

Internet Protocol Datacast

Complete Specifications for the Delivery of Mobile TV Services



What is DVB-IPDC?

The set of DVB specifications for IP Datacasting can most simply be described as the essential components required to deploy a commercial mobile TV service based on Internet Protocol. DVB-IPDC is a set of systems layer specifications originally designed for use with the DVB-H physical layer, but that can ultimately be used as a higher layer for all DVB mobile TV systems, including DVB-SH, and indeed as a higher layer for any other IP capable system. In short, with regard to mobile TV, these specifications define *what* is delivered, *how* it is delivered, how it is *described*, and how it is *protected*. They cover system architecture, use cases, DVB PSI/SI signalling, electronic service guide (ESG), content delivery protocols (CDP), and service purchase and protection (SPP). The DVB-IPDC specifications have all been published as formal ETSI standards.

Background

Many commercial mobile TV networks are likely to be hybrid networks combining a uni-directional broadcast network, typically involving a wide transmission area and high data throughput, with a bi-directional mobile telecommunications network, involving much smaller transmission areas (cells). It's clear that a technology such as DVB-H is ideal for delivering broadcast digital TV to large numbers of receivers in an efficient and cost-effective way. However a viable mobile TV business also needs to make use of the excellent symmetrical bi-directional communication possibilities and the complex billing systems offered by mobile telecoms networks. DVB-IPDC is the glue that binds these two networks together so that they can co-operate effectively in offering a seamless service to the consumer.

The DVB-IPDC specifications were developed within the DVB Project's Technical Module by the TM-CBMS group – standing for the Convergence of Broadcast and Mobile Systems.

How does it work?

DVB-IPDC consists of a number of individual specifications that, taken together, form the overall system. The way the different elements fit together is defined in a reference Architecture of the IPDC system whilst a further specification sets out the various Use Cases that are allowed for within the system. In essence these use cases represent the range of difference business models that are possible and the requirements for each part of the chain to enable these business models. Figure 1 below illustrates where the various elements of DVB-IPDC fit into the protocol stack for a DVB-H mobile TV and datacast service. The key elements of DVB-IPDC are explained overleaf.

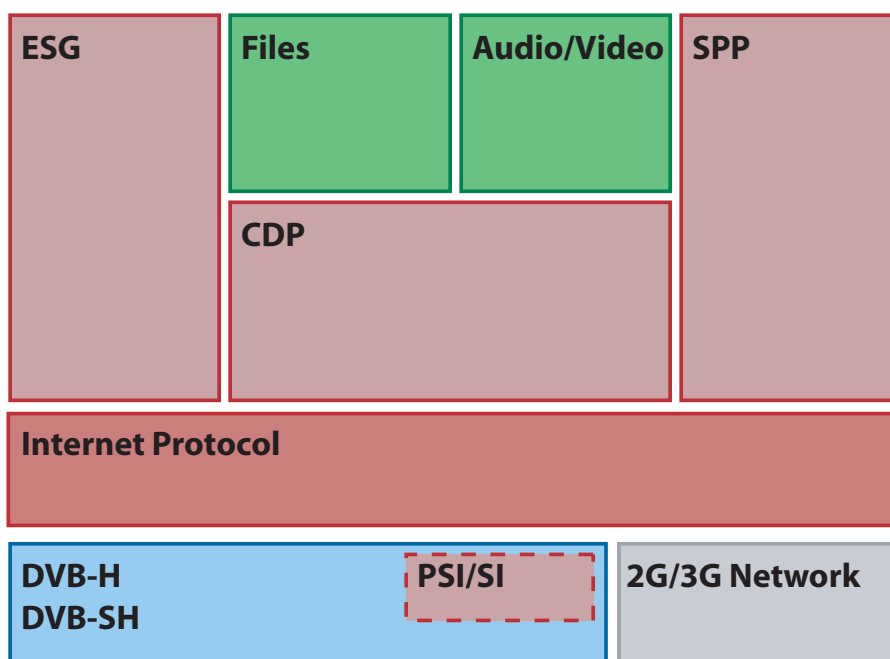


Figure 1. Simplified DVB-IPDC Protocol Stack

[continued: How does it work?]

ESG (Electronic Service Guide) TS 102 471 : defines the format, structure and transport of the ESG, which allows users to select the services they are interested in and to find stored content on the receiver.

CDP (Content Delivery Protocols) TS 102 472 : defines a set of protocols for streaming and file delivery services, which could be used, for example, to stream audio and video content, or to send offline content for storage on the device or to deliver software updates.

SPP (Service Purchase and Protection) TS 102 474: sets out the encryption mechanisms that can be used to protect content and the signalling that the receiver will use to identify whether and how services are protected, enabling a range of different subscription models. Two SPP profiles are specified in the document, one titled Open Security Framework, the other referred to as 18Crypt.

PSI/SI (Programme Specific Information/Service Information) TS 102 470 : ensures that the signalling used on IPDC DVB-H networks is coherent and interoperable to provide good support for mobility and roaming. It sets out the tables of PSI and DVB-SI data that an IPDC DVB-H receiver can expect to be available in a received DVB-H signal.

Market Deployment

DVB-H services are now on air in nine countries around the world with further service launches expected in 2008. Most of these services implement elements of the DVB-IPDC system, including the *Service Purchase and Protection* and *Electronic Service Guide* specifications. Valuable work on creating profiles for DVB-IPDC has been done by the bmcoForum. This, along with sets of implementation guidelines developed within the DVB Project, will greatly aid deployment going forward.

Next Steps for DVB-IPDC

Within the DVB Project the TM-CBMS (Convergence of Broadcast and Mobile Services) group continues to meet very regularly. Besides the implementation guidelines mentioned above, work is also continuing on a number of key elements of the next phase of DVB-IPDC. These would include elements such as the delivery of the ESG via a bi-directional network, active handover between cells, and aspects of notification for the entire system. October 2007 saw the publication of TS 102 611, "IP Datacast over DVB-H: Implementation Guidelines for Mobility".

Work is on-going to make the necessary additions and adaptations to the DVB-IPDC specifications to allow interfacing with the DVB-SH standard. Additionally, DVB continues efforts towards harmonisation with the OMA BCAST set of specifications. Specific elements have been identified on which work is in progress.

Links

- www.dvb-h.org – mobile TV website of the DVB Project; information about service launches and technical documentation
- www.etsi.org – all DVB standards are available for download directly from the ETSI website
- www.dvb.org – the main website of the DVB Project
- www.bmcoforum.org – an international organisation committed to fostering an open market for mobile TV
- www.openmobilealliance.org – the organisation developing the OMA BCAST specifications