

Unified Architecture for DVB-H Electronic Service Guide

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BACKGROUND

Presently, there are three main ESG systems used in DVB-H (DVB, 2004) systems :

1. CBMS (DVB, 2006), promoted by the digital video broadcasting project (DVB).
2. OAI (NOKIA, 2006), promoted by NOKIA.
3. OMA (OMA, 2006), still in draft version, promoted by the open mobile alliance.

All of them have a lot of similarities and are based on same concepts and technologies. Some of these similarities are:

- The use of XML (W3C, 1998) to describe fragments.
- The use of FLUTE (Paila, Luby, Lehtonen, Roca, & Walsh, 2004) as transport protocol.
- A similar data model.
- All of them can split the broadcast contents in several sessions.

COMMON CONCEPTS

All actual ESG systems work at IP level, hiding other layers such as MPEG2-TS (ISO/IEC, 1994), PIDs. Also, all of them use FLUTE/ALC as transport protocol and allow the splitting of the broadcast in several sessions (each session is broadcasted over a different IP/port and has its own bitrate).

Another similarity at protocol level is the way of referencing media. When media is referenced, it is done

by means of a session description protocol (SDP) file (Handley & Jacobson, 1998).

All ESGs systems has a global entry point called bootstrap. The bootstrap is broadcasted in a well-known IP address and port. The bootstrap carries with information about the providers present on the network and where their ESGs are being broadcasted. When a terminal switches on, it must receive the bootstrap and look inside for a valid provider checking the providers list. After that , the terminal reads the multicast address where the ESG is being broadcasted and start retrieving the service guide information.

Data models have also a lot of similarities, covering three main domain concepts: provisioning, core, and access. Each concept is represented using different fragment types:

- **Core:** Service, schedule, content
- **Access:** Access and session description
- **Provisioning:** Purchase item, data, and channel

Fragment semantics are¹:

- **Service:** The Service fragment describes at an aggregate level the content items which comprise a broadcast service. The service may be delivered to the user using multiple means of access. As the part of the service guide, the service fragment forms a central hub referenced by access, schedule, content, and purchase Item fragments.
- **Schedule:** The schedule fragment defines the timeframes in which associated content items are available for streaming, downloading, or render-

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