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DVB-MHP and OCAP

2003-10-15

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Contents

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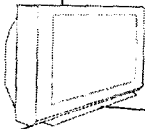
→ **Status of Standard Specifications**
  - MHP 1.0
  - MHP 1.1
  - OCAP 1.0
  - OCAP 2.0

→ **OCAP 1.0 Differences from MHP 1.0**

2

Status of DVB-MHP 1.0.x Specification

→ **Defines two profiles:**
  – Enhanced Broadcast Profile1 – one-way i-TV service
  – Interactive Broadcast Profile1 – two-way i-TV service
→ **Version 1.0.2**
  – The latest released version of MHP 1.0.x
  – Conformance Test Suite has been made based on MHP 1.0.2
→ **Version 1.0.3**
  – The draft version was released at July 2003
  – No big changes from MHP 1.0.2

3

Status of DVB-MHP 1.1.x Specification

→ **Defines three profiles:**
  – Enhanced Broadcast Profile2
  – Interactive Broadcast Profile2
  – Internet Access Profile2
→ **Backward Compatibility to 1.0.x is guaranteed.**
→ **Version 1.1**
  – Released at Nov 2001
  – Major New Features:
    • Stored Application Support, App Download via RC, Non-CA
      SmartCard Access, DVB-HTML(optional)
→ **Version 1.1.1**
  – Released at June 2003
→ **No Test Suite, No Plan yet.**

4

Status of OCAP 1.0 Specification

→ **For OpenCable Host Device**

→ **Based on MHP 1.0.2**

→ **90% APIs are shared with MHP 1.0.2**

→ **Major Differences from MHP 1.0.2**
  - Monitor App, Unbound App, POD, In-band PSIP, OOB SI

→ **Issued Version**
  - Last updated at 2003-08-08
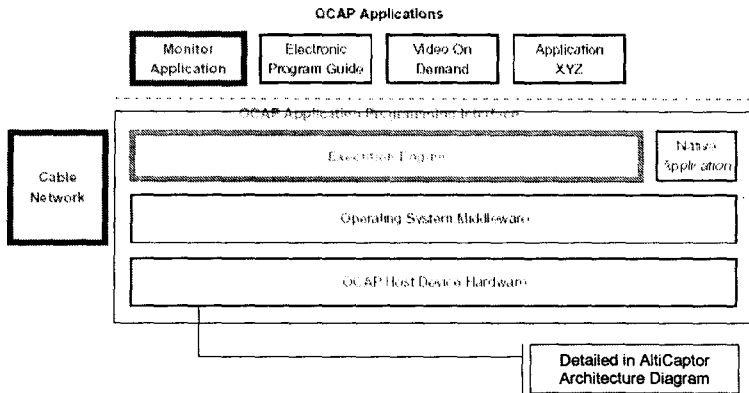 - Still is changing

→ **No Test Suite yet**

5
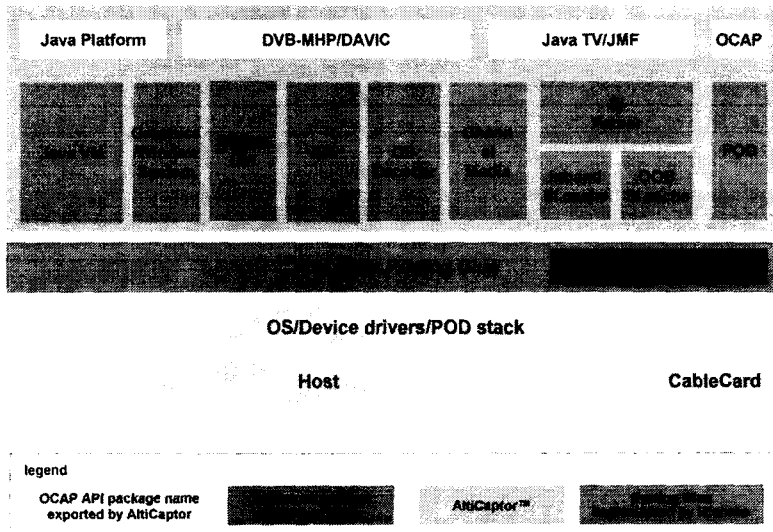

Status of OCAP 2.0 Specification

→ **For OpenCable Advanced Host Device**

→ **Based on MHP 1.1**

→ **Issued Version**
  - Last updated at 2002-4-19
  - No maintenance yet

→ **No Test Suite yet**

→ **Possibly will be merged into DCAP (DASE-OCAP harmonization)**

6

OCAP 1.0 Software Architecture

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OCAP Applications

| Monitor Application | Electronic Program Guide | Video On Demand | Application XYZ |

Cable Network

OCAP Application Programming Interface

Execution Engine

Native Application

Operating System Middleware

OCAP Host Device Hardware

Detailed in AltiCaptor Architecture Diagram

7

AltiCaptor™ OCAP Architecture

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| Java Platform | DVB-MHP/DAVIC | Java TV/JMF | OCAP |

OS/Device drivers/POD stack

Host   CableCard

legend

OCAP API package name
exported by AltiCaptor   AltiCaptor™

8

OCAP에 추가되는 API

→ 기존 **MHP 1.0.2 API**에 추가로 구현해야 하는 **OCAP API**

→ **org.ocap.OcapSystem.***
→ **org.ocap.application.***
→ **org.ocap.event.***
→ **org.ocap.hardware.***
→ **org.ocap.media.***
→ **org.ocap.mpeg.***
→ **org.ocap.net.OCRCInterface**
→ **org.ocap.registry.***
→ **org.ocap.resource.***
→ **org.ocap.service.***
→ **org.ocap.system.***
→ **org.ocap.ui.event.***

9

OCAP에서 사용하지 않는 API

→ 기존 **MHP 1.0.2 API**에서 제거해야 하는 **API**

→ **org.davic.net.ca**
→ **org.davic.net.tuning**
→ **org.dvb.net.tuning**
→ **org.dvb.si**

10

Transport Protocol   Content Format   **alticast**

→ **CA**
- descrambling 요청을 application이 하지 않음
- CableCard가 transarent하게 처리

→ **SI**
- Without CableCard, Inband PSIP
- With CableCard, OOB SI

→ **Network dependent protocol for CATV**

→ **VBI**

→ **Interaction Channel : HDNI, CableCard**

→ **AudioClip**
- MPEG1 audio layer 3 added

→ **ClosedCaption**
- controlled by JMF(javax.tv.media.protocol. PushSourceStream2)

→ **I frame**
- MPEG-1 Iframe added (decoded by HW decoder)

→ **640x480 square pixel OSD**

11

Application Model   **alticast**

→ **Bound application**
- broadcast MHP application

→ **Unbound application**
- Application signalled through XAIT
- Application registered throgh Monitor Application

→ **Native application**
- device manufacturer application

→ **Abstract Service**
- Dynmically defined by Unbound applications
- Statically defined by resident applications

→ **Application Priory**
- Monitor app
- Unbound app
- Bound app

→ **Service Context**
- A service context for each concurrent broadcast service
- A service context for each abstract service
- Context created by app

12

Application Signalling   Application Storage

→ **AIT Syntax**
  - Only application type 0x0001(OCAP-J) is valid
→ **OOB**
  - XAIT files + XAIT descriptor in S/L-VCT
→ **AppDB**
  - bound apps + abstract service apps

→ **Terminal manufacturer app**
  - not removed
→ **MSO app in XAIT**
  - install, remove and update
  - controlled by AppVersion, storage_priority in XAIT
→ **MSO app registered by MonitorApp**
  - install, remove
  - AppManagerProxy API with storage_priority
→ **Authentication at every launching time**

13

OCAP에 추가 구현되는 시스템 소프트웨어

→ 이상의 추가되는 **API**의 구현과 **OCAP**에서만 요구하는 기능을 위하여 다음과 같은 시스템 소프트웨어 모듈이 추가 개발되어야 한다.

→ **In-band PSIP 및 OOB SI** 처리 모듈
→ **Unbound Application** 시그널링 처리를 위한 **XAIT** 처리 모듈
→ **Unbound Application Lifecycle** 관리를 위한 **Application Manager** 모듈 확장
→ **POD, OOB RC, DOCSIS RC** 등을 위한 **Hardware** 인터페이스 모듈
→ **Closed-Caption Decoder**를 위한 인터페이스 모듈

14

Thank you

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Interact with the Future