

# Web on TV : Issues on the Device API and User Interface

Jinhong Yang , Hyojin Park and Junkyun Choi†

Electrical Engineering Dept., Korea Advanced Institute of Science and Technology

103-6 Munji-Dong, Yuseong-Gu, Daejeon 305-714, Korea

{sunupnet, gaiaphj}@kaist.ac.kr and jkchoi@ee.kaist.ac.kr†

## Issues for Web on TV

### #1. Device API and Browser capability to support DTV services

Currently, broadcasting services are provided on the digital television service middleware, e.g., ATSC-ACAP, DVB-DVB, etc. When the Web gets into the TV, users may want to watch digital television channel on the (or in part of the) Web browser, i.e., integrated use of digital television and Web. Some expected use cases are:

- Watching the television channels on the browser with channel changing. (the tv screen becomes a part of the browser)
- Checking the digital television program guide and ordering the 'watch reservation' on the browser.
- Running the interactive functions or applications provided in part of the digital television service on the browser.
- Ordering the time-shift or record functions on the browser. (when the TV has PVR)

To support the use cases, a standardized interface between Web browser and digital television middleware and additional capability for the browser to deal with digital television services are required.

- Device API for browser
  - Interface for digital broadcasting tuner
  - Interface for PSIP (Program and System Information Protocol)
  - Interface for digital broadcasting applications
  - Interface for record functions on TV (when the TV has PVR)

- additional capability for the browser
  - Javascript to call the interfaces through the device API

## **#2. User Interface Issues**

When people watch the television, they sit down in a distance. Hence, even with the screen resolutions up to 1080p, précised content selection and control like Personal Computer (PC) or mobile impossible. However, since current web pages are composed and optimized for PC monitors, new User Interface (UI) optimization for television is required as it has done for mobile environment.

In addition, different from the personal computer or mobile, the I/O devices for television (i.e., remote controller) are various and widening their kinds. (e.g., motion controller, smart phone applications, etc.) Depending on the characteristics and capabilities of the I/O devices, the optimal User Interface of the Web on TV gets different. Hence, to provide the best UI, the browser needs to know what kind of I/O device is being connected and be able to send requests to relevant server based on the information.

Therefore, to promote the common and universal deployment of the Web on TV, development of a standard guideline on the UI for the television browser will be helpful as it has done with the Mobile OK.

## **Introduction about us**

From 2006, we have performed researches on both technical and business aspects around IPTV service funded by Korean Ministry of Knowledge and Economics and Korea Telecom. Especially, we researched on the technical issues to provide IPTV service through the Web under the project, "Research on the Web-based open IPTV service technologies". Part of the results, content aggregation and syndication system, are currently considered to be adapted to the Korea Telecom's IPTV service infrastructure.