
**Information technology — Coding of
audio-visual objects —**

**Part 20:
Lightweight Application Scene
Representation (LAsEeR) and Simple
Aggregation Format (SAF)**

**AMENDMENT 2: Technology for scene
adaptation**

Technologies de l'information — Codage des objets audiovisuels —

*Partie 20: Représentation de scène d'application allégée (LAsEeR) et
format d'agrégation simple (SAF)*

AMENDEMENT 2: Technologies pour adaptation de scène

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The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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Amendment 2 to ISO/IEC 14496-20:2008 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

Information technology — Coding of audio-visual objects —

Part 20:

Lightweight Application Scene Representation (LAsER) and Simple Aggregation Format (SAF)

AMENDMENT 2: Technology for scene adaptation

In Table 3, add the following new LAsER events:

Event name	Namespace	Description	Bubble	Canc.	IDL
"DisplaySizeChanged(A)"	Urn:mpeg:mpeg4:laser:200x	Occurs when the terminal screen or viewport size has been changed to the specified 'A' value. 'A' is expressed in Inches.			DisplaySizeChangedEvent
"MemoryStatus(a,b,c)"	Urn:mpeg:mpeg4:laser:200x	Occurs when the terminal memory occupancy changes more than the each specified parameter.			MemoryStatusEvent

The parameters of **MemoryStatus** event are:

- **a**: number of graphics points. If the number of graphic points released/allocated by the terminal is strictly less than **a**, the event is not triggered.
- **b**: number of Unicode characters. If the number of Unicode characters released/allocated by the terminal is strictly less than **b**, the event is not triggered.
- **c**: size, in kilo-bytes, of the composition buffers (as described in 6.11.3). If the size released/allocated by the terminal is strictly less than **c**, the event is not triggered.

In 6.5.6, add the new attribute *delta* to *ExternalValueEvent*:

```
interface ExternalValueEvent : LAsEREvent {
    readonly attribute float absoluteValue;
    readonly attribute boolean computableAsFraction;
    readonly attribute float fraction;
    readonly attribute signed long delta;
};
```

Attributes

- **absoluteValue**: This value represent the status of a resource of any kind, e.g. the remaining battery time.
- **computableAsFraction**: This value indicates whether a fraction can be computed from the **absoluteValue**.
- **fraction**: This value shall be between 0 and 1 inclusively and represent the status of the resource, e.g. the fraction of remaining battery time over operation time when fully charged.
- **delta**: The delta field carries the difference of **absoluteValue** between this occurrence of the event and the previous occurrence.

After 6.5.6.2, add the following new subclauses:

6.5.6.3 DisplaySizeChanged Event

```
interface DisplaySizeChangedEvent : LAsER Event {  
    readonly attribute SVGLength diagonal;  
    readonly attribute SVGLength screenWidth;  
    readonly attribute SVGLength screenHeight;  
};
```

No defined constants

Attributes

- **diagonal**: This value indicates the new screen or viewport diagonal size. The diagonal value must be consistent with the screenWidth and screenHeight values. The value is expressed in inches.
- **screenWidth**: This value indicates the new viewport width. The value is expressed in pixels.
- **screenHeight**: This value indicates the new viewport height. The value is expressed in pixels.

6.5.6.4 MemoryStatus Event

```
interface MemoryStatusEvent : LAsER Event {  
    readonly attribute integer numberOfPoints;  
    readonly attribute Integer numberOfCharacters;  
    readonly attribute Integer compositionMemorySize;  
};
```

No defined constants

Attributes

- **numberOfPoints**: number of points allocated/freed by the terminal.
- **numberOfCharacters**: number of Unicode characters allocated/freed by the terminal.
- **compositionMemorySize**: composition memory size of images allocated/freed by the terminal.

In 6.6.2.2, add the following new attributes and tables:

- **adaptationType**: the LAsERHeader can signal a set of adaptation constraints in the form of type and value pairs. These type and value pairs can then be referenced in an **AdaptiveUpdateGroup** update to indicate that the given group of updates shall only be applied if the given adaptation constraints match the LAsER engine characteristics (e.g. required display size). The list of adaptation types is given in Table AMD2.1.
- **adaptationTypeValue**: indicates the value of the required LAsER engine characteristic described in the adaptation constraint type.
- **adaptationConstraints**: this attribute represents a list of indexes in the set of adaptation constraints required to process the scene segment.