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The Broad Band Challenge for Isolated Communities

Effective e-Health in isolated communities is clearly dependent on access to broadband infrastructure. Currently, terrestrial technologies like ADSL or cable modem are available for a significant number of Europeans, at competitive prices. But there are challenges.

According to a European Space Agency study in December 2005, broadband coverage ranges from 90-98% of the territory of most northern and western EU Member States. This is however not the case in its central and eastern regions, and also in the south. Even in 2010, broadband coverage is not expected to exceed 50-60% in Romania and 70-90% in Poland, the Czech Republic and Greece.

Some experts believe that a considerable chunk of this gap could be bridged through hybrid solutions of terrestrial systems and satellite-based technologies, especially if demand is aggregated and consolidated on an EU-wide basis.

Satellites, in particular, have the ability to cover vast regions with low-density usage requirements, and avoid the need

for major investments in terrestrial infrastructure. What is as interesting is that they can complement terrestrial solutions to even out gaps in access to broadband services – especially for isolated communities on islands and mountainous

areas.

Few Successes so Far

Using satellites to provide access to the Internet in remote places is not a new idea, but there are few examples of successful deployments. This is partly due to the problem of cost, as a two-way satellite link can be significantly more expensive than fixed-lines. The issue of latency also poses problems for applications such as voice over IP. In addition, existing rules for satellite communications do not cover licensing and the selection of operators is largely national. This has led to divergence in approaches to operator selection, impeding the growth of pan-European mobile satellite systems. The EU Commission has nevertheless sought to take several steps to address what may become a serious digital divide.

European Initiatives Focused on Pilots

One of the first EU projects in this respect was called RURAL WINS, which discussed, reviewed and analysed ways to bridge the digital divide in isolated regions. It drew up an implementation roadmap, and called for significant public sector involvement as far as isolated communities were concerned. It recommended a phased introduction of broadband to rural regions starting with fixed-line services in integrated areas, and extending to satellite-based systems in more remote regions. Its final workshop, which include 30 participants from across Europe, was held in July 2003.

In early 2004, twelve European organisations teamed up in an attempt to link local wireless networks to two-way broadband satellite connections and provide services for rural communities – ranging from Ireland to Poland. The European Space Agency TWISTER project (Terrestrial Wireless Infrastructure integrated with Satellite Telecommunications for E-Rural) set up over 100 ‘validation sites’ across Europe to support innovative applications in a multitude of domains: e-Health, as well as agriculture, education, community services,

and e-business.

In January 2005, the ESA launched INSPIRE (Internet via Satellite for Promoting Inclusion of Rural Economies) – to bring broadband to remote locations. Its first phase connected 6,000 users in the UK, and aimed to demonstrate the viability of satellite broadband access, especially on issues like service flexibility and scalability.

Hylas and Barrd

Real-life experiences with INSPIRE will pave the way for HYLAS (the Highly Adaptable Satellite) to be built by EADS Astrium and scheduled for launch in late 2008. HYLAS’s key purpose is to provide broadband Internet access and to distribute/ broadcast HDTV across Europe. It will handle traffic for up to 300,000 users at the same time, by means of high gain Ka-Band spot beams that enable 6 simultaneously active spots

(equivalent to more than 40 conventional 33 MHz transponders).

Other ESA initiatives include BARRD (Broadband Access for Rural Regeneration with DVB-RCS). The consortium is led by EADS Atrium. Interestingly, BARRD seeks to support the growing trend for Knowledge Economy workers migrating

from the cities to the countryside, and supports the regeneration of rural economies which such a trend encourages.

In August 2007, the EU Commission finally adopted a proposal to select systems for mobile satellite services (in the reserved 2 GHz band) at a pan-European level. If adopted by the European Parliament and the EU Council (of Telecom

Ministers), this new rule would allow broadband data, TV and emergency communications to develop smoothly throughout Europe onwards from 2009.

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