



**INTERNATIONAL BUREAU
REPORT**

2015 U.S. International Circuit Capacity Data

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TABLE OF CONTENTS

	Page
I. EXECUTIVE SUMMARY	1
A. Highlights.....	1
B. Data Units	2
II. DATA HIGHLIGHTS.....	3
A. International Terrestrial and Satellite Circuits Reports.....	3
B. Submarine Cable Operator Reports	4
C. Submarine Cable Capacity Holder Reports	7

Figures		Page
1	Terrestrial and Satellite Circuits (World Totals 2015)	3
2	Submarine Cable Operator Reports, Total Available Capacity by Region (2007-2015)	4
3	Submarine Cable Operator Reports, Total Available Capacity by Region (2015) and Planned (2017)	5
4	Number of Cables by Region (2007-2015)	6
5	Top 8 Foreign Landing Points for U.S. International Submarine Cables (2015)	7
6	Non-Activated Capacity by Region (2015)	8
7	Total Activated vs. Non-Activated Capacity (2015)	8
8	Total Available Capacity (Submarine Cable Operator Reports) vs. Total Owned Capacity (Submarine Cable Capacity Holder Reports) (2015)	9
9	Total Available Capacity Captured by Submarine Cable Capacity Holder Reports (2015)	10

Tables		
1	Section 43.62 Circuit Capacity Filers (2015)	T-1
2	U.S. International Submarine Cable Operator Filers (2015)	T-3
3	Satellite and Terrestrial Circuits (in 64 kbps) (2015)	T-4
4(A)	Submarine Cable Operator Reports (in Gbps) (2015/2017)	T-5
4(B)	U.S. International Submarine Cable Capacity (in Gbps)	T-7
5	Submarine Cable Capacity Holder Reports (2015)	T-9
6	Percentage of Total Available Capacity Reported (2015)	T-10

Attachments		
A	U.S. International Submarine Cables – Landing Points Sorted by Region, Cable, and Foreign Landing Point	A-1
B	U.S. International Submarine Cables – Landing Points Sorted by Region, Foreign Landing Point, and Cable	B-1
C	U.S. International Submarine Cables – Countries Sorted by the Number of Landing Points	C-1

2015 U.S. INTERNATIONAL CIRCUIT CAPACITY REPORT¹

I. EXECUTIVE SUMMARY

The *2015 U.S. International Circuit Capacity Report (Circuit Capacity Report)* highlights circuit capacity data submitted by U.S. facilities-based common carriers, non-common carrier satellite operators, cable landing licensees, and U.S. international carriers that owned or leased capacity on a submarine cable between the United States and any foreign point, as of December 31, 2015 (Filing Entities).² This report also identifies newly licensed submarine cables, cable systems that have come into service, and pending FCC submarine cable applications since December 31, 2015.

A. Highlights

- In 2015, the total available capacity of U.S. international cables was approximately 120,000 gigabit per second (Gbps) circuits, up from 91,000 Gbps circuits in 2014.³ Submarine cable capacity grew 35 percent per year from 2007 to 2015 and is projected to grow 17 percent per year from year-end 2015 to year-end 2017.⁴
- In 2015, of the three regions into which we traditionally group submarine cables (the Americas, Atlantic, and Pacific regions), the Atlantic region accounted for 40 percent of total available capacity, the Pacific region had 37 percent, and the Americas region had more than 23 percent.⁵
- Available capacity reported by cable operators closely matches the owned capacity reported by cable capacity holders (93 percent).⁶
- In 2015, over 87 percent of capacity on U.S. international cables was activated. The non-activated capacity varied among regions – with the Americas region reporting 18 percent, the Pacific region reporting 17 percent, and the Atlantic region reporting 3 percent.⁷
- As of December 31, 2015, the top eight foreign landing points (in descending order) for U.S. international submarine cables were Colombia (9 landing points), Japan and the United Kingdom (7 landing points each), Panama (6 landing points), Brazil and Venezuela (5 landing points each), and Australia and Mexico (4 landing points each).⁸

¹ This 2015 U.S. International Circuit Capacity Report has been revised to include submarine cable capacity holder data that have been updated since the Report was published on August 29, 2017. In particular, we revised Figures 6, 8, and 9, Tables 5 and 6, and the relevant text in Section II.C below.

² 47 CFR § 43.62 (2015); *Reporting Requirements for U.S. Providers of International Telecommunications Services; Amendment of Part 43 of the Commission's Rules*, IB Docket No. 04-112, Second Report and Order, 28 FCC Rcd 575, 608, para. 108, 616-17, Appx. A (2013) (*Part 43 Second Report and Order*); Filing Manual for Section 43.62 Annual Reports at 27-29, paras. 134-39 (IB Feb. 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-332732A1.pdf (*Section 43.62 Filing Manual*).

³ See *infra* 4 & T-7, Tbl. 4(B).

⁴ See *infra* 4-5 & T-7, Tbl. 4(B).

⁵ See *infra* 4 & T-5, Tbl. 4(A).

⁶ See *infra* 9-10, Fig. 8 & 9, T-10, Tbl. 6.

⁷ See *infra* 8, Fig. 6 & 7, T-9, Tbl. 5. Activated capacity consists of capacity used for providing services or facilities to customers (on either a common carrier or non-common carrier basis), capacity reserved for internal company use, capacity reserved for restoration services, and unused capacity that is available for immediate use. Non-activated capacity is unused capacity that is not available for immediate use. *Section 43.62 Filing Manual* at 29, para. 139.

⁸ See *infra* 7, Fig. 5, Attach. C.

B. Data Units

Filers reported the data set out in this *Circuit Capacity Report* in three different units: (1) International Terrestrial and Satellite Circuits Reports – in 64 kilobits per second (kbps) circuit units, for the purpose of assessing annual regulatory fees;⁹ (2) Submarine Cable Operator Reports – in Gbps circuit units, which is an industry standard used to measure capacity; and (3) Submarine Cable Capacity Holder Reports – in Synchronous Transport Module level-1 (STM-1) units, a commonly used unit in commercial contracts in the industry. Conversion rates are:

one STM-1 equals 1,890 64 kbps circuit units, and
one Gbps equals 6.4 STM-1s.

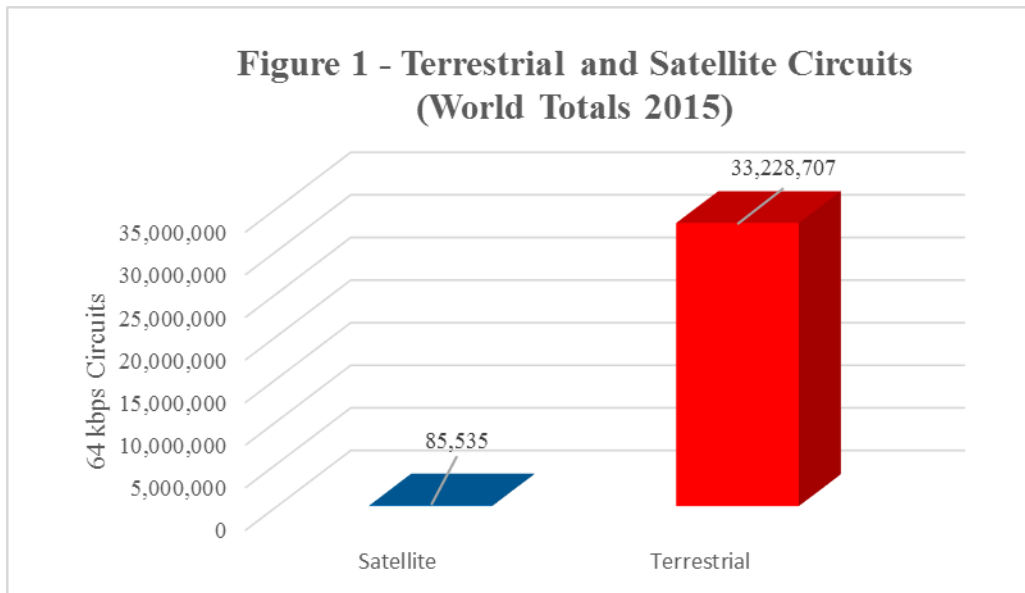
⁹ 47 U.S.C. § 159(g); 47 CFR § 1.1156.

II. DATA HIGHLIGHTS

A. International Terrestrial and Satellite Circuits Reports

Each facilities-based common carrier files a report showing its active common carrier terrestrial or satellite circuits between the United States and any foreign point as of December 31 of the preceding calendar year. The terrestrial and satellite circuits are reported in world-total counts of 64 kbps circuit units. In addition, non-common carrier satellite operators report a world-total count of circuits used by themselves or their affiliates, or sold or leased to any customer as of December 31 of the reporting period, other than to an international common carrier authorized by the Commission to provide U.S. international common carrier services.¹⁰

Satellite circuits account for less than one percent (85,535 satellite circuits) and terrestrial circuits account for the remaining 99.7 percent (33,228,707 terrestrial circuits) as of December 31, 2015.



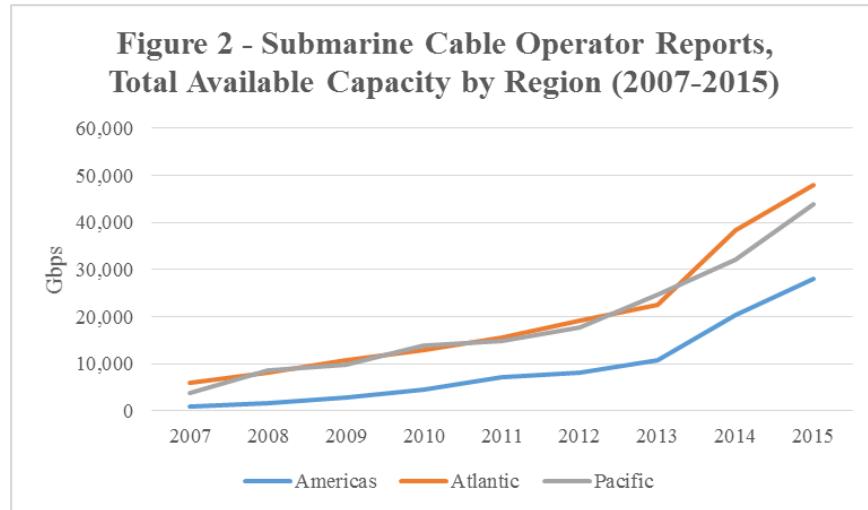
Source: Table 3.

¹⁰ Section 43.62 Filing Manual at 27, para. 135.

B. Submarine Cable Operator Reports

Submarine cable landing licensees file available and planned capacity information for each cable system. **Table 4(A)** provides information on available capacity data (year-end 2015) and planned capacity data (year-end 2017) on an individual and regional basis.¹¹ **Table 4(B)** provides detailed cable-by-cable capacity trend data for 2007 to 2015 and planned capacity for 2017.¹² In 2015, the total available capacity of U.S. international cables was approximately 120,000 Gbps circuits, up from 91,000 Gbps circuits in 2014.¹³ In 2015, there were 21 U.S. international cables in service in the Americas region (compared to 20 in 2014), 14 in the Pacific region (compared to 14 in 2014), and 9 in the Atlantic region (compared to 8 in 2014).¹⁴ In 2015, the Atlantic region accounted for 40 percent of total available capacity (compared to 42 percent in 2014), followed by the Pacific region accounting for 37 percent (compared to 36 percent in 2014), and the Americas region accounting for 23 percent (compared to 22 percent in 2014).¹⁵

Below, **Figure 2** illustrates the total available capacity of U.S. international cables in the Americas, Atlantic, and Pacific regions from 2007 to 2015.¹⁶



Source: Table 4(B).

¹¹ See *infra* T-5, Tbl. 4(A).

¹² See *infra* T-7, Tbl. 4(B).

¹³ *Id.*

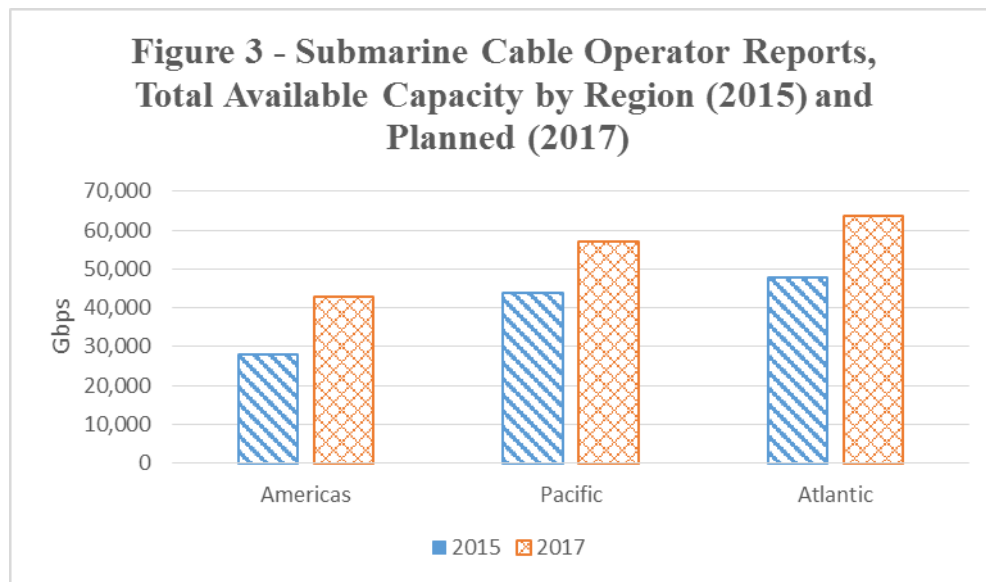
¹⁴ *Id.*

¹⁵ See *infra* T-5, Tbl. 4(A) & T-7, Tbl. 4(B).

¹⁶ See *infra* T-7, Tbl. 4(B); FCC, International Bureau, 2014 U.S. International Circuit Capacity Report (2016) at 6, https://apps.fcc.gov/edocs_public/attachmatch/DOC-337257A2.pdf (2014 Circuit Capacity Report); FCC, International Bureau, 2013 Section 43.82 Circuit Status Data, https://apps.fcc.gov/edocs_public/attachmatch/DOC-334397A2.pdf (2013 Section 43.82 Circuit Status Report). Section 43.62 of the Commission's rules requires the filing of available cable capacity as of December 31 of the previous calendar year (i.e., 2015) and planned capacity two years out from the reporting date (i.e., 2017). 47 CFR 43.62(a)(2); *Section 43.62 Filing Manual* at 28, para. 136. The 2007-2013 cable capacity data are derived from the 2013 Section 43.82 Circuit Status Report. 2013 Section 43.82 Circuit Status Report at 33-34, Tbl. 7(A).

From 2007 to 2015, capacity grew most quickly in the Americas region, at a compound annual growth rate of 52.6 percent, followed by the Pacific region (35.6 percent) and the Atlantic region (29.6 percent). Cable operators forecast a lower growth rate from 2015 to 2017, with projected annual growth of 23.6 percent in the Americas region, 14.0 percent in the Pacific region, and 15.4 percent in the Atlantic region. For all three regions, overall submarine cable capacity has grown approximately 35 percent per year from 2007 to 2015 and is projected to grow approximately 17 percent per year from 2015 to 2017.¹⁷

Below, **Figure 3** illustrates the available (year-end 2015) and planned (year-end 2017) submarine cable capacity in all three regions.¹⁸ The data project capacity increases from approximately 48,000 to 64,000 Gbps circuits in the Atlantic region, 28,000 to 43,000 Gbps circuits in the Americas region, and 44,000 to 57,000 Gbps circuits in the Pacific region.

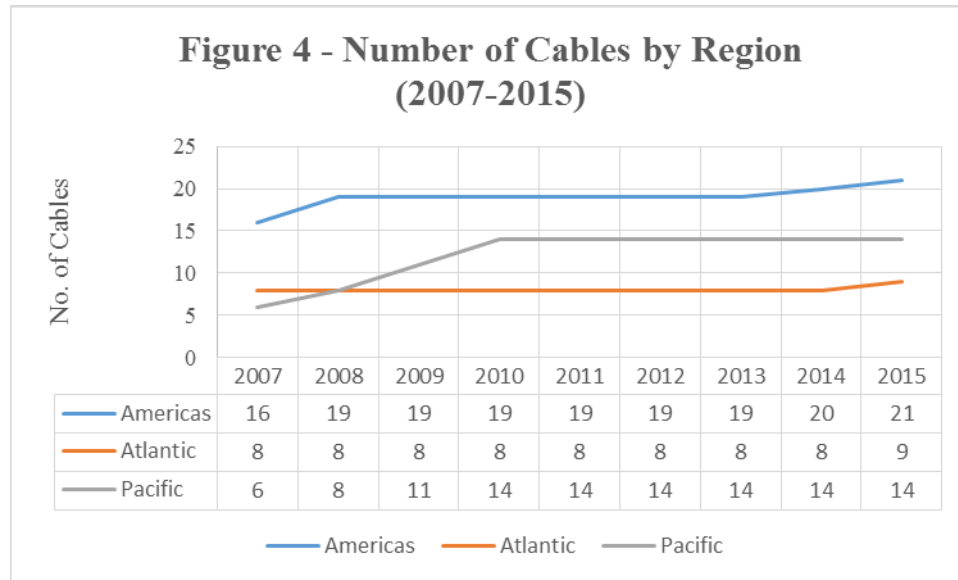


Source: Table 4(A).

¹⁷ See *infra* T-7, Tbl. 4(B).

¹⁸ See *infra* T-5, Tbl. 4(A). We omit 2016 estimates from the 2014 43.62 *Circuit Capacity Report*.

Below, **Figure 4** provides the number of cables in each region over time.¹⁹



Source: Table 4(B).

Since the reporting period, additional U.S. international cable systems have been licensed, some have been placed into service, and others are the subject of currently pending applications.

- In the Americas region, on December 9, 2016, the International Bureau licensed the Monet cable system connecting the United States to Brazil. On May 2, 2017, the International Bureau licensed the BRUSA system connecting Virginia Beach, Virginia with San Juan, Puerto Rico, and Fortaleza and Rio de Janeiro, Brazil.²⁰
- In the Atlantic region, the AEConnect system went into service on May 5, 2016, connecting New York to Ireland. On May 2, 2017, the MAREA cable system application was granted, which will connect Virginia Beach, Virginia to Bilbao, Spain.²¹
- In the Pacific region, the FASTER cable went into service on August 17, 2016, connecting the United States with Japan and Taiwan. On February 23, 2017, the GOKI Cable Network went into service connecting the United States with Japan. On January 12, 2017, the International Bureau licensed the NCP cable system connecting the United States with China, Japan, the Republic of Korea, and Taiwan. The SEA-US cable system, connecting Hawaii with Indonesia, the Philippines, and Guam, received its license on January 12, 2017 and went into service on August 8, 2017. Also, there is a pending application for the Hawaiki system that will connect the United States with Australia and New Zealand.²²

¹⁹ See *infra* T-7, Tbl. 4(B).

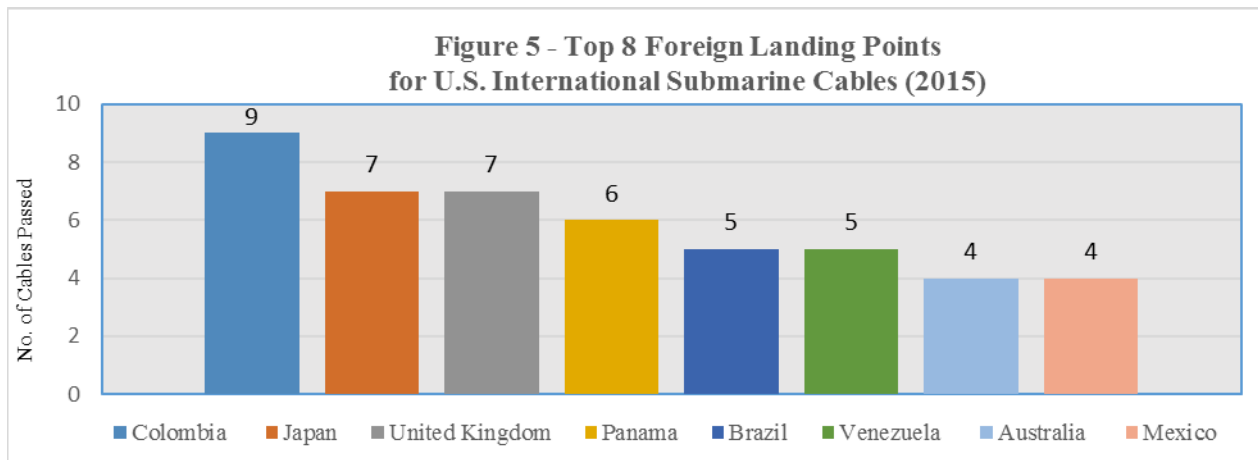
²⁰ See IBFS File Nos. SCL-LIC-20150408-00008 (Monet); SCL-LIC-20160330-00011 (BRUSA).

²¹ See IBFS File Nos. SCL-LIC-20150303-00006 (AEConnect); SCL-LIC-20160525-00012 (MAREA).

²² See IBFS File Nos. SCL-LIC-20150626-00015 (FASTER); SCL-LIC-20110329-00009 (GOKI); SCL-LIC-20151104-00029 (NCP); SCL-LIC-20150626-00016 (SEA-US); SCL-LIC-20160906-00019 (Hawaiki).

As shown in **Attachment A**, the Atlantic region has fewer foreign submarine cable landing points²³ for U.S. international cables than the Americas and Pacific regions.²⁴ There are 20 foreign landing points in the Atlantic region, compared to 80 in the Americas, and 29 in the Pacific region.

Below, **Figure 5** lists the top eight foreign landing points for U.S. international cables. As of December 31, 2015, the top foreign landing points were Colombia (with nine U.S. international cables); Japan and United Kingdom (with seven each); Panama (with six); Brazil and Venezuela (with five each); and Australia and Mexico (with four each).²⁵ There were new foreign landing points in Colombia, Japan, and Brazil.



Source: Attachment C.

C. Submarine Cable Capacity Holder Reports

A U.S. international carrier or cable landing licensee that owned or leased capacity on a submarine cable between the United States and any foreign point on December 31 of the reporting period files capacity amounts for the following categories: (1) owned capacity; (2) net indefeasible rights-of-use (IRUs); (3) net inter-carrier leaseholds (ICLs); (4) net capacity held (i.e., the total of categories (1) through (3)); (5) activated capacity; and (6) non-activated capacity.²⁶ The Submarine Cable Capacity Holder Reports provide information on cable capacity in use.

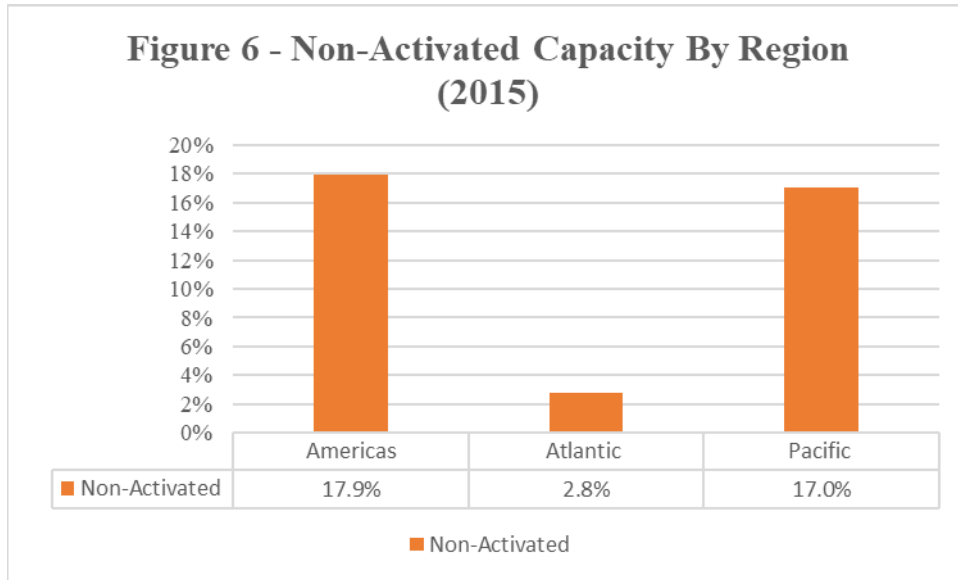
²³ A foreign point “refers to a foreign country or other geographic location outside the United States.” *Section 43.62 Filing Manual*, Appx. B: Definitions.

²⁴ See *infra* Attach. A.

²⁵ These figures do not include any foreign-to-foreign cables from those countries. For instance, although only two U.S. international cables land in China, ten other cables also land in China, most of which are intra-Asia cables. TeleGeography, Submarine Cable Map, <http://www.submarinecablemap.com/#/country/china> (last updated on June 17, 2017).

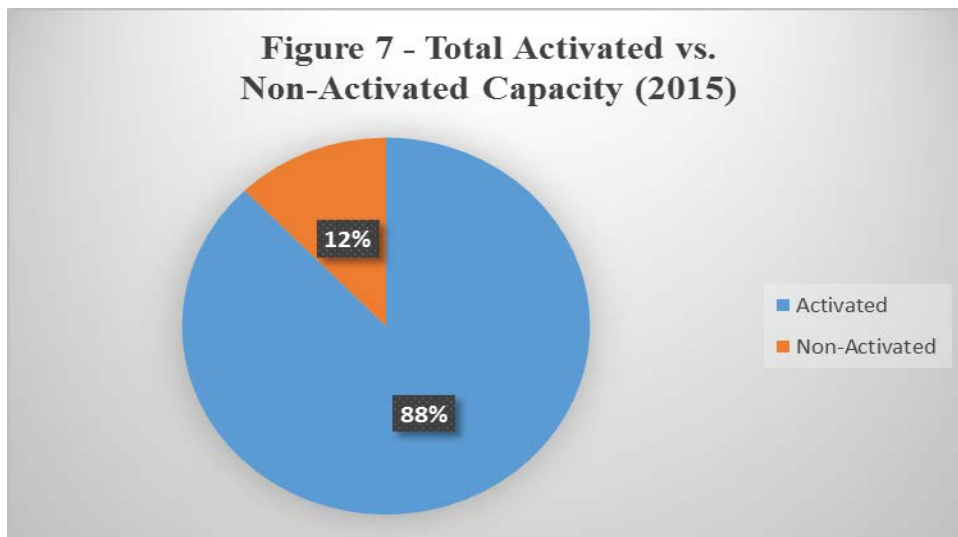
²⁶ *Section 43.62 Filing Manual* at 28-29, paras. 138-39.

Below, **Figure 6** shows non-activated capacity data for the Americas, Atlantic, and Pacific regions.²⁷ Non-activated capacity varies among regions. The Americas and Pacific regions have larger percentages of non-activated capacity. The Atlantic region, by contrast, has the lowest non-activated capacity at 2.8 percent.



Source: Table 5.

Below, **Figure 7** shows that of total U.S. international cable capacity for all regions, 88 percent was activated and 12 percent was non-activated.²⁸



Source: Table 5.

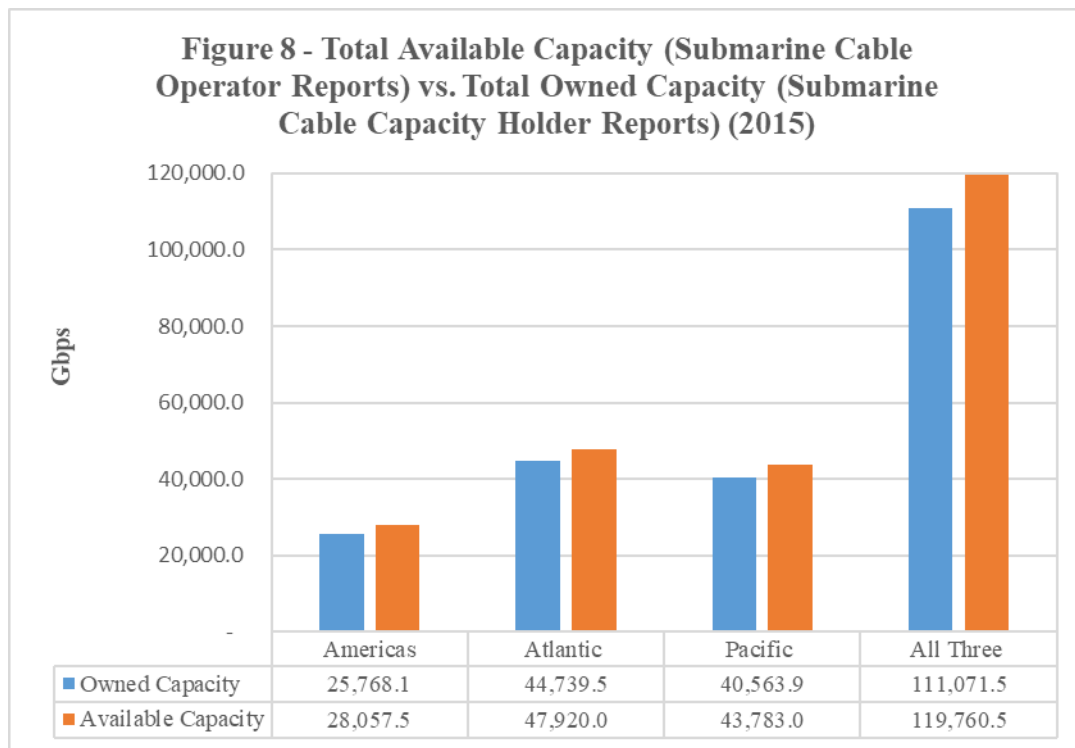
²⁷ See *infra* T-9, Tbl. 5.

²⁸ *Id.*

To assess the accuracy of reported data, we compare the total available circuit capacity reported by submarine cable operators with the total circuit capacity reported by submarine cable capacity holders by region and world total.

Ideally, the total available capacity reported by a submarine cable operator in the Submarine Cable Operator Report for a given cable should match the total in the Submarine Cable Capacity Holder Reports of the net amount held (either owned or leased capacity) reported by all submarine cable capacity holders on that cable. Thus, the totals by region and world total should also match. However, there are discrepancies between these figures because some amount of capacity is held by non-reporting entities, such as entities that hold capacity on a cable but are not U.S. carriers and are otherwise not required to operate as U.S. cable landing licensees.

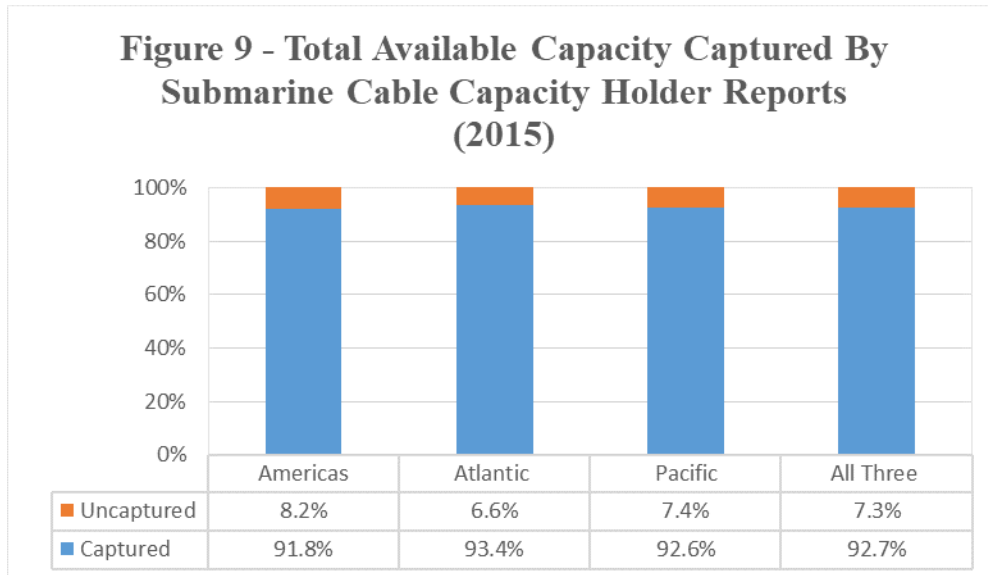
Below, **Figure 8** shows that total available circuit capacity closely matches the amount owned by region and world total, although there are small discrepancies.²⁹



Source: Table 6.

²⁹ See *infra* T-10, Tbl. 6.

Below, **Figure 9** shows the percentage of total available submarine cable capacity reported for each region and in the aggregate.



Source: Table 6.

The fraction of uncaptured capacity, which is the difference between reported available capacity and reported owned or leased capacity, among the regions is about the same (from 6.6 percent to 8.2 percent). The capacity holders' data accounts for 92.7 percent of available capacity.³⁰

³⁰ In 2014, the Section 43.62 data accounted for 94.6 percent of available capacity. *2014 Circuit Capacity Report* at 9, 13.

Table 1
Section 43.62 Circuit Capacity Filers (2015)

No.	Filing Entities	Satellite Circuits Reports		Terrestrial Circuits Reports	Submarine Cable Operator Reports	Submarine Cable Capacity Holder Reports
		Common Carrier	Non-Common Carrier			
1	Allstream Fiber US, Inc.					✓
2	America Europe Connect Licenses Limited				✓	✓
3	American Samoa Hawaii Cable, LLC				✓	✓
4	Antilles Crossing-St. Croix, Inc.				✓	✓
5	ARCOS-1 USA, Inc.				✓	✓
6	AT&T Corp.	✓		✓	✓	✓
7	Australia-Japan Cable (Guam) Limited				✓	✓
8	BCE Nexxia Voice Services Corporation			✓		
9	Bestel USA, Inc.			✓		
10	Bharti Airtel Limited					✓
11	BIG					✓
12	BT Americas Inc.					✓
13	Cable and Wireless Americas Systems Inc.				✓	✓
14	CABLEVISION LIGHTPATH INC			✓		
15	Caribbean Crossings Ltd.				✓	✓
16	CAT Telecom Public Company Limited					✓
17	Cedar Cable Ltd.				✓	✓
18	CenturyLink Communications, LLC			✓		✓
19	China Telecom (Americas) Corporation					✓
20	China Telecommunications Corporation					✓
21	China Unicom Americas Operations Ltd					✓
22	China United Network Communications Group Company Limited					✓
23	Chunghwa Telecom Co., Ltd.					✓
24	Chunghwa Telecom Global, Inc.			✓		✓
25	City of Ketchikan					
26	Claro Chile, S.A.					✓
27	COLT Telecommunications			✓		
28	Columbus Networks USA, Inc.				✓	✓
29	CWC New Cayman Ltd.				✓	✓
30	Dar Communications Corporation			✓		
31	DOCOMO PACIFIC, INC.					✓
32	France Telecom Long Distance USA, LLC					✓
33	Global Caribbean Network				✓	✓
34	Globenet Cabos Sumari s America, Inc.				✓	✓
35	GTI Corporation					✓
36	GU Holdings Inc.				✓	✓
37	Hibernia Atlantic U.S. LLC				✓	✓
38	IDT Telecom, Inc.	✓		✓		
39	Inmarsat Inc.		✓			
40	Intelsat License LLC		✓			
41	KDDI America, Inc.					✓
42	KT Corporation					✓
43	Latam Telecommunications, L.L.C.				✓	✓
44	Ledcor Industries (USA) Inc.				✓	
45	Level 3 Communications, LLC	✓		✓	✓	✓
46	Lighttower Fiber Networks II, LLC			✓		✓
47	Marine Cable Corporation					✓

No.	Filing Entities	Satellite Circuits Reports		Terrestrial Circuits Reports	Submarine Cable Operator Reports	Submarine Cable Capacity Holder Reports
		Common Carrier	Non-Common Carrier			
48	MCI Communications Corporation	✓		✓	✓	✓
49	New Century InfoComm Tech Co Ltd					✓
50	New Skies Satellites B.V.		✓			
51	NTT America, Inc.					✓
52	NTT Communications Corporation					✓
53	OPT Ho tua Division (U.S.)				✓	✓
54	Orange Business Services U.S. Inc					✓
55	Pacific Carriage Ltd				✓	✓
56	PCCW Global, Inc.			✓		✓
57	PC Landing Corp.				✓	✓
58	Philippine Long Distance Telephone Company					✓
59	PLDT (US) Ltd.					✓
60	PPC 1 Limited				✓	✓
61	PREPA Networks, LLC					✓
62	PTI Pacifica Inc.					✓
63	PT Telekomunikasi Indonesia International					✓
64	Puerto Rico Telephone Company, Inc.					✓
65	Reliance Communications, Inc.			✓		
66	Reliance Globalcom Limited				✓	✓
67	Reliance Globalcom Services, Inc.			✓		
68	Rogers Communications Partnership					✓
69	SaskTel			✓		
70	Satellite Communication Systems Inc.	✓				
71	Singapore Telecom USA, Inc.					✓
72	SMITCOMS, Inc.				✓	✓
73	Sprint Communications, Inc.	✓		✓	✓	✓
74	StarHub Ltd					✓
75	TA Resources N.V.					✓
76	Tata Communications (America) Inc.			✓	✓	✓
77	Telecom Italia Sparkle of North America, Inc.					✓
78	Telefonica International Wholesale Services USA, Inc.				✓	✓
79	Telefonica Larga Distancia de Puerto Rico, Inc.			✓		✓
80	TeleGuam Holdings, LLC			✓		✓
81	Telekom Malaysia Bhd					✓
82	TeliaSonera International Carrier, Inc.					✓
83	Telmex USA, L.L.C.			✓		
84	Telstra Incorporated				✓	✓
85	TELUS Communications (U.S.) Inc.			✓		
86	Truestone, LLC				✓	✓
87	T-Systems North America, Inc.			✓		✓
88	VNPT					✓
89	Vodafone US Inc.			✓		
90	WaveDivision Holdings, LLC			✓		
91	Zayo Group, LLC			✓		✓
	Total	6	3	26	30	72

Table 2
U.S. International Submarine Cable Operator Filers (2015)

No.	Filing Entities	No. of Cable Reports
1	America Europe Connect Licenses Limit	1
2	American Samoa Hawaii Cable, LLC	1
3	Antilles Crossing-St. Croix, Inc.	1
4	ARCOS-1 USA, Inc.	1
5	AT&T Corp.	10
6	Australia-Japan Cable (Guam) Limited	1
7	Cable and Wireless Americas Systems Inc.	1
8	Caribbean Crossings Ltd.	1
9	Cedar Cable Ltd.	1
10	Columbus Networks USA, Inc.	1
11	CWC New Caymen Ltd.	1
12	Global Caribbean Network	1
13	Globenet Cabos Sumarinos America, Inc.	1
14	GU Holdings Inc.	1
15	Hibernia Atlantic U.S. LLC	1
16	Latam Telecommunications, L.L.C.	1
17	Ledcor Industries (USA) Inc.	1
18	Level 3 Communications, LLC	4
19	MCI Communications Corporation	1
20	OPT Honotua Division (U.S.)	1
21	Pacific Carriage Ltd	1
22	PC Landing Corp.	1
23	PPC 1 Limited	1
24	Reliance Globalcom Limited	1
25	SMITCOMS, Inc.	1
26	Sprint Communications, Inc.	2
27	Tata Communications (America) Inc.	2
28	Telefonica International Wholesale Services USA, Inc.	2
29	Telstra Incorporated	1
30	Truestone, LLC	1
	Total	45

Table 3
Satellite and Terrestrial Circuits (in 64 kbps) (2015)

Transmission	World Total 64 kbps
Satellite	85,535
Terrestrial	33,228,707
Total Circuits	33,314,242

Table 4(A)
Submarine Cable Operator Reports (in Gbps) (2015/2017)

No.	Cable System	Available Capacity as of 12/31/2015	Planned Capacity as of 12/31/2017
	Americas		
1	America Movil Submarine Cable System (AMX1)	2,800.0	7,220.0
2	AmeriCan-1	1,167.5	1,177.5
3	Americas II	920.0	970.0
4	Antillas 1	90.0	90.0
5	Antilles Crossing	*	*
6	ARCOS-1	*	*
7	BAHAMAS II	60.0	60.0
8	Bahamas Internet Cable Network (BICS)	60.0	100.0
9	CB-1	*	*
10	CFX-1 Cable System	*	*
11	Gemini Bermuda System	*	*
12	Global Caribbean Network (GCN)	70.0	120.0
13	GlobeNet	*	*
14	Maya-1	*	*
15	PAC	*	*
16	Pacific Caribbean Cable System (PCCS)	950.0	1,900.0
17	Pan American Cable System	140.0	140.0
18	SAC	*	*
19	SAm-1	5,100.0	6,600.0
20	SMPR-1	10.0	10.0
21	Taino-Carib	110.0	120.0
	Total	28,057.5	42,845.5
	Atlantic		
1	AEConnect Cable Network/Emerald Express*	*	*
2	Apollo Cable	*	*
3	Atlantic Crossing (AC-1)	*	*
4	Columbus III	160.0	160.0
5	FLAG Atlantic-1	6,130.0	8,630.0
6	Hibernia Atlantic	*	*
7	TAT-14	*	*
8	TGN-Atlantic	6,310.0	6,310.0
9	Yellow (includes Level 3's cable systems)	*	*
	Total	47,920.0	63,772.2
	Pacific		
1	American Samoa Hawaii Cable	1.2	1.2
2	Asia America Gateway (AAG)	4,210.0	4,210.0
3	Australia-Japan Cable (Guam)	*	*
4	China-U.S. Cable Network	160.0	-
5	GOKI	-	40.0
6	HANTRU1	*	*
7	Honotua Cable System	40.0	40.0
8	Japan-U.S. Cable Network	6,850.0	7,380.0
9	PC-1	*	*
10	PPC 1	*	*

* Filer requested confidential treatment of its Submarine Cable Operator Report data.

No.	Cable System	Available Capacity as of 12/31/2015	Planned Capacity as of 12/31/2017
11	Southern Cross	*	*
12	Telstra Endeavor	*	*
13	TGN-Pacific	6,430.0	6,430.0
14	Trans-Pacific Express Cable System (TPE)	2,200.0	6,200.0
15	Unity Cable System	*	*
	Total	43,783.0	56,943.0
	All Regions		
	Americas	28,057.5 (23%)	42,845.5 (26%)
	Atlantic	47,920 (40%)	63,772.2 (39%)
	Pacific	43,783 (37%)	56,943 (35%)
	Total	119,760.5	163,560.7

* Filer requested confidential treatment of its Submarine Cable Operator Report data.

Table 4(B)
U.S. International Submarine Cable Capacity (in Gbps)

CABLES	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014	Available 2015	Planned 2017
AMERICAS										
America Movil Submarine Cable System (AMX-1)								1,640	2,800	7,220
AmeriCan-1	159.3	159.3	159.3	159.3	159.3	159	159	1,163	1,168	1,178
Americas II	80	80	80	520	780	820	850	850	920	970
Antillas 1	5	5	10	20	20	60	60	90	90	90
Antilles Crossing***	30	20	20	20	30	30	40	80	***	***
ARCOS-1 ***	80	120	210	240	290	350	450	1,468	***	***
BAHAMAS II	2.5	2.5	2.5	2.5	2.5	60	60	60	60	60
Bahamas Internet Cable Network (BICS)	12.5	12.5	12.5	22.5	22.5	20	40	60	60	100
CB-1***		20	20	20	20	20	20	20	***	***
CFX-1 Cable System***		100	110	500	560	610	1,040	1,580	***	***
Gemini Bermuda System***		40	40	70	80	80	140	160	***	***
Global Caribbean Network (GCN)	20	20	20	20	40	40	40	60	70	120
GlobeNet ***	80	140	720	720	2,080	2,080	2,400	2,400	***	***
MAYA -1***	65	145	145	145	145	145	145	980	***	***
PAC***	50	65	95	150	310	460	790	800	***	***
Pacific-Caribbean Cable System (PCCS)									950	1,900
Pan American Cable System	5	5	5.0	140	140	140	140	140	140	140
SAC***	200	200	320	530	620	935	1,600	4,260	***	***
SAm-1	160	440	960	1,300	1,700	2,100	2,700	4,400	5,100	6,600
Seabras-1*										
SMPR-1	2.5	2.5	2.5	2.5	2.6	3	3	10	10	10
Taino-Carib	1.9	1.9	1.9	70	70	70	110	110	110	120
Total	953.6	1,578.6	2,933.6	4,651.8	7,071.9	8,182	10,787	20,331	28,057.5	42,845.5
ATLANTIC										
AE Connect Cable Network/Emerald Express***									***	***
AC-2 **	400	400	400	400	1,130	1,250	1,750			
Apollo Cable***	1,280	2,280	2,860	3,100	3,150	3,420	3,510	6,100	***	***
Atlantic Crossing (AC-1)***	635	815	1,165	1,455	1,500	1,760	2,100	2,350	***	***
Columbus III	40	40	160	160	160	160	160	160	160	160
FLAG Atlantic - 1	1,240	1,480	1,640	2,200	2,280	2,830	3,560	4,430	6,130	8,630
Hibernia Atlantic 1 ***	360	360	360	360	2,000	2,750	3,750	14,400	***	***
TAT-14 ***	1,280	1,280	1,870	1,870	1,870	2,250	2,990	4,420	***	***
TGN- Atlantic	460	1,040	1,460	1,560	1,770	2,810	3,010	3,150	6,310	6,310
Yellow Cable System **/**	320	500	900	1,780	1,780	1,860	1,750	3,420	***	***
Total	6,015	8,195	10,815	12,885	15,640	19,090	22,580	38,430	47,920	63,772.2
PACIFIC										
American Samoa Hawaii Cable			1	1	1	1	1	1	1.2	1.2
Asia America Gateway Consortium (AAG)			540	540	580	1,540	1,540	2,180	4,210	4,210
Australia-Japan Cable (Guam)***	160	520	520	520	640	1,200	1,480	1,760	***	***
China-U.S. Cable Network	160	160	160	160	160	160	160	160	160	
FASTER*										
GOKI										40
HANTRU1***				40	40	40	40	20	***	***
Honotua				20	20	20	20	20	40	40
Japan-U.S. Cable Network	800	1,900	2,180	2,300	2,500	2,530	4,630	5,380	6,850	7,380
PC-1 ***	360	960	1,030	1,430	1,800	1,800	2,900	2,780	***	***
PPC 1***			140	140	140	140	140	700	***	***
Southern Cross***	480	860	860	1,240	1,240	1,640	2,700	3,500	***	***
Telestra Endeavour ***		80	80	160	300	300	600	580	***	***
TGN - Pacific	1,880	2,760	3,140	3,140	3,140	3,660	4,350	5,520	6,430	6,430
Trans-Pacific Express Cable System (TPE)		1,280	1,280	1,870	1,870	2,040	2,200	2,200	2,200	6,200
Unity Cable System***				2,380	2,380	2,700	4,020	7,220	***	***
Total	3,840	8,520	9,931	13,941	14,811	17,771	24,781	32,021	43,783.0	59,943.0

CABLES	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014	Available 2015	Planned 2017
REGIONAL CAPACITY										
Americas	954	1,579	2,934	4,652	7,072	8,182	10,787	20,331	28,058	42,846
Atlantic	6,015	8,195	10,815	12,885	15,640	19,090	22,580	38,430	47,920	63,772
Pacific	3,840	8,520	9,931	13,941	14,811	17,771	24,781	32,021	43,783	56,943
Total	10,809	18,294	23,680	31,478	37,523	45,043	58,148	90,782	119,761	163,561
NUMBER OF CABLES IN-SERVICE										
Americas	16	19	19	19	19	19	19	20	21	22
Atlantic	8	8	8	8	8	8	8	8	9	9
Pacific	6	8	11	14	14	14	14	14	14	15
Total	30	35	38	41	41	41	41	42	44	46
GROWTH RATE										
Americas		65.5%	85.8%	58.6%	52.0%	15.7%	31.8%	88.5%	38.0%	
Atlantic		36.2%	32.0%	19.1%	21.4%	22.1%	18.3%	70.2%	24.7%	
Pacific		121.9%	16.6%	40.4%	6.2%	20.0%	39.4%	29.2%	36.7%	
Total		69.3%	29.4%	32.9%	19.2%	20.0%	29.1%	56.1%	31.9%	

COMPOUND GROWTH RATE CALCULATION										
Americas	6.9								10.2	10.7
Atlantic	8.7								10.8	11.1
Pacific	8.3								10.7	10.9
Total	9.3								11.7	12.0
COMPOUND ANNUAL GROWTH RATE (2007-2015)										
Americas	52.6%									
Atlantic	29.6%									
Pacific	35.6%									
Total	35.1%									
COMPOUND FORECAST GROWTH RATE (2015-2017)										
Americas	23.6%									
Atlantic	15.4%									
Pacific	14.0%									
Total	16.9%									

* Data extracted from 2013 43.82 Report. Cables that are no longer in operation as of the date of this Report are not included in this table. FASTER and Seabras-1 cables added in 2016.

** Yellow Cable System and AC-2 are components of a single cable system owned by Level 3.

*** Filer requested confidential treatment of its Submarine Cable Operator Report data in 2015/2017.

Table 5
Submarine Cable Capacity Holder Reports (2015)

Capacity Holders in STM-1 Units						
Cable Region	Owned Capacity (a)	Net IRUs (b)	Net Inter-Carrier Leaseholds (c)	Net Capacity Held (d)=(a)+(b)+(c)=(e)+(f)	Activated Capacity (e)	Non-Activated Capacity (f)
Americas	164,915.7	(9,630.2)	(24,535.5)	130,750.0	107,334.4	23,415.6
Atlantic	286,332.9	(34,842.9)	(17,347.4)	234,142.6	227,643.9	6,498.7
Pacific	259,608.8	31,560.3	3,847.3	295,016.4	244,821.8	50,194.6
Total	710,857.4	(12,912.8)	(38,035.6)	659,909.0	579,800.1	80,108.9
Capacity Holders in Gbps Units						
Conversion Ratio: 1 Gbps= 6.4 STM-1s						
Cable Region	Owned Capacity	Net Capacity Held	Activated	Non-Activated	Activated %	Non-Activated %
Americas	25,768.1	20,429.7	16,771.0	3,658.7	82.1	17.9
Atlantic	44,739.5	36,584.8	35,569.4	1,015.4	97.2	2.8
Pacific	40,563.9	46,096.3	38,253.4	7,842.9	83.0	17.0
Total	111,071.5	103,110.8	90,593.8	12,517.0	87.90	12.2

Table 6
Percentage of Total Available Capacity Reported (2015)

Cable Region	Submarine Cable Operator Reports (Gbps) (Available Capacity)	Submarine Cable Capacity Holder Reports (Gbps) (Owned Capacity)	Discrepancy	Percent Captured by Holder Reports	Percent Not Captured by Holder Reports
Americas	28,057.5	25,768.1	2,289.4	91.8	8.2
Atlantic	47,920.0	44,739.5	3,180.5	93.4	6.6
Pacific	43,783.0	40,563.9	3,219.1	92.6	7.4
Total	119,760.5	111,071.5	8,689.0	92.7	7.3

Attachment A
U.S International Submarine Cables - Landing Points
Sorted by Region, Cable, and Foreign Landing Point

No.	Region	Cable Name	Foreign Landing Point
1	Americas	America Movil Submarine Cable System (AMX1)	Brazil
2	Americas	America Movil Submarine Cable System (AMX1)	Colombia
3	Americas	America Movil Submarine Cable System (AMX1)	Dominican Republic
4	Americas	America Movil Submarine Cable System (AMX1)	Guatemala
5	Americas	America Movil Submarine Cable System (AMX1)	Mexico
6	Americas	AmeriCan-1	Canada
7	Americas	Americas II	Brazil
8	Americas	Americas II	Curacao
9	Americas	Americas II	French Guiana
10	Americas	Americas II	Martinique
11	Americas	Americas II	Trinidad
12	Americas	Americas II	Venezuela
13	Americas	Antillas 1	Dominican Republic
14	Americas	Antilles Crossing	Barbados
15	Americas	Antilles Crossing	Saint Lucia
16	Americas	ARCOS-1	Bahamas
17	Americas	ARCOS-1	Belize
18	Americas	ARCOS-1	Belize
19	Americas	ARCOS-1	Costa Rica
20	Americas	ARCOS-1	Curacao
21	Americas	ARCOS-1	Dominican Republic
22	Americas	ARCOS-1	Guatemala
23	Americas	ARCOS-1	Honduras
24	Americas	ARCOS-1	Mexico
24	Americas	ARCOS-1	Nicaragua
26	Americas	ARCOS-1	Panama
27	Americas	ARCOS-1	Turks and Caicos Islands
28	Americas	ARCOS-1	Venezuela
29	Americas	BAHAMAS II	Bahamas
30	Americas	Bahamas Internet Cable Network (BICS)	Bahamas
31	Americas	CB-1	Bermuda
32	Americas	CFX-1 Cable System	Colombia
33	Americas	CFX-1 Cable System	Jamaica
34	Americas	Gemini Bermuda System	Bermuda
35	Americas	Global Caribbean Network (GCN)	Guadeloupe
36	Americas	Global Caribbean Network (GCN)	Saint Barthelemy
37	Americas	Global Caribbean Network (GCN)	Saint Martin
38	Americas	GlobeNet	Bermuda
39	Americas	GlobeNet	Brazil
40	Americas	GlobeNet	Colombia
41	Americas	GlobeNet	Venezuela
42	Americas	Hibernia Atlantic	Canada
43	Americas	Maya-1	Cayman Islands
44	Americas	Maya-1	Colombia
45	Americas	Maya-1	Costa Rica
46	Americas	Maya-1	Honduras
47	Americas	Maya-1	Mexico
48	Americas	Maya-1	Panama
49	Americas	PAC	Costa Rica
50	Americas	PAC	Mexico
51	Americas	PAC	Panama
52	Americas	PAC	Venezuela
53	Americas	Pacific Caribbean Cable System (PCCS)	Aruba
54	Americas	Pacific Caribbean Cable System (PCCS)	British Virgin Islands

Attachment A
U.S International Submarine Cables - Landing Points
Sorted by Region, Cable, and Foreign Landing Point

No.	Region	Cable Name	Foreign Landing Point
1	Pacific	American Samoa Hawaii Cable	Samoa
2	Pacific	Asia America Gateway (AAG)	Brunei
3	Pacific	Asia America Gateway (AAG)	Hong Kong
4	Pacific	Asia America Gateway (AAG)	Malaysia
5	Pacific	Asia America Gateway (AAG)	Philippines
6	Pacific	Asia America Gateway (AAG)	Singapore
7	Pacific	Asia America Gateway (AAG)	Thailand
8	Pacific	Asia America Gateway (AAG)	Vietnam
9	Pacific	Australia-Japan Cable (Guam)	Australia
10	Pacific	Australia-Japan Cable (Guam)	Japan
11	Pacific	China-U.S. Cable Network	China
12	Pacific	China-U.S. Cable Network	Japan
13	Pacific	China-U.S. Cable Network	Korea, South
14	Pacific	China-U.S. Cable Network	Taiwan
15	Pacific	Honotua Cable System	French Polynesia
16	Pacific	Japan-U.S. Cable Network	Japan
17	Pacific	PC-1	Japan
18	Pacific	PPC 1	Australia
19	Pacific	PPC 1	Papua New Guinea
20	Pacific	Southern Cross	Australia
21	Pacific	Southern Cross	Fiji
22	Pacific	Southern Cross	New Zealand
23	Pacific	Telstra Endeavor	Australia
24	Pacific	TGN-Pacific	Japan
25	Pacific	Trans-Pacific Express Cable System (TPE)	China
26	Pacific	Trans-Pacific Express Cable System (TPE)	Japan
27	Pacific	Trans-Pacific Express Cable System (TPE)	Korea, South
28	Pacific	Trans-Pacific Express Cable System (TPE)	Taiwan
29	Pacific	Unity Cable System	Japan
129	Total Landing Points		

Source: FCC records

Attachment B
U.S International Submarine Cables - Landing Points
Sorted by Region, Foreign Landing Point, and Cable

No.	Region	Foreign Landing Point	Cable Name
1	Americas	Argentina	SAC
2	Americas	French Guiana	SAM-1
3	Americas	Aruba	Pan American Cable System
4	Americas	Aruba	Pacific Caribbean Cable System (PCCS)
5	Americas	Bahamas	ARCOS-1
6	Americas	Bahamas	BAHAMAS II
7	Americas	Bahamas	Bahamas Internet Cable Network (BICS)
8	Americas	Barbados	Antilles Crossing
9	Americas	Belize	ARCOS-1
10	Americas	Bermuda	CB-1
11	Americas	Bermuda	Gemini Bermuda System
12	Americas	Bermuda	GlobeNet
13	Americas	Brazil	America Movil Submarine Cable System (AMX1)
14	Americas	Brazil	Americas II
15	Americas	Brazil	GlobeNet
16	Americas	Brazil	SAC
17	Americas	Brazil	SAM-1
18	Americas	British Virgin Islands	Pacific Caribbean Cable System (PCCS)
19	Americas	British Virgin Islands	Taino-Carb
20	Americas	Canada	AmeriCan-1
21	Americas	Canada	Hibernia Atlantic
22	Americas	Cayman Islands	Maya-1
23	Americas	Chile	Pan American Cable System
24	Americas	Chile	SAC
24	Americas	Chile	SAM-1
26	Americas	Colombia	America Movil Submarine Cable System (AMX1)
27	Americas	Colombia	ARCOS-1
28	Americas	Colombia	CFX-1 Cable System
29	Americas	Colombia	GlobeNet
30	Americas	Colombia	Maya-1
31	Americas	Colombia	Pan American Cable System
32	Americas	Colombia	SAC
33	Americas	Colombia	SAM-1
34	Americas	Colombia	Pacific Caribbean Cable System (PCCS)
35	Americas	Costa Rica	ARCOS-1
36	Americas	Costa Rica	Maya-1
37	Americas	Costa Rica	PAC
38	Americas	Curacao	Americas II
39	Americas	Curacao	ARCOS-1
40	Americas	Dominican Republic	America Movil Submarine Cable System (AMX1)
41	Americas	Dominican Republic	Antillas 1
42	Americas	Dominican Republic	ARCOS-1
43	Americas	Ecuador	Pan American Cable System
44	Americas	Ecuador	SAM-1
45	Americas	Ecuador	Pacific Caribbean Cable System (PCCS)
46	Americas	French Guiana	Americas II
47	Americas	Guadeloupe	Global Caribbean Network (GCN)
48	Americas	Guatemala	America Movil Submarine Cable System (AMX1)
49	Americas	Guatemala	ARCOS-1
50	Americas	Guatemala	SAM-1
51	Americas	Honduras	ARCOS-1
52	Americas	Honduras	Maya-1
53	Americas	Jamaica	CFX-1 Cable System
54	Americas	Martinique	Americas II

Attachment B
U.S International Submarine Cables - Landing Points
Sorted by Region, Foreign Landing Point, and Cable

No.	Region	Foreign Landing Point	Cable Name
1	Pacific	Australia	Australia-Japan Cable (Guam)
2	Pacific	Australia	PPC 1
3	Pacific	Australia	Southern Cross
4	Pacific	Australia	Telstra Endeavor
5	Pacific	Brunei	Asia America Gateway (AAG)
6	Pacific	China	China-U.S. Cable Network
7	Pacific	China	Trans-Pacific Express Cable System (TPE)
8	Pacific	Fiji	Southern Cross
9	Pacific	French Polynesia	Honotua Cable System
10	Pacific	Hong Kong	Asia America Gateway (AAG)
11	Pacific	Japan	Australia-Japan Cable (Guam)
12	Pacific	Japan	China-U.S. Cable Network
13	Pacific	Japan	Japan-U.S. Cable Network
14	Pacific	Japan	PC-1
15	Pacific	Japan	TGN-Pacific
16	Pacific	Japan	Trans-Pacific Express Cable System (TPE)
17	Pacific	Japan	Unity Cable System
18	Pacific	Korea, South	China-U.S. Cable Network
19	Pacific	Korea, South	Trans-Pacific Express Cable System (TPE)
20	Pacific	Malaysia	Asia America Gateway (AAG)
21	Pacific	New Zealand	Southern Cross
22	Pacific	Papua New Guinea	PPC 1
23	Pacific	Philippines	Asia America Gateway (AAG)
24	Pacific	Samoa	American Samoa Hawaii Cable
25	Pacific	Singapore	Asia America Gateway (AAG)
26	Pacific	Taiwan	China-U.S. Cable Network
27	Pacific	Taiwan	Trans-Pacific Express Cable System (TPE)
28	Pacific	Thailand	Asia America Gateway (AAG)
29	Pacific	Vietnam	Asia America Gateway (AAG)
129	Total Landing Points		

Source: FCC records

Attachment C
U.S. International Submarine Cables - Countries
Sorted by the Number of Landing Points

No. of Cables Landed	Country	Region
9	Colombia	Americas
7	Japan	Pacific
7	United Kingdom	Atlantic
6	Panama	Americas
5	Brazil	Americas
5	Venezuela	Americas
4	Australia	Pacific
4	Mexico	Americas
3	Bahamas	Americas
3	Bermuda	Americas
3	Chile	Americas
3	Costa Rica	Americas
3	Dominican Republic	Americas
3	Ecuador	Americas
3	France	Atlantic
3	Guatemala	Americas
3	Peru	Americas
2	Argentina	Americas
2	Aruba	Americas
2	British Virgin Islands	Americas
2	Canada	Americas
2	China	Pacific
2	Curacao	Americas
2	Germany	Atlantic
2	Honduras	Americas
2	Ireland	Atlantic
2	Korea, South	Pacific
2	Taiwan	Pacific
1	Barbados	Americas
1	Belize	Americas
1	Brunei	Pacific
1	Cayman Islands	Americas
1	Denmark	Atlantic
1	Fiji	Pacific
1	French Guiana	Americas
1	French Polynesia	Pacific
1	Guadeloupe	Americas
1	Hong Kong	Pacific
1	Iceland	Atlantic
1	Italy	Atlantic
1	Jamaica	Americas

1	Malaysia	Pacific
1	Martinique	Americas
1	Netherlands	Atlantic
1	Netherlands Antilles	Americas
1	New Zealand	Pacific
1	Nicaragua	Americas
1	Papua New Guinea	Pacific
1	Philippines	Pacific
1	Portugal	Atlantic
1	Saint Barthelemy	Americas
1	Saint Lucia	Americas
1	Saint Martin	Americas
1	Samoa	Pacific
1	Singapore	Pacific
1	Sint Maarten	Americas
1	Spain	Atlantic
1	Thailand	Pacific
1	Trinidad	Americas
1	Turks and Caicos Islands	Americas
1	Vietnam	Pacific

Source: FCC Records

Frequency Table Summary of Foreign Landing Points

No. of Cables Landed	Americas	Atlantic	Pacific
1	15	6	12
2	6	2	3
3	8	1	
4	1		1
5	2		
6	1		
7		1	1
8			
9	1		

Source: FCC Records