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EUROPEAN RESEARCH & INNOVATION IN TELECOMMUNICATIONS

SUCCESS STORIES

BROADBAND INTERNET ACCESS

AN **INTERNATIONAL SUCCESS** BOLSTERED BY EU-FUNDED RESEARCH

The Internet has become a basic utility for homes and businesses in the same way as electricity or water. Affordable, reliable and secure broadband connectivity is essential to making full use of the services that the Internet offers nowadays. The demand for even more high-speed connectivity is constantly growing, driven by new Internet services with multi-media rich content. To take full advantage of such services, faster, smarter and cheaper high-speed access network technologies are required. Work by scientists in European research programmes is making ultra-high-speed broadband networks a reality for all Europeans, using technology that can cost-effectively deliver up to 1Gb/s both to your front door and within the home network.

Availability of cost efficient and highly scalable broadband access technologies is critical if all European citizens are to benefit from a broadband Internet connection by 2013, from a 30Mb/s connection by 2020 and that at least 50% of households have a 100 Mb/s connection by 2020, as promised by the European Commission in its Digital Agenda. This will make it possible to cope with the explosion of the number and variety of devices being used to connect to the Internet to increasingly use multimedia-based services. New broadband access technologies are also a key pre-condition for enabling new business models providing benefi ts for a wide variety of service providers, networks operators and customers.

Early research in broadband access, e.g. by the project MUSE (2004-2008), set the foundations of the European success story of broadband Internet access. It resulted in innovative network concepts for high speed access to multimedia services. PIEMAN created ground breaking ideas for a future broadband optical access and metro-area network. Advanced optical equipment developed in the GANDALF project will enable simultaneous provision of broadband services through wireless and wireline access.

High speed optical access, using 10 Gb/s WDM-PON and cost-efficient delivery of 1Gb/s in home networks, have been in the focus of the ALPHA project. In the OMEGA project, a super-fast network for the multimedia home has been demonstrated, taking advantage of a range of wired, radio and optical communication technologies. Projects such as SARDANA feature an innovative approach towards increasing the reach and quality of service of fibre optic networks for European users to areas of up to 100 km enabling the connection of remote, rural areas.

Exploitation of these research activities is on-going and will leverage the extensive innovation potential provided by these projects. In fact, the exploitation of this research is essential if we are to be able to provide the network capability that will soon be needed to cope with the rapidly growing demand for multimedia content, from pictures to videos to 3D and soon holography, used on a large variety of devices using wired and wireless access at home and at work.

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EUROPEAN **RESEARCH PROJECTS CONTRIBUTIONS** TO SUCCESS IN BROADBAND ACCESS

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