



GPAC
Licensing

MPEG-DASH

Training Program



MPEG-DASH overview

↗ **Requirements:** computers + network

I. Intro

- a. About us
- b. Planning

II. Adaptive Streaming

1. General concepts and existing solutions (HLS, AHS, Smooth Streaming, ...)
2. Introduction toward MPEG-DASH

III. MPEG-DASH Theory

1. MPEG-DASH design principles
2. [Practical session 2: details in half-days 3&4]
3. MPEG-DASH descriptive presentation + real scenarios
4. [Practical session 2: details in half-days 3&4]
5. MPEG-DASH File Format Specificities
6. [Practical session 2: details in half-days 3&4]

II. An overview of MPEG-DASH advanced features (practical session on half-days 3&4)

1. Multi-channel, encryption, descriptors, metrics, byte-range, etc.
2. Extensions to other delivery formats

II. MPEG-DASH deployment scenarios

1. Youtube, Sotchi, Microsoft, Netflix...



HALF-DAY 2



Multimedia Delivery

↗ **Requirements:** computers + network

I. Intro

1. About us
2. Planning

II. Multimedia Delivery

1. Theory
 - a. Fundamental concepts
 - b. Delivery architectures (including P2P and Hybrid)
 - c. File formats
 - d. MPEG4
 - e. ISOBMF
 - f. MPEG2-TS
 - g. [Practical session I]
2. Applications
 - a. Streaming (including HTTP-based solutions)
 - b. Captions/Subtitles
 - c. Metadata
 - d. Encryption
 - e. [Practical session I]
3. Web
 - a. Web Distribution (Flash, HTML5 video and extensions)
 - b. [Practical session I]

I. Practical session I

1. Presentation of tools
2. Useful command-lines
3. Manipulations (file format)
4. Manipulations (encryption, subtitles, live, etc.)
5. Manipulations (Web)

HALF-DAY 3 & 4

↗ **Requirements:** computers + network

I. MPEG-DASH

1. Theory (partially redundant with 2. of the first day)
2. MPEG-DASH design principles
3. [Practical session 2]
4. MPEG-DASH descriptive presentation + real scenarios
5. [Practical session 2]
6. MPEG-DASH File Format Specificities
7. [Practical session 2]

I. MPEG-DASH derivatives

1. A word about standards
2. Profiles and recommendations (DASH-IF, DVB, CFF, etc.)
3. Known MPEG-DASH implementations
4. [Practical session 2]

I. MPEG-DASH Implementations

1. An implementor's point of view for packaging
2. An implementor's point of view for playback
3. [Practical session 2]
4. DASH in a Web browser
5. [Practical session 2]
6. Reference software & Datasets
7. [Practical session 2]

II. The future of MPEG-DASH**III. Practical Session 2**

1. How to read a MPEG-DASH manifest file (MPD)? How to compute delays?
2. Playback reference content
3. Package
4. Encode
5. Web Playback
6. Analyze (Conformance, measuring delays, reducing latency, etc.)
7. Advanced control (trick modes, clock drift, ...)
8. Encryption using Common Encryption (CFF, HbbTV)