European Satellite Operators Association

Immediate Solutions for Effective Communications in the Danube Region

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ESOA
European Satellite Operators Association

ESOA Members

11 operators in 8 Member States of the European Union:

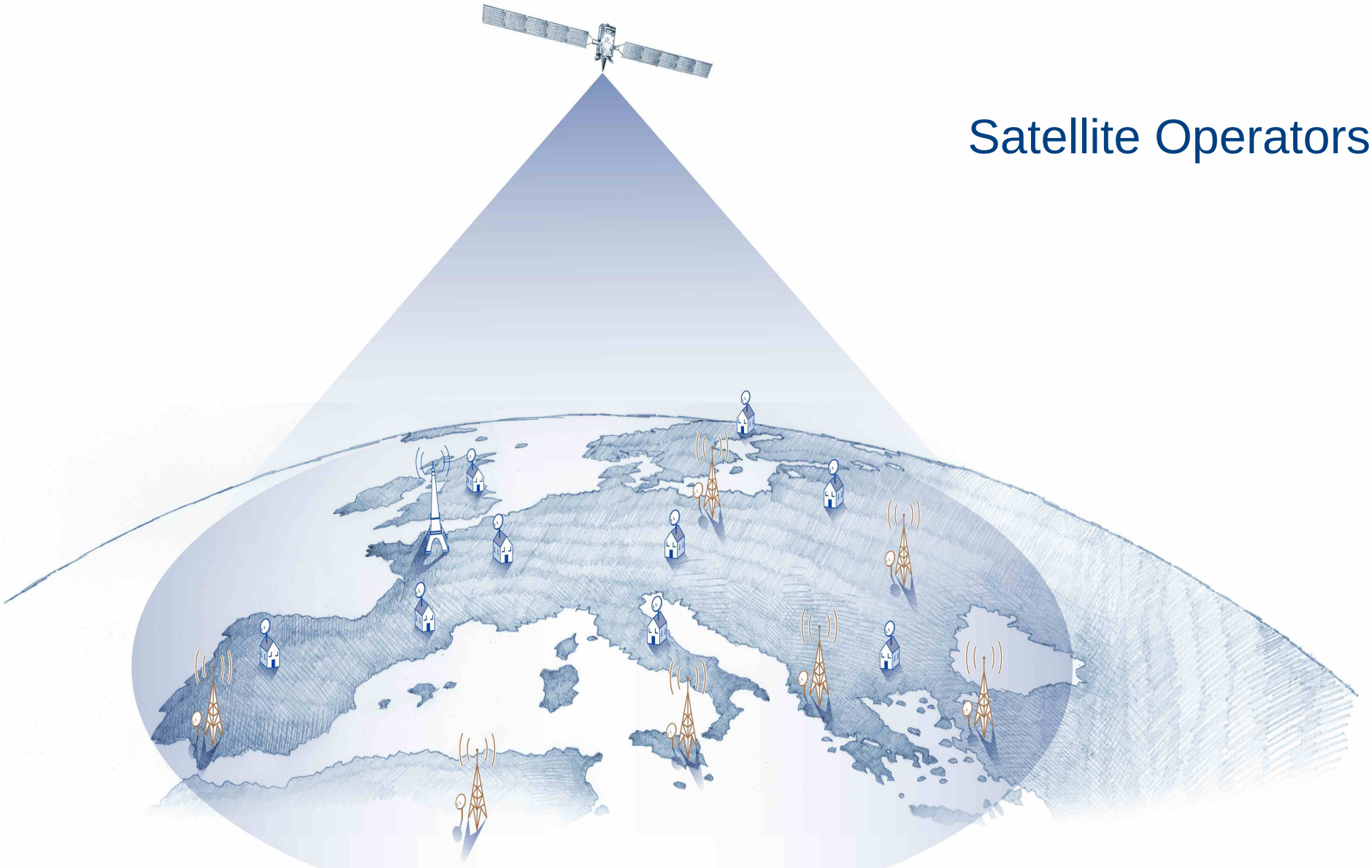
ASTRIUM AN EADS COMPANY Services
avanti communications
EURASIASAT
eutelsat
HELLAS SAT
hispasat
inmarsat Total Communications Network™
INTELSAT. Closer, by far
SES
telenor
TELESPAZIO A Finmeccanica / Thales Company

154 satellites * > €6 billion combined turnover * > 6000 employees

ESOA has the support of the broader Space Industry: 30,000 employees/ €26bn revenue (2008):

arianespace
ASTRIUM AN EADS COMPANY
MAPSAT
MARSH
Munich RE
Newtec SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS
O3b Networks
solaris mobile
THALES

Satellite Operators



Space-based communications services

Anywhere, anytime

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Implementing the EUSDR

- The EUSDR sets out a number of challenges for the region:
  - Connectivity (including energy & mobility)
  - Environment (including managing risks & bio-diversity)
  - Prosperity (including competitiveness & the Knowledge Society)
  - Strengthening the region (including security & crime prevention)

- Alongside other satellite applications, *satellite communications* are ideally suited to help respond to some of these challenges
- A macro-regional strategy allows for *aggregation of demand*, a principle which can produce economies of scale for the whole region
- Exchange of *best practices* from other Member States can be helpful in implementation

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Connectivity (Energy & Mobility)

- Efficient management / sustainability of energy networks are increasingly important
- *Satcoms* play a vital role in data acquisition & processing, enabling 24 hour remote control & monitoring of dams & other energy plants

- Reliable broadband connectivity increases the predictability of energy derived from multiple sources & sites

Best Practice:
In the region of Sardinia, Italy all dams (more than 100) are fully monitored using satellite networks.

Dam Control

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Environment I (Managing Risks)

- Vulnerabilities in a region due to natural or other disasters often disables terrestrial communications networks
- Being prepared with *satcoms* means an Instant Infrastructure for immediate communications
- By reference to: Risk of floods in DR

Satcoms can be used to remotely operate sluice gates on rivers where flooding is a risk. This would allow the control of flood water directly by diverting water away from sensitive areas (power stations, residential areas) to allow time for evacuation or shut down activities.

Best Practice:

In the UK, a Resilient Telecoms Strategy was published in 2007. As part of its implementation, a "Local Resilience Forum" in each UK county has been provided with a satcom device to guarantee them a communications ability in the event of disaster.

At the same time, another "High Integrity Telecoms System" enables secure communications for classified government use during disasters.

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Prosperity (Knowledge Society)

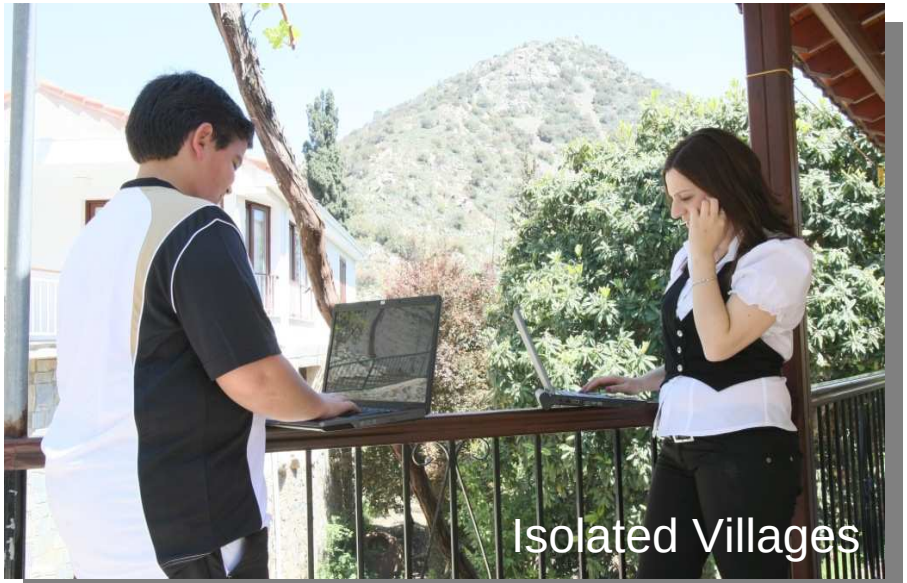
- The Danube Region homes about 223m people, many of which are in remote/ isolated/ sparsely populated areas
- *Satcoms* can enable immediate high quality broadband Internet access
- By reference to: The *"Danube Limes"*
  - Possibility to aggregate demand & benefit from cost reductions
  - Numerous civil or construction works ongoing – where is the dish?
  - Knock-on benefits for tourism/ education/ e-health

Best Practice:

100 telecenters are enabled with satellite in municipalities, schools, post offices, police stations & villages in rural areas throughout Romania:

"More than 17.000 children living in the communities where the telecenters have been installed can have access, thanks to this project, to vital information accessible through the Web"

Dan Georgescu, President of the National Authority for Telecommunications.



Isolated Villages

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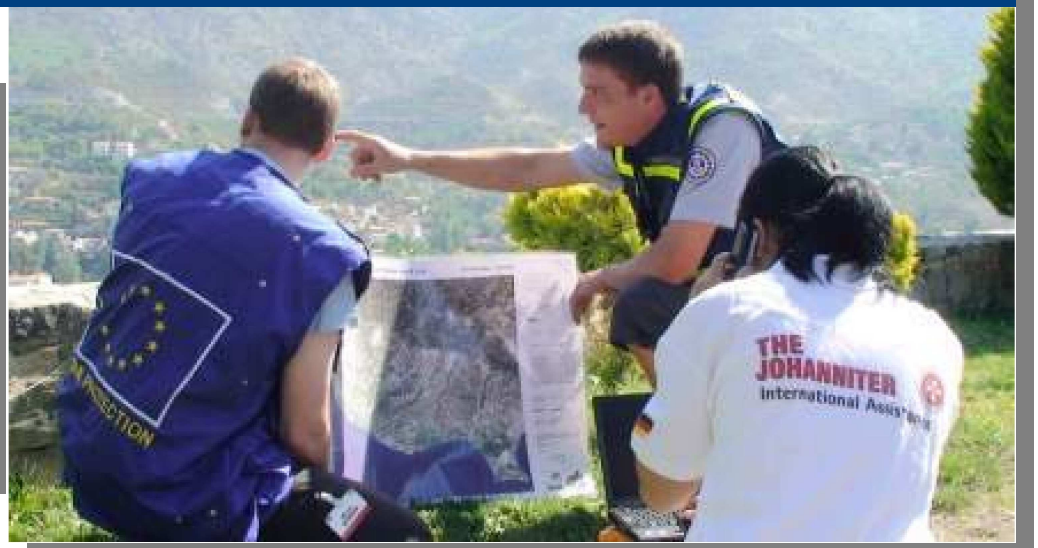
Strengthening the Region (Security & Crime Prevention)

- Security & civil protection needs are highlighted in regions with inland waterways & those that might be affected by unforeseen events (E.g. strong storms/ power cuts/ civil disturbances)
- ***Mobile & fixed satcoms solutions*** allow authorities to remain one step ahead; perform effective border control; & maintain better 'command & control' & response to incidents – disasters/ riots/ crime
- By reference to: the *"NEWADA transport corridor"*
  - Effective monitoring of use of the Danube
  - Ensuring connectivity of border ports

Best Practice:

Satellite links working with covert surveillance cameras and other sensors enable remote border surveillance 24/7



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Environment II (Bio-Diversity)

- Preserving a sustainable ecosystem for diverse species is central to the Danube region
- Using satellite technology provides an unobtrusive means to enable key objectives:
  - Use solar energy during their lifetime (up to 15 years)
  - Zero carbon emissions during operations
  - Do not require landscapes to be cleared in order to install dishes/ modems
- Researchers / scientists communicate data from isolated areas (home to rare species) using ***mobile satcom devices***
- ***Satellite tracking devices*** allow them to follow movement/ migration of birds & other protected species
- Reference to: The *"Danube Parks Network"*

Best Practices:

Enabling scientists on the move

Tracking rare ivory gulls with tiny satellite transmitters in Norway

Exploring & tracking marine bio-diversity in rivers

Researchers use satcom devices to transmit data