TV Services

• Features that cable and other commercial video providers are required, or want, to provide:
  • Closed captions – required
  • Subtitles
  • Main audio dialogue translations
  • Audio description of video track – required
  • Content advisories for parental controls – required
  • Interactive applications synchronized with video
  • Client ad-insertion for targeted advertising
TV Services and HTML5

• Good news! HTML5 multiple media and timed text tracks largely meet TV Services requirements.
• Specifications are needed that define how browsers recognize in-band TV services tracks and expose them in HTML5.
  • Detailed description in Web and TV Media Pipeline TF Use Case http://www.w3.org/2011/webtv/wiki/MPTF/MPTF_Discussions/TV_services_transport_mapping
### TV Services and Media Transport Mapping to HTML5

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- The mapping defines:
  - How TV service tracks are encoded – mostly references existing specifications. Specific to media transport or container.
  - How tracks are exposed in HTML5.
## MPEG-2 TS Example

### Synchronized Web content
- Can be in private data stream type 0x05 or 0xC0, identified by etv signaling descriptor (0xA2). Specified in CableLabs SP-ETV-AM1.0
  - Track element: kind=metadata, label/type = ‘mpeg2ts; pmt="0x05|0xC,0xA2”
  - Cue: Start time = Now, Cue text = message payload in private data stream

### Client ad insertion
- Carried in private data stream type 0x86. Specified in ANSI/SCTE 35
  - Track element: kind=metadata, label/type = ‘mpeg2ts; pmt="0x86”
  - Cue: Start time = Now, Cue text = message payload in private data stream
Synchronized Web Content and Ad-insertion Proof-of-concept

• Script uses iframe to control overlay of interactive app or selected advertisement

• Some issues to resolve
  • How does script distinguish the type of signaling messages a track contains? (bug 13359)
  • How to support changing set of tracks in long-lived streams, e.g. broadcast channel? (bug 13358)
Proof-of-concept Application Layering

<video>
Program Video

<iframe>
Client-Side Advertisement

<iframe>
Synchronized Application

Purchase Tickets Now
For a Theater Near You!