Project information

CELTIC
Telecommunication Solutions
www.celtic-initiative.org

Broadband Access Networks Integrated Telecommunication System - BANITS

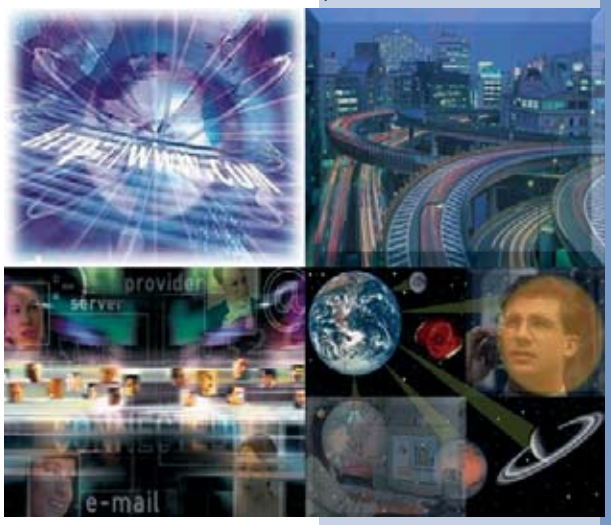
BANITS aims to extend the knowledge in the area of access networks in order to deliver new multimedia service packages to residential and business customers. A special focus will be on maximising the utilisation of the existing network infrastructure, both in the access and metropolitan areas, specifically covering technologies like xDSL, SDH, and Ethernet. New advanced multimedia services will enable network operators and services providers to increase their revenues at a marginal investment, providing an easy migration path to future advancements.

Main focus

The overall objective of BANITS is to explore ways to extend usability and increase revenues in existing networks through new technological solutions in access and metropolitan networks. Furthermore, BANITS will implement a comprehensive service testbed, covering all areas, which enable multi-service offerings to business and residential users, including multimedia services.

In order to fulfill the requirements of new multimedia services and provide the level of quality required by the customers, BANITS will investigate access and metropolitan networks that have the following target features:

- Low investment cost and operational expenses: the solution should leverage existing infrastructures of telecom operators (first of all DSLAMs and SDH infrastructures) combined with a well-known and inexpensive technology like Ethernet, in order to minimize CAPEX (capital expenditures) and reduce OPEX (operating expenses) both of network operators as well as within the customer's premises.
- Multi-service capabilities: suited for the provision of the new services with the appropriate service attributes (Performance, Quality of Service, Security) while maintaining the traditional services over a single infrastructure.
- Well integrated in an end-to-end view: effective inter-working between different network infrastructures (DSLAM, SDH, GbE metro, IP/MPLS) as well as between various network types (metro/core networks and home networks).



BANITS

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Project web site
www.celtic-initiative.org/projects/banits

Approach

BANITS will start from today's network solutions and will investigate new ways to extend their use both in time and in service availability. This approach is the keystone of the project: It is based on the key relevance of the huge investment in network infrastructure already made by the main actors in the telecommunication business.

Furthermore, BANITS will also focus on those weak points that challenge network operators and service providers when facing the future, providing them with solutions for this ever-changing scenario. Thanks to the projected availability of an integrated testbed, BANITS will show novel ways to develop business around these new network scenarios integrating advanced multimedia services.

BANITS will solve the current "bottleneck" in broadband and metropolitan access by optimizing the access networks to transport Ethernet traffic and enabling, at the same time, the low cost and flexibility that has always characterized the "good old Ethernet".

Ethernet-based services and access infrastructures will allow avoiding the complexity and cost of protocol translation. BANITS will focus on empowering the access network with the ability to support the QoS and protection that characterizes TDM networks, enabling them to be ready to satisfy the future demand for broadband connectivity and real-time constraints at a reasonable price.

BANITS will enable the provisioning of "end-to-end Ethernet services", such as Transparent LAN services, Ethernet Internet Services and Private Line Services, by primarily maximizing the use of existing DSLAM and SDH infrastructure. Unlike traditional services, Ethernet services allow service providers to satisfy expanding bandwidth requirements from 1 Mbps to 1 Gbps from a single port without replacing interface cards or equipment, thereby reducing the cost per incremental Mbps.

Main results

The main results of BANITS will be:

- A solution for the access network where the Ethernet traffic is efficiently transported. This solution will be based on the result of the analysis of different access networks architectures both over fiber and copper.
- A solution for the edge network, paying special attention to traffic multiplexing and aggregation. The traditional DSLAM based in ATM will evolve to include the treatment of native Ethernet traffic with QoS, avoiding the complexity and extra cost of protocol translation.
- A solution for the Metropolitan Network based on the re-utilisation of legacy equipment in order to enable the network operators to provide carrier-grade Ethernet with minimum investment.
- Advanced multimedia services that will use the solutions for the different network elements taking into account service attributes such as QoS, Performance, dynamic bandwidth provision, scalability and efficient transport.
- An integrated testbed to explore the areas and technologies covered in the project. This testbed will focus on near commercial solutions that allow network operators to verify and deploy new business solutions in real-life scenarios in shorter time.

Impact

BANITS will allow the reusability of existing telecommunication infrastructures and extend their profitability thanks to novel ways of exploiting them. A number of new technologies will find their way into this scenario to use this opportunity: novel xDSL technologies for spectrum management and to increase range and/or speed, native Ethernet transport over SDH, advanced multimedia services, etc.

Telecom manufacturers will find new opportunities that will extend their market presence through the findings of BANITS in such key areas as metro or access networks. They will have the opportunity to leverage BANITS findings and easily gain valuable knowledge to accelerate the market launch of their products.

BANITS will provide tools to network operators that will enable better and extended business models, ensuring an earlier return on their huge infrastructure investment (ROI). Despite the faster ROI, network operators will be able to offer their customers an extended and exciting portfolio of advanced services.

Finally, BANITS will allow end users a glimpse of the near future of telecoms services. Furthermore, users will benefit from a broader range of better and much more appealing services and applications. These new services are likely to be offered at very attractive prices due to the limited investment needed.

About CELTIC

CELTIC is a European research and development programme designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. CELTIC is the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

Timeframe: 5 years, from 2004 to 2008

Cluster budget: in the range of 1 billion euro, shared between governments and private participants

Participants: small, medium and large companies from the telecommunications industry, universities, research institutes, and local authorities from 33 countries

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