JAIPA MEETING

EUTELSAT SATELLITE BROADBAND PROJECT FOR JAPAN

MAY 19, 2016

eutelsat

A LEADING GLOBAL SATELLITE COMPANY

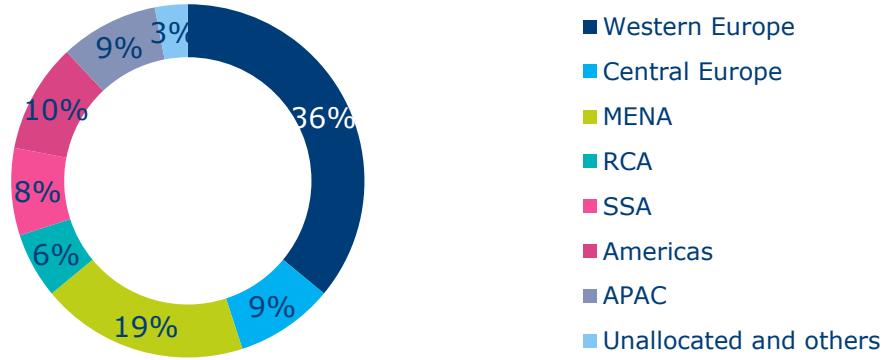
KEY DATA

- Over 30 years of satellite operations
- Fleet of 40 satellites; global coverage
- Continued investment: 5 further satellites to launch
- Operating >1,100 transponders
- Broadcasting >6,000 channels
- Revenues: €1.48bn
- Backlog of €5.8bn, representing 3.9 years of revenues

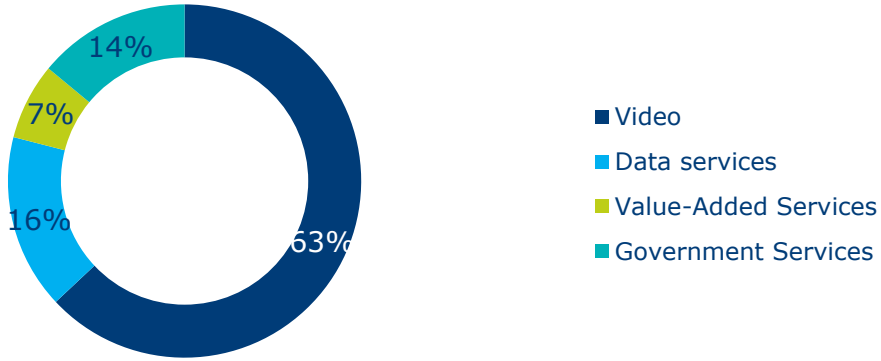
Data as of 31 December 2015, except revenues which are as of 30 June 2015

REVENUE BREAKDOWN

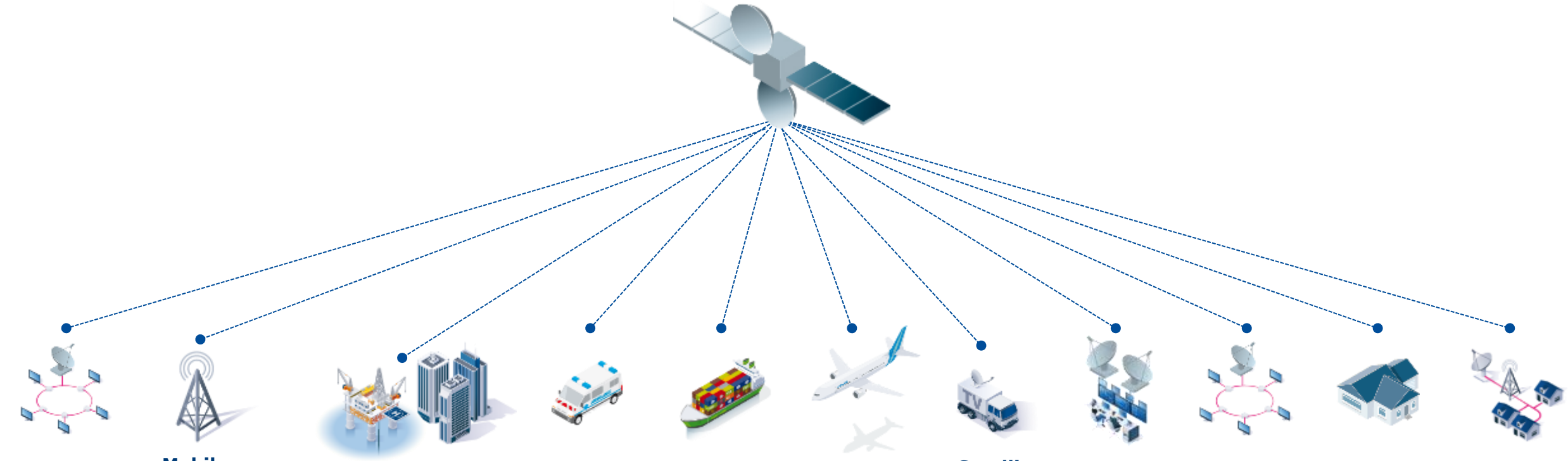
By geography



By application



DIRECT-TO-USER AND HEADEND DELIVERY



WEB GIANTS HAVE CHOSEN SATELLITE

facebook

Google

SPACEX

OneWeb - OneWorld

Virgin

QUALCOMM

- Satellites are considered by Web Giants as the key enablers of connectivity expansion

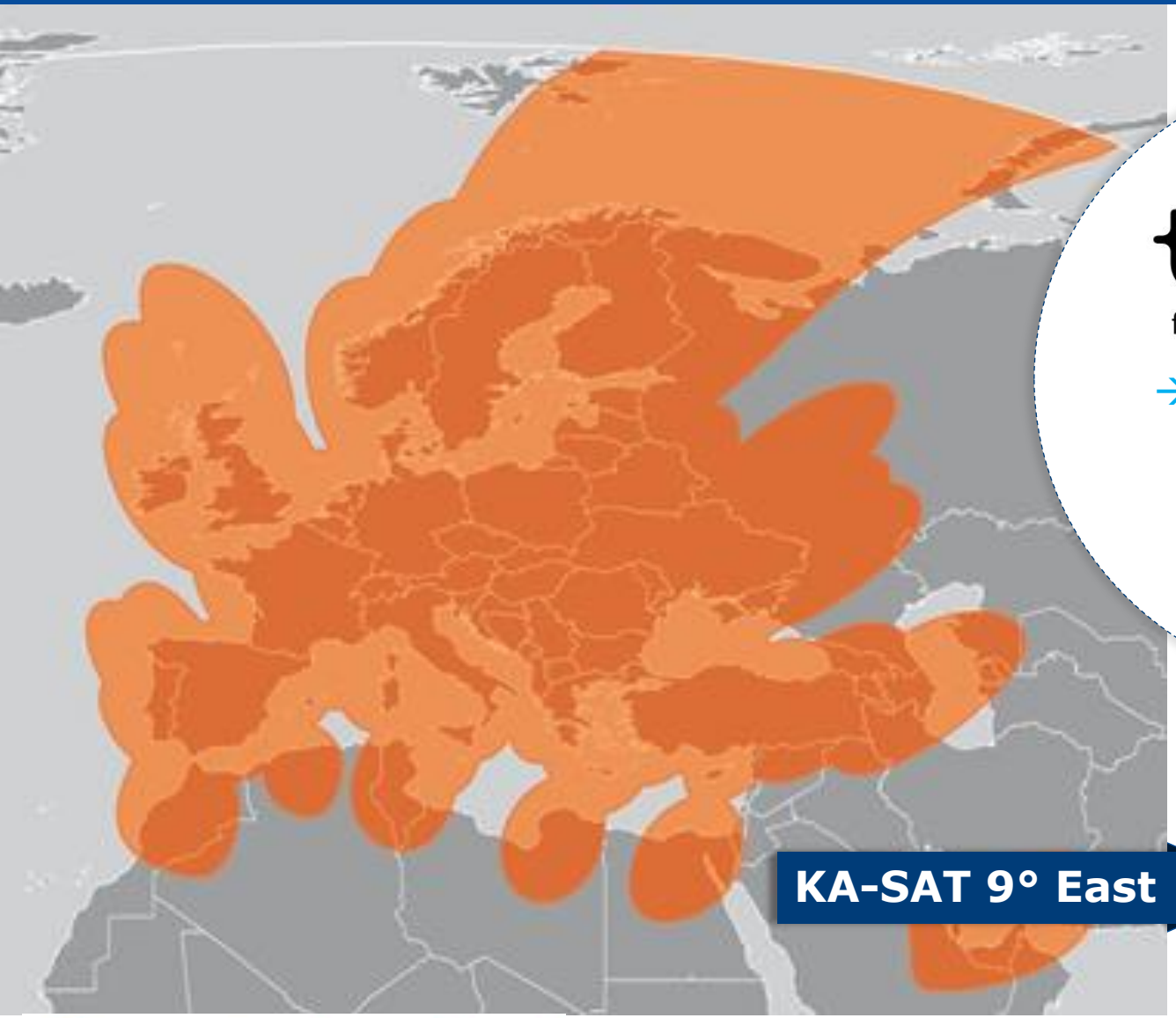
THE 'HTS' REVOLUTION

- **The "High-Throughput Satellite" principle has led to the development of a new satellite architecture:**
  - Coverage in multi-spot beams with frequency reuse
  - Smaller beams to improve coverage performances
  - Increase of the overall capacity on satellite

- **This improvement enables service evolution:**
  - Decrease of Mbps costs and prices
  - Smaller terminals thanks to better satellite performances
  - New broadband markets for consumer or associated markets

- **Each HTS has a specific market positioning**
  - Frequency bands linked to availability and expected performance
    - Ka-band for internet access for consumers and SMEs
    - Ku-band for professional services (enterprise, Telco)
    - Nevertheless, depends on available spectrum, coverage size, etc.
  - International or local connectivity to cover different types of needs
  - Closed or open architecture

HTS VALUE PROPOSITION FOR EUTELSAT: BROADBAND FOR CONSUMER WITH THE KA-SAT EXAMPLE



tooway™
fast internet everywhere

→ **200K subscribers**

tooway Business
Satellite solutions

ViaSat

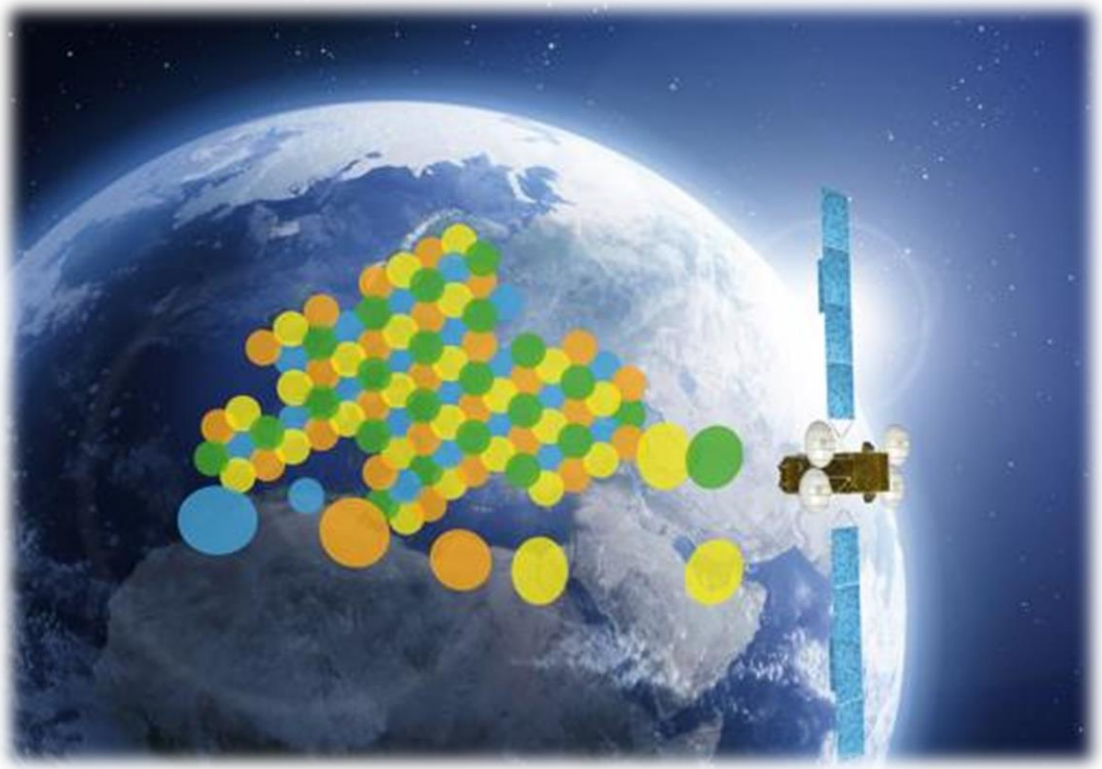
Technology & Service partner

Standard terminal
- → ***IDU box***
- → ***Antenna 77cm***
- → ***3W ODU***
- → ***75W power***

KA-SAT: THE LARGEST EUROPEAN HTS IN THE SKY

82 Ka-band spots over extended Europe
Frequencies reused 20 times

More than 90 Gbps total throughput



Illustrative coverage of KA-SAT seen from the sky

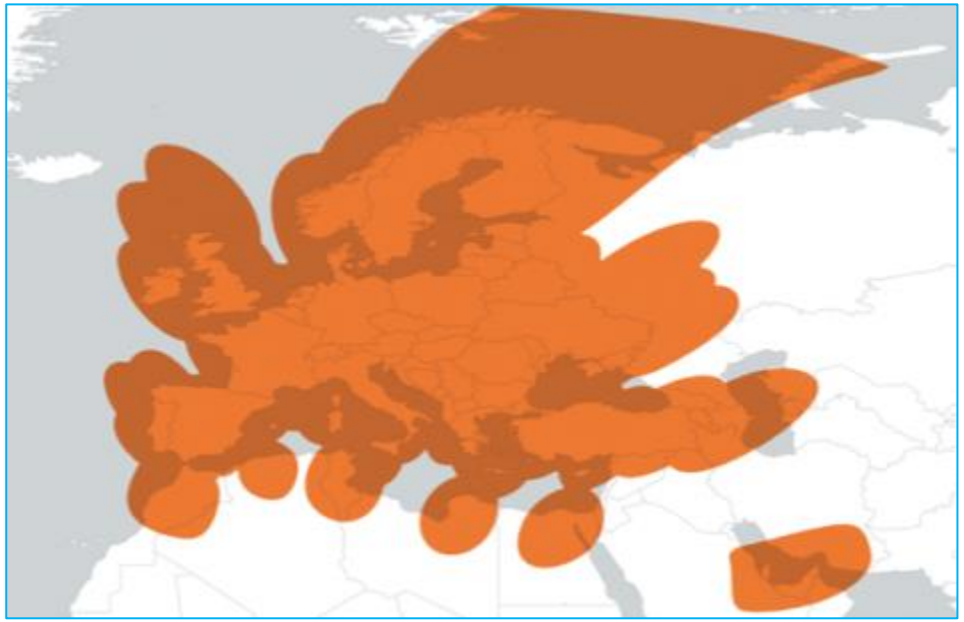
- **Satellite: now an efficient and cost-effective complement to terrestrial technologies**
- **Europe's largest and most advanced satellite broadband infrastructure open for business**
- **Available everywhere across extended Europe**
- **New generation bandwidth optimized for a broader portfolio of data and video services**
- **In operation since May 2011**
- **Circa 200 000 active terminals to date**

Example of service offer enabled in Europe

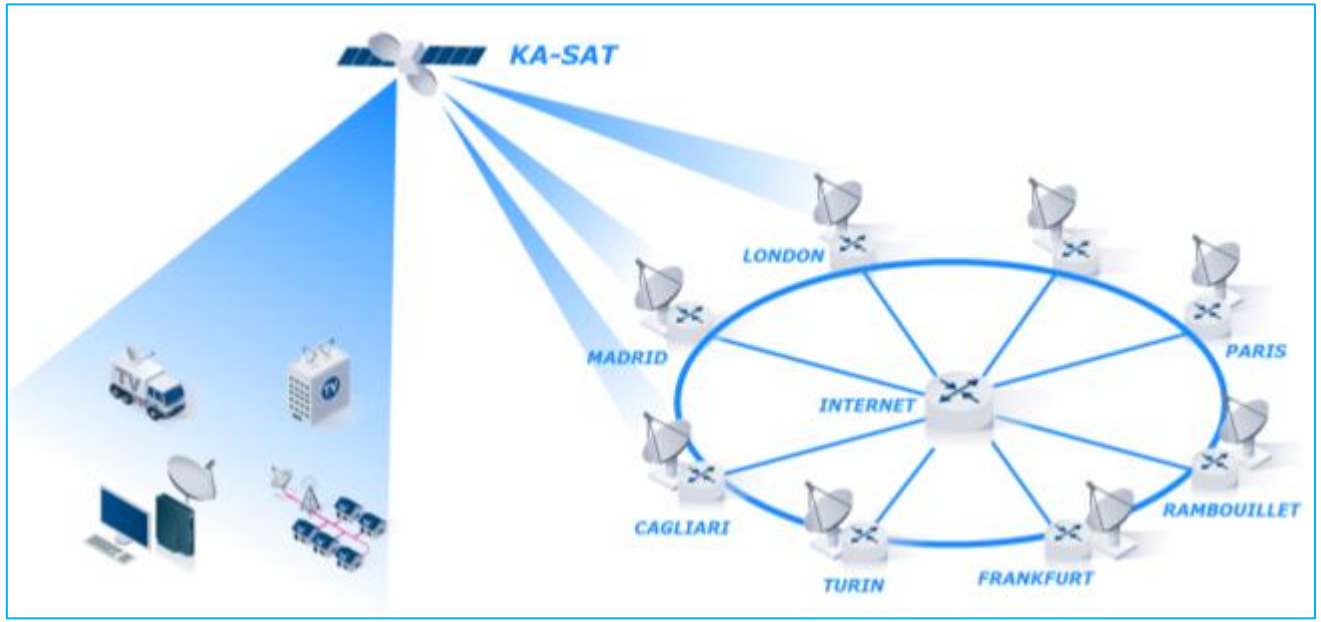
eutelsat

KA-SAT COVERAGE AND GROUND SEGMENT

- **KA-SAT ground segment is comprised of 10 teleports, interconnected to the Internet backbone by a fully redundant fiber ring**
- **Backbone PoP interconnection is offered as standard, with optional Layer 2 Switching configuration available - a unique feature in the satellite world, exclusive to KA-SAT**



KA-SAT coverage footprint



KA-SAT Ground Segment

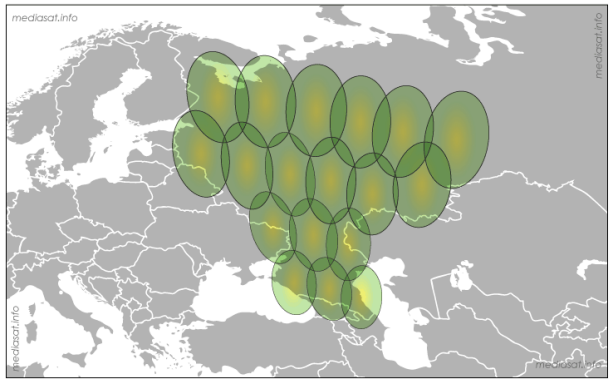
4 NEW HTS SATELLITES WILL BE LAUNCHED BETWEEN 2015 AND 2017

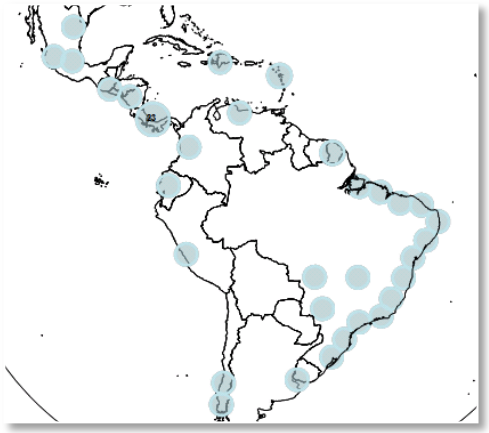
- **EUTELSAT 36C (Ka-band)**
  - Russia
  - Launch in 2015
  - 18 spots in Ka
  - Throughput > 11 Gbps

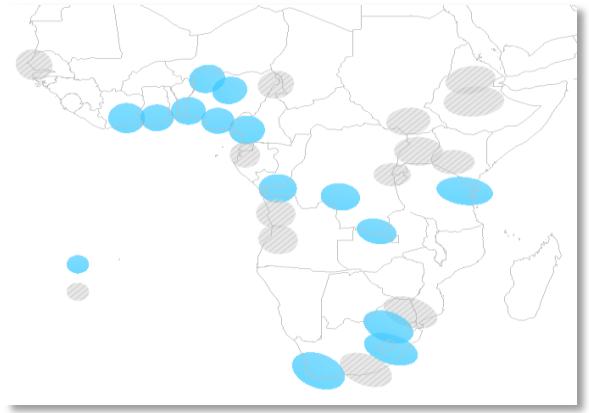
- **EUTELSAT 65 West A (Ka-band)**
  - South America
  - Launch in 2016
  - 24 spots in Ka
  - Throughput > 35 Gbps

- **BB4 Africa (Ka-band)**
  - Africa
  - Launch in 2016
  - 14 spots in Ka
  - Throughput > 8 Gbps (and 75Gbps in 2019)

- **EUTELSAT 172B (Ku-band)**
  - Mobility in Asia and trans-pacific
  - Launch in 2017
  - 11 spots in Ku







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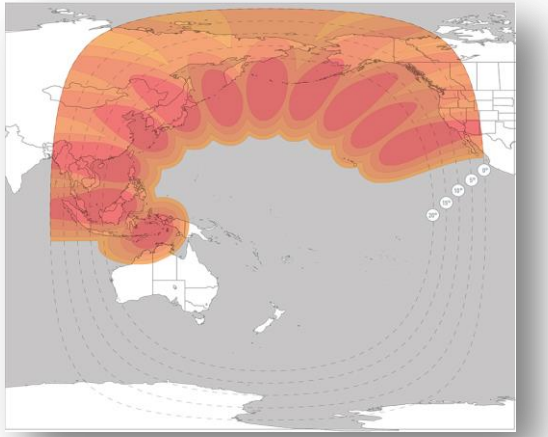
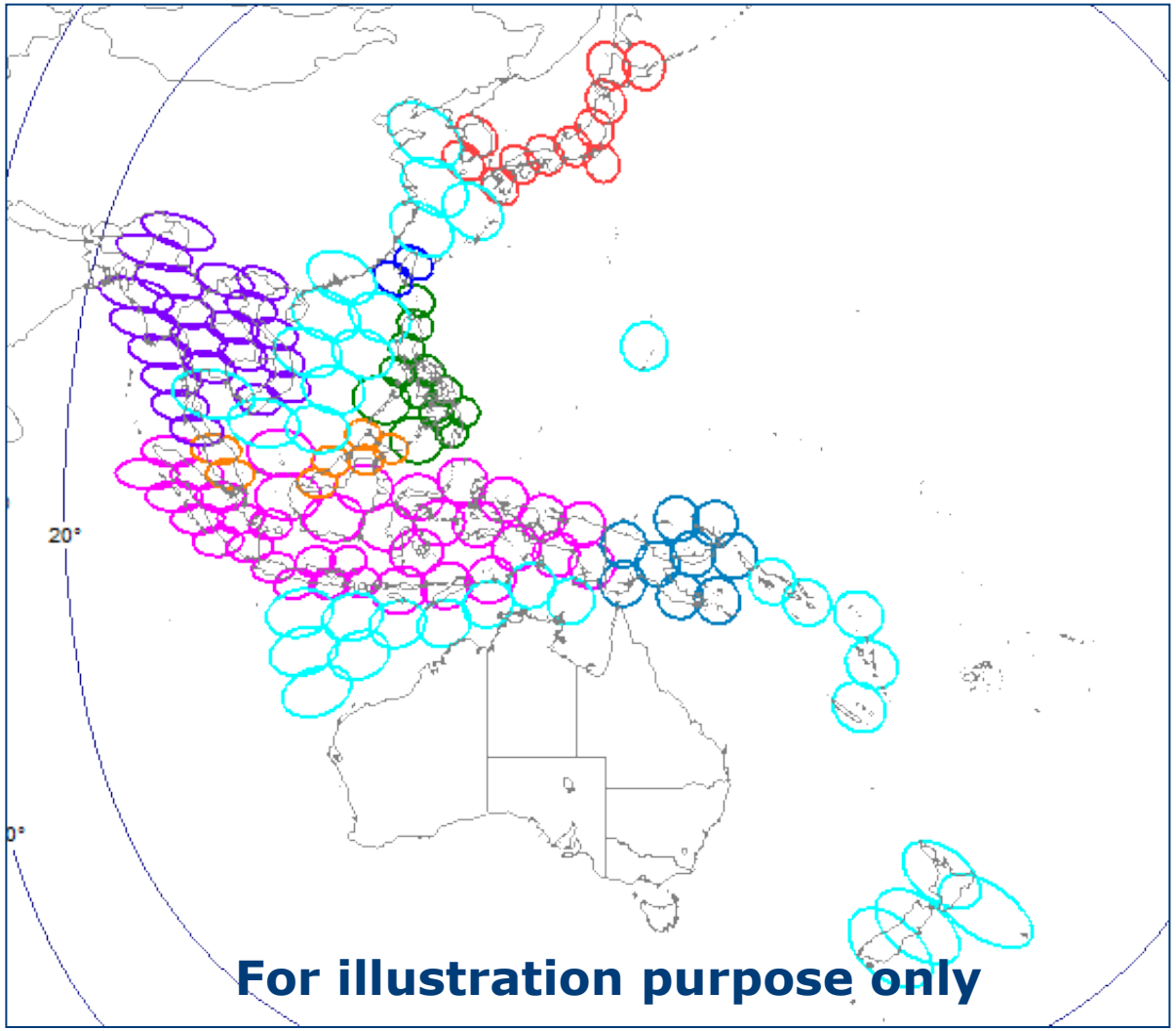


EUTELSAT AMBITIONS FOR BROADBAND IN ASIA PACIFIC

- As per Eutelsat's strategy, a satellite broadband project is being studied for the APAC region, BB4APAC
- A sizable demand exists in that region for a consumer satellite broadband access solution aiming at bridging the Digital Divide in unserved and underserved areas. It makes possible a massive HTS project (over 200 Gbps), favorable to a low cost of Gbps
- Japan has been identified as one of the key markets of this solution both for bringing Ultra-High Broadband access in unserved and underserved areas of Japan
- We aim at a decision on BB4APAC by end of 2016, for a launch of commercial activities by end of 2019/beginning 2020



For illustration purpose only

JAPAN FIELD MARKET SURVEY KEY TAKEWAYS

- **Official figures from the MIC estimates a coverage of ultra-high broadband (>30Mbps) of about 100% of the population (~50m households) in Japan today**

- **However the recognition of a household covered by real ultra-high broadband is difficult to assess**
  - ➔ Mountainous topography
  - ➔ Remote islands
  - ➔ Rural areas

- **Strong will of the government to provide connectivity in rural areas to revitalize the economy of rural areas (including tourism), stop the rural exodus, develop cruise tourism and provide a disaster recovery broadband solution**
  - ➔ Anticipation of Tokyo Olympic Games in 2020
  - ➔ 29 000 Wi-Fi hotspots to be "disaster-ready" throughout the country by 2020

TOKYO 2020

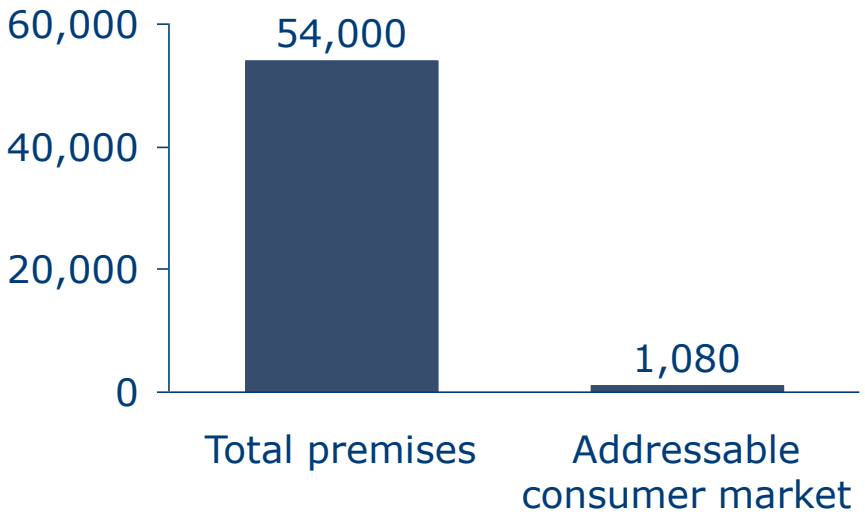
JAPAN FIELD MARKET SURVEY KEY TAKEWAYS

- **Big Wimax and ADSL markets of several millions of subscribers**
  - ➔ A certain level of frustration exists among customers who do not have real ultra-high broadband today (non homogeneous network of Wimax and ADSL)
    - → Eutelsat experienced the same situation on KA-SAT coverage in Europe
  - ➔ BB4APAC would provide a more uniform product with good performance at comparable price
- **Satellite "broadband" is of low quality today: cheapest offer at 45USD/month for 1Mbps peak speed (!)**
- **Potential for broadband on the move which is not everywhere today or not always at a good level of service (eg shinkansen, ferries)**
- **Subsidies schemes to connect the unconnected to be studied at a national and at a regional level**

MARKET SIZING FOR SATELLITE BROADBAND SERVICES IN JAPAN

- **Eutelsat has performed a specific market study aiming at sizing satellite broadband market in Japan**
- **Our market model leads to a potential market for direct access services of <u>1.1 million households (w/o community lines)</u> in Japan in 2020**
  - ➔ **Shared solutions, such as Wi-Fi hotspots, would further increase this potential**

Market sizing for satellite consumer broadband access services in 2020 (in thousand)



Addressable market (w/o community lines) of 2% of total premises in 2020

PROPOSAL FOR PARTNERSHIP FOR INTERNET SERVICE PROVIDERS

BB4APAC project leverages the state-of-the-art satellite technologies

- Coverage and ubiquity: 100% eligibility, instantly
  - → Ensuring reliable broadband access all across Japan and independently of the end-users location
  - → Reducing the digital divide by instantly connecting remote and rural areas for consumers, businesses, schools, etc.
- Fast deployment, flexible and scalable
- Reliability not affected by disaster
- Efficiency: peak speeds of at least 30Mbps

Two main products to adapt to your positioning in the value chain

	"INFRA"	"VNO"
Description	**Provision of raw MHz capacity over selected beams** • You own and manage your preferred ground technology • Your baseband equipment is hosted at BB4APAC's uplink sites	**Provision of dedicated IP bandwidth over selected beams** • You customise and manage your end-user services (peak rate, volume, contention, QoS, IP allocation mechanism…)
Sale Unit	MHz	Mbps

PROPOSAL FOR PARTNERSHIP FOR INTERNET SERVICE PROVIDERS

- **Eutelsat broadband satellite solution would be a complement to your service portfolio**
  - ➔ Available wherever your prospect would be
  - ➔ At a price comparable to terrestrial broadband offers

- **Peak speed between 30 et 60 Mbps at prices which are in the same order of magnitude as terrestrial networks prices (45 to 50 US dollars per month without equipment)**

- **Potential of revenue between 35 to 45 million US dollars for 50 to 60 thousand individual subscribers**

- **We would like to discuss further with you what could be your interest for such a solution**

- **Next steps**
  - ➔ NDA between Eutelsat and interested partners
  - ➔ Discuss the value proposition of Eutelsat solution (economics, lifetime value of a subscriber)
  - ➔ Gather your expression of interest

THANK YOU FOR YOUR ATTENTION!

どうもありがとうございます!

Charles Disneur
Business Development Director

T: +65 9666 1692
Email: cdisneur@eutelsat.com

One Temasek Avenue, #24-01A Millenia Tower, Singapore 039192

eutelsatasia
communications via satellite