ISO/IEC 14496 "MPEG-4" transport

Philippe Gentric
PHILIPS/Digital Networks/MP4Net
http://www.mpeg-4.philips.com

54 th IETF meeting
YOKOHAMA

```
draft-ietf-avt-mpeg4-simple-04.txt
   draft-lim-mpeg4-mime-00.txt
```

draft-ietf-avt-mpeg4-simple-04.txt

- WG last call
- Has been reviewed by MPEG "4onIP" WG
- Changes since -02:
    - Extended to transport "system" (14496-1) streams
    - still *no* SL
    - 2 new *optional* fields in the AU header section:
        - RAP-flag (Random Access Point) (1 bit)
        - Stream-State counter (configurable number of bits)
    - 2 new *optional* MIME parameters
        - RandomAccessIndication (presence of RAP-flag)
        - StreamStateIndication (number of bits for Stream-State)

MPEG-4 system stream states

- In MPEG-4 Synch Layer this is "AU_SequenceNumber"
- There are "Crucial and non-crucial AUs with MPEG-4 System data" (see section 3.2.3.4.)
- Stream State is incremented at crucial AUs:
    - If the RAP-flag is set to 1 and the stream-state changes, then the AU is a crucial RAP AU, and the AU MUST be decoded.
    - If the RAP-flag is set to 1 and the stream state does not change, then the AU is a non-crucial RAP AU, and the receiver SHOULD decode it if the stream is corrupted. Otherwise, the decoder MUST ignore the AU.
    - If the RAP-flag is set to 0, then the AU MUST be decoded, unless the stream is corrupted, in which case the AU MUST be ignored.

Remaining (minor) issues

- The *name* of the MIME parameter "profile" is criticized as being misleading
- The current proposal is to use either:
    - Change the name to "MaxInterleaveDelay"
    - Or use "maxInterleave" as in draft-ietf-avt-evrc-smv-03.txt: *Maximum number for interleaving length. The interleaving lengths used in the entire session MUST NOT exceed this maximum value.*
    - Or use "maxptime" as in RFC3267: *The maximum amount of media which can be encapsulated in a payload packet, expressed as time in milliseconds.The time is calculated as the sum of the time the media present in the packet represents*.
- Setting a value in milliseconds is better than fixed values
- The change itself would only impact early ISMA 1.0 implementations and we had no complaint so far ….

`draft-lim-mpeg4-mime-00.txt`

- Is an evolution of draft-singer-mpeg4-ip-04.txt
- The idea is to separate the "normative" part:
    - IANA stuff: MIME types
- from the "informative" part:
    - "Framework and guidelines for the carriage of ISO/IEC14496 contents over IP networks"

MPEG-4 MIME Types

- "video" MUST be used for MPEG-4 Visual streams (i.e. video as defined in ISO/IEC 14496-2 (Streamtype = 4) and/or graphics as defined in ISO/IEC 14496-1 (Streamtype = 3)) or MPEG-4 Systems streams that convey information needed for an audio/visual presentation.

- "audio" MUST be used for MPEG-4 Audio streams (ISO/IEC 14496-3) (Streamtype = 5)) or MPEG-4 Systems streams that convey information needed for an audio only presentation.

- "application" MUST be used for MPEG-4 Systems streams (ISO/IEC14496-1 (all other StreamType values)) that serve other purposes than audio/visual presentation, e.g. in some cases when MPEG-J streams are transmitted.

More MIME types

- The MIME types to be assigned to **MP4 files** SHOULD be "audio/mp4", and "video/mp4"
- When a **visual** ISO/IEC 14496 ES is served (e.g. over HTTP or otherwise) and must be identified by a MIME type, the type "video/MPEG4-visual" SHALL be used
- In some cases, the initial object descriptor (**IOD**) needs to be identified with a MIME type. In this case, the type "applications/mpeg4-iod" shall be supported, and the type "application/mpeg4-iod-xmt" may be supported