



Azure DVB-H Overview

- Expected uses
 - Playback of video clips such as news items, sport highlights.
 - Playback of music videos.
 - Reception of live TV / Radio.
 - Interactive content.
 - Advertising.
 - Electronic Program Guides
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- Based on the Digital Video Broadcasting Terrestrial (DVB-T) standard.
 - Uses traditional DVB transport stream standards to receive MPEG Audio, MPEG Video and Data streams.
 - Specification contains extensions to carry any data type via Internet Protocol Data Casting (IPDC).
- Developed to support low power, hand held, devices.
 - Custom designed hardware provides a time slicing approach to improve battery performance
 - Enhanced Forward Error Correction (FEC) to help reception issues for devices with built in antennae.
- Combines Terrestrial reception with GSM.
 - Receives data via DVB transport stream but can use GSM as the return path.

Key Issues.

- Digital Rights Management (DRM)
 - Use of traditional DVB Conditional Access; provision of descrambling keys provided in the transport stream
 - Use of the hand held device MAC address.
 - Windows Media DRM
 - Open Mobile Alliance (OMA), use of separate Rights Objects that enable access to encrypted data

- Use of embedded security circuitry within the hand held device micro processor.
- Reception and Management of Data
 - Streamed data contained within DVB transport stream.
 - DVB Service Information (SI) points to data location within transport stream.
 - IPDC Data is located within DVB-H Multi Protocol Encapsulation (MPE) carousel.
 - IPDC packets are extracted and placed into a streaming buffer.
 - Data is then played out from buffer as new content is received (buffer must allow for time slicing of information).

Ocean Blue Sunrise Software is:

- Ocean Blue's Azure DVB-H development is based on our mature DVB-T and S software stack
 - This DVB software has been deployed in UK, Holland, Finland, France, Spain and Germany.
- Designed to be expandable and portable
 - Supports Free To Air (FTA) model, can be expanded to support MHEG-5 / DSM-CC, DRM systems, Conditional Access, Common Interface. DVB-H is the next logical extension.
 - Hardware independent via hardware adaptation porting layer
 - User Interface independent via application porting layer.
 - Developed in ANSI C
 - Basic FTA requires 4MB RAM (assuming no video / audio memory required) and 1MB flash
- Current Software developments for DVB-H include:
 - Expand Service Information handling to extract the IP/MAC Notification Table.
 - Manage the caching and access of MPE data modules.
 - Incorporate relevant DRM (if applied at the DVB level).
 - Hardware driver support to DVB-H Front End / GSM return path
 - Application development to produce simple User Interface based on look and feel of the hand held device.
 - Optimisation of software code to a hardware platform, to produce fast speed performance and a better user experience.

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