



Eutelsat Ka-Sat satellite: services and possible applications

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● Satellite main budgets

➤ Power

- Spacecraft Power <14kW
- Payload DC power 11kW
- Solar Array Power up to 16kW



➤ Mass

- Payload mass ~1000 kg
- Spacecraft dry mass ~3170 kg
- Satellite launch mass 5.7t -6.1t

➤ Orbital Manoeuvre life time 16 years

● Satellite platform: EUROSTAR E3000 (Astrium)

● Launch ILS Proton

● Launch date: December 26th, 2010



KA-SAT – Requirements for satellite broadband

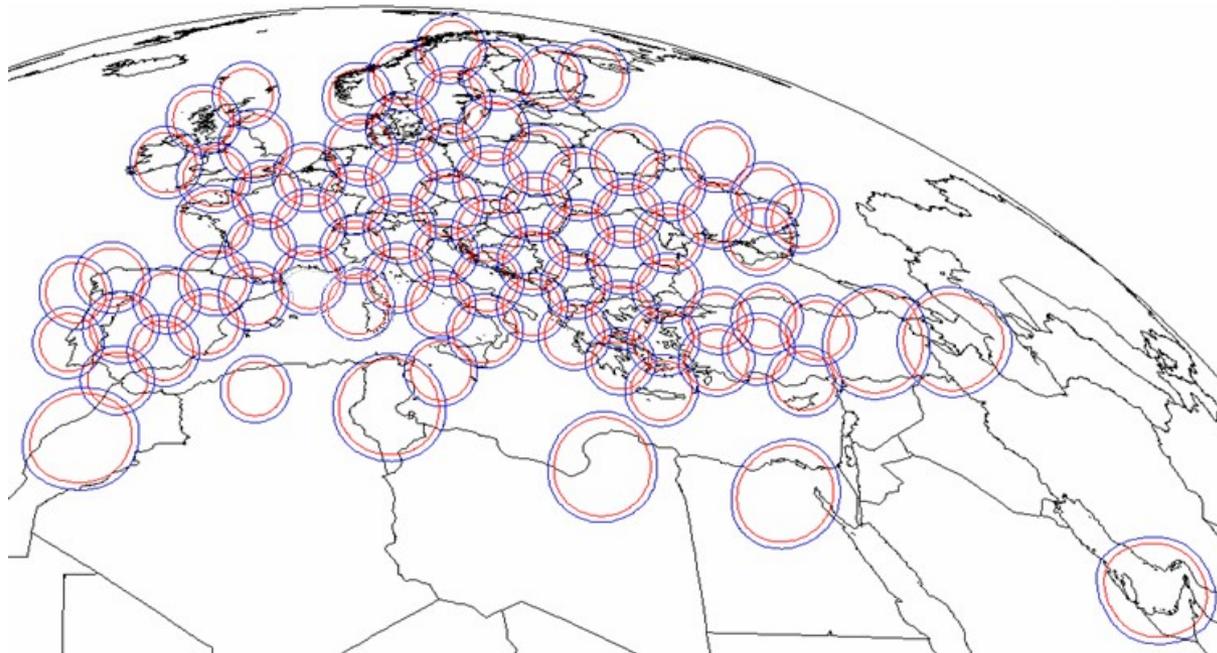


MULTISPOT

Frequencies reused 20 times
Mbps up to 8 times more cost-effective
for broadband than current satellite

KA-BAND

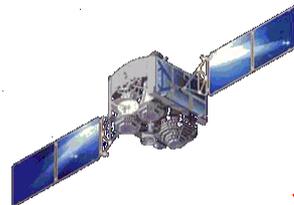
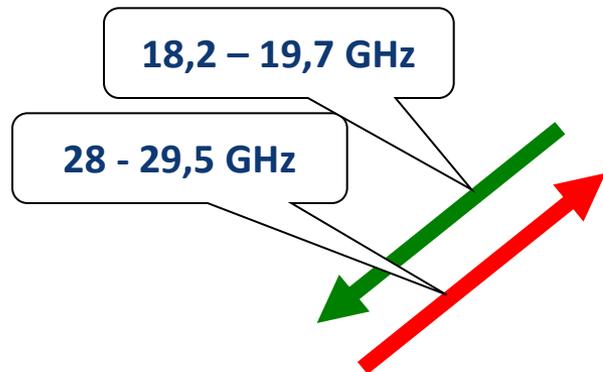
Twice more frequency band
No interference
Small size antennas



Frequencies Used by the System

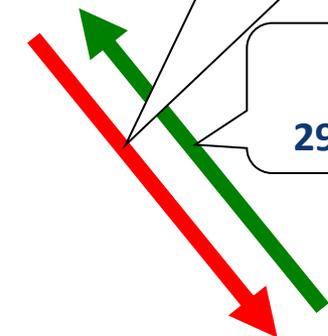


- **User Terminals within Beams**



« FWD »
19,7 – 20,2 GHz

« RTN »
29,5 – 30 GHz



User Terminals
within Beams

10 antennas of 9m



Multispot Ka-Band Beam Performances



KA-SAT IP MPLS core for 10 GateWays/4 PoPs

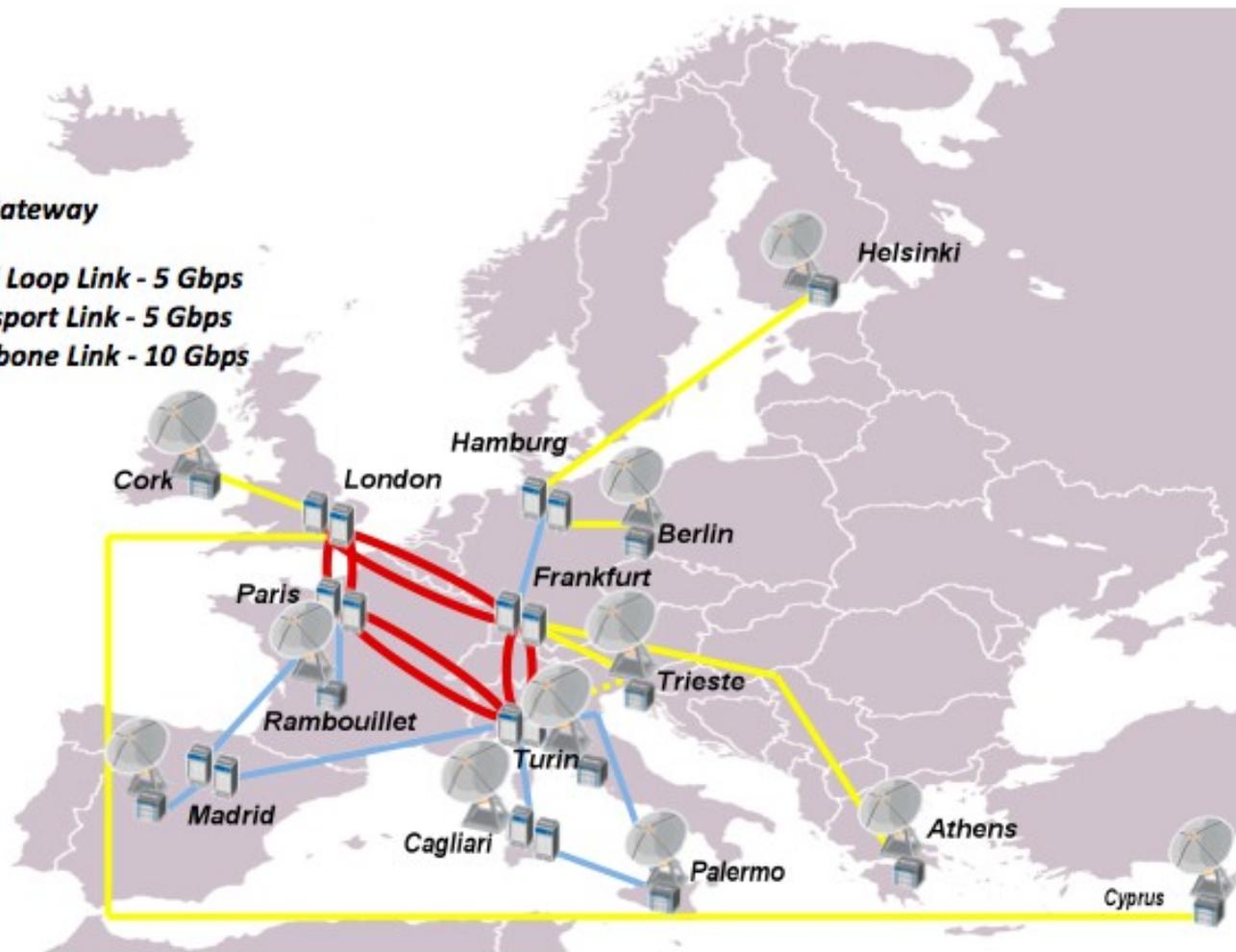


Core/Edge



Satellite Gateway

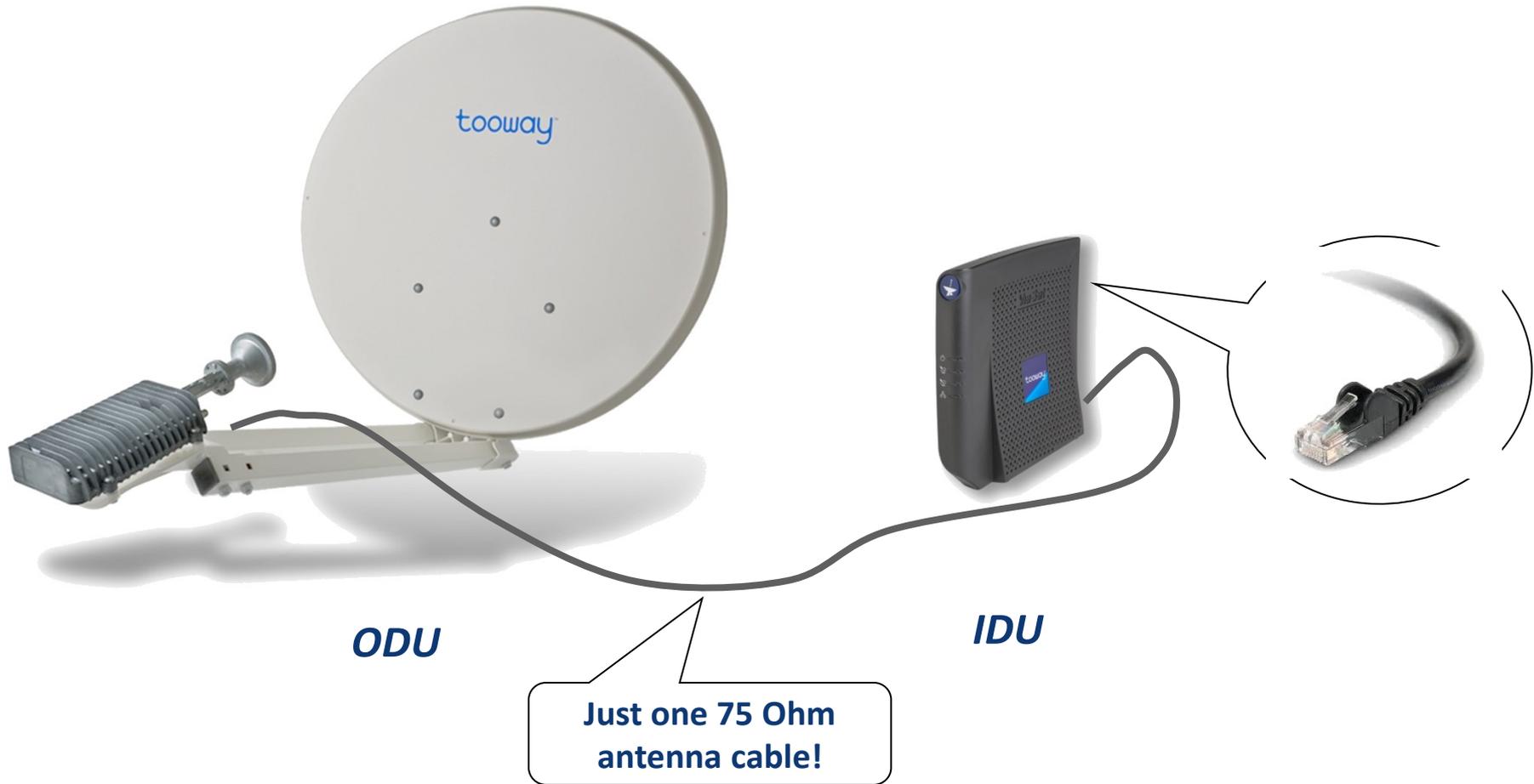
- Local Loop Link - 5 Gbps
- Transport Link - 5 Gbps
- Backbone Link - 10 Gbps



A very inexpensive User Terminal



- Circular polarization
- Integrated pointing tool
- Compact (75 cm)



ODU

IDU

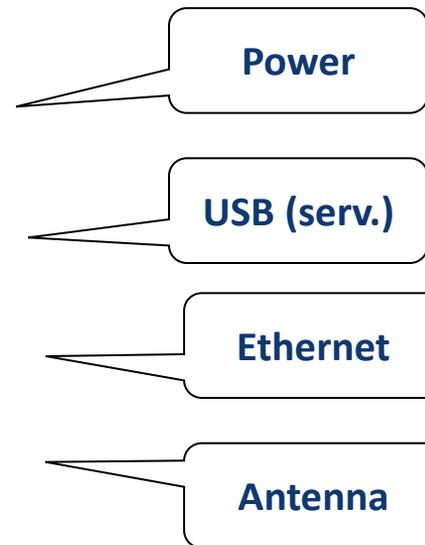
Just one 75 Ohm antenna cable!

Indoor Units (IDUs)



Basic IDU

- **10 Mbit Tx**
- **40 Mbit Rx**



Advanced IDU

- **20 Mbit Tx**
- **50 Mbit Rx**



A wide range of services on KA-SAT



Tooway™ means up to 10 Mbps for all



tooway™
Fast internet for everyone



Fast



Everywhere



Simple



For everyone

Standard packages	Tooway 6	Tooway 8	Tooway 10	Tooway 10+
Max down Kbps	6144	8192	10240	
Max up Kbps	1024	2048		
4 Week volumes GB	4	8	13	25

- **Broadband for everyone everywhere**
 - Immediately available across extended Europe
 - Complements from terrestrial networks
- **A true always-on service comparable to DSL**
 - High-speed connectivity: up to 10Mbps downstream / 4Mbps upstream
 - Available for full triple-play, plus DTH TV reception from neighbouring Ku-band satellites
 - Improved user experience
- **Easy operation and installation**
 - Easy-to-install and as accessible as satellite television
 - Plug and play
- **Breakthrough technology in satellite market**
 - Benefiting from successful first-generation satellite broadband deployed in USA by WildBlue to half a million homes, and in Europe by first-generation Tooway™

New-generation light SNG



The solution

- **Europe-wide low-cost video contribution service for SNG using low cost, lightweight kit**
 - Liberates TV from heavy SNG equipment



Addressable markets

- **Broadcasters for news video contribution needing:**
 - Fast access to injection point
 - Internet-based booking
 - Light terminals
 - Document any event while it is still occurring

Key applications

- Satellite News Gathering using lightweight kits
- Data Gathering applications

New-generation light SNG : the ideal range



- Light (10 kg backpack 35 kg roofmount)
- Low price (10 000 Euros)
- Quick Setup (2 minutes autopoint)



- Manual
- ~ 10 kg
- ~ 10 k€



- Motor+Autopoint
- Small/Light
- ~ 10 k€



- Motor+Autopoint
- Robust/Ruggedised
- ~ 25/40 k€





The solution

- **Cost-efficient solution for regional television channels requiring limited coverage**



Example of coverage with a spot

Addressable markets

- **Regional broadcaster and national broadcasters in small areas**
- **Complementing terrestrial DTT network in small countries/regions**
- **Corporate TV network**
- **Complementing Ku broad footprint coverage**