MPEG-DASH & GPAC
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DASH Activities

- **Standardization**
  - Main Specification
  - Conformance & Ref Software

- **Dissemination**
  - Open-source tools
  - Scientific publications
    - Inc. references by other academics
  - Blogs

- **R&D**
  - Contracts
  - In-house
GPAC: Media framework featuring:
- Content creation tools: MP4Box, MP42TS
- Content distribution tools: IP streamers, T-DMB muxers
- Content playback tools: Osmo4 / MP4Client

DASH support
- Segment generation: TS and MP4
- Segment playback: TS and MP4
- Utility tool for MPEG
- Generation of conformance sequences
DASH in MP4Box

- HLS support
  - Converts m3u8 to mpd

- TS segmenter
  - Generates mpd
  - Splits TS if desired
  - Generates sidx
  - Supports adaptation sets

- MP4 segmenter
  - Profiles: onDemand, Live and Main
  - Large set of segmenting options
  - Supports adaptation sets
DASH in MP4Box

**ISOFF Features**
- Spliting based on « sync » box or « rap » and « roll » groups
- Support for disposable samples

**Limitations**
- NO TRANSCODING: Requires alignment of GOP structures in adaptation sets
- Single adaptation set

**Future Works**
- CENC (not yet supported)
- Subsample information and scalability
DASH in MP42TS

- **TS Muxer**
  - MP4 input
  - RTP/SDP input

- **HLS support**
  - Segment and manifest generation
  - Segment destruction

- **DASH requirements**
  - N complete AUs per segment
  - AU/PES alignment at segment begin
  - PAT/PMT insertion at segment start

- **Future Works**
  - Add MPD Generation
  - Support for multiple representation
DASH Player

- Integration in GPAC players
  - Support for various codecs
  - bifs/svg/x3d integration

- DASH formats
  - TS, MP4, AAC (from HLS)
  - MPD, m3u8
  - Segment switching

- Future improvements
  - Segment switching based on sidx
    - Not constrained to segment boundaries
  - Better switching algorithm
    - Scriptable one?
DASH, GPAC and R&D

- Hybrid networking
  - TS broadcast and broadband
  - eMBMS and broadband
- Cloud computing
- P2P systems