

TPAC 2017  
Media and Entertainment IG and  
Timed Text WG joint meeting

**B B C** Design & Engineering

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# TTWG headlines

- TTML2 in WD, Wide Review gathered
  - plan to transition to CR soon
  - TTML1 + more styling including better language support (e.g. Japanese) + conditional presentation + initial styling + continuous animation + embedded data (e.g. fonts, images) + audio support + xlink + improved profiles + ISDs + CSS style mapping\* + sRGB mappings to HDR/WCG color spaces
- IMSC 1.0.1 in CR
  - Adds 2 optional features: fillLineGap and activeArea
  - Awaiting 1 implementation to satisfy exit criteria
- IMSC 1.1 in FPWD
  - TTML2 profile for subtitles and captions applications, including some of the new TTML2 features
  - Separate Note being worked on for IMSC 1.1 requirements
- WebVTT in WD, Wide Review gathered
  - plan to transition to CR soon

# Subtitles and Captions headlines

- Industry convergence on IMSC
  - MPEG Common Media Application Framework (CMAF)
  - DVB TTML in MPEG Transport Streams
  - ATSC
  - ARIB-TT
  - EBU-TT-D
  - SMPTE Interoperable Master Format (IMF)
  - ...
- IMSC in operation
  - Being generated by BBC, Netflix, IRT
  - Encoder manufacturers, services providers etc
  - Native playback support in browsers conspicuously absent
  - Apple plays back IMSC in fragmented MP4 in OS X and iOS 11
  - imscJS polyfill provides reference implementation using HTML and CSS
    - <https://github.com/sandflow/imscJS/>

# Audio headlines

- Support for the features needed to carry audio scripts and audio renderings
- One use case is (audio) descriptions
- BBC has been working on an implementation

# Hurdles to jump?

- Incomplete mappings of TTML2 style attributes to CSS properties
  - <https://www.w3.org/wiki/TimedText/CSSRequirements>
  - Especially advanced ruby
  - Plus formatting targeted at line areas
- sRGB to Rec2020 for High Dynamic Range (HDR) and Wide Color Gamut (WCG)
  - TTML2 specifies acceptable mappings for HLG and PQ but it's a bigger problem for the web
  - TTWG published a Note on HDR mapping of PNG images using PQ at <https://www.w3.org/TR/png-hdr-pq/>

# What's coming up?

- TTML2 to CR
- IMSC 1.1 WDs – still gathering requirements, so there's an opportunity to provide input
  - <https://github.com/w3c/imsc-vnext-reqs>
- WebVTT to CR
- More on HDR/WCG?
- Profile of TTML2 for audio description?