



Quality Insights

Quality Insights Annotation Report

Huawei Technologies Co. Ltd. v. Verizon Communications, Inc. et al
EDTX-2-20-cv-00030

Focus on: U.S. Pat. No. 9,312,982

Filing date: Feb. 05, 2020

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Claim Construction and § 112 Invalidity

Map claims to specification and file wrapper

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Map claims to specification and file wrapper

Map claims to specification - '982

Which claim terms are or are not in the specification?

Claim Analysis > Claim# 1

Find relevant specification content as intrinsic evidence for claim term interpretation

44 Terms Identified in This Claim [Click to Select Terms](#)

Select Text

Highlight text from within the claim with your cursor and click on the tooltip "Select Terms" to find references in the Specification.

Claim# 1

A method for **processing data** in an **Optical Transport Network** (OTN), comprising:

mapping, by a **processor** of an apparatus for **processing data**,

a **Lower Order Optical Channel Data Unit** (LO ODU) signal into a **payload area** of an **Optical Channel Data Tributary Unit (ODTU) signal** in groups of M bytes, wherein

M is **equal** to the **number of time slots** of a **Higher Order Optical Channel Payload Unit** (HO OPU) that are to be **occupied** by the **ODTU signal**,

and M is an **integer larger** than 1;

encapsulating overhead information to an **overhead area** of the **ODTU signal**;

and **multiplexing** the **ODTU signal** into the **HO OPU**.



Claim Analysis finds these terms in the spec:

"mapping", "processor", "processing data", "Unit (ODTU) signal"

as well as other terms that are highlighted in red.

Map claims to specification - '982

Which claim terms are or are not in the specification?

44 Terms Identified in This Claim
Click to Select Terms

Select Text

Highlight text from within the claim with your cursor and click on the tooltip "Select Terms" to find references in the Specification.

Claim# 1

A method for processing data in an Optical Transport Network (OTN), comprising:

mapping, by a processor of an apparatus for processing data,

a Lower Order Optical Channel Data Unit (LO ODU) signal into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes, wherein

M is equal to the number of time slots of a Higher Order Optical Channel Payload Unit (HO OPU) that are to be occupied by the ODTU signal,

and M is an integer larger than 1;

Review the selected claim element and see how it is defined in the patent specification and related figures.

Selected elements of '982 Claim 1

Selected elements of Claim 1 in Spec

Figures of '982

Select Text

Unit, ODTU, signal

The selected clause includes the following keywords:

- signal* (31)
- Unit* (12)

Content

[0007] Embodiments of the present invention provide method and apparatus for mapping and de-mapping in an Optical Transport Network (OTN), so as to map a Lower Order Optical Channel Data Unit (LO ODU) signal into a Higher Order Optical Channel Payload Unit (HO ODU) universally and efficiently.

[0008] In the mapping method provided by the embodiments of the present invention, first, a Lower Order Optical Channel Data Unit (LO ODU) signal is mapped into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in units, each unit including M bytes, where M is equal to the number of tributary slots of a Higher Order Optical Channel Payload Unit (HO OPU) that are to be occupied by the ODTU signal, and M is an integer larger than 1.

R

Constructing an ODTU according to an amount M of tributary slots of a HO OPU to be occupied by a LO ODU

Mapping the LO ODU to a payload area of the ODTU in a M-byte granularity

Encapsulating overhead information to the payload area of the ODTU

Multiplexing the ODTU, which has been mapped the LO

Map claims to specification and Complaint - '982

Does the allegedly infringing product element fall within or outside the patent's scope?

Select Text

Unit, ODU, signal

The selected clause includes the following keywords:

signal (31)

Unit (12)

Content

[0007] Embodiments of the present invention provide method and apparatus for mapping and de-mapping in an Optical Transport Network (OTN), so as to map a Lower Order Optical Channel Data Unit (LO ODU) signal into a Higher Order Optical Channel Payload Unit (HO ODU) universally and efficiently.

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Constructing an ODTU according to an amount M of tributary slots of a HO OPU to be occupied by a LO ODU

Mapping the LO ODU to a payload area of the ODTU in a M-byte granularity

Encapsulating overhead information to the payload area of the ODTU

Multiplexing the ODTU, which has been mapped the LO

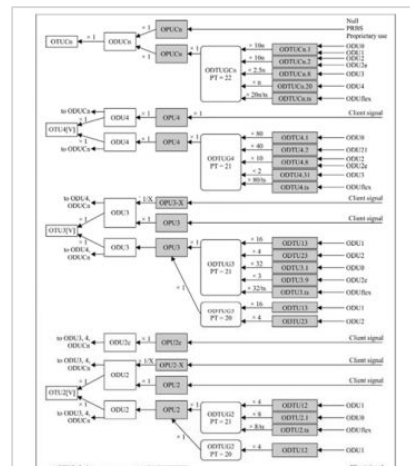


- With the claim scope interpretation from **Claim Analysis**, verify your findings against the complaint.
- Answer the question:
Does the alleged Invention element fall within or outside the patent's scope?

19.6.3 Mapping ODU_j into ODTU_{4.M}

Groups of M successive bytes of the extended ODU_j (j = 0, 1, 2, 2e, 3, flex) signal are mapped into a group of M successive bytes of the ODTU_{4.M} payload area under control of the GMP data/stuff control mechanism. Each group of M bytes in the ODTU_{4.M} payload area may either carry M ODU bytes, or carry M stuff bytes. The value of the stuff bytes is set to all-0s.

(G.709 Standard) at section 19.6.



Map claims to the file wrapper - '982

Which claim terms are in the file wrapper(i.e. examiner's opinion) ?

Disclosure Rate by Prior Art

Claims	Disclosure by Single Reference		Disclosure by Multiple References		Claim# 1
	Prosecution History	Post-Grant	Prosecution History	Post-Grant	
<input checked="" type="checkbox"/> #1	66%	75%	66%	75%	A method for processing data in an Optical Transport Network (OTN), comprising: mapping, by a processor of an apparatus for processing data, a Lower Order Optical Channel Data Unit (LO ODU) signal into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes, wherein M is equal to the number of time slots of a Higher Order Optical Channel Payload Unit (HO OPU) that are to be occupied by the ODTU signal, and M is an integer larger than 1; encapsulating overhead information to an overhead area of the ODTU signal; and multiplexing the ODTU signal into the HO OPU.
<input type="checkbox"/> #5	41%	66%	41%	66%	
<input type="checkbox"/> #9	60%	60%	60%	60%	
<input checked="" type="checkbox"/> #12	40%	60%	40%	60%	

Review how the asserted claims were disclosed by the prior art found by the examiner during prosecution and post-grant proceedings.

A higher percentage means more claim elements were disclosed by the prior art.

Disclosure Rate by Prior Art

Claim Insights Summary Table > Claim Table (Claim# 1) | Select A Claim 1 12 switch between claims

How is each claim element disclosed by cited prior art? Click numbers to find detailed comparison.

☒ The percentage "%" indicates how many keywords in an element being disclosed by a specific references.
[Click to find comprehensive explanation of calculation.](#)

☐ All ☐ Prosecution history ☐ Post-Grant ☒ Responded prior arts only

Claims	Prior Art Ref. (4)			
	US2003/0048813	US2006/0228115	US8048206	EP1826928
#1.01 A (80%)	80%	80%	40%	80%
#1.02 A (100%)	0%	66%	100%	66%
#1.03 A (92%)	50%	92%	92%	92%
#1.04 A (100%)	54%	100%	100%	100%
#1.05 N/A	N/A	N/A	N/A	N/A
#1.06 A (100%)	100%	100%	83%	100%

Map claims terms to the file wrapper - '982

How was this patent challenged during Prosecution?

Claims	Prior Art Ref. (s)		
	US2003/0048813	US2006/0228115	US8948205
#1.01 (A) (80%)	80%	80%	80%
#1.02 (A) (100%)	9%	86%	100%
#1.03 (A) (92%)	50%	92%	92%
#1.04 (A) (100%)	54%	100%	100%
#1.05 (N/A)	N/A	N/A	N/A
#1.06 (A) (100%)	100%	100%	83%

All of the limitations of this asserted claim element in '982 were 92% known by visser (US8948205).

Answer the questions:

How was this patent challenged during Prosecution?

Claim Insights Summary Table > Claim Table (Claim# 1) > Claim Element Page (Claim# 1.03) > US8948205 | Select A Claim 1 12

Side-by-side comparison; Claim terms not found may imply the reasons for patentability.

1.01 1.02 1.03 1.04 1.05 1.06 1.07

Find 1 Result(s) Find More Result(s) Filter Clear All

Claim Element

#1.03 a **Lower Order** **Optical Channel** **Data Unit** (LO ODU) **signal** into a **payload area** of an **Optical Channel** **Data Tributary Unit** (ODTU) **signal** in groups of M **bytes**, wherein

Terms not in the file wrapper Lower

Prior Art Ref.

(A) [US8948205]

20150401:CTNF Prosecution History 35 U.S.C. § double patenting

Rejection

6.

application claims 1-14 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 of u.s. patent no.8,948,205(visser).

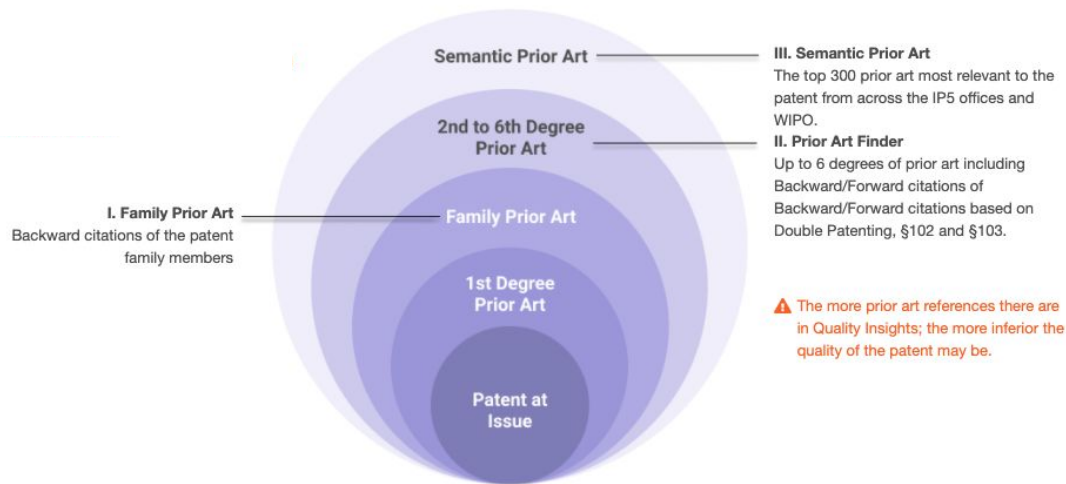
although the claims at issue are not identical, they are not patentably distinct from each other because the application claim 1 merely broadens the scope of the patented claim 1 by eliminating ' into which the data of the **lo odu** has been mapped and to which the overhead information has been encapsulated ' from the patented claim 1, and also rephrasing ' constructing an **optical channel** data tributary unit (odtu) according to an integer value m larger than 1, wherein the integer value m equals the number of time slots of a high order **optical channel** payload unit (ho pu) that are to be occupied by data of a **low order** data unit > optical channel data unit (lo odu) via the **odtu**, mapping the data of the **lo odu** into a **payload area** of the **odtu** by mapping the data of the **lo odu** in units of m **bytes**, such that multiple units of m **bytes** are mapped into the **payload area** of the **odtu** ' to ---mapping, by a processor of an apparatus for processing data, a **low order** data unit > optical channel data unit (lo odu) **signal** into a **payload area** of an **optical channel** data tributary unit (odtu) **signal** in units of m **bytes**, wherein m is equal to the number of time slots of a higher order **optical channel** payload unit (ho pu) that are to be occupied by the **odtu** **signal**, and m is an integer larger

Remarks

20150701-REM

application no.14/566,478 reply to non — final office action status of the claims in the non-final office action dated april 1, 2015, claims 1-14 are rejected. in this response, claims 1-14 are amended. the foregoing amendments are made to clarify the claim language and to correct matters of form in the claims. no new matter is introduced by way of these amendments. thus, claims 1-14 remain pending in this application, including independent claims 1, 5, 9 and 12. reconsideration of the pending claims in view of the following remarks is respectfully requested. claims 5-8 and 12—14 are rejected under 35 u.s.c. § 101, as the ' medium ' as claimed covers both (on)us of non-transitory tangible media and transitory propagating **signals**. applicants have amended the claims according to the examiner 's suggestion. therefore, the rejection is overcome.

How does Quality Insights generate prior art?



Semantic Prior Art

Semantic Prior Art of '982

Review potential prior art ranked by concept similarity

Semantic Prior Art

Most Relevant IP5 & WO 300 prior art references based on [Semantic Similarity](#) among the first claims and abstracts.

[Change Scope](#)

Select claim text or enter the desired text/keywords

Discover prior art's similarity with claim chart format in seconds!

Prior art references found (within the designated scope) that are deemed as having high semantic similarity will be starred with a ★

KEEP mode 29 are of high semantic similarity

Ranked By : Relevance

<input type="checkbox"/>	<input type="checkbox"/>	Ranking	Patent No.	<input type="checkbox"/>	★	Title	Legal Status	Appl. Date	Pub./Issue Date	Assignee (Std)	Applicability
<input type="checkbox"/>		1	US10374738B2	<input type="checkbox"/>	★	Method and apparatus for transporting cli...	Active	2017-10-03	2019-08-06	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(2)
<input type="checkbox"/>		2	US20180091246A1	<input type="checkbox"/>	★	METHOD AND APPARATUS FOR TRANS...	PGPub - Granted	2017-10-03	2018-03-29	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		3	US9819431B2	<input type="checkbox"/>	★	Method and apparatus for transporting cli...	Active	2014-07-24	2017-11-14	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(2)
<input type="checkbox"/>		4	US7583697B2	<input type="checkbox"/>	★	Method and device for transmitting low sp...	Active	2007-02-22	2009-09-01	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(2)
<input type="checkbox"/>		5	US20070189336A1	<input type="checkbox"/>	★	Method and Device for Transmitting Low ...	PGPub - Granted	2007-02-22	2007-08-16	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		6	US20140334503A1	<input type="checkbox"/>	★	METHOD AND APPARATUS FOR TRANS...	PGPub - Granted	2014-07-24	2014-11-13	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		7	US20150215060A1	<input type="checkbox"/>	★	Method and Apparatus for Transmitting a ...	Exam.	2015-04-03	2015-07-30	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		8	US20090263131A1	<input type="checkbox"/>	★	METHOD AND SYSTEM FOR TRANSMIT...	Abandoned	2009-04-28	2009-10-22	DONG LIMIN	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		9	US20100067905A1	<input type="checkbox"/>	★	METHOD AND DEVICES FOR TRANSMIT...	Abandoned	2009-11-20	2010-03-18	HUAWEI TECHNOLOGIES ...	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>		10	US20100014857A1	<input type="checkbox"/>	★	Method of mapping OPUke into OTN frames	Abandoned	2008-07-17	2010-01-21	AVALON MICROELECTRO...	(Pre-AIA) § 102(e)(1)

Semantic Prior Art of '982

Review potential prior art ranked by concept similarity

Active

US9312982B2

Method and apparatus for mapping and de-mapping in an optical transport network

Download Report

Save Report

Overview

History

Claim Analysis

Claim Insights

Family Prior Art

Prior Art Finder

Semantic Prior Art

File Wrapper Search

About Semantic Prior Art

Semantic Prior Art

Most Relevant IP5 & WO 300 prior art references based on Semantic Similarity within the scope below. [Reset to Default](#)

Enter text to start searching for semantic prior art (English only)

+ Add text from claims

Submit

Discover prior art's similarity with claim chart format in s

Add text from claims

Select A Claim

12345678910

Next 10

A method for processing data in an Optical Transport Network (OTN), comprising: mapping, by a processor of an apparatus for processing data, a Lower Order Optical Channel Data Unit (LO ODU) signal into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes, wherein M is equal to the number of time slots of a Higher Order Optical Channel Payload Unit (HO OPU) that are to be occupied by the ODTU signal, and M is an integer larger than 1; encapsulating overhead information to an overhead area of the ODTU signal; and multiplexing the ODTU signal into the HO OPU

Add

adding text from claims to find more related Prior Art

Prior Art Finder

Prior Art Finder for '982

Review cited and citing patents of '982 from the first to the sixth degree

Filter by:

- Applicability
- Legal Basis (§102 or §103)
- Patent Office
- Legal Status

1st Degree Art
4

2nd Degree Art
6

N Degree Art
25

N Degree Art
Extend forward/backward citations from the Second Degree Art

Discover prior art's similarity with claim chart format in seconds !

KEEP mode

Ranked By : Legal Basis (§102 first) |

US9312982B2

1st Degree (4)

2nd Degree (6)

3rd Degree (2)

4th Degree (6)

5th Degree (7)

6th Degree

6th Degree List

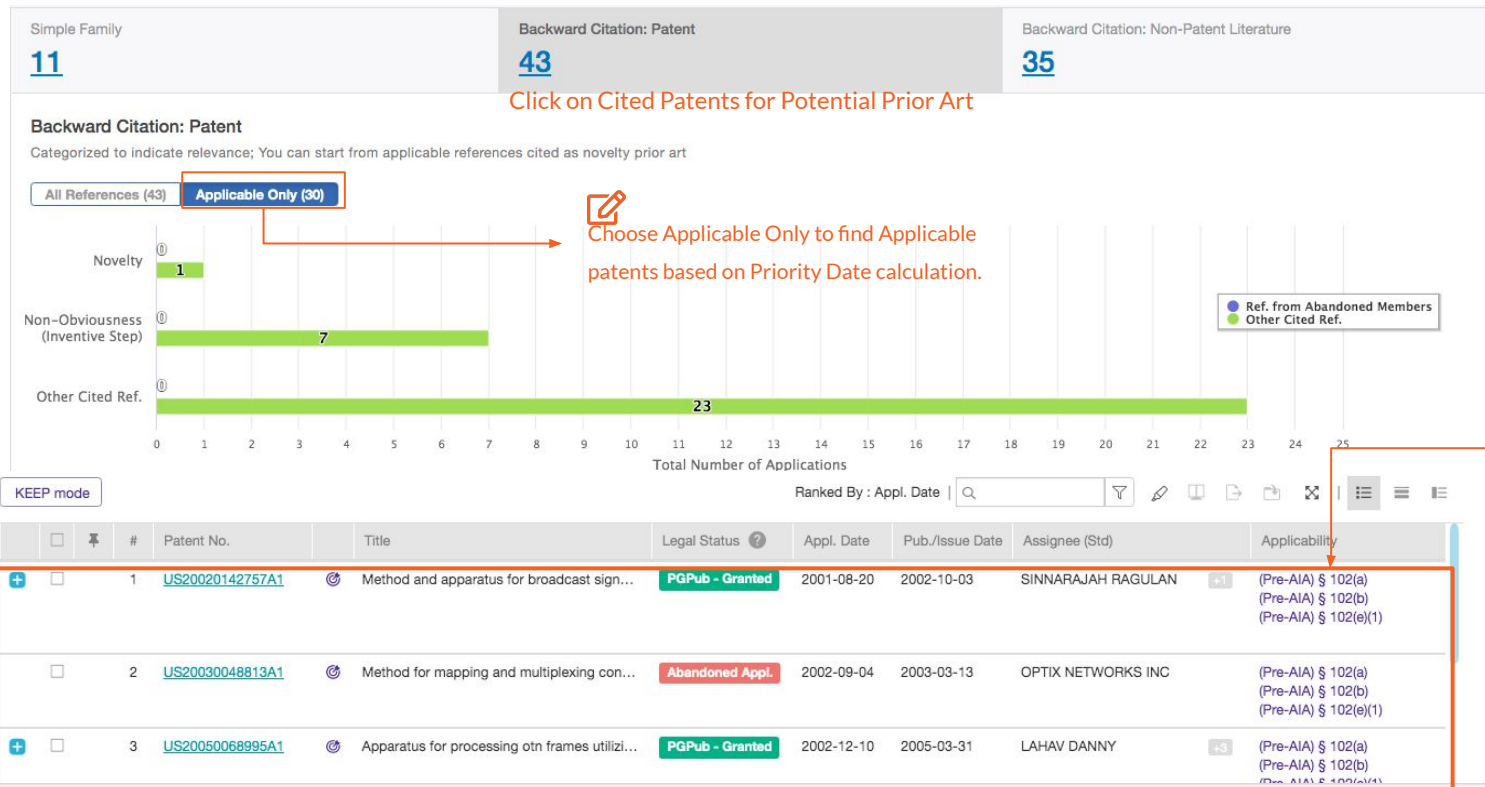
	#	Patent No.	Title	Legal Status	Appl. Date	Pub./Issue Date	Assignee (Std)	Applicability
<input type="checkbox"/>	1	US20060061517A1	Delivering pixels received at a lower data t...	Abandoned Appl.	2004-09-23	2006-03-23	JOLLY PAUL A	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(1)
<input type="checkbox"/>	2	US7295554B1	Word Multiplexing of encoded signals into...	Lapsed	2000-03-09	2007-11-13	ALCATEL LUCENT	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(2)
<input type="checkbox"/>	3	US20030169831A1	Data assisted serial link decoder using ov...	PGPub - Granted	2002-03-07	2003-09-11	STMICROELECTRONICS I...	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(1)
<input type="checkbox"/>	4	US6917366B1	System and method for aligning multi-cha...	Active	2001-04-04	2005-07-12	PIXELWORKS INC	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(2)
<input type="checkbox"/>	5	US20090146935A1	Liquid crystal display	PGPub - Granted	2008-12-10	2009-06-11	SONG HONG SUNG	(Pre-AIA) § 102(e)(1)
<input type="checkbox"/>	6	US20040105644A1	Optically coupling into highly uniform wav...	PGPub - Granted	2003-08-27	2004-06-03	DAWES DAVID	(Pre-AIA) § 102(a) (Pre-AIA) § 102(b)

Up to 6th Degree
Prior Art List

Family Prior Art

Family Prior Art of '982

Review prior art cited by and cited against the family counterparts when available



Comparison tools

Prior Art Comparison (claim chart format)

What does this prior art say about the critical elements?

Disclosure Rate of Prior Art

1.01
1.02
1.03
1.04
1.05
1.06
1.07

Find **101** Result(s) | Disclosure Rate **80%**

Claim Element

#1.03 a Lower Order Unit Optical Channel Data signal in to a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes, wherein

Keyword List

- signal (216) FW PA
- odtu (60) FW PA
- payload area (52) FW PA
- signal in (30) FW PA
- optical channel (29) FW PA
- tributary unit (11) FW PA
- bytes (9) FW PA

US10374738B2 Content

Specification

[0002] The present invention relates to optical communications, and in particular, to method and apparatus for transporting client signals in an Optical Transport Network (OTN) .

[0004] In an OTN, the technology for mapping and wrapping client signals to make them suitable for transmission in the OTN is called Digital Wrapping (DW) technology. DW technology involves technical means such as Optical Channel Transport Unit (OTU) mapping, multiplexing structures, time division multiplexing of Optical Channel Data Unit - k (ODUk), and client signal mapping .

[0005] Before transmitting client signals, it is necessary to map the client signals to an Optical Channel Payload Unit - j (OPUj), where j represents the supported bit rate and may have the values of 1, 2, or 3 which indicate a bit rate of about 2.5 Gbps, 10 Gbps, and 40 Gbps respectively, and add the overhead of the OPUj into the client signal to constitute an OPUj, and then add the channel overhead of the Optical Channel Data Unit (ODUj) into the OPUj to constitute an ODUj. The OTU overhead and the Forward Error Correction (FEC) overhead are added into the ODUj to constitute an Optical Channel Transport Unit - j (OTUj), and then the OTUj is loaded to a wavelength and sent out .

[0006] Time division multiplexing may be performed for the ODUj first so that the client signals can be transmitted through a transport channel with higher rates . Therefore, the G.709 recommendation defines an Optical Channel Payload Unit - k Tributary Slot (OPUk TS) and an Optical Channel Data Tributary Unit j into k (ODTUjk), where k represents the supported bit rate and is greater than j. On the basis of such definition, each byte of the ODUj is mapped to each byte of the ODTUjk in the asynchronous mode, and then the ODTUjk is mapped to the OPUk TS. Finally, an OTUk is constituted for transmitting .

[0007] In the step of mapping the client signal to the OPU, in order to transmit client signals of different types, the OTN specifications provide multiple service mapping methods such as mapping of the signals of a Constant Bit Rate (CBR), mapping of the Generic Framing Procedure (GFP) frame, and mapping of the Asynchronous Transfer Mode (ATM) cell flows, which are defined in the G.709. With the growth of data services, new requirements are raised for the full - rate transparent transmission capability of the OTN, and the application of the CBR mapping mode becomes more widespread .

[0008] The G.709 living list SP13 puts forward an agnostic CBR mapping method . FIG . 1 shows a frame structure suitable for this CBR mapping . Starting from the 15th column, each OPUk frame includes : a 6-byte Cbyte, where the Cbyte indicates the number of bytes of the mapped client signal; an OPUk payload area composed of (4 * 3808 + 1) bytes, for storing client signals; and a 1-byte Payload Structure Identifier (PSI) . On the basis of frame structure as shown in FIG . 1, the client signal is mapped to the payload area of the OTN frame of the agnostic CBR service through the existing & # x3a3;- ; algorithm .

Answer the question:

What does this prior art say about the Claim elements: “ODTU”, “payload area”?

Discover prior art similarity with keywords (includes keyword stemming) mapped to the selected prior art reference Abstract, Claims, and Specification.

Prior Art Comparison (sample output)

Easily generate a table like below

Claim		Claim-Term Interpretation	Semantic Prior Art - '982	3rd Degree Citation Prior Art - B
1	A method for processing data in an Optical Transport Network (OTN), comprising:	Refer to Claim Analysis results	66%	.....
	mapping, by a processor of an apparatus for processing data,	.....	75%	.....
	a Lower Order Optical Channel Data Unit (LO ODU) signal into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes, wherein	.....	80%	
	M is equal to the number of time slots of a Higher Order Optical Channel Payload Unit (HO OPU) that are to be occupied by the ODTU signal,	.....	62%	.....
	and M is an integer larger than 1;	.....	N/A	.....
	encapsulating overhead information to an overhead area of the ODTU signal;		80%	
	and multiplexing the ODTU signal into the HO OPU.	.....	60%	.....

System-identified keywords and key phrases
(highlighting of other keywords is available)

Results from claim to
specification and file
wrapper mapping

Results from prior art comparison by
claim element

Prior Art downloads

Prior Art downloads

Select all

Export

#	Patent No.	Title	Status	Appl. No.	Appl. Date	Pub. No.	Pub. Date
1	CN1247662A	Dual use spe					
2	EP0998105B1	Mobile teleph					
3	JPH09-036932A	EXTERNAL R					
4	JPH11-055358A	MOBILE RAD					
5	US5317622	Ringin circuit for use in a telephone set f...	Abandoned	1994-05-31	1993-02-23	NEC CORP	



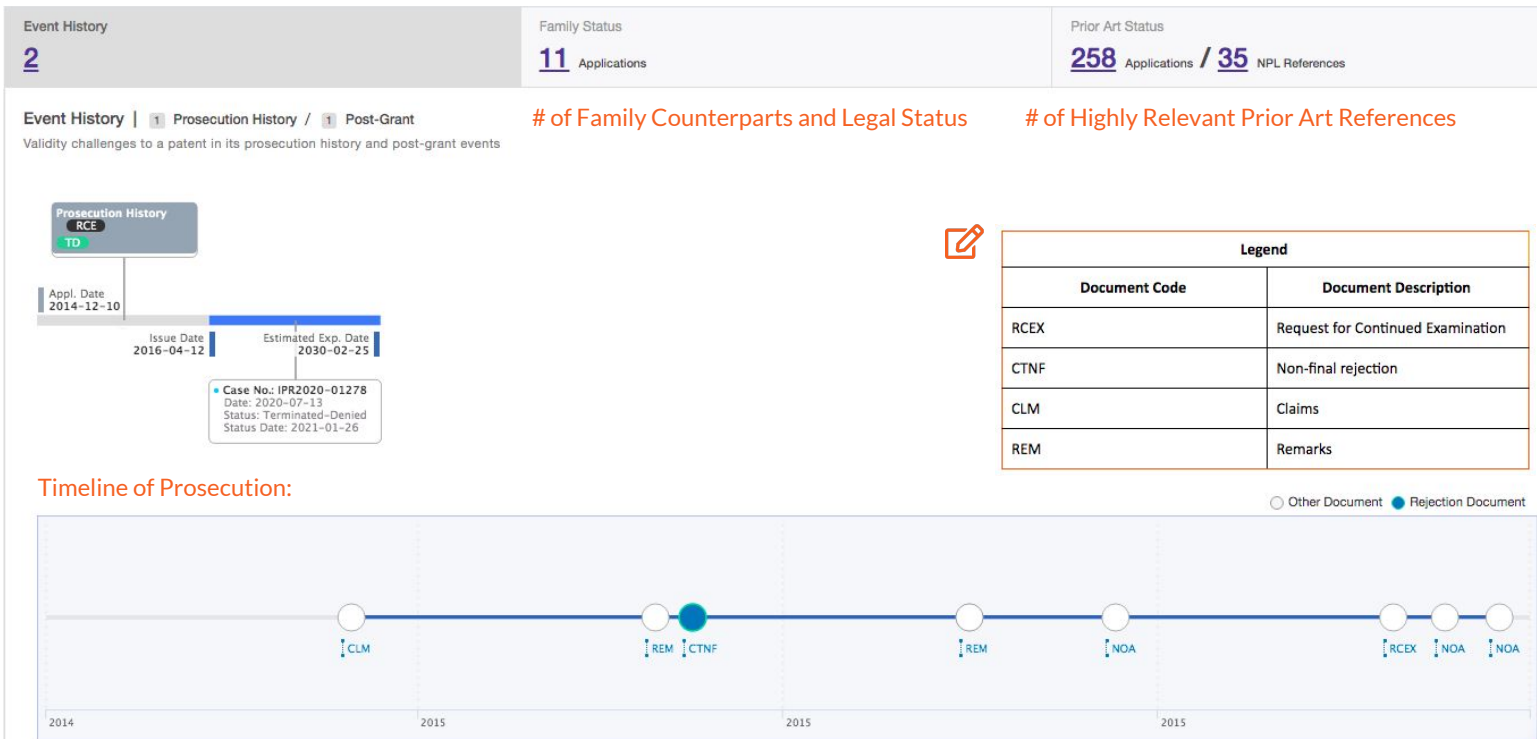
Download patent data in Excel or PDF format for Family Prior Art, Second Degree Prior Art, and/or Semantic Prior Art.

Prosecution and PTAB History

Key Events

Key Events - '982

1 Prosecution & 1 Post-Grant



Key Events - '982

Prosecution History

14/566478 Prior Art Ref. | 0 Ref.

Check prior art cited and the legal basis of these challenges

Double Patenting

1 Ref.

[US8948205](#)

§ 102

0 Ref.

§ 103

0 Ref.

Summary of 14/566478 History | 9 Event(s)

Clickable events for original OAs and their OCR version when available.

Data Last Updated on: 2021-02-03

Descriptions (Code)	Date	Prior Art Ref.
Notice of Allowance (NOA)	2015-12-22	
Notice of Allowance (NOA)	2015-12-04	
Request for Continued Examination (RCEX)	2015-11-17	
Notice of Allowance (NOA)	2015-08-18	
Terminal Disclaimer Filed (DIST)	2015-07-01	
Applicant Arguments/Remarks Made in an Amendment (REM) Claims (CLM)	2015-07-01	
Non-Final Rejection (CTNF)	2015-04-01	Grounds 2
Applicant Arguments/Remarks Made in an Amendment (REM) Claims (CLM)	2015-03-20	
Claims (CLM)	2014-12-10	

Grounds 2

Direct links to Grounds,
Claims Highlighted and Prior Art Details

Key Events - '982

Post-Grant History

Event History

2

Family Status

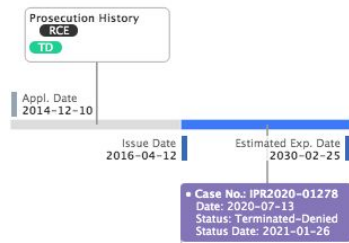
11 Applications

Prior Art Status

258 Applications / **35** NPL References

Event History | 1 Prosecution History / 1 Post-Grant

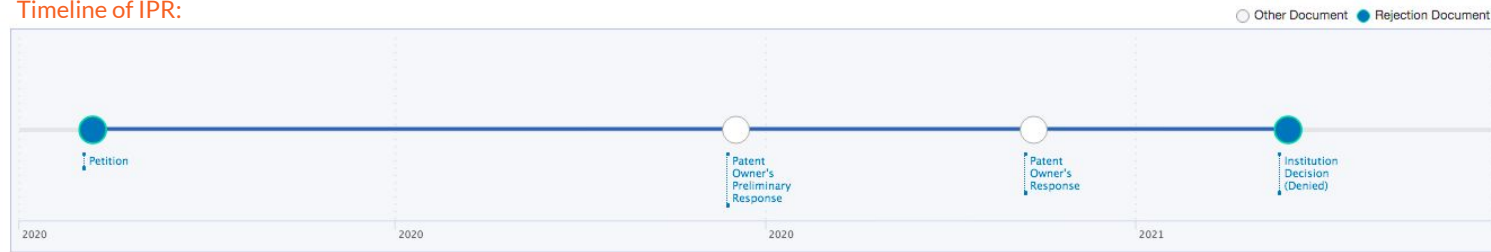
Validity challenges to a patent in its prosecution history and post-grant events



of Family Counterparts and Legal Status

of Highly Relevant Prior Art References

Timeline of IPR:



Key Events - '982

Post-Grant History

IPR2020-01278 Prior Art Ref. | 3 Ref.

Check prior art cited and the legal basis of these challenges

Double Patenting

0 Ref.

\$ 102

0 Ref.

\$ 103

3 Ref.

[EP1826926 \(1st\)](#)
Zou

[US20060228115](#)
Binetti

[US20030048813](#)
Lahav

Order

ORDERED that the Petition is denied and no trial is instituted.

Summary of IPR2020-01278 History | 4 Event(s)

Clickable events for original OAs and their OCR version when available.

Data Last Updated on: 2021-07-15

Descriptions (Code)	Date	Prior Art Ref.
Institution Decision (Denied)	2021-01-26	Grounds 2 ^
Legal Basis	Claims	Prior Art Ref.
35 U.S.C. § 103	claim 3,4,7,8,11,14	Zou EP1826926 (1st) Lahav US20030048813 Binetti US20060228115
35 U.S.C. § 103	claim 1,2,5,6,9,10,12,13	Zou EP1826926 (1st) Binetti US20060228115
Patent Owner's Response	2020-12-15	
Patent Owner's Preliminary Response	2020-10-27	

Direct links to Grounds,
Claims Highlighted and Prior Art Details

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<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2015-06-19
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2015-03-19
<input type="checkbox"/> Request for Continued Examination (RCEX)	Applicant	2015-03-03
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<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-06-26
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Keywords (2)

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U9926631182 - CTNF (2015-03-19)

13/284,674 6 / 18 90%

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the sensor traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.

However, Gray does teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection (Fig. 2; [0063]: **A number of conductors forming rows and columns of a conductive pattern (e.g., indium tin oxide (ITO)) may be deposited on a substrate composed of polyester or other material on one or more layers of the touchscreen... the row and column oriented conductors may be disposed on the same layer...**; See also Miller US 5,089,672; Col. 2, lines 11-16; Col. 5, lines 1-20; Col. 5, lines 61-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Grant and Hotelling by including the conductive lines (rows and columns) taught by Gray for the purpose of "providing paths for signals traveling through the touchscreen" (See Gray; Abstract).

103(a) as being unpatentable over Grant et al. US 2008/0303782 A1 (previously cited and hereinafter Grant), in further View of Gray et al. US 2010/0045814 (previously cited and hereinafter Gray) and in further View of Frey et al. US 2009/0219257 (previously cited and hereinafter Frey).

Regarding claim 1, Grant does teach an apparatus (Abstract) comprising: a substantially flexible substrate (Abstract: flexible touch sensitive surface); and a touch [0003], [0005], [0006], [0022], [0023], [0027], and [0071], e.g., flexible surface, flexible circuitry, and capacitance touch [0003] which must be conductive to receive user input) disposed on the substantially flexible substrate (see at least Figs. 1A-1C; [0009-0011], configured to bend with the substantially flexible substrate (Figs. 1A-1C, 3 and the corresponding descriptions; [0003]).

Grant does not specifically teach the touch [0003] comprising drive or sense electrodes made of flexible conductive material.

However, Hotelling does teach a touch [0003] (Fig. 2a, 5 and the corresponding descriptions, and the Summary of the Invention, i.e., a touch [0003] comprises of row and column traces made of copper) comprising drive or sense electrodes (see at least Figs. 1 and 2a; [0008, 0030-0033]; claim 9; sense traces formed on a first side of a dielectric substrate; and drive traces formed on a second side of the substrate) made of flexible conductive material ([0008]; traces made of copper or other highly conductive metals running along the edge of the substrate).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the [0003] traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.



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