

Portable Content Format

Enabling Cross-Platform Authoring for Interactive Applications



What is DVB-PCF?

The DVB Portable Content Format is a standard means to describe an interactive digital television (iTV) service. It provides the industry with a platform-independent format for the business-to-business interchange of interactive content, and consequently a means to increase the interoperability of authoring tools, head-end systems and broadcast networks.

The PCF allows an interactive application to be authored independently of specific target platforms. This is achieved by capturing the intended viewer experience rather than how it shall be implemented, allowing the greatest possible portability. DVB-PCF (TS 102 523) was published in September 2006 by ETSI.

Background

One of the main benefits of moving from analogue to digital TV is the possibility of offering a range of interactive TV applications that can enhance the viewing experience, e.g. betting applications, information portals, voting, etc. DVB designed the MHP set of specifications (see separate Fact Sheet) to provide an open, interoperable platform for running such applications on DTV receivers. However, MHP is just one solution in the market alongside a range of other, mostly proprietary, solutions. With different television platforms using different technologies a large amount of interactive content has to be developed individually for each platform. This is time consuming and results in high production costs limiting interactive content to high-profile programming and revenue generating propositions.

It was against this background that the DVB Project embarked on a work item to create a format that increase service portability and therefore reduce production costs. The Portable Content Format achieves for interactive applications what Adobe's PDF (Portable Document Format) does for document sharing across different computers and software. The work on the DVB-PCF began in mid-2004.

How does it work?

The PCF embodies a high-level declarative model that is based on industry standard formats, including XML syntax, MIME types and UML (Unified Modelling Language). DVB-PCF is a platform-independent description of "what" the viewer experience should be, rather than "how" it should be achieved. This description must be transformed into a platform-specific format by a "transcoder" (see Figure 1). This transformation step uses the available features of a particular platform to create the viewer experience described in PCF. [continued overleaf]

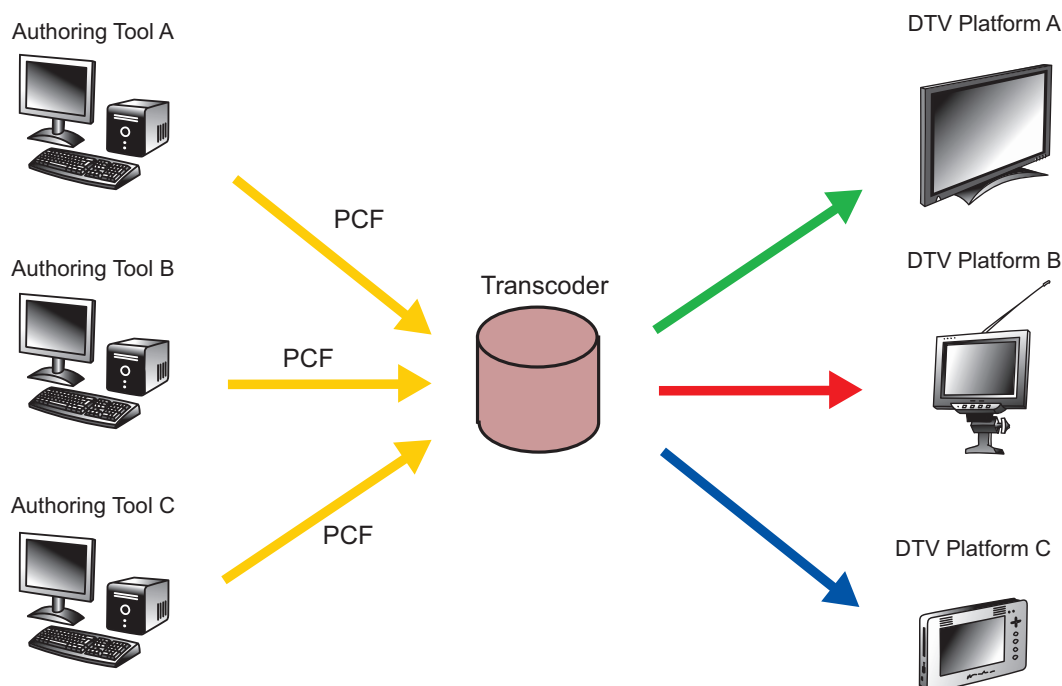


Figure 1. Applications described in PCF are transcoded for specific DTV platforms

The PCF supports independent descriptions of different aspects of the interactive service, i.e. content, presentation (layout and style), behaviour and navigation. Furthermore, the PCF does not require all aspects of a service to be described as one physical unit, such as a file. For example, service descriptions can be arbitrarily distributed across files located on the Internet, using references represented as Uniform Resource Identifiers (URIs). These structuring techniques allow the most appropriate party, whether a person or an organisation, to take their role in the creation and management of a part of an interactive service.

Market Deployment

DVB-PCF provides the industry with a tool to facilitate co-existence with, and migration to, MHP by enabling the exchange of interactive television service descriptions across multiple platforms. This also minimises the total end-to-end cost of deployment of interactive digital television services across multiple platforms, increasing the reach of an interactive digital television service authored to the format.

The BBC TV Platforms group has developed a DVB-PCF Transcoder that targets OpenTV, Liberate and MHEG and is in the process of gathering feedback for the DVB-PCF working group. DVB-PCF is not yet used in any production systems.

Next Steps for DVB-PCF

DVB-PCF was published in September 2006 by ETSI as TS 102 523. The working group is currently inactive.

Links

- bbc.co.uk/rd/pubs/whp – BBC R&D White Paper #134 explains DVB-PCF in more detail
- etsi.org – all DVB standards are available for download directly from the ETSI website
- dvb.org – the main website of the DVB Project