
SMPTE EG 2021-4:2013

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SMPTE ENGINEERING GUIDELINE

Broadcast Exchange Format (BXF) — Schema Documentation



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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Operations Manual.

SMPTE EG 2021-4 was prepared by Technology Committee 34CS.

Introduction

This section is entirely informative and does not form an integral part of this Engineering Document

Broadcast Exchange Format (BXF) is a protocol for exchange of data among broadcast systems such as Traffic, Program Management, Automation, and Content Distribution. It is intended to facilitate the movement of content and its associated metadata for better management, coordination and reporting between these broadcast systems. The BXF Protocol serves as a replacement for the many proprietary interfaces in place today between vendors in these areas.

As of BXF 3.0, many schema changes have taken place. Those changes are described under the appropriate schema sections in this document.

Please note that EG2021-4:2013a contains the actual schema files (XSDs) referenced in this document, and that EG2021-4:2013b contains HTML-based documentation of all BXF schema files.

1. Scope

The Broadcast eXchange Format (BXF) defines the format and content of XML Messages for the interchange of data and metadata among professional systems, as follows:

1. Broadcast schedules, including playout and record schedules
2. As run information
3. Content metadata, such as Content ID, Title, Duration, etc.
4. Content management requests such as dub and purge requests
5. Requests for transfer of content some of which will result in the transfer of Content essence between professional systems.
6. Ports as used by TCP/IP for the exchange of messages

The primary systems envisioned as users of this standard are:

Program Management Systems
Broadcast Traffic Systems
Master Control Automation Systems
Content Distribution Systems

This particular document focuses on documentation of the BXF schemas.

2. Description of BXF Schema (Informative)

This documentation does not contain the actual schema, but instead provides a reference to the individual files that can be viewed with any number of tools, including easily accessible browsers such as Microsoft's Windows® Internet Explorer®, Apple's Safari, and other third party tools. In addition to the XML Schema Files (.XSD) the user can also browse the schema using the .html files.

Depending on the tools you use, different parts of the schema may appear in different formatting. The section below describes the meaning of various parts of the schema as you would see them in the .html version.

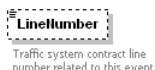
3. Schema Documentation

A number of graphics and symbols are used in the documentation to help describe the various elements of the schema and how the elements are related. These represent components and the relationships between schema components. The different components are represented by the following:

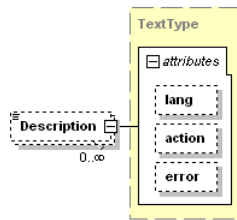
Single element – mandatory: Indicated by a rectangle with a solid border. The element name is inside the shape.



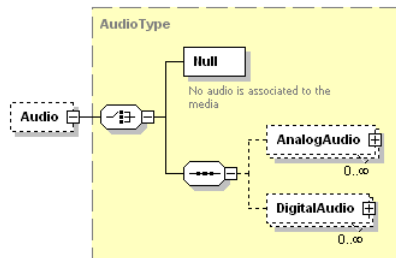
Single element – optional: Indicated by a rectangle with a dashed border. The element name is inside the shape.



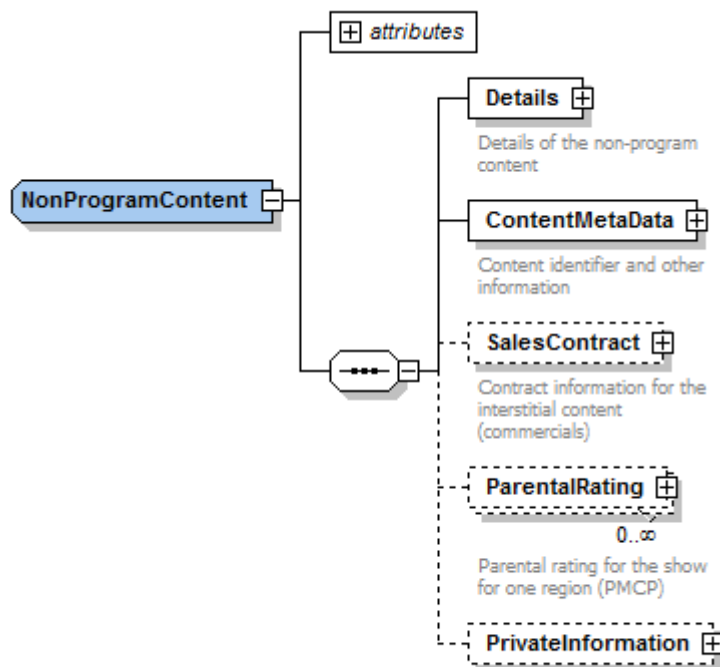
Multiple elements: Indicated by a rectangle with a solid border with a number range representing the minimum and maximum number of occurrences possible. In the example, 0 to infinity (0..∞) is shown.



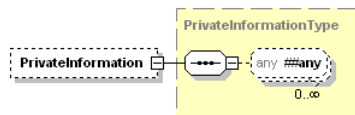
Elements containing child elements: Indicated by a [+] or [-] on the element, representing an element containing additional attributes or elements. The [+] indicates that additional elements are available for display. The [-] indicates that the child elements are displayed.



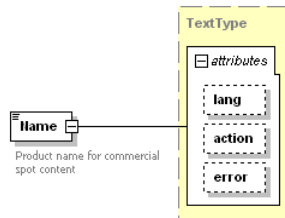
Complex type: Indicated by a partial hexagon and a child element symbol.



Wildcards: Indicated by an octagon with any at the left.

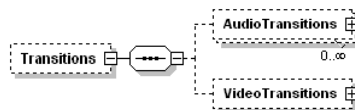



Attributes: Indicated by the word ‘attributes’

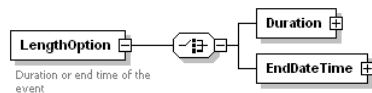


The relationships between components are represented by symbols for sequence and choice.

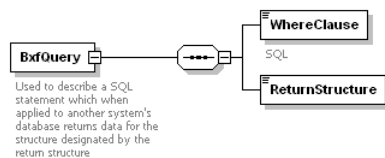
Sequence: The sequence compositor  shows that all elements occur in sequence.



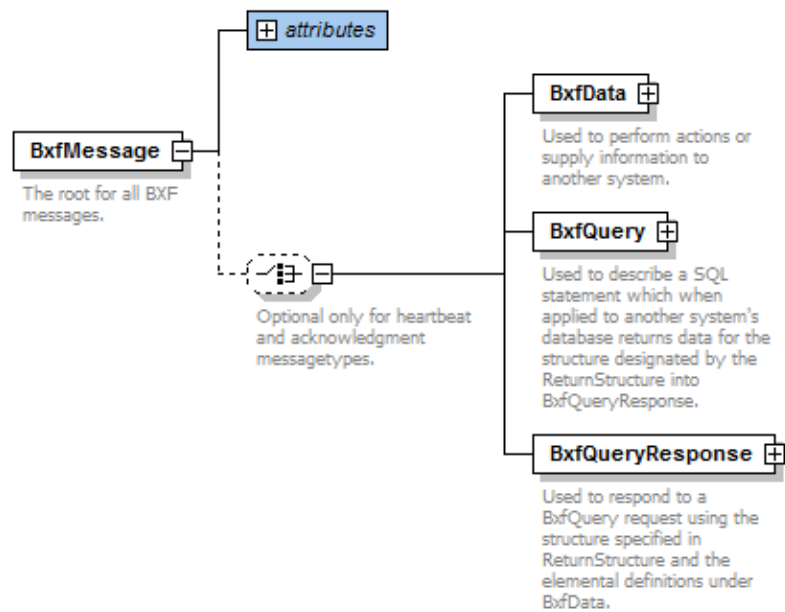
Choice: The choice compositor  shows the ‘or’ relationship between associated components (only one choice may be made).



Solid lines: Solid lines connecting elements represent mandatory connections within the schema diagrams.

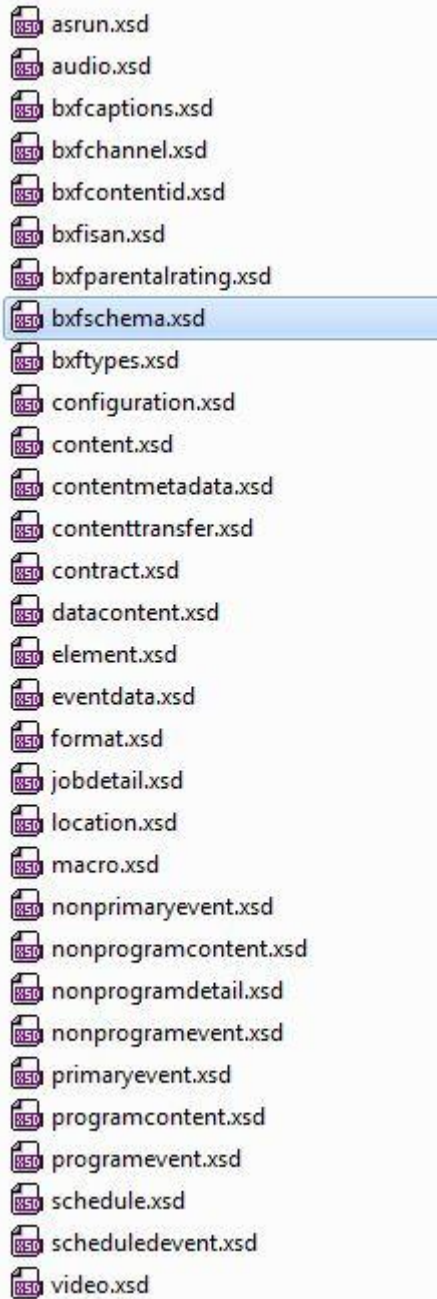


Dashed lines: Dashed lines between elements represent optional connections within the schema diagrams.



3.1 Schema File List

The Schema is actually composed of 31 files listed below. The root file (starting point) is bxfshema.xsd and all other files are referenced from this file. A brief description of each file is given below in alphabetical order. This same description may also be contained in the schema for major elements, but some elements do not contain a description and were segregated into separate files for the convenience of managing the schema.



3.2 Header Change in BXF 3.0

All XSD file headers have same change regarding copyright and targetNamespace:

```
<!-- Copyright 2013 Society of Motion Picture and Television Engineers. All rights reserved. -->

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="http://smpte-ra.org/schemas/2021/2013/BXF"
  xmlns:pmcp="http://www.atsc.org/XMLSchemas/pmcp/2007/3.1" targetNamespace="http://smpte-
  ra.org/schemas/2021/2013/BXF" elementFormDefault="qualified" attributeFormDefault="unqualified"
  version="3.000">
```

Several of the XSDs had only their header changed, and are listed below.

Asrun.XSD
BXCaptions.XSD
BXFChannels.XSD
BXFContentID.XSD
BXFISAN.XSD
BXFParentalRating.XSD
Configuration.XSD
Content.XSD
DataContent.XSD
Macro.XSD
NonProgramContent.XSD
PrimaryEvent.XSD
Schedule.XSD
ScheduledEvent.XSD

3.2.1 Asrun.XSD

Contains:



include	loc:bxftypes.xsd	
include	loc:scheduleevent.xsd	
complexType	AsRunDetail	ann:
complexType	BasicAsRun	ann:
complexType	CompleteAsRun	ann:

Used to describe the exact timing of events on a schedule after the event has been aired, including any errors or other problems that occurred during the broadcast or transmission of the content.

3.2.2 Audio.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1
include	loc:bxftypes.xsd	
complexType	Audios	ann:Extends PMCP AudioType
complexType	Ac3AudioExt	ann:Extends PMCP Ac3Audio
complexType	AnalogAudio	ann:Enumerates the settings of audio included in analog content
complexType	Audio	ann:The base for all audio definitions
complexType	AudioTransition	ann:Enumerates the settings to transition from one audio to another
complexType	DigitalAudio	ann:Enumerates the different types of digital audio streams
complexType	DigitalAudioAttribute	ann:Enumerates the parameters of a digital audio stream
complexType	TSAudio	ann:Enumerates the parameters of digital audio in a transport stream
simpleType	AudioModeType	ann:Defines the way audio is transitioned
simpleType	AudioRateType	ann:Defines the speed of an audio transition
simpleType	AudioTransitionEnumType	ann:Indicates if an audio transition is to be mixed or a cut

The basis for all audio definitions.

3.2.2.1 BXF 3.0 Changes

Several new DigitalAudio Attributes added to Audio.XSD

Description of change:

Some new attributes were added to aid in the exchange of loudness (and CALM) related data. Added as attributes of Digital Audio in the schema were: True Peak, Measured Loudness, Measurement Method, Dialnorm, and Low Audio Levels.

Text representation:

```
<xs:element name="DigitalAudio" type="DigitalAudio" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Enumerates the different types of digital audio streams. (v3.0)</xs:documentation>
  </xs:annotation>
```

```
<xs:attribute name="truePeak">
  <xs:annotation>
    <xs:documentation>BS.1770 (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:nonPositiveInteger">
      <xs:minInclusive value="-146"/>
      <xs:maxInclusive value="0"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

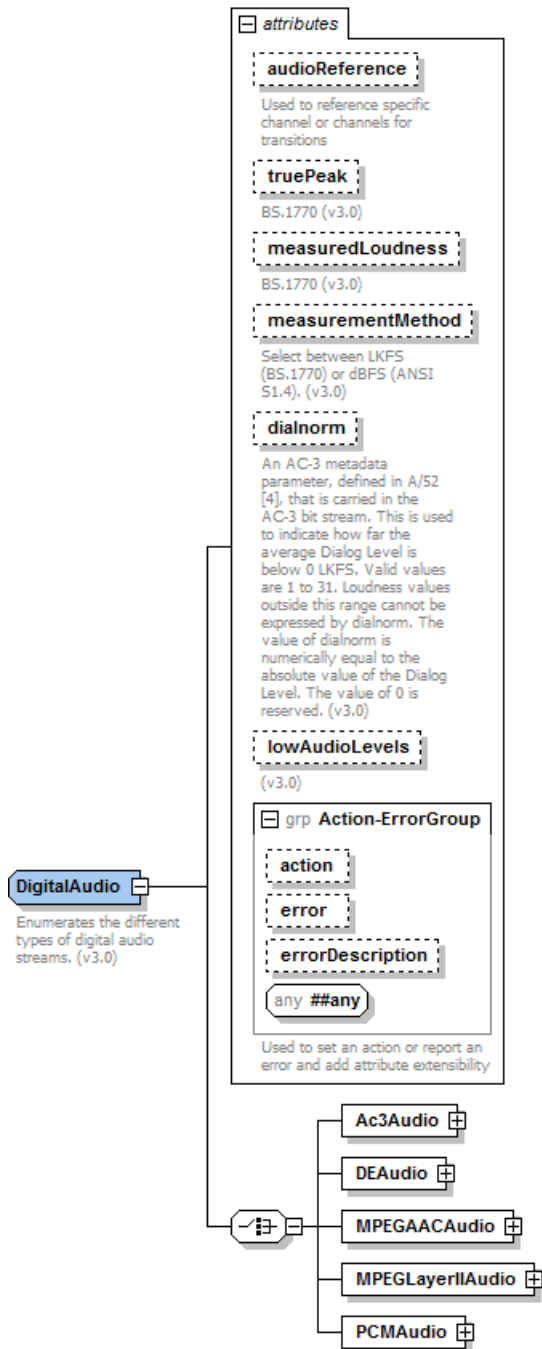
```
<xs:attribute name="measuredLoudness">
  <xs:annotation>
    <xs:documentation>BS.1770 (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:nonPositiveInteger">
      <xs:minInclusive value="-146"/>
      <xs:maxInclusive value="0"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
```

```

    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="measurementMethod">
    <xs:annotation>
      <xs:documentation>Select between LKFS (BS.1770) or dBFS (ANSI S1.4). (v3.0)</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="dBFS"/>
        <xs:enumeration value="LKFS"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="dialnorm">
    <xs:annotation>
      <xs:documentation>An AC-3 metadata parameter, defined in A/52 [4], that is carried in the AC-3 bit stream. This is used to indicate how far the average Dialog Level is below 0 LKFS. Valid values are 1 to 31. Loudness values outside this range cannot be expressed by dialnorm. The value of dialnorm is numerically equal to the absolute value of the Dialog Level. The value of 0 is reserved. (v3.0)</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:positiveInteger">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="31"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="lowAudioLevels">
    <xs:annotation>
      <xs:documentation>(v3.0)</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
      <xs:restriction base="xs:nonPositiveInteger">
        <xs:minInclusive value="-146"/>
        <xs:maxInclusive value="0"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>

```

Graphic representation:



3.2.3 BxfCaptions.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1
include	loc:bxfatypes.xsd	
complexType	BxfCaptions	ann:Caption Service Descriptor (A/65B 6.9.3)
complexType	BxfCaption608	ann:
complexType	BxfCaption708	ann:

Caption Service Descriptor (A/65B 6.9.3).

3.2.4 BxfChannel.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1
include	loc:bxfatypes.xsd	
complexType	Channel	ann:

Extends ATSC's PMCP 3.1 definition of a channel.

3.2.5 BxfContentId.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchemas/pmcp/2007/3.1
include	loc:bxfisan.xsd	
complexType	BxfAlternateId	ann:
complexType	BxfHouseNumber	ann:
complexType	BxfContentId	ann:Groups several content IDs that may be used simultaneously to label and reference a show

Groups several Content IDs that may be used simultaneously to label and reference a show. In Version 2, support was added for the reuse of House Numbers by adding "duration of effectiveness" as supported under ATSC's A57/B standard.

3.2.6 BxfISAN.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchema/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchema/pmcp/2007/3.1
include	loc:bxftypes.xsd	
complexType	BxfIsan	ann:

Used to define entry of an ISAN value into ContentID. Go to www.isan.org for more information on the use of ISAN with content identification.

3.2.7 BxfParentalRating.XSD

Contains:

import	loc:http://www.atsc.org/XMLSchema/pmcp/2007/3.1/pmcp31.xsd	ns:http://www.atsc.org/XMLSchema/pmcp/2007/3.1
include	loc:bxftypes.xsd	
complexType	BxfParentalRating	ann:

Used to define entry of parental rating values as an extension of ATSC's PMCP 3.1.

3.2.8 BxfSchema.XSD

Contains:

import	loc:http://www.w3.org/2001/xml.xsd	ns:http://www.w3.org/XML/1998/namespace
include	loc:bxftypes.xsd	
include	loc:bxfschannel.xsd	
include	loc:schedule.xsd	
include	loc:contenttransfer.xsd	
include	loc:configuration.xsd	
include	loc:jobdetail.xsd	
element	BxfMessage	ann:The root for all BFX messages.

The root for all BFX messages.

3.2.8.1 BXF 3.0 Changes

a) "JobDetail" added as new file, JobDetail.XSD (see below), and used under BXFData in BXFSchema.XSD

Description of change:

A new structure, called JobDetail, was added as an entirely new schema, referenced under the BXFData portion of the main BXFSchema.XSD. This was done in order to permit the grouping of messages under a single job. This is necessary so that systems may associate a series of dependent steps to each other within BXF exchanges.

Text representation:

```
<xs:include schemaLocation="jobdetail.xsd"/>
```

```
<xs:element name="JobDetail" type="JobDetail" minOccurs="0" maxOccurs="unbounded">
```

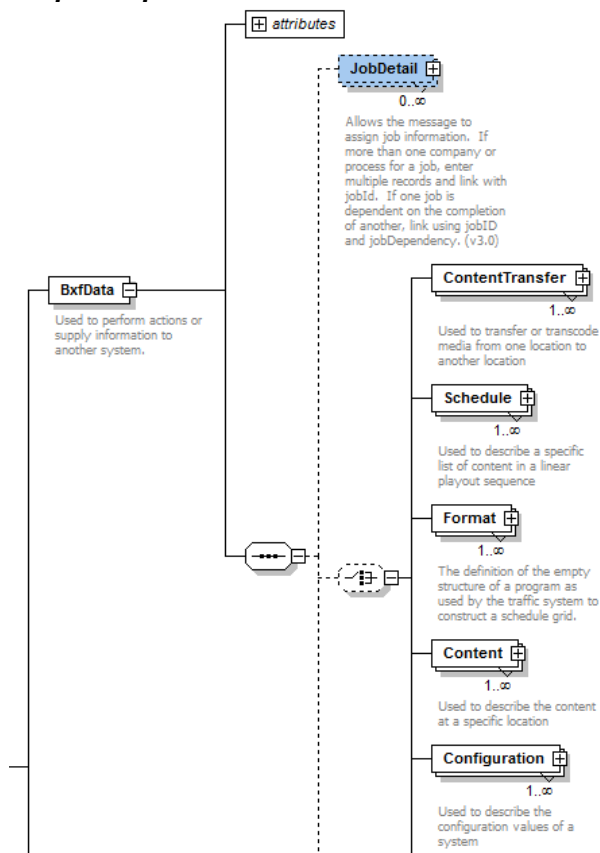
```
<xs:annotation>
```

<xs:documentation>Allows the message to assign job information. If more than one company or process for a job, enter multiple records and link with jobId. If one job is dependent on the completion of another, link using jobId and jobDependency. (v3.0)</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

Graphic representation:



b) "TrafficInstructions" added as new element choice under BxfData.

Description of change:

A new choice has been added under BxfData to provide the ability to fully describe copy instructions for traffic systems to place commercials (nonprogram content). This element uses a new matching Complex Type also called "TrafficInstructions" which is defined in JobDetail.XSD.

Text representation:

```
<xs:element name="TrafficInstructions" type="TrafficInstructions" maxOccurs="unbounded">
```

```
<xs:annotation>
```

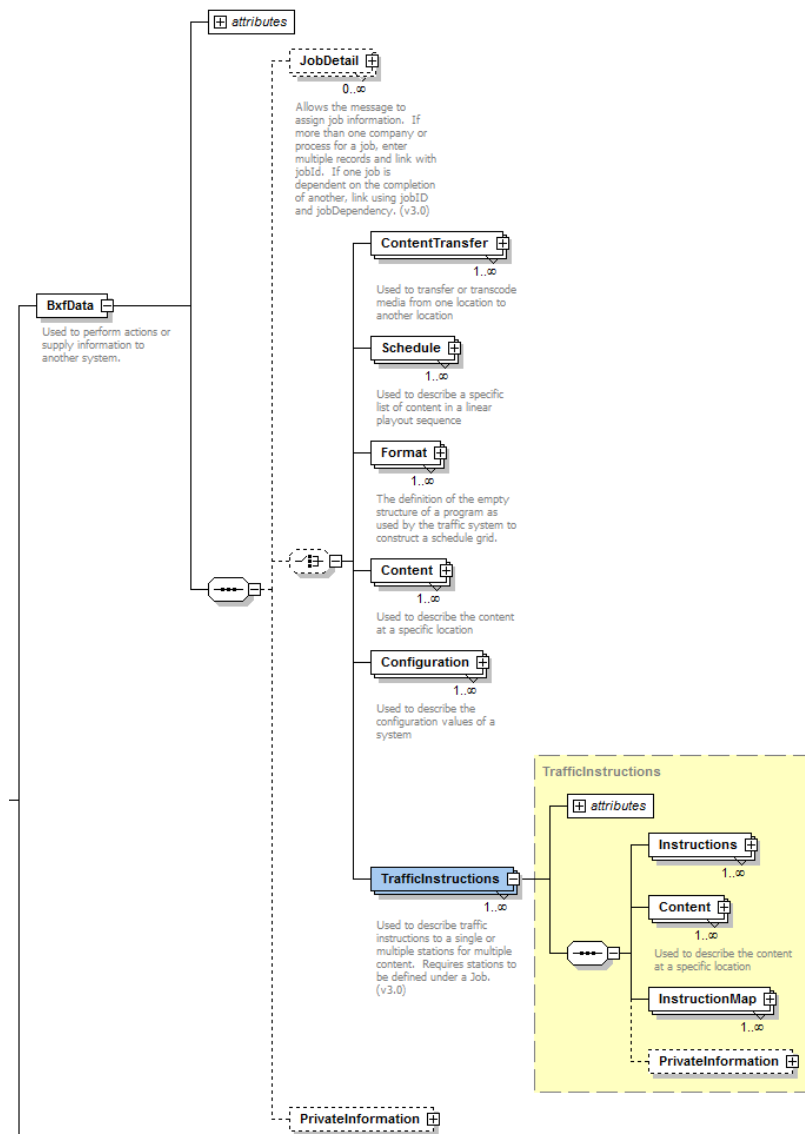
```
<xs:documentation>Used to describe traffic instructions to a single or multiple stations for multiple content.
```

```
Requires stations to be defined under a Job. (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

Graphic representation:



c) “password” added as new attribute to BxfMessage in BxfSchema.XSD

Description of change:

The ability to include a password for validation of the already-existing User Name was added. This is expected to be of use for systems requiring such validation for BXF messages that they consume.

Text representation:

```
<xs:attribute name="password">
```

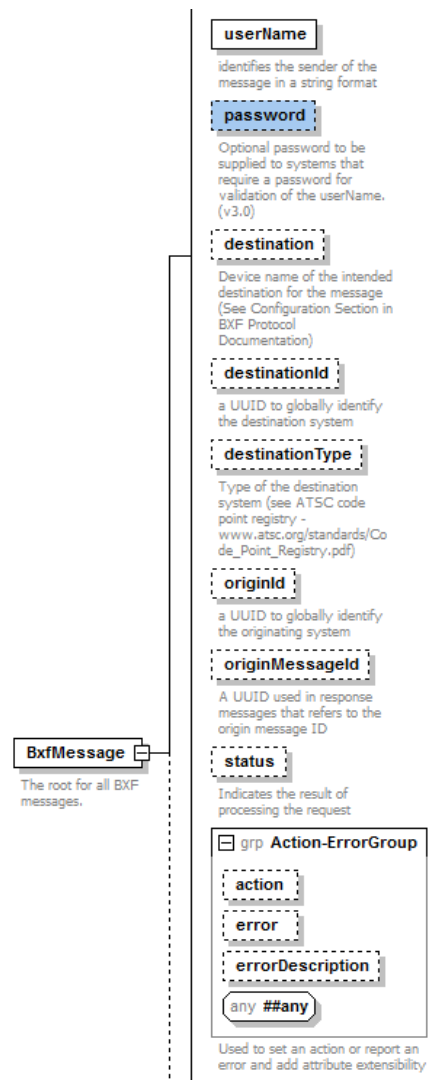
```
<xs:annotation>
```

```
<xs:documentation>Optional password to be supplied to systems that require a password for validation of  
the userName. (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:attribute>
```

Graphic representation:



3.2.9 BxfTypes.XSD

Contains:

URI	XML Schema
http://www.atsc.org/XMLSchema/pscp2007051/pscp3	http://www.atsc.org/XMLSchema/pscp2007051
xs:complexType	BxfAddress
xs:complexType	BxfCompany
xs:complexType	BxfContact
xs:complexType	BxfCoverage
xs:complexType	BxfDaypart
xs:complexType	BxfDuration
xs:complexType	BxfExtensions
xs:complexType	BxfPrivateInformation
xs:complexType	BxfSampleTime
xs:complexType	BxfSampleDateTime
xs:complexType	BxfStation
xs:complexType	BxfText
xs:complexType	BxfUTCDateTime
xs:complexType	EventNotes
xs:complexType	ActionErrorGroup
xs:complexType	PrncpActionErrorExtensionGroup
xs:complexType	AsAnStatusType
xs:complexType	BxfErrorName
xs:complexType	BxfElementaryErrorExt
xs:complexType	BxfElementaryError
xs:complexType	BxfError
xs:complexType	BxfStatus
xs:complexType	BxfStatusExtType
xs:complexType	BxfText
xs:complexType	DayPattern
xs:complexType	DestinationType
xs:complexType	ICCode
xs:complexType	ICCode
xs:complexType	Message
xs:complexType	OperationModeType
xs:complexType	OriginType
xs:complexType	QueryStringIdentifier
xs:complexType	QueryString
xs:complexType	ScheduleEvent
xs:complexType	ScheduleType
xs:complexType	Simple255MTimeCode
xs:complexType	StreamModeType
xs:complexType	Uuid

Used as to store all the utility elements that are used by most of the other schema files.

3.2.9.1 BXF 3.0 Changes

Multiple new Complex Types have been added to the BXFTypes schema in order to support broader functionality in several of the other schema XSD files.

- BxfAddress – address details
- BxfCompany – company details
- BxfContact – contact details
- BxfCoverage – physical distribution coverage of content
- BxfDaypart – fully describes a daypart
- BxfExtensions – allows user to describe a specific extension of data
- BxfStation – describe a broadcast location or distributor of media content

While it would have been preferable to rename “framecount” to be “frameCount”, and be internally consistent with the use of camel case, to maintain backward compatibility, the original name “framecount” has been retained.

Description of change:

- BxfAddress is used to represent a standard address for a company or a contact person.
- BxfCompany allows the full description of a company including addresses and contact information.
- BxfContact is used to describe a single person’s name, addresses, emails, and phone numbers in order to contact that person.
- BxfDaypart moves former daypart descriptions into a formal type definition to be consistent with other complex types in the schema.
- BxfStation uses the other new complex types to fully describe a broadcaster or distributor of media content with specific enumerated types.

Text representation:

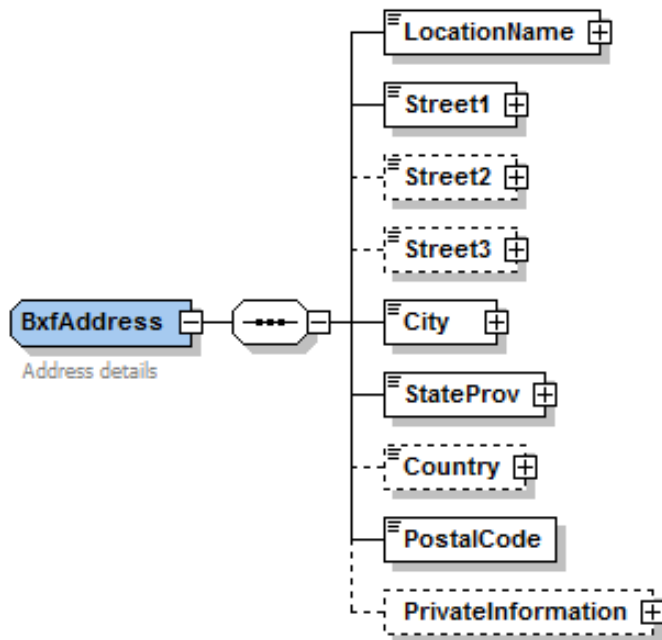
```
<xs:complexType name="BxfAddress">
```

```

<xs:annotation>
<xs:documentation>Address details</xs:documentation>
</xs:annotation>
  <xs:sequence>
    <xs:element name="LocationName" type="BxfText"/>
    <xs:element name="Street1" type="BxfText"/>
    <xs:element name="Street2" type="BxfText" minOccurs="0"/>
    <xs:element name="Street3" type="BxfText" minOccurs="0"/>
    <xs:element name="City" type="BxfText"/>
    <xs:element name="StateProv" type="BxfText"/>
    <xs:element name="Country" type="BxfText" minOccurs="0"/>
    <xs:element name="PostalCode" type="xs:string"/>
    <xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

Graphic representation:



Text representation:

```

<xs:complexType name="BxfCompany">
<xs:annotation>
<xs:documentation>Defines all the attributes required for a company</xs:documentation>
</xs:annotation>
  <xs:sequence>
    <xs:element name="CompanyName" type="BxfText">
      <xs:annotation>
        <xs:documentation>The name of the company</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="CompanyType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Used to designate the type of company such as an agency, advertiser, third party
processor, station, network, etc. (See Configuration Section in BXF Protocol
Documentation)</xs:documentation>

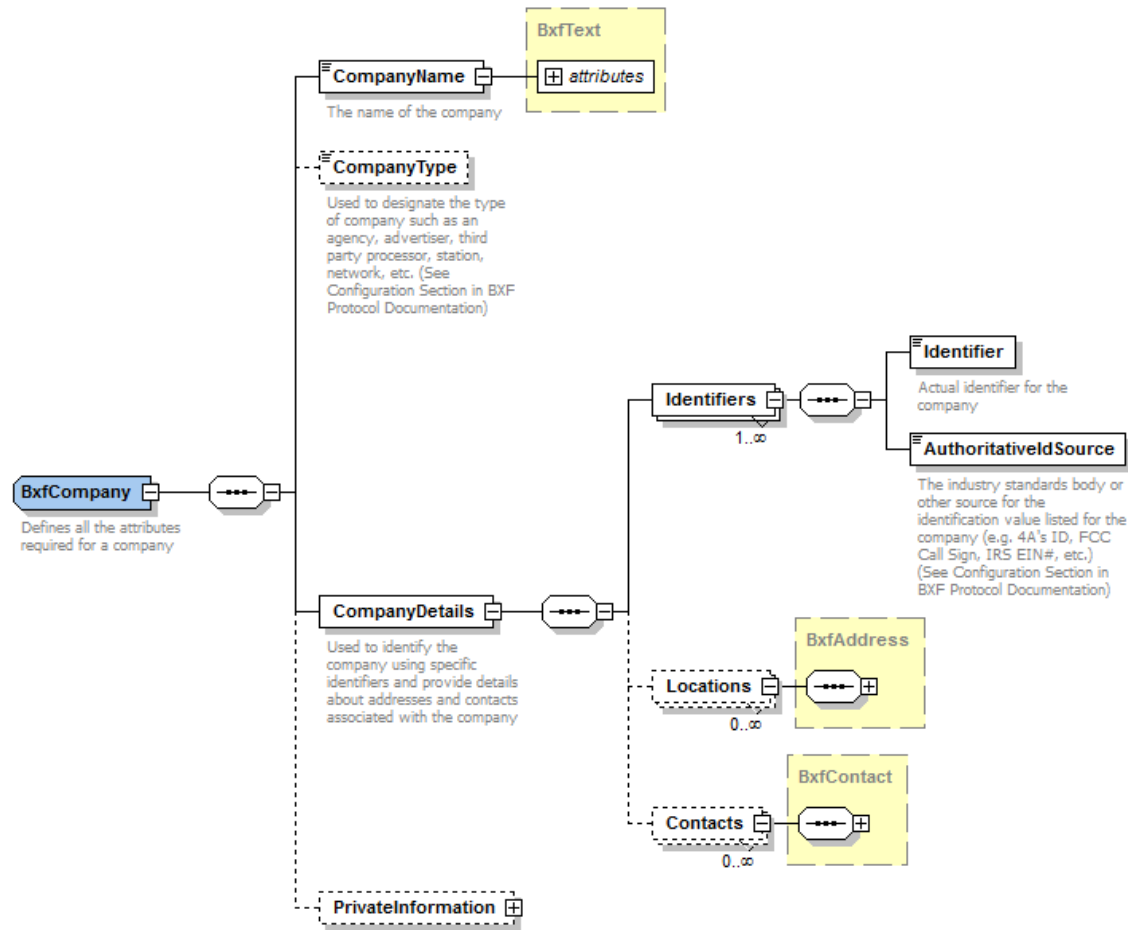
```

```

</xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="Advertiser"/>
      <xs:enumeration value="Agency"/>
      <xs:enumeration value="TV Station"/>
      <xs:enumeration value="Cable Network"/>
      <xs:enumeration value="TV Network"/>
      <xs:enumeration value="Local Cable System"/>
      <xs:enumeration value="Satellite Service"/>
      <xs:enumeration value="Program Distributor"/>
      <xs:enumeration value="Radio Network"/>
      <xs:enumeration value="Radio Station"/>
      <xs:enumeration value="MSO"/>
      <xs:enumeration value="Interconnect Content Distributor"/>
      <xs:enumeration value="Other"/>
      <xs:enumeration value="MVPD"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
<xs:element name="CompanyDetails">
  <xs:annotation>
    <xs:documentation>Used to identify the company using specific identifiers and provide details about
addresses and contacts associated with the company</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Identifiers" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Identifier" type="xs:string">
              <xs:annotation>
                <xs:documentation>Actual identifier for the company</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="AuthoritativeIdSource" type="xs:string">
              <xs:annotation>
                <xs:documentation>The industry standards body or other source for the
identification value listed for the company (e.g. 4A's ID, FCC Call Sign, IRS EIN#, etc.) (See Configuration
Section in BXF Protocol Documentation)</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Locations" type="BxfAddress" minOccurs="0"
maxOccurs="unbounded"/>
      <xs:element name="Contacts" type="BxfContact" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
  <xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

Graphic representation:



Text representation:

```

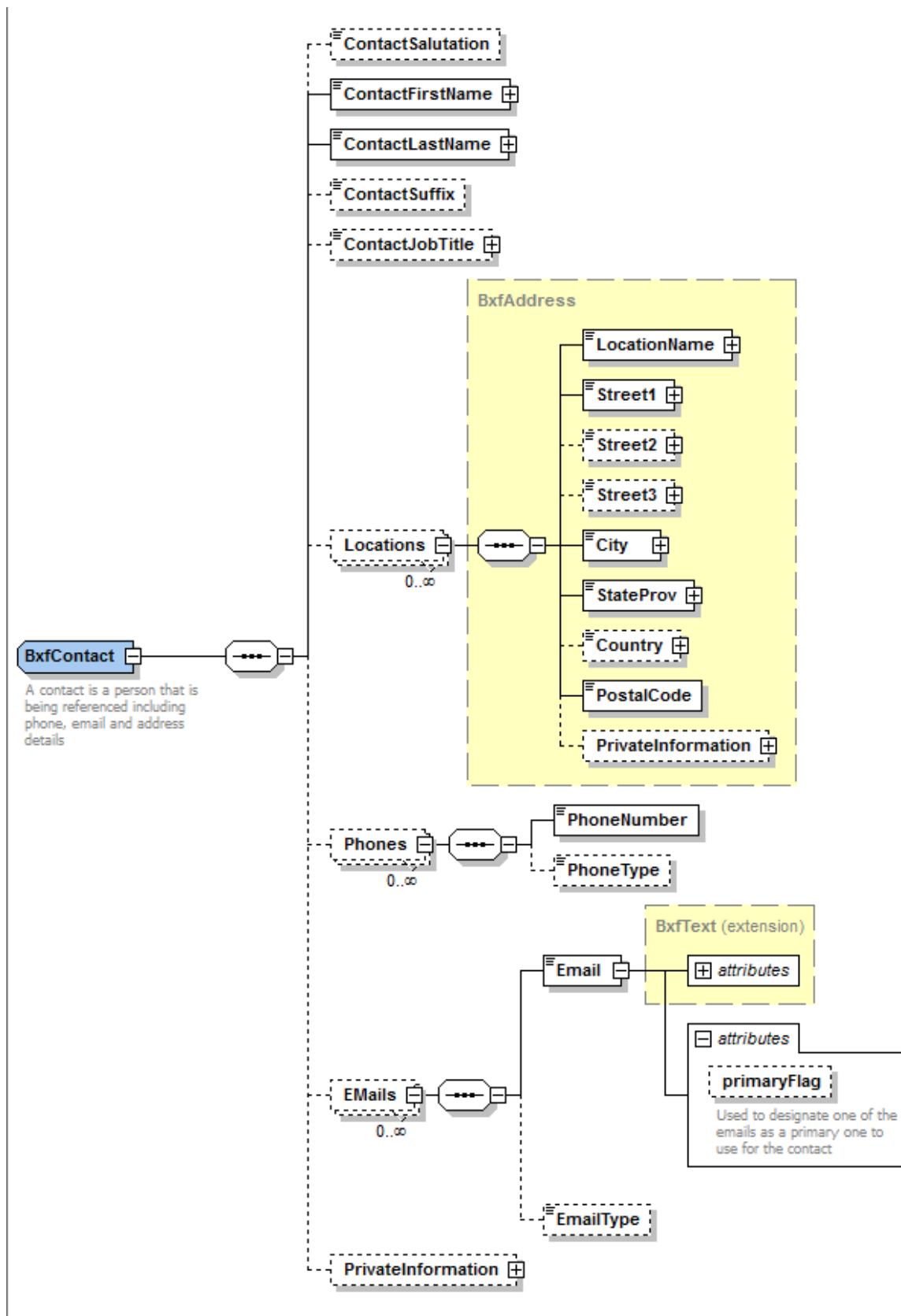
<xs:complexType name="BxfContact">
  <xs:annotation>
    <xs:documentation>A contact is a person that is being referenced including phone, email and address details</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ContactSalutation" minOccurs="0"/>
    <xs:element name="ContactFirstName" type="BxfText"/>
    <xs:element name="ContactLastName" type="BxfText"/>
    <xs:element name="ContactSuffix" minOccurs="0"/>
    <xs:element name="ContactJobTitle" type="BxfText" minOccurs="0"/>
    <xs:element name="Locations" type="BxfAddress" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="Phones" minOccurs="0" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="PhoneNumber" type="xs:string"/>
          <xs:element name="PhoneType" minOccurs="0">
            <xs:simpleType>
              <xs:restriction base="xs:string">
                <xs:enumeration value="Business"/>
                <xs:enumeration value="Home"/>
              </xs:restriction>
            </xs:simpleType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
  
```

```

        <xs:enumeration value="Mobile"/>
        <xs:enumeration value="Alternate"/>
        <xs:enumeration value="Other"/>
    </xs:restriction>
</xs:simpleType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="EMails" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Email">
                <xs:complexType>
                    <xs:complexContent>
                        <xs:extension base="BxfText">
                            <xs:attribute name="primaryFlag" type="xs:boolean" default="0">
                                <xs:annotation>
                                    <xs:documentation>Used to designate one of the emails as a primary one
                                        to use for the contact
                                    </xs:documentation>
                                </xs:annotation>
                            </xs:attribute>
                        </xs:extension>
                    </xs:complexContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="EmailType" minOccurs="0">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:enumeration value="Alternate"/>
                        <xs:enumeration value="Home"/>
                        <xs:enumeration value="Office"/>
                        <xs:enumeration value="Other"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

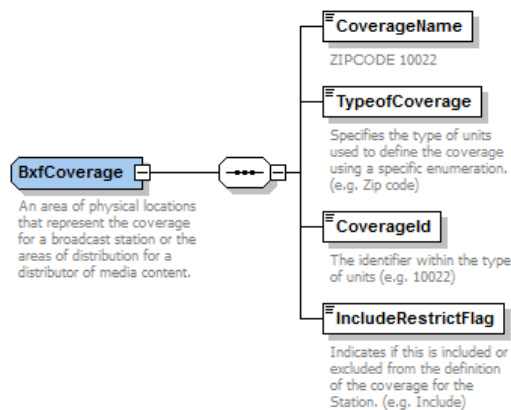
Graphic representation:



Text representation:

```
<xs:complexType name="BxfCoverage">
  <xs:annotation>
    <xs:documentation>An area of physical locations that represent the coverage for a broadcast station or the
    areas of distribution for a distributor of media content.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="CoverageName" type="xs:string">
      <xs:annotation>
        <xs:documentation>ZIPCODE 10022</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="TypeofCoverage">
      <xs:annotation>
        <xs:documentation>Specifies the type of units used to define the coverage using a specific
        enumeration. (e.g. Zip code)</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="City"/>
          <xs:enumeration value="Country"/>
          <xs:enumeration value="Market"/>
          <xs:enumeration value="DMA"/>
          <xs:enumeration value="Zipcode"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="Coverageld" type="xs:string">
      <xs:annotation>
        <xs:documentation>The identifier within the type of units (e.g. 10022)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="IncludeRestrictFlag">
      <xs:annotation>
        <xs:documentation>Indicates if this is included or excluded from the definition of the coverage for the
        Station. (e.g. Include)</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="Include"/>
          <xs:enumeration value="Restrict"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```


Graphic representation:



Text representation:

```
<xs:complexType name="BxfDaypart">
```

```
<xs:annotation>
```

```
<xs:documentation>A defined range of days, for one or more time period ranges and optionally dates that can be used to include or exclude for scheduling of content. Note that it is possible to create illogical periods of time when potentially crossing the start of the broadcast day or crossing midnight depending on the system ingesting the definition.</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:sequence>
```

```
<xs:element name="DaypartDetail" minOccurs="0" maxOccurs="unbounded">
```

```
<xs:complexType>
```

```
<xs:sequence>
```

```
<xs:element name="DayOfWeek" type="DayPattern">
```

```
<xs:annotation>
```

```
<xs:documentation>A 7 element binary representation of the days of the week in Monday-Sunday order where a 1 includes the day and a 0 excludes the day (e.g. 1 1 1 1 1 0 0 = M-F)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="StartTime" type="BxfSmpteTime" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>The start time of the daypart for all days specified in the DayOfWeek element. If not specified assume the Start of Broadcast Day.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="EndTime" type="BxfSmpteTime" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>The end time of the daypart for all days specified in the DayOfWeek element. If not specified assume the End of Broadcast Day.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
</xs:sequence>
```

```
<xs:attribute name="localTimeZoneFlag" type="xs:boolean" use="required">
```

```
<xs:annotation>
```

```
<xs:documentation>Used to designate if the times in the daypart are to be treated as local times (1) or to alternately use a timezone designated in the dates field (0).</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:attribute>
```

```
</xs:complexType>
```

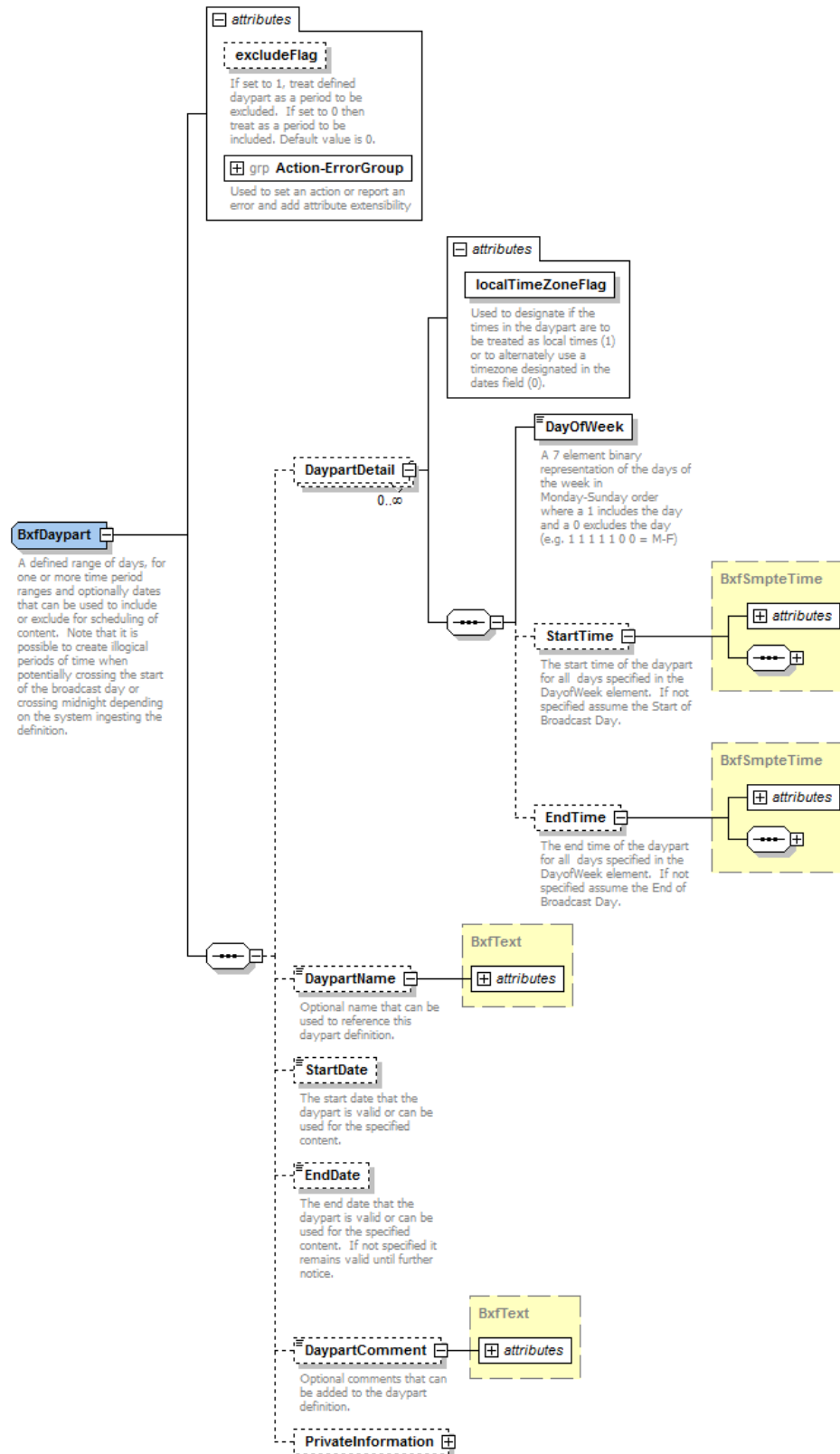
```
</xs:element>
```

```

<xs:element name="DaypartName" type="BxfText" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Optional name that can be used to reference this daypart
definition.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="StartDate" type="xs:date" minOccurs="0">
  <xs:annotation>
    <xs:documentation>The start date that the daypart is valid or can be used for the specified
content.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="EndDate" type="xs:date" minOccurs="0">
  <xs:annotation>
    <xs:documentation>The end date that the daypart is valid or can be used for the specified content. If
not specified it remains valid until further notice.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="DaypartComment" type="BxfText" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Optional comments that can be added to the daypart
definition.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attribute name="excludeFlag" type="xs:boolean" default="0">
  <xs:annotation>
    <xs:documentation>If set to 1, treat defined daypart as a period to be excluded. If set to 0 then treat as a
period to be included. Default value is 0.</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

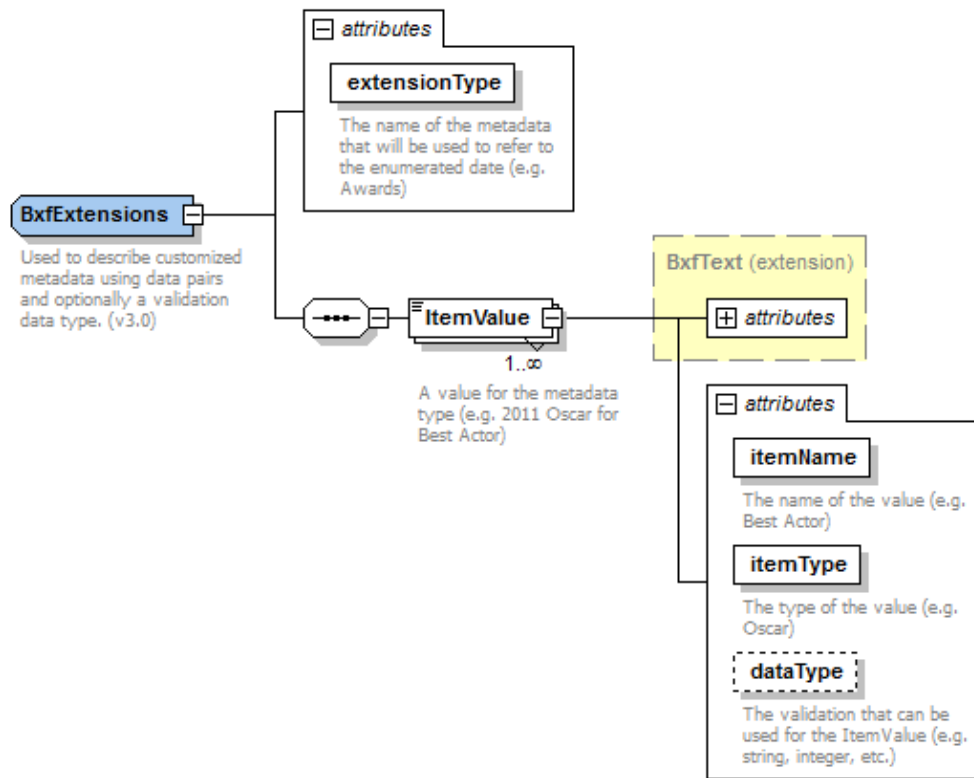
Graphic representation:



Text representation:

```
<xs:complexType name="BxfExtensions">
  <xs:annotation>
    <xs:documentation>Used to describe customized metadata using data pairs and optionally a validation data
    type. (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ItemValue" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>A value for the metadata type (e.g. 2011 Oscar for Best
        Actor)</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:complexContent>
          <xs:extension base="BxfText">
            <xs:attribute name="itemName" type="xs:string" use="required">
              <xs:annotation>
                <xs:documentation>The name of the value (e.g. Best Actor)</xs:documentation>
              </xs:annotation>
            </xs:attribute>
            <xs:attribute name="itemType" type="xs:string" use="required">
              <xs:annotation>
                <xs:documentation>The type of the value (e.g. Oscar)</xs:documentation>
              </xs:annotation>
            </xs:attribute>
            <xs:attribute name="dataType">
              <xs:annotation>
                <xs:documentation>The validation that can be used for the ItemValue (e.g. string, integer,
                etc.)</xs:documentation>
              </xs:annotation>
            </xs:attribute>
            <xs:simpleType>
              <xs:restriction base="xs:string"/>
            </xs:simpleType>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="extensionType" type="xs:string" use="required">
    <xs:annotation>
      <xs:documentation>The name of the metadata that will be used to refer to the enumerated date (e.g.
      Awards)</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Graphic representation:



Text representation:

```
<xs:complexType name="BxfStation">
```

```
<xs:annotation>
```

```
<xs:documentation>A transmitter or distributor of media content either over the air or by other means</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:sequence>
```

```
<xs:element name="StationId" type="xs:string">
```

```
<xs:annotation>
```

```
<xs:documentation>A unique identifier within the context of this message to be used in conjunction with the InstructionMap element.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="StationName" type="BxfText">
```

```
<xs:annotation>
```

```
<xs:documentation>Name used to commonly reference the station, network or other entity performing a job.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="StationCallSign" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Optional federal designation for an over the air broadcast station consisting of 3 to 4 characters. (e.g. WHN or KABC or CJON)</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:simpleType>
```

```
<xs:restriction base="xs:string">
```

```

        <xs:maxLength value="4"/>
        <xs:minLength value="3"/>
    </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="StationType" minOccurs="0">
    <xs:annotation>
    <xs:documentation>List of enumerated types of JobPerformers that accept video and/or audio based
advertising content.</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Cable MSO"/>
            <xs:enumeration value="Content Distributor"/>
            <xs:enumeration value="Internet Distributor"/>
            <xs:enumeration value="Radio Broadcast"/>
            <xs:enumeration value="Radio Network"/>
            <xs:enumeration value="Satellite Network"/>
            <xs:enumeration value="Telco Distributor"/>
            <xs:enumeration value="TV Broadcast"/>
            <xs:enumeration value="TV Network"/>
            <xs:enumeration value="Other"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>
<xs:element name="DistributionPlatform" minOccurs="0">
    <xs:annotation>
    <xs:documentation>Method of distribution used by the Station.</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="AM"/>
            <xs:enumeration value="FM"/>
            <xs:enumeration value="Internet"/>
            <xs:enumeration value="Mobile"/>
            <xs:enumeration value="TV"/>
            <xs:enumeration value="Other"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>
<xs:element name="Ownership" minOccurs="0" maxOccurs="unbounded">
    <xs:annotation>
    <xs:documentation>The company or companies that own the Station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:complexContent>
            <xs:extension base="BxfCompany">
                <xs:attribute name="percentOwnership">
                    <xs:annotation>
                    <xs:documentation>Percentage of ownership of the Station by the
Company</xs:documentation>
                    </xs:annotation>
                    <xs:simpleType>
                        <xs:restriction base="xs:integer">
                            <xs:minInclusive value="1"/>
                            <xs:maxInclusive value="100"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:attribute>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>

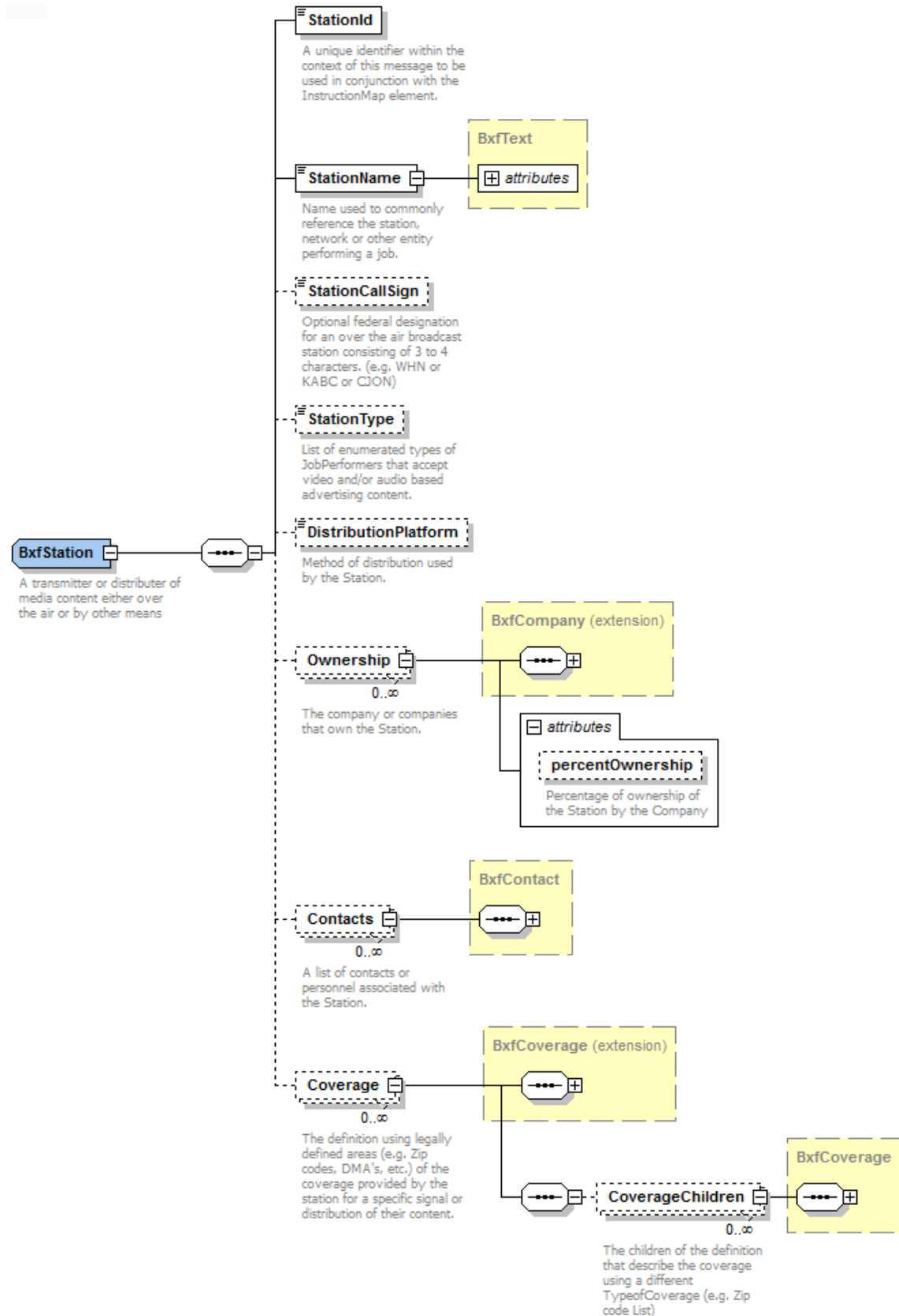
```

```

        </xs:attribute>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
<xs:element name="Contacts" type="BxfContact" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>A list of contacts or personnel associated with the Station.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="Coverage" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>The definition using legally defined areas (e.g. Zip codes, DMA's, etc.) of the
coverage provided by the station for a specific signal or distribution of their content.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="BxfCoverage">
        <xs:sequence>
          <xs:element name="CoverageChildren" type="BxfCoverage" minOccurs="0"
maxOccurs="unbounded">
            <xs:annotation>
              <xs:documentation>The children of the definition that describe the coverage using a
different TypeofCoverage (e.g. Zipcode List)</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>

```

Graphic representation:



Text representation:

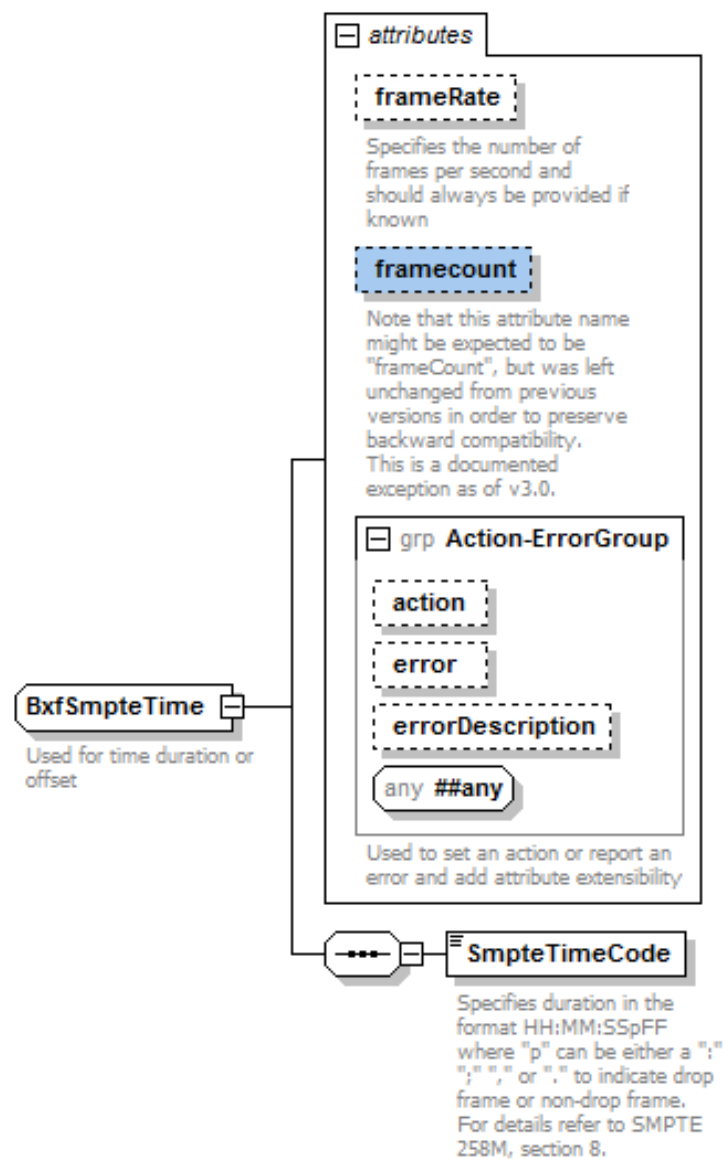
```
<xs:attribute name="framecount" type="xs:integer">
```

```
<xs:annotation>
```

```
<xs:documentation>Note that this attribute name might be expected to be "frameCount", but was left unchanged from previous versions in order to preserve backward compatibility. This is a documented exception as of v3.0.</xs:documentation>
```

```
</xs:annotation>
```

Graphic representation:



3.2.10 Configuration.XSD

Contains:

include	loc:bxftypes.xsd	
complexType	Configuration	ann:

Used to describe the configuration values of a system, to be shared with other BXF-compliant systems.

3.2.11 Content.XSD

Contains:

include	loc:bxftypes.xsd	
include	loc:programcontent.xsd	
include	loc:nonprogramcontent.xsd	
complexType	Content	ann:

Used to describe the content at a specific location.

3.2.12 ContentMetadata.XSD

Contains:

include	loc: audio.xsd	
include	loc: bxfcaptions.xsd	
include	loc: bxfcontentid.xsd	
include	loc: datacontent.xsd	
include	loc: location.xsd	
include	loc: video.xsd	
include	loc: metro.xsd	
include	loc: bxftypes.xsd	
complexType	AlternateAudioContent	ann: Used to provide alternate audio only media information
complexType	BaseMedia	ann: Enumerates the way content is stored or the method used to transmit
complexType	BillBoard	ann: Used to describe the different attributes of one or more BillBoards
complexType	ContentMetadata	ann: Used to describe all the metadata for a single instance of content. (Note that this element name should be "ContentMetadata", but was left unchanged from previous versions in order to preserve backward compatibility. This is a documented exception as of v3.0)
complexType	Media	ann: Base Media combined with Media Location
complexType	MediaLocation	ann: Used to designate the physical location of a media essence
complexType	UsagePolicy	ann:

Content identification and other details.

3.2.12.1 BXF 3.0 Changes

a) "BillBoard" new complex type in ContentMetadata.XSD

Description of change:

BillBoards required the ability to add multiple content descriptions for such items as logos, scripts, copy, audio tracks and other media descriptors. To accommodate this a new element under ContentMetaData was added which allows one or more BillBoard records to be included under a designated content record. This can be used to link a BillBoard to a specific spot or can create a single BillBoard content record with multiple components. BillBoards is an optional field and has its own new complex type.

Text representation:

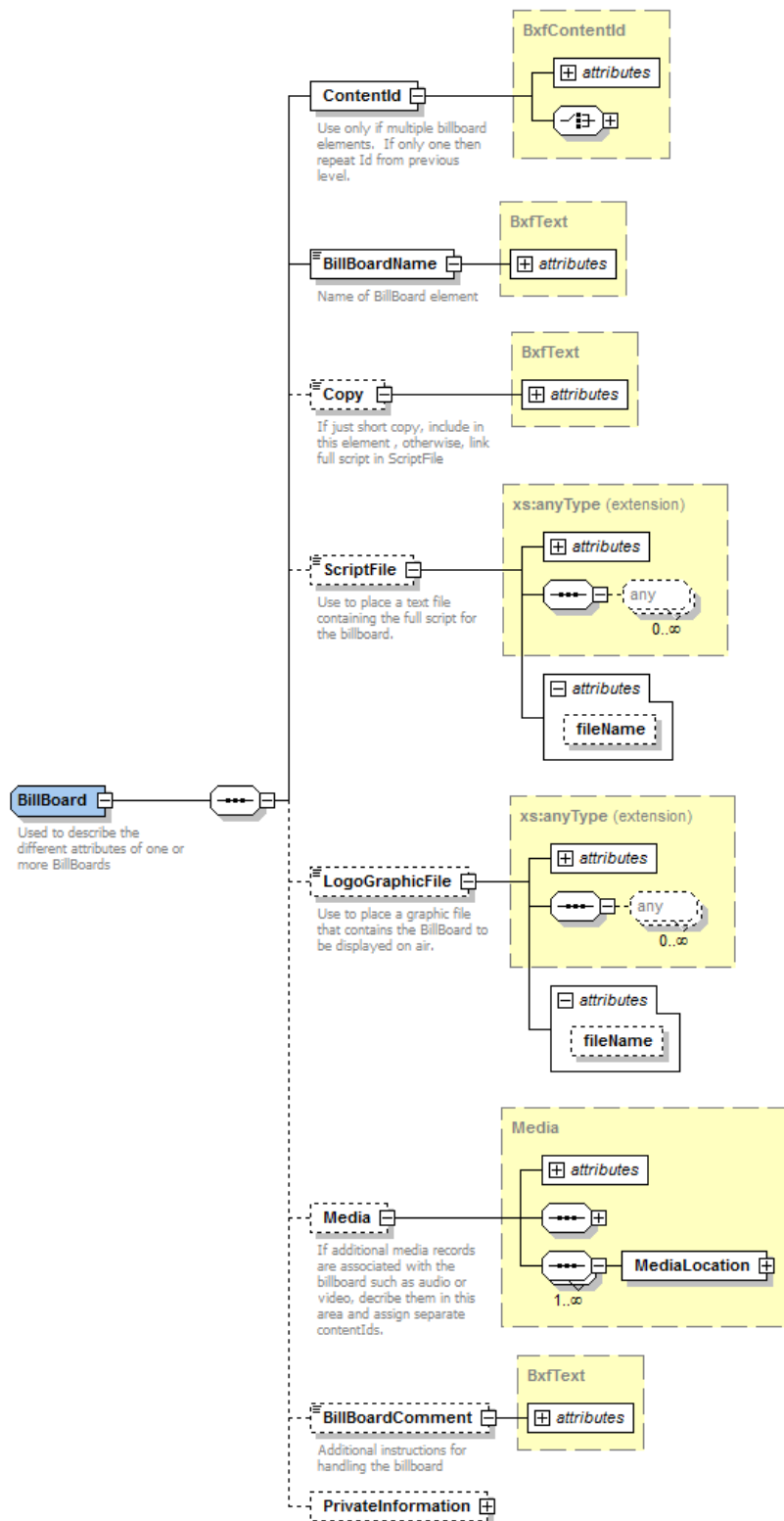
```
<xs:complexType name="BillBoard">
  <xs:annotation>
    <xs:documentation>Used to describe the different attributes of one or more BillBoards</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ContentId" type="BxfContentId">
      <xs:annotation>
        <xs:documentation>Use only if multiple billboard elements. If only one then repeat Id from previous
level.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="BillBoardName" type="BxfText">
      <xs:annotation>
        <xs:documentation>Name of BillBoard element</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="Copy" type="BxfText" minOccurs="0">
      <xs:annotation>
        <xs:documentation>If just short copy, include in this element , otherwise, link full script in
ScriptFile</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ScriptFile" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Use to place a text file containing the full script for the
```

```

billboard.</xs:documentation>
</xs:annotation>
<xs:complexType>
  <xs:complexContent>
    <xs:extension base="xs:anyType">
      <xs:attribute name="fileName"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="LogoGraphicFile" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Use to place a graphic file that contains the BillBoard to be displayed on
air.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="xs:anyType">
        <xs:attribute name="fileName" type="xs:string"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
<xs:element name="Media" type="Media" minOccurs="0">
  <xs:annotation>
    <xs:documentation>If additional media records are associated with the billboard such as audio or
video, describe them in this area and assign separate contentIds.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="BillBoardComment" type="BxfText" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Additional instructions for handling the billboard</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

Graphic representation:



b) “BillBoard” and “DataExtensions” used to extend amount of metadata for ContentMetaData in ContentMetadata.XSD

Description of change:

New elements were added to ContentMetaData named BillBoard (new complex type described previously) and Data Extensions. Data Extensions allows for an unlimited amount of descriptive metadata to be expressed within this portion of the schema, if needed. Each Data Extension may have an Extension Type, along with the metadata value itself, which in turn may contain an Item Name, Item Value, and Data Type.

Text representation:

```
<xs:include schemaLocation="bxftypes.xsd"/>
```

```
<xs:complexType name="ContentMetaData">
```

```
<xs:annotation>
```

```
<xs:documentation>Used to describe all the metadata for a single instance of content. (Note that this element name might be expected to be “ContentMetadata”, but was left unchanged from previous versions in order to preserve backward compatibility. This is a documented exception as of v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:element name="BillBoard" type="BillBoard" minOccurs="0" maxOccurs="unbounded"/>
```

```
<xs:element name="DataExtensions" type="BxfExtensions" minOccurs="0" maxOccurs="unbounded">
```

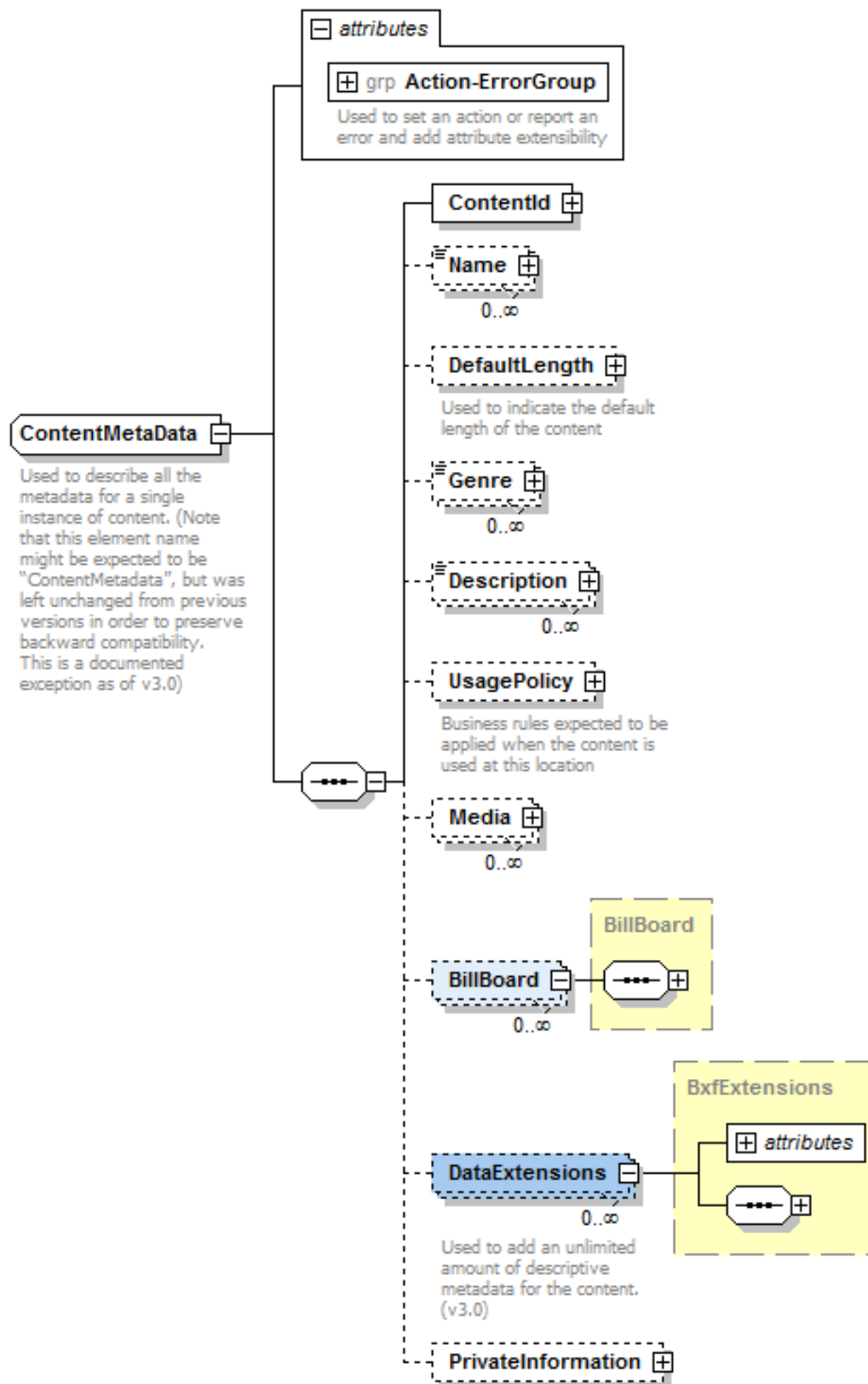
```
<xs:annotation>
```

```
<xs:documentation>Used to add an unlimited amount of descriptive metadata for the content.  
(v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

Graphic representation:



c) "Exclusions" new element under Usage Policy/ContentMetadata.XSD

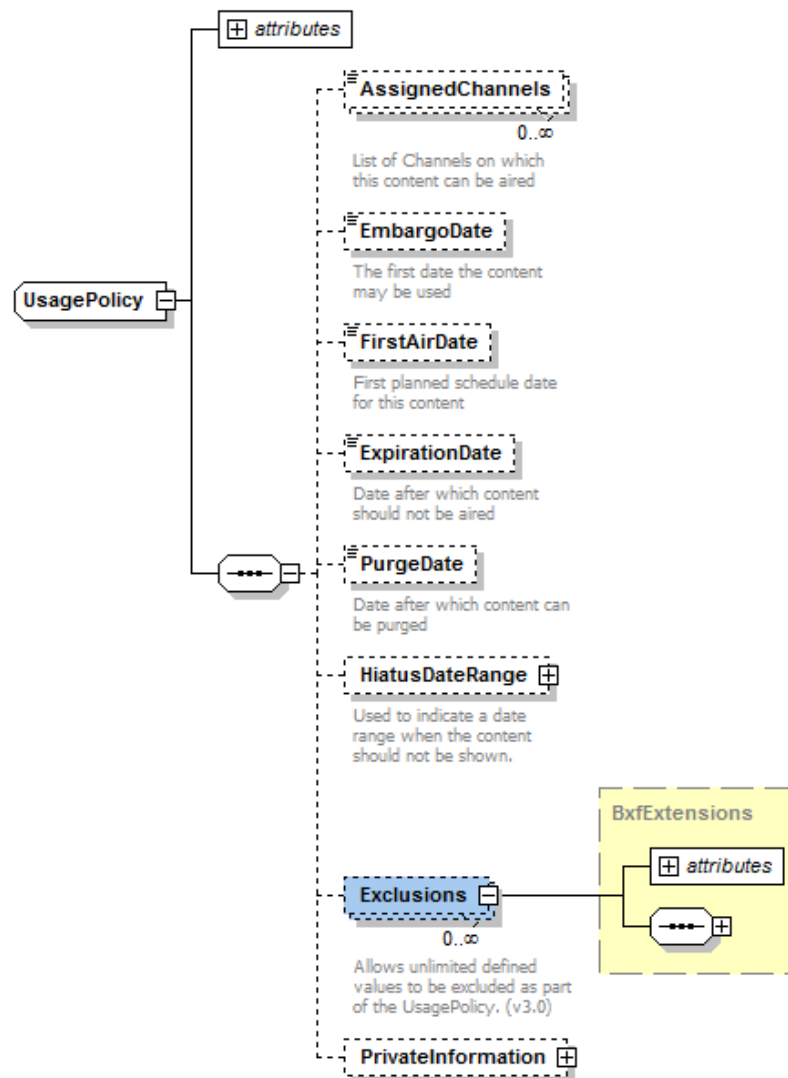
Description of change:

Usage policy allows for the possibility that there are specifically defined reasons to exclude content from being aired based on specific rules. The Exclusions element which was added allows the user to define when this might happen and what the specific exclusion might relate to based on codes assigned to other content. It uses the new BxfExtensions type to define these rules.

Text representation:

```
<xs:element name="Exclusions" type="BxfExtensions" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Allows unlimited defined values to be excluded as part of the UsagePolicy.
    (v3.0)</xs:documentation>
  </xs:annotation>
</xs:element>
```

Graphic representation:



3.2.13 ContentTransfer.XSD

Contains:

include	loc:content.xsd	
include	loc:contentmetadata.xsd	
complexType	ContentTransfer	ann:Transfer content from a source to a destination
simpleType	TransferType	ann:
simpleType	PriorityType	ann:
simpleType	TransferStatusType	ann:

Used to transfer media from one location to another location, or to transcode it.

3.2.13.1 BXF 3.0 Changes

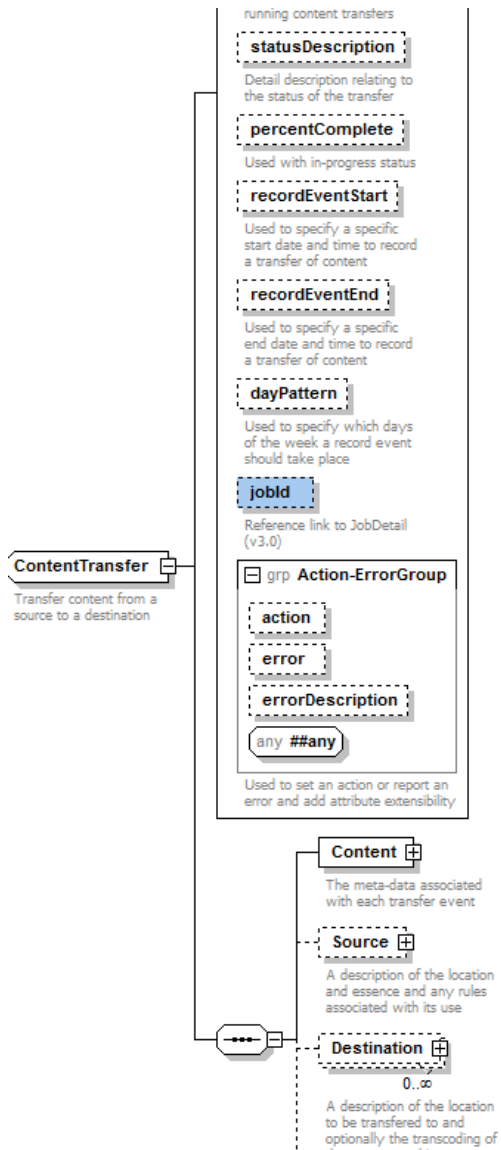
Description of change:

ContentTransfer extended to utilize the new JobDetail functions by assigning a jobId as an attribute.

Text representation:

```
<xs:attribute name="jobId">  
<xs:annotation>  
<xs:documentation>Reference link to JobDetail (v3.0)</xs:documentation>  
</xs:annotation>  
</xs:attribute>
```

Graphic representation:



3.2.14 Contract.XSD

Contains:

include	loc:bxftypes.xsd	
complexType	ProgramContract	ann:
complexType	SalesContract	ann:

ProgramContract - used if the program is purchased, it may be linked to a rights contract. SalesContract – used for contract information for the interstitial content (commercials).

3.2.14.1 BXF 3.0 Changes

Added “Cost” element to SalesContract under Contract.XSD

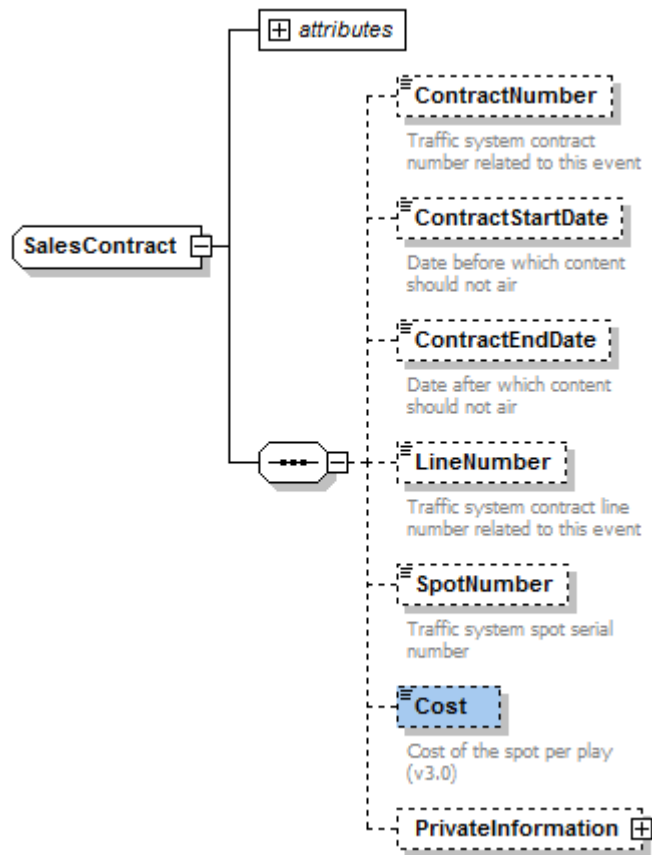
Description of change:

A single new element (Cost) was added to the Sales Contract structure. This element reflects the cost per play of the spot.

Text representation:

```
<xs:element name="Cost" type="xs:decimal" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Cost of the spot per play (v3.0)</xs:documentation>
  </xs:annotation>
</xs:element>
```

Graphic representation:



3.2.15 DataContent.XSD

Contains:

complexType	DataContent	ann:
complexType	VerticalIntervalData	ann:Used to indicate what data is embedded in the vertical interval of the video image

Used to define data that can be added to the transport stream.

3.2.16 Element.XSD

Contains:

include	loc:scheduleevent.xsd	
include	loc:nonprogramcontent.xsd	
complexType	Element	ann:
complexType	ProgramElement	ann:For each element this describes the content on the element
simpleType	ProgramContentType	ann:
complexType	OverlayOpportunityType	ann:Describes locations in time and space where overlays are either permitted or restricted from use. (v3.0)

If the program is being delivered in segmented form, this describes each segment's content, position and offset from the start of the program as well as other embedded content such as inserted barter content.

3.2.16.1 BXF 3.0 Changes

Added “OverlayOpportunity” new ComplexType under Element and ProgramElement in Element.XSD

Description of change:

BXF now allows the definition of when and where secondary events may be placed within a program element, which in turn may be associated with a piece of content, or a scheduled instance of that content. This allows for BXF-compliant systems to enumerate when (in time) and where (in space) placement is allowed for different types of overlays (e.g. voice overs, lower third graphics, logos, over the shoulder graphics, etc.). This structure was developed with the assistance of members of the SCTE's Digital Video Subcommittee's Working Group 5, which has developed similar capability within the SCTE 130-x suite.

Text representation: (Element)

```
<xs:element name="OverlayOpportunity" type="OverlayOpportunityType" minOccurs="0"
maxOccurs="unbounded">
<xs:annotation>
<xs:documentation>Describes locations in time and space where overlays are either permitted or restricted from
use. (v3.0)</xs:documentation>
</xs:annotation>
</xs:element>
```

Text representation: (ProgramElement)

```
<xs:element name="OverlayOpportunity" type="OverlayOpportunityType" minOccurs="0">
<xs:annotation>
<xs:documentation>Describes locations in time and space where overlays are either permitted or restricted from
use. (v3.0)</xs:documentation>
</xs:annotation>
</xs:element>
```

Text representation: (OverLayOpportunity)

```
<xs:complexType name="OverlayOpportunityType">
<xs:annotation>
<xs:documentation>Describes locations in time and space where overlays are either permitted or restricted from
```

```

use. (v3.0)</xs:documentation>
</xs:annotation>
  <xs:sequence>
    <xs:element name="Video-Audio">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="Video"/>
          <xs:enumeration value="Audio"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="SOM" type="BxfSmpteTime"/>
    <xs:element name="EOM" type="BxfSmpteTime"/>
    <xs:element name="OpportunityComment" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="ScreenLocation" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Defines the location of one or more video overlays on the screen and if it is
interactive.</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Plane">
            <xs:annotation>
              <xs:documentation>Defines the layer when multiple overlays are
allowed.</xs:documentation>
            </xs:annotation>
            <xs:complexType>
              <xs:attribute name="zOrder" type="xs:positiveInteger" use="required">
                <xs:annotation>
                  <xs:documentation>Order of layers from 1 to n</xs:documentation>
                </xs:annotation>
              </xs:attribute>
              <xs:attribute name="percentOpaque" type="xs:integer" use="required">
                <xs:annotation>
                  <xs:documentation>A level of 0 to 100 percent where 0 is fully transparent and 100 is
completely opaque.</xs:documentation>
                </xs:annotation>
              </xs:attribute>
            </xs:complexType>
          </xs:element>
          <xs:element name="TopCorner">
            <xs:annotation>
              <xs:documentation>Upper left corner definition of the overlay position relative to the upper left
corner of the screen.</xs:documentation>
            </xs:annotation>
            <xs:complexType>
              <xs:attribute name="horizontalCoordinate" type="xs:nonNegativeInteger"
use="required"/>
              <xs:attribute name="verticalCoordinate" type="xs:nonNegativeInteger" use="required"/>
              <xs:attribute name="units" default="Percent of Screen">
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="Centimeters"/>
                    <xs:enumeration value="Inches"/>
                    <xs:enumeration value="Percent of Screen"/>
                    <xs:enumeration value="Pixels"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:attribute>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>

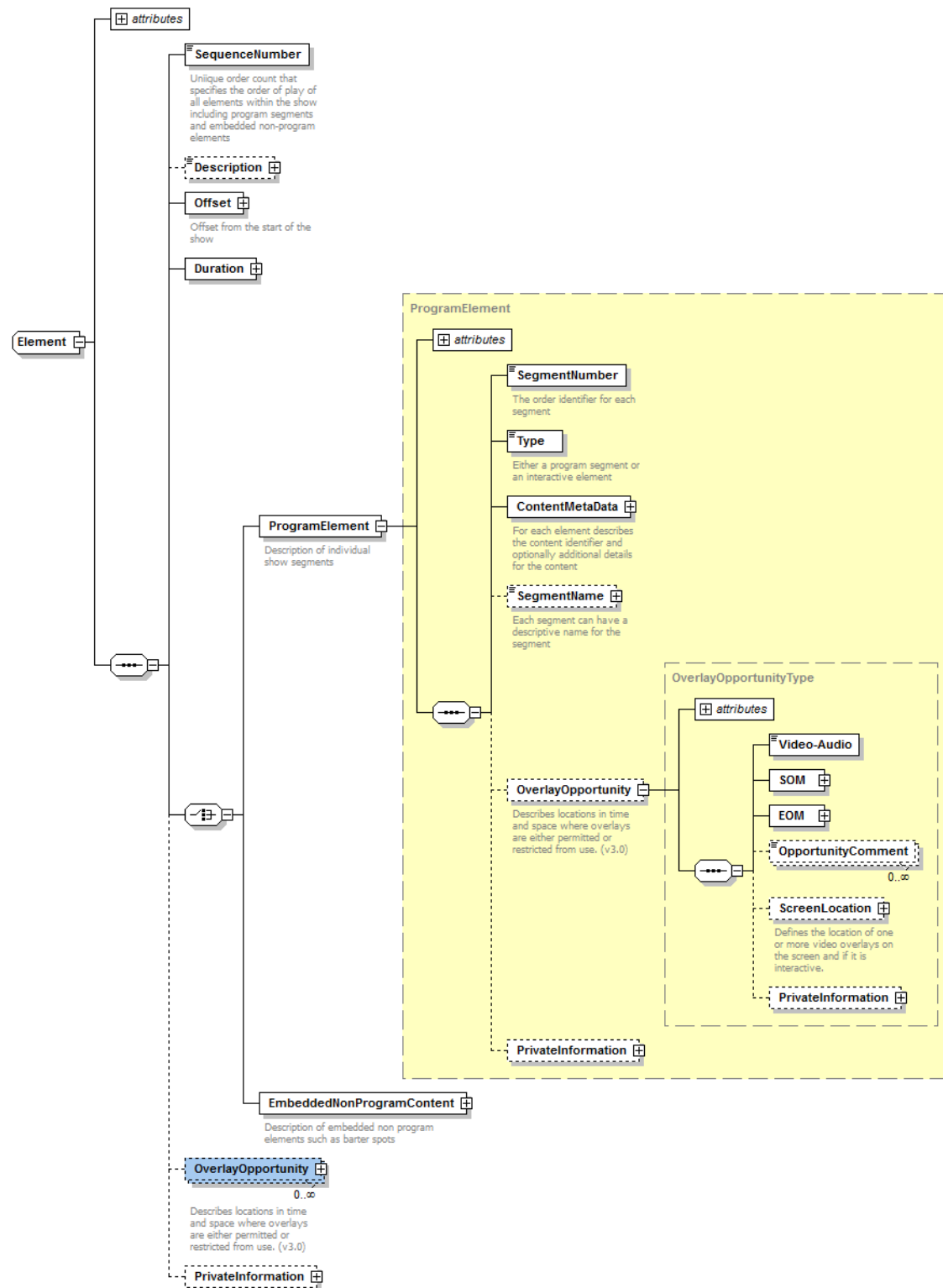
```

```

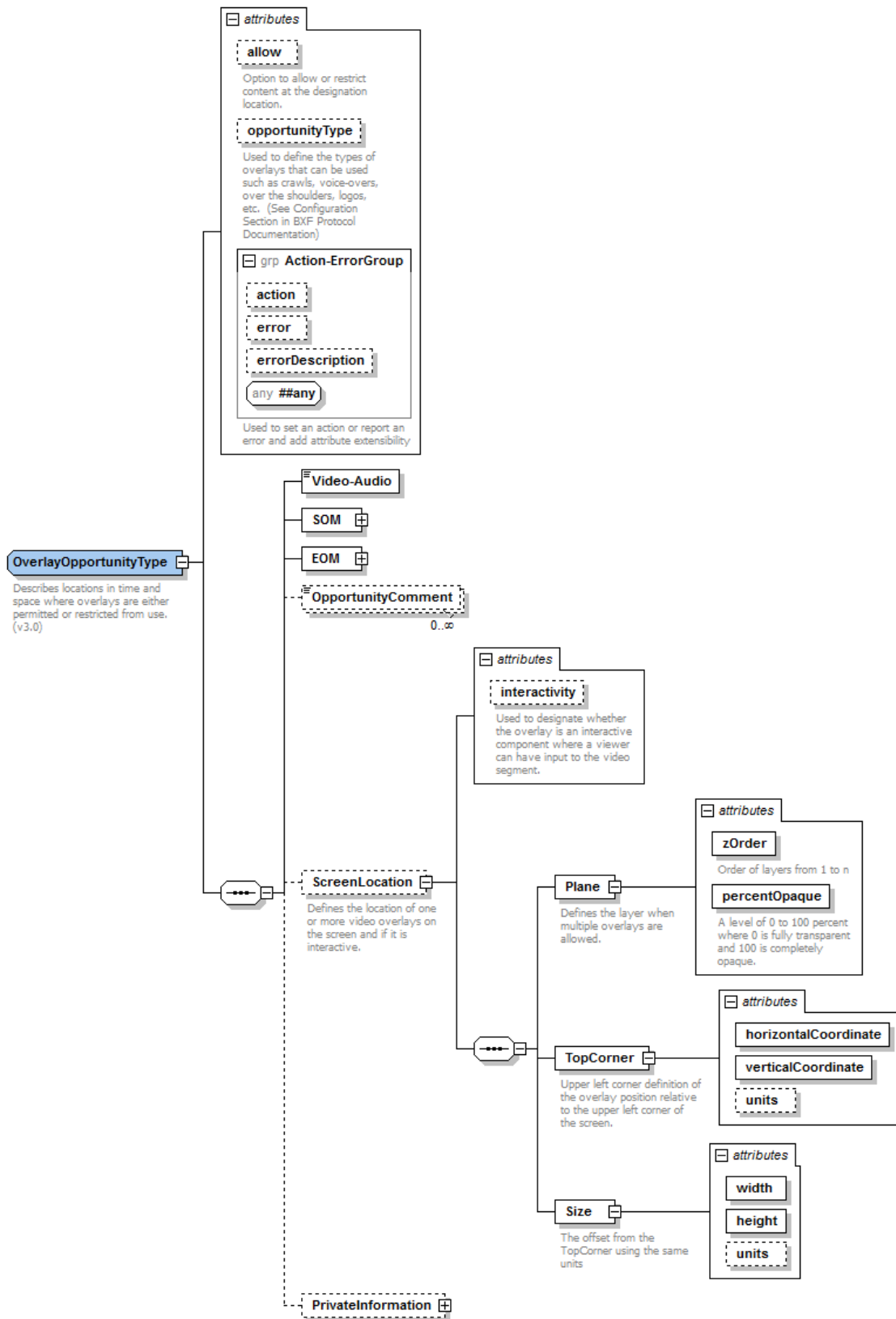
        </xs:attribute>
      </xs:complexType>
    </xs:element>
    <xs:element name="Size">
      <xs:annotation>
        <xs:documentation>The offset from the TopCorner using the same units</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:attribute name="width" type="xs:positiveInteger" use="required"/>
        <xs:attribute name="height" type="xs:positiveInteger" use="required"/>
        <xs:attribute name="units" default="Percent of Screen">
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:enumeration value="Centimeters"/>
              <xs:enumeration value="Inches"/>
              <xs:enumeration value="Percent of Screen"/>
              <xs:enumeration value="Pixels"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:attribute>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="interactivity" type="xs:boolean" default="0">
    <xs:annotation>
      <xs:documentation>Used to designate whether the overlay is an interactive component where a
viewer can have input to the video segment.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attribute name="allow" type="xs:boolean" use="optional" default="1">
  <xs:annotation>
    <xs:documentation>Option to allow or restrict content at the designation location.</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="opportunityType" type="xs:string">
  <xs:annotation>
    <xs:documentation>Used to define the types of overlays that can be used such as crawls, voice-overs, over the
shoulders, logos, etc. (See Configuration Section in BXF Protocol Documentation)</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

Graphic representation: (Element & ProgramElement)



Graphic representation: (OverlayOpportunity)



3.2.17 EventData.XSD

Contains:

include	loc:bxftypes.xsd	
include	loc:primaryevent.xsd	
include	loc:nonprimaryevent.xsd	
include	loc:macro.xsd	
include	loc:audio.xsd	
include	loc:video.xsd	
complexType	SCTE-35DistributionRestrictions	ann:Accommodates the 2012 revision to SCTE-35 that adds distribution bits. (v3.0)
complexType	EventExtId	ann:
complexType	EventData	ann:

Specifies the data specific to a particular airing of a complete show or a single event. In Version 2, support for multiple titles and descriptions in a single message has been added in order to allow multi-language support.

3.2.17.1 BXF 3.0 Changes

a) "SCTE-35DistributionRestrictions" added as a new ComplexType and used under EventData/Protection

Description of change:

Significant enhancement was recently done to the SCTE's two foundational digital program insertion standards (SCTE 35 and 104) in the area of adding the ability to restrict distribution of content. To keep up with this work, BXF has gained a new structure, called SCTE 35 Distribution Restrictions. This includes the new fields added by the SCTE work, as follows: Delivery Not Restricted, Web Delivery Allowed, No Regional Blackout, Archive Allowed, Tier, and Device Restrictions.

The meanings of the various Groups included in Device Restrictions may be obtained from sources such as www.oatc.us.

Text representation: (New Complex Type)

```
<xs:complexType name="SCTE-35DistributionRestrictions">
  <xs:annotation>
    <xs:documentation>Accommodates the 2012 revision to SCTE-35 that adds distribution bits.
    (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:attribute name="deliveryNotRestricted" type="xs:boolean" default="1">
    <xs:annotation>
      <xs:documentation>If set to zero then other attributes apply</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="webDeliveryAllowed" type="xs:boolean" default="0">
    <xs:annotation>
      <xs:documentation>If set to 1 there are no restrictions with respect to delivery of this
      event.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

```

</xs:attribute>
<xs:attribute name="noRegionalBlackout" type="xs:boolean" default="0">
<xs:annotation>
<xs:documentation>If set to 1 there is no regional blackout of this event.</xs:documentation>
</xs:annotation>
</xs:attribute>
<xs:attribute name="archiveAllowed" type="xs:boolean" default="0">
<xs:annotation>
<xs:documentation>If set to 1 there is no assertion about recording this event.</xs:documentation>
</xs:annotation>
</xs:attribute>
<xs:attribute name="deviceRestrictions">
<xs:annotation>
<xs:documentation>This node signals three groups of devices. The populations of each group is
independent and non-hierarchical.</xs:documentation>
</xs:annotation>
<xs:simpleType>
<xs:list>
<xs:simpleType>
<xs:restriction base="xs:string">
<xs:enumeration value="Group0"/>
<xs:enumeration value="Group1"/>
<xs:enumeration value="Group2"/>
<xs:enumeration value="None"/>
</xs:restriction>
</xs:simpleType>
</xs:list>
</xs:simpleType>
</xs:attribute>
<xs:anyAttribute>
<xs:annotation>
<xs:documentation>Used to accommodate the five reserved bits in the standard.</xs:documentation>
</xs:annotation>
</xs:anyAttribute>
</xs:complexType>

```

Text representation: (New Element under Protection)

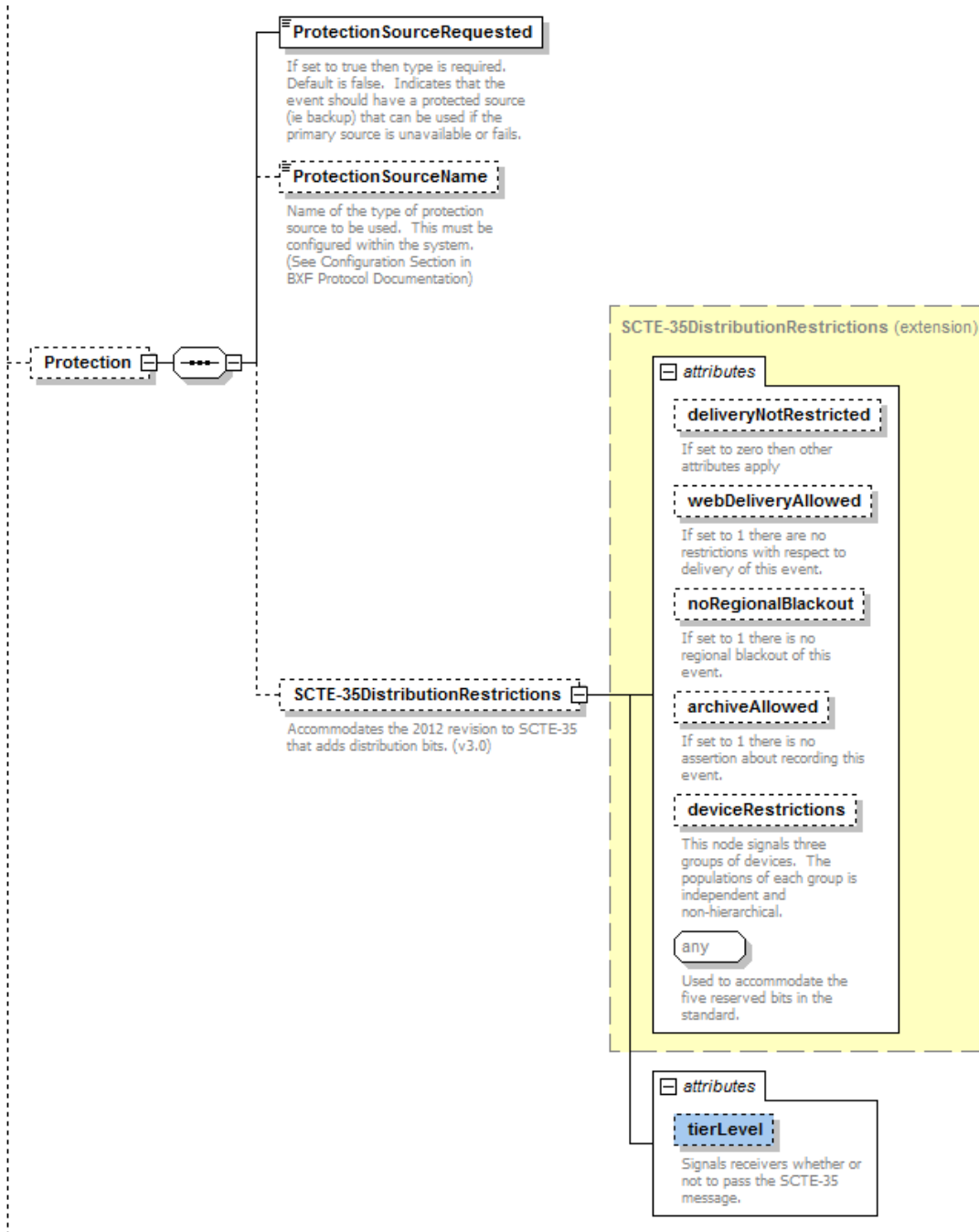
```

<xs:element name="SCTE-35DistributionRestrictions" minOccurs="0">
<xs:annotation>
<xs:documentation>Accommodates the 2012 revision to SCTE-35 that adds distribution bits.
(v3.0)</xs:documentation>
</xs:annotation>
<xs:complexType>
<xs:complexContent>
<xs:extension base="SCTE-35DistributionRestrictions">
<xs:attribute name="tierLevel">
<xs:annotation>
<xs:documentation>Signals receivers whether or not to pass the SCTE-35
message.</xs:documentation>
</xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:nonNegativeInteger">
<xs:minInclusive value="0"/>
<xs:maxInclusive value="4096"/>
</xs:restriction>
</xs:simpleType>
</xs:attribute>

```

```
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
```

Graphic representation:



b) "FederalType" element added to EventData in EventData.XSD

Description of change:

A single new element, Federal Type, was added to provide a place for the commonly used codes referenced by governmental organizations such as the FCC and CRTC. This element may contain commonly used codes such as CM for commercial, PR for promo, PSA for public service announcement, etc.

Text representation:

```
<xs:element name="FederalType" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Some countries require further codification of the content such as the FCC Type or CRTC Code. This is typically a specialized value limited by the countries regulatory body. (e.g. CM, PR, PSA, PRO, PRC) (See Configuration Section in BXF Protocol Documentation) (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:simpleType>
```

```
<xs:restriction base="xs:string">
```

```
<xs:minLength value="1"/>
```

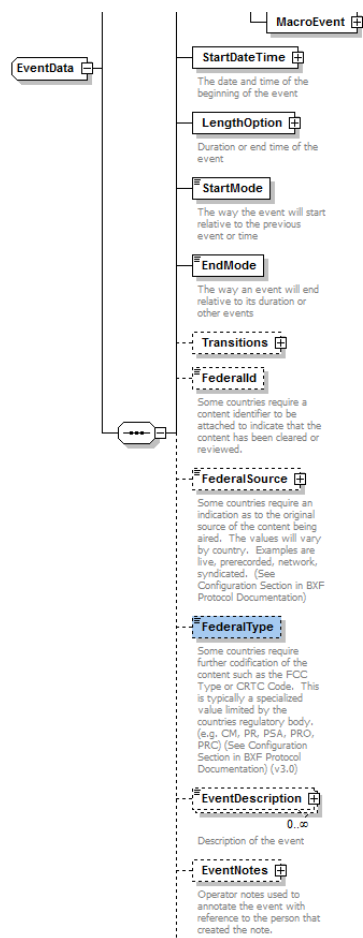
```
<xs:maxLength value="255"/>
```

```
</xs:restriction>
```

```
</xs:simpleType>
```

```
</xs:element>
```

Graphic representation:



3.2.18 Format.XSD

Contains:

include	loc:bxftypes.xsd	
include	loc:macro.xsd	
complexType	Format	ann:
complexType	FormatUsage	ann:Describes for a format which channels it can be used on

The definition of the skeletal structure of a program as used by the traffic system to construct a schedule grid.

3.2.18.1 BXF 3.0 Changes

“Exclusions” element added to FormatUsage under Format in Format.XSD

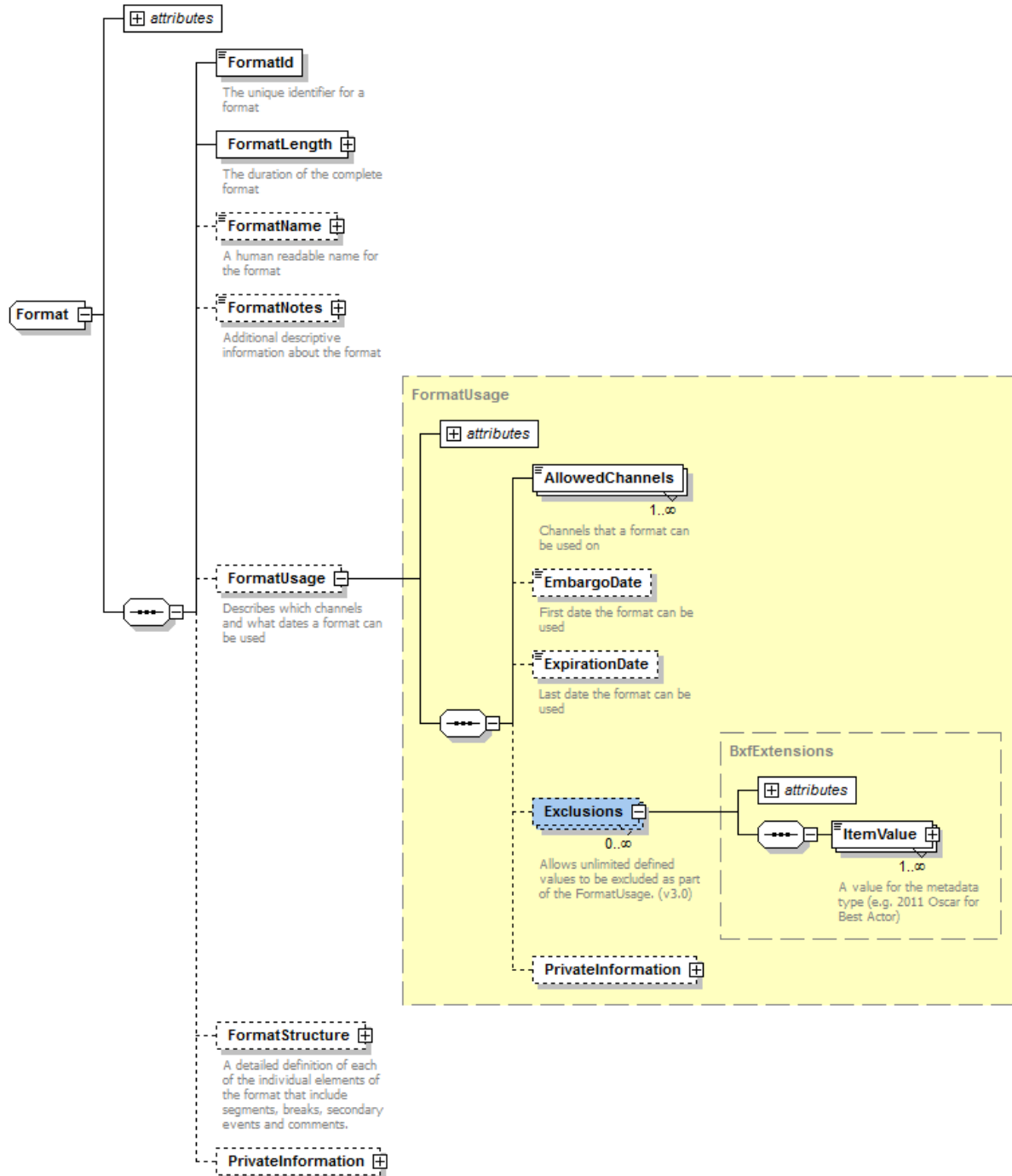
Description of change:

A new element was added that allows the ability to designate exclusions in a format structure using the new BxfExtensions complex type.

Text representation:

```
<xs:element name="Exclusions" type="BxfExtensions" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Allows unlimited defined values to be excluded as part of the FormatUsage.
    (v3.0)</xs:documentation>
  </xs:annotation>
</xs:element>
```

Graphic representation:



3.2.19 JobDetail.XSD (New File – Version 3.0)

Contains:

import	http://www.atsc.org/XMLSchema/mcp/2007/3.1/mcp31.xsd	ns http://www.atsc.org/XMLSchema/mcp/2007/3.1
include	loc:contentId.xsd	
include	loc:types.xsd	
include	loc:content.xsd	
include	loc:nonprogramdetail.xsd	
complexType	InstructionMap	am: Used to map stations, content and traffic instructions in a many to many relationship. (v3.0)
complexType	TrafficInstructions	am: Used to describe traffic instructions to a single or multiple stations for multiple content. Requires stations to be defined under a Job. (v3.0)
complexType	InstructionDetail	am: Rules limiting where the NonProgramContent (NPC) can be used on a schedule. (v3.0)
complexType	JobDetail	am: Allows the message to assign job information. If more than one company or process is required for a job, enter multiple records and link using the jobid. If one job is dependent on the completion of another, link the jobs using jobID and jobDependency. (v3.0)

3.2.19.1 BXF 3.0 Changes

There are several new Complex Types that make up the new JobDetail.XSD. “InstructionMap”, “TrafficInstructions”, “InstructionDetail” and “JobDetail” complex types were all added.

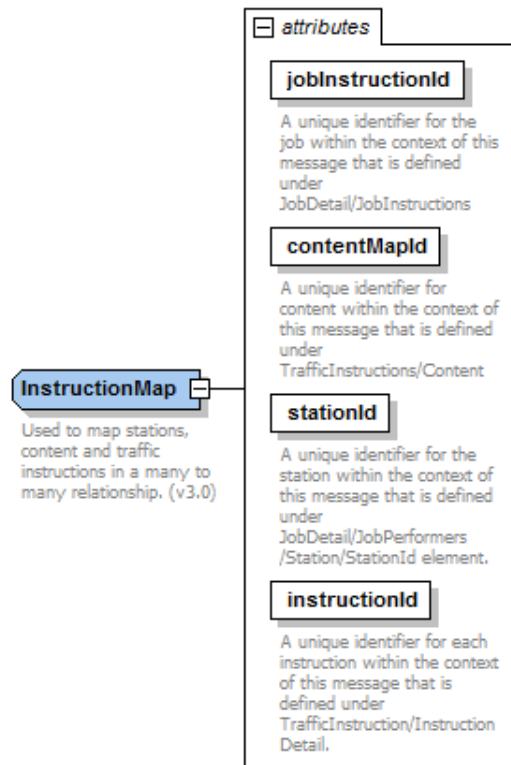
Description of change:

InstructionMap was added, and is used to create a relational mapping between jobs, stations, commercial/non-program content and the instructions used to place the content on the schedule.

Text representation:

```
<xs:complexType name="InstructionMap">
  <xs:annotation>
    <xs:documentation>Used to map stations, content and traffic instructions in a many to many relationship.
(v3.0)</xs:documentation>
  </xs:annotation>
  <xs:attribute name="jobInstructionId" type="Uuid" use="required">
    <xs:annotation>
      <xs:documentation>A unique identifier for the job within the context of this message that is defined under
JobDetail/JobInstructions</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="contentMapId" type="Uuid" use="required">
    <xs:annotation>
      <xs:documentation>A unique identifier for content within the context of this message that is defined under
TrafficInstructions/Content</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="stationId" type="xs:string" use="required">
    <xs:annotation>
      <xs:documentation>A unique identifier for the station within the context of this message that is defined
under JobDetail/JobPerformers
/Station/StationId element.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="instructionId" type="Uuid" use="required">
    <xs:annotation>
      <xs:documentation>A unique identifier for each instruction within the context of this message that is defined
under TrafficInstruction/InstructionDetail.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
```

Graphic representation:



Text representation:

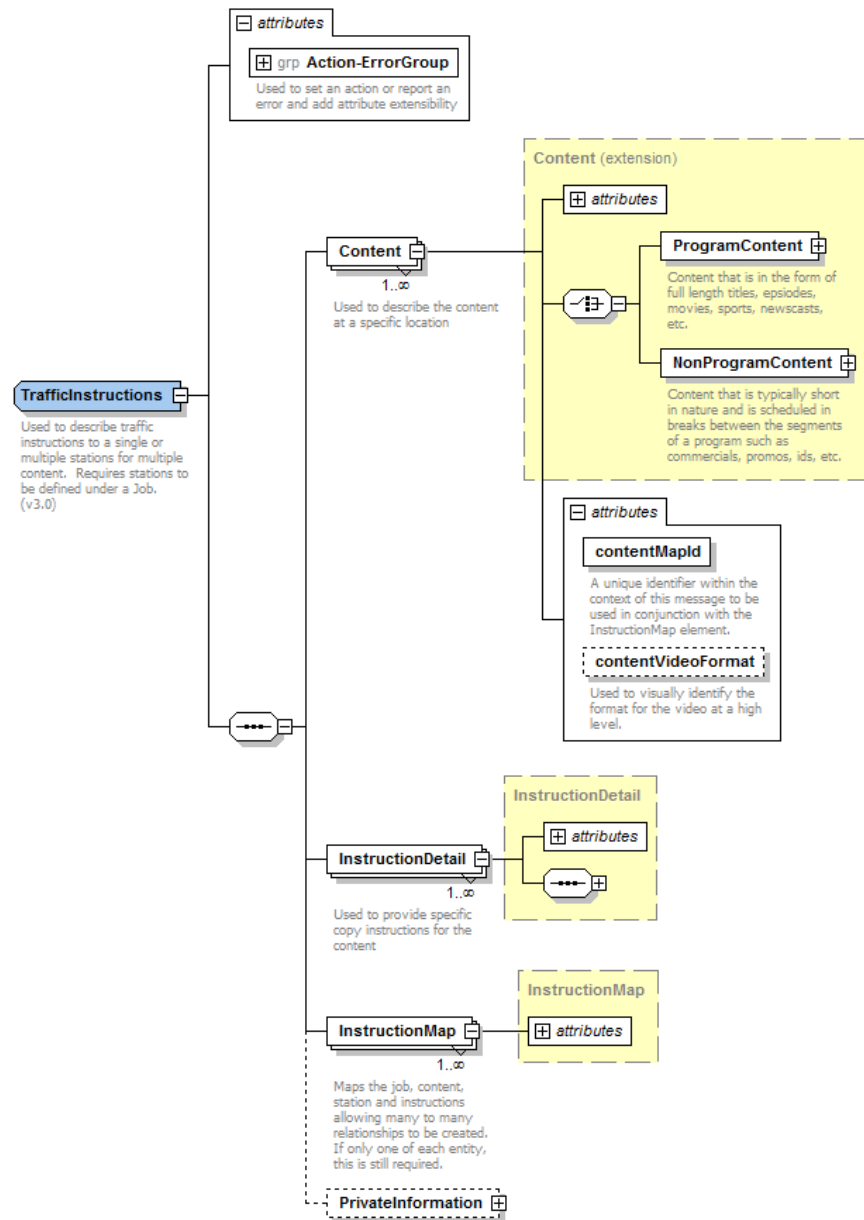
```
<xs:complexType name="TrafficInstructions">
  <xs:annotation>
    <xs:documentation>Used to describe traffic instructions to a single or multiple stations for multiple content.
    Requires stations to be defined under a Job. (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="Content" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>Used to describe the content at a specific location</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:complexContent>
          <xs:extension base="Content">
            <xs:attribute name="contentMapId" type="Uuid" use="required">
              <xs:annotation>
                <xs:documentation>A unique identifier within the context of this message to be used in
                conjunction with the InstructionMap element.</xs:documentation>
              </xs:annotation>
            </xs:attribute>
            <xs:attribute name="contentVideoFormat">
              <xs:annotation>
                <xs:documentation>Used to visually identify the format for the video at a high
                level.</xs:documentation>
              </xs:annotation>
            </xs:attribute>
            <xs:simpleType>
              <xs:restriction base="xs:string">
                <xs:enumeration value="SD"/>
              </xs:restriction>
            </xs:simpleType>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

        <xs:enumeration value="HD"/>
        <xs:enumeration value="3D"/>
        <xs:enumeration value="2K"/>
        <xs:enumeration value="4K"/>
        <xs:enumeration value="Other"/>
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="InstructionDetail" type="InstructionDetail" maxOccurs="unbounded">
<xs:annotation>
<xs:documentation>Used to provide specific copy instructions for the content</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="InstructionMap" type="InstructionMap" maxOccurs="unbounded">
<xs:annotation>
<xs:documentation>Maps the job, content, station and instructions allowing many to many relationships to
be created. If only one of each entity, this is still required.</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

Graphic representation:



Text representation:

```

<xs:complexType name="InstructionDetail">
  <xs:annotation>
    <xs:documentation>Rules limiting where the NonProgramContent (NPC) can be used on a schedule.
    (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="PlacementMethod" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Rules concerning the placement of NPC onto a linear schedule at a specific
        distribution location, station, network, or other operator</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

</xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="NPCSchedule" minOccurs="0" maxOccurs="unbounded">
        <xs:annotation>
          <xs:documentation>NonProgramContent placement rules that either specify or restrict
where a spot can be placed by time periods or specifically named programs</xs:documentation>
        </xs:annotation>
        <xs:complexType>
          <xs:choice>
            <xs:element name="Dayparts" maxOccurs="unbounded">
              <xs:annotation>
                <xs:documentation>Time periods defined by days of the week and start and
end times that either include or exclude the placement of the spot</xs:documentation>
              </xs:annotation>
              <xs:complexType>
                <xs:complexContent>
                  <xs:extension base="BxfDaypart">
                    <xs:sequence>
                      <xs:element name="Programs" minOccurs="0"
maxOccurs="unbounded">
                        <xs:annotation>
                          <xs:documentation>Option to list programs that
would normally be excluded or included within the description of the dayparts. (E.g. run in Primetime, but not in a
specific news programs).</xs:documentation>
                        </xs:annotation>
                        <xs:complexType>
                          <xs:complexContent>
                            <xs:extension base="BxfText">
                              <xs:attribute name="excludeFlag"
type="xs:boolean" default="0">
                                <xs:annotation>
                                  <xs:documentation>If set to 1,
treat defined daypart as a period to be excluded. If set to 0 then treat as a period to be included. Default value
is 0.</xs:documentation>
                                </xs:annotation>
                                </xs:attribute>
                              </xs:extension>
                            </xs:complexContent>
                          </xs:complexType>
                        </xs:element>
                      </xs:sequence>
                    </xs:extension>
                  </xs:complexContent>
                </xs:complexType>
              </xs:element>
            <xs:sequence maxOccurs="unbounded">
              <xs:element name="Programs" maxOccurs="unbounded">
                <xs:annotation>
                  <xs:documentation>Programs which are specially being included
or excluded from the order and placement of the spot.</xs:documentation>
                </xs:annotation>
                <xs:complexType>
                  <xs:complexContent>
                    <xs:extension base="BxfText">
                      <xs:attribute name="excludeFlag"
type="xs:boolean">
                        <xs:annotation>

```

```

        <xs:documentation>If set to 1, treat program to
be excluded. If set to 0, set program to be included.</xs:documentation>
    </xs:annotation>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="Daypart" type="BxfDaypart" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Option to designate dayparts to be included or
excluded when considering the program placement. (e.g. run in PrimeTime airing of program "A", but not the
latenight rerun of same program).</xs:documentation>
    </xs:annotation>
</xs:element>
</xs:sequence>
<xs:element name="NamedRule" type="xs:string"
maxOccurs="unbounded">
    <xs:annotation>
        <xs:documentation>Used to pass a defined named rule for placement of
content that is agreed to by both parties. For example, a predefined rule like "ROS" to indicate run of schedule
on the station.</xs:documentation>
    </xs:annotation>
</xs:element>
</xs:choice>
<xs:attribute name="contentMapId">
    <xs:annotation>
        <xs:documentation>A unique identifier within the context of this message to be
used in conjunction with the InstructionMap element.</xs:documentation>
    </xs:annotation>
</xs:attribute>
<xs:attribute name="comments" type="xs:string">
    <xs:annotation>
        <xs:documentation>Schedule specific comments</xs:documentation>
    </xs:annotation>
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="ContentRotation" minOccurs="0" maxOccurs="unbounded">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Frequency" type="xs:integer" minOccurs="0">
                <xs:annotation>
                    <xs:documentation>Number of times the NPC can be aired in the flight
period</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="RotationPercentage" minOccurs="0">
                <xs:annotation>
                    <xs:documentation>If multiple NPC records, use this to designate the rotation
percentage</xs:documentation>
                </xs:annotation>
                <xs:simpleType>
                    <xs:restriction base="xs:integer">

```

```

        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="100"/>
    </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="RotationPattern" type="xs:string" minOccurs="0">
    <xs:annotation>
        <xs:documentation>String of comma separated numbers indicating content order of
placement by traffic system.</xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="RotationSequence" type="xs:integer" minOccurs="0">
    <xs:annotation>
        <xs:documentation>If multiple NPC records, use this to designate the rotation
sequence</xs:documentation>
    </xs:annotation>
</xs:element>
    </xs:sequence>
    <xs:attribute name="contentMapId">
        <xs:annotation>
            <xs:documentation>A unique identifier within the context of this message to be used in
conjunction with the InstructionMap element.</xs:documentation>
        </xs:annotation>
    </xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="DRPhoneNumber" type="xs:string" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Direct Response Toll-Free Phone Number</xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="Disposal" type="xs:string" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Instructions on the disposal of the NPC media once the contract period has
ended</xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="InstructionComments" type="BxfText" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Specific comments concerning the instructions for the placement or use of the
NPC on a schedule</xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="AgencyDisclaimer" type="BxfText" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Legal disclaimer provided by the buying agency that notifies the entity executing
this contract of various limitations or other issues concerning the airing of the NPC material.</xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="BuyingSystemDetails" minOccurs="0">
    <xs:annotation>
        <xs:documentation>Specific items that are referenced in the buying system, but are not part of the
traffic instructions.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="TargetDayparts" type="BxfDaypart" minOccurs="0"
maxOccurs="unbounded">

```

```

        <xs:annotation>
        <xs:documentation>Dayparts that are targeted for the purposes of this buy, but are not
specifically purchased as part of the contract.</xs:documentation>
        </xs:annotation>
        </xs:element>
        <xs:element name="TargetPrograms" type="xs:string" minOccurs="0"
maxOccurs="unbounded">
        <xs:annotation>
        <xs:documentation>Programs targeted for the purpose of this buy, but are not specifically
purchased as part of the contract.</xs:documentation>
        </xs:annotation>
        </xs:element>
        <xs:element name="TargetCost" type="xs:decimal" minOccurs="0">
        <xs:annotation>
        <xs:documentation>An estimate of the average cost expected for the
buy.</xs:documentation>
        </xs:annotation>
        </xs:element>
        <xs:element name="DistributionDate" type="xs:date" minOccurs="0">
        <xs:annotation>
        <xs:documentation>The date that the NPC media is expected to have been received by
the entity airing the copy for this buy.</xs:documentation>
        </xs:annotation>
        </xs:element>
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="InstructionFiles" minOccurs="0" maxOccurs="unbounded">
<xs:annotation>
<xs:documentation>Location to embed actual data files that would typically consist of the
documentation for the traffic department to execute these instructions. Can also be used to distribute small
media files such as graphics and audio files, but not to be used for video.</xs:documentation>
</xs:annotation>
    <xs:complexType>
        <xs:complexContent>
            <xs:extension base="xs:anyType">
                <xs:attribute name="fileName" type="xs:string">
                    <xs:annotation>
                    <xs:documentation>Filename associated to the file.</xs:documentation>
                    </xs:annotation>
                </xs:attribute>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attribute name="actionType" use="required">
<xs:annotation>
<xs:documentation>The type of action the receiving system could take with the delineated instructions for
the specific schedule including adding new instructions, revising existing instructions or deleting previous
instructions.</xs:documentation>
</xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Add"/>
            <xs:enumeration value="Delete"/>
            <xs:enumeration value="Revision"/>

```

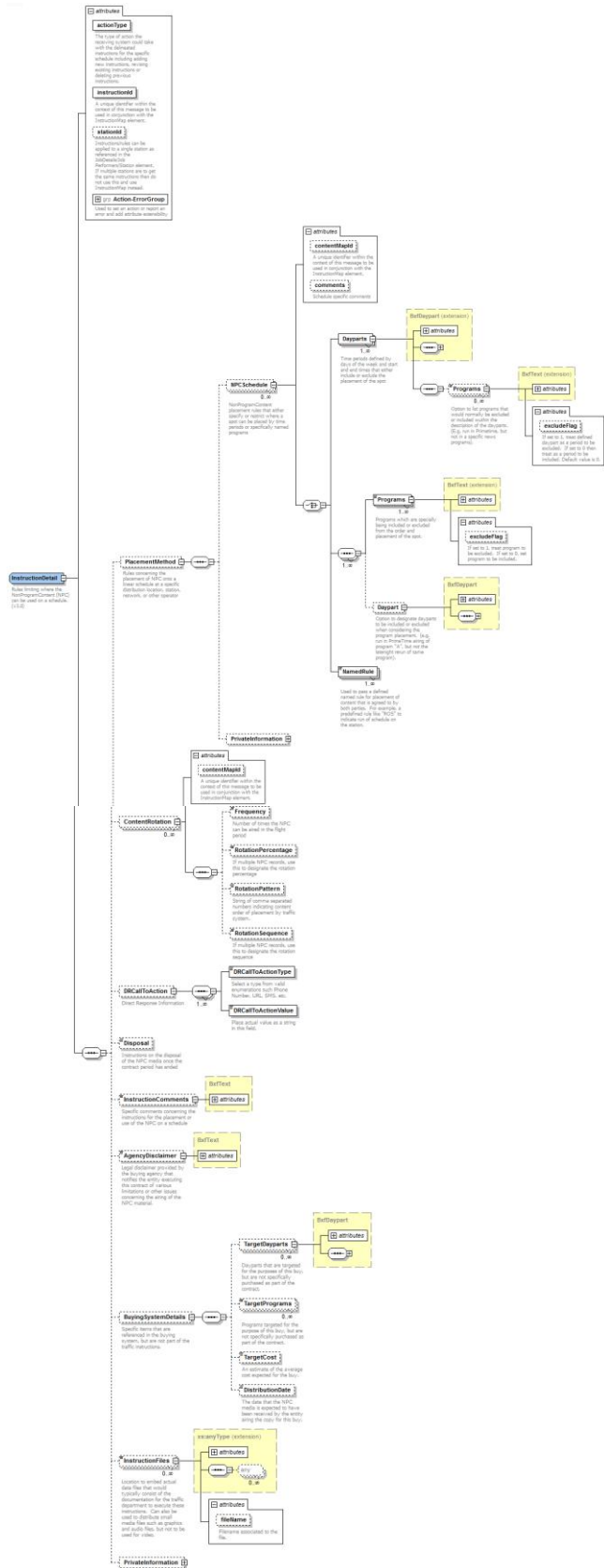


```

        </xs:restriction>
    </xs:simpleType>
</xs:attribute>
<xs:attribute name="instructionId" type="Uuid" use="required">
<xs:annotation>
<xs:documentation>A unique identifier within the context of this message to be used in conjunction with the
InstructionMap element.</xs:documentation>
</xs:annotation>
</xs:attribute>
<xs:attribute name="stationId" type="xs:string">
<xs:annotation>
<xs:documentation>Instructions/rules can be applied to a single station as referenced in the JobDetails/Job
Performers/Station element. If multiple stations are to get the same instructions then do not use this and use
InstructionMap instead.</xs:documentation>
</xs:annotation>
</xs:attribute>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

Graphic representation:



Text representation:

```
<xs:complexType name="JobDetail">
```

```
<xs:annotation>
```

<xs:documentation>Allows the message to assign job information. If more than one company or process is required for a job, enter multiple records and link using the jobId. If one job is dependent on the completion of another, link the jobs using jobId and jobDependency. (v3.0)</xs:documentation>

```
</xs:annotation>
```

```
<xs:sequence>
```

```
<xs:element name="JobType" type="xs:string">
```

```
<xs:annotation>
```

<xs:documentation>Type of job to be performed. This is a specific list that the receiver of the message understands and can act on and would normally also be delineated in Configuration.</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="JobRequester" type="BxfCompany">
```

```
<xs:annotation>
```

<xs:documentation>Company or person requesting the job to be performed</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="JobManager" type="BxfCompany" minOccurs="0">
```

```
<xs:annotation>
```

<xs:documentation>Company or person managing or coordinating the work across multiple companies</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="JobPerformers" minOccurs="0" maxOccurs="unbounded">
```

```
<xs:annotation>
```

<xs:documentation>The company that actually performs the work</xs:documentation>

```
</xs:annotation>
```

```
<xs:complexType>
```

```
<xs:complexContent>
```

```
<xs:extension base="BxfCompany">
```

```
<xs:sequence>
```

```
<xs:element name="Station" type="BxfStation" maxOccurs="unbounded">
```

```
<xs:annotation>
```

<xs:documentation>The entities that will perform the job</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="JobResults" minOccurs="0">
```

```
<xs:annotation>
```

<xs:documentation>Once the Performer works on a submitted job the results of that work would be available to indicate to the JobRequester and JobManager the status of the specific job, either accepted and performed or rejected.</xs:documentation>

```
</xs:annotation>
```

```
<xs:complexType>
```

```
<xs:sequence>
```

```
<xs:element name="Accepted" type="xs:boolean">
```

```
<xs:annotation>
```

<xs:documentation>A flag to indicate that the job sent to the Performer has been accepted and either has been worked on or will be worked on. If the flag is negated it indicates the job was rejected and will not be performed.</xs:documentation>

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="UserName" type="xs:string">
```

```
<xs:annotation>
```

<xs:documentation>The user that was associated with the

decision to accept or reject a job at the Performer company. Usually linked to a specific user in the Performer's system.</xs:documentation>

```

</xs:annotation>
</xs:element>
<xs:element name="UserComment" type="xs:string"
minOccurs="0">
</xs:annotation>
<xs:documentation>An optional comment to indicate what was
done with a job.</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="PrivateInformation"
type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="JobInstruction" minOccurs="0">
<xs:annotation>
<xs:documentation>Instruction reference identifiers, codes and comments as well as start and end
dates</xs:documentation>
</xs:annotation>
<xs:complexType>
<xs:sequence>
<xs:element name="JobReference" minOccurs="0">
<xs:annotation>
<xs:documentation>Used to provide JobPerformer with additional information to
lookup a specific job related to a separate ordering process (e.g. Advertiser Name/Estimate Number could be
provided to help look up a specific order in a traffic system).</xs:documentation>
</xs:annotation>
<xs:complexType>
<xs:sequence maxOccurs="unbounded">
<xs:element name="ReferenceType" type="xs:string">
<xs:annotation>
<xs:documentation>The type of reference being provided which can be
designated in Configuration.</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="ReferenceName" type="xs:string"/>
<xs:element name="ReferenceCode" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Disclaimer" minOccurs="0">
<xs:annotation>
<xs:documentation>Disclaimer that applies to all instructions associated to the job.
For example, if the job is for a single agency, but has multiple Traffic Instructions this can be used to inert the
Agency's Disclaimer once rather than having to repeat it at the lower level.</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="InstructionComment" type="xs:string" minOccurs="0">
<xs:annotation>
<xs:documentation>Comments for the full instructions</xs:documentation>
</xs:annotation>

```

```

        </xs:element>
        <xs:element name="PrivateInformation" type="BxfPrivateInformation"
minOccurs="0"/>
    </xs:sequence>
    <xs:attribute name="jobInstructionId" type="Uuid" use="required">
    <xs:annotation>
    <xs:documentation>A unique identifier for the job within the context of this message to be
used in conjunction with the InstructionMap element.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="instructionType" use="required">
    <xs:annotation>
    <xs:documentation>Instruction type associated with this specific job. (See Configuration
Section in BXF Protocol Documentation) </xs:documentation>
    </xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="instructionStartDate" type="xs:date" use="required">
    <xs:annotation>
    <xs:documentation>The start date for the range of dates that the job
covers.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="instructionEndDate" type="xs:date">
    <xs:annotation>
    <xs:documentation>The end date for the range of dates that the job
covers.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="revisionNumber" type="xs:nonNegativeInteger">
    <xs:annotation>
    <xs:documentation>A non-negative integer that is assigned to the same job when revised
in order to establish a hierarchy to multiple job revisions.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="revisionDateTime" type="xs:dateTime">
    <xs:annotation>
    <xs:documentation>The date a revision is issued for an existing job. Note:
recommended to be UTC.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="revisionReferenceId" type="xs:string">
    <xs:annotation>
    <xs:documentation>The original reference identifier for the job being
revised.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="revisionReason" type="xs:string">
    <xs:annotation>
    <xs:documentation>A textual reason for why the job is being revised to be presented to
the job performers.</xs:documentation>
    </xs:annotation>
    </xs:attribute>
    <xs:attribute name="acceptRejectFlag" type="xs:boolean">
    <xs:annotation>
    <xs:documentation>A boolean flag indicating if the job manager or a job performer has

```

```

accepted to work on the job or has rejected it.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="JobDescription" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Text description of the job to be performed</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="JobBilling" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Optional details concerning the way the job be billed or invoiced for the work
performed.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence maxOccurs="unbounded">
      <xs:element name="BillingReference" type="xs:string">
        <xs:annotation>
          <xs:documentation>The billing reference identifier.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="PONumber" type="xs:string" minOccurs="0">
        <xs:annotation>
          <xs:documentation>A purchase order number related to the job
request.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="LineNumber" type="xs:integer" minOccurs="0">
        <xs:annotation>
          <xs:documentation>A line reference value on the purchase order or contract order that
relates to the work for this specific job.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="Quantity" type="xs:integer">
        <xs:annotation>
          <xs:documentation>The quantity of the item to be billed (units, hours,
etc.)</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="Description" type="xs:string" minOccurs="0">
        <xs:annotation>
          <xs:documentation>A textual description of the job completed, its purpose and
status.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="Cost" type="xs:decimal" minOccurs="0">
        <xs:annotation>
          <xs:documentation>The value to be billed for the specific job.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="PrivateInformation" type="BxfPrivateInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="JobRelease" type="xs:dateTime" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Date-Time when the job is expected to be completed and released, assuming it is

```

```

held until this point in time. Typically not used by the JobPerformer.</xs:documentation>
    </xs:annotation>
    </xs:element>
    <xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute name="jobId" type="xs:string" use="required">
    <xs:annotation>
      <xs:documentation>Sender's internal reference identifier for the work to be performed within the message. Also
      used to reference items in the rest of the message when multiple jobs included in the message or if multiple jobs
      are sent in separate messages.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="subJobId" type="xs:string">
    <xs:annotation>
      <xs:documentation>If multiple job messages for multiple parts of the same job, use this to identify the secondary
      job actions while still linking to the master job identifier.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="jobDependency" type="xs:string">
    <xs:annotation>
      <xs:documentation>Enter the jobId or subJobId that this job is dependent on and cannot be started until
      completed. If left blank, assume job is not dependent and can be started as soon as
      received.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="orderId" type="xs:string">
    <xs:annotation>
      <xs:documentation>Receiver's reference identifier for the work to be performed within the message if known in
      advance - link to existing order sent earlier.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="serviceLevel" type="xs:string">
    <xs:annotation>
      <xs:documentation>Level of service priority to assign to the job as defined by the agreement between the
      JobRequester and JobPerformer and in Configuration.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

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3.2.20 Location.XSD

Contains:

include	loc:bxftypes.xsd	
complexType	Location	ann:Identification of where the media is stored. Used by systems to notify locations of essence instance

Identification of where the media is stored. Used by systems to notify locations of content.

3.2.20.1 BXF 3.0 Changes

Multiple changes to Location in Location.XSD were made to enhance Satellite element.

- ❖ New Attribute – numberOfTransponders
- ❖ New Element – SatellitePosition
- ❖ New Attribute – PrimaryAlternate under Transponders
- ❖ New Elements – under TransponderDetail
 - TransponderFrequency
 - TransponderName
 - SymbolRate
 - ForwardErrorCorrection
 - EncryptionSystem

Description of change:

Several enhancements were made to the Location.XSD schema, to allow for a more robust exchange of satellite feed recording details.

Text representation:

```
<xs:element name="SatellitePosition" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Location of Satellite in degrees east or west relative to the prime meridian (0) - negative
    values are west (-123.0) and positive values are east (+123.0). (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:decimal">
      <xs:minInclusive value="-123.0"/>
      <xs:maxInclusive value="123.0"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>

<xs:element name="Transponders" maxOccurs="unbounded">
  <xs:complexType>
    <xs:choice>
      <xs:element name="TransponderName" type="xs:string">
        <xs:annotation>
          <xs:documentation>The designated name for a specific transponder as defined in the Receiver
          used as a shortcut to select a transponder. (v3.0)</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
  </xs:complexType>
</xs:element>
```

```

        </xs:annotation>
    </xs:element>

    <xs:element name="TransponderDetail">
        <xs:annotation>
        <xs:documentation>Detailed definition for each transponder including ability to name the
        transponder</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:sequence>
                <xs:element name="TransponderNumber">
                    <xs:annotation>
                    <xs:documentation>Transponder number 1 or greater</xs:documentation>
                    </xs:annotation>
                    <xs:simpleType>
                        <xs:restriction base="xs:integer">
                            <xs:minInclusive value="1"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
                <xs:element name="TransponderFrequency">
                    <xs:annotation>
                    <xs:documentation>Frequency (MHz) assigned to the transponder number (12700.0 = 12.7000
                    GHz for DBS). (v3.0)</xs:documentation>
                    </xs:annotation>
                    <xs:simpleType>
                        <xs:restriction base="xs:decimal">
                            <xs:minInclusive value="0"/>
                            <xs:pattern value="[0-9]{1,5}[.][0-9]"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
                <xs:element name="Polarity">
                    <xs:annotation>
                    <xs:documentation>Left or Right for circularly polarized DBS satellites, Horizontal or Vertical for
                    linearly polarized satellites</xs:documentation>
                    </xs:annotation>
                    <xs:simpleType>
                        <xs:restriction base="xs:string">
                            <xs:enumeration value="Vertical"/>
                            <xs:enumeration value="Horizontal"/>
                            <xs:enumeration value="Right"/>
                            <xs:enumeration value="Left"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
                <xs:element name="TransponderName" type="xs:string" minOccurs="0">
                    <xs:annotation>
                    <xs:documentation>The designated name for a specific transponder as defined in the Receiver.
                    (v3.0)</xs:documentation>
                    </xs:annotation>
                </xs:element>
                <xs:element name="SymbolRate" type="xs:integer" minOccurs="0">
                    <xs:annotation>
                    <xs:documentation>Rate of transmission in Kilo Symbols/second. (v3.0)</xs:documentation>
                    </xs:annotation>
                </xs:element>
                <xs:element name="ForwardErrorCorrection" minOccurs="0">

```

```

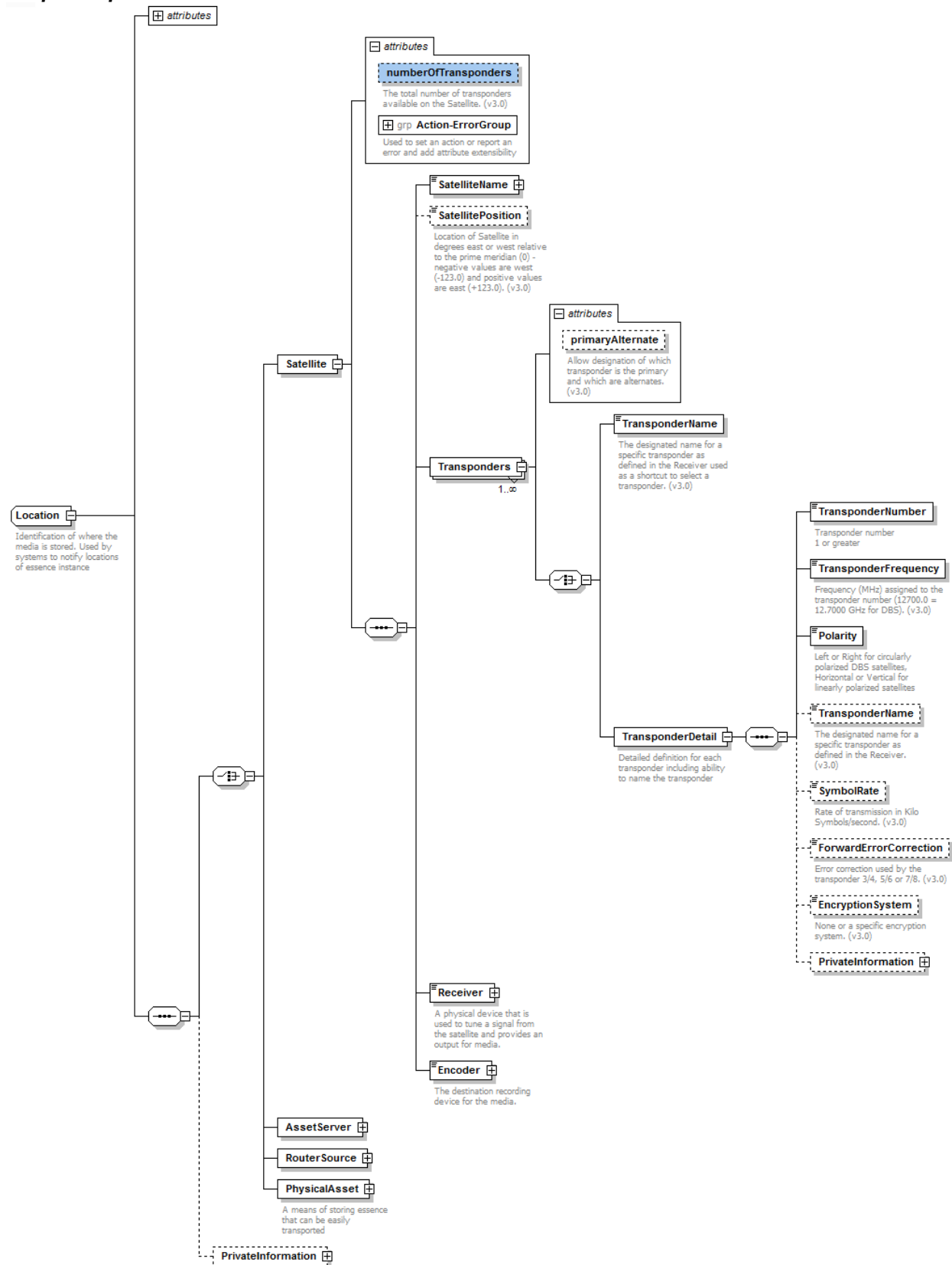
        <xs:annotation>
        <xs:documentation>Error correction used by the transponder 3/4, 5/6 or 7/8.
(v3.0)</xs:documentation>
        </xs:annotation>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:length value="2"/>
                <xs:enumeration value="34"/>
                <xs:enumeration value="56"/>
                <xs:enumeration value="78"/>
            </xs:restriction>
        </xs:simpleType>
        </xs:element>
        <xs:element name="EncryptionSystem" type="xs:string" minOccurs="0">
            <xs:annotation>
            <xs:documentation>None or a specific encryption system. (v3.0)</xs:documentation>
            </xs:annotation>
        </xs:element>
        <xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
<xs:attribute name="primaryAlternate" default="Primary">
    <xs:annotation>
    <xs:documentation>Allow designation of which transponder is the primary and which are alternates.
(v3.0)</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Primary"/>
            <xs:enumeration value="Alternate1"/>
            <xs:enumeration value="Alternate2"/>
        </xs:restriction>
    </xs:simpleType>
</xs:attribute>
</xs:complexType>
</xs:element>

<xs:element name="Encoder" type="BxfText">
    <xs:annotation>
    <xs:documentation>The destination recording device for the media.</xs:documentation>
    </xs:annotation>
</xs:element>

<xs:attribute name="numberOfTransponders">
    <xs:annotation>
    <xs:documentation>The total number of transponders available on the Satellite. (v3.0)</xs:documentation>
    </xs:annotation>
    <xs:simpleType>
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="1"/>
        </xs:restriction>
    </xs:simpleType>
</xs:attribute>

```

Graphic representation:



3.2.21 Macro.XSD

Contains:

include	loc:bxftypes.xsd	
complexType	Macro	ann:

Used to describe a MacroEvent under EventData.

3.2.22 NonPrimaryEvent.XSD

Contains:

include	loc:macro.xsd	
include	loc:nonprogramevent.xsd	
include	loc:programevent.xsd	
include	loc:content.xsd	
complexType	NonPrimaryEvent	ann:
complexType	GraphicData	ann: Use to add in graphics associated data to a specific secondary event. Used for delineating a graphic collection, keyer number, template name, etc.

Used to describe those events that are not the primary content of a transport stream or playlist. Secondary events happen at the same time or in conjunction with the broadcast of the primary video and audio streams and may be started and completed using offsets from the start of the primary events. Note that in Version 2, BXF supports the inclusion of program events referenced by the secondary event.

3.2.22.1 BXF 3.0 Changes

New elements added to NonPrimaryEvent to support special secondary events:

AudioOverPercent

GraphicData

OverlayPlacement

Description of change:

Improvements were made to the NonPrimaryEvent options to support voice overs, more complex graphic keying and better control of overlay placements.

Text representation:

```
<xs:include schemaLocation="content.xsd"/>
```

```
<xs:element name="AudioOverPercent" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Used to set an adjustment to the audio levels for voice over audio</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:simpleType>
```

```
<xs:restriction base="xs:nonNegativeInteger">
```

```
<xs:minInclusive value="0"/>
```

```
<xs:maxInclusive value="100"/>
```

```
</xs:restriction>
```

```
</xs:simpleType>
```

```
</xs:element>
```

```
<xs:element name="GraphicData" type="GraphicData" minOccurs="0" maxOccurs="unbounded">
```

```
<xs:annotation>
```

```
<xs:documentation>Use to add in graphics associated data to a specific secondary event. Used for delineating a graphic collection, keyer number, template name, etc.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:complexType name="GraphicData">
```

```
<xs:annotation>
```

```
<xs:documentation>Use to add in graphics associated data to a specific secondary event. Used for delineating a graphic collection, keyer number, template name, etc.</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:sequence>
```

```
<xs:element name="GraphicCollectionName" type="BxfText" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>The collection in which the template can be found</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="GraphicTemplate" type="xs:string" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Name of template used for graphics overlay</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="GraphicKeyer" type="xs:string" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Name or number of the keyer being used</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:sequence minOccurs="0" maxOccurs="unbounded">
```

```
<xs:element name="GraphicTextSource" type="xs:string" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>If an external source is used for the graphics, specify a path or external device.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="GraphicText" type="BxfText" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Actual text to appear. Do not use for captioning.</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
</xs:sequence>
```

```
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
```

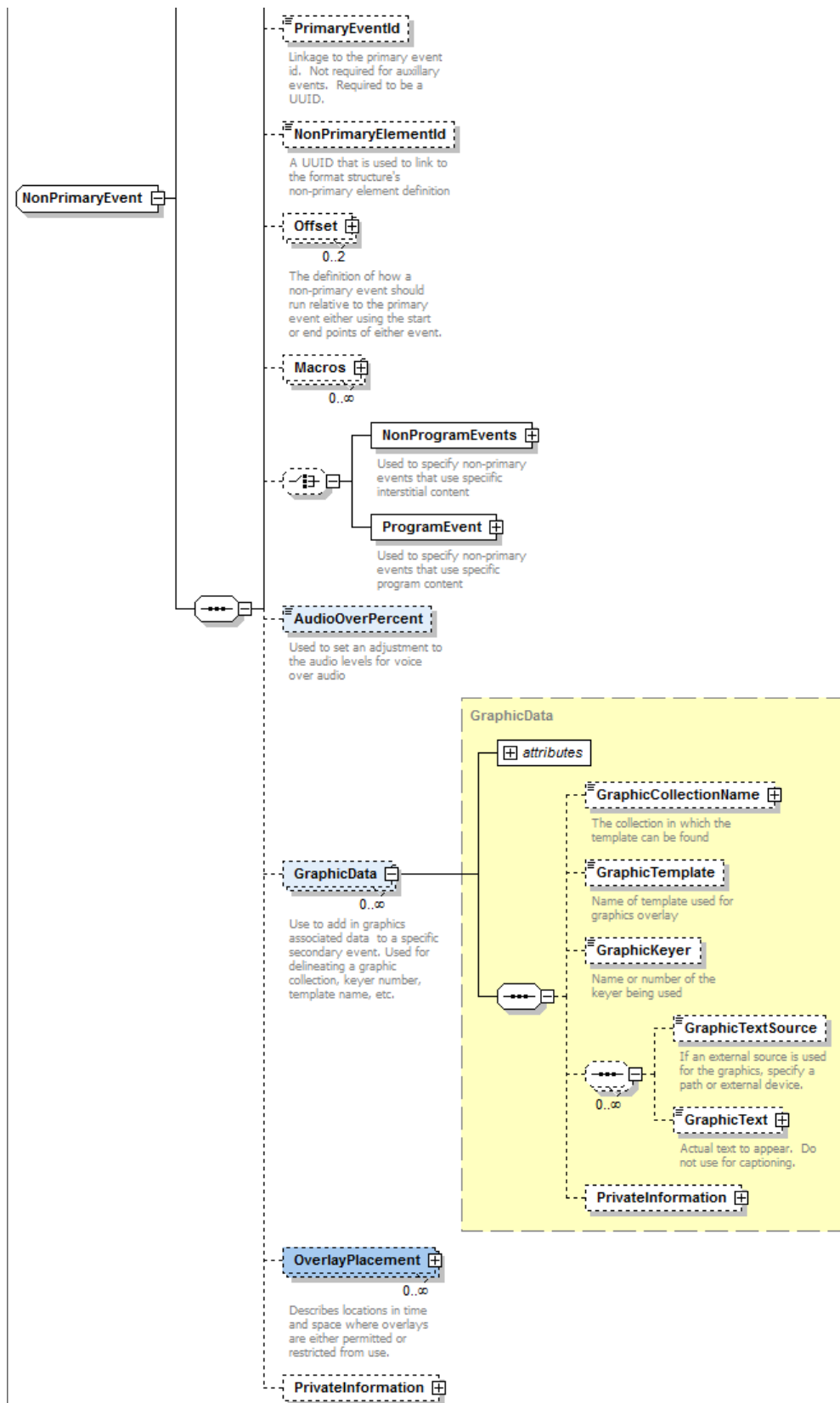
```

    </xs:sequence>
    <xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

<xs:element name="OverlayPlacement" type="OverlayOpportunityType" minOccurs="0"
maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>Describes locations in time and space where overlays are either permitted or restricted from
    use.</xs:documentation>
  </xs:annotation>
</xs:element>

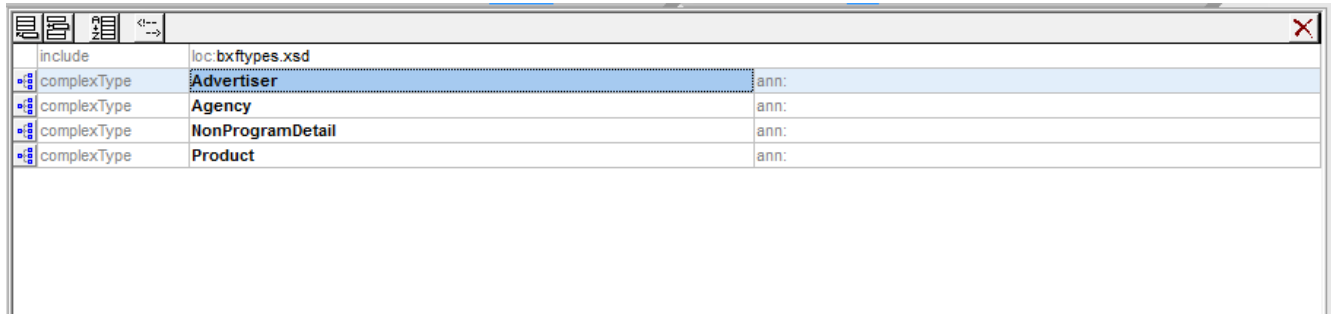
```

Graphic representation:



3.2.23 NonProgramDetail.XSD

Contains:



include	loc:bxftypes.xsd	
complexType	Advertiser	ann:
complexType	Agency	ann:
complexType	NonProgramDetail	ann:
complexType	Product	ann:

Details of the non-program content.

3.2.23.1 BXF 3.0 Changes

Multiple changes were made to NonProgramDetail in NonProgramDetail.XSD. Note that this area has been modified to a large degree and will not be backward compatible with Version 1 or 2 of BXF. This was done in order to make the area useable going forward and could not be logically adjusted to maintain compatibility. It is believed that this area is not currently used because of these deficits.

- ❖ AdType added as new enumerated required element
- ❖ SpotType modified to have specific enumerations
- ❖ Advertiser, Agency, and Product added as new ComplexTypes
- ❖ Advertiser added as new node, pushing AdvertiserName out a level which is also extended to include AdvertiserCode attribute and a new node ParentCompany is added with type BxfCompany (see BxfTypes.XSD)
- ❖ Agency extended to add AlternateAgencyName and EstimateName as new elements
- ❖ Product extended to add new elements BrandName/brandCode and AdvertiserCampaign/advertiserCampiagnCode. ProductCode is given four new string attributes:
 - industryGroup
 - majorCategory
 - subCategory
 - productCategory
- ❖ MakeGoodFlag added as a new optional element

Description of change:

Several new attributes and elements were added to the Non Program Detail structure, so that often-vital details relating to commercial content may now be exchanged in BXF messages.

Text representation:

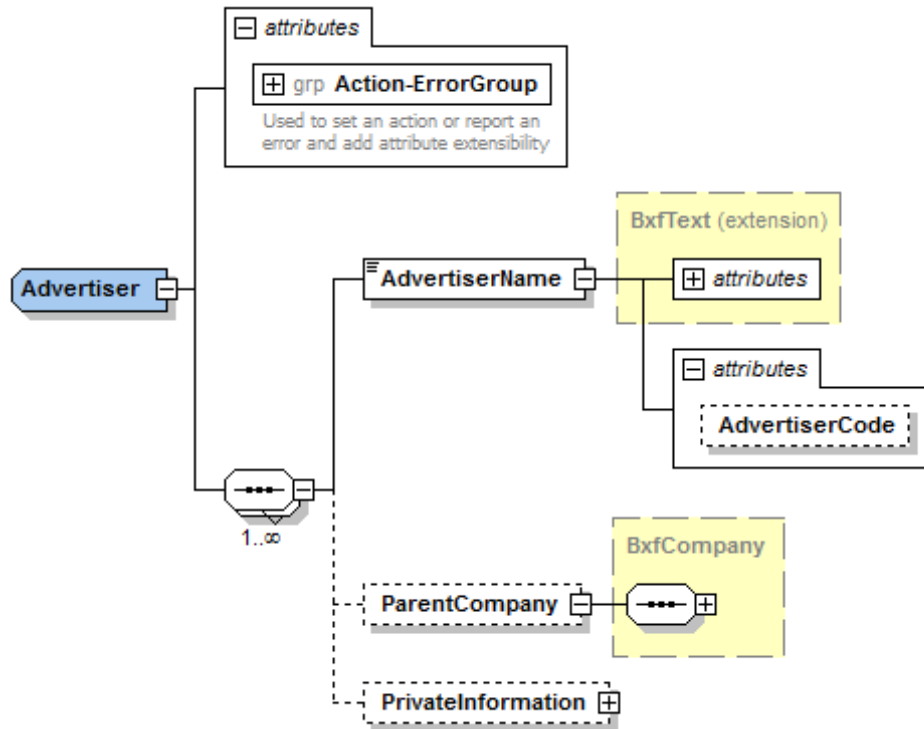
```
<xs:complexType name="Advertiser">
  <xs:sequence maxOccurs="unbounded">
    <xs:element name="AdvertiserName">
      <xs:complexType>
        <xs:complexContent>
```

```

        <xs:extension base="BxfText">
            <xs:attribute name="AdvertiserCode" type="xs:string"/>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="ParentCompany" type="BxfCompany" minOccurs="0"/>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

Graphic representation:



Text representation:

```

<xs:complexType name="Agency">
    <xs:sequence>
        <xs:element name="AgencyName" type="BxfText">
            <xs:annotation>
                <xs:documentation>Name of advertising agency (buying agency)</xs:documentation>
            </xs:annotation>
        </xs:element>
        <xs:element name="EstimateNumber" type="xs:string" minOccurs="0">
            <xs:annotation>
                <xs:documentation>Refers to the contract identifier in the agency system</xs:documentation>
            </xs:annotation>
        </xs:element>
        <xs:element name="AgencyCode" type="xs:string" minOccurs="0">
            <xs:annotation>
                <xs:documentation>Recommended to use TVB EDI Value or see Configuration Section in BXF
                Protocol Documentation</xs:documentation>
            </xs:annotation>
        </xs:element>
    </xs:sequence>

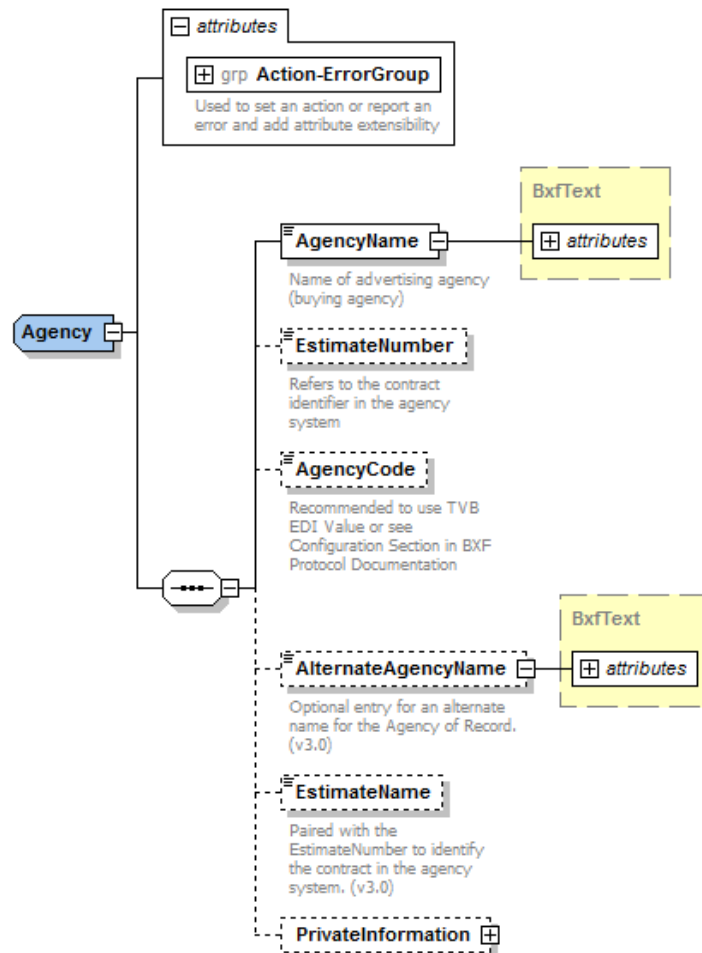
```

```

</xs:annotation>
</xs:element>
<xs:element name="AlternateAgencyName" type="BxfText" minOccurs="0">
<xs:annotation>
<xs:documentation>Optional entry for an alternate name for the Agency of Record.
(v3.0)</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="EstimateName" type="xs:string" minOccurs="0">
<xs:annotation>
<xs:documentation>Paired with the EstimateNumber to identify the contract in the agency system.
(v3.0)</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

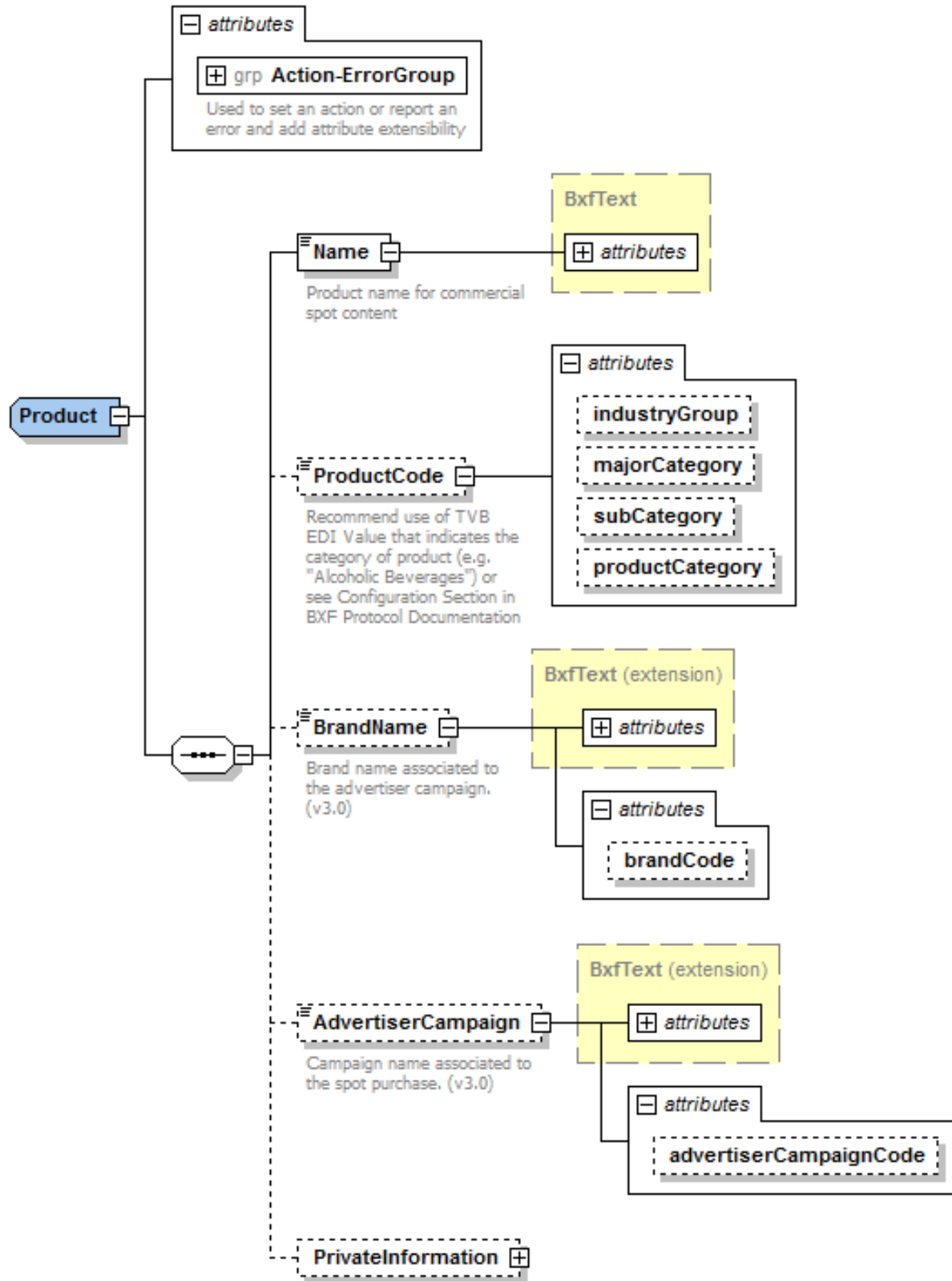
Graphic representation:



Text representation:

```
<xs:complexType name="Product">
  <xs:sequence>
    <xs:element name="Name" type="BxfText">
      <xs:annotation>
        <xs:documentation>Product name for commercial spot content</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ProductCode" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Recommend use of TVB EDI Value that indicates the category of product (e.g.
"Alcoholic Beverages") or see Configuration Section in BXF Protocol Documentation</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:complexType>
      <xs:simpleContent>
        <xs:extension base="xs:string">
          <xs:attribute name="industryGroup" type="xs:string"/>
          <xs:attribute name="majorCategory" type="xs:string"/>
          <xs:attribute name="subCategory" type="xs:string"/>
          <xs:attribute name="productCategory" type="xs:string"/>
        </xs:extension>
      </xs:simpleContent>
    </xs:complexType>
  </xs:sequence>
  <xs:element name="BrandName" minOccurs="0">
    <xs:annotation>
      <xs:documentation>Brand name associated to the advertiser campaign. (v3.0)</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="BxfText">
        <xs:attribute name="brandCode" type="xs:string"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="AdvertiserCampaign" minOccurs="0">
    <xs:annotation>
      <xs:documentation>Campaign name associated to the spot purchase. (v3.0)</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="BxfText">
        <xs:attribute name="advertiserCampaignCode" type="xs:string"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>
```

Graphic representation:



Text representation:

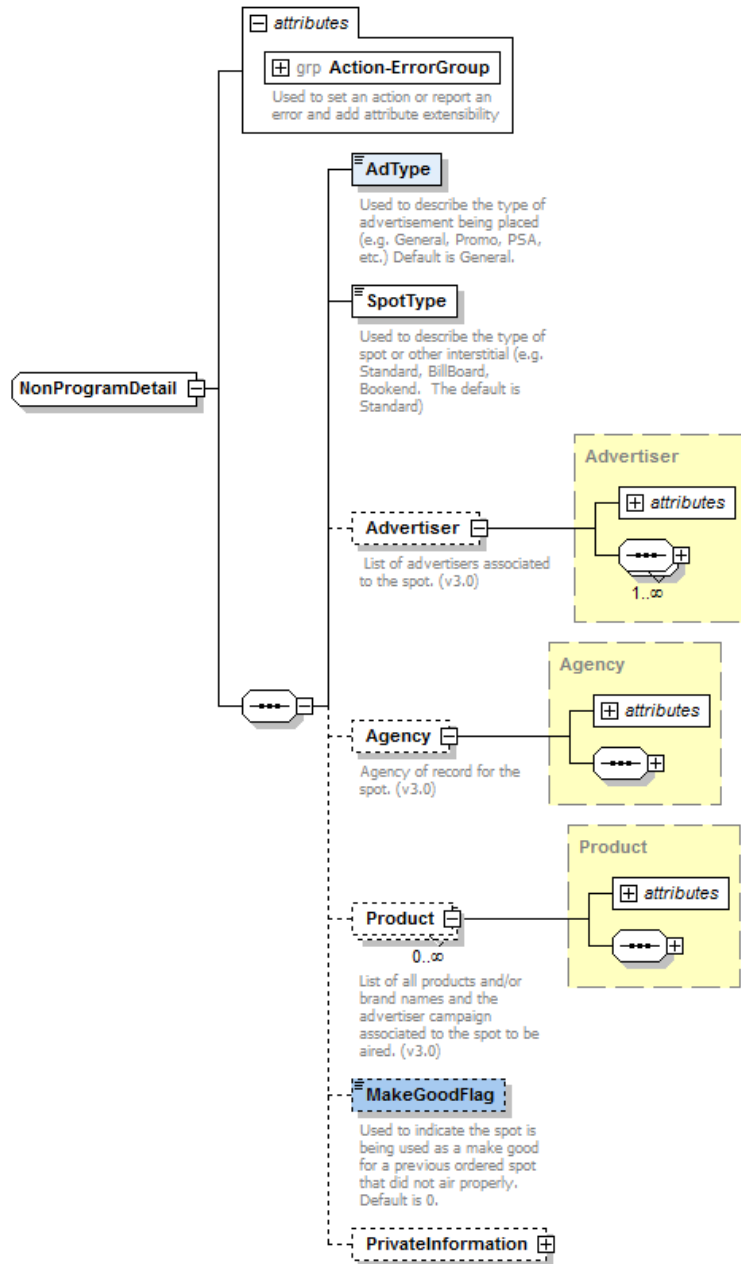
```
<xs:complexType name="NonProgramDetail">
  <xs:sequence>
    <xs:element name="AdType">
      <xs:annotation>
        <xs:documentation>Used to describe the type of advertisement being placed (e.g. General, Promo,
PSA, etc.) Default is General.</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="Direct Response"/>
          <xs:enumeration value="General"/>
          <xs:enumeration value="Promo"/>
          <xs:enumeration value="PSA"/>
          <xs:enumeration value="Trade/Barter"/>
          <xs:enumeration value="Other"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="SpotType" default="Standard">
      <xs:annotation>
        <xs:documentation>Used to describe the type of spot or other interstitial (e.g. Standard, Billboard,
Bookend. The default is Standard)</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="BillBoard"/>
          <xs:enumeration value="Bookend"/>
          <xs:enumeration value="Piggyback"/>
          <xs:enumeration value="Standard"/>
          <xs:enumeration value="Other"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="Advertiser" type="Advertiser" minOccurs="0">
      <xs:annotation>
        <xs:documentation>List of advertisers associated to the spot. (v3.0)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="Agency" type="Agency" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Agency of record for the spot. (v3.0)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="Product" type="Product" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>List of all products and/or brand names and the advertiser campaign associated to
the spot to be aired. (v3.0)</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="MakeGoodFlag" type="xs:boolean" default="0" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Used to indicate the spot is being used as a make good for a previous ordered
spot that did not air properly. Default is 0.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>

```

Graphic representation:



3.2.24 NonProgramEvent.XSD

Contains:

include	loc:contract.xsd	
include	loc:eventdata.xsd	
include	loc:nonprogramdetail.xsd	
complexType	Constraint	ann:
complexType	NonProgramEvent	ann:

Describes an event that contains NonProgramContent such as commercials and other interstitials, typically of short duration.

3.2.24.1 BXF 3.0 Changes

Added new element “SCTE-35DistributionRestrictions” to Constraints under NonProgramEvent

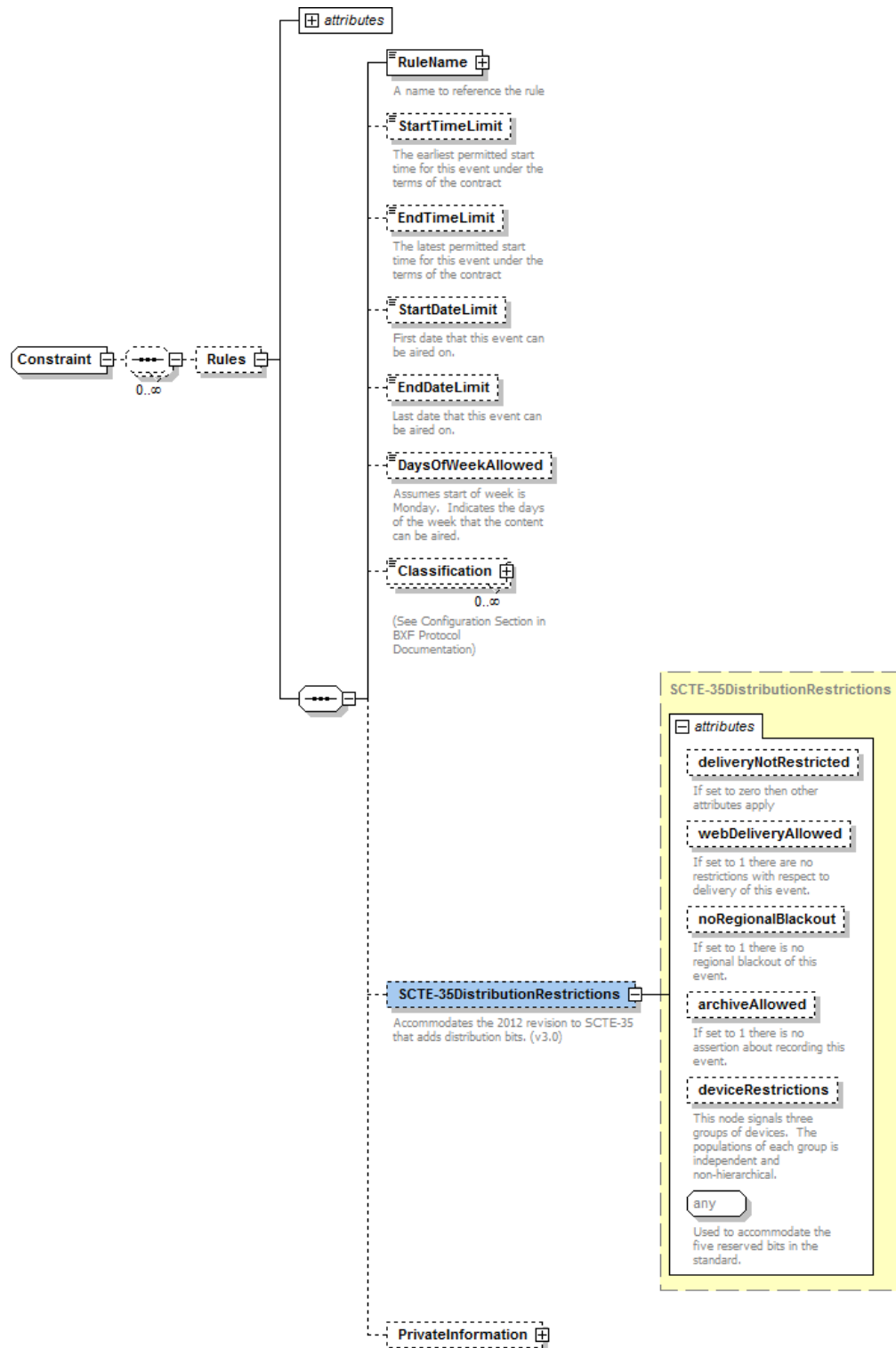
Description of change:

Added support for new SCTE-35 distribution restriction capabilities.

Text representation:

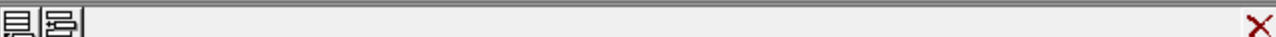
```
<xs:element name="SCTE-35DistributionRestrictions" type="SCTE-35DistributionRestrictions" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Accommodates the 2012 revision to SCTE-35 that adds distribution bits.
    (v3.0)</xs:documentation>
  </xs:annotation>
</xs:element>
```


Graphic representation:



3.2.25 PrimaryEvent.XSD




Contains:

	
include	loc:bxfatypes.xsd
include	loc:nonprogramevent.xsd
include	loc:programevent.xsd
 complexType	PrimaryEvent
	ann:

Describes an event that contains the primary audio and video content for the transport stream or playlist.

3.2.26 ProgramContent.XSD

Contains:

		
include	loc:bxfparentalrating.xsd	
include	loc:bxfatypes.xsd	
include	loc:contentmetadata.xsd	
include	loc:contract.xsd	
include	loc:element.xsd	
include	loc:scheduledevent.xsd	
 complexType	ProgramContent	ann:

Used to describe the full length content of a show.

3.2.26.1 BXF 3.0 Changes

“ContentType”, “EiCode” and “PaidProgramming” added to ProgramContent.XSD and used in ProgramContent.

Description of change:

Three new elements, ContentType, EiCode and PaidProgramming were added, which allow the exchange of the type of program content (e.g. network, entertainment, local, news, etc) as well as the Education/Information Children's Code, as defined by the FCC and paid programming.

Text representation:

```
<xs:element name="ContentType" type="BxfText" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Used to describe the type of content (e.g. network, local, entertainment, news) (See  
Configuration Section in BXF Protocol Documentation) (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

</xs:element>

```
<xs:element name="EiCode" type="EiCode" minOccurs="0">
```

```
<xs:annotation>
```

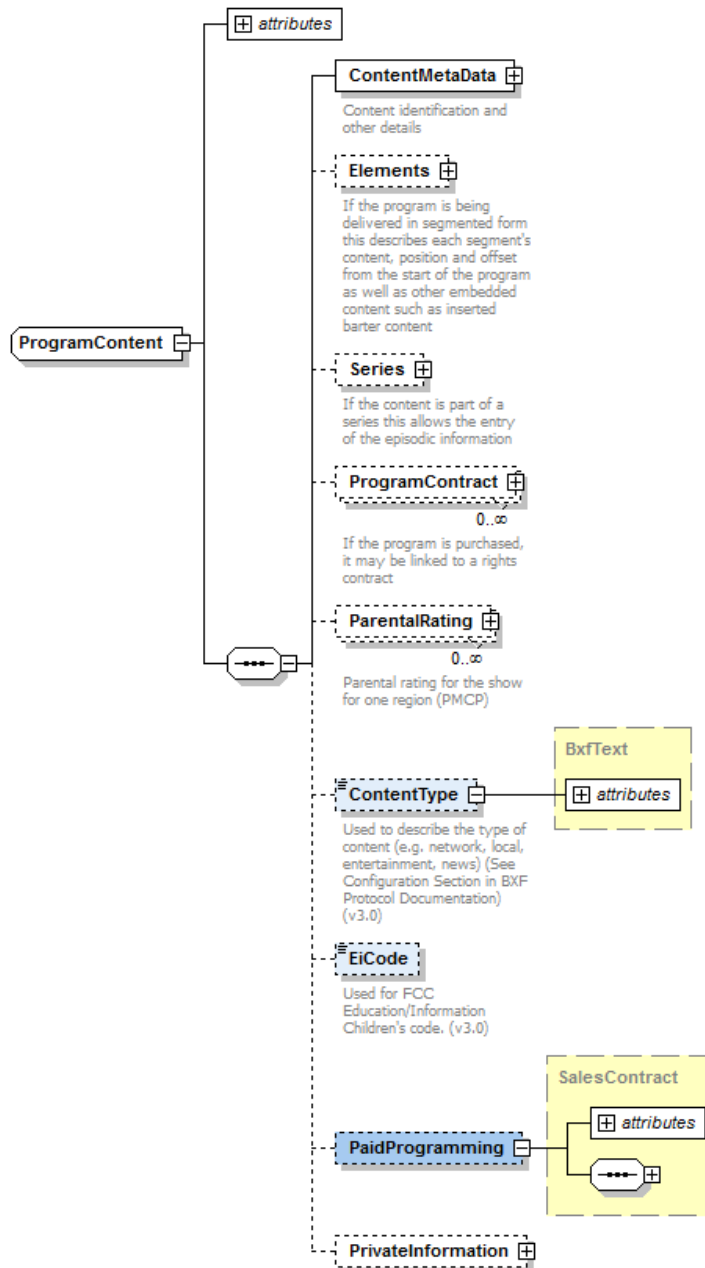
```
<xs:documentation>Used for FCC Education/Information Children's code. (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="PaidProgramming" type="SalesContract" minOccurs="0"/>
```

Graphic representation:



3.2.27 ProgramEvent.XSD

Contains:

include	loc:bxftypes.xsd	
include	loc:contract.xsd	
include	loc:nonprogramevent.xsd	
complexType	ProgramEvent	ann:

Describes an event that contains ProgramContent.

3.2.27.1 BXF 3.0 Changes

Added a new Choice option to differentiate between Program Contracts for typical long form content and Paid Programming Contracts for long form content that is commercial in nature.

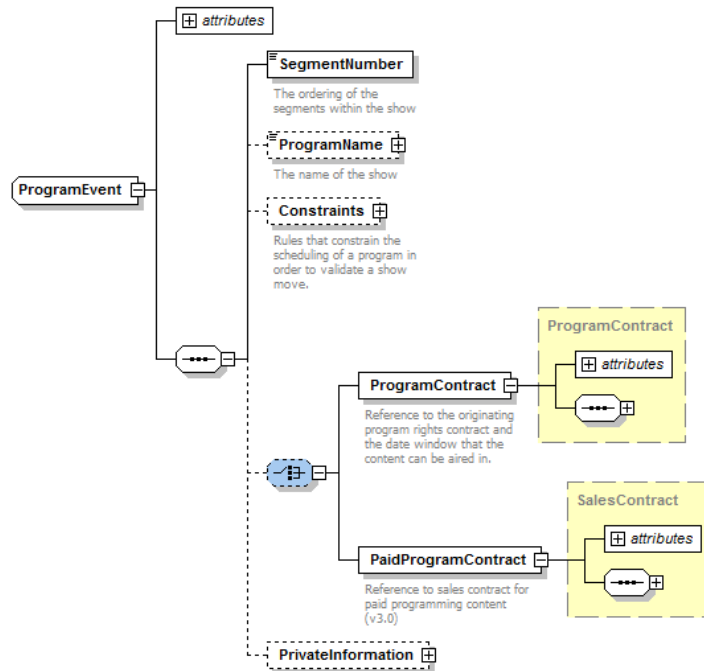
Description of change:

Long form content can be purchased under different types of contracts. This new choice option replaces a single option under previous versions. The choice is to designate the content either as normal program content or as paid programming typically managed by traffic and placed under a sales contract agreement.

Text representation:

```
<xs:choice minOccurs="0">
  <xs:element name="ProgramContract" type="ProgramContract">
    <xs:annotation>
      <xs:documentation>Reference to the originating program rights contract and the date window that the
content can be aired in.</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:element name="PaidProgramContract" type="SalesContract">
    <xs:annotation>
      <xs:documentation>Reference to sales contract for paid programming content (v3.0)</xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:choice>
```

Graphic representation:



3.2.28 Schedule.XSD

Contains:

include	loc:asrun.xsd	
include	loc:bxchannel.xsd	
include	loc:bxftypes.xsd	
include	loc:scheduledevent.xsd	
complexType	Schedule	ann:A schedule

Used to describe a specific list of content in a linear playout sequence. In Version 2, support has been added to communicate schedule changes in real time by a new node, **RealTimeDetail**. This allows the indication of which event is the current event playing as well as the events that had played out previously and those that will play out next.

3.2.29 ScheduledEvent.XSD

Contains:

include	loc:bxfparentalrating.xsd	
include	loc:bxftypes.xsd	
include	loc:contentmetadata.xsd	
include	loc:eventdata.xsd	
include	loc:format.xsd	
complexType	ScheduledEvent	ann:
complexType	Series	ann:

Used to describe a single event within a specific list of content arranged in a linear playlist sequence.

3.2.30 Video.XSD

Contains:

include	loc:bxftypes.xsd	
complexType	TSVideo	ann:Enumerates the various values relating to the presentation of video in a transport stream
complexType	Video	ann:Enumerates the various values relating to the presentation of video
complexType	VideoTransition	ann:Allows the user to specify specific actions to be used by the automation system to transition the video from one event to another
complexType	AFDDData	ann:Used to describe both Active Format Description Codes, Shorthand Text Descriptions and Bar Data options. (v3.0)
simpleType	AspectRatioType	ann:Enumerates either 4:3 or 16:9 video presentation formats
simpleType	TSVideoEncodingType	ann:Enumerates various methods used to compress video in a transport stream
simpleType	VideoEncodingType	ann:Enumerates various methods of compressing video
simpleType	VideoFormatType	ann:Enumerates the different video presentation formats
simpleType	VideoRateType	ann:Enumerates the speed of a video transition
simpleType	VideoTransitionEnumType	ann:Enumerates various transition options

Enumerates the various values relating to the presentation of video.

3.2.30.1 BXF 3.0 Changes

“AFDDData” added as a Complex Type to Video.XSD and used in Video and TSVideo.

Description of change:

A structure was added to the Video.XSD file to allow exchange of AFD (Active Format Description) and Bar Data (describing the black vertical or horizontal which may be present) between BXF systems.

The AFD Code itself, in its 4-bit form as defined in SMPTE ST 2016-1 is included, along with a more human-readable AFD Annotation, which provides six text values, each describing a possible AFD Code (TOP = Common Top, CT = Center Cut, FF = Full Frame, LB = Letterbox, PB = Pillarbox, SAFE = Center Protect).

A comprehensive Bar Data structure is also included, allowing complete description of the Bar Data, as defined in SMPTE ST 2016-1.

Text representation:

```
<xs:complexType name="AFDData">
  <xs:annotation>
    <xs:documentation>Used to describe both Active Format Description Codes, Shorthand Text Descriptions
and Bar Data options. (v3.0)</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="AFDCode">
      <xs:annotation>
        <xs:documentation>Four bits that indicate the code for the Active Format Description as referenced by
SMPTE ST2016-1:2009.</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:boolean">
          <xs:pattern value="[0,1][0,1][0,1][0,1]"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="AFDAnnotation" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Describes the AFD Code in textual form and indicates which coded frame type is
being used as referenced by SMPTE ST2016-1:2009.</xs:documentation>
      </xs:annotation>
      <xs:complexType>
        <xs:choice>
          <xs:element name="AFDAnnotationIn4-3" type="AFDDetails">
            <xs:annotation>
              <xs:documentation>
                [0000]=Undefined
                [0001]=Reserved
                [0010]=16:9+Top+Letterbox
                [0011]=14:9+Top+Letterbox
                [0100]=Other+Centered+Letterbox
                [0101]=Reserved
                [0110]=Reserved
                [0111]=Reserved
                [1000]=4:3+Full Frame
                [1001]=4:3+Full Frame
                [1010]=16:9+Centered+Letterbox
                [1011]=14:9+Centered+Letterbox
                [1100]=Reserved
                [1101]=4:3+14:9 Centered+Full Frame
                [1110]=16:9+14:9 Centered+Letterbox
                [1111]=16:9+4:3 Centered+Letterbox
              </xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="AFDAnnotationIn16-9" type="AFDDetails">
            <xs:annotation>
              <xs:documentation>
                [0000]=Undefined
                [0001]=Reserved
                [0010]=16:9+Full Frame
                [0011]=14:9+Centered+Pillarbox
                [0100]=Other+Centered+Letterbox
                [0101]=Reserved
                [0110]=Reserved
                [0111]=Reserved
                [1000]=16:9+Full Frame
              </xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:choice>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

[1001]=4:3+Centered+Pillarbox
 [1010]=16:9+Full Frame+Protected
 [1011]=14:9+Centered+Pillarbox
 [1100]=Reserved
 [1101]=4:3+14:9 Centered+Pillarbox
 [1110]=16:9+14:9 Centered+Full Frame
 [1111]=16:9+4:3 Centered+Full Frame

```

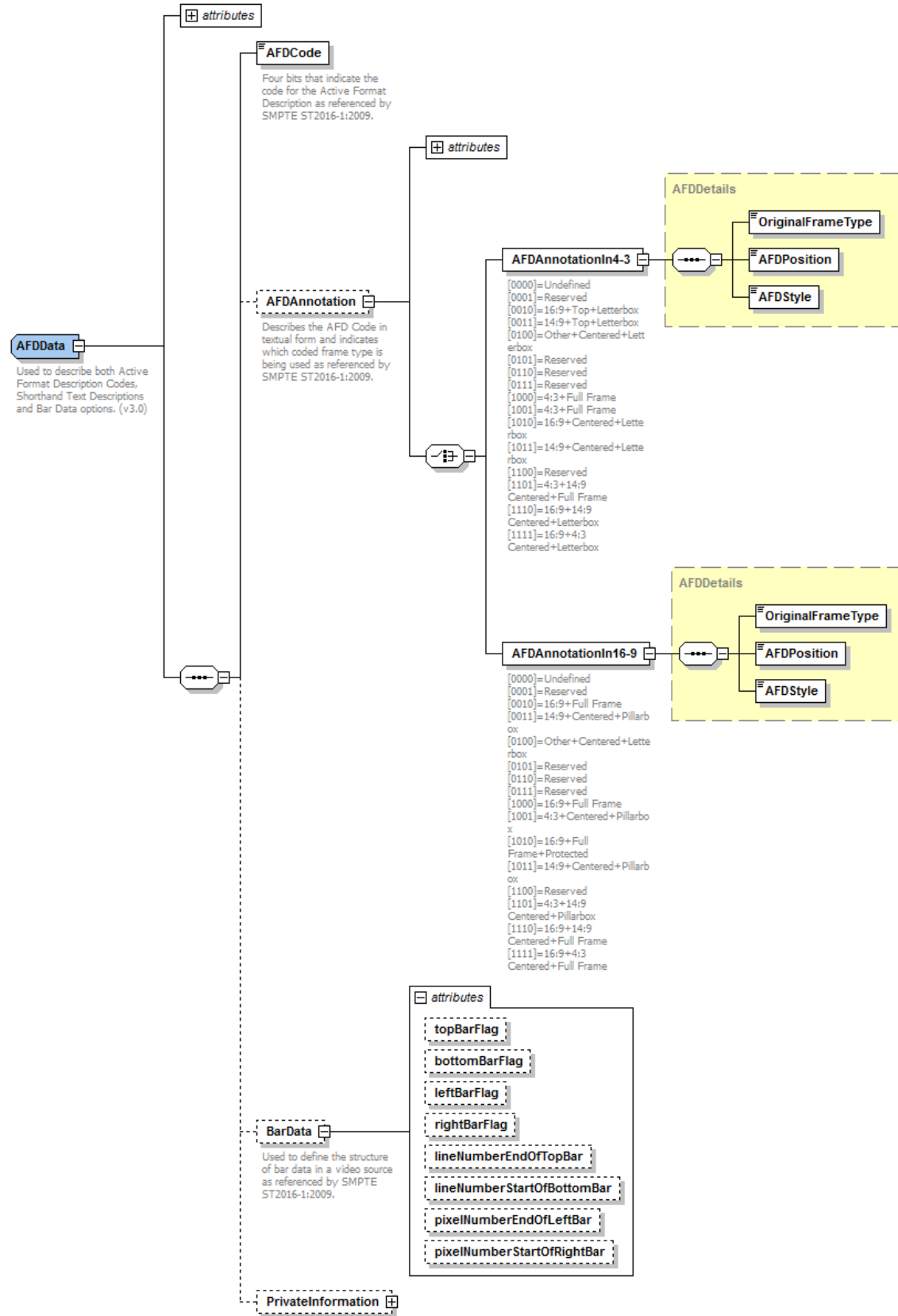
    </xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:choice>
<xs:attribute name="CodedFrameType" use="required">
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="4:3"/>
      <xs:enumeration value="16:9"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="BarData" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Used to define the structure of bar data in a video source as referenced by SMPTE
ST2016-1:2009.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:attribute name="topBarFlag" type="xs:boolean"/>
    <xs:attribute name="bottomBarFlag" type="xs:boolean"/>
    <xs:attribute name="leftBarFlag" type="xs:boolean"/>
    <xs:attribute name="rightBarFlag" type="xs:boolean"/>
    <xs:attribute name="lineNumberEndOfTopBar">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedInt">
          <xs:maxInclusive value="16383"/>
          <xs:minInclusive value="0"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="lineNumberStartOfBottomBar">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedInt">
          <xs:minInclusive value="0"/>
          <xs:maxInclusive value="16383"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="pixelNumberEndOfLeftBar">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedInt">
          <xs:minInclusive value="0"/>
          <xs:maxInclusive value="16383"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="pixelNumberStartOfRightBar">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedInt">

```



```
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="16383"/>
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="PrivateInformation" type="BxfPrivateInformation" minOccurs="0"/>
</xs:sequence>
<xs:attributeGroup ref="Action-ErrorGroup"/>
</xs:complexType>
```

Graphic representation:



Text representation:

```
<xs:element name="AFDDData" type="AFDDData" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Used to describe both Active Format Description Codes, Shorthand Text Descriptions and Bar Data options. (v3.0)</xs:documentation>
```

```
</xs:annotation>
```

```
</xs:element>
```

```
<xs:element name="AFD-BarDataPresent" minOccurs="0">
```

```
<xs:annotation>
```

```
<xs:documentation>Indicates that active format description and bar data is used in the presentation of the video in order to convert the production image to the selected transmission aspect ratio. The actual values for these items is incorporated into the video VANC.</xs:documentation>
```

```
</xs:annotation>
```

```
<xs:complexType>
```

```
<xs:simpleContent>
```

```
<xs:extension base="xs:boolean"/>
```

```
</xs:simpleContent>
```

```
</xs:complexType>
```

```
</xs:element>
```

Graphic representation:

