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**Title**     **Clarification on fragment identifiers for ISOBMFF**  
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## **1 Introduction**

The definition of ISOBMFF fragment identifiers is unclear. Some text is present in 14496-12 while some other text is in MPEG-21 Part 17. This contribution proposes to update 14496-12 to clarify the situation.

## **2 Current Situation**

Section 8.11.9 of the ISOBMFF defines URL forms for use in meta box and refers to a shadowing mechanism and the following fragment identifiers are defined:

```
file.mp4#item_ID=<n>, identifying an item by its ID  
file.mp4#item_name=<name>, identifying an item by its name
```

It also defines how # is replaced by \* if the item name contains a #.  
It does not however define how to identify which meta box contains the item. This URL form only works from within a meta box.

ISO/IEC 21000-17:2006 defines fragment identifiers for MPEG resources using namespaces and fragment schemes. In particular the ffp() scheme is used for ISOBMFF files. It extends the syntax of ISO/IEC 14496-12 in two ways: firstly, it wraps the original fragment identifier as pointer scheme data as in ffp(item\_ID=<n>). Secondly, it allows a track to be identified by means of its track\_ID. For instance, to be conformant to MPEG-21 Part 17, one has to use:

```
file.mp4#ffp(item_ID=1)  
file.mp4#ffp(item_name=test)  
file.mp4#ffp(track_ID=101)
```

Finally, it looks like item\_ID are not scoped in the specification, nor required to be unique: accessing an item by its name leads to potentially undefined results in the specification.

## **3 Proposal**

We propose to allow #track\_ID to be used directly on 14496-12 resources, leaving the ffp() option still compliant to MPEG-21 Part 17, but not required.

We propose to clarify that:

- #item\_ID= and #item\_name= refer to file level meta boxes,
- #/item\_ID =and #/item\_name= refer to root level meta boxes,
- #track\_ID=101/item\_ID= and #track\_ID=101/item\_name= refer to meta boxes in the track with track\_ID101, including meta boxes found in movie fragments.

We additionally propose to enforce unicity of item\_ID:

“item\_ID shall be unique between all items declared in a meta or in meco boxes at a given level (file, moov or track level).”

## **4 Conclusion**

We recommend MPEG to add the proposal to the next ISOBMFF amendment.