
**Information technology — Multimedia
framework (MPEG-21) —**

**Part 18:
Digital Item Streaming**

AMENDMENT 1: Simple fragmentation rule

Technologies de l'information — Cadre multimédia (MPEG-21)

Partie 18: Transmission d'élément numérique

AMENDEMENT 1: Règle de fragmentation simple



Reference number
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AMENDMENT 1: Simple fragmentation rule

In Clause 2 add the following normative reference following the reference to ISO/IEC 15938-5:

ISO/IEC 16262:2002, *Information technology — ECMAScript language specification*

In 7.3.5 add the following paragraph:

BBL also allows for user-defined XPath functions to be defined by the BBL author using ECMAScript with DIS extensions. See also 7.3.24 and 9.

In 7.3.17 replace Table 17 Register Type with the following:

Table 17 — RegisterType

Diagram				
Children	bbl:Handler bbl:Encoder bbl:Multiplexer bbl:Bsd			
Attributes	Name	Type	Use	Description
	xmlSource	xs:string	optional	See SourceElementType (7.3.8)
	binarySource	xs:string	optional	
	bSrcNamespace	xs:string	optional	
Source	<pre><xs:complexType name="RegisterType"> <xs:complexContent> <xs:extension base="bbl:SourceElementType"> <xs:sequence> <xs:element name="Handler" type="bbl:HandlerType" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="Encoder" type="bbl:EncoderType" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="Multiplexer" type="bbl:MultiplexerType" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="BSD" type="bbl:BSDType" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="Function" type="bbl:FunctionType" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> </xs:extension> </xs:complexContent> </xs:complexType></pre>			

Insert a new Subclause 7.3.24 as follows and renumber subsequent subclauses appropriately:

7.3.24 Function element

A **Function** element is of type **FunctionType** and registers a user-defined XPath function. A user-defined XPath function is defined using the ECMAScript language (ISO/IEC 16262) with the DIS extensions as per clause 9. The function definition shall be contained as text content of a **Function** element.

Table AMD1. 1 — FunctionType

Diagram	FunctionType			
Used by	bbl:Register			
Attributes	Name	Type	Use	Description
	bbl:name	xs:Qname	required	The name of the function being defined.
	bbl:args	xs:nonNegativeInteger	optional	The number of arguments that the function accepts.
Source	<pre> <xs:complexType name="FunctionType"> <xs:simpleContent> <xs:extension base="xs:string"> <xs:attribute ref="bbl:name" use="required"/> <xs:attribute name="args" type="xs:nonNegativeInteger" use="optional" default="0"/> </xs:extension> </xs:simpleContent> </xs:complexType> </pre>			

In 7.3.36 replace the *Fragmentation* element specification with the following:

Diagram				
Children	bbl:FragmentAt bbl:Size bbl:Duration bbl:Count bbl:Constraint			
Attributes	Name	Type	Use	Description
	attributes	xs:NCName	optional	<p>Specifies whether reassembly attributes should be added to the fragments. Possible values are none, id, and context.</p> <p>A value of none indicates that no reassembly attributes should be attached to the fragments. This is the default value.</p> <p>A value of id indicates that bbl:fragmentRef and bbl:fragmentID attributes are to be attached to fragmentation nodes in the parent and child fragments respectively. The ID value assigned to each fragment is that of the id attribute of the fragmentAt element, if present, or an arbitrary ID which is unique in the BBL description, assigned by the processor.</p> <p>If the fragmentAt element matches multiple nodes, the ID assigned shall be the concatenation of the value of the fragmentAt id attribute and a unique integer.</p> <p>A value of context indicates that the bbl:context attribute, with a value as specified in [3] is added to the child fragment.</p>
Source	<pre> <xs:complexType name="FragmentationType"> <xs:sequence> <xs:element name="FragmentAt" type="bbl:FragmentAtType" minOccurs="0" maxOccurs="unbounded"/> </pre>			

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<xs:element name="Size" type="bbl:SizeType" minOccurs="0"/>
<xs:element name="Duration" type="bbl:DurationType" minOccurs="0"/>
<xs:element name="Count" type="bbl:CountType" minOccurs="0"
  maxOccurs="unbounded"/>
<xs:element name="Constraint" type="bbl:ConstraintType" minOccurs="0"
  maxOccurs="unbounded"/>
</xs:sequence>
<xs:attribute name="attributes" use="optional" default="none">
  <xs:simpleType>
    <xs:restriction base="xs:NCName">
      <xs:enumeration value="none"/>
      <xs:enumeration value="id"/>
      <xs:enumeration value="context"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
</xs:complexType>

```

Insert a new Subclause 7.3.37 as follows and renumber subsequent subclauses appropriately:

7.3.37 FragmentAt element

A **FragmentAt** element is of type **FragmentAtType** and declares that content should be fragmented so that a new fragment is to be created for any node matched. The specific node(s) matched shall be present in both parent and child fragments, and may have **fragmentRef** and **fragmentID** attributes respectively. Included descendants shall be present in the child fragment.

Included content shall be traversed in hierarchical order – beginning at the root of the content – and descendant content of a fragmentation node will be included in subsequent fragments.

For an example of the use of this element see C.8.

Table AMD1. 2 — FragmentAtType

Diagram	FragmentAtType			
Used by	bbl:Fragmentation			
Attributes	Name	Type	Use	Description
	match	xs:string	required	A W3C XPATH expression which is evaluated against the nodes returned by the parent include element and resolves to the node(s) at which new fragment(s) are to be created.
	deliveryTime	xs:string	optional	The delivery time of the fragment(s) declared by FragmentAt .
	repeat	xs:string	optional	The repetition period of the fragment(s) declared by FragmentAt .
	id	xs:ID	optional	If the attributes attribute is present on the parent Fragmentation element (see 7.3.36) and its value is id , then if the id attribute is present on a FragmentAt element its value shall be the ID value assigned to the bbl:fragmentRef and bbl:fragmentID attributes attached to fragmentation nodes in the parent and child fragments.
Source	<pre> <xs:complexType name="FragmentAtType"> <xs:attribute ref="bbl:match" use="required"/> <xs:attribute name="deliveryTime" type="xs:string" use="optional"/> <xs:attribute name="repeat" type="xs:string" use="optional" default="0"/> <xs:attribute name="id" type="xs:ID" use="optional"/> </xs:complexType> </pre>			