

TELECOM ParisTech's Interest in Second W3C Web and TV Workshop

Participant's Interest

TELECOM ParisTech is a French "Grande Ecole" in Paris, i.e. a small university dedicated to Telecommunications and teaching at graduate and PhD levels. TELECOM ParisTech laboratories are part of INSTITUT TELECOM Recherche. TELECOM ParisTech today has a faculty of about 150 full-time staff (full professors, associate and assistant professors), over 200 part-time lecturers and a student body of about 1000 students.

The Multimedia group of the Signal and Image Processing Department is:

- involved in HbbTV development, testing and promotion, through its participation in a French project called openHbb.
- involved with/implementer of W3C widgets, and extensions for widget communication within the home network (MPEG-U: interface with discovery, communication and agent-like mobility across devices).
- involved with/implementer of SVGT1.2 and other presentation standards in the open source platform GPAC.
- involved with W3C and other standards for the past 15 years.

Initially focused on multimedia scene representation, the team expanded its interest to a more general "service" perspective, with service as seen by the user, i.e. a coherent set of functionality for the user.

Point of View

Here is a set of requirements we work with:

- It should be possible to build text-based and graphics-based service interfaces. This should be non-controversial: use HTML+CSS for text apps, SVG for graphics apps.
- Services should be available as widgets, be compatible with W3C Widgets. The extra technology to make HbbTV compatible with W3C Widgets (PC and Interface) is comparatively very small, actually.
- A service should be available on any device, even if the service is about e.g. TV. A user should be able to vote on her TV (with a remote control), but also on her mobile, especially if there are more viewers. One way to achieve this is by solving another requirement: it should be possible to create a service as a constellation of cooperating elements (widgets) running on possibly multiple devices (distributed services). In the example of the TV vote, there should be one widget on each voting phone and one widget on the TV to collect and send the votes back. This implies communication between widgets.
- It should be possible to build services with data from any origin, broadband or broadcast or local. The user should not be aware of these differences, and it should be possible to implement innovative business models on the complementarities between delivery modes. A widget should work the same way whether it is used during the broadcast, or when used with catch-up TV.
- The user should also be able to switch devices at any time without losing the context of the current service, for nomadic use, or for a better user interface. For example, the program guide may be easier to browse on a tablet, even if the data still comes from the TV.
- To be able to deal with a dynamic set of available devices, the environment should provide discovery and service protocols. Discovery is necessary to deal with dynamic networks, to remove the need for the author of a service to know the address of a subservice in advance, as well as to deal with devices coming in or going out of the home network. You should be able to vote even if you are at a friend's home.
- A service should behave the same, whether it is provided by hardware, by a native application, or by a widget. This is to be inclusive about the type of device that can be integrated in the home environment.
- It should be possible to build services on top of other services, so as to easily create mash-ups, as well as multiple interfaces for the same service.
- Even if we may have technology preferences, it should be possible to replace any chosen technology by an equivalent, without breaking the service model: replace a discovery protocol with another, a scripting language by another, a format by another, etc. The service model needs to be future-proof.

We are working on implementing (in code and in standards) the missing parts to realize this global vision of service, intuitive for the user: intuitive network setup, intuitive user interface, intuitive switching of devices maintaining the service context... At the moment, our choice of standards is: (x)HTML, CSS, ECMA-Script,

SVGT1.2, W3C Widgets (PC and Interface), HbbTV (with its dependencies on DVB signalling, MPEG-2 TS and DSM-CC, OIPF DEA, CE-HTML), UPnP/DLNA, MPEG-U for the discovery and communication of widgets, RTP/RTSP for streaming. We use open source projects GPAC and WebKit. We work on authoring tools, servers and players. Examples of technology replacement we consider are: use BIFS for the presentation of 3D widgets, use HTTP streaming (MPEG DASH, 3GPP AHS) to replace RTP/RTSP, use Bonjour instead of UPnP...

We believe the W3C standards are a key to this vision of a coherent family of interoperable standards. Only W3C standards have the necessary breadth and momentum, but there is a need for significant adaptation to really take into account mobile and TV environments.

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