

## NETWORKED MEDIA

### RESEARCH ON DIGITAL TV AND RELATED APPS

Digital TV and radio are one of the major elements of innovation that enters directly into people's everyday lives, in terms of both their extraordinary penetration, and the developments offered by the advent of digital media. TV and radio are now making the transition from their traditional ether medium to the internet, the worldwide web, which offers new "hybrid" application scenarios where traditional audio and video contents can be enhanced with additional information, multimedia elements and multichannel access to other spheres of content.

These developments have fuelled research into broadcasting technologies – looking at the most efficient, effective and secure ways to broadcast – and applications, namely the channels that users employ to access increasingly rich, complex and convergent contents.

### A LONG-STANDING HISTORY OF RESEARCH

CSP has been involved in research into digital TV since 2004 when, with SUN Microsystems and Telecom Italia, it established DTTLab, the laboratory devoted to Digital Terrestrial TV, under the scientific direction of Turin University. After years of research into different areas, from broadcasting to applications, leading to the development of assets for sending email and consulting newspapers and RSS feeds on DTT, CSP supported Regione Piemonte in the switchover to Digital Terrestrial TV which began in September 2009. The progress of technology in this field has opened up new areas and led to the establishment of a new research project: DTVLab draws on the time-honoured work of CSP in the field of digital TV and focuses on the topical issues facing the sector: from stereoscopic TV to connected TV, applications for digital TV and augmented TV, as well as protocols and technologies for Digital Radio, DRM/DRM+ and DAB/DAB+.



## LA CONNECTED TV

The advent of television sets connected to the internet has led to the development of applications and services accessible via TV and remote control. With applications for everything from weather forecasts to finance and entertainment on demand, the television has become a channel for access to a world of contents and services, and an alternative way of accessing the web. CSP has developed a series of applications for accessing contents available on the net, including dedicated applications for accessing email services, reading newspapers online, checking the weather forecast or financial data, with the potential for interactive usage scenarios.

Work has focussed on the SmartTV platform produced by Samsung, the global manufacturer that has invested the most in this direction, developing a system based on standard programming languages like HTML, Javascript and Flash ActionScript.

CSP is part of the group of developers certified by Samsung to create new projects for the SmartTV platform.

## APPLICATIONS

**ConnectedContents:** is an application for Connected TV that visualises audio and video flows, such as images from webcams and on-demand content from the web, in live streaming mode. CSP's application enables users to access broadcasts from traditional TV channels, integrating common social network tools, enabling live viewing with a twitter channel or facebook.

With the use of a 3D TV, the application also visualises stereoscopic contents.

Two different apps have been developed in this framework, one for accessing contents of public interest published by Regione Piemonte, and the other in collaboration with the local broadcaster Quartarete, which made contents available for visualisation using Samsung SmartTV.

**ConnectedPress:** is an application that enables users to consult newspapers and magazines on a Connected TV platform. An interactive application, it enables users to browse the PDF of the newspaper in question and zoom on articles of interest. The XML description of the articles increases navigation usability and facilitates reading.

**ConnectedMail:** is an application based on the IMAP protocol that enables users to access their email accounts to send and receive emails on Connected TV. With the aim of maximising flexibility, ConnectedMail offers users a single interface to log-in to their email accounts, using their usual address. Based on a back-end Apache PHP server, the service accesses the user's account, gathers the data and formats it in XML, making it easier to process on the Connected TV platform.

