

# SEE TELEMEDICINE VPN VIA SATELLITE

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- Life within an informatics society, daily usage of ICT – an indispensable privilege
- ITU Telecom World 2009 – how ICT can help in crisis overcoming
- World Bank study: ICT for economic development and new jobs
- “10% increase of investment in introduction of fast internet causes a 1.3% rise of GDP”
- BB key of economic growth and education development in the world: e-everything

# CURRENT STATUS

- 15 – 20 M of European households do not have access to BB
- SE Europe statistics – significantly below the European average

	Internet				Broadband subscribers	
	Subscribers (000s)	Subscribers per 100 inhabit.	Users (000s)	Users per 100 inhabit.	Total (000s)	Per 100 inhabit.
<b>Albania</b>	84.0	2.67	750.0	23.86	64.0	2.04
<b>Bosnia and Herzegovina</b>	336.2	8.91	1'307.6	34.66	188.5	4.99
<b>Bulgaria</b>	850.2	11.2	2'647.1	34.86	821.2	11.11
<b>Croatia</b>	1'301.7	29.43	1'879.6	42.50	524.7	11.86
<b>Greece</b>	1'744.1	15.66	4'253.4	38.19	1'506.6	13.53
<b>Moldova</b>	155.8	4.29	850.0	23.39	115.1	3.17
<b>Montenegro</b>	88.7	14.27	294.0	47.24	62.2	9.99
<b>Romania</b>	2'520.0	11.8	6'132.2	28.71	2'506.0	11.73
<b>Serbia</b>	849.9	8.64	3'300.0	33.54	451.2	4.59
<b>Slovenia</b>	456.4	22.65	1'125.7	55.86	426.6	21.17
<b>FYR Macedonia</b>	288.4	14.13	847.9	41.54	181.0	8.87
<b>Europe</b>	165'984	20.60	353'946.0	57.80	126'254.7	20.60

Table 2. SEE area Internet and Broadband Subscribers in 2009

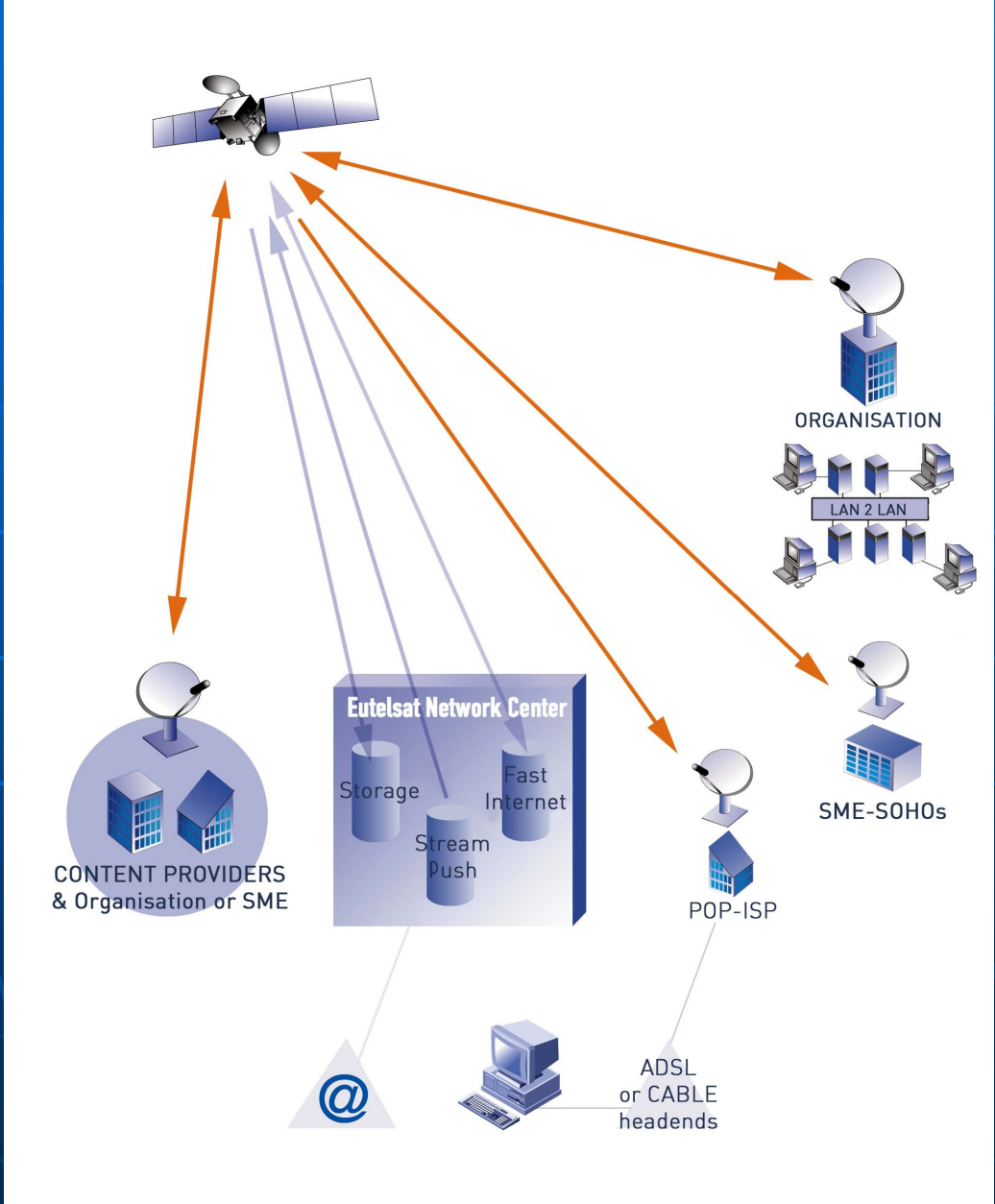
Sources: International Telecommunication Union - <http://www.itu.int/>; "Information Society Statistical Profiles 2009 Europe"

# CURRENT STATUS

- Digital gap and how to overcome it in the shortest timeframe
- Answer: Over satellite

# SATELLITE COMMUNICATIONS

- Immediate Availability
- High quality of large transfer of data
- Economically feasible system
- Tide of application for TV throughout 90s
- One-way distribution of signal
- More and more significant usage of BB in the beginning of the century
- Two-way interactive communication

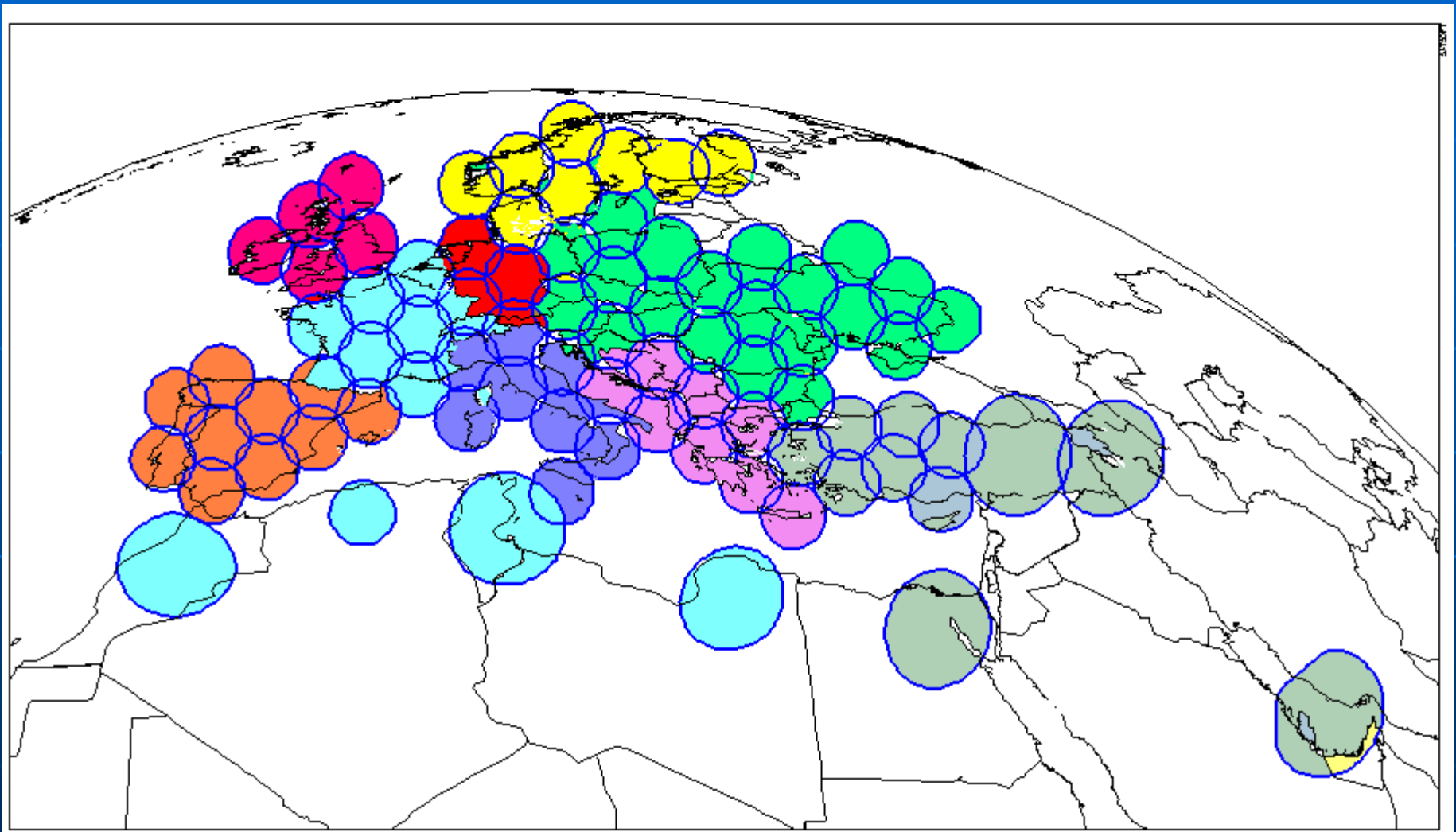


# EUTELSAT POLICY

- Skylogic for BB
- Professional B2B and individual B2C market
- Tooway since 2007
- Triple Play: TV, data, VoIP
- Instant bridging of the digital gap

# KASAT

- A revolutionary innovation:
  1. New frequency bands;
  2. 80 spot beams;
  3. Higher EIRP;
  4. Frequency re-use;
  5. Smaller antenna 70 cm;
  6. Bitstream 2M/10M;
  7. Total bitstream 70Gb/s;
  8. 2,4 M households in E-M region

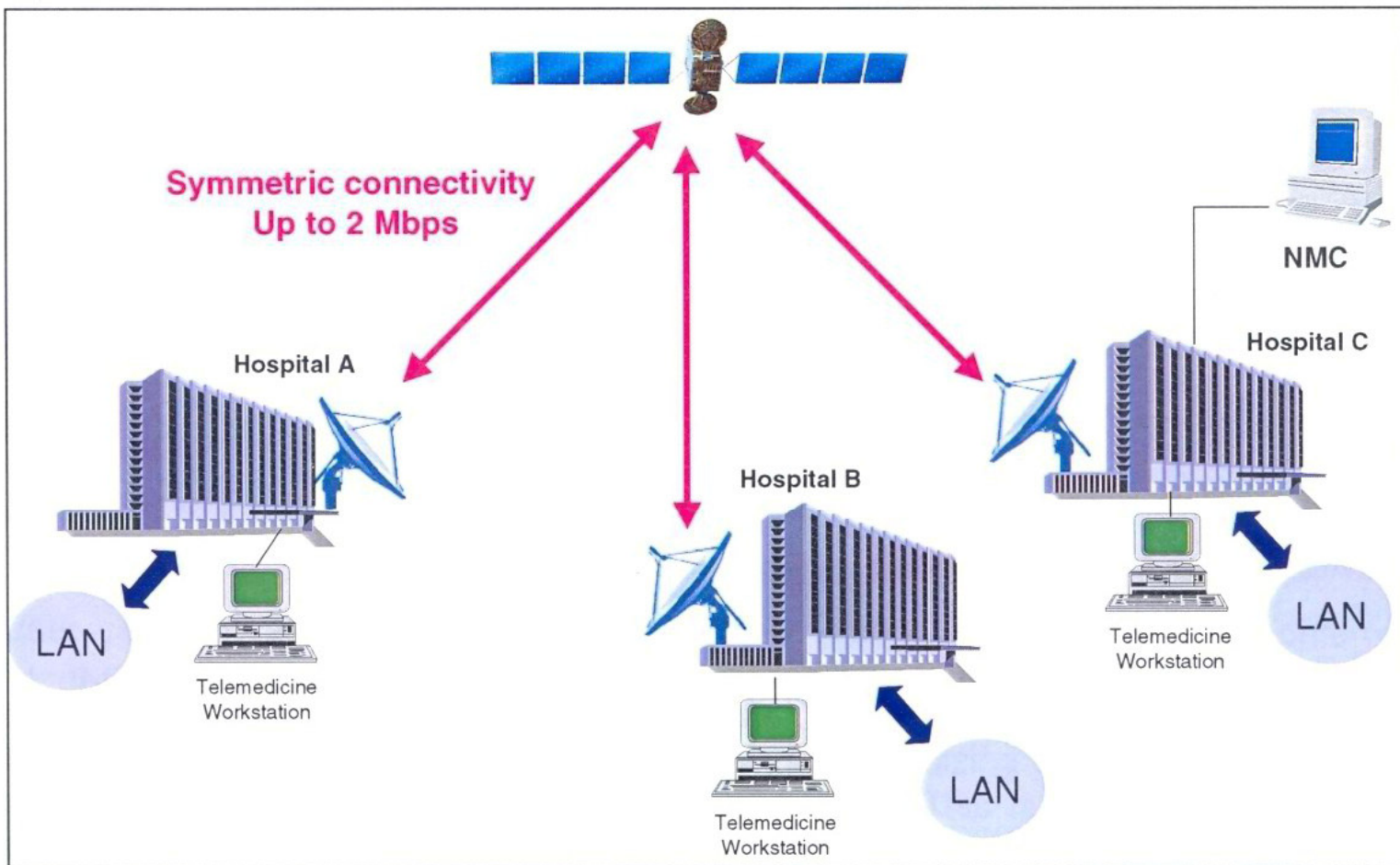


# NEXT STEPS

- Need for daily online communication
- VPN networks via satellite – ideal means of cooperation
- Tooway equipment - nod of a number of networks for bridging the digital gap
- VPN network for strategic institutions
- VNP university network for education
- VPN network for telemedicine...
- Introduction of first satellite VPN for multiuse services as soon as possible

# TELEMEDICINE VIA SATELLITE

- Enhancing healthcare services worldwide
- Broadband network via satellite dedicated to telemedical applications.
- Real-time digital transfer of video, audio and data for videoconferencing, teleconsultation, emergency diagnosis, interoperative telepathology
- Management Multimedia records: DICOM imagery, SCP / ECG records, Holter, MPEG4 video streams...
- Gathering data for decision -making and professional purposes in extreme and crisis situations



**Fig. 1: The Telemedicine Network Architecture**  
*Mesh Network for Corporate Interactive, Broadband, and communications  
 with Service Interoperability*

# HISTORY

- Canadian ANIK Experiment
- Space Station ESA Experiment
- ESA OLYMPUS Multiservice Project
- EBU Satellite Broadcasting Experiment
- EUROTRANSMED
- JRT Plan and Participation
- Experimental transmission of Program
- Propagation Measurement in SHF – Crkvice / Boka Kotorska
- Yugo–Canadian Telemedicine Experiment
- Center for Primary Health Care “Medical Electronic” Banjaluka - St. John’s Memorial Hospital Canada
- 29. i 32. ETANin Marine, 1987 i 1990
- Connection of Military Field Hospital in Sarajevo and Rome...

# EUTELSAT TELEMEDICAL APPLICATIONS

- Different European projects (GALENOS Project for telemedicine co-funded by the European Commission; MEDASHIP: Telemedical Services onboard ships; EMISPHER: Cross-Mediterranean Virtual Medical University)
- D-STAR, D-SAT, or Tooway for tele-medical applications (Tele-consultation, Tele-training, Tele-radiology...)

# EUTELSAT TELEMEDICAL APPLICATIONS

- MEDLIVE TV (Educational pay TV program in 2002; weekly live program prepared exclusively for dentists)
- MEDSKY (Telemedicine solution for Hospitals, clinics, rural medical centers; Videoconference for teleconsultation for continuous medical education; Rescue teams working in the field; Internet audio and videoconferencing; Updating of medical files; Sharing of medical images; Mobile Field Hospital on the disaster field and the reference hospital; Real time exchanges on-line/off-line telediagnosis)



**Intraoperative Telepathology**

# CONCLUSION

- Telemedicine applications using satellite technology
- Most effective solution
- Support to medical teams in the SEE Region and abroad
- Civil and military purposes
- Creation of SEE Telemedicine VPN via satellite

Thank you for your attention

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