Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Fourth Annual Report and Analysis of	)	IB Docket No. 10-99
Competitive Market Conditions with Respect	)	
to Domestic and International Satellite	)	
Communications Services	)	

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

SATELLITE INDUSTRY ASSOCIATION

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SUMMARY

The Satellite Industry Association ("SIA") welcomes this opportunity to assist the Federal Communications Commission in preparing its Fourth Annual Report to Congress on the status of competition in the satellite services industry. In response to the Commission's Public Notice, SIA provides information in these comments on various satellite operators and service providers, and on the competitive dynamics experienced in different sectors of the industry.

The worldwide satellite services industry continues to grow. Satellite operators across the globe are investing heavily to expand and upgrade their existing satellite networks, and new entrants from around the world are launching their own competitive systems.

Even as the number of satellites and operators increases, satellite service providers are also continually experiencing new sources of competition. For instance, fixed satellite and mobile satellite providers are increasingly offering competing services despite their differing technology platforms. Satellite providers also compete more with fiber optic cable networks as fiber is deployed to new areas previously served only by satellite. And the recent expansion of fiber-to-the-premises networks has enhanced competition for services that traditionally have been provided primarily by satellites, such as point-to-multipoint video services. Competition across different modes has also increased as terrestrial networks offer more broadband-enabled IP services through fiber, cable broadband, DSL, and next-generation fixed and mobile wireless networks.

SIA encourages the Commission to consider also the important roles other sectors play in the satellite services industry. For instance, systems integrators, managed service providers, and value-added resellers of satellite capacity play an essential role in enabling end-users to realize the full benefits of satellite transmission services. Strong markets for input services, such as

satellite manufacturing and launch services, are also critical to the competitiveness of satellite communications services.

Finally, SIA urges the FCC to consider the competitive conditions arising from the activities of some foreign governments. Many foreign satellite competitors are government-owned and/or subsidized and compete directly with privately-financed commercial satellite companies. Several governments also impose barriers to entering foreign markets through regulations and polices that discriminate against foreign satellite providers or favor domestic providers.

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The Satellite Industry Association ("SIA") submits these comments in response to the Commission's Public Notice[1] inviting comments for the Fourth Annual Report to Congress on the status of competition in the satellite services industry. SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, remote sensing operators, and ground equipment suppliers.[2] SIA is the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business.

[1] "International Bureau Invites Comment for Fourth Annual Report to Congress on Status of Competition in the Satellite Services Industry," Public Notice, DA 10-1353, IB Docket No. 10-99 (July 22, 2010) ("Public Notice").

[2] SIA Executive Members include: Artel, Inc.; The Boeing Company; CapRock Communications Inc.; The DIRECTV Group; Hughes Network Systems, LLC; DBSD North America, Inc.; Echostar Satellite Services, LLC; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Communications Inc.; Lockheed Martin Corporation.; Loral Space & Communications, Inc.; Northrop Grumman Corporation; Rockwell Collins Government Systems; SES WORLD SKIES; SkyTerra Communications, Inc; and TerreStar Networks, Inc. SIA Associate Members include: Arqiva Satellite and Media; ATK Inc.; Cobham SATCOM Land Systems; Comtech EF Data Corp.; DRS Technologies, Inc.; EchoStar Satellite, LLC; EMC, Inc.; Eutelsat, Inc.; GE Satellite; Globecomm Systems, Inc.; Glowlink Communications Technology, Inc.; iDirect Government Technologies; Inmarsat, Inc.; Marshall Communications Corporation.; Panasonic Avionics Corporation; Segovia Global IP Solutions; Spacecom, Ltd.; Spacenet Inc.; Stratos Global Corporation; Telesat Canada; Trace Systems, Inc.; and ViaSat, Inc. Additional information about SIA can be found at http://www.sia.org.

Every year SIA and Futron Corporation conduct a leading analysis of the global satellite industry's economic performance. The 2010 State of the Satellite Industry Report shows a continued growth in global industry revenues for 2009, in each of the satellite services, manufacturing, launch and ground equipment satellite industry segments. The industry's overall revenues for all four sectors reached $160.9 billion in 2009, an 11 percent increase over 2008 revenues. The entire satellite industry has posted an average annual growth of 11.7 percent for the five-year period of 2004 through 2009.[3] The SIA Report evaluates revenue performance for four services sectors: consumer (including satellite television, satellite radio, and end-user broadband services); fixed services (including revenue from transponder agreements and managed network services); mobile services; and remote sensing.[4] World-wide revenues from satellite services are the largest component of sector revenues, representing $93 billion in 2009, an 11 percent increase over 2008. Global revenues for fixed satellite services reached $14.4 billion, led by $11 billion in transponder agreements for video distribution and satellite television platforms, capacity for enterprise and government networks, and broadband middle-mile connectivity. Revenues from end-user broadband services delivered by satellite reached $1 billion by year's end 2009, with the U.S. representing approximately 70 percent of these revenues. Mobile satellite services revenues in 2009 reached $2.2 billion, led by mobile data service revenues, which grew by 13 percent over the previous year. Satellite radio or Digital Audio Radio Services ("DARS") generated $2.5 billion in 2009 worldwide revenues,

[3] *See* Satellite Industry Association, 2010 State of the Satellite Industry Report, at 5 (June 2010) ("SIA Report") (attached as Appendix A).

[4] SIA recognizes that the Commission's Satellite Competition Report does not review the remote sensing sector and that the satellite television market is analyzed in the Commission's Annual Report to Congress on Video Competition.

comparable to the previous year's posting.[5] A copy of the 2010 report is available at www.sia.org and attached as Appendix A for the Commission's convenience.

I. THE NUMBER OF COMMERCIAL SATELLITE OPERATORS AND SATELLITES IS INCREASING IN EVERY REGION OF THE GLOBE

As requested in the Public Notice,[6] SIA identifies below many of the providers of Fixed-Satellite Service (FSS) and Mobile Satellite Service (MSS) and describes some of their recent activities in launching satellites. Satellite operators are making sizeable financial investments to upgrade and expand their space-based networks and service offerings.[7] As a result, the overall number of commercial satellite operators and satellites is increasing.[8]

In the Americas, 13 different FSS operators provide coverage with approximately 95 satellites.[9] Since 2007, Embratel has launched two satellites,[10] and Telesat has launched four,[11]

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[5] SIA Report at 9-11.

[6] Public Notice, part I, at 3-4.

[7] *See, e.g.*, Intelsat 2009 Annual Report, SEC Form 10K, at 73 (filed Mar. 9, 2010) (showing satellite-related capital expenditures increasing from about $100 million in 2005 to about $887 million in 2009, with total capital expenditures in 2009 reaching over $943 million), *available at* http://www.sec.gov/Archives/edgar/data/1156871/000119312510051611/d10k.htm; SES 2009 Annual Report, at 60 (showing EUR1,125 million in committed, satellite-related capital expenditures as of December 31, 2009), *available at* http://www.ses.com/ses/PDFs/MediaRoom/Financial/SES_Report_2009_ENGLISH.PDF (last visited Aug. 20, 2010).

[8] The number of satellites and satellite providers is one indicator of the state of competition for satellite services. However, it does not give an accurate measure of the actual available capacity of any individual satellite service provider. Sophisticated new satellites are often capable of carrying greater capacity for transmitting signals. Newer satellites also tend to have more transponders functioning at full capacity, while transponders on older satellites can sometimes fail due to natural wear and tear in the harsh environment of space.

[9] SIA researched various publicly available sources to determine the approximate number of C- and Ku-band FSS satellites serving a region, including operator websites, corporate regulatory filings, LyngSat.com, and Telegeography.

[10] Embratel launched the Star One C1, located at 65W, in 2007 and Star One C2, located at 70W, in 2008. *See* http://en.wikipedia.org/wiki/Star_One_(satellite_operator) (last visited Aug. 20, 2010).

with at least one more planned.[12] Venezuela launched its first satellite in 2008.[13] Satmex launched a satellite in 2006,[14] and has ordered the construction of another.[15] SES plans to launch a BSS satellite in 2011 for use by Echostar,[16] and Arsat plans to launch at least three geostationary satellites beginning in 2012.[17] In addition, several operators recently have launched FSS satellites to operate in the Ka-band[18] and are planning to launch more, including Hughes, Viasat[19] and Inmarsat.[20]

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[11] *See* Telesat, Satellite Fleet, *available at* http://www.telesat.ca/en/Satellite_Fleet (last visited Aug. 20, 2010).

[12] Telesat and Echostar Order Loral Satellites, Space News (Dec. 31, 2009), *available at* http://www.spacenews.com/satellite_telecom/091231-telesat-echostar-order-loral-satellites.html (last visited Aug. 20, 2010).

[13] Rui C. Barbosa, China launch VENESAT-1 – debut bird for Venezuela, NASA Spaceflight.com (Oct. 29, 2008), *available at* http://www.nasaspaceflight.com/2008/10/china-launch-venesat (last visited Aug. 20, 2010).

[14] Satmex Launches New Satellite, AllBusiness (June 7, 2006), *available at* http://www.allbusiness.com/north-america/mexico/1175526-1.html (last visited Aug. 20, 2010).

[15] SS/L Receives Order to Build Satmex 8, Satellite Today (May 11, 2010), *available at* http://www.satellitetoday.com/st/headlines/SSL-Receives-Order-to-Build-Satmex-8_34121.html (last visited Aug. 20, 2010).

[16] QuetzSat-1 Will Service Mexico And USA, Space Mart (Feb. 12, 2009), *available at* http://www.spacemart.com/reports/QuetzSat_1_Will_Service_Mexico_And_USA_999.html (last visited Aug. 20, 2010).

[17] *See* Arsat, Satellites and Orbits: Satellite Capacity Plan 2008-2012, *available at* http://www.arsat.com.ar/ingles/satelites.html (last visited Aug. 12, 2010).

[18] *See, e.g.*, Press Release, Hughes Communications, Hughes Initiates Commercial Service on SPACEWAY 3 Satellite (April 7, 2008), *available at* http://www.hughes.com/HNS Library Press Release/04-07-08_Hughes_Initiates_Commercial_Service_on_SPACEWAY_3_ Satellite.htm (last visited Aug. 20, 2010).

[19] *See, e.g.*, Peter B. de Selding, ViaSat Bullish on Ka-band, Might Order 2nd Satellite This Year, Space News (Feb. 9, 2010) ("ViaSat-1 is scheduled for launch in February 2011, with Hughes' Jupiter satellite scheduled for launch in 2012."), *available at* http://www.spacenews.com/satellite_telecom/100209-viasat-bullish-ka-band.html (last visited Aug. 22, 2010).

[20] Press Release, Inmarsat, Inmarsat to invest US$1.2bn in Ka-band network (Aug. 6, 2010), *available at* http://www.inmarsat.com/About/Newsroom/00036138.aspx? (last visited Aug. 22, 2010).

In Europe, Israel-based Spacecom launched its second satellite covering Europe in 2008.[21] Then, in 2009, Spacecom placed a satellite previously owned by an Asian operator in a slot over Europe, promising to fill the slot on a more permanent basis with the Amos-5 satellite to be launched next year.[22] Several Asian companies also have expanded their reach in Europe, including Thaicom,[23] and Asia Broadcast Satellite.[24] As a result, 17 different FSS providers now serve Europe with approximately 124 satellites.[25]

In Asia, 25 different FSS providers operate approximately 137 satellites.[26] Among these, Singtel Optus of Singapore has launched three satellites since 2006,[27] Indosat of Indonesia launched a new satellite in 2009,[28] and Indian Space Research Organization (ISRO) launched

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[21] *See* Amos-Spacecom, About the AMOS-3 Satellite, *available at* http://www.amos-spacecom.com/content.cfm/amos-3 (last visited Aug. 12, 2010).

[22] *See* Spacecom: Interim Amos 5i satellite's fuel to run out early, Globes (Aug. 9, 2010), *available at* http://www.globes.co.il/serveen/globes/docview.asp?did=1000580731&fid=1725 (last visited Aug. 20, 2010).

[23] Thaicom, Thaicom 5, *available at* http://www.thaicom.net/eng/satellite_thaicom5.aspx (last visited Aug. 12, 2010).

[24] *See* ABS (scheduled to launch ABS-2 and ABS-5 in 2012, which will extend coverage to Europe), *available at* http://www.absatellite.net/satellite/abs1_footprints.html (last visited Aug. 12, 2010).

[25] *See supra,* note 9.

[26] *See id.*

[27] These include Optus D1, located at 160E, in 2006, Optus D2, located at 152E, in 2007, and Optus D3, located at 156E, in 2009. *See* Singtel, Network and Infrastructure: Satellite Systems, *available at* http://home.singtel.com/about_singtel/network_n_infrastructure/satellite_systems/networkinfra_satellitesystems.asp (last visited Aug. 12, 2010).

[28] Press Release, ThalesAlenia Space, Palapa-D communications satellite now in geostationary orbit (Sept. 9, 2009), *available at* http://www.thalesgroup.com/Press_Releases/space_090909_Palapa-D_communications_satellite_now_in_geostationary_orbit/?pid=1575&LangType=2057 (last visited Aug. 22, 2010).

two satellites in 2007.[29] Even more launches are planned in the near future, including satellites by Hong Kong-based APT Satellite,[30] Asia Broadcast Satellite,[31] Gazprom of Russia,[32] and Vinasat of Vietnam.[33]

A similar picture appears in Africa and the Middle East, where 21 FSS operators provide coverage with approximately 123 satellites.[34] Just this month, RascomStar-QAF, a pan-African company based in Mauritius, and Nilesat of Egypt each launched a new satellite serving the region.[35] Arabsat launched two satellites in June 2010[36] and is planning to expand its constellation with two more launches next year.[37] Turksat launched a satellite in 2008 and

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[29] *See* ISRO, Geostationary Satellites: INSAT-4CR, *available at* http://www.isro.org/satellites/insat-4cr.aspx (last visited Aug. 12, 2010).

[30] China to launch French-made communications satellite, China Daily (Nov. 8, 2009), *available at* http://www.chinadaily.com.cn/china/2009-11/08/content_8929459.htm (last visited Aug. 22, 2010).

[31] *See* ABS (scheduled to launch ABS-2 and ABS-5 in 2012), *available at* http://www.absatellite.net/satellite/abs1_footprints.html (last visited Aug. 12, 2010).

[32] *See* Gazprom (scheduled to launch the Yamal-300k in 2011, which will be located at 90E), *available at* http://www.gazcom.ru/index.php?lang=en&screen=content&level_1=2&level_2=3 (last visited Aug. 12, 2010).

[33] Vietnam Expects To Launch Vinasat-2 In 2012, Satnews Daily (Sept. 11, 2009), *available at* http://www.satnews.com/cgi-bin/story.cgi?number=1354292739 (last visited Aug. 22, 2010).

[34] *See supra,* note 9.

[35] Arianespace Launches Two Satellites, Space Daily (Aug. 5, 2010), *available at* http://www.space-travel.com/reports/Arianespace_Launches_Two_Satellites_999.html (last visited Aug. 12, 2010).

[36] *See* Press Release, Arabsat, Arabsat Badr-5 Successfully Launched (June 4, 2010), *available at* http://www.arabsat.com/pages/PressReleaseDetails.aspx?id=80 (last visited Aug. 22, 2010); Press Release, Arabsat, Arabsat-5A Successfully Launched (June 27, 2010), *available at* http://www.arabsat.com/pages/PressReleaseDetails.aspx?id=182 (last visited Aug. 22, 2010).

[37] Press Release, Arianespace, Arianespace to launch two satellites for Arabsat (Feb. 4, 2009), *available at* http://www.arianespace.com/news-press-release/2009/02-04-09-contract-arabsat-5C-6B.asp (last visited Aug. 22, 2010).

expects to launch two additional satellites in 2011.[38] Other upcoming launches include planned satellites for Nigeria (NIGCOMSAT),[39] Measat (Africasat in 2012),[40] and a joint project between Eutelsat and ictQATAR for a 2013 launch.[41]

With respect to inter-regional coverage, in addition to Intelsat and SES WORLD SKIES, Telesat provides trans-Atlantic coverage through its Telstar 11N and 12 satellites,[42] and Eutelsat provides coverage with its Atlantic Bird fleet.[43] Several other emerging satellite providers also

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[38] *See* Turksat 3A: 42° East, *available at* http://www.turksat.com.tr/english/v2/satellite-fleet-and-specifications/turksat-3a-42-east (last visited Aug. 22, 2010); Türksat to sign contracts for two new satellites, Today's Zaman (April 6, 2010), *available at* http://www.todayszaman.com/tz-web/news-206539-100-turksat-to-sign-contracts-for-two-new-satellites.html (last visited Aug. 22, 2010).

[39] Press Release, NIGCOMSAT, NIGCOMSAT and CGWIC Sign Pact on NIGCOMSAT-1R (Mar. 24, 2009), *available at* http://www.nigcomsat.net/index.php?option=com_content&task=view&id=57&Itemid=27 (last visited Aug. 22, 2010).

[40] *See* Measat, *available at* http://www.measat.com/satellite.html (last visited Aug. 12, 2010).

[41] Eutelsat and ictQATAR Select Space Systems/Loral to Deliver Their Joint Venture Satellite, PR Newswire (July 15, 2010), *available at* http://www.prnewswire.com/news-releases/eutelsat-and-ictqatar-select-space-systemsloral-to-deliver-their-joint-venture-satellite-98483494.html (last visited Aug. 22, 2010).

[42] *See* Telesat, Telestar Fleet, http://www.telesat.com/en/Telstar_Fleet (coverage maps available at http://www.telesat.com/File/0c871af0ef964cd1a16129d0d16b546a and *available at* http://www.telesat.com/File/7b411deaaa5944c081a0a946b350797f (last visited Aug. 20, 2010).

[43] Eutelsat Communications, Atlantic Bird Satellites, *available at* http://www.eutelsat.com/satellites/atlantic-bird.html (last visited Aug. 12, 2010).

serve this area, such as Hispasat,[44] Spacecom,[45] and RSCC.[46] Trans-Pacific connectivity is provided by GE Satellite,[47] SES,[48] and others.

Notably, new market entrants from around the world have been able to make the significant investment required to build, launch, and operate their own satellite systems even in these challenging economic times. For example, Yahsat of Abu Dhabi plans to launch two new satellites beginning in 2011[49]; Venezuela launched its first satellite (Venesat-1) in 2008[50]; Kazakhstan expects to launch Kazsat 2 in late 2010 to replace the malfunctioned Kazsat 1 launched in 2006[51]; and Azerbaijan plans to launch its first satellite by 2011.[52] In addition, as noted above, ictQATAR, RascomStar, and Nigeria have recently launched, or are planning to

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[44] Hispasat, Hispasat 1C global coverage, *available at* http://www.hispasat.com/Detail.aspx?SectionsId=117&lang=en (last visited Aug. 12, 2010).

[45] Amos-Spacecom, About the AMOS-3 Satellite, *available at* http://www.amos-spacecom.com/content.cfm/amos-3 (last visited Aug. 12, 2010).

[46] *See* Intersputnik, *available at* http://intersputnik.com/satellites/00015/ (last visited Aug. 12, 2010).

[47] *See* GE Satellite, GE-23, Comprehensive Pacific Coverage, *available at* http://www.sat-ge.com/ge-23-satellite/coverage.htm (last visited Aug. 16, 2010).

[48] *See, e.g.*, Press Release, SES World Skies, Hope Channel Extends Reach with SES World Skies (July 15, 2010), *available at* http://www.ses-worldskies.com/worldskies/news_and_events/press_releases/index.php?pressRelease=/pressReleases/pressReleaseList/10-07-15/index.php (last visited Aug. 22, 2010).

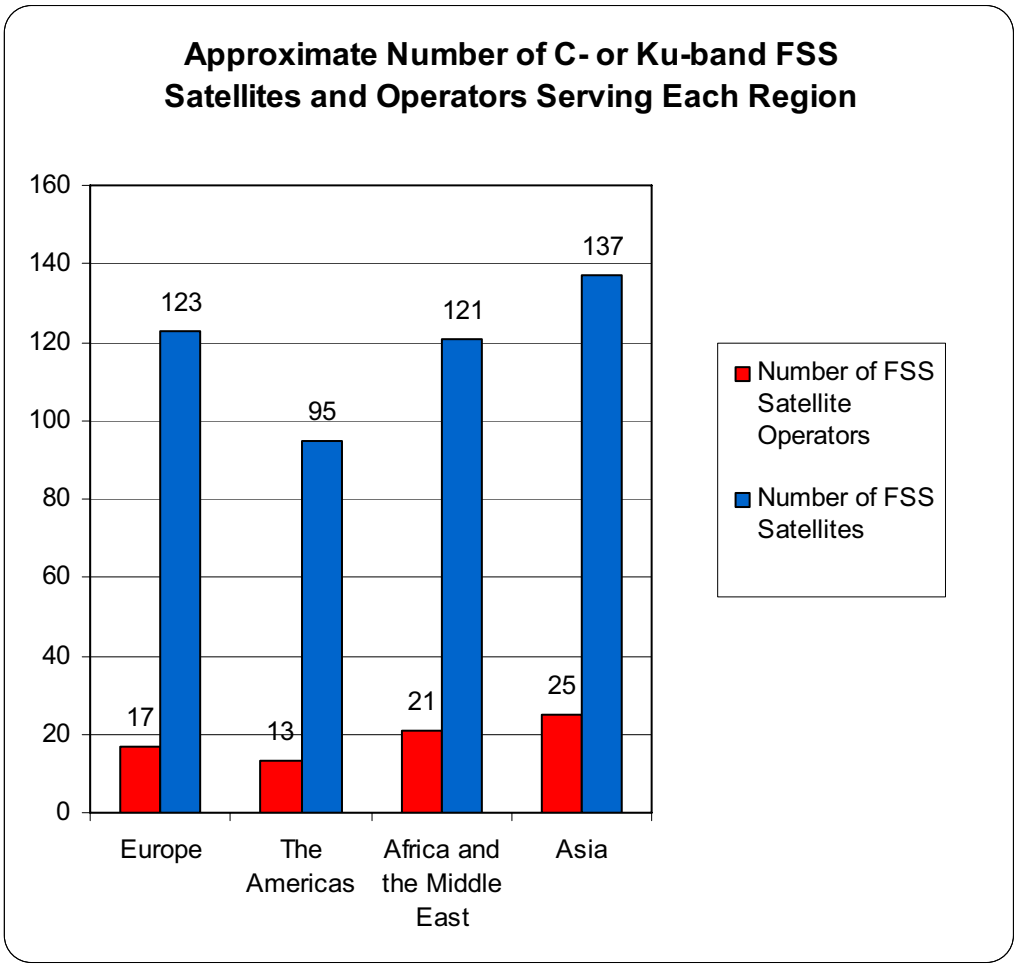
[49] *See* First Yahsat Satellite Launch Postponed until Early 2011, Space News (Dec. 14, 2009), *available at* http://www.spacenews.com/launch/1st-yahsat-satellite-launch-postponed-until-early-2011.html (last visited Aug. 22, 2010).

[50] *See* Venezuela launches first satellite with Chinese technology, Caribbean Net News (Nov. 1, 2008), *available at* http://www.caribbeannetnews.com/news-11878--12-12--.html (last visited Aug. 23, 2010); *see also* Barbosa, *supra*, note 13.

[51] *See* Kazakhstan Prepares Second Satellite For Launch, Interspace News (Feb. 23, 2010), *available at* http://www.interspacenews.com/FeatureArticle/tabid/130/Default.aspx?id=4491 (last visited Aug. 22, 2010).

[52] Shahin Abbasov, Azerbaijan: Baku Developing Satellite to Kick Off National Space Program, EurasiaNet (Nov. 23, 2009), *available at* http://www.eurasianet.org/departments/insightb/articles/eav112409.shtml (last visited Aug. 22, 2010).

launch, their first satellites. And Swedish-based startup OverHorizon LLC plans to launch its first satellite in 2012 to use BSS bands for mobile broadband applications.[53]



Note: A satellite or satellite operator that serves more than one region is included in each region it serves.[54]

Mobile-satellite service ("MSS") system operators provide service across the L-band, Big LEO band, 2 GHz band, and Little LEO band, both within the United States and on a global basis.[55] The MSS providers authorized to serve the United States include:

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[53] *See* Orbital and Thales Alenia Space Receive Contract for a OverHorizon Satellite, Space Fellowship (Dec. 24, 2009), *available at* http://spacefellowship.com/news/art17375/orbital-and-thales-alenia-space-receive-contract-for-a-overhorizon-satellite.html (last visited Aug. 22, 2010).

[54] *See supra,* note 9.

- Inmarsat Inc., which currently provides mobile services worldwide, including services using its Broadband Global Area Network ("BGAN") platform, using a global fleet of geostationary satellites (including fourth-generation "I-4" class satellites);

- Iridium Communications Inc., which currently provides a variety of mobile services throughout the United States and globally using its constellation of 66 low-earth orbiting (LEO), cross-linked satellites operating as a fully meshed network that covers 100 percent of the Earth's surface, and is developing a next-generation satellite constellation;

- GlobalStar, Inc., which currently provides mobile services throughout the United States and globally, is in the process of developing a next-generation NGSO system that it will begin to launch later this year, holds an ancillary terrestrial component ("ATC") authorization, and has an arrangement with Open Range Communications Inc. for the provision of terrestrial services using MSS spectrum;

- LightSquared Subsidiary LLC (formerly SkyTerra), which currently provides mobile services in the United States and Canada, will soon launch its next-generation spacecraft, and is developing a next-generation system to provide advanced voice and data services using an ATC architecture;

- DBSD North America, Inc., which has launched a next-generation satellite network that is capable of supporting mobile services throughout the United States, and holds ATC authority;

- TerreStar, which launched a next-generation satellite network that is capable of supporting mobile services throughout the United States and holds ATC authority; and

- Orbcomm, which uses an NGSO system to provide a variety of messaging, data communications, and geo-positioning services globally.

Outside the United States, MSS operators and service providers include Telecomunicaciones de Mexico, Informcosmos, Thuraya, Optus MobileSat, INSAT 3C, and N-Star.[56] Next-generation MSS networks are planned and being implemented as well.[57]

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[55] *See SkyTerra Commc'ns, Inc. and Harbinger Capital Partners Funds*, Memorandum Opinion and Order and Declaratory Ruling, 25 FCC Rcd 3059, 3077 (¶ 32) (2010) ("*SkyTerra-Harbinger Order*").

[56] *See Robert M. Franklin and Inmarsat plc*, Memorandum Opinion and Order, 24 FCC Rcd 449, 463 (¶ 36) (2009) ("*Inmarsat-Stratos Order*").

Finally, there are many value-added resellers of FSS and MSS. For example, Echostar leases large amounts of capacity from SES both for its own use and to provide to other FSS customers,[58] and Intelsat resells Inmarsat capacity.[59] Inmarsat also distributes its services through a number of distribution partners, including Stratos, Vizada, ARINC, MVS, and numerous others.[60] Iridium also has a large number of global distributors.[61] Similarly, ORBCOMM utilizes a network of value-added resellers with expertise in specific industries to provide whole product solutions and customer support to end-users.[62]

II. COMPETITIVE SERVICE OFFERINGS BETWEEN FSS AND MSS PROVIDERS ARE BECOMING COMMONPLACE

The Commission has recognized that, "as the satellite industry has evolved, the line between [competing services offered through] different satellite technologies has blurred."[63] Increased throughput on newer MSS satellites allows MSS operators to offer voice and data connectivity to both fixed and temporary fixed users. Inmarsat, for example, provides BGAN

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[57] *See, e.g., SkyTerra Subsidiary LLC*, Order and Authorization, 25 FCC Rcd 2022, 2025-26 (¶ 7) (2010) (noting that Mexico is planning implementation of a new "MEXSAT" system).

[58] *See, e.g.*, Press Release, Echostar, SES Selects Space Systems/Loral To Provide Satellite For ECHOSTAR For Service in Mexico and U.S. (Feb. 11, 2009), *available at* http://www.echostar.com/NewsEvents/PressReleases/PressRelease.aspx?prid=%7B26DE2F6C-A4F9-4B50-BEBF-1D884FAC966F%7D (last visited Aug. 22, 2010).

[59] *See* Intelsat, Mobile Satellite Services, BGAN Satellite Service: The highest data speed available with truly mobile, lightweight gear, *available at* http://www.intelsatgeneral.com/services/mss/inmarsat_bgan.aspx (last visited Aug. 22, 2010).

[60] *See* http://www.inmarsat.com/Partners/ (last visited Aug. 16, 2010). Inmarsat has over 400 distribution and service partners around the world.

[61] *See* Iridium SEC Form 10-K Annual Report, File No. 001-33963 at 2 (March 16, 2010), *available at* http://www.sec.gov/Archives/edgar/data/1418819/000119312510058393/d10k.htm (last visited Aug. 22, 2010). Iridium has 65 service providers, 130 value added resellers, and 45 value added manufacturers.

[62] *See* http://www.orbcomm.com/partners-overview.htm (last visited Aug. 16, 2010).

[63] *SkyTerra-Harbinger Order*, 25 FCC Rcd at 3080 (¶ 39 n.136). This does not mean that there are no meaningful technical differences between FSS and MSS systems.

service to fixed and mobile users with advanced satellites launched over the past few years.[64] Thuraya offers Thuraya DSL and IP which are similar to BGAN.[65] DBSD's development efforts for its MSS/ATC system have showcased cellular, broadband and broadcast service offerings, including testing of handsets and mobile devices which could offer traditional wireless calling services and advanced data and internet services.

Similarly, the Commission has recognized that "services once provided exclusively by mobile satellite operators are now also being provided by [FSS] operators."[66] FSS capacity has been used for several years to provide MSS services, including Internet access, to cruise ships, merchant ships, ferries, barges, yachts and U.S. navy vessels.[67] Further, the Commission recently adopted a new licensing framework to permit services to be provided to land-based vehicles,[68] and has been developing a similar licensing framework to facilitate the provision of service to airplanes and other aeronautical vehicles.[69]

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[64] *See* Inmarsat, BGAN: Broadband for a Mobile Planet, *available at* http://www.inmarsat.com/Services/Land/BGAN/default.aspx (last visited Aug. 12, 2010).

[65] *See* http://www.thuraya.com/products/data (last visited Aug. 19, 2010).

[66] *SkyTerra-Harbinger Order*, 25 FCC Rcd at 3081 (¶ 39 n.136).

[67] *See, e.g., Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, Report and Order, 20 FCC Rcd 674 (2005) (establishing licensing and service rules for Earth Stations on Vessels, and authorizing a mobile service on the C and Ku FSS bands), *Order on Reconsideration*, 24 FCC Rcd 10369 (2009) (*further recon. pending*).

[68] *See Amendment of Parts 2 and 25 of the Commission's Rules to Allocate Spectrum and Adopt Service Rules and Procedures to Govern the Use of Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service*, Report and Order, 24 FCC Rcd 10,414 (2009) (*recon. pending*).

[69] *See Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to Fixed Satellite Services*, Notice of Proposed Rulemaking, 20 FCC Rcd 2906 (2005).

A number of industry analysts agree that VSAT services on-the-move are a "practical alternative" to services offered over systems operating in MSS spectrum bands.[70] ARINC,[71] Boeing,[72] Viasat,[73] Row 44,[74] and numerous others, for example, offer aeronautical satellite services using Ku-band FSS satellite capacity to implement systems using tracking VSAT technologies. Qualcomm's OmniTRACS service has successfully provided FSS service on-the-move for some time now. Similarly, KVH Industries, Inc., for instance, markets a range of VSAT services with varying levels of bandwidth,[75] and has often touted its conversion of former MSS customers to VSAT technology, citing the cost efficiency of the product, the ease of installation, and emphasizing that the equipment will operate alongside MSS and other

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[70] *See, e.g.*, Michael A. Tverna, *Connexion 2, ViaSat-KVH Alliance Aims to Challenge Inmarsat's Role Among Maritime, Aeronautical Broadband Users*, Aviation Week & Space Technology (Oct. 27, 2008).

[71] *See ARINC Inc.*, *Application for Blanket Authority for Operation of Up to One Thousand Technically Identical Ku-Band Transmit/Receive Airborne Mobile Stations Aboard Aircraft Operating in the United States and Adjacent Waters*, Order and Authorization, 20 FCC Rcd 7553 (2005).

[72] *See Boeing Co. Application for Blanket Authority to Operate Up to Eight Hundred Technically Identical Transmit and Receive Mobile Earth Stations Aboard Aircraft in the 14.0- 14.5 GHz and 11.7- 12.2 GHz Frequency Bands*, Order and Authorization, 16 FCC Rcd 5864 (Int'l Bur. and OET, 2001) and Order and Authorization, 16 FCC Rcd 22645 (Int'l Bur. and OET, 2001).

[73] *See Viasat, Inc., Application for Blanket Authority for Operation of 1,000 Technically Identical Ku-and Aircraft Earth Stations in the United States and Over Territorial Waters*, Order and Authorization, 22 FCC Rcd 19,964 (2007).

[74] *See Row 44, Inc., Application for Authority to Operate Up to 1,000 Technically Identical Aeronautical Mobile Satellite Transmit/Receive Earth Stations Aboard Commercial and Private Aircraft*, Order and Authorization, 24 FCC Rcd 10,223 (2009).

[75] *See KVH mini-VSAT Broadband Airtime Rate Sheet* (Jan. 2009), *available at* http://www.mobilsat.com/marine-satellite-internet-andTV/Marine-internet/KVH/DS_TPV7_AirtimeRates-Jan-09.pdf (last visited Aug. 20, 2010).

communications equipment.[76] Vizada, MTN, and ShipEquip, which operate private networks using VSAT or hybrid systems, offer similar flat-rate pricing plans for their VSAT services on-the-move.[77] The Commission has recognized these services as applications of the FSS to facilitate the use of existing FSS allocations.[78]

III. FIBER OPTIC CABLE AND OTHER TERRESTRIAL NETWORKS ARE COMPETITIVE ALTERNATIVES TO SATELLITES

The Commission seeks information on the effects of alternative products and services, and in particular how the growth of fiber optic cable affects satellite competition.[79] Advanced terrestrial networks are extending to geographic areas formerly served only by satellite. In addition, services once delivered primarily by satellite (such as point-to-multipoint) are now also available via fiber optic cable, next-generation terrestrial wireless networks, and other technology platforms.

A. Fiber Optic Cables Are Expanding Globally

Fiber optic cable growth can be seen in and connecting every geographic region. Areas that formerly lacked access to wire infrastructure now enjoy such access.

For example, in Africa in 1999, according to Hamilton Research, 80.2 percent of Africans depended exclusively on satellites for international connectivity.[80] By 2008, that

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[76] *See Commercial Marine Operators Turning to KVH for Complete Satellite Communications Solution*, TMC News (Mar. 23, 2009), *available at* http://www.tmcnet.com/usubmit/2009/03/23/4077262.htm (last visited Aug. 20, 2010).

[77] *See* Vizada WaveCall Rates, *available at* http://www.mobilsat.com/marine-satellite-internet-andTV/Marine-internet/SeaTel/index.htm (last visited Aug. 19, 2010)..

[78] *See, e.g.*, 47 C.F.R. § 2.106 note NG181, note NG183 (ESVs).

[79] Public Notice, part I.E., at 4.

[80] Gemma Ware, *Satellite vs fibre*, The Africa Report (May 20, 2010), *available at* http://www.theafricareport.com/special-reports/sector-reports/satellite/3291154-satellite-vs-fibre.html (last visited Aug. 23, 2010).

number had fallen to 39.5 percent,[81] and it continues to fall as more fiber cables are brought online. In fact, around ten undersea fiber cables are currently under construction or being planned for Africa,[82] which would leave only one major African country, the Democratic Republic of the Congo, without high-capacity fiber connectivity.[83]

Other regions likewise are seeing growth in fiber for international connectivity. In South America, at least five undersea cables since 1999 have connected countries along each coast to each other and to the U.S., the Caribbean, and Europe.[84] And in the United States, at least four new cables have been laid between the West Coast and Asia in the last five years, more than doubling trans-Pacific capacity and providing service between the U.S., China, Taiwan, Korea, and other South Asia countries.[85] Even a number of Pacific islands are gaining fiber connections, such as the Honotua Cable, which was installed this year and connects several French Polynesia islands to Hawai'i via Tahiti.[86] In fact, nearly all of the "thin route market"

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[81] *Id.*

[82] Undersea cable set to boost West Africa broadband, Reuters (July 2, 2010) *available at* http://www.reuters.com/article/idUSTRE66122520100702 (last visited Aug. 20, 2010).

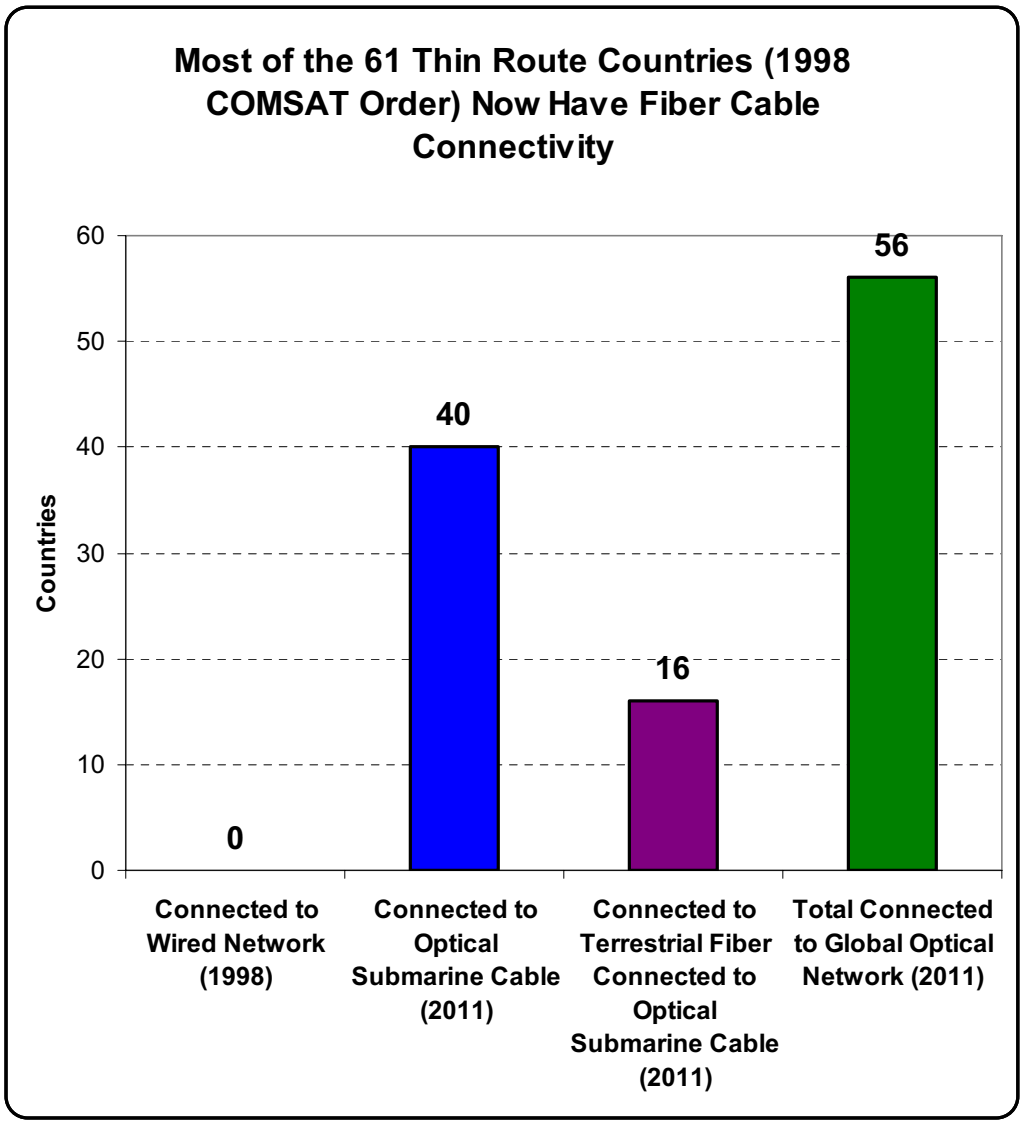
[83] Satellite to fibre – Africa's big change is really under way, says new report, Balancing Act (April 15, 2010), *available at* http://www.balancingact-africa.com/news/en/issue-no-500/top-story/satellite-to-fibre%20-Africa%E2%80%99s-big-change-is-really-under-way (last visited Aug. 20, 2010).

[84] *See, e.g.*, Latin America – submarine cables for a bandwidth-hungry region, BuddeComm, *available at* http://www.buddeblog.com.au/frompaulsdesk/latin-america-submarine-cables-for-a-bandwidth-hungry-region/ (last visited Aug. 17, 2010).

[85] Google gets its cable, Telegeography CommsUpdate (Feb. 26, 2008), *available at* http://www.telegeography.com/cu/article.php?article_id=21910 (last visited Aug. 20, 2010).

[86] Honotua cable hookup finally made ashore on Hawaii's Big Island, Tahiti Presse (Mar. 4, 2010), *available at* http://en.tahitipresse.pf/2010/03/honotua-cable-hookup-finally-made-ashore-on-hawaiis-big-island/ (last visited Aug. 20, 2010).

countries the Commission recognized in its 1998 Comsat Order as having no cable connection to the U.S. and access only to satellite,[87] now have fiber cable connectivity.



B. Fiber Is Capable Of Providing Services Historically Offered Via Satellite

Fiber is capable of providing many of the same types of services traditionally offered by satellite. Recent expansion of fiber-to-the-premises (FTTP) infrastructure is adding competition

[87] *See In the Matter of Comsat Corp., Petition Pursuant to Section 10(c) of the Commc'ns Act of 1934, as amended, for Forbearance from Dominant Carrier Regulation and for Reclassification as a Non-Dominant Carrier, Policies and Rules for Alternative Incentive Based Regulation of Comsat Corp.*, Order and Notice of Proposed Rulemaking, 13 FCC Rcd 14,083, 14,106-110 (¶¶ 41-48) (1998).

to satellite services in delivering point-to-multipoint video services. FTTP networks are rapidly being deployed to connect millions of U.S. households. For example, Verizon reported 3.8 million FiOS Internet and 3.2 million FiOS TV customers at the end of last quarter,[88] and AT&T reported 2.5 million U-Verse customers, a rise of nearly 60 percent in the last year.[89] Allied Fiber recently announced plans to deploy a nationwide network of 11,548 miles of dark fiber.[90] The National Broadband Plan encourages such development, calling for broadband deployment of at least 100 Mbps to 100 million U.S. homes by 2020.[91]

Some content providers are responding to these changes by increasing their use of fiber distribution networks. For example, ESPN used fiber rather than satellite to transmit its coverage of the 2010 World Cup in South Africa to the U.S.[92] General Motors, AutoZone, and Burger King[93] have also recently moved from satellite to terrestrial-based networks, while others,

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[88] Press Release, Verizon, Verizon Reports Strong Wireless, FiOS Customer Growth; Increased Enterprise Revenues; Strong Cash Flow in 2Q (July 23, 2010), *available at* http://newscenter.verizon.com/press-releases/verizon/2010/Verizon-Reports-Strong-Wireless-FiOS-Customer-Growth-Increased-Enterprise-Revenues-Strong-Cash-Flow-in-2Q.html (last visited Aug. 22, 2010).

[89] Press Release, AT&T, AT&T U-verse Achieves First Billion-Dollar Revenue Quarter (July 23, 2010), *available at* http://www.att.com/gen/press-room?pid=18150&cdvn=news&newsarticleid=30976 (last visited Aug. 22, 2010).

[90] Press Release, Allied Fiber, Allied Fiber is Constructing a Nationwide, Network-Neutral, Dark Fiber Cable System Linking U.S. Subsea Landing Points, Major Data Centers, Colocation Interconnection Facilities, Rural Networks and Wireless Towers to Meet Increasing Market Demand (May 24, 2010), *available at* http://www.alliedfiber.com/documents/Allied%20Fiber%20Announcement%20May%2024%202010%20-FINALjsa.pdf (last visited Aug. 22, 2010).

[91] Connecting America: The National Broadband Plan, FCC (2010), *available at* http://download.broadband.gov/plan/national-broadband-plan.pdf (last visited Aug. 22, 2010).

[92] Glen Dickson, ESPN's Wide-Area World Cup: Sports giant creates global fiber network for 2010 coverage, Broadcasting and Cable (July 18, 2009), *available at* http://www.broadcastingcable.com/article/315666-ESPN_s_Wide_Area_World_Cup.php (last visited Aug. 22, 2010).

[93] *See* Carol Wilson, Burger King gets its way with MegaPath, Connected Planet (Oct. 3, 2006) (discussing Burger King's decision to use a terrestrial network with DSL connections and a

including Rite Aid, TJ Maxx and CVS, have switched from using solely satellite to mostly terrestrial networks with some backup satellite coverage.

C. Satellite Providers Face Competition From Terrestrial-Based Service Providers Apart From Fiber

Satellite providers also face competition from terrestrial-based service providers apart from fiber in large part due to the proliferation of broadband-enabled IP services. As communications and information services generally transition from various different protocols to a single IP format, competition increases across all modes of transmission regardless of technology. Satellite providers thus today also compete with high speed Internet and video providers such as cable broadband, DSL, and next generation fixed and mobile terrestrial wireless providers.

These broadband alternatives are leading some corporate data customers to replace their satellite services with terrestrial alternatives. For example, the large investment firm Edward Jones switched from satellite to a terrestrial IP communications network in part for greater bandwidth to support it voice, video, and data traffic.[94]

Advances in terrestrial wireless technology also position such services as a competitor to satellite. As LTE networks become more available, consumers will have a competitive alternative for wireless broadband and video services. One source recently reported, for

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secure managed service), *available at* http://connectedplanetonline.com/broadband/marketing/burger_king_megapath_100306 (last visited Aug. 20, 2010).

[94] *See* Matt Hamblen, Satellite Network Stops Paying Off for Edward Jones: CIO says new IP network will boost performance, support more apps, ComputerWorld (Feb. 5, 2007) (discussing Edward Jones' decision to switch from using a satellite network to a terrestrial IP network), *available at* http://www.computerworld.com/s/article/281577/Satellite_Network_Stops_Paying_Off_for_Edward_Jones (last visited Aug. 22, 2010).

example, that Verizon Wireless plans to deploy its 4G LTE services to 75 percent of the U.S. by 2012.[95]

MSS providers also are facing increasing competition from terrestrial CMRS providers. As the Commission has recognized, "[t]he mobile satellite service industry . . . is undergoing major technological and structural changes" that are "shifting the locus of consumer demand and competition to broadband services"[96]— including services that compete with those offered by terrestrial CMRS providers. At the same time, several MSS operators provide mobile voice and low data rate capability to handheld devices that can compete directly with terrestrial wireless operators in some contexts, especially in hard-to-reach markets.[97] In addition, some MSS operators with ATC authority will offer user equipment that resembles traditional mobile consumer devices in terms of aesthetics, functionality, and cost, and as such will compete vigorously with terrestrial CMRS providers.[98]

Greater flexibility in CMRS service rules is also leading to a convergence of terrestrial and satellite applications. For example, as the Commission recently observed, "Aircell is using terrestrial stations to provide aeronautical broadband services in competition with Inmarsat and other MSS providers."[99] A broader examination shows that satellite-based providers face

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[95] Brad Reese, Verizon LTE plans leaked, Network World (Aug. 9, 2010), *available at* http://www.networkworld.com/news/2010/080910-verizon-lte-plans-leaked.html (last visited Aug. 22, 2010).

[96] *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fourteenth Report, FCC 10-81, WT Docket No. 09-66, ¶ 37 (May 20, 2010).

[97] *See id.*

[98] *See* Comments of the MSS/ATC Coalition, *Fifteenth Annual Report on the State of Competition in Mobile Wireless, including Commercial Mobile Radio Services*, WT Docket No. 10-133 (Jul. 30, 2010).

[99] *Inmarsat-Stratos Order*, 24 FCC Rcd at 464 (¶ 37 & n.99).

vigorous competition across platforms in their provision of mobile communications services, and that this competition will increase in the future. The Commission should recognize this intermodal competition in order to properly describe the state of competition in satellite markets.[100]

IV. SYSTEMS INTEGRATORS, MANAGED SERVICE PROVIDERS AND VALUE-ADDED RESELLERS PLAY A CRITICAL ROLE IN THE SATELLITE SERVICES MARKET

The Commission must consider the critical role of systems integrators, managed service providers and value-added resellers as it evaluates the state of competition in the satellite industry. These entities play an essential role in enabling end-users—whether they be government, civilian or military, or private sector customers—to realize the value of satellite transmission services.

Systems integrators and managed service providers such as ARTEL, Spacenet, CapRock and Globecomm provide end-to-end connectivity solutions that utilize FSS and MSS capacity as the underlying long-haul transmission medium. They provide the design, construction and operation of ground station and terrestrial network facilities, complex network engineering, necessary software, security features, redundant network operation centers, staffing and logistical support. These entities have a wide array of unique capabilities and intellectual property that cannot be replicated, and that remain essential to the timely deployment of advanced networks through the United States and particularly in remote parts of the world. Systems integrators and managed service providers work with every major FSS and MSS operator, as well as ground station and electronic component manufacturers.

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[100] *Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and Int'l Satellite Commc'ns Serv.*, First Report, 22 FCC Rcd 5954, 5966 (¶ 35) (2007) ("Recognizing intermodal competition is consistent with customary descriptions of relevant markets.").

Value-added resellers and distributors continue to play an important and growing role. Inmarsat distributes its services through a number of distribution partners, including Stratos, Vizada, ARINC, MVS, and numerous others.[101] Iridium also has a large number of global distributors.[102] Similarly, ORBCOMM utilizes a network of value added resellers with expertise in specific industries to provide whole product solutions and customer support to end-users.[103]

V. A STRONG U.S. MANUFACTURING BASE AIDS THE COMPETITIVENESS OF THE SATELLITE SERVICES INDUSTRY

The Commission requests comments on whether and to what extent suppliers of input services might constrain the financial performance, innovation, or capacity expansion of satellite operators.[104] SIA applauds the Commission's recognition of critical inputs to the provision of satellite communications services, such as launch services and manufacturing.

Commercial satellite operators rely on the satellite manufacturing sector to design, build and deliver their space-based infrastructure. The technical innovation, pricing, and production scheduling affect directly the ability of a satellite operator to replenish and expand their space-based network or constellation of satellites in a manner that responds to fluctuations in demand for specific services, frequency bands, and regional coverage. For example, changes in satellite manufacturing processes unique to one market or to a well-established production line, can introduce uncertainties and delays.

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[101] *See* http://www.inmarsat.com/Partners/ (last visited Aug. 16, 2010). Inmarsat has over 400 distribution and service partners around the world.

[102] Iridium SEC Form 10-K Annual Report, File No. 001-33963 at 2 (March 16, 2010), *available at* http://www.sec.gov/Archives/edgar/data/1418819/000119312510058393/d10k.htm (last visited Aug. 22, 2010). Iridium has 65 service providers, 130 value added resellers, and 45 value added manufacturers.

[103] *See* http://www.orbcomm.com/partners-overview.htm (last visited Aug. 16, 2010).

[104] Public Notice, part I.B., at 3.

SIA estimates that the world satellite manufacturing industry generated $13.5 billion in revenues for 2009, up nearly a third from 2008 revenues of $10.5 billion. While worldwide satellite manufacturing revenues tend to vary year-on-year, they have shown steady growth in the longer term, increasing 61 percent overall from 2004 through 2009.

There are currently four domestic U.S. prime manufacturers of commercial communications satellites: Space Systems/Loral ("Loral"), Lockheed Martin Corporation ("Lockheed Martin"), The Boeing Company ("Boeing"), and Orbital Sciences Corporation ("Orbital Sciences"); additional U.S. manufacturers such as the Northrop Grumman Corporation supply the U.S. government market for military, civil space and intelligence spacecraft. Numerous additional U.S. companies supply sub-systems and components to these prime manufacturers for completion of communications satellites.

U.S. prime manufacturers face considerable competition from two traditional European rivals in the world marketplace, EADS Astrium ("EADS") and Thales Alenia Space ("Thales"). U.S. manufacturers have aggressively competed for and won bids at home and abroad, both for smaller spacecraft and commercial communications spacecraft, as well as for more complex commercial and government satellites. At the prime manufacturing level, relative market shares for the U.S. satellite manufacturing sector had remained steady at around 40 percent for the past several years, but jumped to 57 percent in 2009, due to major U.S. government demand, versus commercial satellite contracts.[105]

The Obama Administration issued a National Space Policy ("NSP") in June 2010 that recognizes that the space industrial base that supplies the commercial satellite industry is linked to manufacturing capabilities for government and military space requirements, and states that

[105] *See* SIA Report at 15 (attached at Appendix A).

"the United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports U.S. needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship."[106] However, as expressed in Congressional testimony, SIA has significant concerns that U.S. export control policies—which place excessive regulatory burdens on exports of all U.S.-built satellites and related components and technology under the International Traffic in Arms Regulations (ITAR)—may adversely affect the relative health of the communications satellite industry, including second- and third-tier manufacturers and the prime manufacturers they supply.[107]

VI. THE AVAILABILITY OF LAUNCH SERVICES IS CRITICAL TO THE COMPETITIVENESS OF THE SATELLITE SERVICES INDUSTRY

Commercial satellite operators rely on launch service providers to replenish and expand their space-based infrastructure. The pricing, scheduling, reliability, and technical appropriateness of satellite launch services have a profound effect on the lead-times to bring into operation a spacecraft and on the eventual cost of satellite-based services. The ability to promptly and predictably schedule a cost-competitive launch with a launch vehicle of appropriate size and lift capability is an essential element of planning and building any satellite system.

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[106] *See* "National Space Policy of the United States of America," at 3 (June 28, 2010), *available at* http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf (last visited Aug. 20, 2010).

[107] *See* Written Testimony for Patricia Cooper, President, Satellite Industry Association (SIA) Before the House Foreign Affairs Committee (HFAC) – Subcommittee on Terrorism, Non-Proliferation and Trade Hearing on Export Controls on Satellite Technology at 5-6 (Apr. 2, 2009), *available at* http://www.internationalrelations.house.gov/111/coo040209.pdf (last visited Aug. 20, 2010).

SIA estimates that the world launch services industry revenues for 2009 were $4.5 billion, up 18 percent from $3.9 billion in 2008 revenues.[108] Forty-six commercially-procured launches took place in 2009, versus 49 launches the previous year. Although the total number of commercially-procured launches was lower in 2009 compared with 2008, the average revenue-per-launch increased. U.S. launch revenues increased 78 percent in 2009 to $1.9 billion over $1.1 billion in 2008, representing 42 percent of global sector revenues. However, the 2009 increase was primarily attributable to revenue from launches for U.S. government customers.

There are currently four domestic U.S. launch service providers: Lockheed Martin Corporation ("Lockheed Martin"), The Boeing Company ("Boeing"), Orbital Sciences Corporation ("Orbital Sciences"), and new entrant Space Exploration Technologies Corporation ("SpaceX"). Only two of these companies currently have the technical capability to launch spacecraft into the geostationary orbit common for many commercial communications satellites: Lockheed Martin's Atlas V vehicle, and Boeing's Delta vehicle. SpaceX's Falcon 9 vehicle, the first of which was launched in June 2010, will not be available for commercial satellite launches until 2012.[109] Orbital Sciences' Pegasus, Minotaur, and Taurus vehicles and SpaceX's Falcon 1 vehicle are designed to launch smaller spacecraft to lower earth orbits.

In the past four years, U.S. launch companies have primarily launched U.S. government payloads for military, intelligence, and civil space requirements.[110] In 2006, Lockheed Martin

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[108] *See* SIA Report at 16-17 (attached at Appendix A).

[109] *See* SpaceX Falcon 9 Debut Launch Successful, Satellite Today (June 7, 2010), *available at* http://www.satellitetoday.com/st/topnews/SpaceX-Falcon-9-Debut-Launch-Successful_34265.html (last visited Aug. 22, 2010).

[110] *See* Center for Strategic and International Studies, National Security and the Commercial Space Sector: An Analysis and Evaluation of Options for Improving Commercial Access to Space, at 18-19 (July 2010), *available* at http://csis.org/files/publication/100726_Berteau_CommcialSpace_WEB.pdf ("CSIS Report") (last visited Aug. 20, 2010).

and Boeing joined to form the United Launch Alliance, LLC (ULA), a 50-50 joint venture to provide launch services for the U.S. government. Such U.S. government payloads typically require tailored accommodations to meet mission-specific needs and may not be easily adaptable to additional commercial use. In addition, the system for scheduling launches at U.S. government launch ranges imposes significant constraints on commercial satellite access to domestic launch infrastructure.[111] In the past two years, one commercial satellite was launched by U.S. launch services providers.

There are currently four international launch service providers capable of launching commercial satellites to geostationary orbit: France-based Arianespace, with investment from 10 European countries; International Launch Services ("ILS"), which uses the Russian Proton launch vehicle[112]; Sea Launch, a consortium owned by companies from the United States, Russia, Norway, and Ukraine[113]; and China Great Wall's Long March. However, not all of these options are available for use by U.S. satellite operators. U.S. law and policy places considerable constraints on any export to China of U.S.-manufactured missile equipment or technology, including commercial satellites, effectively blocking U.S. use of Chinese launch services since 1999.[114] Additionally, Sea Launch is currently attempting to emerge from bankruptcy

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[111] *Id.*

[112] *See* International Launch Services, About Us, *available at* http://www.ilslaunch.com/about-us (last visited Aug. 22, 2010).

[113] *See* Sea Launch, Organization, *available at* http://www.sea-launch.com/organization.htm (last visited Aug. 22, 2010).

[114] *See* The Foreign Relations Authorization Act Fiscal Years 1990 and 1991 (P.L. 101-246), which requires a Presidential waiver of Tiananmen Square sanctions to launch a commercial satellite from China; The Strom Thurmond National Defense Authorization Act For Fiscal Year 1999 (P.L. 105-261), which additionally requires Presidential certification to Congress that such export is not detrimental to the U.S. launch industry and the export will not improve China's missile or space launch capabilities, as well as a report to Congress with detailed justification for the waiver of sanctions; and the National Defense Authorization Act for Fiscal Year 2000 (P.L.

proceedings and, even if successful, is not expected to be in a position to conduct further launches for about a year.[115]

VII. FOREIGN GOVERNMENT REGULATION AND FINANCING OF SATELLITE OPERATORS MAY POSE MARKET ENTRY CHALLENGES

The Public Notice also asks for information on access to foreign markets,[116] which can be significantly inhibited by foreign government practices and policies. In many parts of the world, commercial satellite providers may face foreign competitors that are owned or heavily financed by their respective governments[117] as well as regulatory requirements that raise barriers and favor domestic providers.[118] SIA has filed its views on many of the foreign market access questions raised in the Public Notice in our comments to U.S. Trade Representative ("USR") for its 2010 1377 Review of Telecommunications Trade Agreements; our filing is contained in Appendix B. SIA's comments address issues relating to market access for satellite services in a number of World Trade Organization ("WTO") member or candidate countries and highlights obstacles that directly impact SIA's member companies.

106-65), which requires Presidential notification to Congress if any waiver to the Tiananmen Square sanctions is granted to a company that is under investigation for export control violations.

[115] *See* U.S. Bankruptcy Court Approves Sea Launch Reorganization Plan, Satellite Today (July 28, 2010), *available at* http://www.satellitetoday.com/st/headlines/U-S-Bankruptcy-Court-Approves-Sea-Launch-Reorganization-Plan_34662.html (last visited Aug. 20, 2010).

[116] *See* Public Notice, part IV, at 6.

[117] *See, e.g.*, Center for Strategic and International Studies, Preserving America's Strength in Satellite Technology, A Report of the CSIS Satellite Commission, at viii (April 2002) ("Preserving America's Strength"), *available at* http://csis.org/files/media/csis/pubs/081023_lewis_satellitetech.pdf (last visited Aug. 22, 2010).

[118] *See* U.S. Trade Representative, 2010 National Trade Estimate Report on Foreign Trade Barriers (2010) ("2010 USTR Trade Estimate Report"), *available at* http://www.ustr.gov/sites/default/files/uploads/reports/2010/NTE/NTE_COMPLETE_WITH_APPENDnonameack.pdf.

Government support can facilitate greater risk-taking by business. Subsidies also relieve some of the pressure to secure financing and to attract investment. Some governments that own or support domestic satellite entities view their operations with nationalist pride as an emblem of technological or economic status[119]; others may consider domestic satellite capabilities as an important aspect of their own communications security and independence.[120] Nonetheless, regulatory barriers that favor a domestic provider over foreign competitors can result in non-market based competition.

Examples of government-owned satellite providers appear throughout the world and in some regions seem to constitute the norm. In Africa and the Middle East, for example, Turksat, Arabsat, ictQATAR, RascomStar, NIGCOMSAT, Yahsat, Spacecom and others are all government-owned either by an individual country or by a government consortium. Likewise in Asia, Indosat, ISRO, Chinasat and others are government-owned. In the Americas, Arsat and Venesat are owned by the governments of Argentina and Venezuela respectively, and Colombia has publicly announced plans to launch a completely government-funded satellite.[121]

Operators face additional challenges in some countries where government regulations pose unwarranted barriers to providing service.[122] Such regulations often favor domestic entities

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[119] *See* Preserving America's Strength, *supra*, at 4; *see also* Jeffrey Logan, China's Space Program: Options for U.S.-China Cooperation, CRS Report for Congress, at 3 (Sept. 29, 2008) ("China's Space Program"), *available at* http://www.fas.org/sgp/crs/row/RS22777.pdf (last visited Aug. 20, 2010).

[120] *See* Preserving America's Strength, *supra*, at 4; China's Space Program, *supra*, at 3.

[121] *See* Colombian Ministry of Information Technologies and Communications, Was Received a Proposal for the Process of SATCOL, Colombian Social Satellite, *available at* http://www.mintic.gov.co/mincom/faces/index.jsp?id=18743 (last visited Aug. 10, 2010).

[122] The U.S. Trade Representative discusses some of these barriers in the 2010 Section 1377 Review of Telecommunications Trade Agreements, at 10, *available at* http://www.ustr.gov/sites/default/files/2010%2003%2025%201377%20REPORT%20FINAL.pdf (last visited Aug. 22, 2010).

to the detriment of foreign competitors. The USTR has made particular mention of problems in China, India, Russia, Korea, and others.[123] In India, for example, foreign operators must first sell capacity to ISRO, a direct competitor, which then resells the capacity to consumers.[124] Similarly, Korea requires foreign operators to sell to customers only through a Korean company for domestic Korean services.[125] No foreign operators are allowed to directly provide domestic satellite services in China.[126] And Russia reportedly imposes discriminatory legal and administrative requirements that give preference to domestic providers.[127]

VIII. CONCLUSION

In developing the Fourth Report to Congress, SIA urges the Commission to continue to take a broad view of the competitive environment in which satellite service providers operate and recognize the substantial consumer benefits that result from those competitive forces.

Respectfully submitted,

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[123] *See* 2010 USTR Trade Estimate Report, *supra*, note 118.

[124] *See id.* at 179.

[125] *Id.* at 234.

[126] *Id.* at 80.

[127] *Id.* at 317.

Appendix A

2010 State of the Satellite Industry Report

State of the Satellite Industry Report

June 2010

Sponsored by the

SIA
SATELLITE INDUSTRY ASSOCIATION

Prepared by
Futron Corporation

Futron

Study Overview

- The latest comprehensive satellite industry statistics in SIA's series of annual studies
- Based on year-end 2009 annual statistics from key players representing four satellite industry segments:
  - Satellite Services
  - Satellite Manufacturing
  - Launch Industry
  - Ground Equipment
- Performed by Futron Corporation, the report includes surveys more than 70 key companies and SIA members, augmented with publicly available data and research to derive industry revenues and statistics

Satellite Industry Sectors Surveyed

Satellite Services
- Consumer Services
  - Satellite Television
  - Satellite Radio
  - Satellite Broadband
- Fixed Satellite Services
  - Transponder Agreements
  - Managed Network Services
- Mobile Satellite Services
  - Mobile Data
  - Mobile Voice
- Remote Sensing

Launch Industry
- Launch Services
- Vehicle Services

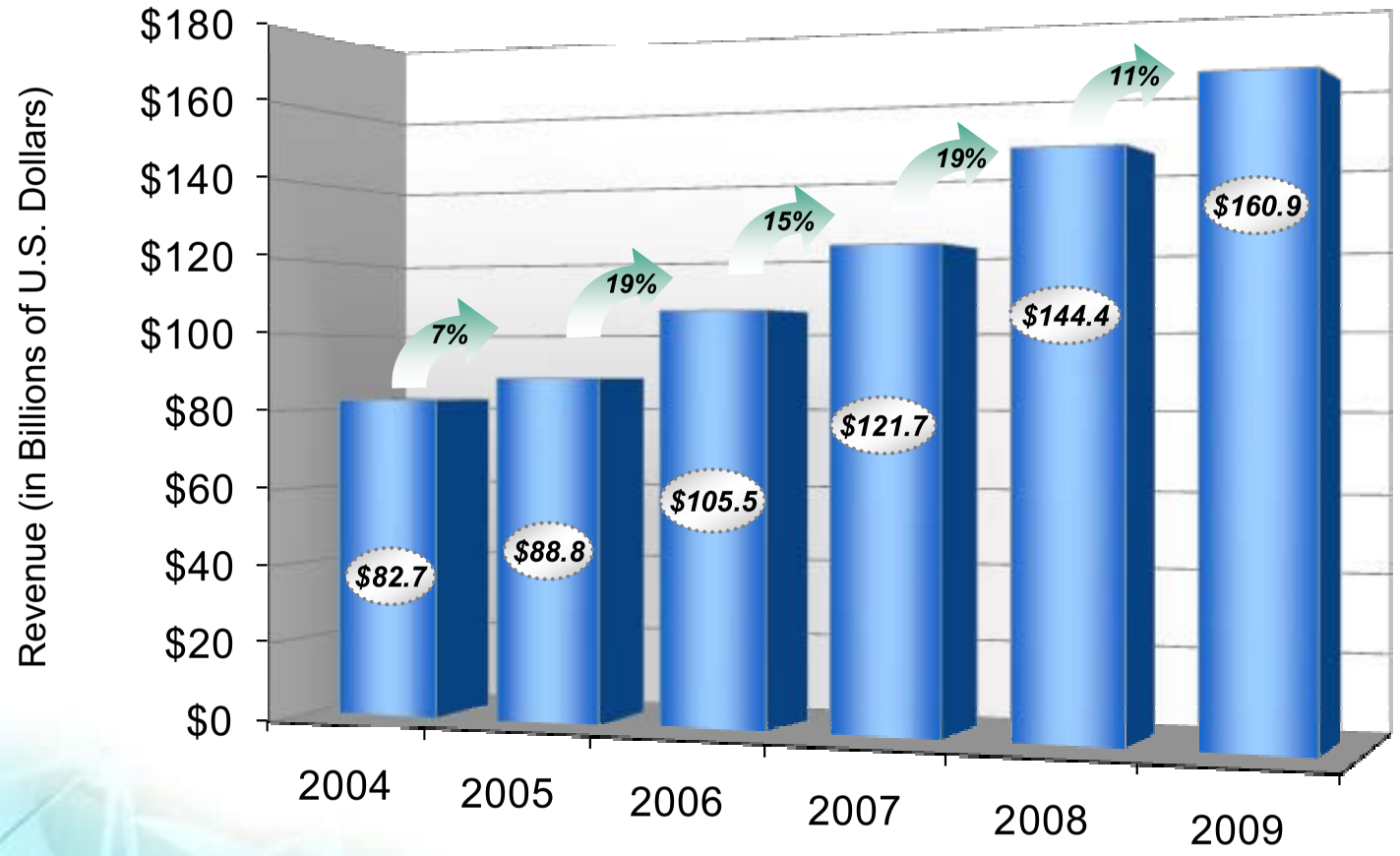
Ground Equipment
- Network Equipment
  - Gateways
  - Control Stations
  - Very Small Aperture Terminals (VSATs)
- Consumer Equipment
  - Direct Broadcast Satellite (DBS) Dishes
  - Handheld Satellite Phones
  - Digital Audio Radio Service (DARS) Equipment
  - Global Positioning System (GPS) Primary-Use Hardware

Satellite Manufacturing
- Satellite Manufacturing
- Component and Subsystem Manufacturing

Methodology Notes

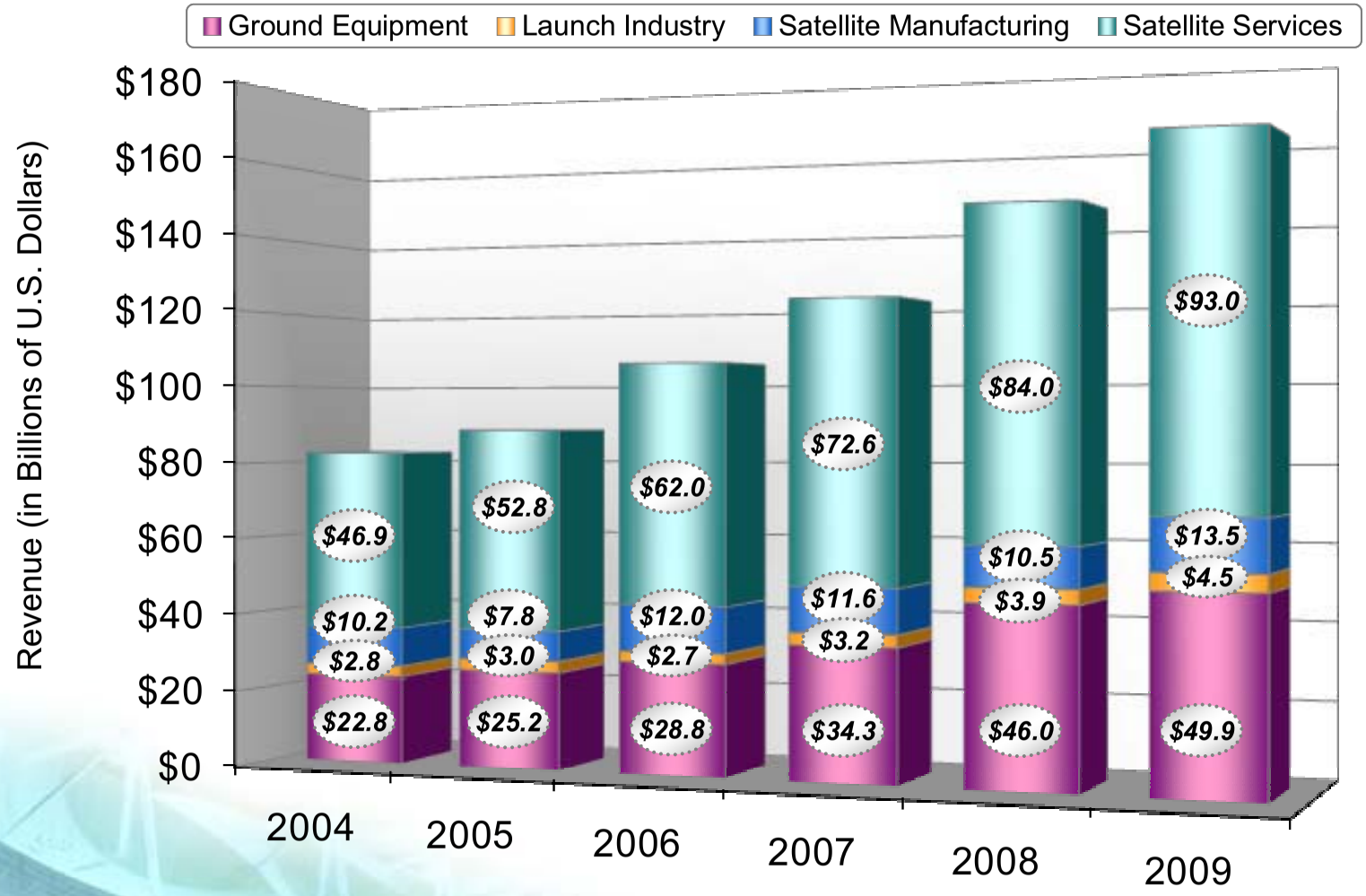
- All data reflect global revenues unless otherwise noted
- Satellite Manufacturing data
  - Include spacecraft built by commercial arms of government entities (such as ISRO's Antrix of India)
  - Exclude university-built satellites
- Actual satellite manufacturing revenues for research and development, procurement, and construction are accrued throughout the life-cycle of satellite programs; however, they are captured in this report only during the year of launch
- Launch Industry data
  - Include all launches by commercial launch companies, including those that primarily launch government payloads
  - Exclude launches conducted by government entities for government customers outside of commercial procurement processes
- Revenue is expressed as in-year U.S. dollars (not adjusted for inflation)

World Satellite Industry Revenues



World satellite industry revenues posted average annual growth of 11.7% for the period from 2004 through 2009

World Revenues By Sector

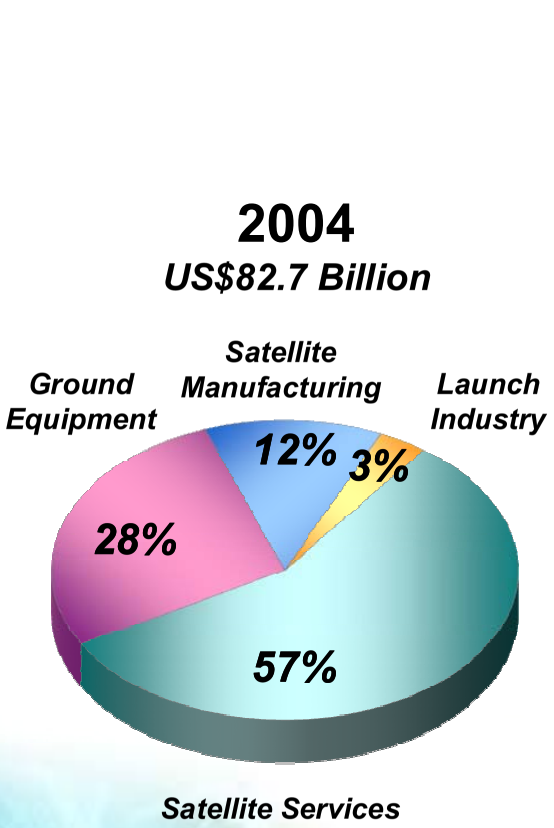


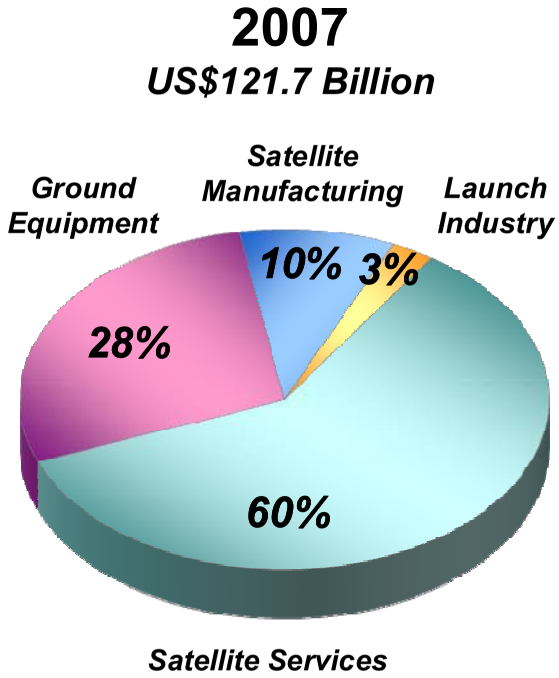
Revenues for all four sectors surveyed grew from 2008 to 2009, led by Satellite Manufacturing (29% growth), followed by the Launch Industry (18%), Satellite Services (11%), and Ground Equipment (8%)

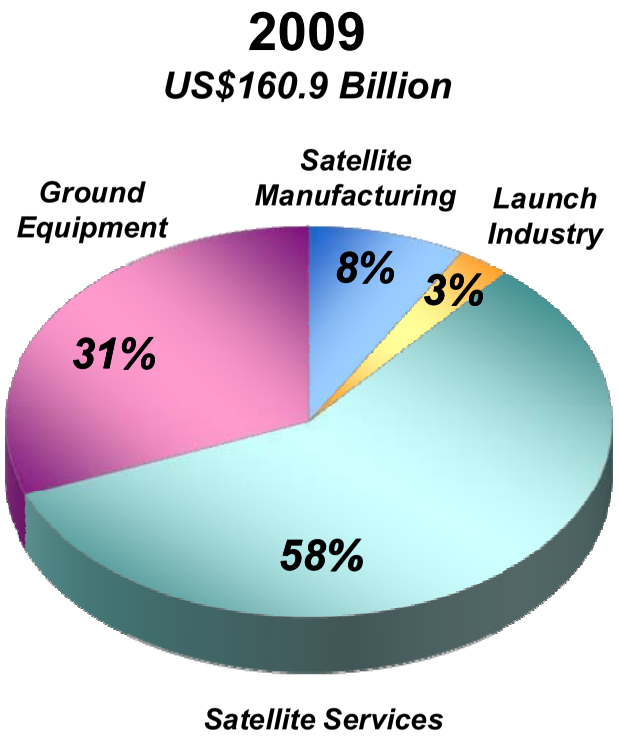
Top-Level Satellite Industry Findings

- Overall worldwide industry revenue growth was 11% from 2008 to 2009, down from a 19% increase from 2007 to 2008
- Importantly, all four industry sectors' revenue grew in 2009
- Despite slightly slower growth in subscriptions for consumer services, Satellite Services revenues grew 11% from 2008 to 2009
- Satellite Manufacturing revenues increased by nearly one-third between 2008 and 2009, as greater numbers of high-value spacecraft were completed and launched
- Launch Industry revenues grew by 18% from 2008 to 2009; 11 more orbital launches occurred in 2009 than in 2008
- Ground Equipment revenues grew by 8% in 2009, driven by slower but steady growth in both consumer and network equipment
- As of 3Q 2009, U.S. satellite industry employment was down 5.5% from 4Q 2008, with losses seen in all four sectors

World Revenues By Sector

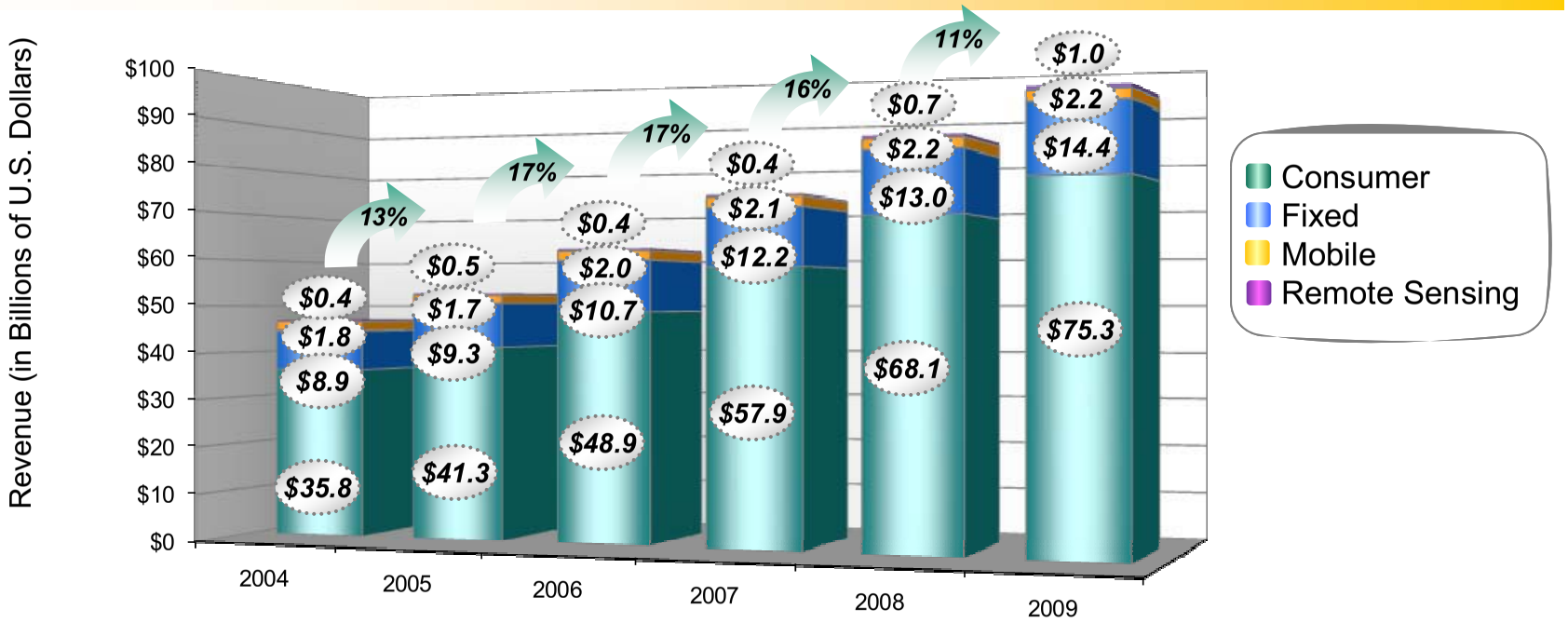






Ground Equipment | Launch Industry | Satellite Manufacturing | Satellite Services

World Satellite Services Revenue



	2004	2005	2006	2007	2008	2009
Consumer	**$35.8**	**$41.3**	**$48.9**	**$57.9**	**$68.1**	**$75.3**
- Satellite TV (DBS/DTH)	$35.3	$40.2	$46.9	$55.4	$64.9	$71.8
- Satellite Radio (DARS)	$0.3	$0.8	$1.6	$2.1	$2.5	$2.5
- End-User Broadband	$0.2	$0.3	$0.3	$0.4	$0.8	$1.0
Fixed	**$8.9**	**$9.3**	**$10.7**	**$12.2**	**$13.0**	**$14.4**
- Transponder Agreements	$7.0	$7.3	$8.5	$9.6	$10.2	$11.0
- Managed Network Services [1] [2]	$ 1.9	$2.0	$2.2	$2.6	$2.8	$3.4
Mobile [3]	**$1.8**	**$1.7**	**$2.0**	**$2.1**	**$2.2**	**$2.2**
Remote Sensing	$0.4	$0.5	$0.4	$0.4	$0.7	$1.0
Total	**$46.9**	**$52.8**	**$62.0**	**$72.6**	**$84.0**	**$93.0**

Note: Numbers may not sum exactly due to rounding

1. Includes capacity for DTH platforms
2. Includes VSAT services
3. Includes mobile satellite telephony and data

Satellite Services Findings

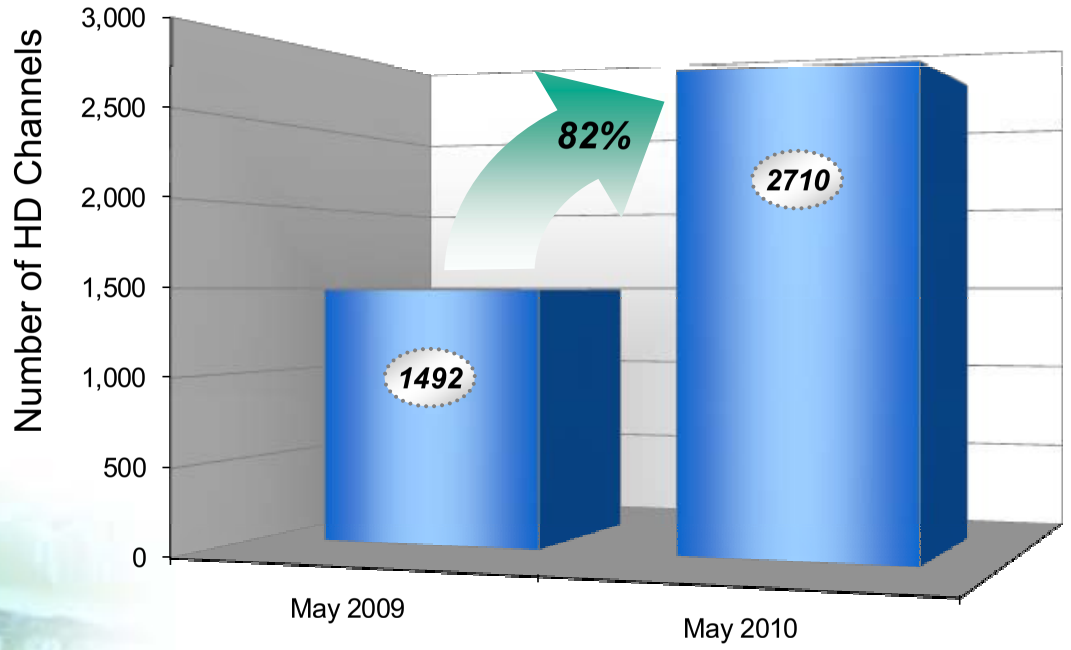
- Despite a worldwide economic slowdown, overall Satellite Services revenue expanded at 11% in 2009—albeit lower than the 17% and 16% growth posted in 2007 and 2008, respectively
- Consumer Satellite Television services (DBS/DTH), representing three-quarters of total Satellite Services revenues in 2009, also grew 11%, from $64.9 billion to $71.8 billion
  - 8 million satellite pay TV subscribers were added between 2008 and 2009—mainly in Asia—bringing the world total to over 140 million
  - U.S. satellite pay TV subscribers exceeded 30 million, representing one quarter of the world total
- Transponder agreement revenues, the core of the fixed satellite services sector, increased from $10.2 billion in 2008 to $11 billion in 2009—a 7.8% growth rate, exceeding the 6% growth posted from 2007 to 2008
- Broadband satellite internet revenues reached $1 billion globally
  - The U.S. constituted approximately 70% of these revenues

Satellite Services Findings (2)

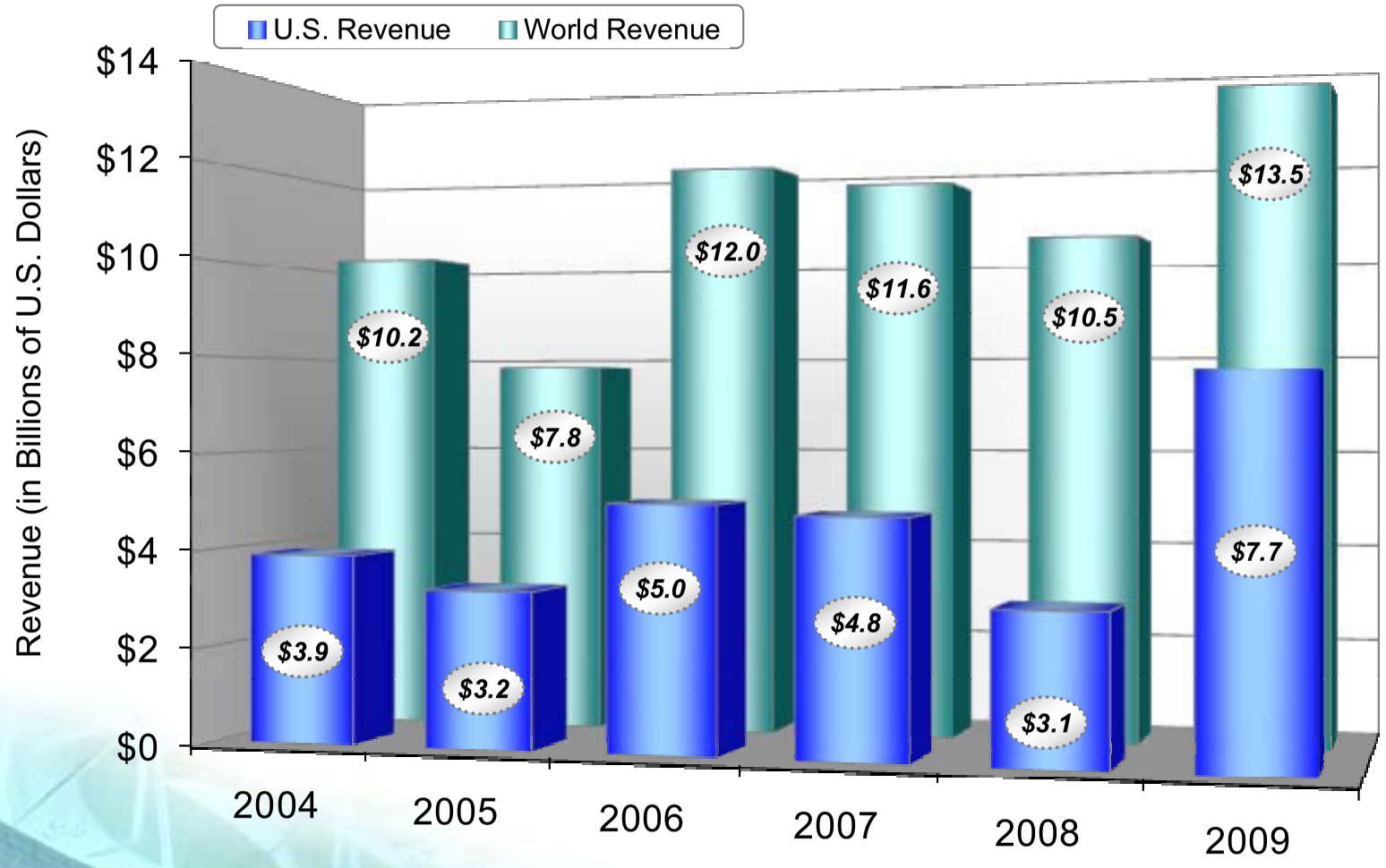
- Mobile satellite services growth continued to be driven by data applications
  - Mobile data services revenues grew by 13%, and now represent three-quarters of all mobile satellite services revenues
  - Mobile voice revenues declined by 23% in 2009, with most providers reporting slightly lower revenues year-on-year
- Satellite radio (DARS) continued to grow, although the pace of growth was slower
  - Subscription revenues increased 4%, from $2.45 billion to $2.54 billion (reflecting 32,000 net subscribers added), versus the 18% growth from 2007 to 2008
- Revenues from remote sensing imagery products and services surged 37% to $1 billion in 2009, reflecting higher-resolution offerings from newly launched satellites, as well as value-added services

Impact of HDTV on Satellite Industry

- Growth in the numbers of High Definition Television (HDTV) and cable distribution channels continued both to drive demand for transponder capacity and to increase revenues for satellite pay TV
  - The number of HDTV channels worldwide nearly doubled from May 2008 to May 2009
  - Almost 80% of HDTV channels currently serve the Americas
  - Remaining HDTV channels primarily serve Europe and Asia-Pacific, yet the gap between these markets and the Americas indicates potential for further growth



Satellite Manufacturing Revenues



Note: Satellite Manufacturing revenues are recorded in the year the satellite is delivered/launched, not when contract is awarded or interim payments are transacted. World revenue includes U.S. revenue.

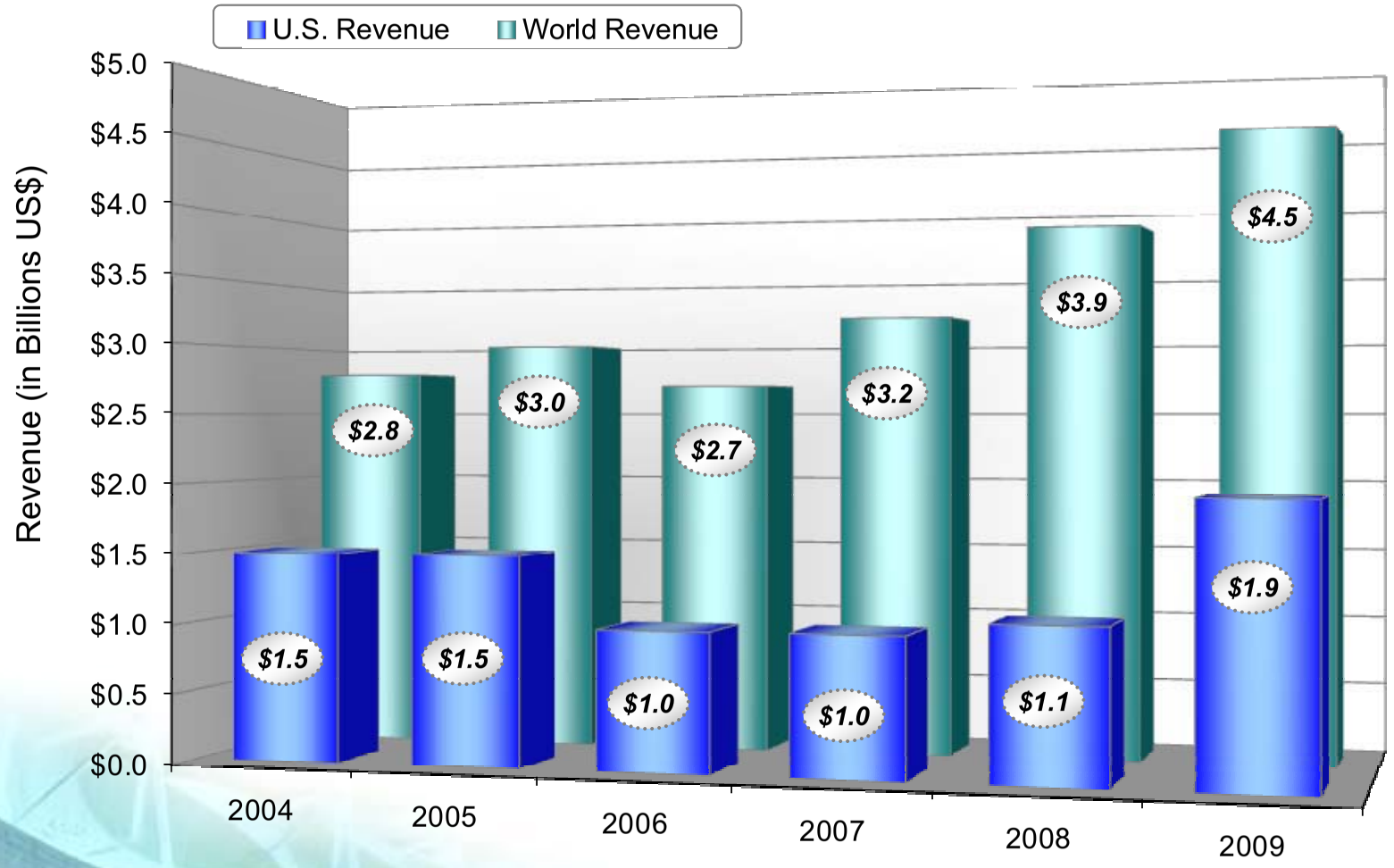
Satellite Manufacturing Findings

- Global Satellite Manufacturing revenues grew by nearly one-third, from $10.5 billion to $13.5 billion, between 2008 and 2009
- While worldwide Satellite Manufacturing revenues tend to vary year-on-year, they have shown steady growth in the longer term
  - From 2004 through 2009, Global Satellite Manufacturing revenues increased by 61% overall
- Commercially-procured satellites for government missions were the primary driver of growth
  - Several large and high-value satellites serving a variety of civil, scientific, and military missions were built and launched in 2009
  - The value of commercially-procured government satellites launched in 2009 was $9.8 billion, up from $5.3 billion in 2008

Satellite Manufacturing Findings (2)

- U.S. Satellite Manufacturing revenues more than doubled, increasing the U.S. share from 30% in 2008 to 57% in 2009
  - Major NASA, NOAA, and DoD satellites were completed and deployed
  - 41% of commercially-manufactured spacecraft launched in 2009 were built by U.S. firms, compared with 22% in 2008
- Future commercial spacecraft orders:
  - 41 commercial geosynchronous orbit (GEO) satellite manufacturing orders were announced in 2009 for future delivery, almost double the orders announced in 2008
    - U.S. manufacturers received 19 of these orders, or 46%—down slightly from the 52% or orders announced for U.S. firms in 2008
    - European manufacturers received 12 of these orders, or 29%—a slight decrease compared to 33% won by European firms in 2008
    - The remaining 10 orders were split among Russian, Chinese, Canadian, and Japanese manufacturers
      - The combined share of orders won by firms from these countries rose from 14% in 2008 to 24% in 2009

Launch Industry Revenues

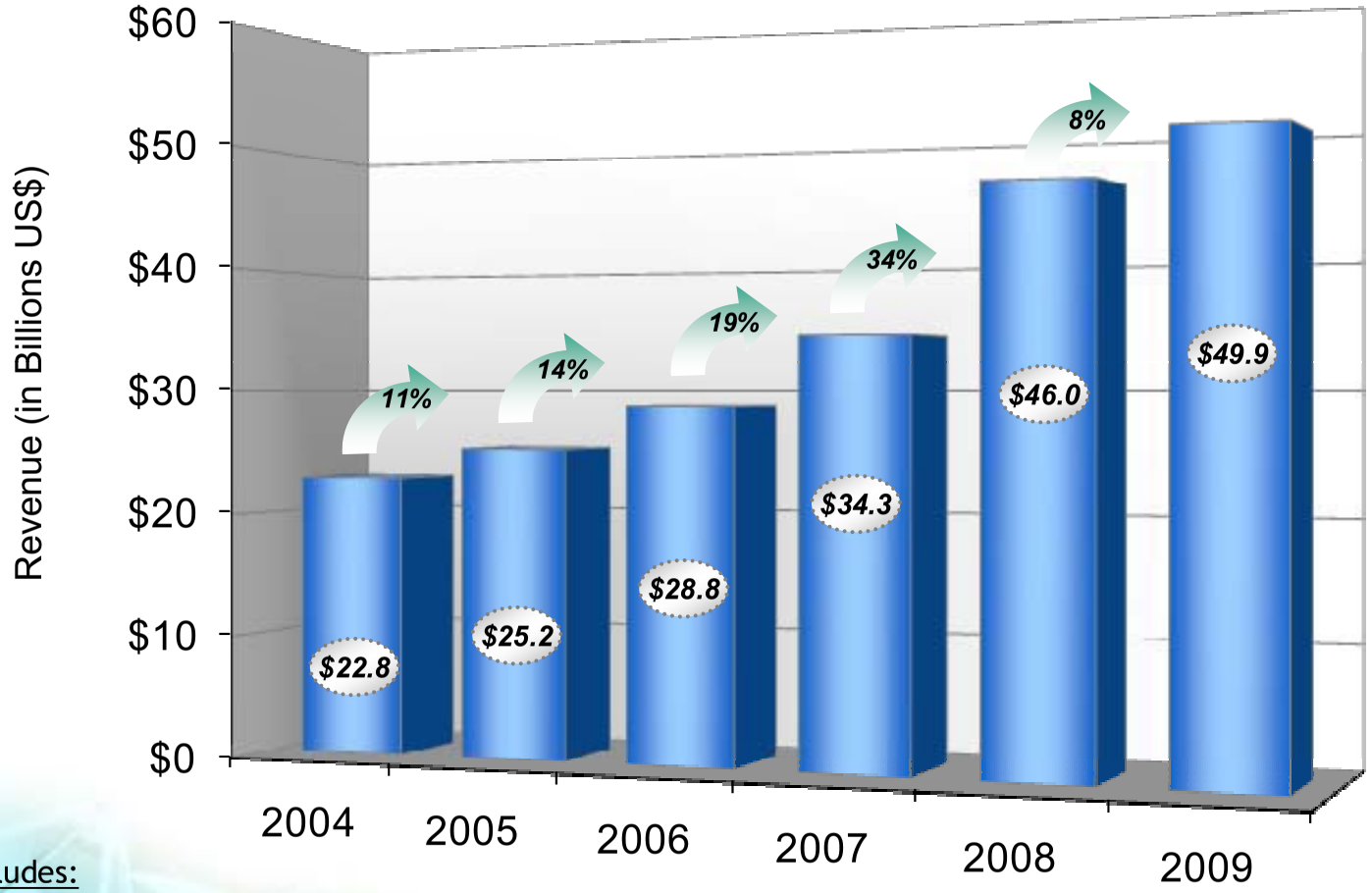


Note: Launch Industry revenues are recorded in the year the launch occurs, not when contract is awarded or interim payments are transacted. World revenue includes U.S. revenue.

Launch Industry Findings

- Worldwide Launch Industry revenues increased by 18% in 2009, slightly lower than the previous year's growth
- In 2009, there were 46 commercially-procured launches, compared to 49 in 2008—but average revenue per launch increased
- Government demand for commercial launches was the main growth driver in 2009, representing 55% of all commercially-procured launch revenues
- U.S. launch revenues surged 78%, from $1.1 billion to $1.9 billion, based on commercially-procured launches for U.S. government clients
  - The U.S. share of global launch revenues rose to 42% in 2009
- Announced commercial launch orders in 2009 declined by 10 to 35
  - Geosynchronous (GEO) launch orders increased 25% to 25 in 2009, none U.S. but two for China (APT Satellite Company and NIGCOMSAT)
  - Non-Geosynchronous (NGSO) launch orders declined from 25 to 10 in 2009

World Ground Equipment Revenues



Includes:

Network Equipment – Gateways, Network Operations Centers (NOCs), Satellite News Gathering (SNG) equipment, flyaway antennas, and Very Small Aperture Terminals (VSATs); and

Consumer Equipment – Satellite TV and broadband dishes, satellite radios, satellite phones, and select GPS devices

Ground Equipment Findings

- Overall revenue in the Ground Equipment sector grew by 8% from 2008 to 2009
  - This was a significantly lower expansion than the 34% growth between 2007 and 2008
- Consumer equipment sales of satellite phones, satellite TV dishes, and satellite radios remained steady
- Sales of satellite network equipment (including VSATs and other terminals) grew by 3%
- While sales of primary-use GPS equipment (personal navigation devices, in-vehicle navigation systems, shipment tracking devices, and precision measurement instruments) continued to grow, the industry emphasis is shifting toward handsets and chipsets, which are not included in this report

Ground Equipment Findings (2)

- The number of end-user ground equipment terminals in service grew across all sectors, although at a slower rate than in the previous year

Terminals in Service (Millions)	2008	2009
Satellite TV	133.6	141.3
Satellite Radio	20.4	20.5
Mobile Satellite Services	1.9	2.0
End-User Broadband	1.0	1.1
Mobile Satellite TV	1.3	1.5

Note: For consumer services, terminal number estimates are based on reported subscriber numbers

- Global growth of end-user broadband between 2008 and 2009 occurred primarily in the U.S.
  - U.S. satellite broadband subscribers grew from approximately 842,000 in 2008 to approximately 942,000 as of year-end 2009
- Mobile Satellite TV (S-DMB) revenues derive from new hand-held video services available primarily in Asian markets

U.S. Satellite Industry Employment (As of 3Q 2009)

- Between year-end 2008 and September 2009, the U.S. satellite industry shed 14,564 jobs, or 5.5%, linked to the global economic downturn
- All four satellite industry segments were impacted
  - The Ground Equipment sector had the largest decline, losing 8,249 jobs, or 8.36%
  - Satellite Manufacturing employment contracted by 1,645 jobs, or 5.87%
  - Satellite Services shed 4,254 jobs, or 5.05%
  - The Launch Industry was most resilient, losing only 415 net jobs, or 0.08%

Satellite Industry Sector	Estimated U.S. Personnel (2008) *	Estimated U.S. Personnel (2009) *
Satellite Services	84,267	80,013
Satellite Manufacturing	28,014	26,369
Launch Industry	52,007	51,592
Ground Equipment	98,663	90,414
Total Estimated U.S. Employees *	**262,952**	**248,388**

* Includes launch tracking and telemetry services

Source: U.S. Bureau of Labor Statistics (BLS). All figures as of 3Q 2009 — the most recent complete data as of June 2010

Figures derived from three inputs: BLS Current Employment Statistics Survey (CES); BLS Quarterly Census of Employment and Wages (QCEW); U.S. Census Bureau North American Industry Classification System (NAICS)

2009 Global Trend Summary

- Overall satellite industry growth of 11% reflected strength in 2009 despite a worldwide economic recession
- Size of the four industry sectors' revenues analyzed in relation to each other indicates balanced consistency of revenues over time
- Satellite services remained the single largest satellite industry segment, led by satellite TV growth
- Launch Industry and Satellite Manufacturing revenues posted the most robust growth in 2009
  - Government demand surged in 2009, with more launches carrying higher-value spacecraft
  - The U.S. share of both global Launch Industry and Satellite Manufacturing revenues also rose significantly
- Ground Equipment revenue grew at a substantially slower rate, as the GPS sector shifted from primary-use GPS devices to secondary-use GPS chipsets

For more information on the satellite industry,
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Appendix B

Comments of the Satellite Industry Association
to the U.S. Trade Representative for its 2010
1377 Review of Telecommunications Trade Agreements

COMMENTS FILED BY THE
SATELLITE INDUSTRY ASSOCIATION

The Satellite Industry Association ("SIA"), on behalf of its Member Companies,[1] hereby files its Comments concerning obligations under the World Trade Organization ("WTO") and General Agreement on Trade in Services ("GATS"), in response to the U.S. Trade Representative's Request for Comments Concerning Compliance With Telecommunications Trade.[2] Our comments are as follows:

CHINA

National treatment. China is a restrictive market for satellite services. Satellite operators that are Chinese-owned receive preferential treatment over foreign satellite operators. Foreign satellite operators are required to obtain government approval or enter into a contract with a "qualified domestic entity" in order to provide services in China. Foreign satellite operators are prohibited from leasing transponder capacity directly to end-users in the country, without the prior approval of the Ministry of Information and Industry ("MII")

There is only one authorized domestic fixed satellite service ("FSS") provider in China -- China Direct Broadcast Satellite Company ("China DBSat"), which holds a Basic Telecommunications Services ("BTS") operating license. China DBSat was founded in December 2007 to merge into one sole satellite operation all satellite-related assets, businesses and professionals of the former three domestic Chinese satellite companies, namely China Satellite Communications Corporation ("China Satcom"), Sino Satellite Communications Company Ltd. ("Sinosat"), and China Orient Telecommunications Satellite Company Ltd ("China Orient").

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[1] SIA Executive Members include: Artel Inc.; The Boeing Company; CapRock Government Solutions; The DIRECTV Group; Hughes Network Systems, LLC; DBSD North America, Inc.; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite, LLC; Lockheed Martin Corp.; Loral Space & Communications Inc.; Northrop Grumman Corporation; Rockwell Collins; SES Americom, Inc.; SkyTerra Communications, Inc; and TerreStar Networks, Inc. Associate Members include: ATK Inc.; Comtech EF Data Corp.; DRS Technologies, Inc.; EchoStar Satellite, LLC; EMC, Inc.; Eutelsat Inc.; iDirect Government Technologies; Inmarsat Inc.; Marshall Communications Corp.; Panasonic Avionics Corporation; Spacecom Ltd.; Stratos Global Corp; SWE-DISH Space Corp; Telesat; ViaSat Inc.; and WildBlue Communications, Inc.
Additional information about SIA can be found at http://www.sia.org.

[2] *See* Request for Comments Concerning Compliance With Telecommunications Trade Agreements, 74 Federal Register 59339 (2009).

In addition to China DBSat, only Asia Satellite Telecommunications Company Limited ("AsiaSat") and APT Satellite Holdings Limited ("APT Group") are allowed to provide satellite services directly to end-users in China. These two companies are based in Hong Kong, but are partially owned by Chinese government entities.

Monopoly. China DBSat continues to have a monopoly for the provision of satellite services in the country, as no other company has been granted a BTS license.

Transparency. There is a lack of transparency with regard to satellite regulations in China. While revisions to the Telecommunications Regulations of the People's Republic of China, published by the State Council on September 25, 2000, are currently under consideration, it is unclear how these proposed revisions will apply to satellite communications.

Market access. In August, 2005, the State Council issued a directive which stated that radio and television signal broadcasting and relation station, satellite, and backbone networks are closed to private capital. Further, China also bans foreign companies and organizations from offering educational services via satellite networks.

EGYPT

Lack of transparency. In violation of its General Agreement on Trade in Services ("GATS") Article III obligation to publish all relevant measures of general application which pertain to or affect implementation of its World Trade Organization ("WTO") commitments, there are no established regulations regarding the provision of satellite services in Egypt. Egypt does not fully disclose its regulations regarding access to foreign satellites; publicly-available information for satellite service suppliers is limited to general guidelines, which indicate that satellite capacity must be approved by the National Telecommunications Regulatory Authority ("NTRA"), yet no information about this approval process is available. Regulatory policies governing satellite services in Egypt are unknown or ad hoc.

Failure to provide market access. While Egypt has made recent strides towards general telecom competition, the market for the provision of satellite services in Egypt remains limited. Egypt has a national satellite operator ("Nilesat") and four Very Small Aperture Terminal ("VSAT") licenses. Egypt's regulator exercises discretion in licensing additional VSAT operators, based on its judgment of whether or not the business is viable. Egypt's failure to allow unlimited VSAT operators and satellite service operators directly contradicts its Schedule of Specific Commitments. Egypt specifically agreed to remove all market access barriers in all services, including VSAT, international voice and data, private leased lines, etc., as of December 31, 2005. Its failure to do so is a direct violation of its WTO commitments.

INDIA

Restrictions on the use of foreign satellite capacity for direct-to-home ("DTH") services. India's Ministry of Information and Broadcasting ("MIB") has established guidelines that establish a preference for Indian satellites to provide capacity for delivery of Direct-to-Home subscription television services ("DTH"). While these guidelines do allow the use of foreign satellites if the foreign satellite has completed the international frequency coordination process with the domestic Indian National Satellite System ("INSAT"), in practice, authorized DTH licensees are not permitted to contract directly with foreign operators even if the frequency coordination has been completed. Instead, the foreign satellite capacity must be procured through the Indian Space Research Organization ("ISRO"), the operator of the INSAT system. ISRO only permits such use if it does not have available capacity on its own system. If ISRO cannot meet the DTH requirement, the foreign satellite operator first must sell its capacity to ISRO, a direct competitor, who then resells it to the consumer, creating a middleman scenario where (i) additional costs are created for the consumer through markups by ISRO; (ii) ISRO may structure contracts with the goal (explicitly stated at times) of moving the service to one of ISRO's satellites once capacity is available; and (iii) ISRO determines the rate at which the market grows.

Lack of clarity regarding the role of the Department of Space ("DOS"). India's Department of Telecommunication's New Telecom Policy of 1999 stated that users of transponder capacity would be able to access both domestic and foreign satellites, in consultation with the Department of Space ("DOS"), of which ISRO forms part. While it might be necessary for the DOS to ensure that foreign satellites are completing international coordination agreements with the INSAT system, there are no technical or commercial reasons why foreign satellite capacity should need to be procured through DOS (ISRO), a direct competitor of foreign satellite operators. This "middleman" role of DOS results in a competitive advantage for the domestic Indian satellite system.

A true "open skies" policy should be adopted for the provision of satellite services in India. Local users in India should be allowed to contract directly with any satellite operator that has the ability to serve India, and not be constrained by regulatory policies that establish a "preference" for a domestic operator or service provider.

Ku-band restrictions. Satellite services operating in the Ku-band frequency range remain banned for use of broadcasting to cable head ends. There is no technical or logical policy reason for this restriction, given that Ku-band capacity is just as suitable for video distribution as are other frequencies, such as C-band, that are currently approved for this application in India. This restriction should be removed.

Security concerns. Security restrictions on mobile satellite services ("MSS") operators require the deployment of particular gateway infrastructure within India, despite the fact that more advanced technologies other than locally-established gateways can fully meet security concerns. This requirement should be removed.

Market access. In 2005, India issued a "Downlink Policy" which requires media content providers that down-link programming from a satellite into India establish a registered office in India or designate a local agent. India cites greater oversight over programming content as its rationale for such a requirement, but it could instead control content through its licensed entities such as cable companies or DTH providers. The policy is overly burdensome and effectively requires companies to establish a taxable presence in India.

India limits foreign direct and indirect investment in companies engaged in uplinking to satellites to a maximum of 49 percent, negatively impacting the ability of U.S. companies to invest.

ISRAEL

Restrictions on market access. Israel promised in its Schedule of Specific Commitments to provide market access and national treatment to satellite services (voice and data) without any limitations. Unlike the entries for voice and data telephone services and private leased circuit services, there were no limitations noted for foreign ownership in satellite operators. The schedule does not list any requirement for local presence of any sort, promising access through Modes 1 and 3. In violation of these commitments, Israel applies a 74 percent foreign ownership limit to satellite service providers and imposes a requirement for establishment of a local presence in order to sell such services to the Israeli market. Further, advertising broadcasted through Israel's satellite network by foreign channels may only broadcast a limited amount of advertising targeted at the Israeli market. Both the foreign ownership limits and the local presence requirement violates Israel's World Trade Organization ("WTO") obligations.

Unreasonable and discriminatory regulation. In addition, Israel applies unreasonable and discriminatory regulation on companies seeking authorization to install and operate a satellite earth station to access or use capacity on a foreign satellite. These companies require a variety of permits and licenses (wireless license, telecommunications services license, type approval license, trading license, and special import license) which are specifically tailored to the particular operator, rather than broadly defined. These licensing requirements impose an undue burden on the provision of service and discriminate against satellite services provided by foreign-owned satellites. As such, they violate Israel's national treatment commitment and contradict the General Agreement on Trade in Services ("GATS") Article VI requirement that the regulations by administered in a reasonable manner.

MEXICO

Market access. Mexico's schedule with respect to satellite services lacks clarity. The Schedule of Specific Commitments does say, however, that "services other than international long distance services which require use of satellites must use Mexican satellite infrastructure until the year 2002." This appears to give foreign satellite service providers a right to market satellite services, other than voice telephony, beginning

January 1, 2002. There is no local presence specified with respect to this commitment. Notwithstanding this commitment, Mexico does not permit foreign-owned satellites to be used in Mexico without a bilateral agreement and a local presence via a locally-issued Concession. In order to qualify to hold such Concession, the local entity must be 51 percent Mexican-owned. Further, it requires that MSS operators deploy gateway earth stations within Mexico to satisfy security policies. These gateways are not technically necessary and newer technologies are available to satisfy security concerns. The gateway requirement for MSS operators simply serves as a barrier to market entry.

Excessive fees and capitalization requirements. Mexico applies substantial spectrum usage fees under the Federal Rights Law that bear no relationship to the cost of licensing and operation of the regulator. These fees are not reasonable as required by Article VI of the General Agreement on Trade in Services ("GATS"). Similarly, Mexico applies extremely high capitalization requirements that are not related to the operational abilities of the licensees. Again, these requirements are not reasonable and violate Article VI of the GATS.

VENEZUELA

National treatment and most-favored nation treatment. As of November 27, 2000, Venezuela committed to providing national treatment to foreign-owned and -operated satellite service providers, subject to a local incorporation requirement. In violation of this commitment, Venezuela's Organic Telecommunications Law calls for preferential treatment of Venezuelan-owned satellites. Furthermore, draft regulations on satellite services provide an additional preference for satellites of "international entities" by subjecting them to more lax local presence requirements than those imposed on other satellite operators (both foreign and domestic). These "international entities" operate their satellites pursuant to national authorization and preferential treatment of these entities violates Venezuela's obligation to provide most-favored nation treatment under Article II of the GATS

The draft regulations also contain another potential violation of Venezuela's commitment to provide most-favored nation treatment. There is a provision requiring the Venezuelan regulator to sign bilateral reciprocity agreements with administrations notifying foreign orbital positions prior to licensing satellites in those orbital positions to serve Venezuela. Article II of the GATS provides for non-discriminatory treatment of all WTO members and directly prohibits any requirement for reciprocity.

Market access. With regard to broadcasting, including both television and radio, Venezuela limits foreign equity participation (except for other Andean Community countries) to 20 percent in enterprises engaged in Spanish language media.

Respectfully Submitted,

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December 14, 2009