

2018 BROCHURE

SATELLITE COMMUNICATIONS & BROADCASTING MARKETS SURVEY

FORECASTS TO 2027

25th Edition | A Euroconsult **Research Report**

The essential tool for business planning and investment decisions in the satellite industry:

Analysis of all fixed satellite communications applications – strategic review of satellite operators' business models – thirteen regional profiles – extensive figures & analysis for the coming decade

- ✓ **Hundreds of graphs & tables**
- ✓ **Thousands of data points**
- ✓ **Comprehensive digital files**
- ✓ **Priced at 6,000 euros**

The FSS industry continues to move towards telecom/data markets, as wholesale revenues derived from video markets continue to erode.

Based on the latest market projections, wholesale capacity revenues from telecom applications will surpass video applications by 2021. The growth is largely supported by the influx of low cost capacity from new VHTS systems & NGSO broadband in the coming years. As a result, total capacity supply is projected to grow eight-fold from 1.3 Tbps in 2017 to nearly 10 Tbps by 2022.

Innovations in technology, services and in the ecosystem will make satellite connectivity relevant in the context of the communication sector of the 2020s, that will see the spread of terrestrial 5G and the rollout of a wider range of communication services, either between humans or driven by IoT exchanges.

In the short term, the impact on legacy services and the related pressure on the economic performance of operators could be unfortunately described as a necessary pain, and is certainly no different from the cycles observed in other industries navigating a breakthrough innovation period.

The growth acceleration in HTS capacity demand confirms our view of the market shift from regular to HTS and the increasing demand for telecom applications. HTS capacity leased increased to around 594 Gbps in 2017, a new record high, and a clear acceleration (+36% y-o-y) in take-up across all telecom verticals.

The net growth in capacity usage in 2017 did not result in revenue growth as the FSS industry is still absorbing the impacts of the recent capacity price resets. Leased regular capacity decreased for the first time in more than a decade to around 6,920 TPEs in 2017. Growing requirements for video distribution, miltatcom and aero IFC are expected to mute regular capacity erosion until 2020.

ABOUT

SATELLITE COMMUNICATIONS & BROADCASTING MARKETS SURVEY

ABOUT

Now in its 25th edition, *Satellite Communications & Broadcasting Markets Survey* is the definitive business planning tool supporting investment decisions in the satellite industry. Released annually, it provides the most complete and accurate picture of market conditions and extensive, insightful analysis of market trends.

ELEMENTS OF THE REPORT INCLUDE:

- ✓ PDF & Excel & Files
- ✓ Thousands of data points
- ✓ Executive summary
- ✓ 13 regional profiles

KEY TRENDS, DRIVERS & FORECASTS FOR FSS SATELLITE COMMUNICATIONS:

- Transponder pricing trends
- Demand trends & 10-year forecasts by application, region & frequency band
- Supply trends & 10-year forecasts by region & frequency band
- Operators' market shares by application and region
- Assessment of high throughput services (including Ka & Ku-band)
- Upgraded supply databases & expended HTS demand forecast with capacity leased versus used

WHO WILL BENEFIT FROM THIS REPORT?

- Satellite Operators
- Launchers
- Satellite & Equipment Manufacturers
- Investors & Financial Institutions
- Administrations & Space Agencies
- Service Providers
- Telecommunications Companies

TRUSTED BY KEY SATELLITE PLAYERS, REPRESENTING OVER 80% OF THE INDUSTRY

Operators & Service Providers: Eutelsat, Yahsat, Amos – Spacecom, APT Satellite, Arab Satellite Communication Organization, Arsat, ABS, Avanti Communications, China Satellite Communications, Echostar, Eutelsat, Gazprom Space Systems, Hispasat, Inmarsat, Intelsat, Measat, National Operator of Satellite Communications CJSC, O3b Networks, Optus, PT Telkom, RSCC, SES, Singtel, SKY Perfect JSAT Corporation, Star One S.A., Telenor, Telesat, Turksat A.S., Telecom, Arqiva, EBU, Globecast, GT Satellite Systems S.A., Hughes Network Systems, Korea Telecom-Kt Sat, RRsat Global Communications Network, Telespazio...

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Governments: EUMETSAT, GCHQ, IctQATAR, Industry Canada, Ministère de Commerce Extérieur de la Russie, Azerbaijan Republic...

Space Agencies: ASI, CSA, CAST, CNES, ESA, ISRO, JAXA, Center of Space Communications in Kazakhstan, Electronic Telecommunications Research Institute, SK Telecom, Ericsson, Cyfrowy Polsat S.A...

1.1\ STRATEGIC ISSUES & FORECASTS

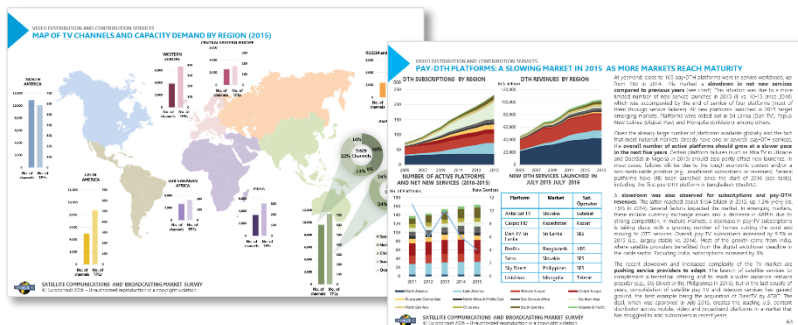
- > Satellite capacity market – forces at play in the next five years
- > Overview of current dynamics for satellite capacity demand
- > Forecasts for capacity demand
- > Benchmark of past & present forecasts & changes in methodology
- > Synthesis of demand trends by application segment
- > World map of satellite capacity demand (2017 data)
- > Profile of the main frequency bands in use
- > World map of satellite capacity by frequency band (2017 data)
- > Trends for supply & fill rates – overview
- > Roadmap for FSS supply offering – assets in orbit
- > Trends for supply & fill rates
- > Trends in capacity lease rates
- > Synthesis of pricing & ARPU trends by regional market

1.2\ SATELLITE OPERATORS

- > Role & positioning of satellite operators in the satcom value chain
- > Satellite operators active by region – 2017
- > Financial performance of satellite operators
- > Options & trends for the financing of new satellite systems
- > FSS industry
- > Forecasts

2.1\ VIDEO DISTRIBUTION & CONTRIBUTION SERVICES

- > Map of TV channels & capacity demand by region (2017)
- > Definition & trends in capacity demand for the distribution of TV channels
- > Marked slowdown in channel additions in 2017
- > Emerging markets continued to drive video distribution market in 2016
- > MPEG-4 became most common compression format in 2017
- > More than 7,000 channels broadcast in 2017
- > Still limited availability of UHD content despite doubling of TV channels
- > Overview of key trends in pricing & length of contracts
- > Pay-DTH platforms
- > Other distribution services
- > Growing use of terrestrial networks hampering growth of satellite market
- > OTT services & their impact on the satellite distribution market
- > Forecasts
- > Map of contribution feeds & regular capacity leased by region (2017)
- > Limited growth for video contribution market in 2017
- > Regular capacity continues to be dominant as HTS is gains ground
- > Growing impact of terrestrial competition on satellite video contribution market
- > Video contribution forecasts



2.2\ CONSUMER-GRADE BROADBAND ACCESS

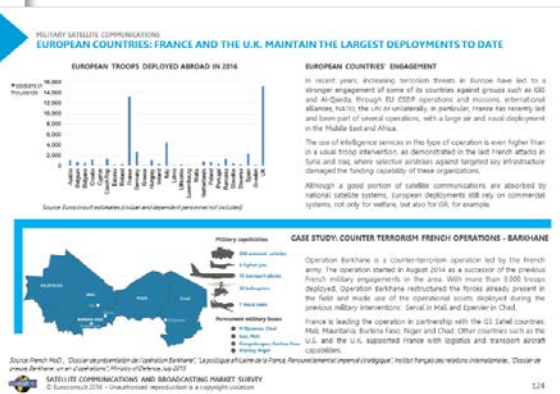
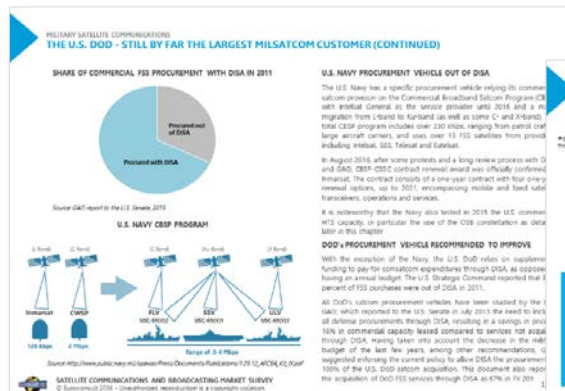
- > Slow recent growth in both established & new regional markets
- > World map of broadband access over satellite (2017 data)
- > Satellite service offerings catching up to terrestrial services
- > Affordability as a critical condition for growth in emerging markets
- > The question of efficient distribution still unsolved in a majority of countries
- > Regional dynamics: North America
- > Regional dynamics: Latin America
- > Regional dynamics: Europe
- > Regional dynamics: Russia & Central Asia
- > Regional dynamics: Middle East & Africa
- > Regional dynamics: Asia Pacific
- > Subscriber & capacity forecasts (2013-2027)

2.3\ ENTERPRISE NETWORKS

- > Current market dynamics
- > Overview of major vertical markets or segments
- > A value chain in motion: Equipment vendors, service providers
- > Regional dynamics: North America
- > Regional dynamics: Latin America
- > Regional dynamics: Europe
- > Regional dynamics: Russia Area & Central Asia
- > Regional dynamics: Middle East & North Africa
- > Regional dynamics: Sub-Saharan Africa
- > Regional dynamics: Asia Pacific
- > The mobility market focus
- > Summary of market drivers
- > Market forecasts: Terminals, capacity
- > Cellular backhaul & trunking

2.4\ MILITARY SATELLITE COMMUNICATIONS

- > Threats could boost the demand
- > U.S. military forces
- > The U.S. DoD
- > NATO & Europe
- > Rest of the world – limited commercial demand, with still new government programs
- > Importance of demand from oceans
- > Capacity supply
- > Assumptions – major trends for milsatcom
- > Forecasts for commercial milsatcom demand



13 REGIONAL PROFILES

- NORTH AMERICA
- LATIN AMERICA
- WESTERN EUROPE
- CENTRAL EUROPE
- RUSSIA & CENTRAL ASIA
- MIDDLE EAST & NORTH AFRICA
- SUB-SAHARAN AFRICA

- SOUTHERN ASIA
- NORTH-EAST ASIA
- CHINA AREA
- SOUTH-EAST ASIA
- OCEANIA & PACIFIC
- OCEANS

Regional profiles are analyzed in the same way, with dedicated graphs and tables for easy comparison:

- > Overview
- > Application segments
- > Capacity lease rates & revenues
- > Capacity supply & fill rate
- > Positioning & market share of satellite operators

MENA OVERVIEW

SELECTED COUNTRY EVENTS

- ALGERIA** (2016) Algeria Telecom awarded 20-year license by state government to provide satellite services for broadband access and emergency response purposes, with the obligation to extend the VSAT network to all provinces by 2020.
- ISRAEL** (2016) Israel Post services request by Eilat to merge with satellite TV services. VSAT to support 570 million.
- SAUDI ARABIA** (2016) GSAT and ArabSat sign 500M USD deal with Saudi Arabia for their own satellites. ArabSat and HellenSat will provide TV, radio and broadband access.
- UAE** (2016) Shatel uses technical support from UAE to receive 4G and regulatory services to government entities, all companies and other firms based in rest area of the Emirates.

The Middle East and North Africa (MENA) is currently the third-largest market in terms of satellite bandwidth leased, which stood at 38 Gbps in 2015, up 4% y-o-y.

Regular transponder demand stood at 830 units in 2015. Down 1% y-o-y, growth observed in video distribution and mobility markets was somewhat offset by decreasing requirements for trunking. The "regular" capacity market is expected to continue declining in verticals such as trunking/backhaul and broadband access where HTS will take over. Overall, regular capacity demand in the MENA region should reach about 854 TTEs in 2020 and steadily decrease to 812 over the 2021-2025 period. This corresponds to a CAGR of 2% over the next five years and 1% for the 10-year period, which is a downward revision of our previous forecasts. Reasons should include:

- > Political uncertainty could hold back investments.
- > Slower oil growth in the next few years could weigh on GDP growth.
- > The TV market is expected to increasingly mature after the significant growth recorded in the past 10 years.
- > The reduced presence of troops compared to the last decade would reduce usage for military communications.

> HTS competition should increase with the launch of large capacities in the Ku- and Ka-bands. In addition to commercial capacity, the use of the WGS constellation for military communications should also impact growth.

VSAT capacity leased **increased from 11 Gbps in 2014 to 16 Gbps in 2015**, mainly driven by enterprise networks and considering the already announced commitments Eutelsat (2x1 Gbps) and Kacific (1.7 Gbps) with Arabsat bringing broadband coverage to Morocco with Higgs predict that HTS capacity leased in MENA will grow a 2025, with enterprise networks and broadband service. Total bandwidth leased ("regular capacity" and HTS) **78 Gbps in 2025**, up from 38 Gbps in 2015. 110-year for HTS capacity is expected to account for close to 1/3 the forecast period.

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NORTH EAST ASIA POSITIONING AND MARKET SHARES OF SATELLITE OPERATORS

REGULAR CAPACITY LEASED BY OPERATOR (TPE)
Total: 225 units (38 MHz equivalent)

KT Sat	52 (23%)
Intelsat	10 (4%)
ISAT	7 (3%)
SES	3 (1%)
Others	4 (2%)

INFRASTRUCTURE REVENUES* BY OPERATOR (\$M)
Total: 556 million

ISAT	420 (75%)
KT Sat	113 (20%)
Intelsat	17 (3%)
Others	8 (1%)

THE NORTH EAST ASIAN MARKET IS ESSENTIALLY A DUOPOLY
The North East Asia region is dominated by the two operators based in the region, Sky Perfect Sat in Japan and KT Sat in Korea. The two operators together accounted for around 90% of all transponders leased in the region and for more than 95% of capacity lease revenue generated in the region in 2015. Due to their strong domestic market positions and historic customer relationships, the situation in the market is unlikely to change anytime soon, except if either of the two companies takes part in industry consolidation.

POSITIONING IN HTS SEGMENT
The HTS market is relatively small in North East Asia, mainly due to the strong competition from terrestrial networks in the region. According to OECD, over 70% of the fixed-line broadband access uses fiber in Japan and Korea*. Accordingly, limited future investment is expected in coming years. That's why ISAT is the only HTS system offering about 4.5 Gbps capacity to the region in 2015. In addition, as a niche market, the HTS capacity is largely leased to ISAT in Japan for trunking and backhaul as well as maritime broadband application. HTS capacity is expected to more than double in 2016 with SES entering to the market. In 2016-18, Intelsat is also expected to target the regional HTS market. SES and Intelsat are expected to offer the most HTS capacity in the region at the end of the current decade. If the coordinators with global coverage start operating, the total HTS supply could reach >40 Gbps in the early 2020s. Demand is expected to mainly come from maritime or sea connectivity and trunking/backhaul applications.

*OECD broadband statistics

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OCEANIA PACIFIC APPLICATION SEGMENTS - VOICE & DATA SERVICES

While connectivity requirements in Australia, New Zealand, is expected to continue traffic trunking, including consumer, HTS capacity has already begun to impact the region as O3B had already built up a large contracted backlog by year-end 2015 for its low-cost MEO HTS capacity to provide trunking services to multiple Pacific island nations, with several extensions of contracts since then. As such, overall demand for HTS is expected to grow from 2.4 Gbps in 2015 to 4.5 Gbps by 2025.

Consumer broadband access
As of the end of 2015, there were approximately 95,000 subscribers to satellite broadband access in the region, a stable figure compared to 2014. In the short term, the market is expected to be propelled by two HTS systems (one launched in 2015 and the second one expected to be launched in late 2016) procured by the Australian government as part of its NBN program. The broadband plan leverages satellites to provide improved connectivity (peak access rates of 6 Mbps download and 1 Mbps upload) for up to 400,000 premises in rural/remote regions of the country. The interim NBN satellite service utilizes capacity from Optus and ISAT. However, capacity demand for the interim service appears to have been underestimated, as users are widely reporting struggles with download limits and speeds. Services on NBN's first satellite started in April 2016, significantly increasing speeds offered to end users. All subscribers are expected to migrate off the interim satellite service by 2017.

Following the launch of the NBN satellites, consumer broadband subscribers in the region are projected to reach 215,000 by 2020 alone, and over 252,000 by 2025. At that point, all subscribers should be utilizing HTS capacity, carrying nearly 50 Gbps of traffic, up from 2.1 Gbps in 2015.

Capacity Demand (Regular & HTS)

Year	2015	2025
Capacity Demand (Regular & HTS)	6 Gbps	47 Gbps

Consumer BB

Year	2015	2025
# of Subs (in thousands)	95	252
Average Traffic Per Sub (Mbps/week)	0.02	0.17

SAMPLE OF RECENT CONTRACT ANNOUNCEMENTS

YEAR	COUNTRY	SERVICE PROVIDER	CUSTOMER	COMMENTS
2016	Australia	unannounced	MMA Offshore	VSAT services to MMA's global offshore fleet
2016	Australia	unannounced	Virgin Australia	Will offer IFC services from May 2017
2016	New Zealand	not selected	Air New Zealand	The airline is selecting an IFC provider
2016	Australia	Viasat	Qantas	Fixed Ka-band satellites to be installed on the A320-200 fleet

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