

# OVERVIEW OF MEDIA TECHNOLOGIES FOR THE WEB – FRANÇOIS DAOUST



**W3C TECHNICAL PLENARY / ADVISORY COMMITTEE 2017**

# Objectives

- **Present** the Overview of Media Technologies for the Web
- **Adopt** the Overview as working document in the Interest Group?
- **Take a deeper look** – Gap analysis, Opportunities, Requirements

# Problem statement

- Many technologies compose the media platform
- A good chunk of these technologies are developed at W3C
- Ideas are incubated in different Community Groups
- Relevance of a particular technology to a particular industry can be indirect
- Relationships between technologies are not explained

# Problem statement

I am a media company...

- What are the Web technologies that I should be looking at?
- What are the identified gaps? Anyone trying to fill them?
- What changed on the Web in the last 3-6-12 months?
- What is W3C doing for me?
- What could I do to steer the Web in the direction I need?

“It would be good to  
have a document that lists  
media technologies for the Web”

People we meet from media companies  
(both W3C and non W3C Members)

# Some requirements

- Needs to be appealing enough to « catch the eye »
- Needs to be accurate and complete enough to be useful
- Needs to have a reasonable « bucket » structure
- Needs to highlight past efforts, current efforts and possibly upcoming efforts.
- Needs to be easy to author and translate
- **Needs to be easy to maintain over time**

# Different approaches

Document type	Benefits	Drawbacks
Use cases & Requirements	Complete, detailed	Takes a long time to author, <b>usually one shot</b>
Wiki pages	Easy to maintain	Often becomes a list of links without much info. <b>Not « sexy » enough</b>
Issue tracker	Easy to get feedback	<b>No global view</b>
Overview / Roadmap page	Can be visually attractive and pleasant to read	Need to strike the right balance between completeness and ease of authoring to ease maintenance



# Past experience: Mobile roadmap (2011-2015)

- 18 editions published
- Maintained by the Web and Mobile Interest Group
- Mostly maintained by Dom (@dontcallmedom) in practice, thanks to EU Projects funding
- Most of the content was gathered and assembled manually

<https://www.w3.org/Mobile/mobile-web-app-state/>

## Standards for Web Applications on Mobile: current state and roadmap

August 2015

### Latest version

<http://www.w3.org/Mobile/mobile-web-app-state/>

### This version

<http://www.w3.org/2015/08/mobile-web-app-state/> (PDF version)

### Previous version

<http://www.w3.org/2015/05/mobile-web-app-state/>



Web technologies have become powerful enough that they are used to build full-featured applications; this has been true for many years in the desktop and laptop computer realm, but is increasingly so on mobile devices as well.

This document summarizes the various technologies developed in W3C that increase the capabilities of Web applications, and how they apply more specifically to the mobile context. A good subset of these technologies are described and explained in the [W3C on-line training on programming Web applications](#).

1. [Core Web Design and Development](#)
  - [Graphics and Layout](#)
  - [Device Adaptation](#)
  - [Forms](#)
  - [Data storage](#)
2. [Media and Real-Time Communications](#)
3. [Usability and Accessibility](#)
4. [Device Interaction](#)
5. [Network Integration](#)
6. [Application Lifecycle](#)
7. [Payment and Services](#)
8. [Performance & Tuning](#)
9. [Security & Privacy](#)

## Status and changes

This document is the 18th edition of this overview of mobile Web applications technologies. The previous edition was released in [May 2015](#). A live version of this document accepts contributions on [the W3C Web and Mobile Interest Group Github repository](#).

This document is published by the [Web and Mobile Interest Group](#); feedback on every aspect of this document should be sent to [public-web-mobile@w3.org](mailto:public-web-mobile@w3.org), the [publicly archived mailing list](#) of the interest group, or raised as [issues on the Github repository](#), or alternatively to the author ([dom@w3.org](mailto:dom@w3.org)). It will serve as input for the next iteration of the document.

The following changes in the Web platform since May 2015 are documented in this update:

### Emerging Work

- The early work on a [generic sensor API](#) is now embodied in an editors draft
- A proposal to enable [CSS transitions between Web pages](#) was brought to the CSS Working Group
- A proposal to detect the [input-capabilities of devices](#) (in particular their ability to react to touch) was brought to the Web Applications Working Group
- The Web Performance Working Group is considering the definition of a [callback mechanism for scheduling function calls](#) and has a proposed editors draft for it;
- A [charter for a Web Payments Working Group](#) has been proposed; the group would work on a browser API that would vastly simplify payments on the Web
- A [draft charter for a Hardware Security Working Group](#) is being developed; it would bring interaction with secure hardware modules to the Web platform

### Published as First Public Working Draft

- The [Geofencing API](#), enabling developers to be notified when the user enters specific geographical areas, was published as a First Public Working Draft
- The [Entry Point Regulation specification](#), which provides another layer of protection against common attack vectors such as cross-site-script or cross-site request forgery, was published as First Public Working Draft
- The [Preload](#) specification, which offers a way to load stylesheets and scripts immediately, but defer their application, was published as a First Public Working Draft

### Returned to Working Draft

- The [Proximity Events](#) and [Ambient Light Events](#) APIs went back to Working Draft status (respectively from Candidate Recommendation



# Overview of Media technologies for the Web

## Overview of Media Technologies for the Web

This document provides an overview of Web technologies as they can be used to build media applications and services, and highlights some of the known gaps to enable additional use cases.



### Media rendering

Features needed to render media content on one or more devices.



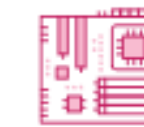
### Media control

Features needed to let the user interact with the playback of media content, both via local and remote interactions.



### Media distribution

Features that help with sending media content from its source to its rendering target.



### Media processing

Features needed to analyze or modify media content.



### Media orchestration

Features needed to synchronize multiple media or non-media content together, on one or several devices.



### Media capture

Features needed to capture media content from a variety of available sources.



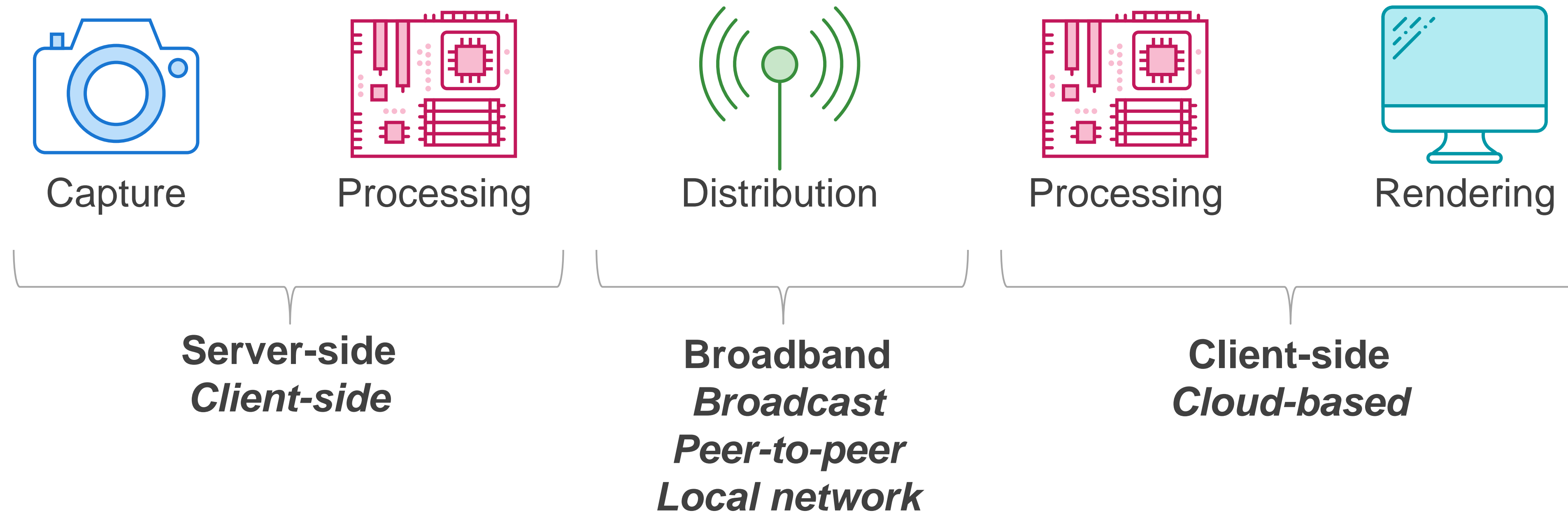
### Media application development

Platform features and best practices to develop media applications on the Web

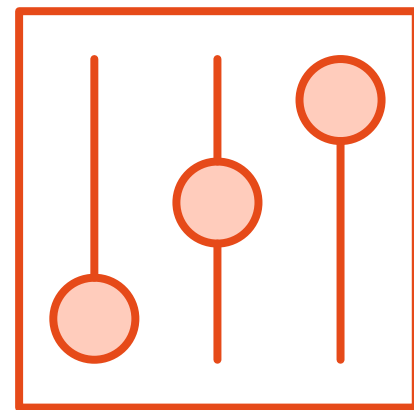
- Leverage experience gathered on mobile roadmap to ease maintenance
- Sleek design to « catch the eye »
- Simple but efficient structure
- Describes past (including dropped features), present, possible future
- Implementation status gathering automated

<https://w3c.github.io/web-roadmaps/media/>

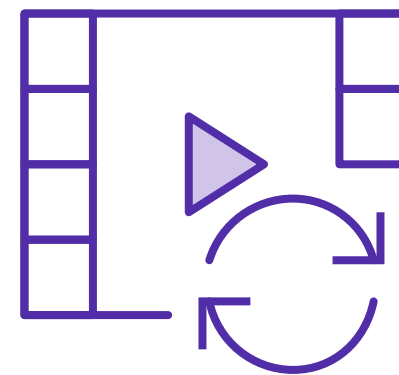
# Media « pipeline »



# Media applications



Controls



Orchestration



Web apps

# Content sections

- **Well-deployed technologies**  
Finished or nearly finished technologies, with significant adoption among implementations
- **Technologies in progress**  
Features on the Recommendation track
- **Exploratory work**  
Features not on the Recommendation track, typically incubated in a Community Group
- **Features not covered by ongoing work**  
Identified technical gaps that no known effort adequately covers
- **Discontinued features**  
Past attempts to develop a feature, stopped for some reason or that led to some other proposal

# Key features

- **Easy to author/maintain**  
Each feature/spec described with one paragraph, independently from other features described in other paragraphs  
A simple JSON structure to follow to define new features
- **Framework takes care of adding useful info**  
Link to spec, maturity, group name, implementation status on different platforms gathered from Can I Use, Chrome Status, Webkit status, Microsoft Edge status
- **Framework takes care of navigation**  
Home page automatically created  
Side navigation menu automatically created
- **Easy to translate content**  
Framework contains logic to handle translations



# The Overview document and the Media & Entertainment IG

# Current status of the Overview document

- Developed and maintained by **W3C team** with (limited) resources to continue over the next year, at least
- **No** official standing, very likely **incomplete** perhaps **wrong** here and there
- Does **not** represent the consensus of W3C Members
- Framework still in its **infancy**, many possible improvements (e.g. to generate a published version of the document, to add proper timelines, links to ED and GitHub repos, and test results info next to implementation status, etc.)

# Other roadmaps in the works

- Roadmap of Web Applications on Mobile:  
<https://w3c.github.io/web-roadmaps/mobile/>
- Roadmap of Technologies needed for Web Publications:  
<https://w3c.github.io/web-roadmaps/publishing/>
- Roadmap for Security technologies:  
<https://w3c.github.io/web-roadmaps/security/>
- ...

# The Media & Entertainment IG

- **Steering committee** for media-related discussions at W3C
- **Tracks and investigates** media-related features on the Web
- **Identifies priorities** for possible standardization efforts

**“The group will maintain a public list  
of the media features on the Web  
that it is tracking and investigating”**

Media & Entertainment IG Charter  
<https://www.w3.org/2017/03/webtv-charter.html>



# Proposal

- **Adopt the Overview document as working document within the IG**
- « Living » document, updated based on inputs from IG members and progress in other groups
- Document used to steer discussions in the IG  
Structure and content can change entirely based on input
- Look-and-feel would likely remain « imposed » by W3C MarComm team
- Snapshots of the document could be published every 3-4 months, (to be discussed). Publication on /TR/ does not seem needed.
- François Daoust to continue as main editor of the document (anyone welcome to contribute or take the lead!)

# Deeper look at the Overview

- **Scope**  
Should the document also list other technologies such as codecs and protocols that are relevant on the Web (typically those developed at MPEG and IETF)? If so, any volunteer?
- **Structure / List of features**  
Any better way to categorize technologies?  
Anything missing or wrong?
- **Gap analysis**  
New opportunities and requirements to highlight?
- **Timeline**  
When should technologies be ready?
- **Generated tables**  
What (automatically retrievable) information would be worth adding?  
Testing results? Activity indicator? Number of open issues?

# Summary

- The Media & Entertainment IG needs to have a clear picture of media technologies on the Web
- Overview documents provide this generic vision, remain simple, and allow to record gaps and identified priorities
- The underlying framework is not perfect but has dedicated resources at W3C for now, and is also used for other roadmaps

# Summary

- **Overview of Media Technologies for the Web**  
<https://w3c.github.io/web-roadmaps/media/>
- **GitHub**  
<https://github.com/w3c/web-roadmaps>
- **Maintainers**  
François Daoust (@tidoust) – Framework / Media / Mobile  
Fuqiao Xue (@xfq) – Framework / Mobile

THANK YOU FOR LISTENING!



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