INTERNATIONAL ORGANISATION FOR STANDARDISATION
ORGANISATION INTERNATIONALE DE NORMALISATION
ISO/IEC JTC1/SC29/WG11
CODING OF MOVING PICTURES AND AUDIO

ISO/IEC JTC1/SC29/WG11 MPEG2015/M37257
October 2015, Geneva, Switzerland

Source **Telecom ParisTech**
Status **For consideration at the 113th MPEG Meeting**
Title **MIME type for subtitle-only files**
Author Cyril Concolato, Jean Le Feuvre

1 Introduction

This contribution discusses two aspects related to the use of subtitles in MP4 files: the general MIME type for subtitle-only files, and the codecs parameter for file carrying TTML subtitles.

2 General consideration for the MIME Type of subtitle-only files

Many people start using subtitle-only files for use in DASH context. RFC 4337 defining the mime type for MP4 files does not have any mention of subtitle. It indicates:

```
" The MIME types to be assigned to MP4 files are selected according to
   the contents.  Basic guidelines for selecting MIME types are as
   follows:

   a) if the file contains neither visual nor audio presentations, but
      only, for example, MPEG-J or MPEG-7, use application/mp4;

   b) for all other files, including those that have MPEG-J, etc., in
      addition to video or audio streams, video/mp4 should be used;
      however:

   c) for files with audio but no visual aspect, including those that
      have MPEG-J, etc., in addition to audio streams, audio/mp4 may be
      used."
```

The distinction between "visual" and "video" is subtle and does not seem to be always understood. Is a subtitle stream a visual stream? Probably. So the correct mime type for subtitle only could have been video/mp4. However, the DASH-IF IOP table 18 lists "application/mp4" as the correct MIME type for encapsulated TTML. Additionally, given that the content is text, one might think that "text/mp4" should have been used.

We recommend updating the RFC to mention subtitle-only file and to clarify that the "application/mp4" MIME type shall be used (or allow text/mp4 for such files ?).

3 Codecs parameter for TTML in MP4

ISO/IEC 14496-30 defines the carriage of TTML in MP4 files using the generic carriage of XML Subtitles. In particular, this means that the SampleEntry code is 'stpp'. Many people seem to think that 'stpp' is meant for TTML only. In particular, many implementations seem to expect that a media with MIME type 'video/mp4; codecs="stpp"' refers automatically to TTML.

The specification should be updated to clarify that aspect by:

- either specifying a TTMLSampleEntry using the 'stpp' 4CC with the exact same syntax as the current XMLSubtitleSampleEntry and to use another 4CC for generic XMLSubtitleSampleEntry (such as 'xmls'). Such change would break existing software and content that uses 'stpp' for generic XML but would achieve backwards compatibility with current TTML content and readers. This would still require a clear statement that the codecs parameter for TTML is "stpp.xxxx", where "xxxx" is defined below.

- or defining explicitly the "codecs" MIME parameter for TTML-based content. We suggest indicating that if the XML language used is based on TTML (ie. if the namespace of the root element of the XML document is TTML's namespace), the codecs parameter be "stpp.ttml.xxxx", where "xxxx" is defined below.

In both case, the ".xxxx" part would be optional but recommended, with the "xxxx" being replaced by a profile identifier as defined in the TTML Registry or a combination of profile identifiers using the | or + symbols as recommended by the registry.

4 Conclusion

We propose issue a corrigendum to ISO/IEC 14496-30, to add an annex to Part 12 to define its MIME type, and to update the IANA registry for the definition of the MP4 MIME to point to that Annex.

We furthermore kindly ask the FF AhG to welcome any further contributions on how the mapping from a TTML document to its TTML registry could be simply made, in order to simplify the tasks of file writers and dash segmenters.

5 References

[1] DASH-IF IOP, http://dashif.org/wp-content/uploads/2015/10/DASH-IF-IOP-v3.1.pdf
[2] TTML Registry: https://www.w3.org/wiki/TTML/CodecsRegistry