



MHEG-5 Browsers and Interactive Engines



Line of Product Description

V1.0
June 2011

What is MHEG-5?

- **MHEG-5 is an open standard for the delivery and display of interactive TV services**
- **MHEG-5 is based on the ISO/IEC 13522-5 international standard with extensions to cover delivery via broadcast medium using a DSM-CC object carousel**
- **From Freeview launch, all digital television receivers in the UK must conform to the MHEG-5 (V1.05 then V1.06) profile designed by DTG**
- **A conformance regime has been set up that guarantees the interoperability between applications and receivers**
- **MHEG-5 2.0 (High Definition + Interaction Channel) specification has been introduced in D-Book V6.0 early 2009 to be used within Freeview and Freesat HD networks**
- **MHEG-5 has also been chosen by CI Plus as its browsing technology (MHEG-5 apps are stored within the CICAM)**
 - **CI Plus 1.2 selected a subset of MHEG-5 1.06 (SD)**
 - **And CI Plus 1.3 a subset of MHEG-5 2.0 (HD)**

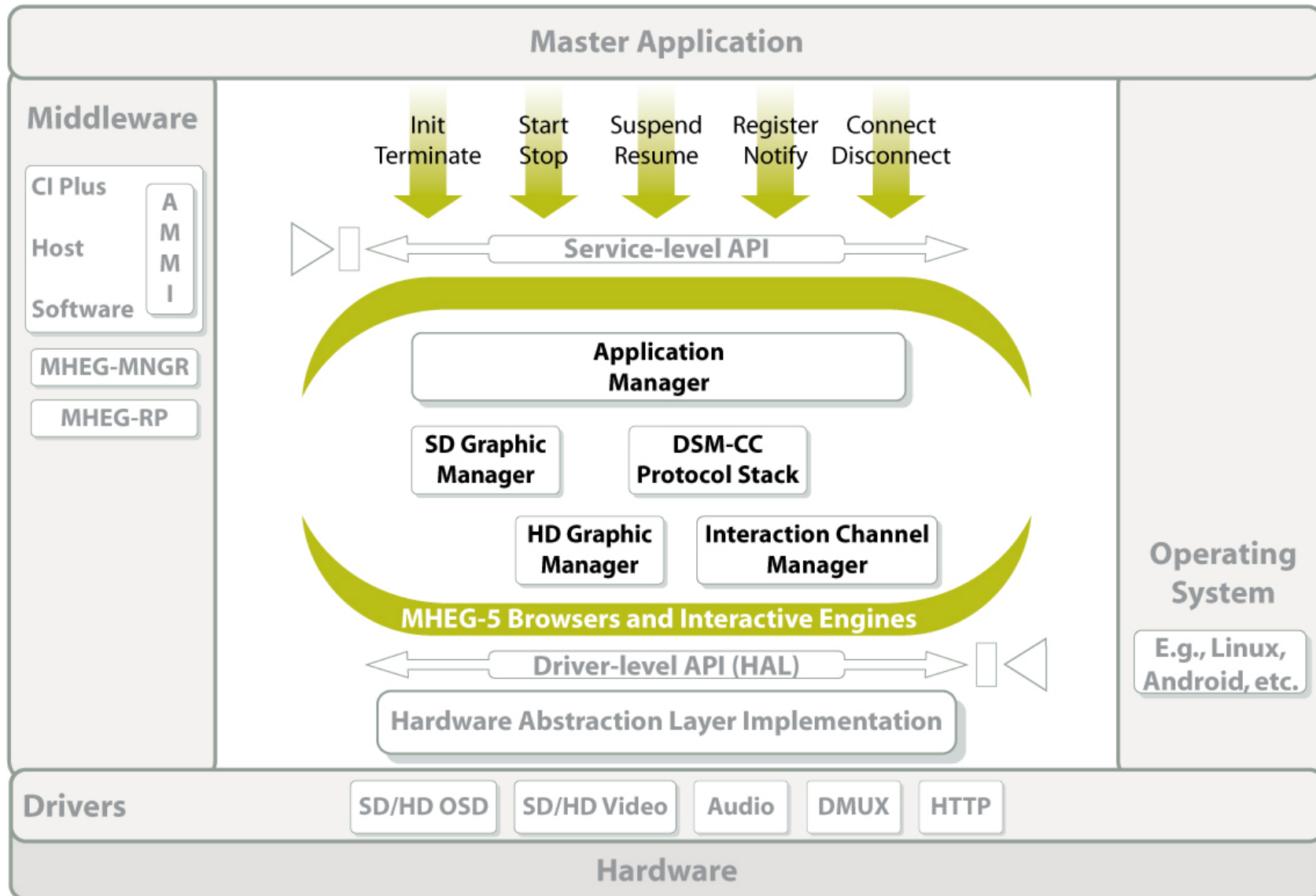
What is an MHEG-5 Interactive Engine?

What is an MHEG-5 Browser?



- **An MHEG-5 interactive engine is responsible for:**
 - Handling DVB signaling with respect to MHEG-5 apps
 - Downloading an MHEG-5 app and acquiring DSM-CC stream events from DSM-CC carousels
- **An MHEG-5 browser is responsible for:**
 - Handling the dialog with the CICAM with respect to MHEG-5 apps
 - Acquiring an MHEG-5 app stored within the CICAM
- **Both are responsible for:**
 - Managing the MHEG-5 app life cycle
 - Decoding the MHEG-5 app from a binary (ASN.1) representation to an internal representation
 - Interpreting and executing the ingredients of the MHEG-5 app
 - Rendering the MHEG-5 app: text and graphics presentation, audio and video control, video window control, management of user inputs
 - Accessing the resident programs of the platform on behalf of the MHEG-5 app, e.g. to get information on current service
- **An MHEG-5 engine/browser is compliant with the relevant parts of DTG D-Book**
- **An MHEG-5 engine/browser is a stand alone software component that aims at being integrated within the middleware and the master application of the target device**
- **An MHEG-5 engine/browser is independent from the underlying platform as it relies on an Hardware Abstraction Layer (HAL)**
- **An MHEG-5 engine/browser is composed of:**
 - An MHEG application manager
 - An MHEG SD graphic manager
 - (For an engine) a DSM-CC protocol stack
 - An MHEG HD graphic manager
 - An MHEG interaction channel manager

MHEG-5 Browsers and Interactive Engines Architecture Overview



- **Services provided to the master application**
 - Init
 - Terminate
 - Start
 - Stop
 - Suspend
 - Resume
 - Connect
 - Disconnect
 - Register
 - Notify

- **Services expected from the middleware**
 - User input management
 - Section filtering
 - A/V management
 - Graphics management
 - Service information retrieval
 - DVB Subtitle management
 - Interaction Channel management

- **Hardware Abstraction Layer (driver-level API) relies on**
 - SD/HD OSD
 - SD/HD video
 - Audio
 - Demux
 - HTTP

- **The MHEG-related line of product is composed of:**
 - **A CI Plus Browser V1.2**
 - Compliant with CI Plus Specification V1.2
 - **A CI Plus Browser V1.3**
 - Compliant with CI Plus Specification V1.3
 - **A MHEG-5 1.06 Broadcast Interactive Engine**
 - Compliant with DTG D-Book 5.0 – “Digital Terrestrial Television; Requirements for Interoperability; Issue 5.0”
 - **A MHEG-5 2.0 Broadcast and Broadband Interactive Engine**
 - Compliant with DTG D-Book 6.1 – “Digital Terrestrial Television; Requirements for Interoperability; Issue 6.2.1”
- **Products are accompanied with APIs documentations, integration guidelines, and test and validation applications**

- **Phase #1: porting of MHEG-5 engine/browser on top of target platform**
- **Phase #2: standalone validation of MHEG-5 engine/browser**
- **Phase #3: integration with master application**
- **Phase #4: validation using**
 - **Relevant parts of the official DTG MHEG-5 test suite**
 - **Real applications**
- **Phase #5: certification**
 - **Go through the relevant MHEG-5 certification process (CI Plus and/or DTG)**

- **Delivering a training and getting started session to Customer team**
- **Handling the integration of the MHEG-5 components on Customer platform in the course of a fixed price program to be quoted**
- **Providing technical support to Customer during its MHEG-5 integration project on a time and material basis**
- **Handling at iWedia's labs the CI Plus and or DTG pre certification of Customer device, in the course of a fixed price program to be quoted**
- **Providing technical support to Customer during its MHEG-5 certification process on a time and material basis**

- **Reducing risks by leveraging state of the art MHEG-5 software components which are robust, reliable, deployed, and certified**
- **Accelerating time-to-market by integrating MHEG-5 software component with efficient porting, integration, and validation tools and processes**
- **Preparing for the future by relying on the MHEG-5 offering of a software publisher committed to ensuring its solutions remain compliant with changes to the relevant standards and to guaranteeing interoperability with the various (existing and to be released) MHEG-5 applications**
- **Minimising the learning curve by sharing iWedia expertise in the field of MHEG-5**
- **Managing the integration project thanks to access to “à la carte” iWedia professional services**



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