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**Title**      **MIME Type for Timed Text streams**  
**Author**    Cyril Concolato, Jean Le Feuvre

## **1 Introduction**

ISO/IEC 14496-12 and ISO/IEC 14496-30 define how to carry metadata and timed text streams in the ISO/BMFF but these standards do not define the value of the “codecs” parameter for those streams. This is problematic in a DASH MPD. If an XML subtitle stream or an XML metadata stream is used, it is not possible to know which XML language is used unless the initialization segment is fetched. The same problem appears for streams identified by a MIME type. This contribution proposes a solution.

## **2 Proposal**

Contribution m29240 proposed to define the “codecs” parameter for these streams as follows:

Sample Entry	Codecs parameter
XMLMetaDataSampleEntry	metx.<namespace>
TextMetaDataSampleEntry	mett.<mime_format>
XMLSubtitleSampleEntry	stpp.<namespace>
TextSubtitleSampleEntry	sbtt.<mime_format>

The problems raised with that contribution were related to length and special characters, in two cases: in the content-type header and an in a MPD ‘codecs’ attribute.

- The <mime\_format> part is a MIME type (possibly with codecs parameters), therefore producing nesting of MIME types. However, RFC 2045 indicates that characters such as ‘/’ or ‘=’ or <’> may appear in parameters of a MIME type as long as they are quoted. Thus such MIME type would be:

HTML streams in MP4

Content-Type: video/mp4 ; codecs=“mett.text/html”

Text streams with codecs parameter in MP4

Content-Type: video/mp4 ; codecs=“mett.text/x-myText;codecs=‘<param-value>’”.

- The <namespace> part in the SampleEntry represents a list of XML namespaces, i.e. a list of URNs. It may have the following problems:
  - number of elements in the list: we suggest keeping only the first namespace in the list.
  - special characters: again according to the MIME RFC, this does not appear to be a real problem.
  - namespace length. It may be a problem if the first URN is too long, in which case a hash function (SHA-1, MD5 ...) could be used, however in practice this is not really a problem.

So we would have the following examples:

TTML in MP4

Content-Type: video/mp4 ; codecs="stpp.http://www.w3.org/ns/ttml/"

EBU-TT-D in MP4

Content-Type: video/mp4 ; codecs="stpp.http://www.smpte-ra.org/schemas/2052-1/2010/smpte-tt"

CFF-TT in MP4

Content-Type: video/mp4 ; codecs="stpp.https://www.uvvu.com/schema/2012/01/cff-tt-meta"

When giving a <namespace> it is not however possible to give the profile such as:

TTML (SPD-US profile) in MP4

Content-Type: video/mp4 ; codecs="stpp.http://www.w3.org/ns/ttml/ profiles='http://www.w3.org/ns/ttml/profile/sdp-us' "

### 3 Conclusion

We urge MPEG to take actions into solving this problem, for instance by adopting the proposal into the ISO/BMFF, as we came aware of already tentative ways of defining codecs parameters for TTML in MP4 by other bodies.