[DRAFT] Web-based Signage Working Group Charter

The mission of the Web-based Signage Working Group is to develop APIs which the user agents embedded in the digital signage terminals should provide.

1. Scope

The group will develop APIs which the user agents (UAs) embedded in the digital signage terminals should provide. In other words, if a terminal device has the user agent with these APIs, we can use it as a digital signage display.

The way to use the signage UA is quite different from that on the generic UA. The generic UA is used by a single user, who operates it and views its web contents. On the other hand, the signage UA is owned by a remote owner who cannot operate it directly, and its contents are viewed by audiences in front of it.

To be utilized under this situation, the signage UA should have two types of APIs.

First, the signage UA should provide “Auto Pilot” APIs to be controlled by a remote owner. The owners want to manage the signage UA via their own web server. The functionalities that they want to keep under their control include the followings, which the users can directly operate in case on generic UAs.

* Start/Stop the UA
* Open/Close a page
* Scroll
* Reboot the UA if a certain error occurs
* Accept/Reject when the UA prompts a certain user confirmation required under the normal security model

These controls may be provided by a privilege Worker that is started at the UA’s boot time and allowed to access any window objects on the page.

In addition, we will develop API which enables web applications to control the underlying operating system because rebooting it is useful for some unknown trouble or emergency case, and adjusting the clock on which web applications depend is important in order to show some contents at the specific time.

The APIs developed by this group may use a different security model than the traditional browser security model, since the owners do not want other web servers to get the control on their signage UAs.

Second, the signage UA should provide APIs to enrich the presentation of the web contents to the audiences.

Generally, it is important for the signage terminals (not necessarily web-based) to display more impressive visual presentations to audiences. We will define necessary enhancements for a video element on the signage UA. These enhancements may include enabling to playback video contents stored in the external storage devices of the terminals and multicast video streams.

When people operate generic UA, they are tolerant of a few second blackouts on opening a new page and on starting media playback. But the audiences of signage terminals may have bad impressions for such blackouts. If the signage UA has double buffering functionality, it will be avoided. In case several signage terminals are settled on a place, showing the contents synchronously on them can bring very impressive visual effects to the audiences. This use scenario can be realized if web applications resided on these UAs precisely manage and control the double buffering functionality through the API.

Members of the Working Group should review other working groups' deliverables that are identified as being relevant to the Working Group's mission.

* 1. Success Criteria

To advance to Proposed Recommendation, each specification is expected to have two independent implementations of each feature defined in the specification(s). The implementation(s) should demonstrate the interoperability between them such that the web application running on either implementation should render the same data and data values with the same functionality.

* 1. Out of Scope

This Working Group will not define or mandate hardware specification of signage terminals.

1. Deliverables
2. Recommendation-Track Deliverables

The working group will deliver at least the following specification:

Auto Pilot API

Auto Pilot API is a total API which consists of following APIs.

Power Management API

This API enables web applications to control the browser behavior. Restarting the underlying web runtime or rebooting the underlying operating system is useful for some unknown trouble or emergency case. Shutting down the underlying operating system and turning off the terminal device can be used for the system operation. By studying the use cases, the APIs will be consulted for enrichment

Web NTP Client API

This API enables web application to get a precise time stamp interacting with the specified NTP server. The digital signage system shows its content on time schedule. In order to realize this function with a web browser, the browser has only to know the time difference from the server even if the clock of terminal device is wrong. The time stamp object provides the same functions as the Date object specified in the ECMAScript.

System Context

Consider if we need system-wide background process such as:

\* start working from the boot time, independent to loaded contents

\* workers which can interact with any windows (context/domains)

\* context with privilege to access any windows and origins

\* handle System Events (see next item)

note: This is similar context/concept to Chrome process of Firefox or System Apps of Firefox OS.

System Events (or Service Worker extensions)

Consider to support system type events such as:

\* Boot - to run specific task or to load specific contents on boot

\* Window Closed (including Crash) - to reload, re-schedule, sync

\* Watchdog (busy more than xx ms) - to reload, close or change behavior

note: Some of these can be defined as events of the System Context or additional events of Service Workers or within performance API.

Rich presentation API

Rich presentation API is a total API which consists of following APIs. This API might be discussed jointly with the other WGs.

Multiple resources for video

In short, we need <video> version of <picture> element.

Define container element or system which provides multiple video source and to control or give hints to the user agent about which video resource to use, based on the screen pixel density, viewport size (especially for 2K/4K/8K), and other factors.

We need multiple resource for iframe, basically same as above, <picture> like feature for <iframe>.

Multicast video playback

Define a capability to playback multicast video streams. This is useful to save network bandwidth to deliver video content to multiple signage terminals. Moreover, if it is needed to synchronize the video playback on plural signage terminals, MMT technology might help synchronization. It would be an additional enhancement.

Access control of external storage

Define an access control of external storage devices such as USB memory.

Double Buffering API

This API enables web application to make following resource (both pages and embedded media elements) requests sent to the buffer, to render them on background, and to switch them to foreground at the timing set by the application.

1. Other Deliverables

Use cases and requirements

The Working Group is strongly encouraging the participants to create and maintain a use cases and requirements document for each specification.

Implementation guidelines

To encourage the implementation of web-based signage content, the group may provide informative guidelines for implementers.

Other non-normative documents may be created for each specification, for example:

Primers

Non-normative schemas for language formats

Non-normative group notes

1. Milestones

Milestones

Note: The group will document significant changes from this initial schedule on the group home page (link to be added once group approved).

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| --- | --- | --- | --- | --- | --- |
| Specification | FPWD | LC | CR | PR | Rec |
|  | Q4 2015 | Q2 2016 | Q4 2016 | Q2 2017 | Q4 2017  |

1. Dependencies and Liaisons
2. Liaisons

The Working Group expects to maintain contacts with at least the following groups and Activities within W3C (in alphabetical order) and ask for reviews of deliverables where appropriate:

Accessible Platform Architectures Working Group

Accessible Platform Architectures Working Group is to ensure W3C specifications provide support for accessibility to people with disabilities.

Audio Working Group

The Audio Working Group’s deliverables cover advanced sound and music capabilities and they enrich expression of the Web-based Signage.

Cascading Style Sheets (CSS) Working Group

The CSS Working Group’s deliverables attach the style to structured documents like HTML and it enriches expression of the Web-based Signage.

Geolocation Working Group

Geolocation Working Group defines a secure and privacy-sensitive interface for using client-side location information in location-aware Web applications.

Internationalization Core Working Group

The Internationalization Core Working Group is to enable universal access to the World Wide Web by proposing and coordinating the adoption by the W3C of techniques, conventions, technologies, and designs that enable and enhance the use of W3C technology and the Web worldwide, with and between the various different languages, scripts, regions, and cultures.

Second Screen Presentation Working Group

The Second Screen Presentation Working Group’s deliverables cover specifications that enable web pages to use secondary screens. This specification enables Web-based signage to access audiences’ mobile device and to realize interactive communications.

SVG Working Group

SVG Working Group continues the evolution of Scalable Vector Graphics as a format and a platform, and enhances the adoption and usability of SVG in combination with other technologies.

Web and TV Interest Group

The Web-based Signage Working Group intends to have its deliverables reviewed from the Web and TV Interest Group from the perspective of using TV as a Web-based signage terminal.

Web Annotation Working Group

Web Annotation Working Group defines a generic data model for Annotations, and defines the basic infrastructural elements to make it deployable in browsers and reading systems through suitable user interfaces.

Web Application Security Working Group

The Web Application Security Working Group develops security and policy mechanism to improve the security of Web applications.

Web Fonts Working Group

Web Fonts Working Group develops specifications that allow the interoperable deployment of downloadable fonts on the Web.

Web of Things Interest Group

Web of Things Interest Group is to accelerate the development of open markets of applications and services based upon the role of Web technologies for a combination of the Internet of Things (IoT) with the Web of data.

Web Platform Working Group

The Web Platform Working Group’s deliverables cover the security model implemented in Web Browsers and specifications that enrich the power of Web applications. The Web-based Signage Working Group uses this security model and discussions about it as reference.

Web Performance Working Group

The Web Performance Working Group defines relevant or potentially relevant specifications about timing, such as Resource Timing, User Timing or so.

Web Real-Time Communications Working Group

The Web Real-Time Communications Working Group defines relevant or potentially relevant specifications for establishing peer-to-peer communication channels and they relate to enrich the Web-based signage content.

Web Security Interest Group

The Web-based Signage Working Group intends to secure reviews on its deliverables from the Web Security Interest Group to ensure they offer the right level of security.

Web-based Signage Business Group

The Web-based Signage Business Group studies profiles for web-based signage player as well as use-cases and requirements of web-based signage.

1. External Groups

The following is a tentative list of external bodies the Working Group should collaborate with:

ITU-T

ITU-T Q14/16 studies digital signage systems and services and currently studies web-based architecture of digital signage.

Digital Signage Consortium (DSC)

Digital Signage Consortium studies and develops the digital signage services and systems with its member companies including location owners (buildings, railways), content and service providers, and system integrators.

1. Participation

To be successful, the Web-based Signage Working Group is expected to have 10 or more active participants for its duration, and to have the participation of industry leaders in fields relevant to the specifications it produces.

Effective participation to Web-based Signage Working Group is expected to consume one fifth of a full-time employee for each participant and two fifths of a full-time employee for editors. Chairing the group is expected to take two fifth of a full-time employee.

1. Communication

Teleconferences will be conducted on an as-needed basis.

This group primarily conducts its work on the public mailing list public-xxx@w3.org. Administrative tasks may be conducted in Member-only communications.

Information about the group (deliverables, participants, face-to-face meetings, teleconferences, etc.) is available from Web-based Signage Working Group home page.

1. Decision Policy

As explained in the W3C Process Document (section 3.3), this group will seek to make decisions when there is consensus and with due process. The expectation is that typically, an editor or other participant makes an initial proposal, which is then refined in discussion with members of the group and other reviewers, and consensus emerges with little formal voting being required. However, if a decision is necessary for timely progress, but consensus is not achieved after careful consideration of the range of views presented, the Chairs should put a question out for voting within the group (allowing for remote asynchronous participation -- using, for example, email and/or web-based survey techniques) and record a decision, along with any objections. The matter should then be considered resolved unless and until new information becomes available.

Any resolution taken in a face-to-face meeting or teleconference is to be considered provisional until 10 working days after the publication of the resolution in draft minutes sent to the working groups mailing list. If no objections are raised on the mailing list within that time, the resolution will be considered to have consensus as a resolution of the Working Group.

This charter is written in accordance with Section 3.4, Votes of the W3C Process Document and includes no voting procedures beyond what the Process Document requires.

1. Patent Policy

This Working Group operates under the W3C Patent Policy (5 February 2004 Version). To promote the widest adoption of Web standards, W3C seeks to issue Recommendations that can be implemented, according to this policy, on a Royalty-Free basis.

For more information about disclosure obligations for this group, please see the W3C Patent Policy Implementation.

1. About this Charter

This charter for the Web-based Signage Working Group has been created according to section 6.2 of the Process Document. In the event of a conflict between this document or the provisions of any charter and the W3C Process, the W3C Process shall take precedence.