BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C.

In the Matter of	)	
	)	
Fourth Annual Report to Congress	)	IB Docket No. 10-99
on the Status of Competition in the Satellite	)	DA 10-1353
Services Industry	)	
	)	
	)	

To: Office of the Secretary

REPLY COMMENTS OF ARIANESPACE, INC.

Arianespace, Inc., founded in 1980 as the world's first commercial space transportation company, hereby submits these comments in response to the above-referenced Federal Communication Commission ("Commission") proceeding. 1/ Arianespace offers commercial launch services to satellite operators from around the world, both private companies and government space agencies. Since its founding, Arianespace has signed more than 300 launch services contracts with 77 customers worldwide and launched 283 satellites into orbit.

It is Arianespace's significant experience in the satellite launch services market that forms the basis for the comments that it respectfully submits in this proceeding.

The Commission has asked for an analysis of the degree of competition in the satellite launch input supplier services market during the calendar year of 2009. Through these comments, Arianespace provides abundant evidence of the intense degree of competition in the

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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").

satellite launch marketplace – where demonstrated launch capacity is 43% above global demand for commercial geostationary orbit launch services in 2009 and will rise to an average of 52% capacity over the next eight years. Arianespace will also demonstrate that launch services providers lack the bargaining power in their financial relationships with satellite operators to dictate or otherwise constrain, "pricing decisions, innovation, capacity expansion or corporate strategy options in general." 2/ Arianespace will show instead that satellite operators wield considerable bargaining power in a market that is flush with excess launch capacity. 3/

I. ARIANESPACE FACES INTENSE COMPETITION FROM SEVERAL LAUNCH PROVIDERS

In addition to Arianespace with its Ariane 5 and Soyuz launch vehicles, there are a number of launch providers with the capability to launch commercial telecommunications satellites into low earth orbit ("LEO") and geostationary orbit ("GEO") including: Boeing Commercial Launch Services and Lockheed Martin Commercial Launch Services which both use the Delta IV and Atlas V launch vehicles respectively manufactured by the United Launch Alliance ("ULA") (a joint venture of Lockheed Martin Corporation and The Boeing Company); International Launch Services ("ILS") using the Proton M launch vehicle; Sea Launch (that entered into bankruptcy in 2009, but has already confirmed a Plan of Reorganization on July 27, 2010 with fresh investment by Energia Overseas Ltd. 4/) operating with the Zenit 3SL launch

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2/ *Id*. at 3.

3/ Arianespace recognizes that a group of satellite operators has submitted a report of the CSIS Defense-Industrial Initiatives Group. *See Joint Comments to the Public Notice of EchoStar Corporation, Intelsat Global S.A., SES WORLD SKIES, and Telesat Canada*, August 24, 2010 ("Joint Comments"). While we have not had the opportunity to fully explore every facet and ramification of this new July 2010 CSIS study, Arianespace has many questions regarding the validity of its findings, which it will address in another more-appropriate venue.

4/ *See* http://www.sea-launch.com/news_releases/2010/nr_100727.html.

system; Moscow-based Space International Services (SIS) with the Land Launch version of the Zenit-3; Mitsubishi Heavy Industries, Ltd. with their H-IIA and H-IIB launch vehicles; Space Exploration Technologies Corp. ("Space X") which successfully demonstrated their new Falcon 9 launcher in early June 2010 and the Falcon 1e; China Great Wall Industry Corporation with their Long March 3B launch vehicle and Antrix which is marketing services on the Indian-built PSLV and GSLV launchers.

These launch providers offer real and meaningful competition in the commercial marketplace to launch smaller LEO satellites as well as larger GEO satellites ranging in mass from approximately three to six metric tons. This competition is evidenced by the fact that Arianespace has lost launch contract awards to each of the above-cited companies over the past five years. A few recent examples include:

- Lockheed Martin Commercial Launch Services was recently selected over Arianespace to launch the Geoeye-2 commercial earth-imaging satellite. 5/
- ILS signed a Multi Launch Agreement with SES (the parent company of SES New Skies) to launch a sixth satellite under the deal. 6/
- Sea Launch announced it will emerge from Chapter 11 protection in October 2011 with six renegotiated launch contracts on its manifest from several major satellite operators including: Hughes Network Systems, Eutelsat, Intelsat, Asiasat and Echostar who all made launch deposits to the company prior to its bankruptcy. Each of these companies plans on recouping its deposit once launch operations resume in the second half of 2011.

5/ *See* http://www.spacenews.com/launch/100907-atlas-launch-geoeye2.html.

6/ *See* http://www.ilslaunch.com/news-090710.

- China Great Wall Industry Corporation launched the Palapa-D communications satellite for PT Indosat Tbk in 2009 and plans to launch the W3C satellite for Eutelsat in 2010; and
- Lastly, Space X, the newest competitor in the market, was recently awarded one of the largest single commercial launch deals ever signed, $492 million for a multi-year replacement contract with Iridium Communications, Inc. 7/

These major satellite launch players (and others) contribute to a vibrant global market for satellite launch services. In 2009, launch services were offered to commercial telecommunications and earth imaging satellite operators on 17 launch vehicles from 10 locations globally, as indicated below.

- United States 8/
  - Cape Canaveral, Florida: Atlas V, Delta II, Delta IV and Falcon 9
  - Vandenberg Air Force Base, Lompoc, California: Atlas V, Falcon 9 (selected to launch the Iridium NEXT satellites)
  - Long Beach, California: Seaport for Sea Launch and the Zenit-3SL
  - Kwajalein Atoll: Falcon 1
- French Guiana – Guiana Space Center, Kourou: Ariane 5
- India – Sriharikota: PSLV and GSLV
- Japan – Tanegashima: H-IIA and H-IIB
- Kazakhstan – Baikonur Cosmodrome: Proton M, Zenit-3SLB, Soyuz, DNEPR and Rockot
- Russia – Plesetsk Cosmodrome: Rockot
- China – Xichang Satellite Launch Center: Long March 3B

This global marketplace fosters intense competition for a limited number of commercial launches. In 2009, there were 25 openly-competed launches, on an international basis, and contracts were awarded to US, Russian, European, Chinese and multinational launch services providers. 9/

7/ *See* http://investor.iridium.com/releasedetail.cfm?ReleaseID=479890.

8/ Some launch vehicles may launch from more than one spaceport.

II. A GLUT OF OVERCAPACITY EXISTS IN THE DOMESTIC AND INTERNATIONAL LAUNCH MARKETS

A study prepared by the Tauri Group this year estimates that the number of commercial GEO satellite launches will be, on average, 21 - 22 per year through 2018, based on data from independent industry analysts as well as the Federal Aviation Administration's Commercial Space Transportation Advisory Committee ("COMSTAC"). 10/ However, satellite launch services providers have already conservatively demonstrated the combined capacity to launch 30 commercial GEO satellites per year and are projected to have the capacity to launch 33 commercial GEO satellites per year beginning in 2013. 11/ Under present market conditions, GEO satellite launch services providers have shown they have 43% more launch capacity than is needed to meet projected market demand. Launch providers are projected to have the capacity to launch 33 satellites per year which would increase to 59% over expected demand in 2013 and 2014. This overcapacity translates into 12 commercial satellites that could be launched per year. Likewise, the upcoming deployment of LEO communications satellite constellations for companies including ORBCOMM, Iridium, Globalstar and O3b has already been met through competitively bid contracts let to SpaceX on board their Falcon 1e (ORBCOMM) and Falcon 9 (Iridium) rockets and by Arianespace with the Soyuz launcher (Globalstar 2 and O3b).

Despite the demonstrated market overcapacity, we understand that some satellite operators are concerned that commercial access to US and Chinese launch services has the

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9/ *See* Federal Aviation Administration. *Commercial Space Transportation: 2009 Year in Review*, Jan. 2010 at 21.

10/ *See* Appendix A at slide 8.

11/ *See* Appendix A at slide 10 (The Tauri Group conservatively analyzed the commercial capacity for only 8 of the 17 launch vehicles available globally).

potential to be constrained. 12/ They contend that the US government receives first priority in the manifests of US launch companies and access to Chinese launch capabilities can be restricted by US government policies. Even if we take the worst-case scenario (which we do not believe to be necessary) and exclude US and Chinese launch services, there still would be a combined GEO overcapacity of 31% based on demonstrated launch rates.

With abundant capacity in the marketplace, satellite operators exercise significant negotiating power. They typically hold open competitions for launch services contracts with multiple bidders, require several rounds of offers and foster an increasingly high degree of transparent pricing as several companies report contract prices in their filings with the Securities and Exchange Commission ("SEC"). 13/ Larger satellite operators have also negotiated discounts with launch services providers through multiple launch awards ("MLAs"), typically with fixed price options for future launches, allowing them to drive down the cost of satellite launch services and mitigate schedule risk through procurements with two or more launch services providers.

Overall the trend in launch services pricing has demonstrated the impact of competition in the market as well as the increase in launch capacity and capability by launch services providers. The Tauri Group study has revealed a precipitous drop in satellite launch prices per kilogram. In 1999-2000, the average launch price per kilogram by satellite was

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12/ *See* Joint Comments at Appendix, 18-20.

13/ Skyterra (formerly, MSV), TerreStar, Hughes Network Systems, ViaSat, Iridium, and GlobalStar, have all reported their launch prices publicly in some fashion. *See e.g.,* SEC Annual Report for 2009, Form 10K of TerreStar Networks available at: http://phx.corporate-ir.net/phoenix.zhtml?c=110135&p=irol-sec (a TerreStar – Arianespace Launch Agreement is included as Exhibit 10.18). In addition to the U.S. companies traded on US exchanges there are foreign companies, such as, APT, Asiasat and Measat that are traded on foreign exchanges and have disclosed launch pricing publically.

$32,000, and in 2007-2008 the average price per kilogram hovered at $21,000. 14/ Satellite launch providers and industry analysts expect this price to drop even further, due to the global economic crisis which has reduced satellite capacity needs in many industrialized nations. 15/ Further, analysts predict that the geostationary satellite launch market could shrink, in the next few years, as the replacement cycle for these satellites winds down. The four largest fixed satellite services ("FSS") operators in the world have all indicated in respective quarterly financial calls that they have reached the peak of their replacement cycles and plan to reduce capital expenditures on new satellites and launch services in the coming three years.

III. THE CONSIDERABLE COMPETITION IN THE LAUNCH SERVICES MARKET, NOTWITHSTANDING, THIS INQUIRY IS BEYOND THE SCOPE OF THE COMMUNICATIONS SATELLITE ACT OF 1962

While Arianespace appreciates the opportunity to provide evidence of the fiercely competitive satellite launch services industry, the satellite launch industry is not within the scope of the Communications Satellite Act of 1962, as amended ("Communications Satellite Act"). Under Section 404, the Commission must to report to Congress its authorized operations, activities and accomplishments that fall within the purview of the Communications Satellite Act. Nowhere in the statute does Congress authorize activities or an inquiry into launch services. In fact, the definition of "communications satellite system" in Section 103 of the Act specifically excludes launch services. 16/ The FCC has recognized this jurisdictional exclusion, on two

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14/ *See* Appendix A at slide 3 (figures have been adjusted for inflation in 2008 dollars).

15/ *See Assessing the Commercial Launch Industry*, SPACE NEWS, August 30, 2010.

16/ *See* 47 U.S.C. § 702(1)("The term "communications satellite system" refers to a system of communications satellites in space whose purpose is to relay telecommunication information between satellite terminal stations, together with such associated equipment and facilities for tracking, guidance control, and command functions *as are not part of the generalized launching, tracking, control, and command facilities for all space purposes*." (*emphasis added*)).

occasions, in past Reports. 17/ Any expansion of this inquiry, as contemplated in the Commission's present Public Notice, would likely require an amendment of the Communications Satellite Act, and would be contrary to the FCC's past acknowledgments.

IV. CONCLUSION

For the foregoing reasons, Arianespace respectfully requests that the Commission withdraw its inquiry into satellite launch services. Not only is this inquiry outside the scope of the Commission's jurisdiction under the Communications Satellite Act, but also there exists such ample competition for commercial satellite launch services that such an inquiry is unnecessary.

Respectfully submitted,

/s/

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17/ *See Second Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, 23 FCC Rcd 15170 (rel. October 16, 2008) ("We do not consider other related industries such as satellite space and earth station manufacturing and the satellite launch industry." *Id.* ¶8.). *See also Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, 22 FCC Rcd 5954 (rel. March 26, 2007) ("We do not evaluate the satellite manufacturing or launch sectors, nor do we assess non-communications satellite applications, as we view these as outside the scope of Congress' request." *Id.* at note 7.).

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Outside Counsel to Arianespace, Inc.

September 24, 2010

APPENDIX A

Launch Prices and the Economics of the Space Industry

Launch Prices and the Economics of the Space Industry

Carissa Christensen

Space 2010

September 1, 2010

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Study of Commercial GEO Launch Services Price Trends: Study Goal and Approach

- Study goal: To understand the trend of commercial GEO launch prices over the last decade as well as supply, demand, and market drivers which impacted fluctuations in launch prices.
- Approach: Worked directly with two major launch service providers to use the most accurate launch information available, resulting in unique insight into the launch market
  - Sources included guidance and inputs from launch service providers on pricing, launch contract dates, and satellite masses, verified against public information from a wide range of sources (for example, SEC filings). Data provided included selected proprietary information, validation of estimates and public information, and unpublished contract details.
  - Analysis includes launch contracts for commercial GEO communications satellites in the decade from 1999 to 2008, and extending to 2009
  - Data grouped into two-year periods to protect sensitive pricing details
  - Launch contracts analyzed based on the year the contract was finalized, rather than launch date, to most accurately represent the supply and demand drivers at work
- Customer: This study was conducted independently by The Tauri Group for Arianespace, Inc.

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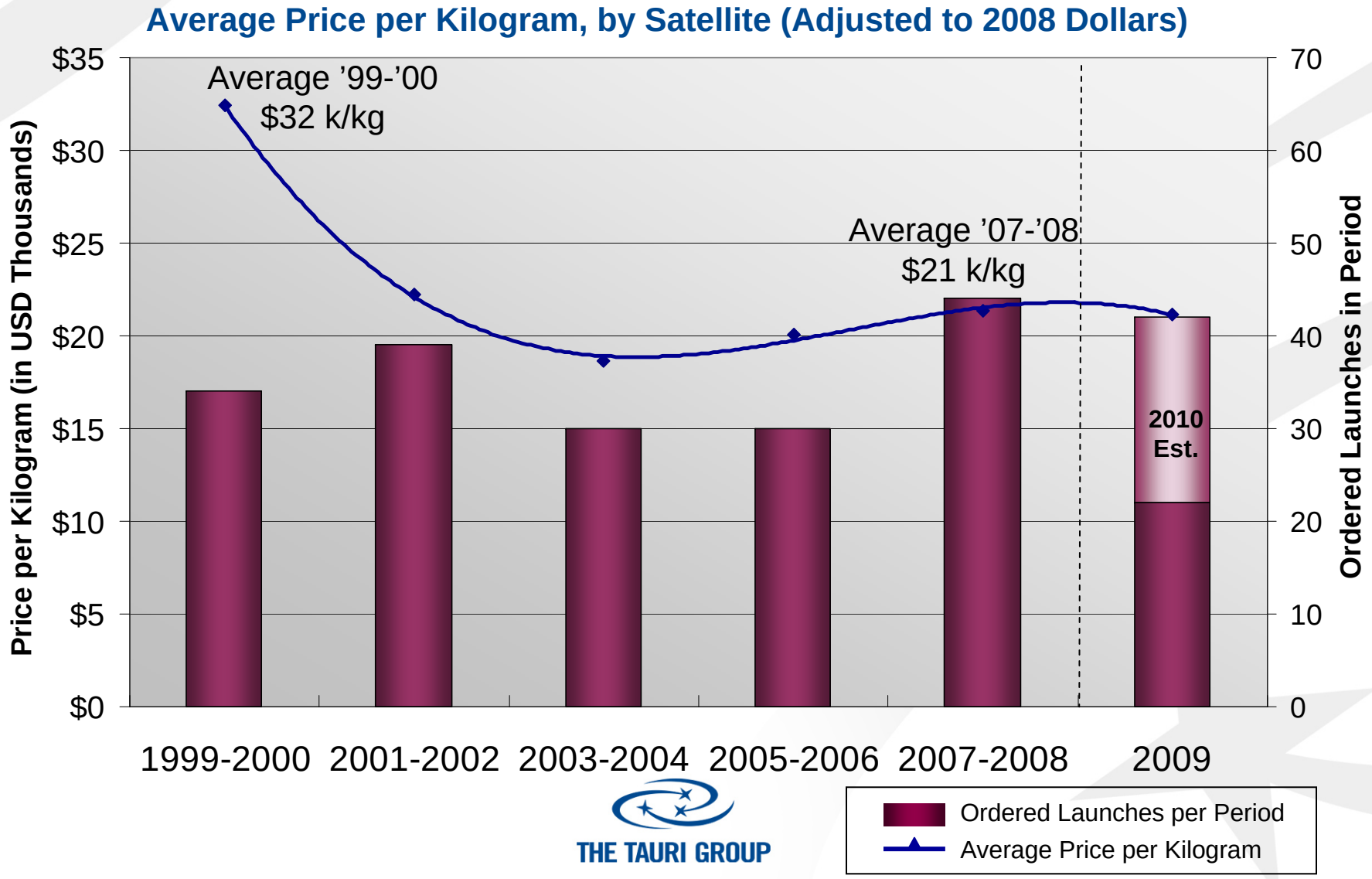
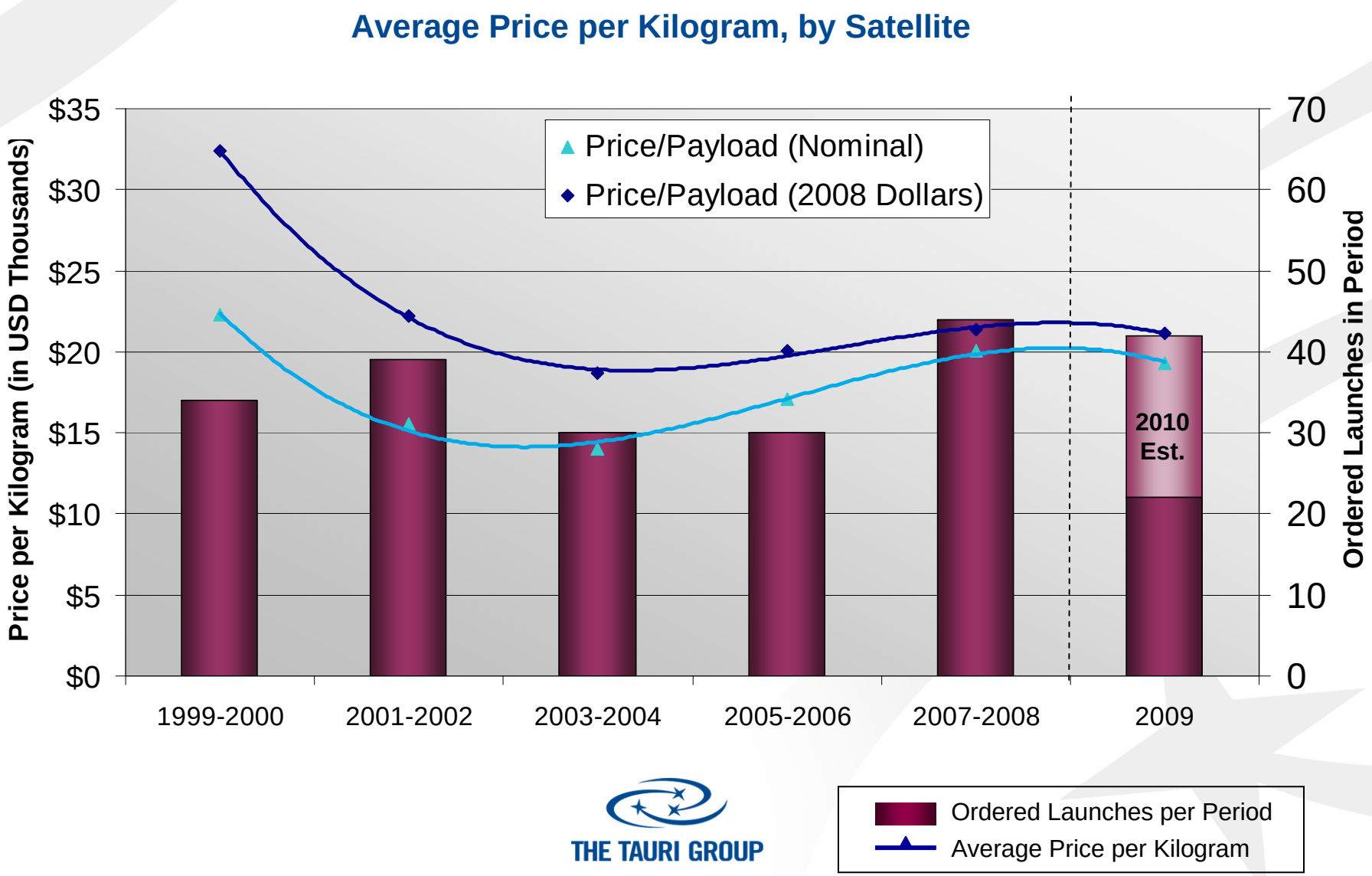
Commercial GEO Launch Services Price Trends



Commercial GEO Launch Services Price Trends: Impact of Inflation



Commercial GEO Launch Services Price Trends

- 34% drop in prices per kilogram (2008 dollars) over decade 1999 to 2008
  - Increasing satellite mass and vehicle capacities contributed to trend, with more efficient launches over time (more mass on one launch)
  - Prices in the 1999-2000 period reflect a relatively steady price trend over the previous 5 years, based on earlier studies of launch prices
- Price fluctuations result from different market conditions
  - Decreasing prices in the middle of the decade likely driven by decreasing demand, increasing supply, and introductory pricing by new market entrants
  - In 2009 prices moved slightly downward, despite relatively few major players

Increasing Launch Capacity of GEO Vehicles

Launch Vehicle	GTO Capacity at Vehicle Introduction	Maximum Demonstrated GTO Capacity per Year*				Maximum Demonstrated GEO/GTO Capacity
		2000 (in kg)	2002 (in kg)	2005 (in kg)	2008 (in kg)	
Ariane 4	2,100 kg (1988)	4,167	4,720	---	---	4,720 kg (2002)
Ariane 5	5,970 kg (1996)	5,629	5,693	8,091	8,347	8,705 kg (2007)
Proton K	1,879 kg (1974**)	4,400	5,250	---	---	5,250 kg (2002)
Proton M	2,920 kg (2001)	--	3,529	4,981	5,960	6,384 kg (2010)
Zenit SL	5,015 kg (1999)	5,108	4,850	6,100	5,900	6,100 kg (2005)

** Maximum demonstrated GTO capacity per year uses largest commercial GEO payload in each calendar year*

*** First Proton K variant used for GEO launch was in 1974*

-- Proton M debuted commercially in 2002

-- Ariane 4 and Proton K were no longer launching commercial satellites in 2005

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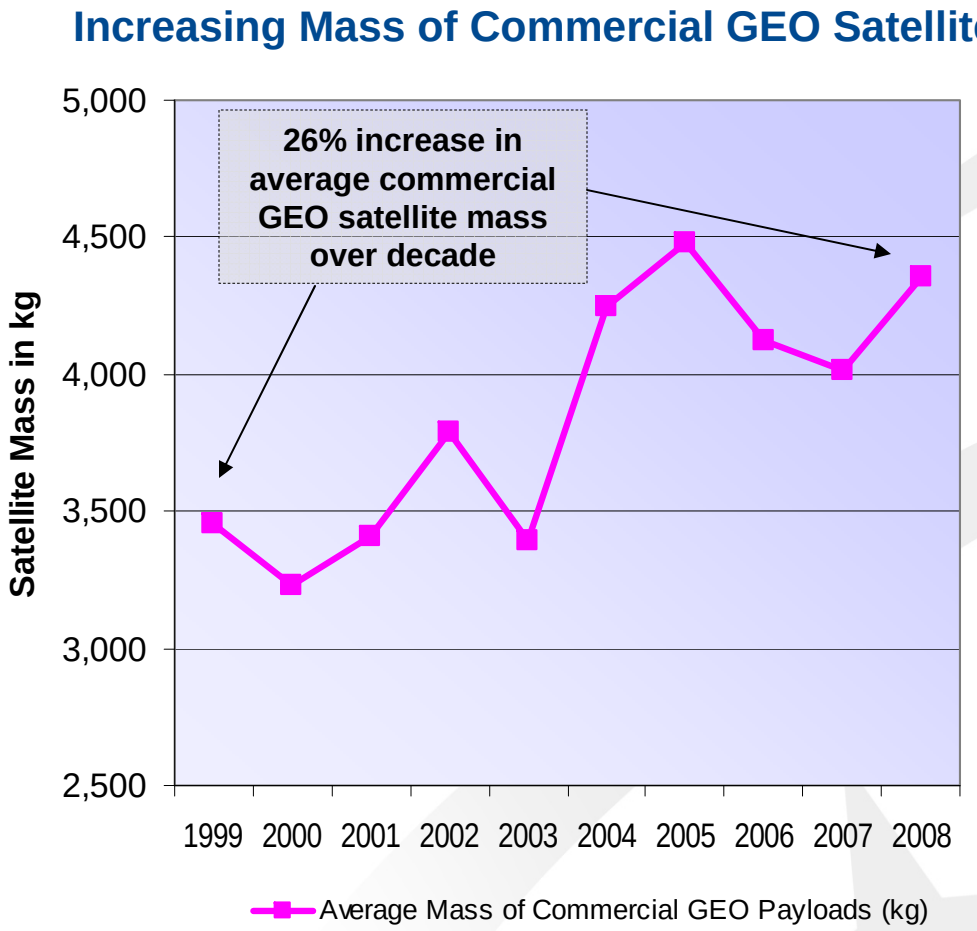
Trends in GEO Satellites Mass

- As prices per kilogram to orbit decrease, more capable satellites are being launched
  - Larger satellites can operate more efficiently
- This trend is also evident in upward trends for satellite power, transponders per satellite, and design life, increasing the overall capabilities of each satellite launched



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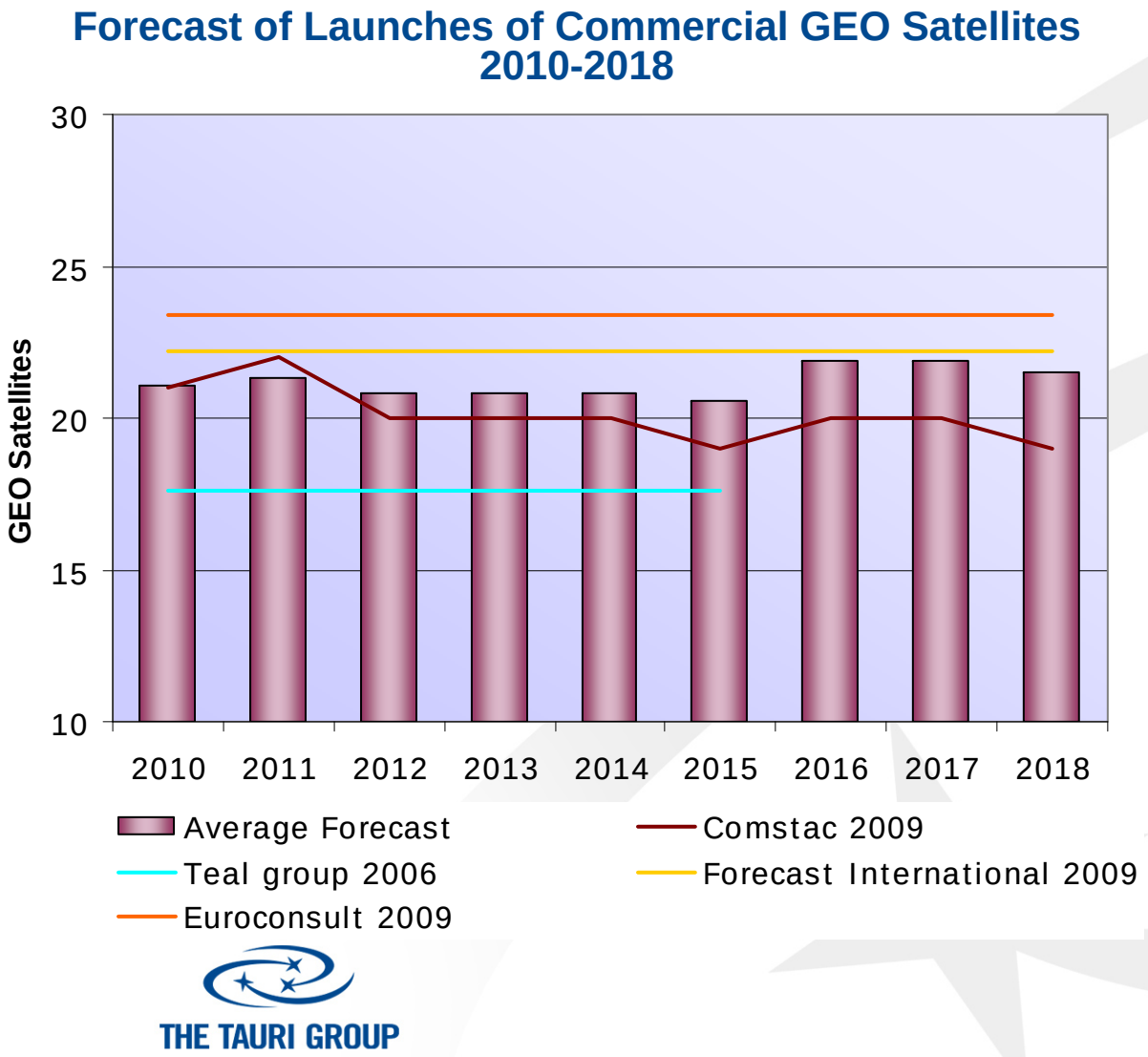
Forecast of Commercial GEO Satellite Launches

- Average satellites to be launched forecast between 21 and 22 per year through 2018
- Pulled from a variety of industry sources for launch forecasts, all have different strengths and weaknesses
- Forecast of capital expenditures by the 3 major satellite operators shows downward trend in the next 5 years



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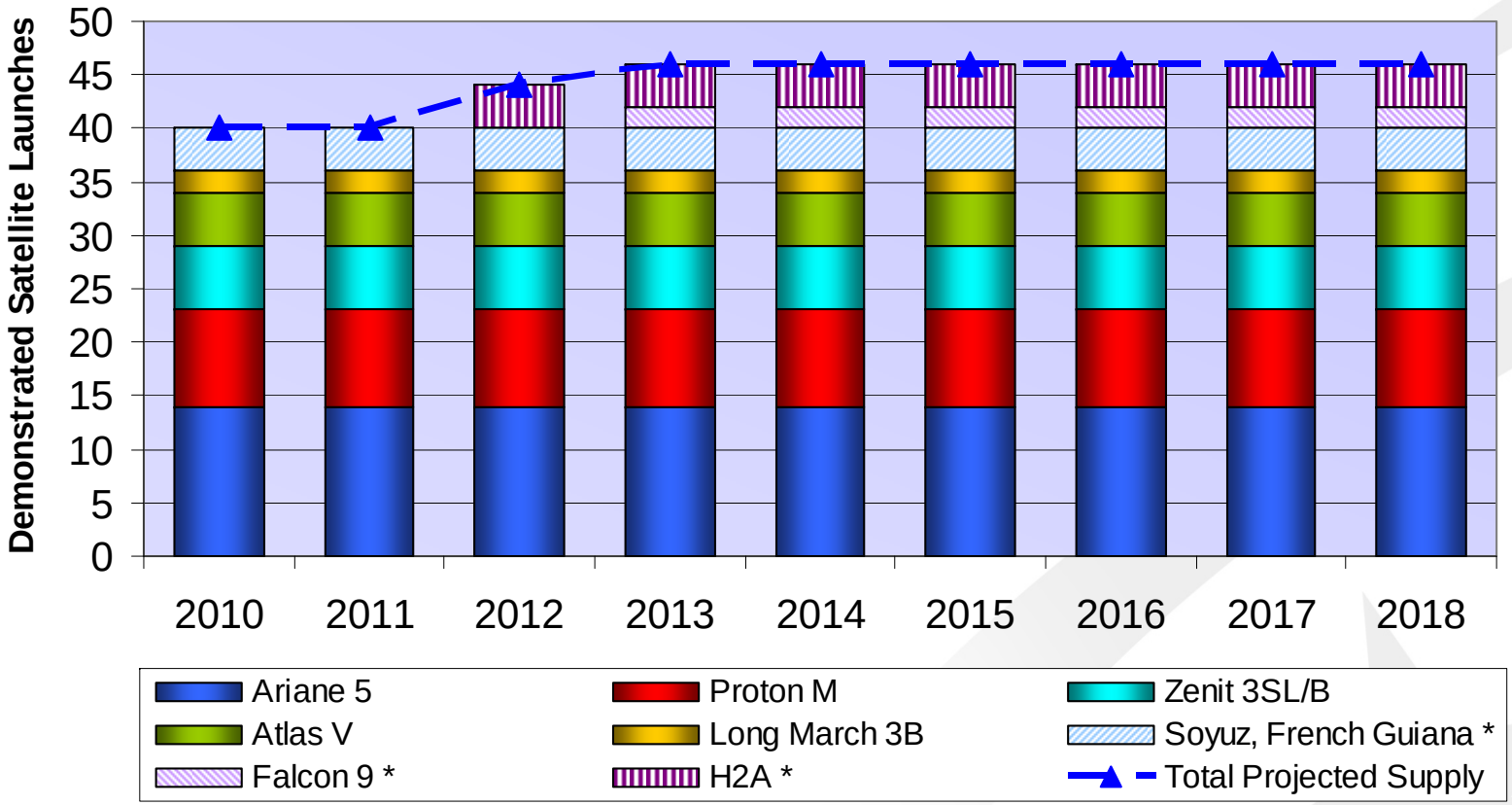
Projected Future Supply of Launch Capacity, Proven Vehicle Throughput

Projected Future Supply, Based on Total Annual Maximum Demonstrated Satellites Launched, by Vehicle 2010-2018



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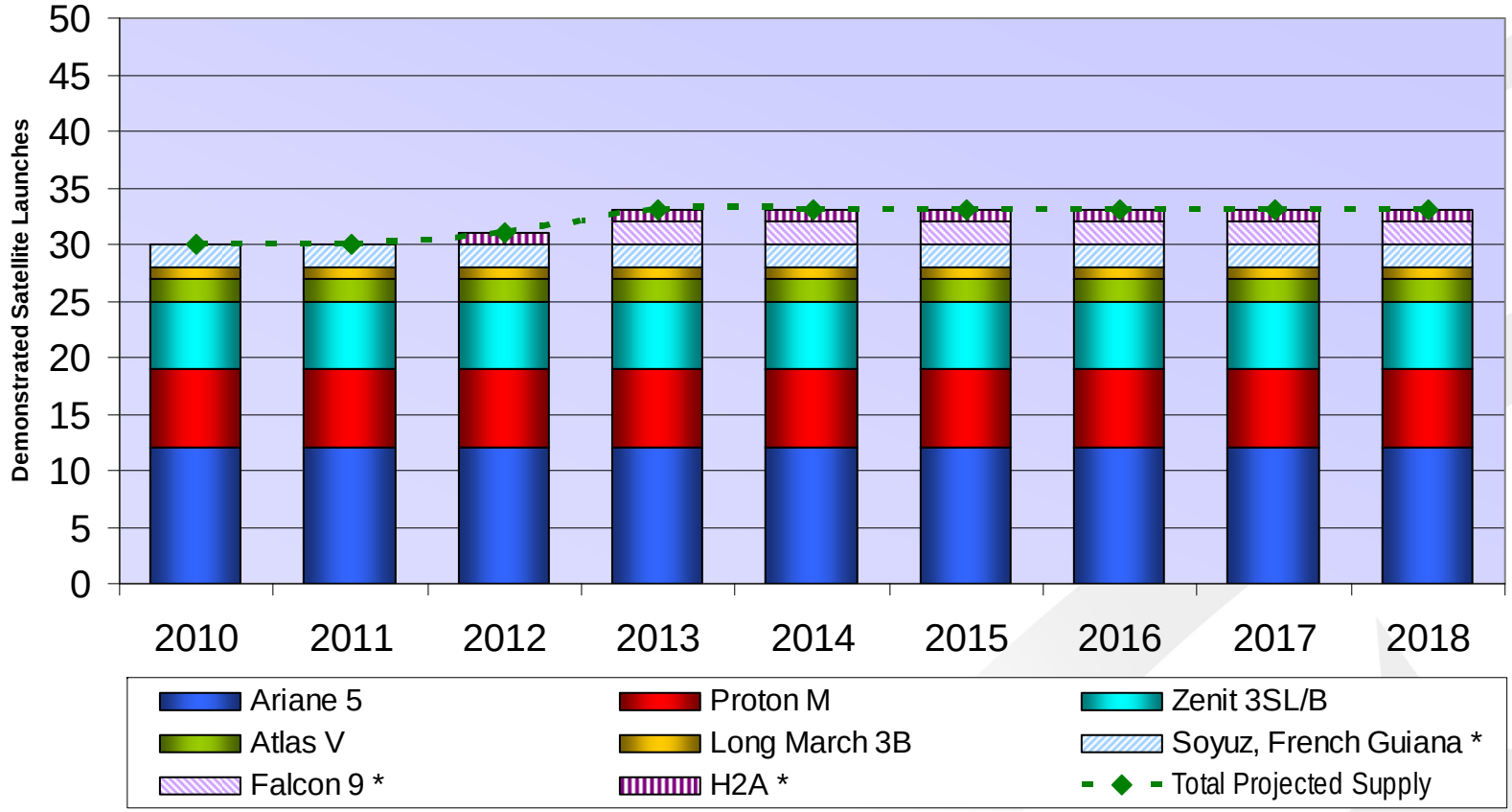
*Note: * Indicates projected capacity for annual launches*

Zenit figure based on combined maximum Zenit launches in a year (Sea and Land Launch)

Projected Future Supply of Launch Capacity, Proven Commercial GEO Throughput

Projected Future Supply, Based on Maximum Demonstrated Annual Commercial GEO Satellites Launched, by Vehicle 2010-2018



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*Note: * Indicates projected capacity for annual launches*

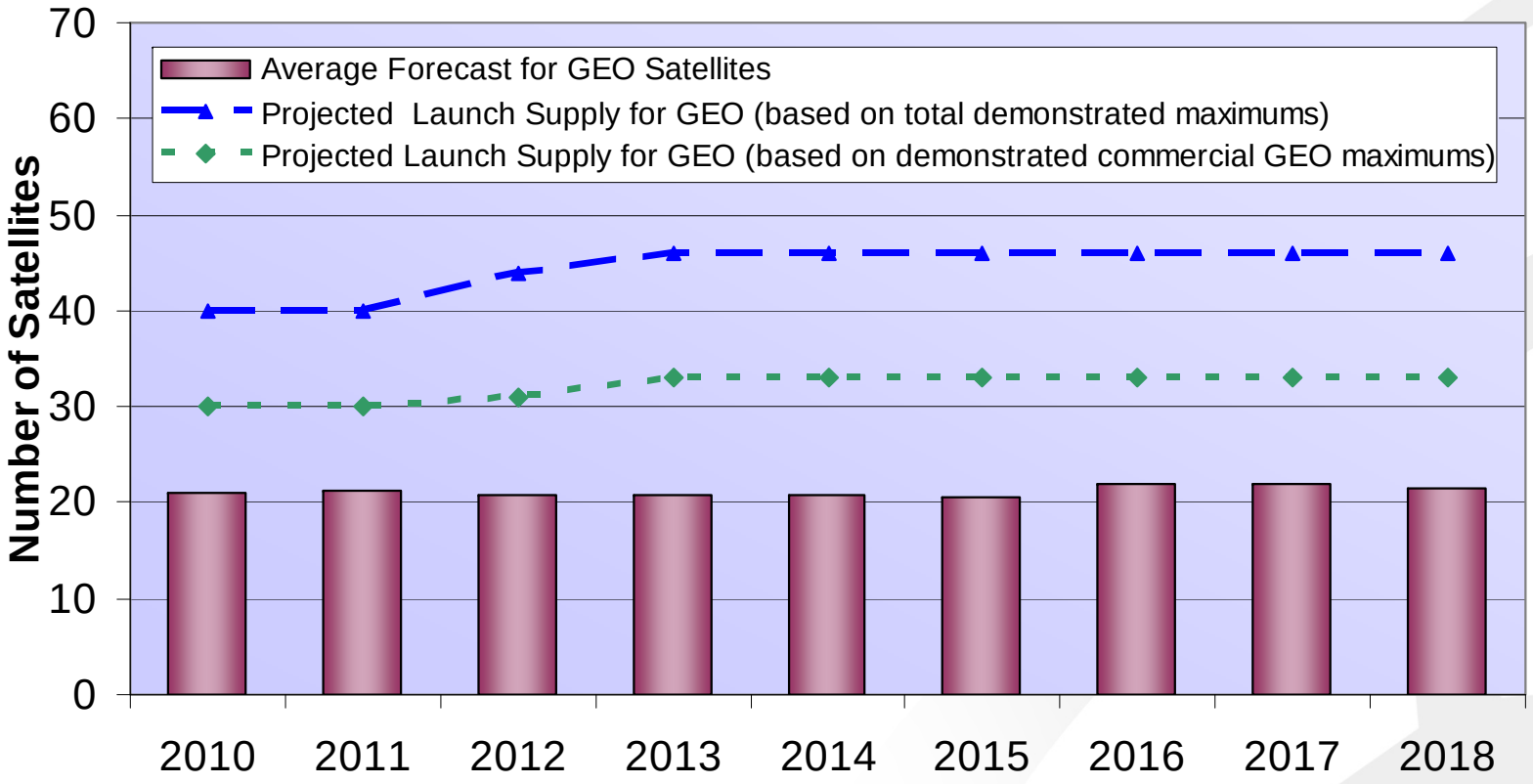
Zenit figure based on combined maximum Zenit launches in a year (Sea and Land Launch)

Future Trend Supply and Demand of Launch Vehicles

Projected Supply of Commercial GEO Launched Satellites

(based on annual demonstrated GEO commercial and total maximums)

Compared Against Forecasted Satellite Launches per Year 2010-2018



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Study of Commercial GEO Launch Services Price Trends: Summary

- Commercial GEO launch price per kilogram dropped by 34% over the last decade
  - Pricing trend continued downward in 2009
- Total cost per transponder equivalent of satellite capacity has dropped more rapidly because satellite capability has increased (average mass increased 26% over the decade) and price per kilogram has decreased
- Long term projected trend for an average of 52% more launch capacity than needed to meet projected demand
  - 52% translates into an average of 11 commercial GEO satellites a year
  - This is based on demonstrated commercial GEO satellite launches and assumes the addition of capacity by the French Guiana-launched Soyuz, Falcon 9, H2A, and Sea Launch returning to flight
  - The supply of commercial GEO launch services is projected to outpace forecasted demand in the coming decade when compared against the highest forecast of demand for GEO satellite launches

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