SMPTE OVERVIEW DOCUMENT

Broadcast Exchange Format — Roadmap for the 2021 Document Suite

Document Roadmap

The SMPTE 2021 suite of documents specifies the Broadcast eXchange Format (BXF). This particular document (SMPTE 2021-0:2018) serves as a roadmap to the entire suite of 2021 documents, as well as other related files.

Documents in the SMPTE 2021 Suite

SMPTE RP 2021-1 – General Information and Informative Notes (Normative and Informative Sections)

This document serves as the base standard document for the 2021 suite. It includes a comprehensive set of definitions, discussion of system data flow, security, configuration, and a large set of informative notes. This document is critical to anyone implementing BXF, as it is referenced by all other documents in this suite.

The distribution of SMPTE ST 2021-1 also includes:

Schema Definition File Collection (2021-1a-2009 Schema.zip)

This is the collection of XSD files which are required to implement BXF.

HTML Schema Documentation (2021-1b-2009 Schema HTML.zip)

This is a visual representation of the entire BXF schema, including all XSDs. It provides a graphical, non technical view into the structure of the schema from top to bottom, including relationships between portions of the schema, as well as complete documentation of all schema attributes and elements.

SMPTE ST 2021-2 – Protocol (Entirely Normative)

This document specifically and exclusively deals with issues surrounding protocol as it relates to BXF. It addresses the nature of BXF TCP/IP connections, sending of messages, dealing with inactive connections, initiation of servers, timeout of services, encryption of BXF messages, message formats, as well as file-based transport.

SMPTE EG 2021-3 – Engineering Guideline – BXF Use Cases (Entirely Informative)

This document provides a rich set of use cases, illustrating the use of BXF in real-world scenarios, complete with XML samples. The use cases cover such examples as: schedule, dub order, purge order, record order, transfer order, content notification, queries, invoking schedules, heartbeat messages, as runs, playlist updates, and acquisition failures. This document is intended to assist those wishing to implement BXF in specific ways.

This is a preview. Click here to purchase the full publication.

SMPTE ST 2021-4 –BXF Schema Documentation

This document provides documentation of each of the schema definition files included with 2021 (the XSDs). It covers all of the XSD files and explains all of the attributes and elements contained in each.

SMPTE RP 2021-5 – Recommended Practice - Using Ad-ID and
EIDR as alternate identifiers in SMPTE BXF and ATSC PMCP

This document was created to assist BXF implementers with a recommendation for use of the two commonly used identifiers (Ad-ID and EIDR) in a BXF environment.

SMPTE RP 2021-9 – Recommended Practice (Normative and Informative Sections)

This document was created to assist BXF implementers who have read the other documents in the 2021 suite to create interoperable implementations. It covers such topics as: wellformedness and validation, processing model, general conventions related to various messages, as well as transport protocol (both connection-based and file-based). Perhaps the most useful portion of this Recommended Practice is its enumeration of message types that are typically used by different types of applications. If you are implementing BXF for an automation system, for instance, you can go directly to that portion of the document to see what parts of BXF are specifically applicable to your system. The document then goes into each major subset of BXF (configuration, content, content transfer, format, and schedule) in detail. The document also includes annexes covering: supported extensions, message type usages, error handling, and protocol transport.

Changes Contained In BXF 2.0

BXF 2.0 consists of a collection of four significant schema updates, adding new capabilities required by implementers. It is important to note that these changes are all backward-compatible. Existing BXF implementations will continue to operate as they always have. A new set of XSD (schema definition files) as well as XML samples is included in the 2021 package.

Below is an outline of the changes included within BXF 2.0.

1. **Change to all XSD headers for this new release:**

In order to distinguish BXF 2.0 schemas from those of BXF 1.0, the headers in each of the BXF XSD files have been updated to reflect the new version, as well as a new location for the BXF 2.0 schemas.

Old Version of all headers:

```
<!-- Copyright 2008 Society of Motion Picture and Television Engineers. All rights reserved. -->
<xs:schema xmlns="http://smpte-ra.org/schemas/2021/2008/BXF"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:pmcp="http://www.atsc.org/XMLSchemas/pmcp/2007/3.1" targetNamespace="http://smpte-ra.org/schemas/2021/2008/BXF" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.000">
```

New Version of all headers:

```
<!-- Copyright 2011 Society of Motion Picture and Television Engineers. All rights reserved. -->
```

```xml
<xs:schema xmlns="http://smpte-ra.org/schemas/2021/2011/BXF"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:pmcp="http://www.atsc.org/XMLSchemas/pmcp/2007/3.1" targetNamespace="http://smpte-
ra.org/schemas/2021/2011/BXF" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="2.000">
```

2. Addition of support for sponsored secondary events

A new structure has been added within the BXF nonprimaryevent.xsd schema definition. This allows a non-primary event to be either a standard non-advertising related event (as was allowed in BXF 1.0), or an advertising-related event (indicated in the schema as a NonProgramEvent). This allows the scheduling of a non-primary program event that plays concurrently with the primary event being played. An example would be the squeezed-back end credits of a program (non-primary event) that airs concurrently with the primary event start of the following program.

nonprimaryevent.xsd	
Version 1.0	**Version 2.0**
New Version supports a choice between NonProgramEvents and ProgramEvent	

`<xs:element name="NonProgramEvents" type="NonProgramEvent" minOccurs="0">`
`    <xs:annotation>`
`        <xs:documentation>`Used to specify non-primary events that use speciific interstitial content`</xs:documentation>`
`    </xs:annotation>`
`</xs:element>`
	`<xs:choice minOccurs="0">`
	`    <xs:element name="NonProgramEvents" type="NonProgramEvent">`
	`        <xs:annotation>`
	`            <xs:documentation>`Used to specify non-primary events that use speciific interstitial content`</xs:documentation>`
	`        </xs:annotation>`