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**AMENDMENT 1**  
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**Information technology — Dynamic  
adaptive streaming over HTTP  
(DASH) —**

**Part 5:  
Server and network assisted DASH  
(SAND)**

**AMENDMENT 1: Improvements on SAND  
messages**

*Technologies de l'information — Diffusion en flux adaptatif  
dynamique sur HTTP (DASH) —*

*Partie 5: DASH assisté par serveur et réseau (SAND)*

*AMENDEMENT 1: Améliorations relatives aux messages de SAND*



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# Information technology — Dynamic adaptive streaming over HTTP (DASH) —

## Part 5: Server and network assisted DASH (SAND)

### AMENDMENT 1: Improvements on SAND messages

#### 6.4.1.3

Replace Table 3 with the following:

**Table 3 — AnticipatedRequests parameters**

Parameter	Type	Cardinality	Description
AnticipatedRequests	object	1	
request	array	1..N	The ordered list of anticipated requests. High priority requests are listed first.
sourceUrl	url	1	URL for a segment of a given representation.
range	string	0..1	This is the byte range specification when the segment is only a part of the content referred to by sourceUrl.
targetTime	date-time	0..1	Time at which the DASH client expects to request the resource identified by sourceUrl.

#### 6.4.7.3

Add the following paragraph at the end of the subclause:

When supportedMessage and messageSetUri are both present in the same message, it means that the client supports all messages in the supportedMessage list and all messages in the messageSetUri.

#### 6.5.9.3

Add the following paragraph at the end of the subclause:

When supportedMessage and messageSetUri are both present in the same message, it means that the client supports all messages in the supportedMessage list and all messages in the messageSetUri.

## Annex A

Replace

```
<!-- DaneCapabilities Type -->
<xs:complexType name="DaneCapabilitiesType">
  <xs:complexContent>
    <xs:extension base="SANDMessageType">
      <xs:choice>
        <xs:sequence>
```

```

        <xs:element name="SupportedMessage" type="xs:unsignedInt" minOccurs="1"
maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:element name="MessageSetUri" type="xs:anyURI"/>
</xs:choice>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

with

```

<!-- DaneCapabilities Type -->
<xs:complexType name="DaneCapabilitiesType">
    <complexContent>
        <extension base="SANDMessageType">
            <xs:sequence>
                <xs:element name="SupportedMessage" minOccurs="0" maxOccurs="unbounded">
                    <complexType>
                        <xs:attribute name="messageType" type="xs:unsignedInt" use="required"/>
                    </complexType>
                </xs:element>
            </xs:sequence>
            <xs:attribute name="messageSetUri" type="xs:anyURI"/>
        </extension>
    </complexContent>
</xs:complexType>

```

replace

```

<!-- SAND message base Type -->
<xs:complexType name="SANDMessageType">
    <xs:attribute name="messageId" type="xs:unsignedInt" use="required"/>
    <xs:attribute name="validityTime" type="xs:dateTime"/>
</xs:complexType>

```

with

```

<!-- SAND message base Type -->
<xs:complexType name="SANDMessageType">
    <xs:attribute name="messageId" type="xs:unsignedInt"/>
    <xs:attribute name="validityTime" type="xs:dateTime"/>
</xs:complexType>

```

*Annex B*

Add the following text before the last paragraph of Clause B.1:

The first four algorithms build on the use of the `allocate_at_most()` function called with the input parameter `available_bandwidth`. This function allocates to a DASH client a bandwidth comprised between:

- at least, the bandwidth required for the highest operation point workable under `available_bandwidth` constraint, and
- at most, the full bandwidth budget given by `available_bandwidth`.

This allows DANE implementations to allocate a DASH client the exact bandwidth needed for its highest workable operation point while also allowing to add some additional bandwidth up to `available_bandwidth`. Note that the logic to determine the amount of such additional bandwidth is out of scope of the current document.