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Information technology — MPEG systems technologies —

Part 14:
Partial file format

AMENDMENT 1: Support for HTTP entities, enhanced file type and byte-range priorities

Technologies de l'information — Technologies des systèmes MPEG —

Partie 14: Format de fichier partiel

AMENDEMENT 1: Prise en charge des entités HTTP, du type de fiche amélioré et des priorités des plages d'octets

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Information technology — MPEG systems technologies —

Part 14:
Partial file format

AMENDMENT 1: Support for HTTP entities, enhanced file type and byte-range priorities

4.2.4, second paragraph:

Replace the second sentence with the following:

The FileTypeBox of the source file, and, if present, the OriginalFileTypeBox and/or ExtendedTypeBox, whether or not correctly received, shall not be modified; they shall either:

— be encapsulated altogether in one partial segment and stored in a PartialDataBox, or

— be encapsulated altogether in an OriginalFileTypeBox immediately following the new FileTypeBox of the mixed partial file.

This ensures that a single FileTypeBox is present at the container level.

5.1.9 and 5.1.10

Add the following subclauses after 5.1.8.3, before 5.2:

5.1.9 HTTP Entity Box

5.1.9.1 Definition

Box Type:	'htte'
Container:	PartialSegmentBox or PartialFileBox
Mandatory:	No
Quantity:	At most one per PartialSegmentBox, or one in PartialFileBox

The HTTPEntityBox is used to store a set of HTTP entities (header name and body) applying to the file identified by the source URL. It is typically inserted in PartialFileBox or PartialSegmentBox by the receiver based on information carried in the delivery protocol, and can be used by the receiving entity to populate an HTTP cache.

There may be several HTTPEntityBox in a partial file. HTTPEntityBox declared in PartialFileBox define entities valid for the entire partial file; HTTPEntityBox declared in PartialSegmentBox define entities valid for the partial segment only.

The Content-Type and Content-Length entities shall not be included in this box. Content-Type may be signalled through SourceURLBox. Content-Length shall be recomputed from the partial file structures (chunks in PartialSegmentLocationBox).

5.1.9.2 Syntax

```
aligned(8) class HTTPEntityBox extends FullBox('htte', 0, 0) {
    unsigned int(32) entry_count;
    for (i=0; i<entry_count; i++) {
        utf8string name;
        utf8string body;
    }
}
```

5.1.9.3 Semantics

`entry_count` indicates the number of HTTP entities in the box.

`name` gives the name of the HTTP entity described.

`body` gives the body (content) of the HTTP entity described.

5.1.10 Byte-Range Priority Info Box

5.1.10.1 Definition

Box Type:	`'brpi'`
Container:	`PartialSegmentBox` or `PartialFileBox`
Mandatory:	No

Quantity: At most one per `PartialSegmentBox`, or one in `PartialFileBox`

The `ByteRangePriorityInfoBox` indicates transmission priority levels of byte ranges in the source file. This allows a file reader to further optimize its repair process. By using external data reference in a partial file, it is possible to build a companion file containing priority levels of byte ranges of the source file, allowing a server to optimize its distribution (retransmission policies, FEC, etc.) of a file without modifying it.

NOTE This information is usually transported out-of-band or through well-protected packets with more FEC in the transport layer; for example, the information can be described in the FDT of the file in a FLUTE session.

If this box is present in the `PartialFileBox`, it shall indicate the byte ranges priorities for the complete file using absolute offsets, and no other `ByteRangePriorityInfoBox` shall be present in any subsequent `PartialSegmentBox`.

The following flags are defined for the `ByteRangePriorityInfoBox`:

— `relative_offset`: flag value is 0x000001. Presence of this flag indicates that indicated byte ranges are relative to the first byte of the first chunk of the partial segment containing this box. Absence of this flag indicates that indicated byte ranges are relative to the beginning (first byte) of the source file. This flag shall not be set if the container box is a `PartialFileBox`.

— `dependencies_present`: flag value is 0x000002. Presence of this flag indicates that the priority level depends on an explicit list of priority levels, rather than on levels with lower priority.

Byte in the source file not included in any of the byte ranges listed in `ByteRangePriorityInfoBox` shall be treated as having priority 0.

5.1.10.2 Syntax

```
aligned(8) class ByteRangePriorityInfoBox extends FullBox('brti', version, flags)
{
    unsigned int(32) entry_count;
    for (i=0; i < entry_count; i++) {
        if (version==1) {
            unsigned int(64) byte_range_start;
        } else {
            unsigned int(32) byte_range_start;
        }
        unsigned int(32) byte_range_length;
        unsigned int(16) priority_level;
```