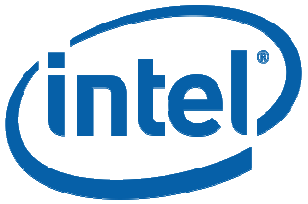

Digital Signage Open Pluggable Specification (OPS) Introduction and Update

Jeff Chang
Product and Marketing Manager
APAC Embedded Sales Group (ESG)
Dec., 2011

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Agenda

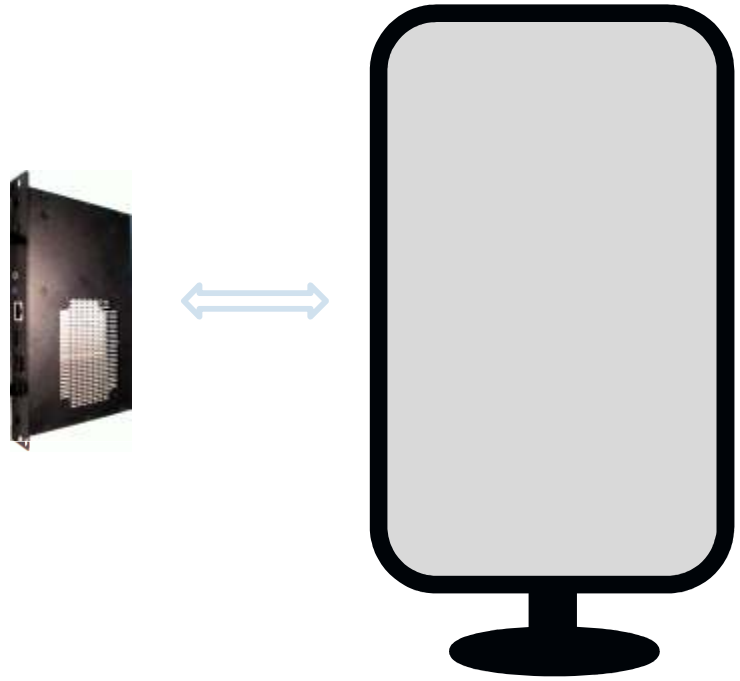
- Digital Signage Open Pluggable Specification (OPS) Introduction

- Digital Signage Open Pluggable Specification (OPS) Update

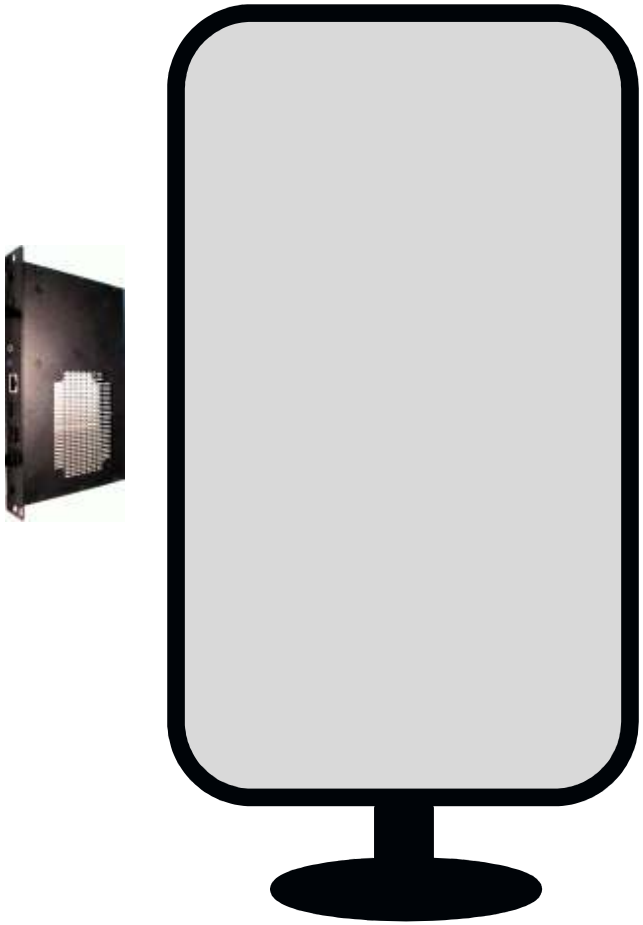
What is OPS?

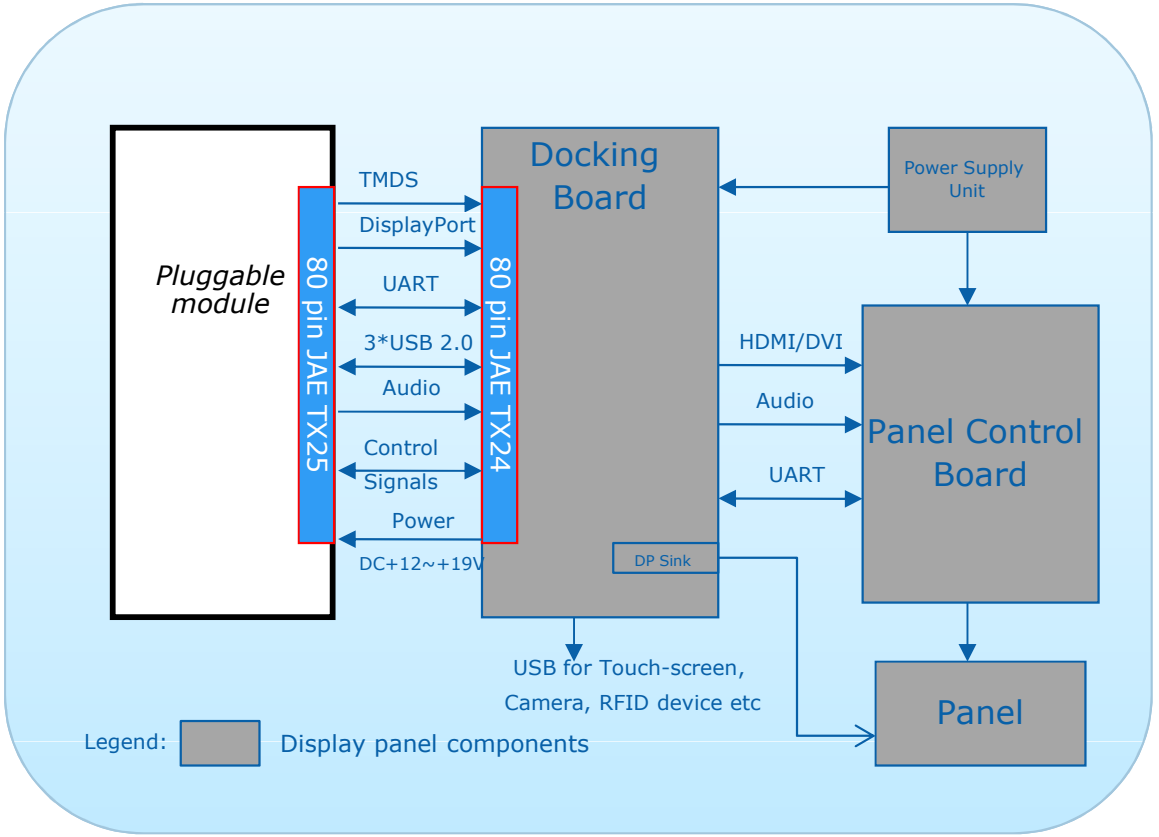
Open Pluggable Specification :–

An integrated modular DS media player solution that interconnects with the display panel via a standard mating internal connector interface



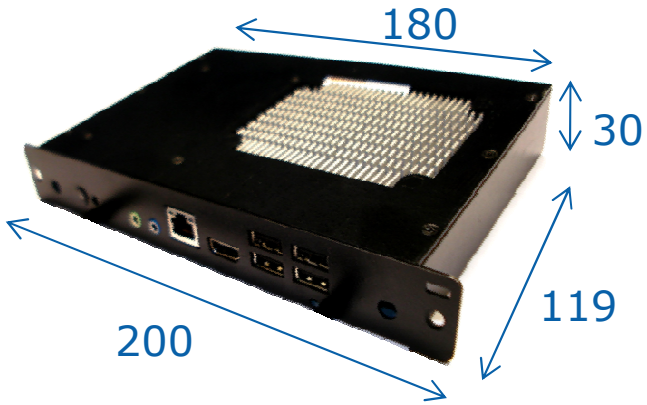
Functional Block Diagram





Pluggable Module Prototype

Compact dimension (mm):



1st Fan-less solution for up to Intel® Core™ i7 LV Processor (25W)

Intel® Active Management Technology (AMT6.0) enabled for OOB remote manageability

Interconnect Features

1. JAE TX25 Plug & TX24 Receptacle Connectors

- Blind-mate type - higher tolerance on mating misalignment
- 80 pin circuits – 40 top and 40 bottom contacts
- 500 Insertion Lifecycle

2. Supported Interfaces

- Power
- HDMI/DVI and DisplayPort
- Audio
- USB2.0/3.0
- UART
- OPS Control Signals

OPS Technologies
Value Added Made Easy

1. OOB Remote Manageability with AMT – scheduled on/off (power saving), remote update/maintenance (no onsite visit needed by technician) 2. Efficient System Management control - OPS Module Detect, OPS signal ON, System Fan Control	 Lower Total Cost of Ownership
1. HW KVM with AMT6.0 for Proof of Play 2. HDMI CEC for Proof of Display (WIP) 3. Intel AIM (Anonymous Impression Metric) Suite for Proof of Impression - allows use of integrated image sensor & performance with Intel® Core™ processors	 Increased Return of Investment

Improved OPEX with OPS

OPEX IMPACT

Installation & Usage
- **Higher Implementation Cost**

Upgradability
- **Difficult to Upgrade**

Reliability
- **Connection & Wiring Reliability**

Serviceability
- **Hard to Access & Maintenance**

OPS SOLUTION

Simplify Installation
- Less cabling
- Space saving
- Consolidated H/W, Image Sensor, NFC, Touch etc

Seamless Upgradability
- Modularity and Scalability
- Interchangeable

Improved Reliability
- Less cabling with JAE Connector
- Reduced liability - Less tangible components e.g Power Supply

Improved Serviceability
- Active management capability
- Easy swap OPS modules
- HW KVM for POP and HDMI CEC for POD

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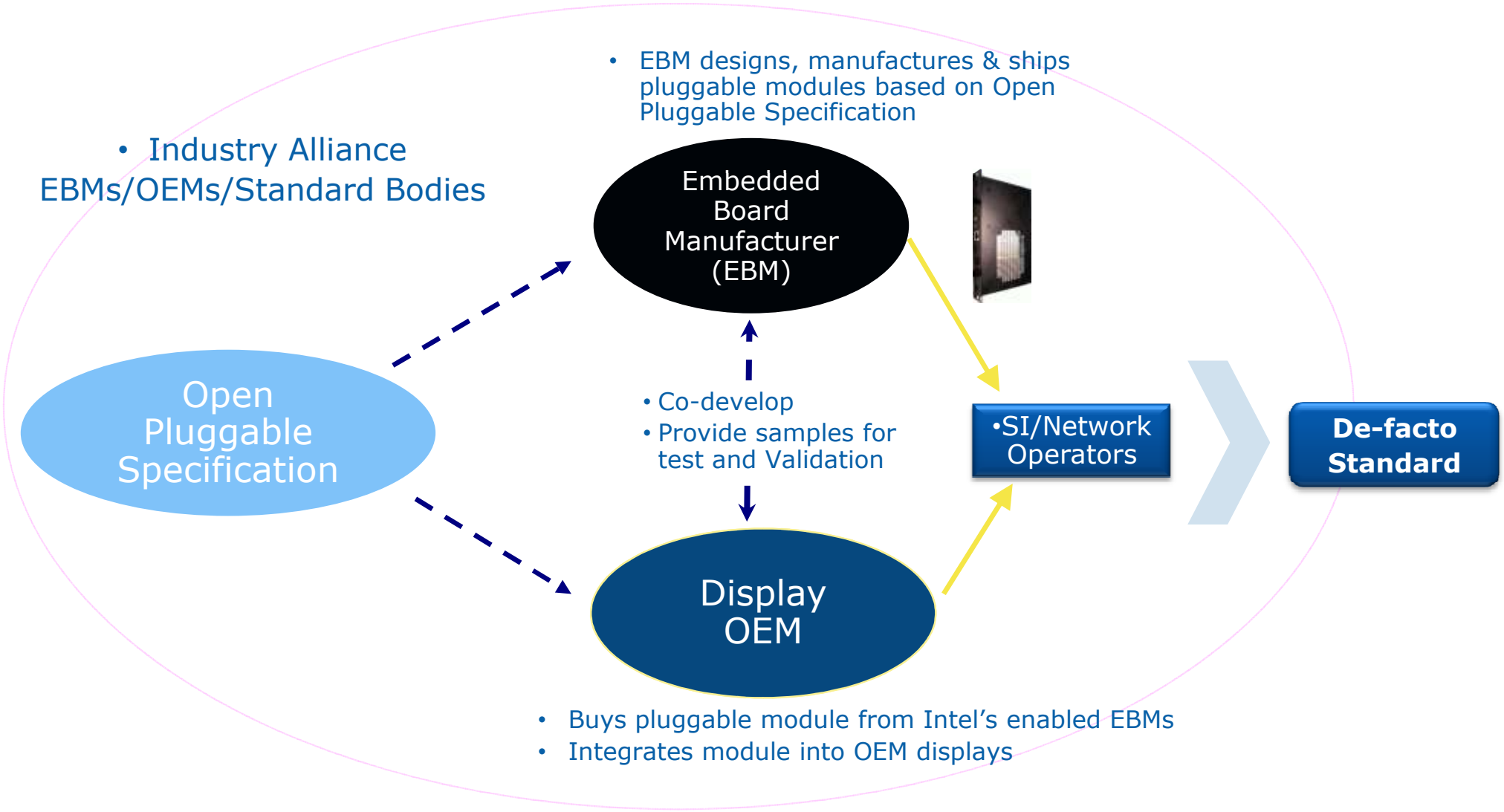
OPS Business Model



OPS Standardization Benefits

DS DISPLAY OEM:

- Faster TTM on new DS player adoption/migration
- Better product scalability and offering
- Easier & faster distribution for the market

EBM & IA ODM:

- Increase high volume business opportunities
- Driving standard reference design for pluggable module – high volume ➔ lower costs

ECOSYSTEM & DS ADOPTERS:

- Increased reliability between DS Player & display
- Space saving + easier deployment
- Modularity and scalability
- Improved maintenance process

OPS Plug Fest Update

- **Objective:**
  - Ensure OPS modules produced by ODMs/OEMs can work seamlessly with OPS displays for OPS broad market engagement
- **Date: Jan 9th -10th, 2012 (two-day event)**
- **Time: 9:30AM – 16:30PM**
- **Venue: Regent Hotel, Taipei**
- **Participants as of Dec. 1, 2011**
  - 6 OPS module manufactures
  - 8 OPS display manufactures

To download the spec and for more information on OPS go to:

http://edc.intel.com/Applications/Digital-Signage/OPS/

Questions on OPS?
Send to OPS_Support@intel.com

Thank You

DS OPEX - What are common challenges

Fragmentation H/W Solution

DVD Player

PC

Media Player

Challenges

- Extra cabling
- Space consuming
- Compromised Reliability
- Extra Logistics
- Fragmented

OPEX Impact

1. **Installation & Usage**
   - **Higher Implementation Cost**
2. **Upgradability**
   - **Difficult to Upgrade**
3. **Reliability**
   - **Connection & Wiring Reliability**
4. **Serviceability**
   - **Hard to Access & Maintenance**

Save Operating Expenditure (OPEX) with Digital Signage Open Pluggable Specification (OPS)