Project Information

CELTIC
Telecommunication Solutions

Broadcast for the 21st Century

The B21C project (Broadcast for the 21st Century) aims to constitute a task force, building on the works and reflections of the DVB Forum, with the goal to elaborate the technical propositions for the future of Digital Video Broadcasting (DVB).

Main focus

The future of broadcasting in Europe relies on a number of key standards produced by the DVB project. B21C aims at contributing to the work produced by DVB to elaborate, verify and disseminate these standards. B21C will constitute a task force which will focus on three main aspects of the past and future work on DVB:

- Completing the existing expertise related to the implementation of the DVB-H standard released in 2005, in order to optimize the deployment of the Mobile TV networks using this technology. A specific focus will be on indoor and outdoor pedestrian coverage.

- Contributing to the practical validation and optimization of the newly defined DVB-SH specification for a hybrid satellite and terrestrial Mobile TV transmission.

- Contributing to the study, simulation and design of the future DVB-T2 specifications for fixed and mobile reception of digital TV, providing enhanced services and capacities in comparison with the current DVB-T reference.

Approach

The project is organized as a set of task forces, each of them dealing with a specific aspect of the broadcasting air interface (e.g. coding, modulation, synchronization, etc.) or a specific phase of the development of a standard (e.g. design, simulation, prototyping, lab testing, field testing). These task forces will work for the 3 main systems (handheld, hybrid, fixed & mobile), providing resources as needed by the development stage of the system, and according to the relevant timeframe.

As a consequence, the overall work plan is a two-directional matrix with four main work packages and three activities, each of them having an identified leader.

The liaison between B21C and DVB will be of premium importance. Even if most of B21C partners are also DVB members, a direct liaison between the two projects will be established, allowing B21C as a whole to contribute to DVB's work.

Liaisons will be established also with other major collaborative projects dealing with the future of broadcasting, such as

B21C

Project ID: CP4-004
Start Date: 1 January 2007
Completion date: 31 December 2009

Partners:

Abertis Telecom-Retevision, Spain
Åbo Akademi University Turku, Finland
Agilent Technologies , Belgium
Alcatel-Lucent, France
British Broadcasting Corporation, UK
Dibcom, France
Digita, Finland
Elektrobit Corporation, Finland
France Telecom R&D, France
Fraunhofer (FhG), Germany
Hispasat, Spain
INSA / IETR, France
Mier Communications, Spain
Nokia, Finland
NXP Semiconductors, France
RAI (Radiotelevisione Italiana), Italy
Rohde&Schwarz, Germany
Robotiker Infotech, Spain
Sidsa, Spain
Sony Semiconductor & Electronics Solutions, UK
Space Hellas, Greece
Spectracom, France
TeamCast, France
TELECOM Bretagne, France
Technical University Braunschweig, Germany
TDF, France
Telefónica I+D, Spain
Teracom, Sweden
Thomson Grass Valley, France
Turku University of Applied Sciences, Finland
Tampere University of Technology, Finland
University of Bologna – ARCES, Italy
University of Surrey, UK
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www.celtic-initiative.org/projects/b21c

TVMSL, a French project developing the first hybrid networks in Europe, and FURIA, a Spanish project dealing also with the future mobile, hybrid, fixed and mobile systems.

Main results

Major results expected from B21C are:

♦ Validated channel model and optimum parameter settings for pedestrian indoor/outdoor reception of DVB-H services. Enhanced revision of the DVB-H implementation guidelines. Validated / improved transmission and reception equipment for DVB-H services.

♦ Contribution to the first version of the DVB-SH Implementation Guidelines. Validated / improved transmission and reception equipment for hybrid satellite/terrestrial DVB-SH services.

♦ Simulated and experienced wave forms for the future European DVB terrestrial transmission system (i.e. DVB-T2). Interoperability tests and performance measurements through laboratory tests and field trials. Key contributions

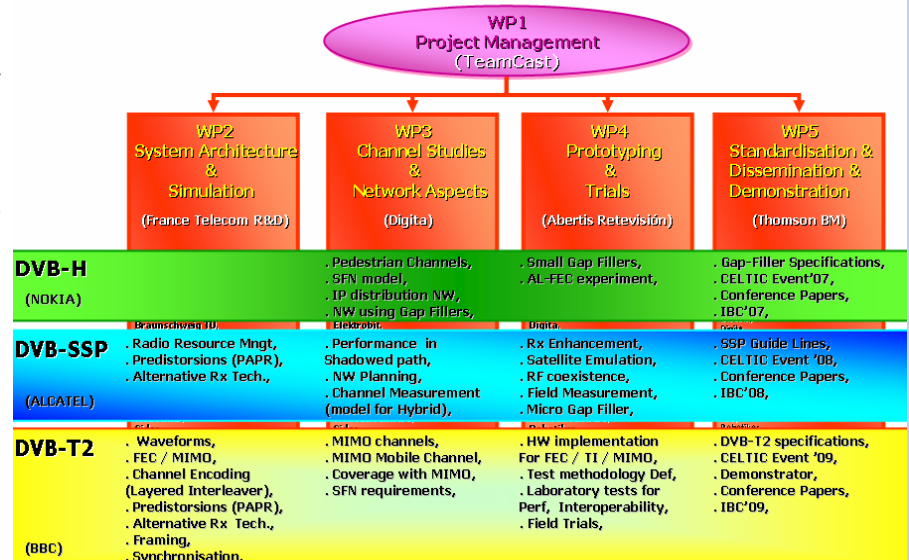to the DVB-T2 study group for preparing the specification.

Besides these system specific contributions, B21C will produce key results in more generic techniques, such as channel modelling, channel coding, system synchronisation, vertical handover, MIMO technologies, terminal integration, and IP-based distribution networks from studios to transmitters.

Impact

First, the B21C project will strongly

support the DVB standardisation work and will reinforce the impact the standards will have by enhancing them and strengthening their credibility. We expect a better penetration of these European standards worldwide through the technical consolidation and verification work and the promotional work done through publications, conferences and shows. By embedding state-of-the-art technology bricks into the new standards (i.e. DVB-T2), these new European standards will take again the lead against the international competition,

B21C at a glance

like DVB-T did eleven years ago.

Second, all partners will benefit from the intensive exchange of advanced information about state-of-the-art techniques for wireless broadcasting. Industrial companies from both the transmission equipment side and the consumer terminal side will have the opportunity to enhance existing products or to anticipate development of new ones. Operators will be able to better plan their network deployment.

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 currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

Timeframe: 8 years, from 2004 to 2011

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

Participants: small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

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