BROCHURE

# SATELLITES TO BE BUILT & LAUNCHED BY 2027

## World Market Survey

The industry's landmark analysis & forecast of satellite manufacturing & launch services worldwide

2018 Edition | A Euroconsult **Research Report**

This report, in its 21st edition, provides an exhaustive analysis of the worldwide satellite demand merging customers, applications & orbits.

- **Customers:** Civilian government, military government, commercial companies
- **Applications:** Fixed & mobile communications, TV & radio broadcasting, navigation, Earth observation, meteorology, data relay, science, IMINT/ELINT/SIGINT…
- **Orbits:** LEO, MEO/HEO, GEO, Deep Space

According to the 21st edition of the report, Euroconsult anticipates that 330 satellites with a mass over 50 kg will be launched on average each year by 2027 for government agencies and commercial organizations worldwide. This is a threefold increase over the past decade as the satellite market experiences a paradigm shift with the rise of small satellites and large constellations.

The satellite sector is undergoing a massive transformation as more commercial and governmental entities take advantage of constellations to introduce new satellite services on Earth. We anticipate that over 40 constellations of various sizes and capabilities will launch about 2,300 satellites into low or medium Earth orbits for services as diverse as communications, navigation, Earth observation, meteorology and data collection from Earth sensors.

The 3,300 satellites over 50 kg to be launched over 2018–2027 should represent a market of $284 billion for the space industry in terms of building and launching, up 25% over that of the past decade. At the same time, a price decrease is visible in the satellite industry, driven by the commercial constellations of smallsats introducing new production and operation concepts including economies of scale, softwarization, and vertical integration up to data analytics.

Governments will remain the largest customer of the satellite and launch industries with 1,300+ satellites to be launched over the next ten years for about 70 countries, for a market value of over $200 billion. 85% of the government market will remain concentrated in the top ten countries with an established space industry; the other 60 countries invest in satellite systems to develop domestic space capabilities, or to acquire their first systems in order to be more responsive to social and economic development.

In the commercial space sector, Euroconsult believes about 50 companies will launch almost 2,000 satellites, of which 1,700 units will be for 22 commercial constellations. Commercial space still means communications and broadcasting satellites in geostationary orbit; these satellites represent almost 50% of the $70 billion of commercial revenues expected over the decade. The two other large commercial markets are for non-geostationary orbit satellite constellations for communications and Earth observation. New commercial markets are emerging for in-orbit services such as life extension, and for in-orbit tourism (mostly lunar).

# **ABOUT** SATELLITES TO BE BUILT & LAUNCHED BY 2027

## ABOUT

**Satellites to Be Built & Launched by 2027**, **World Market Survey** is a required reading for anyone interested in the business generated by satellite systems and their launches. The report is fully updated, providing all the key figures and analysis needed to understand the global space market, and the future opportunities & challenges.

## NEW IN THE 2018 EDITION:

- ✓**Retrospective analysis of Euroconsult's forecast matching with satellite reality over the past 17 years**
- ✓**Market share of the satellites of the report relative to the cubesat and mega-comsat constellations**
- ✓**New data series in Excel files**
- ✓**New format & layout**

## KEY TRENDS, DRIVERS & FORECASTS

- Exclusive 10-year forecasts including breakdown by customer & by orbit, with number & mass of satellites to be manufactured & launched, plus market value (manufacturing & launch services)
- Review of strategic issues from both supply (industry) & demand (customers) perspectives
- Detailed demand database for commercial (order book) and government satellites (forecasts) including: application, launch date, launch mass, satellite platform, manufacturer, launch provider

## WHO WILL BENEFIT FROM THIS REPORT?

- ✓ Satellite & launch vehicle integrators
- ✓ Satellite & launch vehicle parts manufacturers
- ✓ Launch & service providers
- ✓ Banks, investors & insurers
- ✓ Satellite operators
- ✓ Space & other government agencies

## TRUSTED BY KEY INDUSTRY PLAYERS

**Admin & Political:** European Commission, EUMETSAT, IctQATAR, Industry Canada, Institut d'Estudis Espacials De Catalunya, Japanese Office of National Space Policy, Ministère de la Défense - Etat Major de l'Armée de l'Air, NCRD-Ministry of Science and Technology of Israel…

**Banks:** Credit Suisse, Export Development Canada, Goldman Sachs International, HSBC, Morgan Stanley…

**Manufacturers:** 3D Plus, Aerojet, Air Liquide, Alcantara Cyclone Space, Alliant Techsystems Inc. (ATK), Arianespace, Ascent Solar Tech, Airbus D&S, Astrotech Corporation, Atmel, Boeing Integrated Defense Systems, Carlisle Interconnect Technologies, China Aerospace Science And Technology Corp., China Great Wall Industry Corporation, Cobham Microwave, COM DEV International Ltd., Comtech EF Data, Dynetics Inc., E2V Technologies, Finmeccanica, Gilat Satellite Networks, Harris Corporation, iDirect Technologies, IHI AEROSPACE, ILS, International Rectifier, ISS Reshetnev Company, ITT Corporation, Khrunichev State Research & Production Space Center, Korea Aerospace Industries, L-3 Communications, Lockheed Martin, MDA, Microsemi, Mitsubishi Electric Corporation, Mitsubishi Heavy Industries, MT Aerospace, NGC Aerospace, Northrop Grumman Aerospace Systems, OHB-System AG, Orbital Sciences Corporation, Rakon France, Raytheon, Reliance, RSC Rocket Space Corporation Energia, RUAG Schweiz AG, Russian Space Systems(Niir), Rymsa - Radiacion Y Microondas Sa, SAFT, Satrec Initiative, Sea Launch, Smiths Interconnect, SNECMA Groupe SAFRAN Moteurs, Sofradir, Space Flight Services, SpaceX, SSL, STMicroelectronics, Sumitomo Corporation of America, Surrey Satellite Technology Ltd., Tesat-Spacecom, Thales Alenia Space, TMServices, Trak Microwave Limited, Turkish Aerospace Industries, Umicore, United Technologies Corp., Yuzhnoye SDO, Zodiac Data Systems…

**Space Agencies and R&D Centers:** AEB, Azercosmos, Brazilian Institute of Aeronautics and Space (IAE), CSA, CAST, CNES, DLR, ESA, INPE, JAXA, KISTEP, KARI, NSO, SANSA, SNSB, Tekes Technology Development Center of Finland, UK Space Agency…

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THE LAUNCH SERVICE INDUSTRY

- Structure of the space transportation industry
- Financial performance of the space transportation industry
- The GEO launch industry
- The LEO launch industry

PROFILES OF THREE COMMERCIAL LAUNCH SERVICE PROVIDERS

  - Arianespace
  - ILS
  - SpaceX

## 03\ COMMERCIAL SATELLITE DEMAND

ASSUMPTIONS FOR COMMERCIAL SATELLITE DEMAND

DEMAND CONTEXT FOR COMMERCIAL SATELLITES

- The three orbits (GEO, MEO, LEO) are now commercial and working together
- Commercial space still means communication satellites (ComSat), both in GEO and non-GEO orbits

THE COMMERCIAL MARKET BY APPLICATION

- A mature GEO ComSat market driven by replacing in-orbit capacity
- Future GEO ComSat demand highly uncertain in the medium term
- High-throughput payloads for broadband communications not only in GEO
- ComSat market driven by consolidation of existing operators by new entrants
- In-orbit servicing of ComSats systems
- Seven constellations for broadband communications
- Earth observation at 16% of commercial space
- Two new markets totalling 11% of commercial space

## 04\ GOVERNMENT SATELLITE DEMAND

ASSUMPTIONS FOR GOVERNMENT SATELLITE DEMAND

GOVERNMENT MARKET HIERARCHY

- Market hierarchy between customers, applications & regions
- Growth in future government demand is driven by civilian satellites
- Earth observation dominant for civilian satellites
- Asia dominates civilian satellite market and the USA the military market
- Newcomer space countries at 14% in satellite count, 10% of market value

MARKET DYNAMICS BY ORBIT

MARKET DYNAMIC BY APPLICATION

# 05\ SATELLITE BACKLOG & FORECAST

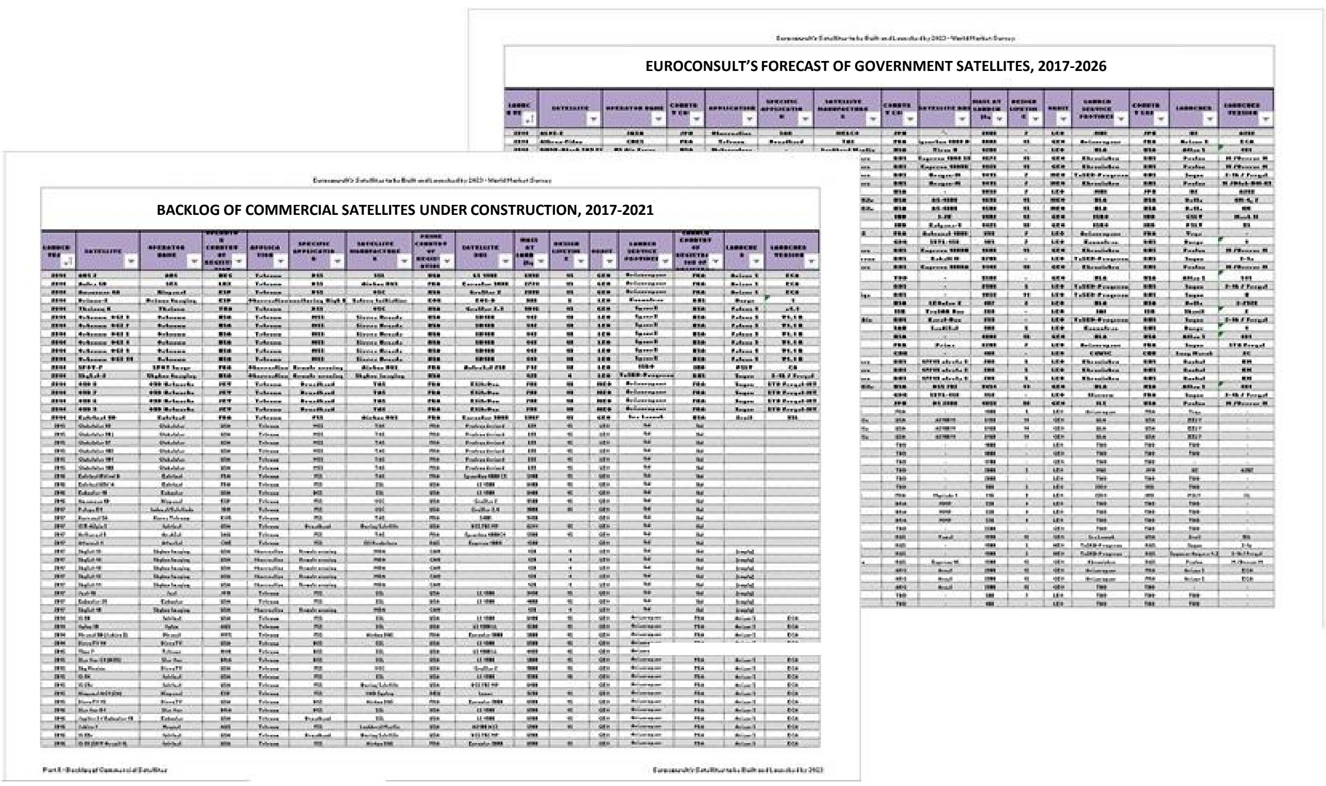
## TWO DATABASES EXCLUSIVE TO EUROCONSULT

**Backlog of 1,260 commercial satellites under construction to be launched from January 2018** is a complement to the market forecast established by Euroconsult on the number and types of commercial satellites to be manufactured for launch.

**Euroconsult's forecast of 1,380 government satellites to be launched over 2018-2027,** including the nominative satellites, and those that are planned to be launched by 2027 as a follow-on to existing systems or as new systems.

**For each satellite, the following information is provided :**

- Name of the satellite
- Year of launch
- Name and country of the operator
- Application of the satellite
- Orbit of the satellite
- Satellite manufacturer
- Satellite bus
- Design lifetime of the satellite
- Launch mass of the satellite
- Launch service provider
- Launch vehicle



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