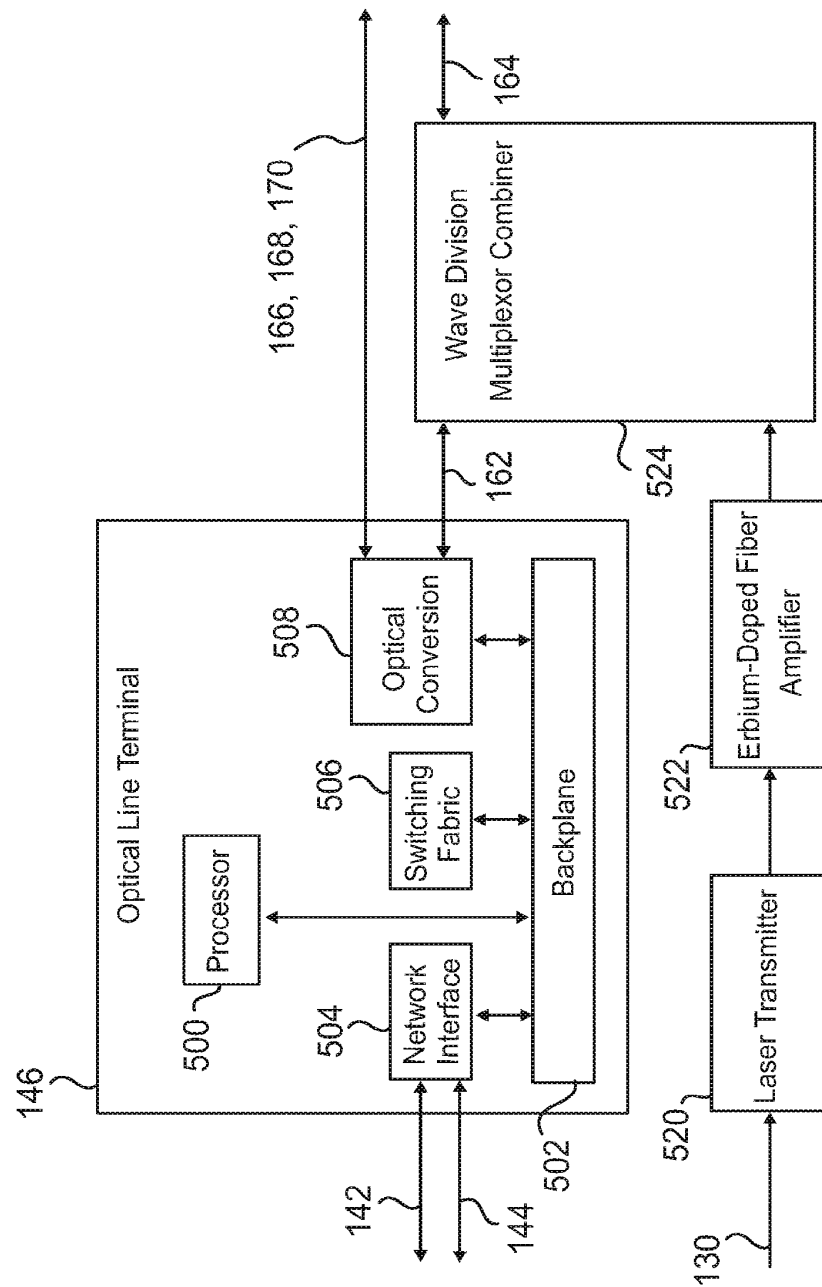


FIG. 5

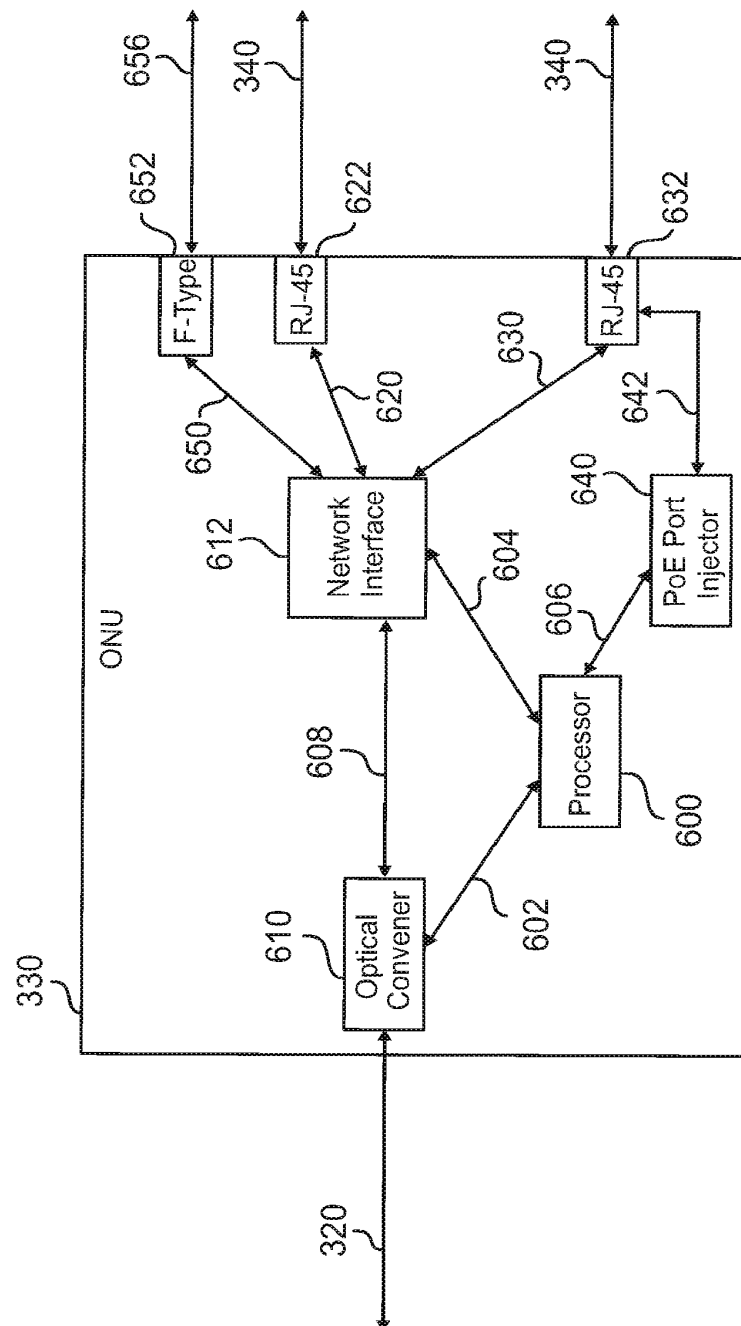


FIG. 6

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Mutually secured optical data network and method		
First Named Inventor/Applicant Name:		Joseph Louis Vilella		
Filer:		Joseph L. Vilella		
Attorney Docket Number:				
Filed as Small Entity				
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	80	80
UTILITY SEARCH FEE	2111	1	350	350
UTILITY EXAMINATION FEE	2311	1	400	400
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2100	2100
Pages:				
Claims:				
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				3000

Electronic Acknowledgement Receipt	
EFS ID:	41440301
Application Number:	17128042
International Application Number:	
Confirmation Number:	3307
Title of Invention:	Mutually secured optical data network and method
First Named Inventor/Applicant Name:	Joseph Louis Vilella
Customer Number:	175346
Filer:	Joseph L. Vilella
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	19-DEC-2020
Filing Date:	
Time Stamp:	13:57:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 3000
RAM confirmation Number	E2020BIE05108287
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	Vilella_16600302_Continuation_Utility_Patent_Application_Transmittal.pdf	280559	no	2
			bacec30a36f774b19919887267db4b0d67f91167		
Warnings:					
Information:					
2	Application Data Sheet	Vilella_16600302_Continuation_ADS.pdf	1256254	no	9
			e4b86aaec3c3454bd4efc35330d1283e2fcd0987		
Warnings:					
Information:					
3	Oath or Declaration filed	Vilella_16600302_Continuation_Oath.pdf	95355	no	1
			43be14b603cd82601a7701fb6fee297157c4105c		
Warnings:					
Information:					
4	TrackOne Request	Vilella_16600302_Continuation_TrackOne_Examination.pdf	103135	no	2
			98d4777c8e857111d6816617bc5f09643b07e2fd		
Warnings:					
Information:					
5	First Action Interview - Enrollment Request	Vilella_16600302_Continuation_Request_First_Action_Interview.pdf	229166	no	3
			8d6a5ef703405e0ef372d799ed007f4d21571614		
Warnings:					
Information:					
6		Vilella_Continuation_Specification_claims_abstract.pdf	124459	yes	14
			2d333c6f167f52cf5235f5ef0db1f15c26d04a38		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	

	Specification		1	12
	Claims		13	13
	Abstract		14	14
Warnings:				
Information:				
7	Drawings-only black and white line drawings	Vilella_16600302_Continuation_Drawings.pdf	190631 edb26a442bd290409bbb2faf0840fa70b4204cbd	no 6
Warnings:				
Information:				
8	Fee Worksheet (SB06)	fee-info.pdf	39894 8a719b56900a8d6ced964abac07e0fec986c9e98	no 2
Warnings:				
Information:				
Total Files Size (in bytes):			2319453	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>				



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
17/128,042	12/19/2020	1629	830		3	1

CONFIRMATION NO. 3307

FILING RECEIPT



0000000122632818

175346
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

Date Mailed: 01/13/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Joseph L. Vilella, San Diego, CA;

Applicant(s)

Joseph L. Vilella, San Diego, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 16/600,302 10/11/2019 PAT 10904649
which is a CON of 16/431,602 06/04/2019
which is a CIP of 15/351,315 11/14/2016 ABN
which is a CIP of 14/419,092 02/02/2015 ABN
which is a 371 of PCT/US2013/053389 08/02/2013
which claims benefit of 61/678,977 08/02/2012

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

page 1 of 4

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 01/13/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/128,042**

Projected Publication Date: 04/22/2021

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Mutually secure optical data network and method

Preliminary Class

514

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

page 2 of 4

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/128,042			
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A			
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	350		N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A			
TOTAL CLAIMS (37 CFR 1.16(ii))	3	minus 20 = *	x 50 =	0.00	OR				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x 240 =	0.00					
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00					
			TOTAL	830		TOTAL			
* If the difference in column 1 is less than zero, enter "0" in column 2.									
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(ii))	*	Minus	**	=	x	=	OR	x
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x
	Application Size Fee (37 CFR 1.16(s))							OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR	
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(ii))	*	Minus	**	=	x	=	OR	x
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x
	Application Size Fee (37 CFR 1.16(s))							OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR	
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307
175346	7590	01/27/2021	EXAMINER	
Joseph L. Vilella 2031 Second Avenue San Diego, CA 92101				
			ART UNIT	PAPER NUMBER
			2439	
			MAIL DATE	DELIVERY MODE
			01/27/2021	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<i>Decision Granting Request for Prioritized Examination (Track I)</i>	Application No. 17/128,042	Applicant(s) Vilella, Joseph L.	
	Examiner CHERYL P GIBSON BAYLOR	Art Unit OPET	AIA (FITF) Status No
<p>1. THE REQUEST FILED <u>19 December 2020</u> IS GRANTED .</p> <p>The above-identified application has met the requirements for prioritized examination</p> <p>A. ☒ for an original nonprovisional application (Track I).</p> <p>B. ☐ for an application undergoing continued examination (RCE).</p> <p>2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:</p> <p>A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply;</p> <p>B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim;</p> <p>C. filing a <u>request for continued examination</u> ;</p> <p>D. filing a notice of appeal;</p> <p>E. filing a request for suspension of action;</p> <p>F. mailing of a notice of allowance;</p> <p>G. mailing of a final Office action;</p> <p>H. completion of examination as defined in 37 CFR 41.102; or</p> <p>I. abandonment of the application.</p> <p>Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.</p>			
/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET			



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307
175346	7590	03/09/2021		
Joseph L. Vilella 2031 Second Avenue San Diego, CA 92101			EXAMINER TOLENTINO, RODERICK	
			ART UNIT	PAPER NUMBER
			2439	
			MAIL DATE	DELIVERY MODE
			03/09/2021	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. The present application is being examined under the pre-AIA first to invent provisions.
2. Office Action is in response to the instant Application 17/128,042 filed on 12/19/2020. Claims 1-3 are pending. This Office Action is Non-Final.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a

result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

4. Claim 1 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 10,904,649. Although the claims at issue are not identical, they are not patentably distinct from each other because:

Instant Application: 17/128,042	US Patent: 10,904,649
1. A multi-user optical data network apparatus comprises: accepting at least one private data stream of a plurality of data streams into at least one passive optical network interface router serving a plurality of private user devices through a plurality of optical network units (ONUs);	1. A digital data network communication method comprises: accepting at least one private data stream of a plurality of data streams into at least one passive optical network interface router serving a plurality of private user devices through a plurality of optical network units (ONUs);

<p>configuring said at least one passive optical network interface router to virtually separate the information intended for at least one of said plurality of private user devices, wherein said configuring comprises:</p> <p>generating an independently unique virtual routing table for said at least one of said plurality of private user devices using Virtual Routing and Forwarding (VRF);</p> <p>uniquely tagging the ethernet frames contained in said at least one private data stream and intended for said at least one of said plurality of private user devices according to the entries of said virtual routing table associated with said at least one private user device using Multi Protocol Label Switching (MPLS) to form MPLS tagged data packages;</p> <p>sending said MPLS tagged data packages to a passive optical networks optical line terminal (OLT);</p> <p>aggregating within said OLT said MPLS tagged data packages into a common data feed that also contains ethernet frames without MPLS tags;</p> <p>distributing said common data feed to said plurality of ONUs; wherein said distributing comprises:</p> <p>replicating said common data feed using at least one optical splitter connected to said plurality of ONUs;</p> <p>extracting, from at least one of said plurality of ONUs, from said common data feed, those MPLS tagged data packages intended for said at least one of said plurality of private user devices.</p>	<p>configuring said at least one passive optical network interface router to virtually separate the information intended for at least one of said plurality of private user devices, wherein said configuring comprises:</p> <p>generating an independently unique virtual routing table for said at least one of said plurality of private user devices using Virtual Routing and Forwarding (VRF);</p> <p>uniquely tagging the ethernet frames contained in said at least one private data stream and intended for said at least one of said plurality of private user devices according to the entries of said virtual routing table associated with said at least one private user device using Multi Protocol Label Switching (MPLS) to form MPLS tagged data packages;</p> <p>sending said MPLS tagged data packages to a passive optical networks optical line terminal (OLT);</p> <p>aggregating within said OLT said MPLS tagged data packages into a common data feed that also contains ethernet frames without MPLS tags;</p> <p>distributing said common data feed to said plurality of ONUs; wherein said distributing comprises:</p> <p>replicating said common data feed using at least one optical splitter connected to said plurality of ONUs;</p> <p>extracting, from at least one of said plurality of ONUs, from said common data feed, those MPLS tagged data packages intended for said at least one of said plurality of private user devices.</p>
---	---

5. **Regarding claims 2 and 3;** claims 2 and 3 are dependent on claim 1, and therefore inherit the Double Patenting rejection .

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Regarding claim 2;** the claim calls for a apparatus; however, there is no hardware element found within the claimed apparatus. The recited body of the claim does not positively recite any hardware element or potentially an element that could represent hardware. The recited body recites what looks to be only active steps containing elements but those elements are not positively recited as part of the body of the claim. As the body of the claim does not positively recite any hardware embodiment, the claim is directed to non-statutory subject matter. The nominal recitation of the machine/device in the preamble with an absence of a hardware element in the body of the claim fails to make the claim statutory under 35 USC 101. See *Am. Med. Sys., Inc v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010). See also *Ex parte Cohen et al.*, (Appeal No. 2009-011366) for details. The Examiner respectfully suggests that the claim be further amended to positively recites at least one hardware element within the body of the claim to make the claim statutory subject matter under 35 U.S.C. 101.

Regarding claims 2 and 3; claims 2 and 3 are dependent on claim 1, and therefore inherit the 35 USC 101 rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RODERICK TOLENTINO whose telephone number is (571)272-2661. The examiner can normally be reached on Mon- Fri 8am-4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Luu Pham can be reached on 571-270-5002. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access

Application/Control Number: 17/128,042
Art Unit: 2439

Page 7

to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RODERICK . TOLENTINO
Examiner
Art Unit 2439

/RODERICK TOLENTINO/
Primary Examiner, Art Unit 2439

<i>Notice of References Cited</i>	Application/Control No. 17/128,042		Applicant(s)/Patent Under Reexamination Vilella, Joseph L.	
	Examiner RODERICK TOLENTINO		Art Unit 2439	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020141421-A1	10-2002	Dupont, Jean-Lou	H04Q11/0478	370/403
*	B	US-20080212598-A1	09-2008	Kolli; Raja	H04L29/12933	370/409
*	C	US-20040223500-A1	11-2004	Sanderson, David M.	H04L63/0272	370/395.53
*	D	US-20110206370-A1	08-2011	Suvakovic; Dusan	H04Q11/0067	398/25
*	E	US-20130010640-A1	01-2013	HIGUCHI; Hidemitsu	H04L12/4641	370/254
*	F	US-20120128349-A1	05-2012	ITSUNAGA; Daiji	H04J14/0268	398/25
*	G	US-6693878-B1	02-2004	Daruwalla; Feisal Y.	H04L12/2801	370/235
*	H	US-20130084063-A1	04-2013	Hu; Junqiang	H04L49/10	398/2
*	I	US-20120014693-A1	01-2012	Cheng; Ning	H04J14/0282	398/34
*	J	US-20080273877-A1	11-2008	Palacharla; Paparao	H04J14/0282	398/64
*	K	US-20070092249-A1	04-2007	Akasaka; Yoichi	H04J14/0282	398/49
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
*	U	Prommak et al., "Load distribution-survivable lightpath routing for the optical virtual private network," Workshop on High Performance Switching and Routing, Merging Optical and IP Technologie Year: 2002 Conference Paper Publisher: IEEE
*	V	Kim et al., "Design and implementation of ME-VPNS," 2012 14th International Conference on Advanced Communication Technology (ICACT) Year: 2012 Conference Paper Publisher: IEEE
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20210222

Search Notes 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

CPC - Searched*		
Symbol	Date	Examiner
H04Q11/0067; H04B10/27; H04L63/0414; H04Q2011/0073; H04Q2011/0086	02/22/2021	RT
H04Q11/0067; H04Q2011/0073; H04L47/2416; H04L63/0272	02/22/2021	RT

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST Keyword Search (see search history)	02/22/2021	RT
EAST CPC Search (see search history)	02/22/2021	RT
See search history of parent application 16/600,302 now patent 10,904,649	02/22/2021	RT

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	
---	--

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	13,029,234	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/09 16:11
S2	974	(virtual near2 "routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:11
S3	14	(virtual near2 "routing table" with packets with (tag tagged Id identifier))	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:12
S4	8	(virtual near2 "routing table" with packets with (tag tagged Id identifier) with destination)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:16
S5	9	(virtual near2 "routing table" with packets with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:22
S6	3	(virtual near2 "routing table" with packets with common near4 feed)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:23
S7	0	(virtual near2 "routing table" with packets near3 ignor\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:24
S8	3	(virtual near2 "routing table" with packets near3 intended)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:24
S9	1,478	S1 and (ethernet with frame with MAC same packet)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/09 16:39
S10	2,351	S1 and (ethernet with frame with MAC same packet)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:39
S11	1,016	S1 and (ethernet with frame with "MAC address" same packet)	US-PGPUB;	OR	ON	2020/07/09 16:39

			USPAT; EPO			
S12	8	S1 and (ethernet with ignor\$3 with "MAC address" same packet)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:40
S13	0	("80115221").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/13 11:44
S14	1	("8011522").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/13 11:44
S15	974	(virtual near2 "routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:21
S16	3	(virtual near2 "routing table" with optical)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S17	11	(virtual near2 "routing table" same optical)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S18	254	(virtual near2 "routing table" with routers)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S19	41	(virtual near2 "routing table" with routers)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 13:23
S20	13,029,234	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:33
S21	0	S20 and ("Passive optical network") with "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:33
S22	0	S20 and ("Passive optical network") same "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:36

S23	5	S20 and ("Passive optical network") and "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:36
S24	0	S20 and ("Passive optical network" PON) same "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:38
S25	0	S20 and ("Passive optical network" PON) same (virtual near3 routing near3 table)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:41
S26	263	S20 and ("Passive optical network" PON) same "MAC address"	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:56
S27	58	S20 and ("Passive optical network" PON) same "MAC address" with table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:57
S28	0	S20 and ("Passive optical network" PON) same "MAC address" with routing near2 table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 15:16
S29	12	S20 and ("Passive optical network" PON) with routing near2 table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 15:21
S30	2	S20 and ("Passive optical network" PON) with routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:22
S31	0	S20 and ("Passive optical network" PON) same packets near4 routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:32
S32	2	S20 and ("Passive optical network" PON) and packets near4 routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:33
S33	5	S20 and (virtual near2 "routing tables" same ethernet)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:34
S34	3	S20 and (virtual near2 "routing tables" same MAC)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:36

S35	5	S20 and (virtual near2 "routing tables" near4 devices)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:44
S36	0	S20 and ("Passive optical network") same routing near3 tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:49
S37	0	S20 and ("Passive optical network" PON) same routing near3 tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:50
S38	3	S20 and ("Passive optical network" PON) same tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:51
S39	13,029,289	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:46
S40	100	S39 and ("virtual routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/14 10:46
S41	49	S39 and ("virtual routing tables")	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:47
S42	10	S39 and ("virtual routing tables") and "mac address"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:50
S43	0	S39 and ("virtual routing tables" same (PON optical))	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S44	0	S39 and ("virtual routing tables") and PON	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S45	0	S39 and ("virtual routing tables") and (passive near3 optical)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S46	0	S39 and ("virtual routing tables") and PON	US-PGPUB; USPAT; EPO	OR	ON	2020/07/14 10:52

S47	16	S39 and ("virtual routing tables" with router)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:53
S48	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:34
S49	22	S48 and ("virtual routing tables") and MPLS	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:34
S50	0	S48 and ("virtual routing tables" same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:36
S51	75	S48 and (("virtual routing tables" VRF) same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:37
S52	79	S48 and (("virtual routing tables" VRF) same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S53	49	S48 and (("virtual routing tables" VRF) with MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S54	114	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S55	8	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) same ethernet)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:46
S56	1	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) same supported)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:49
S57	29	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) with route)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:50
S58	18	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) with private)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:59

S59	0	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and ONU	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:42
S60	11	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and optical	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:44
S61	2	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and uplink	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:45
S62	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/24 07:31
S63	31	S62 and (MPLS with OLT and ONU)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:31
S64	23	S62 and (MPLS with OLT same ONU)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:32
S65	0	S62 and (MPLS with OLT same ONU same splitter)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:32
S66	14	S62 and (MPLS with OLT same ONU same (traffic packet packages))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:41
S67	2	S62 and (MPLS with OLT same ONUs same (traffic packet packages))	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/24 07:44
S68	0	S62 and (MPLS with OLT same ONU same (traffic packet packages) same destinatio)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:45
S69	2	S62 and (MPLS with OLT same ONU same (traffic packet packages) same destination)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:46
S70	0	S62 and (MPLS with OLT same ONU same (traffic packet packages) same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:48

S71	0	S62 and (MPLS with OLT same ONU same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:48
S72	2	S62 and (MPLS with OLT same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:49
S73	0	S62 and (MPLS with OLT same combin\$3 with (feed stream))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:50
S74	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/25 08:23
S75	6	S74 and ((PON "passive optical network") same uplink same router same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 08:23
S76	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/25 12:00
S77	86	S76 and (optical near3 splitter with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 12:00
S78	3	S76 and (optical near3 splitter with replicat\$3 with (feed traffic stream))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 12:12
S79	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/26 06:51
S80	0	S79 and (MPLS with ONUs with splitter with common)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:51
S81	0	S79 and (MPLS with ONUs with splitter with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:52
S82	0	S79 and (MPLS with ONUs with splitter same (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:58

S83	0	S79 and (MPLS same ONUs with splitter with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S84	140	S79 and (splitter with common with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S85	0	S79 and (splitter with common with (stream feed traffic) with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S86	0	S79 and (splitter with common with (stream feed traffic) with tags)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:01
S87	0	S79 and (optical near3 splitter with (stream feed traffic) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:03
S88	0	S79 and (optical near3 splitter with MPLS with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:05
S89	0	S79 and (optical near3 splitter with MPLS with ONUs)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:08
S90	0	S79 and (optical near3 splitter with replicat\$3 with ONUs)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:10
S91	0	S79 and (optical near3 splitter near6 MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:11
S92	903	S79 and (optical near3 splitter near6 ONUS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S93	0	S79 and (optical near3 splitter near6 ONUS with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S94	0	S79 and (optical near3 splitter near6 ONUS same MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12

S95	0	S79 and (splitter near6 ONUS with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S96	0	S79 and (splitter near6 ONUS same MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S97	6	S79 and (splitter with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:13
S98	119	S79 and (splitter with ONUs with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S99	0	S79 and (splitter with ONUs with (stream feed traffic) with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S100	0	S79 and (splitter with ONUs with (stream feed traffic) with tag)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S101	32	S79 and (splitter with ONUs with (stream feed traffic) with filter\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:15
S102	0	S79 and (splitter with MPLS near3 (tag tagged))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:18
S103	0	S79 and (splitter same MPLS near3 (tag tagged))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:18
S104	8,140	S79 and (splitter same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:19
S105	0	S79 and (splitter same MPLS same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:19
S106	0	S79 and (ONUS with (tag tagged) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:22

S107	0	S79 and (ONU with (tag tagged) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:22
S108	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/26 07:26
S109	566	S108 and (splitter with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:26
S110	37	S108 and (splitter with replicat\$3 with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:26
S111	2	S108 and (splitter with replicat\$3 with (stream feed traffic)) and "passive optical network"	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:27
S112	1	("20080212598").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/10/26 08:27
S119	13,030,637	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2021/02/22 09:00
S120	3,390	S119 and (H04Q11/0067 H04B10/27 H04L63/0414 H04Q2011/0073 H04Q2011/0086).cpc.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:00
S121	0	S119 and (secure with optical near3 network).ti,ab. and (optical near3 network\$3 same virtual near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:03
S122	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same virtual near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:04
S123	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same (routing forward\$3 virtual) near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:04
S124	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same (routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:05

S125	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3) and ((routing forward\$3) with virtual).clm.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:06
S126	8	(secure with optical near3 network).ti,ab. and (optical near3 network\$3) and ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:06
S127	8,135	S119 AND (H04Q11/0067 H04Q2011/0073 H04L47/2416 H04L63/0272).CPC.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:07
S128	0	S127 and (secure with optical near3 network) same ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:08
S129	1	S127 and (secure with optical near3 network) and ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:08

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S113	0	(ONU and VRF and MPLS).clm.	US-PGPUB; USPAT	OR	OFF	2020/11/17 14:21
S114	0	(ONU and VRF and OIT).clm.	US-PGPUB; USPAT	OR	OFF	2020/11/17 14:21
S115	0	(ONU and VRF and (packet package)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:22
S116	19	(ONU and Virtual and forward\$3 and (packet package)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23
S117	0	(ONU and Virtual and forward\$3 and (feed stream)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23
S118	42	(ONU and Virtual and forward\$3 and optical).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23

2/22/2021 9:18:31 AM

C:\Users\rtolentino\Documents\EAST\Workspaces\Case 17128042.wsp

Bibliographic Data

Application No: 17/128,042

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged:

/RODERICK TOLENTINO/

Examiner's Signature

Initials

Title:

Mutually secure optical data network and method

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/19/2020	398	2439	
RULE			

APPLICANTS

INVENTORS

Joseph L. Vilella, San Diego, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 16600302 10/11/2019 PAT 10904649

16600302 is a CON of 16431602 06/04/2019

16431602 is a CIP of 15351315 11/14/2016ABN

15351315 is a CIP of 14419092 02/02/2015ABN

14419092 is a 371 of PCT/US2013/053389 08/02/2013

PCT/US2013/053389 has PRO of 61678977 08/02/2012

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

01/13/2021

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101
UNITED STATES

FILING FEE RECEIVED

\$3,000



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/128,042	12/19/2020	Joseph L. Vilella	

175346
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

CONFIRMATION NO. 3307
PUBLICATION NOTICE



Title:Mutually secure optical data network and method

Publication No.US-2021-0120322-A1

Publication Date:04/22/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

WASHINGTON, D.C.

In re application of:	)	
	)	Examiner: Tolentino, Roderick
Joseph L. Vilella	)	
	)	Art Unit: 2439
Serial No: 17128042	)	
	)	
Filed: 2021-05-18	)	
	)	
For: Mutually secure optical data	)	
network and method	)	
	)	

AMENDMENT AFTER NON-FINAL OFFICE ACTION

Commissioner for Patents
Mail Stop Amendment
Commissioner for Patents
Alexandria, Virginia

In response to the Office Action dated **2021-03-09**, please amend the application as indicated below.

In the Claims

Please cancel Claim 3.

Please amend Claims 1, 2 and add Claims 4 through 7 as follows.

1. (Currently Amended) A ~~multi-user optical data network apparatus~~ digital data network communication method comprises:

accepting ~~at least one private data stream~~ of a plurality of data streams into at ~~least one~~ a passive optical network (PON) interface router, interconnected with at least one secondary PON interface router serving a plurality of ~~private~~ user devices through a plurality of optical network units (ONUs);

configuring said ~~at least one PON~~ passive optical network interface router to virtually separate the information intended for at least one of ~~said~~ a plurality of private user devices, wherein said at least one of a plurality of private user devices is connected to at least one of said plurality of ONUs;

wherein said configuring comprises:

generating ~~an~~ at least one independently unique virtual routing table ~~for said at least one of said plurality of private user devices~~ by using Virtual Routing and Forwarding (VRF);

virtually separating at least one private data stream intended for said at least one private user device from said plurality of data streams using said at least one independently unique virtual routing table to create at least one virtually separated private data stream;

uniquely ~~tagging~~ labelling the ethernet frames Multi-Protocol Label Switching (MPLS) data packages contained in said at least one virtually separated private data stream ~~and intended for said at least one of said plurality of user devices according to the entries of said virtual routing table associated with said at least one private user device using Multi-Protocol Label Switching (MPLS), to form MPLS data packets~~ whereby said MPLS data packages are further identified as MPLS labelled data packages;

sending said plurality of data streams, including said at least one virtually separated private data stream comprising said MPLS tagged labelled data packages, to the said at least one secondary PON interface router ~~a passive optical network optical line terminal (OLT);~~

forwarding said plurality of data streams including said at least one virtual separated private data stream from said at least one secondary PON interface router to a PON optical line terminal (OLT) without altering the virtual separation of said at least one virtually separated private data stream and without altering said MPLS labelled data packages;

aggregating within said OLT said MPLS tagged data packages plurality of data streams and said at least one virtually separated private data stream into a common data feed that also contains ethernet frames without MPLS tags;

distributing said common data feed to said plurality of ONUs;

wherein said distributing comprises:

replicating said common data feed using at least one optical splitter connected to said plurality of ONUs;

extracting from said common data feed said MPLS tagged data packages intended for said at least one private user device;

delivering said common data feed to said plurality of ONUs;

extracting from within said at least one of said plurality of ONUs, said at least one virtually separated private data stream including those said MPLS tagged labelled data packages intended for said at least one of said plurality of private user devices from said common data feed;

sending said at least one virtually separated private data stream including said MPLS labelled data packages from said at least one of said plurality of ONUs to said at least one of a plurality of private user devices.

2. (Currently Amended) The method of Claim 1, wherein said at least one of said plurality of ONUs ~~optical network units~~ provides services to at least one private user out of a plurality of a separate number of private users.

3. Cancelled

4. (New) The method of Claim 1, wherein said plurality of data streams within the plurality of data streams are private.

5. (New) A digital network communication method comprises:

receiving from at least one passive optical network (PON) interface router out of a plurality of PON interface routers at a PON optical line terminal (OLT), at least one private data stream out of a plurality of data streams, wherein said at least one private data stream is virtually separated using Virtual Routing and Forwarding (VRF) to form at least one virtually separated private data stream comprised of Multi-Protocol Label Switching (MPLS) data packages that have been uniquely labelled using MPLS for further identification as MPLS labelled data packages, and wherein said at least one virtually separated private data stream including said MPLS labelled data packages is intended for at least one of a plurality of ONUs, and wherein said at least one of a plurality of ONUs serves at least one of plurality of private user devices;

aggregating within said OLT said plurality of data streams and said at least one virtually separated private data stream into a common data feed;

distributing said common data feed to said plurality of ONUs;

wherein said distributing comprises:

replicating said common data feed using at least one optical splitter connected to said plurality of ONUs;

delivering said common data feed to said plurality of ONUs;

extracting within said at least one of said plurality of ONUs, said at least one virtually separated private data stream including said MPLS labelled data packages from said common data feed;

sending said at least one virtually separated private data stream including said MPLS labelled data packages from said at least one of said plurality of ONUs to said at least one of a plurality of private user devices.

6. (New) The method of Claim 5, wherein said at least one ONU of said plurality of ONUs provides services to at least one private user out of a plurality of users.

7. (New) The method of Claim 5, wherein said plurality of data streams within the plurality of data streams are private.

REMARKS

Claims 1, 2, 4-7 remain pending in this application.

Claim 3 has been cancelled.

Claims 1 and 5 are independent.

An Information Disclosure Statement has been submitted with this Amendment.

What follows is a discussion of those references.

PATENTS

Vasseur Patent – 8199642 - This patent relates to tunneling of IP packets inside an MPLS cloud core network and its related MPLS label changes. It does not make any reference to PON.

Zheng Patent – 8565597 - This patent relates to the creation of a unique PON based MPLS scheme for Mobile Base Station Applications as well as the set up and use of an ONT as a router to interact with the OLT in the creation and management of these MPLS labelled packets.

Zheng Patent Application – 20110116796 – This patent application attempts to resolve the problem of protocol stack layer complications when a PON is coupled with mobile network. The instant invention points the fact that the PON in its native form causes that problem with the way it handles the MPLS packets. The inventor seeks to solve the problem by suggesting encapsulating the MPLS packages immediately at the OLT via the GPON encapsulation method (GEM) and maintaining them encapsulated all the way to the ONUs where the decapsulation occurs and the packets are returned to their original MPLS state.

Schmidtke Patent – EP 215754 A1 – This patent relates to a suggested GPON system used as router with its related virtual routing functionality. There is no mention of MPLS or VRF.

NON-PATENT PUBLICATIONS

TOM RARICK and TIM DOIRON, MPLS and GPON: Happy together in the next-generation OLT, Lightwave On Line, 2007-02-06, United States -This publication relates to a concept similar to that described in the Zheng patent (8565597) and the Schmidtke

Patent (EP 215754 A1) both of which propose the use of a PON OLT in a routing and switching capacity and with it, its capacity to produce and manipulate MPLS labels.

CABLE TELEVISION LABORATORIES, INC, Converged Access Platform Architecture Technical Report, 2011-06-14, United States of America –This publication defines the way to use EPON as a method of transport of DOCSIS (RF transported IP information). Within this particular method the PON Optical Line Terminal is completely bypassed and only its functionality to turn on the laser of its ports is used. This is termed as an overlay of DOCSIS over the EPON system, and it is accomplished by amplifying the DOCSIS RF signal with an Erbium Doped Fiber Amplifier (EDFA) and inserting it as an optical beam operating in the 1550 nanometer band immediately after the OLT and before the splitters via a Wave Division Multiplexer (WDM). This 1550 optical beam is then sent via the splitters to the ONUs. Only the ONUs within a network that are equipped with appropriate Optical to RF converter will be able to receive the optical signal and convert it to the appropriate DOCSIS RF format. Once that is accomplished, the DOCSIS signal is sent to the setup box of the end user.

FUJITSU NETWORKS COMMUNICATIONS, INC, How GPON Deployment Drives the Evolution of the Packet-Based Networks, Year 2007, United States of America, 9 Pages – This publication discusses the use of MPLS within a Layer 2 environment as applied to Pseudowire (PW). The MPLS labeling scheme used for Pseudowire is defined by a specific standard and PW is a point to point communications application that does not use fiber optic splitters.

ROUBIN ZHENG and HONGYU LI, Multi-segment Pseudowire in Passive Optical Networks slide presentation, 2011, China, 8 slides – This publication discusses the use of MPLS as it applies to Pseudowire (PW) within a Layer 2 VPN environment.

ALCATEL-LUCENT, 7302 Intelligent Services Access Manager (7302 ISAM) and 7330 Intelligent Services Access Manager Fiber to the Node (7330 ISAM FTTN), 598 pages, United States – This publication describes a multi services rack that amongst the services supported includes EPON and GPON. The PON systems rely on point to point communication and therefore their OLTs are not required to aggregate data streams specifically intended to be sent to optical splitters. These systems support Layer 2 VPN including point to point ATM as well as point to point Pseudowire with its related MPLS scheme. The term VRF is depicted in three fairly cryptic images primarily related to router to router transport of Layer 2 VLANs within pages of the Routing section of this voluminous product specification. The VRF functionality is not textually described in the specification nor architecturally connected to PON in a meaningful way. The sections are well labelled and the reading is informative relative to its Layer 2 transport, support and capabilities.

None of the above patents, patent applications or publications alone or together suggest the combination required by the pending claims. The present involves Layer 3 mode of virtual information separation rather than to Layer 2 virtual information separation modes such as Frame Relay (Pseudowire (PW)), Asynchronous Transfer

Mode (ATM), Ethernet, High Level Data Link Control (HDLC), or Point to Point Protocol (PPP).

Applicant reserves the right to prosecute any cancelled claims or any other broad claims supported by the original disclosure in one of more continuing applications.

Respectfully submitted,

/Joseph L Vilella/

2021-05-18

Joseph L Vilella
2031 Second Avenue
San Diego, California 92101
Telephone: (619) 884-8360

Certificate of Electronic Transmission

I hereby certify that this correspondence is being electronically transmitted via the EFS-Web System to the U.S. Patent and Trademark Office on 2021-05-18.

Typed or printed name of person signing this certificate:

Joseph L. Vilella
Agent of Record

Signature _____/Joseph L Vilella/_____

**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING
REJECTION OVER A "PRIOR" PATENT**

Docket Number (Optional)

In re Application of: The mutually secured optical data network and method

Application No.: 17126042

Filed: 2020-12-19

For: Priority Examination Continuation Application of Patent 10904549

The applicant, SPADA Innovations, Inc., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent No. 10904549 as the term of said prior patent is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

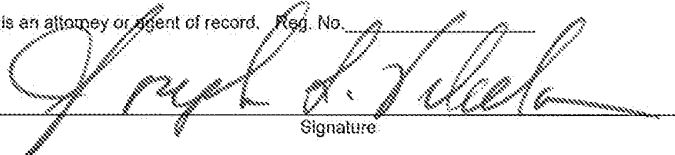
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☒ The undersigned is an attorney or agent of record. Reg. No. _____


Signature

2021-05-11
Date

Joseph L. Vilella
Typed or printed name

Inventor and Agent of Record
Title

619-884-8360
Telephone Number

- ☒ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2036.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17128042
	Filing Date	2020-12-19
	First Named Inventor	Joseph L Vilella
	Art Unit	1629
	Examiner Name	Roderick Tolentino
	Attorney Docket Number	

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	8199642		2020-06-12	Jean-Phillippe Vasseur	Page 1 (Col. 12-15 and Col. 21-24), Page 3 (Col. 21-24), Page 4 (Col. 25-40), Page 5 (Col. 53-64), Page 6 (Col. 23-35), Page 7 (Col. 17-23 and Col. 40-50), Page 13 (Col. 12-15 and		
	2	8565597		2013-10-22	Ruobin Zheng	Abstract, All figures, Page 1 (Col. 20-61), Page 2 (Col. 1-67), Page 3 (Col. 1-9 and 58-62), Page 4 (Col. 1-13 and 14-19)		
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20110116796		2011-05-19	Ruobin Zheng	Abstract, All figures, Page 1 (Par. 0004 to 0015) Page 2 (Par 0016 to 0043)		
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	EP 215745 A1	DE		2008-08-10	Uwe Schmidtke	Figure 4, Page 5 (Col. 18-23 and 24-34)	
If you wish to add additional Foreign Patent Document citation information please click the Add button							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17128042
	Filing Date		2020-12-19
	First Named Inventor	Joseph L Vilella	
	Art Unit	1629	
	Examiner Name	Roderick Tolentino	
Attorney Docket Number			

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	TOM RARICK and TIM DOIRON, MPLS and GPON: Happy together in the next-generation OLT, Lightwave (On Line), 2007-02-06, United States of America, 6 Screen Shots	
	2	CABLE TELEVISION LABORATORIES, INC, Converged Access Platform Architecture Technical Report, 2011-06-14, United States of America, 40 Pages	
	3	FUJITSU NETWORKS COMMUNICATIONS, INC, How GPON Deployment Drives the Evolution of the Packet-Based Networks, Year 2007, United States of America, 9 Pages	
	4	ROUBIN ZHENG and HONGYU LI, Multi-segment Pseudowire in Passive Optical Networks slide presentation, 2011, China, 8 slides	
	5	ALCATEL-LUCENT, 7302 Intelligent Services Access Manager (7302 ISAM) and 7330 Intelligent Services Access Manager Fiber to the Node (7330 ISAM FTTN), 598 pages, United States	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17128042
	Filing Date		2020-12-19
	First Named Inventor	Joseph L Vilella	
	Art Unit	1629	
	Examiner Name	Roderick Tolentino	
	Attorney Docket Number		

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature		Date (YYYY-MM-DD)	
Name/Print		Registration Number	

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		17128042		
Filing Date:		19-Dec-2020		
Title of Invention:		Mutually secure optical data network and method		
First Named Inventor/Applicant Name:		Joseph L. Vilella		
Filer:		Joseph L. Vilella		
Attorney Docket Number:				
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	170	170
Total in USD (\$)				170

Electronic Acknowledgement Receipt	
EFS ID:	42758417
Application Number:	17128042
International Application Number:	
Confirmation Number:	3307
Title of Invention:	Mutually secure optical data network and method
First Named Inventor/Applicant Name:	Joseph L. Vilella
Customer Number:	175346
Filer:	Joseph L. Vilella
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	18-MAY-2021
Filing Date:	19-DEC-2020
Time Stamp:	22:14:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 170
RAM confirmation Number	E20215HM17390724
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Amendment_17120842.pdf	121576	no	8
			a5e93e0e17d2108b32ebc2b3c38ca0fcd2d4ec70		
Warnings:					
Information:					
2	Terminal Disclaimer Filed	Terminal_Disclaimer.pdf	294291	no	1
			968105ef91e5d9b2fdc36335666c67b1882b6224		
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	Information_Disclosure_State ment.pdf	1035258	no	4
			89dbe2288236319bc47158b5bc70112ee99cb821		
Warnings:					
Information:					
4	Non Patent Literature	Reference_5.pdf	1881807	no	15
			39d5d1c1a7db62f8ce642db9868fb594d6874d93		
Warnings:					
Information:					
5	Non Patent Literature	Ref6_printed.pdf	17348333	no	46
			7d7795aa34027917e023885a811959ba9cc eee41		
Warnings:					
Information:					
6	Non Patent Literature	Reference_7.pdf	1042567	no	10
			79a95af2f1a1de31ee0d233c1efeeb341d698009		
Warnings:					

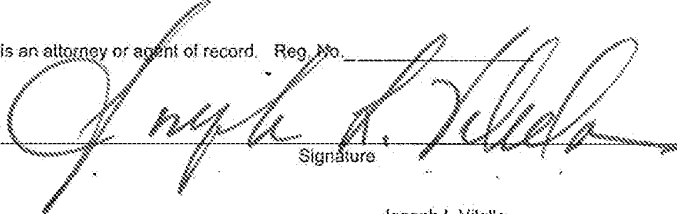
Information:					
7	Non Patent Literature	Reference_8.pdf	988615	no	12
			703cba1e9ab6828d925fb7b40505af15d0e3795b		
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	29870	no	2
			7c71b46c8387293a70c37df17303c023ce63ca59		
Warnings:					
Information:					
Total Files Size (in bytes):			22742317		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Application Number * 17/128,042 *	Application/Control No. 17/128,042	Applicant(s)/Patent under Reexamination Vilella, Joseph L.	
	Examiner TOLENTINO, RODERICK	Art Unit 2439	
Document Code - DISQ		Internal Document - DO NOT MAIL	

TERMINAL DISCLAIMER	☐ APPROVED	☒ DISAPPROVED
Date Filed: <u>18 May 2021</u>	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by: /JEAN PROCTOR/ Technology Center: <u>OPLC</u> Telephone: <u>(571)272-1040</u> <u>The terminal disclaimer identifies a party who is not the applicant (only for applications filed on or after September 16, 2012; See FP 14.26.10):</u> <u>For cases filed on/after 9/16/12, 37 CFR 1.321 specifies that the applicant can disclaim, and the terminal disclaimer must specify the extent of the applicant's ownership.</u> <u>A request under 37 CFR 1.46(c) to change the applicant needs to be filed, which is (1) a request, signed by a 1.33(b) party, (2) a corrected ADS (37 CFR 1.76(c)) that identifies the "new" applicant in the applicant information, and is underlined since it is new, and (3) a 3.73(c) statement showing chain of title to the new applicant. Along with the § 1.46(c) request we need a POA that gives power to the attorney who is signing the TD, along with another copy of the TD, unless they file a TD that is signed by the applicant.</u>
--

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TERMINAL DISCLAIMER TO OBTAIN A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional)
<p>In re Application of: The mutually secured optical data network and method</p> <p>Application No.: 17128042</p> <p>Filed: 2020-12-19</p> <p>For: Priority Examination Continuation Application of Patent 10904649</p> <p>The applicant, <u>Joseph L. Vilella</u>, owner of <u>100</u> percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent No. <u>10904649</u> as the term of said prior patent is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.</p> <p>In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:</p> <ul style="list-style-type: none"> expires for failure to pay a maintenance fee; is held unenforceable; is found invalid by a court of competent jurisdiction; is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; has all claims canceled by a reexamination certificate; is reissued; or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer. <p>Check either box 1 or 2 below, if appropriate.</p> <p>1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.</p> <p>I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p>2. ☒ The undersigned is an attorney or agent of record. Reg. No. _____</p> <div style="text-align: center; margin-top: 20px;">  </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: center;"> <p>Signature</p> <p>Joseph L. Vilella</p> <p>Typed or printed name</p> </div> <div style="text-align: center;"> <p>2021-08-02</p> <p>Date</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="text-align: center;"> <p>Inventor and Agent of Record</p> <p>Title</p> </div> <div style="text-align: center;"> <p>619-884-8360</p> <p>Telephone Number</p> </div> </div> <p>☒ Terminal disclaimer fee under 37 CFR 1.20(d) included.</p> <p style="text-align: center;">WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p>	

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	42885858
Application Number:	17128042
International Application Number:	
Confirmation Number:	3307
Title of Invention:	Mutually secure optical data network and method
First Named Inventor/Applicant Name:	Joseph L. Vilella
Customer Number:	175346
Filer:	Joseph L. Vilella
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-JUN-2021
Filing Date:	19-DEC-2020
Time Stamp:	10:18:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer Filed	17128042_CR_Terminal_Disclaimer.pdf	293334 75532badd742737509616b3eb0825a39eeafa3c2	no	1

Warnings:

The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing

Information:

Total Files Size (in bytes):

293334

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Number * 17/128,042 *	Application/Control No. 17/128,042	Applicant(s)/Patent under Reexamination Vilella, Joseph L.	
	Examiner TOLENTINO, RODERICK	Art Unit 2439	
Document Code - DISQ		Internal Document - DO NOT MAIL	

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed: <u>02 June 2021</u>	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
/KIMBERLY R WHITE/ Technology Center: <u>OPLC</u> Telephone: <u>(571)272-6179</u> _____

M



Memorex		TITLE: IDS Cite No. 5	DATE: 2021-6-7
TRACK NO.:	TRACK TITLE:		TIME:
<p>Application 17128042 Alcatel Lucent 7302 Intelligent Services Access Manager (7302 ISAM) and 7330 Intelligent Services Access Manager Fiber to the Node (ISAM 7330 FTN)</p>			

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). The first artifact folder for an artifact type receives the letter A, the second B, etc..
Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

17128042UA

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

☒	CD(s) containing:	☐
	computer program listing	Artifact Type Code: P
	Doc Code: Artifact	
	pages of specification	☐
☐	and/or sequence listing	Artifact Type Code: S
	and/or table	
☐	Doc Code: Artifact	
	content unspecified or combined	☒
☐	Doc Code: Artifact	Artifact Type Code: U
	voluntary electronic submission	☐
☐	Doc Code: Artifact	Artifact Type Code: T

☐	Stapled Set(s) Color Documents or B/W Photographs
	Doc Code: Artifact Artifact Type Code: C

☐	Microfilm(s)
	Doc Code: Artifact Artifact Type Code: F

☐	Video tape(s)
	Doc Code: Artifact Artifact Type Code: V

☐	Model(s)
	Doc Code: Artifact Artifact Type Code: M

☐	Bound Document(s)
	Doc Code: Artifact Artifact Type Code: B

☐	Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.
	Doc Code: Artifact Artifact Type Code X

☐	Other, description: _____
	Doc Code: Artifact Artifact Type Code: Z

August 31, 2016



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

175346 7590 06/11/2021
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

EXAMINER	
TOLENTINO, RODERICK	
ART UNIT	PAPER NUMBER
2439	

DATE MAILED: 06/11/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307

TITLE OF INVENTION: Mutually secure optical data network and method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	09/13/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

175346 7590 06/11/2021
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307

TITLE OF INVENTION: Mutually secure optical data network and method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	09/13/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
TOLENTINO, RODERICK	2439	398-045000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- ☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307
175346	7590	06/11/2021		
Joseph L. Vilella 2031 Second Avenue San Diego, CA 92101			EXAMINER TOLENTINO, RODERICK	
			ART UNIT 2439	PAPER NUMBER

DATE MAILED: 06/11/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/128,042	Applicant(s) Vilella, Joseph L.	
	Examiner RODERICK TOLENTINO	Art Unit 2439	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/18/2021.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-2 and 4-7. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>5/18/2021</u> . 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	5. ☐ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
---	---

/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	
---	--

DETAILED ACTION

1. The present application is being examined under the pre-AIA first to invent provisions.
2. Notice of Allowability is in response to the reply filed on 5/18/2021 and the Terminal Disclaimer filed on 6/3/2021, which has been approved. Claim 3 has been canceled. Claims 4-7 have been added as New. Claims 1, 2 and 4-7 are pending.

Information Disclosure Statement

3. The information disclosure statement (IDS), submitted on 5/18/2021, is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

A) Applicant's filing of a Terminal Disclaimer on 6/3/2021 has been approved. As a result the Double Patenting rejection has been withdrawn.

B) Applicant's amendments and arguments to claim 1, with regards to 35 USC 101 for no hardware element, has been considered and deemed persuasive. As a result the 35 USC 101 rejections have been withdrawn.

Allowable Subject Matter

4. Claims 1, 2 and 4-7 are allowed.

5. The instant Application is allowed for similar reasons as parent Application 16/600,302, filed 10/11/2019, now U.S. Patent #10,904,649 along with authorized amendments made by Applicant on 5/18/2021 and Terminal Disclaimer approved on 6/5/2021. An updated search was conducted on 6/7/2021 and the claims are still in condition for Allowance.

6. The closest prior art fails to disclose, teach or even suggest “receiving from at least one passive optical network (PON) interface router out of a plurality of PON interface routers at a PON optical line terminal (OLT), at least one private data stream out of a plurality of data streams, wherein said at least one private data stream is virtually separated using Virtual Routing and Forwarding (VRF) to form at least one virtually separated private data stream comprised of Multi-Protocol Label Switching (MPLS) data packages that have been uniquely labelled using MPLS for further identification as MPLS labelled data packages, and wherein said at least one virtually separated private data stream including said MPLS labelled data packages is intended for at least one of a plurality of ONUs, and wherein said at least one of a plurality of ONUs serves at least one of plurality of private user devices; aggregating within said OLT said plurality of data streams and said at least one virtually separated private data stream into a common data feed; distributing said common data feed to said plurality of ONUs; wherein said distributing comprises: replicating said common data feed using at least one optical splitter connected to said plurality of ONUs”. Applicant’s inventive steps listed above disclose novel method for its distribution and replication of a feed in an optical network, which is not disclosed by conventional methods which pertain to optical networks. Such as conventional methods do not use the virtual routing and

forwarding in the same way as the above. As a result the claims are in condition for Allowance.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RODERICK TOLENTINO whose telephone number is (571)272-2661. The examiner can normally be reached on Mon- Fri 8am-4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Luu Pham can be reached on 571-270-5002. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RODERICK . TOLENTINO
Examiner
Art Unit 2439

/RODERICK TOLENTINO/
Primary Examiner, Art Unit 2439

Notice of References Cited	Application/Control No. 17/128,042		Applicant(s)/Patent Under Reexamination Vilella, Joseph L.	
	Examiner RODERICK TOLENTINO		Art Unit 2439	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020141421-A1	10-2002	Dupont, Jean-Lou	H04Q11/0478	370/403
*	B	US-20080212598-A1	09-2008	Kolli; Raja	H04L29/12933	370/409
*	C	US-20040223500-A1	11-2004	Sanderson, David M.	H04L63/0272	370/395.53
*	D	US-20110206370-A1	08-2011	Suvakovic; Dusan	H04Q11/0067	398/25
*	E	US-20130010640-A1	01-2013	HIGUCHI; Hidemitsu	H04L12/4641	370/254
*	F	US-20120128349-A1	05-2012	MITSUMAGA; Daiji	H04J14/0268	398/25
*	G	US-6693878-B1	02-2004	Daruwalla; Feisal Y.	H04L12/2801	370/235
*	H	US-20130084063-A1	04-2013	Hu; Junqiang	H04L49/10	398/2
*	I	US-20120014693-A1	01-2012	Cheng; Ning	H04J14/0282	398/34
*	J	US-20080273877-A1	11-2008	Palacharla; Paparao	H04J14/0282	398/64
*	K	US-20070092249-A1	04-2007	Akasaka; Yoichi	H04J14/0282	398/49
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
*	U	Prommak et al., "Load distribution-survivable lighthpath routing for the optical virtual private network," Workshop on High Performance Switching and Routing, Merging Optical and IP Technologie Year: 2002 Conference Paper Publisher: IEEE
*	V	Kim et al., "Design and implementation of ME-VPNS," 2012 14th International Conference on Advanced Communication Technology (ICACT) Year: 2012 Conference Paper Publisher: IEEE
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20210607

<i>Search Notes</i> 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

CPC - Searched*		
Symbol	Date	Examiner
H04Q11/0067; H04B10/27; H04L63/0414; H04Q2011/0073; H04Q2011/0086	02/22/2021	RT
H04Q11/0067; H04Q2011/0073; H04L47/2416; H04L63/0272	02/22/2021	RT

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST Keyword Search (see search history)	02/22/2021	RT
EAST CPC Search (see search history)	02/22/2021	RT
See search history of parent application 16/600,302 now patent 10,904,649	02/22/2021	RT
EAST Keyword Search (see search history)	06/07/2021	RT
IEEE Database Keyword Search	06/07/2021	RT

/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	
---	--

<i>Search Notes</i> 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
USPAT; USPGPUB	Text Search	06/07/2021	RT

/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	
---	--

Issue Classification 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

CPC						
Symbol					Type	Version
H04Q	/	11	/	0067	F	2013-01-01
H04L	/	63	/	0414	I	2013-01-01
H04B	/	10	/	27	I	2013-01-01
H04Q	/	2011	/	0086	A	2013-01-01
H04Q	/	2011	/	0073	A	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	07 June 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20210607

Issue Classification 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04Q	/	11	/ 00
H04L	/	29	/ 06
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439	07 June 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20210607

Issue Classification 	Application/Control No. 17/128,042	Applicant(s)/Patent Under Reexamination Vilella, Joseph L.
	Examiner RODERICK TOLENTINO	Art Unit 2439

☐ Claims renumbered in the same order as presented by applicant
 ☐ CPA
 ☒ T.D.
 ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1														
2	2														
	3														
3	4														
4	5														
5	6														
6	7														

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 6	
/RODERICK TOLENTINO/ Primary Examiner, Art Unit 2439 (Primary Examiner) _____ (Date) 07 June 2021		O.G. Print Claim(s) 1	O.G. Print Figure 1

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	13,029,234	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/09 16:11
S2	974	(virtual near2 "routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:11
S3	14	(virtual near2 "routing table" with packets with (tag tagged Id identifier))	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:12
S4	8	(virtual near2 "routing table" with packets with (tag tagged Id identifier) with destination)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:16
S5	9	(virtual near2 "routing table" with packets with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:22
S6	3	(virtual near2 "routing table" with packets with common near4 feed)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:23
S7	0	(virtual near2 "routing table" with packets near3 ignor\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:24
S8	3	(virtual near2 "routing table" with packets near3 intended)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:24
S9	1,478	S1 and (ethernet with frame with MAC same packet)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/09 16:39
S10	2,351	S1 and (ethernet with frame with MAC same packet)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:39
S11	1,016	S1 and (ethernet with frame with "MAC address" same packet)	US-PGPUB;	OR	ON	2020/07/09 16:39

			USPAT; EPO			
S12	8	S1 and (ethernet with ignor\$3 with "MAC address" same packet)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/09 16:40
S13	0	("80115221").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/13 11:44
S14	1	("8011522").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/13 11:44
S15	974	(virtual near2 "routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:21
S16	3	(virtual near2 "routing table" with optical)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S17	11	(virtual near2 "routing table" same optical)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S18	254	(virtual near2 "routing table" with routers)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 13:22
S19	41	(virtual near2 "routing table" with routers)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 13:23
S20	13,029,234	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:33
S21	0	S20 and ("Passive optical network") with "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:33
S22	0	S20 and ("Passive optical network") same "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:36

S23	5	S20 and ("Passive optical network") and "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:36
S24	0	S20 and ("Passive optical network" PON) same "virtual routers"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 14:38
S25	0	S20 and ("Passive optical network" PON) same (virtual near3 routing near3 table)	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:41
S26	263	S20 and ("Passive optical network" PON) same "MAC address"	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:56
S27	58	S20 and ("Passive optical network" PON) same "MAC address" with table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 14:57
S28	0	S20 and ("Passive optical network" PON) same "MAC address" with routing near2 table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 15:16
S29	12	S20 and ("Passive optical network" PON) with routing near2 table	US-PGPUB; USPAT; EPO	OR	ON	2020/07/13 15:21
S30	2	S20 and ("Passive optical network" PON) with routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:22
S31	0	S20 and ("Passive optical network" PON) same packets near4 routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:32
S32	2	S20 and ("Passive optical network" PON) and packets near4 routing near2 tables	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:33
S33	5	S20 and (virtual near2 "routing tables" same ethernet)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:34
S34	3	S20 and (virtual near2 "routing tables" same MAC)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:36

S35	5	S20 and (virtual near2 "routing tables" near4 devices)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:44
S36	0	S20 and ("Passive optical network") same routing near3 tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:49
S37	0	S20 and ("Passive optical network" PON) same routing near3 tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:50
S38	3	S20 and ("Passive optical network" PON) same tables same virtual	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/13 15:51
S39	13,029,289	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:46
S40	100	S39 and ("virtual routing table")	US-PGPUB; USPAT; EPO	OR	ON	2020/07/14 10:46
S41	49	S39 and ("virtual routing tables")	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:47
S42	10	S39 and ("virtual routing tables") and "mac address"	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:50
S43	0	S39 and ("virtual routing tables" same (PON optical))	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S44	0	S39 and ("virtual routing tables") and PON	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S45	0	S39 and ("virtual routing tables") and (passive near3 optical)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:51
S46	0	S39 and ("virtual routing tables") and PON	US-PGPUB; USPAT; EPO	OR	ON	2020/07/14 10:52

S47	16	S39 and ("virtual routing tables" with router)	US-PGPUB; USPAT; EPO	OR	OFF	2020/07/14 10:53
S48	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:34
S49	22	S48 and ("virtual routing tables") and MPLS	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:34
S50	0	S48 and ("virtual routing tables" same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:36
S51	75	S48 and (("virtual routing tables" VRF) same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/23 08:37
S52	79	S48 and (("virtual routing tables" VRF) same MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S53	49	S48 and (("virtual routing tables" VRF) with MPLS with traffic)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S54	114	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:38
S55	8	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) same ethernet)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:46
S56	1	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) same supported)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:49
S57	29	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) with route)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:50
S58	18	S48 and (("virtual routing tables" VRF) with MPLS with (packets traffic) with private)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 08:59

S59	0	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and ONU	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:42
S60	11	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and optical	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:44
S61	2	S48 and ("virtual routing tables" VRF) with MPLS with (packets traffic) with route) and uplink	US-PGPUB; USPAT; EPO	OR	ON	2020/10/23 09:45
S62	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/24 07:31
S63	31	S62 and (MPLS with OLT and ONU)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:31
S64	23	S62 and (MPLS with OLT same ONU)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:32
S65	0	S62 and (MPLS with OLT same ONU same splitter)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:32
S66	14	S62 and (MPLS with OLT same ONU same (traffic packet packages))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:41
S67	2	S62 and (MPLS with OLT same ONUs same (traffic packet packages))	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/24 07:44
S68	0	S62 and (MPLS with OLT same ONU same (traffic packet packages) same destinatio)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:45
S69	2	S62 and (MPLS with OLT same ONU same (traffic packet packages) same destination)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:46
S70	0	S62 and (MPLS with OLT same ONU same (traffic packet packages) same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:48

S71	0	S62 and (MPLS with OLT same ONU same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:48
S72	2	S62 and (MPLS with OLT same aggregat\$4)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:49
S73	0	S62 and (MPLS with OLT same combin\$3 with (feed stream))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/24 07:50
S74	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/25 08:23
S75	6	S74 and ((PON "passive optical network") same uplink same router same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 08:23
S76	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/25 12:00
S77	86	S76 and (optical near3 splitter with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 12:00
S78	3	S76 and (optical near3 splitter with replicat\$3 with (feed traffic stream))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/25 12:12
S79	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/26 06:51
S80	0	S79 and (MPLS with ONUs with splitter with common)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:51
S81	0	S79 and (MPLS with ONUs with splitter with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:52
S82	0	S79 and (MPLS with ONUs with splitter same (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:58

S83	0	S79 and (MPLS same ONUs with splitter with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S84	140	S79 and (splitter with common with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S85	0	S79 and (splitter with common with (stream feed traffic) with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 06:59
S86	0	S79 and (splitter with common with (stream feed traffic) with tags)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:01
S87	0	S79 and (optical near3 splitter with (stream feed traffic) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:03
S88	0	S79 and (optical near3 splitter with MPLS with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:05
S89	0	S79 and (optical near3 splitter with MPLS with ONUs)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:08
S90	0	S79 and (optical near3 splitter with replicat\$3 with ONUs)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:10
S91	0	S79 and (optical near3 splitter near6 MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:11
S92	903	S79 and (optical near3 splitter near6 ONUS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S93	0	S79 and (optical near3 splitter near6 ONUS with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S94	0	S79 and (optical near3 splitter near6 ONUS same MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12

S95	0	S79 and (splitter near6 ONUS with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S96	0	S79 and (splitter near6 ONUS same MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:12
S97	6	S79 and (splitter with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:13
S98	119	S79 and (splitter with ONUs with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S99	0	S79 and (splitter with ONUs with (stream feed traffic) with extract\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S100	0	S79 and (splitter with ONUs with (stream feed traffic) with tag)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:14
S101	32	S79 and (splitter with ONUs with (stream feed traffic) with filter\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:15
S102	0	S79 and (splitter with MPLS near3 (tag tagged))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:18
S103	0	S79 and (splitter same MPLS near3 (tag tagged))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:18
S104	8,140	S79 and (splitter same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:19
S105	0	S79 and (splitter same MPLS same users)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:19
S106	0	S79 and (ONUS with (tag tagged) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:22

S107	0	S79 and (ONU with (tag tagged) with MPLS)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:22
S108	13,030,025	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2020/10/26 07:26
S109	566	S108 and (splitter with replicat\$3)	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:26
S110	37	S108 and (splitter with replicat\$3 with (stream feed traffic))	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:26
S111	2	S108 and (splitter with replicat\$3 with (stream feed traffic)) and "passive optical network"	US-PGPUB; USPAT; EPO	OR	ON	2020/10/26 07:27
S112	1	("20080212598").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/10/26 08:27
S119	13,030,637	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2021/02/22 09:00
S120	3,390	S119 and (H04Q11/0067 H04B10/27 H04L63/0414 H04Q2011/0073 H04Q2011/0086).cpc.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:00
S121	0	S119 and (secure with optical near3 network).ti,ab. and (optical near3 network\$3 same virtual near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:03
S122	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same virtual near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:04
S123	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same (routing forward\$3 virtual) near6 table)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:04
S124	4	(secure with optical near3 network).ti,ab. and (optical near3 network\$3 same (routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:05

S125	4	(secure with optical near3 network).ti.ab. and (optical near3 network\$3) and ((routing forward\$3) with virtual).clm.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:06
S126	8	(secure with optical near3 network).ti.ab. and (optical near3 network\$3) and ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:06
S127	8,135	S119 AND (H04Q11/0067 H04Q2011/0073 H04L47/2416 H04L63/0272).CPC.	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:07
S128	0	S127 and (secure with optical near3 network) same ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:08
S129	1	S127 and (secure with optical near3 network) and ((routing forward\$3) with virtual)	US-PGPUB; USPAT; EPO	OR	ON	2021/02/22 09:08
S130	13,031,050	@ad<"20120802"	US-PGPUB; USPAT; EPO	OR	OFF	2021/06/07 21:48
S131	8,137	S130 AND (H04Q11/0067 H04Q2011/0073 H04L47/2416 H04L63/0272).CPC.	US-PGPUB; USPAT; EPO	OR	ON	2021/06/07 21:48
S132	1	S131 and (secure with optical near3 network) and ((routing forward\$3) with (virtually virtual))	US-PGPUB; USPAT; EPO	OR	ON	2021/06/07 21:48

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S113	0	(ONU and VRF and MPLS).clm.	US-PGPUB; USPAT	OR	OFF	2020/11/17 14:21
S114	0	(ONU and VRF and OIT).clm.	US-PGPUB; USPAT	OR	OFF	2020/11/17 14:21
S115	0	(ONU and VRF and (packet package)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:22
S116	19	(ONU and Virtual and forward\$3 and (packet package)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23
S117	0	(ONU and Virtual and forward\$3 and (feed stream)).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23

S118	42	(ONU and Virtual and forward\$3 and optical).clm.	US-PGPUB; USPAT	OR	ON	2020/11/17 14:23
S133	10	(ONU and replicat\$3 and (virtual virtually)).clm.	US-PGPUB; USPAT	OR	ON	2021/06/07 21:47

6/7/2021 9:54:55 PM

C:\Users\rtolentino\Documents\EAST\Workspaces\Case 17128042.wsp

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17128042
	Filing Date	2020-12-19
	First Named Inventor	Joseph L Vilella
	Art Unit	1629
	Examiner Name	Roderick Tolentino
	Attorney Docket Number	

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
/R.T/	1	8199642		2020-06-12	Jean-Phillippe Vasseur	Page 1 (Col. 12-15 and Col. 21-24), Page 3 (Col. 21-24), Page 4 (Col. 25-40), Page 5 (Col. 53-64), Page 6 (Col. 23-35), Page 7 (Col. 17-23 and Col. 40-50), Page 13 (Col. 12-15 and		
/R.T/	2	8565597		2013-10-22	Ruobin Zheng	Abstract, All figures, Page 1 (Col. 20-61), Page 2 (Col. 1-67), Page 3 (Col. 1-9 and 58-62), Page 4 (Col. 1-13 and 14-19)		
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
/R.T/	1	20110116796		2011-05-19	Ruobin Zheng	Abstract, All figures, Page 1 (Par. 0004 to 0015) Page 2 (Par 0016 to 0043)		
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
/R.T/	1	EP 215745 A1	DE		2008-08-10	Uwe Schmidtke	Figure 4, Page 5 (Col. 18-23 and 24-34)	
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17128042
Filing Date	2020-12-19
First Named Inventor	Joseph L Vilella
Art Unit	1629
Examiner Name	Roderick Tolentino
Attorney Docket Number	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
/R.T./	1	TOM RARICK and TIM DOIRON, MPLS and GPON: Happy together in the next-generation OLT, Lightwave (On Line), 2007-02-06, United States of America, 6 Screen Shots	
/R.T./	2	CABLE TELEVISION LABORATORIES, INC, Converged Access Platform Architecture Technical Report, 2011-06-14, United States of America, 40 Pages	
/R.T./	3	FUJITSU NETWORKS COMMUNICATIONS, INC, How GPON Deployment Drives the Evolution of the Packet-Based Networks, Year 2007, United States of America, 9 Pages	
/R.T./	4	ROUBIN ZHENG and HONGYU LI, Multi-segment Pseudowire in Passive Optical Networks slide presentation, 2011, China, 8 slides	
/R.T./	5	ALCATEL-LUCENT, 7302 Intelligent Services Access Manager (7302 ISAM) and 7330 Intelligent Services Access Manager Fiber to the Node (7330 ISAM FTTN), 598 pages, United States	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/RODERICK TOLENTINO/	Date Considered	06/07/2021
--------------------	----------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17128042
Filing Date	2020-12-19
First Named Inventor	Joseph L Vilella
Art Unit	1629
Examiner Name	Roderick Tolentino
Attorney Docket Number	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature		Date (YYYY-MM-DD)	
Name/Print		Registration Number	

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

175346 7590 06/11/2021
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Joseph L. Vilella (Typed or printed name)
Joseph L. Vilella (Signature)
06/16/2021 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	12/19/2020	Joseph L. Vilella		3307

TITLE OF INVENTION: Mutually secure optical data network and method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	09/13/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
TOLENTINO, RODERICK	2439	398-045000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies

4b. Method of Payment: (Please first recopy my previously paid fee shown above)

- ☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No.

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.33 and 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature

Date

Typed or printed name

Registration No.

Electronic Patent Application Fee Transmittal				
Application Number:		17128042		
Filing Date:		19-Dec-2020		
Title of Invention:		Mutually secure optical data network and method		
First Named Inventor/Applicant Name:		Joseph L. Vilella		
Filer:		Joseph L. Vilella		
Attorney Docket Number:				
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				600

Electronic Acknowledgement Receipt	
EFS ID:	43008071
Application Number:	17128042
International Application Number:	
Confirmation Number:	3307
Title of Invention:	Mutually secure optical data network and method
First Named Inventor/Applicant Name:	Joseph L. Vilella
Customer Number:	175346
Filer:	Joseph L. Vilella
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	16-JUN-2021
Filing Date:	19-DEC-2020
Time Stamp:	17:31:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$600
RAM confirmation Number	E20216FH34532688
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Fee_Transmittal.pdf	377487	no	1
			116eb055091c28bf50659d738e98a5b8556713db		
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	29899	no	2
			8c676306b303a3dfdf1c2107e63fa86cd488ee25		
Warnings:					
Information:					
Total Files Size (in bytes):			407386		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17128042
	Filing Date	2020-12-19
	First Named Inventor	Joseph L Vilella
	Art Unit	1629
	Examiner Name	Roderick Tolentino
	Attorney Docket Number	

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
Change(s) applied to document, /C.G./R.T/ 6/18/2021	1	8199642		2020-06-12 06/2012	Jean-Phillippe Vasseur	Page 1 (Col. 12-15 and Col. 21-24), Page 3 (Col. 21-24), Page 4 (Col. 25-40), Page 5 (Col. 53-64), Page 6 (Col. 23-35), Page 7 (Col. 17-23 and Col. 40-50), Page 13 (Col. 12-15 and		
/R.T/	2	8565597		2013-10-22	Ruobin Zheng	Abstract, All figures, Page 1 (Col. 20-61), Page 2 (Col. 1-67), Page 3 (Col. 1-9 and 58-62), Page 4 (Col. 1-13 and 14-19)		
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
/R.T/	1	20110116796		2011-05-19	Ruobin Zheng	Abstract, All figures, Page 1 (Par. 0004 to 0015) Page 2 (Par 0016 to 0043)		
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
/R.T/	1	EP 215745 A1	DE-EP		2008-08-10	Uwe Schmidtke	Figure 4, Page 5 (Col. 18-23 and 24-34)	
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/128,042	07/20/2021	11070898		3307

175346 7590 06/30/2021
Joseph L. Vilella
2031 Second Avenue
San Diego, CA 92101

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Joseph L. Vilella, San Diego, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IR103 (Rev. 10/09)