Introduction to Tizen TV SDK

Jiang Haichao
Samsung Electronics
Tizen TV Profile

Mobile profile

IVI profile

TV profile

Clamshell profile

Camera profile

Tizen Common
# Tizen App Category

<table>
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<th>Web Framework based Application</th>
<th>EFL Framework based Application</th>
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<td>- TV Subsystem</td>
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<td>- Sports</td>
<td>- MultiScreen</td>
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<td>- Educational</td>
<td>- Many More…</td>
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<td>- Many More…</td>
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## Diagram

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<th>Web Apps</th>
<th>Device specific Native Apps</th>
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<td>common Standard Module</td>
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<td>Applications</td>
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<td>Linux Kernel</td>
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**Device Specific Ext. Extension**

- DTV Extension
Tizen TV SDK Evolution

SDK is very important for Open P/F / Ecosystem Success

Integrated with Tizen SDK soon - Single SDK installation

TV SDK 1.0b
1st IDE
Web Simulator, Web Inspector

TV SDK 1.0
Tizen Web Device API
Web Standard API
Caph 2.0

TV SDK 1.2
1st Emulator
Tizen Product APIs
Caph 2.2.1

TV SDK 1.4
Multi Resolution
TV Emulator

TV SDK 1.5
Multi Screen 2.0
‘15 Smart Controller
Mac OS TV Emulator

TV SDK 2.X
Integrated with Tizen SDK soon
- Single SDK installation

July   Aug   Sep   Oct   Nov   Dec   Jan   Feb   Mar   Apr   May   Jun
2014

July   Aug   Sep
2015
Tizen TV Profile SDK

API of Tizen TV SDK

Tizen TV Tools Suite
Web Functions Supporting

Public SDK
Tools for HTML/CSS/JS web applications.

HTML5 and Standard APIs

Tizen TV Development APIs

- HTML5 based development environment
- Adaptable in cross-platform environment

Web Device APIs
TV Product APIs
MultiScreen
CAPH

HTML5
CSS
JS
Web GL

W3C
TV Functions Supporting

Public SDK
Tools for HTML/CSS/JS web applications.

- Device's capabilities access
- TV-specific feature & control
- Cross device convergence
- High Performance Accelerated APIs

HTML5 and Standard APIs

Tizen TV Development APIs

Web Device APIs
TV Product APIs
MultiScreen
CAPH

HTML5
CSS
JS
Web GL

W3C
App Scenarios

Web Device API + TV Product API

MultiScreen

Caph

Audio Control

AVPlay

Video on Demand

DRM

Input Devices
App Scenarios

Web Device API + TV Product API

MultiScreen

Caph

File System

Information Apps

Alarms

Smart Controller

DRM
App Scenarios

Web Device API + TV Product API

MultiScreen

Caph

Provider

Device Discovery

Convergence Apps

Network

ASF Service
MultiScreen - Over View

- Extend mobile apps to the Big Screen
- Separate views connected and running on different devices (Two Apps)
  - TV view enjoyed by an audience
  - Mobile view for privacy & SmartTV control.
- Devices (and the TV) are connected and can communicate.
MultiScreen - Work Flow

Discover
Discover Smart TVs on your network from mobile app

Launch
Launch TV apps from your mobile app

Communicate
Send/Receive messages to/from any number of mobile devices
MultiScreen - App Scenarios

App Casting
- Installed TV apps & Cloud TV apps

Media Casting
- Photos, Videos & Music

Shared Experience
- Multi Device, Multi User
Caph – Over View

- Web Application framework
- Higher performance
- Easily Extendable & Customizable
- Fast & Easy prototyping
Caph – Framework

**caph.base**
- Access and animate DOM
- Define your class to support OOP
- Performance oriented jQuery-style API
- Transform and timeline animations

**caph.ui**
- Accelerated UI component
- Customizable APIs
- Supports various types of layouts
- Accessible Rich Internet Applications

**caph.theme**
- Pre-defined UI components
- Define your own theme
Tizen TV Tools Suite

Tizen TV Development API

Tizen TV Profile SDK
Tools Suit

Public SDK
Tools for HTML/CSS/JS web applications.

Tizen TV Tools Suite

TV Emulator
Web Simulator
Editor
Analyzer Tool
Tools Convergence

Native/Web App IDE
- Project Explorer
- Connect Explorer
- Editors: C/C++, HTML/Javascript/CSS
- Outline
- Preview
- Console

Launch directly

Launch Emulator Manager

Emulator Manager
- Configure VM
- Launch
- Generate events
- Monitor status

Emulator Control Panel
- Control emulator

Web Simulator

Emulator

Real TV

Dynamic Analyzer

Analyze platform/app
Web Simulator

- Light weight debug environment
- Useful in quick Development of UI based Apps
- Supports Debugger (Web Inspector)
- Supports Mouse, keyboard and Remote Control
TV Emulator

- Provides Tizen TV emulation
- Debug Apps with TV Product & Device APIs
- Supports Debugger (Web Inspector)
- Emulate HW by setting HW / SW specs
Code Editor: Project Creation

- Project Selection
- Template Interface

Variety of templates
Sample Applications
Templates and Sample for Caph Apps
Editor: Project Creation

Project Explorer

Editor

Outline

Connection Explorer

Problems
Analyze Tool - Web Inspector

- Elements
- Network
- Source
- Console

- Inspect DOM Elements
- Network profiling
- Java Script Debugger
- Diagnostic Logs
Analyze Tool - Web Inspector Elements

- DOM Tree View
- Style Pane
- Event Listener
- Metrics

Editing DOM nodes as HTML
Editing CSS & Listener attributes
Analyze Tool - Web Inspector Console

- Message Stacking
- Console API for Errors, Warnings and Logs
- Frame Selection to operate within different frames
- Command Line interaction with DOM
Analyze Tool – Dynamic Analyze CPU

1. CPU charge graph
   * blue: whole CPU
   * green: selected process
   * shade: selected duration (time based)

2. Call Trace

3. Function Profiling
   * find function to use CPU much
   * find function to spend much time

* Platform SDK only
Analyze Tool – Dynamic Analyze Memory

1. CPU graph
   * light blue: total heap used
   * deep blue: used heap for selected process

2. Candidates function
   * function not to call free yet

* Platform SDK only
Thank You!
Appendix - Developer Resources

Information
- TV SDK Detailed Information
- SDK Download
- Documentation
- API Reference
- Samples
- Distribution Guide
- UX Guidelines

www.samsungdforum.com