



# PBCore Handbook

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Exploring the human endeavor*



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## What is PBCore?

PBCore is an XML-based metadata schema developed in the early 2000s for the public broadcasting community. Since the launch of PBCore 1.0 in 2005, dozens of organizations have begun using PBCore as a way to structure, organize, and share data around their audiovisual collections.

PBCore was originally developed by the public broadcasting community with funding from the Corporation for Public Broadcasting so that producers and local stations could better share, manage and preserve their media. Since then, a growing number of moving image archives and media organizations outside of public broadcasting have adopted PBCore to organize, share, and structure data about audiovisual assets and collections in a standard way.

The PBCore schema has been adopted for a variety of different purposes, such as:

- a core descriptive metadata schema and data dictionary for cataloging or describing audiovisual content and associated technical metadata
- a model for building custom databases or applications for the management and use of audiovisual collections
- a guideline for identifying a set of vocabularies for describing audiovisual assets
- a data model for configurable collection management systems such as Omeka, Collective Access, etc.
- a guideline for creating inventory spreadsheets
- a mapping utility for targeting data into different schemas or custom databases

PBCore is focused on providing a structured way to describe audiovisual assets and related audiovisual material. It includes specialized fields and vocabularies to describe concepts that are uniquely relevant for assets created within the broadcast and media environment.

PBCore concepts can be used to inventory, describe, and catalog the physical and intellectual properties of their holdings. Some users develop databases based on the PBCore model to make their data searchable and discoverable by users both within and outside of their institution; others incorporate PBCore terminology into existing applications to better describe and manage their audiovisual content. Users can generate PBCore XML records or create PBCore-based spreadsheets to share data with other users in a standardized fashion.

While it is designed to manage descriptive and technical metadata, PBCore can be used alongside other standards to capture additional descriptive, technical, or preservation metadata. To address preservation needs, PBCore encourages the use of other standards through extensions and additions. For example, the American Archive of Public Broadcasting uses PBCore for descriptive and technical metadata, PREMIS for preservation metadata, and reVTMD for process history metadata. Other organizations have used PBCore for their item-level descriptive and technical metadata needs in conjunction with *Describing Archives: A Content Standard* (DACS)/Encoded Archival Description (EAD) for archival collections. PBCore can also be used as a core descriptive metadata standard in conjunction with Metadata Object Descriptive Standard (MODS) for describing audiovisual resources in libraries.

## History and Development

PBCore 1.0 was released in April 2005, with initial development funding provided by the Corporation for Public Broadcasting (CPB). Version 1.0, based on the Dublin Core metadata standard, defined 48 metadata elements that combined to describe the intellectual content, creation, creators, usage, permissions, constraints, use obligation, and physical or digital format of a media asset.

In version 1.1, released in January 2007, PBCore shifted from a flat to a nested structure, in which related metadata elements became linked through hierarchically organized container elements. This allowed for the differentiation between Asset and Instantiation level data to allow multiple related formats to be described within a single metadata record. Information about PBCore 1.1 is available at [v1.pbcore.org](http://v1.pbcore.org).

Version 1.2.1, released December 2008, increased the level of format detail that could be expressed in a PBCore record by adding the ‘pbcoreEssenceTrack’ element to express the technical information associated with different instantiations.

Version 1.3, released in August 2010, added the “pbcoreAssetType” element to allow for the high-level description of assets, whether a program, episode, or series. It also introduced the attribute “source” to allow users to declare where they derived their data. This was an interim development primarily to support upcoming American Archive projects, while CPB consultants worked toward the release of PBCore 2.0.

In February 2011, following extensive review of change requests from the PBCore user community, PBCore 2.0 was released. PBCore 2.0 introduced optional attributes to allow for the inclusion of more detailed information, specific time-based metadata, and URIs for better mapping to the semantic web. It also introduced the PBCoreInstantiation and PBCoreCollection container elements, and allowed for the division of PBCore Description Documents and Instantiations into Parts for defining segments, stories, and nested relationships. Information about PBCore 2.0 is available at [v2.pbcore.org](http://v2.pbcore.org).

In 2013, CPB transferred responsibility for the PBCore metadata standard to the WGBH Media Library and Archives as part of the American Archive of Public Broadcasting (AAPB) initiative. The AAPB team established a PBCore Advisory Subcommittee of the Association of Moving Image Archivists to reassess the schema, lead outreach efforts, and gather feedback from the user community.

In August 2015, the PBCore Advisory Subcommittee released the current version: PBCore 2.1, an incremental update that provides clearer element definitions and more options to include detailed source information for metadata using optional attribute groups. PBCore 2.1 is designed to be backwards compatible with PBCore 2.0, with further changes planned for PBCore 3.0. The current PBCore schema can be found on GitHub at [https://github.com/WGBH/PBCore\\_2.1](https://github.com/WGBH/PBCore_2.1),

along with information about the process and rationale for developing the changes. (Process History and XSD: Appendix A.)

In May 2017, the WGBH Media Library and Archives received a Preservation and Access Research and Development grant from the National Endowment for the Humanities (NEH) to pursue the PBCore Development and Training project, designed to develop tools, methodologies, and training workshops to make PBCore more accessible to archivists and public media organizations. This Handbook, and several of the resources referenced within it, are the result of this grant project.

## Glossary

**Asset:** A single piece of content, such as a program, clip, or episode. One asset may exist in many different forms (for example, on DVD, on a U-matic tape in English, and on a VHS tape in French). If the content is the same, those would all be considered [instantiations](#) of the same asset.

**Attribute:** A structure used to provide more specific information about the data contained in an element. Within the context of XML, attributes are stored within the start tag of the element. Here’s an example. `<pbcoreTitle titleType=“main”>Lassie</pbcoreTitle>` In this case, the element is `pbcoreTitle`, and the attribute `titleType` provides more information about the title.

**Container:** A container element in XML is a way to group other elements together. Container elements usually do not hold data themselves, but act as a bucket for sub-elements that do hold data. The container element is only relevant to PBCore users who are using the XML expression.

**Digital Asset Management (DAM):** An asset management system that either serves as a brand asset library or a system for storing and retrieving historical assets.

**Elements:** A way to describe and store data in a self-explanatory manner according to a structured vocabulary. Here’s an example. `<pbcoreTitle titleType=“main”>Lassie</pbcoreTitle>` This would appear as “Title: Lassie.” “Title” is the element, and “Lassie” is the value. Putting the information “Lassie” within a “pbcoreTitle” element tells anyone (or any machine) looking at the data that “Lassie” is the title of the asset. Attributes may be associated with any element, and provide even further detail about the data.

**Instantiation:** A particular realization of an asset that is embodied in physical or digital form, such as a tape, DVD, or digital file. One asset can have many instantiations, but generally, each instantiation holds the same intellectual content.

**Media Asset Management (MAM):** An asset management system that’s primarily a part of an audio or video workflow. MAM systems are primarily for audiovisual creators that allow them to put content in a central location so that editors can access it.

**Metadata:** A set of data that describes and gives information about other data in a deliberate and structured fashion, allowing for discovery, identification, and preservation. Some examples include description (title, subject), technical information, or rights information. Metadata can include a wide variety of information, and different communities have different uses for metadata. Often there are different types of metadata needed for different purposes: structural metadata, technical metadata, and preservation metadata. PBCore elements include descriptive and technical metadata, and some people also use it for preservation metadata.

**Schema:** An XML schema provides the framework for structuring an XML document. The PBCore schema specifies how PBCore information should be written in XML so that people and machines can consistently understand the information contained in PBCore documents by referencing the schema.

**XML (Extensible Markup Language):** A [markup language](#) that defines a set of rules for encoding documents in a [format](#) that is readable by both humans and machines. It is defined by the [W3C's XML 1.0 Specification](#) and by several other related specifications.

**XSD (XML Schema Definition):** The document that defines an XML schema. It can be used to validate other XML documents to make sure that they are complying with the rules of the schema.

## PBCore Structure

PBCore 2.1 is made up of 15 containers and 82 elements, and makes use of 49 XML attributes. Attributes are used to further qualify or describe the elements and their values. Not all attributes can be used to describe every element. This Handbook contains a description of each element, what contains them, what they contain, and a list of what attributes can be used to describe them.

Within a PBCore XML Document, the order and structure of the elements is determined by the XSD. Elements must be included in the correct order, or the XML document will not validate. Below is a listing of the correct order of subelements in PBCore:

- pbcoreDescriptionDocument
  - pbcoreAssetType
  - pbcoreAssetDate
  - pbcoreIdentifier
  - pbcoreTitle
  - pbcoreSubject
  - pbcoreDescription
  - pbcoreGenre
  - pbcoreRelation
    - pbcoreRelationType
    - pbcoreRelationIdentifier
  - pbcoreCoverage
    - coverage
    - coverageType
  - pbcoreAudienceLevel
  - pbcoreAudienceRating
  - pbcoreCreator
    - creator
    - creatorRole
  - pbcoreContributor
    - contributor
    - contributorRole
  - pbcorePublisher
    - publisher
    - publisherRole
  - pbcoreRightsSummary
    - rightsSummary
    - rightsLink
    - rightsEmbedded
  - pbcoreInstantiation
    - instantiationIdentifier
    - instantiationDate
    - instantiationDimensions
    - instantiationPhysical
    - instantiationDigital



- instantiationStandard
- instantiationLocation
- instantiationMediaType
- instantiationGenerations
- instantiationFileSize
- instantiationTimeStart
- instantiationDuration
- instantiationDataRate
- instantiationColors
- instantiationTracks
- instantiationChannelConfiguration
- instantiationLanguage
- instantiationAlternativeModes
- instantiationEssenceTrack
  - essenceTrackType
  - essenceTrackIdentifier
  - essenceTrackStandard
  - essenceTrackEncoding
  - essenceTrackDataRate
  - essenceTrackFrameRate
  - essenceTrackPlaybackSpeed
  - essenceTrackSamplingRate
  - essenceTrackBitDepth
  - essenceTrackFrameSize
  - essenceTrackAspectRatio
  - essenceTrackTimeStart
  - essenceTrackDuration
  - essenceTrackLanguage
  - essenceTrackAnnotation
  - essenceTrackExtension
- instantiationRelation
  - instantiationRelationType
  - instantiationRelationIdentifier
- instantiationRights
  - rightsSummary
  - rightsLink
  - rightsEmbedded
- instantiationAnnotation
- instantiationPart
- instantiationExtension
- pbcoreAnnotation
- pbcorePart
- pbcoreExtension
  - extensionWrap
    - extensionElement
    - extensionValue

- extensionAuthorityUsed
- extensionEmbedded

There are three main ways of structuring a PBCore XML document. The most common way is to contain all elements within a `pbcoreDescriptionDocument`. This allows a user to describe the intellectual content of an asset using asset-level subelements, such as `pbcoreAssetType`, `pbcoreTitle`, and `pbcoreCreator`. A `pbcoreDescriptionDocument` is considered complete and valid if it only includes asset-level descriptive information; however, within a `pbcoreDescriptionDocument`, users can also use `pbcoreInstantiation` and its subelements to describe all instances of that asset (tapes, digital files, etc) within a single record.

Here is example of a `pbcoreDescriptionDocument` using only the minimum required elements for the document to be valid:

#### DESCRIPTION DOCUMENT

IDENTIFIER: 00001

Source: PBCore Handbook

TITLE: Hamlet

DESCRIPTION: Filmed production of Shakespeare's Hamlet

#### PBCore XML

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreDescriptionDocument xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <pbcoreIdentifier source="PBCore Handbook">00001</pbcoreIdentifier>
  <pbcoreTitle>Hamlet</pbcoreTitle>
  <pbcoreDescription>Filmed production of Shakespeare's Hamlet</pbcoreDescription>
</pbcoreDescriptionDocument>
```

Here is an example of a `pbcoreDescriptionDocument` with all descriptive asset-level elements filled out, as well as two associated instantiations:

#### DESCRIPTION DOCUMENT

ASSET TYPE: Episode

Source: PBCore

ASSET DATE: 11-17-1970

Date Type: broadcast

IDENTIFIER: 00001

Source: PBCore Handbook

TITLE: Hamlet

Title type: Episode

TITLE: ITV Sunday Night Theater

Title type: Series

TITLE: 3204

Title type: Episode Number

SUBJECT: Princes--Denmark--Drama

Source: Library of Congress Subject Headings

Ref: <http://id.loc.gov/authorities/subjects/sh2008109991.html>

DESCRIPTION: Filmed production of Shakespeare's Hamlet

GENRE: Drama

Source: IMDB

RELATION

RELATION TYPE: Has Derivative

Source: PBCore

RELATION IDENTIFIER: 00038

Annotation: A two-disc audio set comprising the soundtrack of the production

COVERAGE

COVERAGE: Denmark

COVERAGE TYPE: Spatial

AUDIENCE LEVEL: General Audience

SOURCE: EBU Intended Audience Code

AUDIENCE RATING: N/A

Annotation: The program predates TV parental guidelines

CREATOR:

CREATOR: Wood, Peter, 1925-2016

Source: Library of Congress Name Authorities

Ref: <http://id.loc.gov/authorities/names/n86143606.html>

CREATOR ROLE: Director

Source: PBCore

CREATOR

CREATOR: Shakespeare, William, 1564-1616

Source: Library of Congress Name Authorities

Ref: <http://id.loc.gov/authorities/names/n78095332>

CREATOR ROLE: Author

Source: PBCore

CONTRIBUTOR

CONTRIBUTOR: Chamberlain, Richard, 1935

Source: Library of Congress Name Authorities

Ref: <http://id.loc.gov/authorities/names/n85158136>

CONTRIBUTOR ROLE: Actor

Source: PBCore

Portrayal: Hamlet

PUBLISHER

PUBLISHER: Hallmark Hall of Fame Productions, Inc.

RIGHTS SUMMARY

RIGHTS SUMMARY: Copyright Chamberlain-LeMaire (U.K.) Limited and ATV Network Limited, 1970

## INSTANTIATION

INSTANTIATION IDENTIFIER: 422934074

Source: OCLC Number

INSTANTIATION DATE: 11-17-1970

Date Type: created

INSTANTIATION PHYSICAL: Film

Source: PBCore

INSTANTIATION LOCATION: UCLA Film and Television Archive

INSTANTIATION MEDIA TYPE: Moving Image

Source: PBCore

INSTANTIATION GENERATIONS: Original

Source: PBCore

INSTANTIATION DURATION: 01:30:00

INSTANTIATION COLORS: Color

INSTANTIATION LANGUAGE: eng

## INSTANTIATION

INSTANTIATION IDENTIFIER: T:31586

Source: Paley Center for Media Catalog

INSTANTIATION DATE: 11-17-1970

Date Type: created

INSTANTIATION PHYSICAL: Open reel videotape

Source: PBCore

INSTANTIATION LOCATION: Paley Center for Media

INSTANTIATION MEDIA TYPE: Moving Image

Source: PBCore

INSTANTIATION GENERATIONS: Copy

Source: PBCore

INSTANTIATION DURATION: 01:49:43

INSTANTIATION COLORS: Black and white

INSTANTIATION LANGUAGE: eng

ANNOTATION: Program initially broadcast in the UK as part of ITV Sunday Night Theater and in the United States as part of NBC's Hallmark Hall of Fame

**PBCore XML**

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreDescriptionDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <pbcoreAssetType source="PBCore">Episode</pbcoreAssetType>
  <pbcoreAssetDate dateType="broadcast">11-17-1970</pbcoreAssetDate>
  <pbcoreIdentifier source="PBCore Handbook">00001</pbcoreIdentifier>
  <pbcoreTitle titleType="Episode">Hamlet</pbcoreTitle>
  <pbcoreTitle titleType="Series">ITV Sunday Night Theater</pbcoreTitle>
  <pbcoreSubject
ref="http://id.loc.gov/authorities/subjects/sh2008109991.html"
source="Library of Congress Subject Headings">Princes--Denmark--Drama
```

```

</pbcoreSubject>
  <pbcoreDescription>Filmed production of Shakespeare's
Hamlet</pbcoreDescription>
  <pbcoreGenre source="IMDB">Drama</pbcoreGenre>
  <pbcoreRelation>
    <pbcoreRelationType source="PBCore">Has Derivative</pbcoreRelationType>
    <pbcoreRelationIdentifier annotation="A two-disc audio set comprising the
soundtrack of the production">00038</pbcoreRelationIdentifier>
  </pbcoreRelation>
  <pbcoreCoverage>
    <coverage>Denmark</coverage>
    <coverageType>Spatial</coverageType>
  </pbcoreCoverage>
  <pbcoreAudienceLevel source="EBU Intended Audience Code">General
Audience</pbcoreAudienceLevel>
  <pbcoreAudienceRating annotation="The program predates TV parental
guidelines">N/A</pbcoreAudienceRating>
  <pbcoreCreator>
    <creator source="Library of Congress Name Authorities"
ref="http://id.loc.gov/authorities/names/n86143606.html">Wood, Peter, 1925-
2016</creator>
    <creatorRole source="PBCore">Director</creatorRole>
  </pbcoreCreator>
  <pbcoreCreator>
    <creator source="Library of Congress Name Authorities"
ref="http://id.loc.gov/authorities/names/n78095332">Shakespeare, William,
1564-1616</creator>
    <creatorRole source="PBCore">Author</creatorRole>
  </pbcoreCreator>
  <pbcoreContributor>
    <contributor source="Library of Congress Name Authorities"
ref="http://id.loc.gov/authorities/names/n85158136">Chamberlain, Richard,
1935</contributor>
    <contributorRole portrayal="Hamlet"
source="PBCore">Actor</contributorRole>
  </pbcoreContributor>
  <pbcorePublisher>
    <publisher>Hallmark Hall of Fame Productions, Inc.</publisher>
  </pbcorePublisher>
  <pbcoreRightsSummary>
    <rightsSummary>Copyright Chamberlain-LeMaire (U.K.) Limited and ATV
Network Limited, 1970</rightsSummary>
  </pbcoreRightsSummary>
  <pbcoreInstantiation>
    <instantiationIdentifier source="OCLC
Number">422934074</instantiationIdentifier>
    <instantiationDate dateType="created">11-17-1970</instantiationDate>
    <instantiationPhysical source="PBCore">Film</instantiationPhysical>
    <instantiationLocation>UCLA Film and Television
Archive</instantiationLocation>
    <instantiationMediaType source="PBCore">Moving
Image</instantiationMediaType>
    <instantiationGenerations
source="PBCore">Original</instantiationGenerations>
    <instantiationDuration>01:30:00</instantiationDuration>
    <instantiationColors source="">Color</instantiationColors>
    <instantiationLanguage>eng</instantiationLanguage>

```

```

</pbcoreInstantiation>
<pbcoreInstantiation>
  <instantiationIdentifier source="Paley Center for Media
Catalog">T:31586</instantiationIdentifier>
  <instantiationDate dateType="created">11/17/1970</instantiationDate>
  <instantiationPhysical source="PBCore">Open reel
videotape</instantiationPhysical>
  <instantiationLocation>Paley Center for Media</instantiationLocation>
  <instantiationMediaType source="PBCore">Moving
Image</instantiationMediaType>
  <instantiationGenerations source="PBCore">Copy</instantiationGenerations>
  <instantiationDuration>01:49:43</instantiationDuration>
  <instantiationColors source="">Black and white</instantiationColors>
  <instantiationLanguage>eng</instantiationLanguage>
</pbcoreInstantiation>
  <pbcoreAnnotation>Program initially broadcast in the UK as part of ITV
Sunday Night Theater and in the United States as part of NBC's Hallmark Hall
of Fame </pbcoreAnnotation>
</pbcoreDescriptionDocument>

```

These two documents represent two extremes, but each institution can determine the level of description and PBCore usage that works for their individual use case.

Individual pbcoreDescriptionDocuments can also be collected using the root element pbcoreCollection. When using pbcoreCollection as the root element of a pbcoreDocument, the hierarchy remains the same, but one or many pbcoreDescriptionDocuments are contained inside the pbcoreCollection element for serialization. Here is an example of a pbcoreCollection document containing three pbcoreDescriptionDocuments:

#### COLLECTION DOCUMENT

##### DESCRIPTION DOCUMENT

IDENTIFIER: 19993

Source: TGIF

TITLE: Sabrina the Teenage Witch

Title type: Series

DESCRIPTION: Fragment of a recorded episode of a television series about a teen witch and her wacky aunts

##### DESCRIPTION DOCUMENT

IDENTIFIER: 19994

Source: TGIF

TITLE: Boy Meets World

Title type: Series

DESCRIPTION: Fragment of a recorded episode of a television sitcom about a boy's everyday life

##### DESCRIPTION DOCUMENT

IDENTIFIER: 19996

Source: TGIF

TITLE: Sister, Sister

Title type: Series

DESCRIPTION: Fragment of a recorded episode from a television sitcom about twins separated at birth

## PBCore XML

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreCollection xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
<pbcoreDescriptionDocument>
  <pbcoreIdentifier source="TGIF">19993</pbcoreIdentifier>
  <pbcoreTitle titleType="Series">Sabrina the Teenage Witch</pbcoreTitle>
  <pbcoreDescription>Fragment of a recorded episode of a television series
about a teen witch and her wacky aunts</pbcoreDescription>
</pbcoreDescriptionDocument>
<pbcoreDescriptionDocument>
  <pbcoreIdentifier source="TGIF">19994</pbcoreIdentifier>
  <pbcoreTitle titleType="Series">Boy Meets World</pbcoreTitle>
  <pbcoreDescription>Fragment of a recorded episode of a television sitcom
about a boy's everyday life</pbcoreDescription>
</pbcoreDescriptionDocument>
<pbcoreDescriptionDocument>
  <pbcoreIdentifier source="TGIF">19996</pbcoreIdentifier>
  <pbcoreTitle titleType="Series">Sister, Sister</pbcoreTitle>
  <pbcoreDescription>Fragment of a recorded episode from a television
sitcom about twins separated at birth </pbcoreDescription>
</pbcoreDescriptionDocument>
</pbcoreCollection>
```

The third way of structuring a PBCore document is to use `pbcoreInstantiationDocument` as the root element. If a `pbcoreInstantiationDocument` is used as the root element, only the `Instantiation` elements may appear inside the document. `PBCoreInstantiationDocuments` can be used to track physical information about archival collections for which little to no content information is available. They can also be used as a means of recording technical metadata about digital files in a collection.

A `pbcoreInstantiationDocument` is considered complete and valid if it includes an identifier and a location. `InstantiationDocuments` can also include complex multi-layered information through the use of the `instantiationEssenceTrack` container element, which describe the individual streams that comprise an instantiation, such as audio, video, timecode, etc. `InstantiationEssenceTracks` can also be used to describe instantiations within `descriptionDocuments`, but cannot form standalone PBCore documents.

Here is an example of a `pbcoreInstantiationDocument` using only the minimum required elements for the document to be valid:

## INSTANTIATION DOCUMENT

INSTANTIATION IDENTIFIER: 00001

Source: PBCore Handbook

INSTANTIATION LOCATION: Library of Congress

**PBCore XML**

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreInstantiationDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <instantiationIdentifier source="PBCore
Handbook">00001</instantiationIdentifier>
  <instantiationLocation>Library of Congress</instantiationLocation>
</pbcoreInstantiationDocument>
```

Here is an example of a pbcoreInstantiationDocument fully describing a physical instance, with all applicable elements filled out.

## INSTANTIATION DOCUMENT

INSTANTIATION IDENTIFIER: 00001

Source: PBCore Handbook

INSTANTIATION DATE: 12-27-1964

Date Type: created

INSTANTIATION DIMENSIONS: 4800

Units of Measure: ft

INSTANTIATION PHYSICAL: 2 inch videotape

Source: PBCore

INSTANTIATION STANDARD: NTSC

INSTANTIATION LOCATION: Library of Congress

INSTANTIATION MEDIA TYPE: Moving Image

Source: PBCore

INSTANTIATION GENERATIONS: Master

Source: PBCore

INSTANTIATION TIME START: 01:00:00

INSTANTIATION DURATION: 00:30:00

INSTANTIATION COLORS: Color

Source: PBCore

INSTANTIATION CHANNEL CONFIGURATION: video, audio, control, and timecode tracks

INSTANTIATION LANGUAGE: eng

INSTANTIATION RIGHTS:

RIGHTS SUMMARY: Copyright unknown; no donor restrictions



## PBCore XML

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreInstantiationDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <instantiationIdentifier source="PBCore
Handbook">00001</instantiationIdentifier>
  <instantiationDate dateType="created">12-27-1964</instantiationDate>
  <instantiationDimensions unitsOfMeasure="ft">4800</instantiationDimensions>
  <instantiationPhysical source="PBCore">2 inch
videotape</instantiationPhysical>
  <instantiationStandard>NTSC</instantiationStandard>
  <instantiationLocation>Library of Congress</instantiationLocation>
  <instantiationMediaType source="PBCore">Moving
Image</instantiationMediaType>
  <instantiationGenerations source="PBCore">Master</instantiationGenerations>
  <instantiationTimeStart>01:00:00</instantiationTimeStart>
  <instantiationDuration>00:30:00</instantiationDuration>
  <instantiationColors source="PBCore">Color</instantiationColors>
  <instantiationChannelConfiguration>video, audio, control, and timecode
tracks</instantiationChannelConfiguration>
  <instantiationLanguage>eng</instantiationLanguage>
  <instantiationRights>
    <rightsSummary>Copyright unknown; no donor restrictions</rightsSummary>
  </instantiationRights>
</pbcoreInstantiationDocument>
```

Here is an example of a pbcoreInstantiationDocument that describes a digital file with technical metadata automatically generated by a file characterization tool (in this case, MediaInfo).

### INSTANTIATION DOCUMENT

INSTANTIATION IDENTIFIER: barcode\_152572\_clip.mov

Source: File Name

INSTANTIATION DATE: 2018-02-26T19:14:19Z

Date Type: file modification

INSTANTIATION DIGITAL: video/mp4

INSTANTIATION STANDARD: MPEG-4  
profile: QuickTime

INSTANTIATION LOCATION:

/Users/rebecca\_fraimow/Downloads/barcode\_152572\_clip.mov

INSTANTIATION MEDIA TYPE: Moving Image

INSTANTIATION FILE SIZE: 291475523

Units of Measure: byte

INSTANTIATION DURATION: 00:00:10;00

INSTANTIATION DATA RATE: 23947472

Units of Measure: bit/second

INSTANTIATION TRACKS: 2

INSTANTIATION CHANNEL CONFIGURATION: Track 2: 8 channels (L R C LFE Ls R Rls Rb)

INSTANTIATION ESSENCE TRACK

ESSENCE TRACK TYPE: Video

ESSENCE TRACK IDENTIFIER: 1

Source: ID

ESSENCE TRACK IDENTIFIER: 0

Source: StreamKindID (MediaInfo)

ESSENCE TRACK IDENTIFIER: 0

Source: StreamOrder (MediaInfo)

ESSENCE TRACK STANDARD: NTSC

ESSENCE TRACK ENCODING: YUV

Source: codecId

Ref: v210

Annotation: compression\_mode:Lossless

ESSENCE TRACK DATA RATE: 223724851

Units of Measure: bit/second

ESSENCE TRACK FRAME RATE: 29.970

Annotation: rational\_frame\_rate:30000/1001 interlacement:BFF

ESSENCE TRACK BIT DEPTH: 10

ESSENCE TRACK FRAME SIZE: 720x480

ESSENCE TRACK ASPECT RATIO: 1.333

ESSENCE TRACK TIME START: 01:00:01.135

Source: Container

ESSENCE TRACK DURATION: 00:00:10;00

ESSENCE TRACK LANGUAGE: eng

INSTANTIATION ESSENCE TRACK

ESSENCE TRACK TYPE: Audio

ESSENCE TRACK IDENTIFIER: 2

Source: ID

Annotation: default:Yes

ESSENCE TRACK IDENTIFIER: 0

Source: StreamKindID (MediaInfo)

ESSENCE TRACK IDENTIFIER: 1

Source: StreamOrder (MediaInfo)

ESSENCE TRACK ENCODING: PCM

Source: codecId

Ref: in24

Annotation: endianness:Little signedness:Signed

ESSENCE TRACK DATA RATE: 9216000

Units of Measure: bit/second

Annotation: CBR

ESSENCE TRACK SAMPLING RATE: 48000

Units of Measure: Hz

ESSENCE TRACK BIT DEPTH: 24

ESSENCE TRACK TIME START: 01:00:02.135  
 Source: Container  
 ESSENCE TRACK DURATION: 00:00:10.010  
 ESSENCE TRACK LANGUAGE: eng  
 INSTANTIATION ANNOTATION: 303  
 Annotation Type: FrameCount  
 INSTANTIATION ANNOTATION: Lav58.20.100  
 Annotation Type: Encoded\_Application

## PBCore XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Generated at 2019-10-24T18:15:11Z by MediaInfoLib - v18.12 -->
<pbcoreInstantiationDocument
  xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
  https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html">
  <instantiationIdentifier source="File
  Name">barcode_152572_clip.mov</instantiationIdentifier>
  <instantiationDate dateType="file modification">2018-02-
  26T19:14:19Z</instantiationDate>
  <instantiationDigital>video/mp4</instantiationDigital>
  <instantiationStandard profile="QuickTime">MPEG-4</instantiationStandard>
  <instantiationLocation>/Users/rebecca_framow/Downloads/barcode_152572_cl
  ip.mov</instantiationLocation>
  <instantiationMediaType>Moving Image</instantiationMediaType>
  <instantiationFileSize
  unitsOfMeasure="byte">291475523</instantiationFileSize>
  <instantiationDuration>00:00:10;00</instantiationDuration>
  <instantiationDataRate
  unitsOfMeasure="bit/second">232947472</instantiationDataRate>
  <instantiationTracks>2</instantiationTracks>
  <instantiationChannelConfiguration>Track 2: 8 channels (L R C LFE Ls R
  Rls Rb), Track 2: 8 channels (L R C LFE Ls R Rls
  Rb)</instantiationChannelConfiguration>
  <instantiationEssenceTrack>
    <essenceTrackType>Video</essenceTrackType>
    <essenceTrackIdentifier source="ID">1</essenceTrackIdentifier>
    <essenceTrackIdentifier source="StreamKindID
    (MediaInfo)">0</essenceTrackIdentifier>
    <essenceTrackIdentifier source="StreamOrder
    (MediaInfo)">0</essenceTrackIdentifier>
    <essenceTrackStandard>NTSC</essenceTrackStandard>
    <essenceTrackEncoding source="codecid" ref="v210"
    annotation="compression_mode:Lossless">YUV</essenceTrackEncoding>
    <essenceTrackDataRate unitsOfMeasure="bit/second"
    annotation="CBR">223724851</essenceTrackDataRate>
    <essenceTrackFrameRate annotation="rational_frame_rate:30000/1001
    interlacement:BFF">29.970</essenceTrackFrameRate>
    <essenceTrackBitDepth>10</essenceTrackBitDepth>
    <essenceTrackFrameSize>720x486</essenceTrackFrameSize>
    <essenceTrackAspectRatio>1.333</essenceTrackAspectRatio>
```

```

    <essenceTrackTimeStart
source="Container">01:00:02.135</essenceTrackTimeStart>
    <essenceTrackDuration>00:00:10;00</essenceTrackDuration>
    <essenceTrackLanguage>eng</essenceTrackLanguage>
</instantiationEssenceTrack>
<instantiationEssenceTrack>
    <essenceTrackType>Audio</essenceTrackType>
    <essenceTrackIdentifier source="ID"
annotation="default:Yes">2</essenceTrackIdentifier>
    <essenceTrackIdentifier source="StreamKindID
(MediaInfo)">0</essenceTrackIdentifier>
    <essenceTrackIdentifier source="StreamOrder
(MediaInfo)">1</essenceTrackIdentifier>
    <essenceTrackEncoding source="codecid" ref="in24"
annotation="endianness:Little signedness:Signed">PCM</essenceTrackEncoding>
    <essenceTrackDataRate unitsOfMeasure="bit/second"
annotation="CBR">9216000</essenceTrackDataRate>
    <essenceTrackSamplingRate
unitsOfMeasure="Hz">48000</essenceTrackSamplingRate>
    <essenceTrackBitDepth>24</essenceTrackBitDepth>
    <essenceTrackTimeStart
source="Container">01:00:02.135</essenceTrackTimeStart>
    <essenceTrackDuration>00:00:10.010</essenceTrackDuration>
    <essenceTrackLanguage>eng</essenceTrackLanguage>
</instantiationEssenceTrack>
<instantiationAnnotation annotationType="Other_Codec_List">QuickTime
TC</instantiationAnnotation>
    <instantiationAnnotation
annotationType="FrameCount">300</instantiationAnnotation>
    <instantiationAnnotation
annotationType="Encoded_Application">Lavf57.72.101</instantiationAnnotation>
</pbcoreInstantiationDocument>

```

In addition to these three main forms of PBCore documents, the structure of PBCore can be extended through the use of the `pbcorePart` or `instantiationPart` elements. The element `pbcorePart` can be used within a `pbcoreDescriptionDocument` to repeat all asset-level elements for a more detailed description of different parts of the content. This structure is sometimes used when a single asset contains several discrete units of intellectual content – for example, an album that has several songs by different singers, an anthology show that contains several segments, or a compilation that includes multiple programs.

Although an asset may be divided into segments by `pbcorePart`, the `pbcoreDescriptionDocument` must still include all required elements (title, identifier with source, and description) for the asset as a whole in order to be valid. Each `Part` must also include these required elements, and all sub-elements must appear in the same order within a `pbcorePart` as within a `pbcoreDescriptionDocument`.

Here is an example of a `pbcoreDescriptionDocument` that uses `pbcorePart` to describe the different programs included in a single box set:

## DESCRIPTION DOCUMENT

ASSET TYPE: Compilation

Source: PBCore

IDENTIFIER: 978-1-62789-267-4

Source: ISBN

IDENTIFIER: 123456

Source: WGBH Barcode

TITLE: Wild West

Title Type: Box Set

DESCRIPTION: They were "heroes" and rebels, but they were all epic personalities who took center stage in the creation of the mythic Wild West. This superb selection of documentaries and authentically reproduced memorabilia combine to present compelling portraits of the icons who risked everything in a dazzling new land of opportunity.

Source: Back of box

GENRE: Documentary

## COVERAGE

COVERAGE: American West

COVERAGE TYPE: Spatial

## COVERAGE

COVERAGE: 19<sup>th</sup> Century

COVERAGE TYPE: Temporal

## CREATOR

CREATOR: WGBH

CREATOR ROLE: Producer

## CREATOR

CREATOR: Sharon Griberg

CREATOR ROLE: Senior Producer

## CREATOR

CREATOR: Mark Samuels

CREATOR ROLE: Executive Producer

Source: PBCore

## PUBLISHER

PUBLISHER: PBS Distribution

PUBLISHER ROLE: Distributor

Source: PBCore

RIGHTS SUMMARY: AMERICAN EXPERIENCE is produced for PBS by WGBH Boston. Senior Producer: Sharon Griberg. Executive Producer: Mark Samels. Images Courtesy of: Alamy & Getty Images. Additional DVD materials and packaging copyright 2016 PBS Distribution. All rights reserved.

Source: Back of box

## INSTANTIATION

INSTANTIATION IDENTIFIER: 123456

Source: WGBH Barcode

INSTANTIATION STANDARD: NTSC

INSTANTIATION LOCATION: WGBH

INSTANTIATION MEDIA TYPE: Moving Image

Source: PBCore

INSTANTIATION GENERATIONS: Copy: Access

Source: PBCore

INSTANTIATION DURATION: 6:00:00

INSTANTIATION ALTERNATIVE MODES: English SDH Subtitles

INSTANTIATION ANNOTATION: DVD Box Set

PBCORE PART

ASSET TYPE: Program

Source: PBCore

IDENTIFIER: 123456-1-BK

Source: WGBH

TITLE: Billy the Kid

SUBJECT: Billy the Kid

DESCRIPTION: On April 28, 1881, just days from being hanged for murder, 21-year-old Henry McCarty, alias Billy the Kid, outfoxed his jailors and electrified the nation with the last in a long line of daring escapes. Just a few weeks later, he was finally gunned down by an ambitious sheriff, and the felling of one of the most notorious criminals of the age made headlines across the country.

Source: American Experience website

CREATOR

CREATOR: John Maggio

CREATOR ROLE: Producer

CREATOR

CREATOR: Michael Murphy

CREATOR ROLE: Narrator

PBCORE PART

ASSET TYPE: Program

Source: PBCore

IDENTIFIER: 123456-1-JJ

Source: WGBH

TITLE: Jesse James

SUBJECT: Jesse James

DESCRIPTION: The legend of Jesse James is one of America's most familiar myths – and one of its most wrong-headed. James, so the legend goes, was a Western outlaw, but in reality, he never went west. He has been called American's own Robin Hood, yet he robbed both rich and poor, and was never seen to share his ill-gotten gains. He was known as a gunfighter – but his victims were almost always unarmed. Less heroic than brutal, James was a member of a vicious band of Missouri guerrillas during the Civil War, and sought vengeance for the Confederate defeat afterwards. In a life steeped in prolific violence and bloodshed, he met what was perhaps the most fitting end.

Source: American Experience website

CREATOR

CREATOR: Mark Zwonitzer

CREATOR ROLE: Producer

CREATOR

CREATOR: Michael Murphy  
 CREATOR ROLE: Narrator

#### PBCORE PART

ASSET TYPE: Program

Source: PBCore

IDENTIFIER: 123456-1-BC

Source: WGBH

TITLE: Butch Cassidy and the Sundance Kid

SUBJECT: Butch Cassidy

SUBJECT: The Sundance Kid

DESCRIPTION: In an era in which cold-blooded killers such as Jesse James and the Younger Brothers terrorized the American West, Butch Cassidy, the Sundance Kid and their Wild Bunch gang took a smart and methodical approach to bank and train robbery. In the 1890s, their thrilling exploits – robbing banks and trains and then seemingly vanishing into thin air – became front-page news and the basis of rumor and myth, captivating Americans from coast to coast.

Source: American Experience website

#### CREATOR

CREATOR: John Maggio

CREATOR ROLE: Producer

#### CREATOR

CREATOR: Michael Murphy

CREATOR ROLE: Narrator

#### PBCore XML

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreDescriptionDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <pbcoreAssetType source="PBCore">Compilation</pbcoreAssetType>
  <pbcoreIdentifier source="ISBN">978-1-62789-267-4</pbcoreIdentifier>
  <pbcoreIdentifier source="Barcode">123456</pbcoreIdentifier>
  <pbcoreTitle titleType="Box Set">Wild West</pbcoreTitle>
  <pbcoreDescription descriptionType="Item" source="Back of box">They were
"heroes" and rebels, but they were all epic personalities who took center
stage in the creation of the mythic Wild West. This superb selection of
documentaries and authentically reproduced memorabilia combine to present
compelling portraits of the icons who risked everything in a dazzling new
land of opportunity. </pbcoreDescription>
  <pbcoreGenre>Documentary</pbcoreGenre>
  <pbcoreCoverage>
    <coverage>American West</coverage>
    <coverageType>Spatial</coverageType>
  </pbcoreCoverage>
  <pbcoreCoverage>
    <coverage>19th Century</coverage>
    <coverageType>Temporal</coverageType>
  </pbcoreCoverage>
```

```

<pbcoreCreator>
  <creator>WGBH</creator>
  <creatorRole>Producer</creatorRole>
</pbcoreCreator>
<pbcoreCreator>
  <creator>Sharon Grimberg</creator>
  <creatorRole>Producer</creatorRole>
</pbcoreCreator>
<pbcoreCreator>
  <creator>Mark Samels</creator>
  <creatorRole source="PBCore">Executive Producer</creatorRole>
</pbcoreCreator>
<pbcorePublisher>
  <publisher>PBS Distribution</publisher>
  <publisherRole source="PBCore">Distributor</publisherRole>
</pbcorePublisher>
<pbcoreRightsSummary>
  <rightsSummary source="Back of box"> AMERICAN EXPERIENCE is produced for
  PBS by WGBH Boston. Senior Producer: Sharon Griberg. Executive Producer: Mark
  Samels. Images Courtesy of: Alamy & Getty Images. Additional DVD
  materials and packaging copyright 2016 PBS Distribution. All rights
  reserved.</rightsSummary>
</pbcoreRightsSummary>
<pbcoreInstantiation>
  <instantiationIdentifier source="WGBH
  Barcode">123456</instantiationIdentifier>
  <instantiationStandard>NTSC</instantiationStandard>
  <instantiationLocation>WGBH</instantiationLocation>
  <instantiationMediaType source="PBCore">Moving
  Image</instantiationMediaType>
  <instantiationGenerations source="PBCore">Copy:
  Access</instantiationGenerations>
  <instantiationDuration>6:00:00</instantiationDuration>
  <instantiationLanguage>eng</instantiationLanguage>
  <instantiationAlternativeModes>English SDH
  Subtitles</instantiationAlternativeModes>
  <instantiationAnnotation>DVD Box Set</instantiationAnnotation>
</pbcoreInstantiation>
<pbcoreAnnotation>Includes a memorabilia collection of replica documents
  sourced from national and state collections, including the Library of
  Congress. </pbcoreAnnotation>
<pbcorePart>
  <pbcoreAssetType source="PBCore">Program</pbcoreAssetType>
  <pbcoreIdentifier source="WGBH">123456-1-BK</pbcoreIdentifier>
  <pbcoreTitle>Billy the Kid</pbcoreTitle>
  <pbcoreSubject >Billy the Kid</pbcoreSubject>
  <pbcoreDescription source="American Experience website">On April 28,
  1881, just days from being hanged for murder, 21-year-old Henry McCarty,
  alias Billy the Kid, outfoxed his jailors and electrified the nation with the
  last in a long line of daring escapes. Just a few weeks later, he was finally
  gunned down by an ambitious sheriff, and the felling of one of the most
  notorious criminals of the age made headlines across the
  country.</pbcoreDescription>
  <pbcoreCreator>
    <creator>John Maggio</creator>
    <creatorRole>Producer</creatorRole>
  </pbcoreCreator>

```



```

    <pbcoreCreator>
      <creator>Michael Murphy</creator>
      <creatorRole>Narrator</creatorRole>
    </pbcoreCreator>
  </pbcorePart>
</pbcorePart>
  <pbcoreAssetType source="PBCore">Program</pbcoreAssetType>
  <pbcoreIdentifier source="WGBH">123456-1-JJ</pbcoreIdentifier>
  <pbcoreTitle>Jesse James</pbcoreTitle>
  <pbcoreSubject>Jesse James</pbcoreSubject>
  <pbcoreDescription source="American Experience website">The legend of
Jesse James is one of America's most familiar myths - and one of its most
wrong-headed. James, so the legend goes, was a Western outlaw, but in
reality, he never went west. He has been called American's own Robin Hood,
yet he robbed both rich and poor, and was never seen to share his ill-gotten
gains. He was known as a gunfighter - but his victims were almost always
unarmed. Less heroic than brutal, James was a member of a vicious band of
Missouri guerrillas during the Civil War, and sought vengeance for the
Confederate defeat afterwards. In a life steeped in prolific violence and
bloodshed, he met what was perhaps the most fitting end.</pbcoreDescription>
  <pbcoreCreator>
    <creator>Mark Zwonitzer</creator>
    <creatorRole>Producer</creatorRole>
  </pbcoreCreator>
  <pbcoreCreator>
    <creator>Michael Murphy</creator>
    <creatorRole>Narrator</creatorRole>
  </pbcoreCreator>
</pbcorePart>
</pbcorePart>
  <pbcoreAssetType source="PBCore">Program</pbcoreAssetType>
  <pbcoreIdentifier source="WGBH">123456-1-BC</pbcoreIdentifier>
  <pbcoreTitle>Butch Cassidy and the Sundance Kid</pbcoreTitle>
  <pbcoreSubject>Butch Cassidy</pbcoreSubject>
  <pbcoreSubject>The Sundance Kid</pbcoreSubject>
  <pbcoreDescription source="American Experience website">In an era in
which cold-blooded killers such as Jesse James and the Younger Brothers
terrorized the American West, Butch Cassidy, the Sundance Kid and their Wild
Bunch gang took a smart and methodical approach to bank and train robbery. In
the 1890s, their thrilling exploits - robbing banks and trains and then
seemingly vanishing into thin air - became front-page news and the basis of
rumor and myth, captivating Americans from coast to
coast.</pbcoreDescription>
  <pbcoreCreator>
    <creator>John Maggio</creator>
    <creatorRole>Producer</creatorRole>
  </pbcoreCreator>
  <pbcoreCreator>
    <creator>Michael Murphy</creator>
    <creatorRole>Narrator</creatorRole>
  </pbcoreCreator>
</pbcorePart>
</pbcoreDescriptionDocument>

```

The element `instantiationPart` functions in a similar way to `pbcorePart`, but works to subdivide `instantiationDocuments` and instantiations within `pbcoreDescriptionDocuments`. This structure

can be used for multi-part instantiations in which two or more discrete items may need to be described with individual technical metadata, such as a film that stretches over multiple reels, a CD set that contains several individual discs, or two video files that combine to form a multi-channel installation.

As with `pbcorePart`, the record must still include required subelements (identifier with source and location) for the instantiation as a whole in order to be valid. Each `instantiationPart` must also include these required elements, and all sub-elements must appear in the same order within an `instantiationPart` as within an instantiation.

Here is an example of a `pbcoreDescriptionDocument` that uses `instantiationPart` to describe different DVDs within a single box set.

#### DESCRIPTION DOCUMENT

ASSET TYPE: Compilation

Source: PBCore

IDENTIFIER: 978-1-62789-267-4

Source: ISBN

IDENTIFIER: 123456

Source: WGBH Barcode

TITLE: Wild West

Title Type: Box Set

DESCRIPTION: They were "heroes" and rebels, but they were all epic personalities who took center stage in the creation of the mythic Wild West. This superb selection of documentaries and authentically reproduced memorabilia combine to present compelling portraits of the icons who risked everything in a dazzling new land of opportunity.

Source: Back of box

GENRE: Documentary

#### COVERAGE

COVERAGE: American West

COVERAGE TYPE: Spatial

#### COVERAGE

COVERAGE: 19<sup>th</sup> Century

COVERAGE TYPE: Temporal

#### CREATOR

CREATOR: WGBH

CREATOR ROLE: Producer

#### CREATOR

CREATOR: Sharon Grimberg

CREATOR ROLE: Senior Producer

#### CREATOR

CREATOR: Mark Samuels

CREATOR ROLE: Executive Producer

Source: PBCore

#### PUBLISHER

PUBLISHER: PBS Distribution  
 PUBLISHER ROLE: Distributor  
 Source: PBCore

RIGHTS SUMMARY: AMERICAN EXPERIENCE is produced for PBS by WGBH Boston. Senior Producer: Sharon Grimberg. Executive Producer: Mark Samels. Images Courtesy of: Alamy & Getty Images. Additional DVD materials and packaging copyright 2016 PBS Distribution. All rights reserved.

Source: Back of box

#### INSTANTIATION

INSTANTIATION IDENTIFIER: 123456

Source: WGBH Barcode

INSTANTIATION STANDARD: NTSC

INSTANTIATION LOCATION: WGBH

INSTANTIATION MEDIA TYPE: Moving Image

Source: PBCore

INSTANTIATION GENERATIONS: Copy: Access

Source: PBCore

INSTANTIATION DURATION: 6:00:00

INSTANTIATION ALTERNATIVE MODES: English SDH Subtitles

INSTANTIATION ANNOTATION: DVD Box Set

#### INSTANTIATION PART

IDENTIFIER: 123456-1

Source: WGBH Barcode

LOCATION: WGBH

#### INSTANTIATION PART

IDENTIFIER: 123456-2

Source: WGBH Barcode

LOCATION: WGBH

ANNOTATION: Includes a memorabilia collection of replica documents sourced from national and state collections, including the Library of Congress.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<pbcoreDescriptionDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <pbcoreAssetType source="PBCore">Compilation</pbcoreAssetType>
  <pbcoreIdentifier source="ISBN">978-1-62789-267-4</pbcoreIdentifier>
  <pbcoreIdentifier source="Barcode">123456</pbcoreIdentifier>
  <pbcoreTitle titleType="Box Set">Wild West</pbcoreTitle>
  <pbcoreDescription descriptionType="Item" source="Back of box">They were
"heroes" and rebels, but they were all epic personalities who took center
stage in the creation of the mythic Wild West. This superb selection of
documentaries and authentically reproduced memorabilia combine to present
compelling portraits of the icons who risked everything in a dazzling new
land of opportunity. </pbcoreDescription>
  <pbcoreCreator>
    <creator>WGBH</creator>
    <creatorRole>Producer</creatorRole>
```

```

</pbcoreCreator>
<pbcoreCreator>
  <creator>Sharon Grimberg</creator>
  <creatorRole>Producer</creatorRole>
</pbcoreCreator>
<pbcoreCreator>
  <creator>Mark Samels</creator>
  <creatorRole source="PBCore">Executive Producer</creatorRole>
</pbcoreCreator>
<pbcorePublisher>
  <publisher>PBS Distribution</publisher>
  <publisherRole source="PBCore">Distributor</publisherRole>
</pbcorePublisher>
<pbcoreRightsSummary>
  <rightsSummary source="Back of box">AMERICAN EXPERIENCE is produced for
PBS by WGBH Boston. Senior Producer: Sharon Grimberg. Executive Producer:
Mark Samels. Images Courtesy of: Alamy & Getty Images. Additional DVD
materials and packaging copyright 2016 PBS Distribution. All rights
reserved.</rightsSummary>
</pbcoreRightsSummary>
<pbcoreInstantiation>
  <instantiationIdentifier source="WGBH
Barcode">123456</instantiationIdentifier>
  <instantiationStandard>NTSC</instantiationStandard>
  <instantiationLocation>WGBH</instantiationLocation>
  <instantiationMediaType source="PBCore">Moving
Image</instantiationMediaType>
  <instantiationGenerations source="PBCore">Copy:
Access</instantiationGenerations>
  <instantiationDuration>6:00:00</instantiationDuration>
  <instantiationLanguage>eng</instantiationLanguage>
  <instantiationAlternativeModes>English SDH
Subtitles</instantiationAlternativeModes>
  <instantiationAnnotation>DVD Box Set</instantiationAnnotation>
  <instantiationPart>
    <instantiationIdentifier source="WGBH Barcode">123456-
1</instantiationIdentifier>
    <instantiationPhysical source="PBCore">DVD</instantiationPhysical>
    <instantiationLocation>WGBH</instantiationLocation>
  </instantiationPart>
  <instantiationPart>
    <instantiationIdentifier source="WGBH Barcode">123456-
2</instantiationIdentifier>
    <instantiationPhysical source="PBCore">DVD</instantiationPhysical>
    <instantiationLocation>WGBH</instantiationLocation>
  </instantiationPart>
</pbcoreInstantiation>
  <pbcoreAnnotation>Includes a memorabilia collection of replica documents
sourced from national and state collections, including the Library of
Congress. </pbcoreAnnotation>

```

As should by now be apparent, there is a lot of flexibility and variety in the structure of PBCore documents. Each institution or application using PBCore should consider implementing internal standards for the description of complex assets that suit their individual needs.

## Elements

PBCore is made up of elements, which can be organized into three main groups: Root Elements, Asset Elements, Instantiation Elements. Elements are a way to structure information based on what type of information it is. Each element has a specific definition within the XML schema. Some elements also include best practice recommendations that, while not mandatory to follow, may guide a user's methodology in applying the elements within their cataloging workflow. Where best practice recommendations exist, they are included below the element's definition.

In XML, some elements are required to create a valid record, while others are optional and may be included only where relevant. Additionally, some elements may be repeated many times, while others may only appear once. Information about whether the element is required or optional, and whether it's repeatable or not repeatable, is included in this handbook.

If an element includes subelements, some of those subelements may also be required, and some may be optional. Required subelements and optional subelements are listed for each element that contains subelements.

Almost all elements in PBCore have the option to include more information by adding attributes to the element. As with elements, some attributes are required to make the usage of the element valid, but most are optional. Required and optional elements are listed for each element below. Definitions of each attribute can be found in the next section, Attributes Defined.

Some elements, such as instantiationGeneration, have associated controlled vocabularies that are provided and managed by PBCore. In most cases, PBCore recommends that users consult the controlled vocabularies when determining terminology for their records, but does not require their use. Other elements, such as pbcoreAudienceRating, have recommended controlled vocabularies that are provided and managed by other organizations. Again, in most cases these controlled vocabularies are not required. Where a controlled vocabulary recommendation exists for an element, it is listed below. Supported PBCore vocabularies, with definitions, are included in a later section of this handbook.

## Root Elements

### pbcoreCollection

Definition: PBCoreCollection groups multiple pbcoreDescriptionDocument XML into one container element to allow for a serialized output. Uses might include API returns or other web service output.

Best Practice: This element is not intended to be equivalent to the archive/library concept of a 'collection.' Please see pbcoreAssetType for information on how PBCore can be used to express information about collections. The element is only applicable to XML expressions of PBCore. This container enables a similar function to RSS; pbcoreCollection would be similar to rss:channel and pbcoreDescription document to rss:item.

Usage: not repeatable

Required attributes: xmlns, xsi, schemaLocation

Optional attributes: collectionTitle, collectionDescription, collectionSource, collectionRef, collectionDate

Subelements: pbcoreDescriptionDocument

Example Code:

```
<pbcoreCollection xmlns="http://pbcore.org/PBCore/PBCoreNamespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://pbcore.org/PBCore/PBCoreNamespace
http://pbcore.org/xsd/pbcore-2.0.xsd">
  <pbcoreDescriptionDocument>
    <pbcoreIdentifier source="NOLA
Code">AMEX000102</pbcoreIdentifier>
    <pbcoreTitle titleType="Full">American Experience: Radio
Bikini</pbcoreTitle>
    <pbcoreDescription>In July 1946, the U.S. Navy staged "Operation
Crossroads"--two highly publicized atomic bomb tests at a Pacific Island
called Bikini. This film is the story of those tests and their effect not
only on the thousands of Naval personnel and spectators who watched, but also
on the Bikinians whose homes was rendered uninhabitable by contamination,
even now, 40 years later.</pbcoreDescription>
  </pbcoreDescriptionDocument>
  <pbcoreDescriptionDocument>
    <pbcoreIdentifier source="NOLA
Code">AMEX000103</pbcoreIdentifier>
    <pbcoreTitle titleType="Full">American Experience: Hoover
Dam</pbcoreTitle>
    <pbcoreDescription>Rising more than 700 feet above the raging
waters of the Colorado River, it was called one of the greatest engineering
works in history. Hoover Dam, built during the Great Depression, drew men
desperate for work to a remote and rugged canyon near Las Vegas. There they
struggled against brutal heat, choking dust and perilous heights to build a
colossus of concrete that brought electricity and water to millions,
transforming the American Southwest. Peter Coyote
narrates.</pbcoreDescription>
  </pbcoreDescriptionDocument>
  <pbcoreDescriptionDocument>
    <pbcoreIdentifier source="NOLA
Code">AMEX000104</pbcoreIdentifier>
    <pbcoreTitle titleType="Full">American Experience: Alone on the
Ice</pbcoreTitle>
    <pbcoreDescription>In June 1934, Richard Byrd lay alone in a
small hut below the polar ice, hovering near death. No one before Byrd had
ever experienced winter in the interior of the Antarctic. In an age of
heroes, he was one of America's greatest. An explorer, aviation pioneer and
scientist, Byrd was also an egotist, risk-taker, heavy drinker -- and, his
critics claim, a fraud who took credit for the accomplishments of
others.</pbcoreDescription>
```

```
</pbcoreDescriptionDocument>
</pbcoreCollection>
```

### **pbcoreDescriptionDocument**

Definition: pbcoreDescriptionDocument is a root XML element for the expression of an individual PBCore record. pbcoreDescriptionDocument can be used to express intellectual content only (e.g. a series or collection level record with no associated instantiations), or intellectual content with one or more instantiations (e.g. an episode of a program with copies/instantiations on videotape and digital file). This element is only applicable to XML expressions of PBCore. pbcoreDescriptionDocument can only be contained by pbcoreCollection.

Usage: only repeatable within pbcoreCollection

Required attributes: xmlns, xsi, schemaLocation

Required subelements: pbcoreIdentifier, pbcoreTitle, pbcoreDescription

Optional subelements: pbcoreAssetType, pbcoreAssetDate, pbcoreIdentifier, pbcoreTitle, pbcoreSubject, pbcoreGenre, pbcoreRelation, pbcoreCoverage, pbcoreAudienceLevel, pbcoreAudienceRating, pbcoreCreator, pbcoreContributor, pbcorePublisher, pbcoreRightsSummary, pbcoreInstantiation, pbcoreAnnotation, pbcorePart, pbcoreExtension

Example Code:

```
<pbcoreDescriptionDocument xmlns="http://pbcore.org/PBCore/PBCoreNamespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://pbcore.org/PBCore/PBCoreNamespace
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd">
  <pbcoreIdentifier source="NOLA Code">AMEX000102</pbcoreIdentifier>
  <pbcoreTitle titleType="Full">American Experience: Radio
  Bikini</pbcoreTitle>
  <pbcoreDescription>In July 1946, the U.S. Navy staged "Operation
  Crossroads"--two highly publicized atomic bomb tests at a Pacific Island
  called Bikini. This film is the story of those tests and their effect not
  only on the thousands of Naval personnel and spectators who watched, but also
  on the Bikinians whose homes was rendered uninhabitable by contamination,
  even now, 40 years later.</pbcoreDescription>
</pbcoreDescriptionDocument>
```

### **pbcoreInstantiationDocument**

Definition: pbcoreInstantiationDocument is the equivalent of the instantiation element, but used for the expression of an instantiation record at the root of an XML document. This is most commonly used when referenced from other schemas, or if you want to create and express a single, stand-alone instantiation. pbcoreInstantiationDocument is a root element and cannot be contained by any other elements.

Best Practice: This is most commonly used when Intellectual Content (in other words, descriptive metadata) is not expressed using PBCore, but rather another standard such as MODS or Dublin Core.

Usage: not repeatable

Optional attributes: startTime, endTime, timeAnnotation

Required subelements: instantiationIdentifier, instantiationLocation

Optional subelements: instantiationDate, instantiationPhysical, instantiationDigital, instantiationStandard, instantiationMediaType, instantiationGenerations, instantiationFileSize, instantiationTimeStart, instantiationDuration, instantiationDataRate, instantiationColors, instantiationTracks, instantiationChannelConfiguration, instantiationLanguage, instantiationAlternativeModes, instantiationEssenceTrack, instantiationRelation, instantiationRights, instantiationAnnotation, instantiationPart, instantiationExtension

Example code:

```
<!--?xml version="1.0" encoding="UTF-8"?-->
<pbcoreInstantiationDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://pbcore.org/xsd/pbcore-2.1.xsd">
  <instantiationIdentifier source="McHale
University">MCU_v0123_01</instantiationIdentifier>
  <instantiationLocation>McHale University</instantiationLocation>
</pbcoreInstantiationDocument>
```

## Asset Elements

### pbcoreAssetType

Definition: pbcoreAssetType is a broad definition of the type of intellectual content being described. Asset types might include those without associated instantiations (a collection or series), or those with instantiations (programs, episodes, clips, etc.)

Best Practice: The asset type should broadly describe all related instantiations — for example, if an asset includes many instantiations representing different generations of a program, the asset type ‘program’ remains accurate for all of them.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreAssetType>Program</pbcoreAssetType>
```



```
<pbcoreAssetType source="pbcoreAssetType Controlled Vocabulary"
ref="http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-
vocabulary/#RawFootage" version="2.1">Raw Footage</pbcoreAssetType>
```

### **pbcoreAssetDate**

Definition: pbcoreAssetDate is intended to reflect dates associated with the Intellectual Content.

Best Practice: By contrast, instantiationDate is intended to reflect date information for the specific instance. For instance, if you have a VHS copy of Gone With The Wind, the pbcoreAssetDate would be 1939, while the instantiationDate of the VHS copy could be 1985. pbcoreAssetDate may also be used to reflect availability dates, etc. Date types should be specified using the @dateType attribute. Dates or time-based events related to the content of the asset, on the other hand, would be described in the ‘coverage’ element — so, while the storyline of Gone with the Wind takes place in the nineteenth century, this information should be noted in the Coverage field, not the assetDate field. Best practice is to use ISO 8601 or some other date/time standard if possible.

Usage: optional, repeatable

Optional attributes: dateType, source, ref, version, annotation

Recommended controlled vocabularies: PBCore dateType Vocabulary

Example code:

```
<pbcoreAssetDate>1987-05-13</pbcoreAssetDate>
```

```
<pbcoreAssetDate dateType="broadcast">2001-02-03</pbcoreAssetDate>
```

### **pbcoreIdentifier**

Definition: pbcoreIdentifier is an identifier that can apply to the asset. This identifier should not be limited to a specific instantiation, but rather all instantiations of an asset. It can also hold a URL or URI that points to the asset.

Best Practice: Best practice is to identify the media item (whether analog or digital) by means of an unambiguous string or number corresponding to an established or formal identification system if one exists. Otherwise, use an identification method that is in use within your agency, station, production company, office, or institution.

Usage: required, repeatable

Required attributes: source

Optional attributes: ref, version, annotation

Example code:

```
<pbcoreIdentifier source="American Archive of Public Broadcasting">cpb-  
aacip_15-b853f4kv16</pbcoreIdentifier>
```

```
<pbcoreIdentifier source="NOLA Code">NOVA003406</pbcoreIdentifier>
```

## **pbcoreTitle**

Definition: pbcoreTitle is a name or label relevant to the asset.

Best Practice: There may be many types of titles an asset may have, such as a series title, episode title, segment title, or project title; therefore, the element is repeatable.

Usage: required, repeatable

Optional attributes: titleType, titleTypeSource, titleTypeRef, titleTypeVersion, titleTypeAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Recommended controlled vocabularies: PBCore @titleType Vocabulary for the titleType attribute

Example code:

```
<pbcoreTitle titleType="Full" source="Box">American Experience: The Boys of  
'36</pbcoreTitle>
```

```
<pbcoreTitle titleType="Program">The Boys of '36</pbcoreTitle>
```

```
<pbcoreTitle titleType="Series" titleTypeSource="PBCore titleType Controlled  
Vocabulary" titleTypeRef="http://pbcore.org/pbcore-controlled-  
vocabularies/titletype-vocabulary/#Series">American Experience</pbcoreTitle>
```

## **pbcoreSubject**

Definition: pbcoreSubject is used to assign topic headings or keywords that portray the intellectual content of the asset. A subject is expressed by keywords, key phrases, or even specific classification codes. Controlled vocabularies, authorities, formal classification codes, as well as folksonomies and user-generated tags, may be employed when assigning descriptive subject terms.

Usage: optional, repeatable

Optional attributes: subjectType, subjectTypeSource, subjectTypeRef, subjectTypeVersion, subjectTypeAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Recommended controlled vocabularies: Library of Congress Subject Headings, IPTC NewsCodes Subject Codes, Thesaurus for Graphic Materials, Wikipedia

Example code:

```
<pbcoreSubject>Olympics</pbcoreSubject>

<pbcoreSubject subjectType="entity" source="LC Subject Headings"
ref="http://id.loc.gov/authorities/subjects/sh85147037">Winter
Olympics</pbcoreSubject>>
```

## **pbcoreDescription**

Definition: pbcoreDescription is an element that uses free-form text or a narrative to report general notes, abstracts, or summaries about the intellectual content of an asset. The information may be in the form of an individual program description, anecdotal interpretations, or brief content reviews. The description may also consist of outlines, lists, bullet points, rundowns, edit decision lists, indexes, or tables of content.

Best Practice: pbcoreDescription can be repeated, so that multiple descriptions can be provided. The attribute @descriptionType can be used to identify the type of description. The @source attribute can be used to identify the source of a description, e.g. @source='NOVA website'.

Usage: required, repeatable

Optional attributes: descriptionType, descriptionTypeSource, descriptionTypeRef, descriptionTypeVersion, descriptionTypeAnnotation, segmentType, segmentTypeSource, segmentTypeRef, segmentTypeVersion, segmentTypeAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Recommended controlled vocabularies: PBCore @descriptionType Vocabulary for the descriptionType attribute

Example code:

```
<pbcoreDescription descriptionType="Version">HV (home video) Master
Letterbox</pbcoreDescription>

<pbcoreDescription descriptionType="Program" descriptionTypeSource="PBCore
descriptionType Controlled Vocabulary"
descriptionTypeRef="http://pbcore.org/pbcore-controlled-
vocabularies/descriptiontype-vocabulary/#Program" source="American Experience
website">In the summer of 1936, nine working class young men from the
University of Washington took the rowing world and the nation by a storm when
they captured the gold medal at the Olympic Games in Berlin. These sons of
loggers, shipyard workers and farmers overcame tremendous hardships—
psychological, physical and economic—to beat not only the Ivy League teams of
the East Coast but also Adolf Hitler's elite German rowers. Featuring
interviews with Brown, historians and surviving children of the 1936
Washington team, The Boys of '36 recounts their unexpected victory and the
```

obstacles they overcame to achieve it, giving hope to a nation struggling to emerge from the depths of the Great Depression.</pbcoreDescription>

```
<pbcoreDescription descriptionType="Shot List" startTime="00:00:34"
endTime="00:06:22">
  00:00:34  ship at dock/EWS
  00:01:01  Crew on deck/WS
  00:01:43  Ship bow tied to pier/WS
  00:02:02  Ship ext./observation deck/MS
  00:02:24  ship ext. Maurice Ewing sign/MS
  00:02:39  Ship ext./anchor/MS
  00:03:05  Ship ext./ stern/WS
  00:04:02  Maurice Ewing New York sign on stern/CU
  00:04:22  Truck L past length of ship/WS
  00:05:17  Ian on deck/talking to man/MS/CU
  00:05:35  Crew setting up on bow/WS
  00:06:00  Men on captain's deck/MS/Ian on deck/MS</pbcoreDescription>>
```

## pbcoreGenre

**Definition:** pbcoreGenre is an element that describes the Genre of the asset, which can be defined as a categorical description informed by the topical nature or a particular style or form of the content.

**Best Practice:** Genre refers to the intellectual content of the asset, whereas the element Asset Type defines a broader structural category; i.e. an asset might have the Asset Type of Segment, with a Genre of News, together defining a news segment.

**Usage:** optional, repeatable

**Optional attributes:** source, ref, version, annotation, startTime, endTime, timeAnnotation

**Recommended controlled vocabularies:** Library of Congress Moving Image Genre-Form Guide, IPTC NewsCodes Genres, Library of Congress Thesaurus for Graphic Materials

**Example code:**

```
<pbcoreGenre>Documentary</pbcoreGenre>

<pbcoreGenre source="Library of Congress Thesaurus for Graphic Materials"
ref="http://id.loc.gov/vocabulary/graphicMaterials/tgm003474">Educational/cul
tural films & video</pbcoreGenre>
```

## pbcoreRelation

**Definition:** pbcoreRelation contains the pbcoreRelationType and pbcoreRelationIdentifier elements. In order to properly use these two elements they must be nested with the pbcoreRelation element, and pbcoreRelation must contain both pbcoreRelationType and pbcoreRelationIdentifier if it is included.

Usage: optional, repeatable

Required subelements: pbcoreRelationType, pbcoreRelationIdentifier

Example code:

```
<pbcoreRelation>
  <!-- No data here directly; it's within sub-elements instead -->
  <pbcoreRelationType>Is Part Of</pbcoreRelationType>
  <pbcoreRelationIdentifier>NOVA</pbcoreRelationIdentifier>
</pbcoreRelation>
```

### **pbcoreRelationType**

Definition: pbcoreRelationType describes the relationship between the asset being describe by the PBCore document and any other asset. Ideally it would contain text from a controlled vocabulary for describing relationships. There is some depth to what a relationship could be. The assets can be related as different episodes in a series, different tapes in a box set, or different versions of an original, among others.

Best Practice: The assets may be related in that they are different discrete parts of a single intellectual unit, one may be a derivative of another, or they may be different versions that are distinct enough to be described as separate assets.

Usage: required within pbcoreRelation, not repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore's Relation Type vocabulary, Dublin Core RDF Schema Declaration of Relation Types

Example code:

```
<pbcoreRelation>
  <pbcoreRelationType source="pbcoreRelationType Vocabulary"
  ref="http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-
  vocabulary/#IsPartOf">Is Part Of</pbcoreRelationType>
  <pbcoreRelationIdentifier>NOVA</pbcoreRelationIdentifier>
</pbcoreRelation>
```

### **pbcoreRelationIdentifier**

Definition: pbcoreRelationIdentifier contains the identifier of the related asset. In the case that the related asset has a PBCore record, this identifier should correspond with the pbcoreIdentifier of the related asset. However, it is possible to use this element with a record that isn't in PBCore, in which case the source attribute should identify the source of the identifier.

Usage: required within pbcoreRelation, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreRelation>
  <pbcoreRelationType source="pbcoreRelationType Vocabulary"
  ref="http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-
  vocabulary/#IsPartOf">Is Part Of</pbcoreRelationType>
  <pbcoreRelationIdentifier>NOVA</pbcoreRelationIdentifier>
</pbcoreRelation>
```

## **pbcoreCoverage**

Definition: pbcoreCoverage is a container for subelements coverage and coverageType.

Usage: optional, repeatable

Required subelements: coverage

Optional subelements: coverageType

Example code:

```
<pbcoreCoverage>
  <!-- No data here directly; it's within sub-elements instead -->
  <coverage>1607-1631</coverage>
  <coverageType annotation="historical">Temporal</coverageType>
</pbcoreCoverage>
```

## **coverage**

Definition: coverage refers to either the geographic location or the time period covered by the asset's intellectual content. For geographic locations ('spatial' descriptors), it is expressed by keywords such as place names (e.g. 'Alaska' or 'Washington, DC'), numeric coordinates or geo-spatial data. For time-based events ('temporal' descriptors), it is expressed by using a date, period, era, or time-based event that is portrayed or covered in the intellectual content (e.g. '2007' or 'Victorian Era'). The PBCore metadata element coverage houses the actual spatial or temporal keywords. The companion element coverageType is used to identify the type of keywords that are being used.

Usage: required with pbcoreCoverage, not repeatable

Optional attributes: source, ref, version, annotation, startTime, endTime, timeAnnotation

Recommended controlled vocabularies: W3C Profile of ISO 8601 Representation of Dates and Time (Temporal), Library of Congress Extended Date/Time Format (Temporal), Getty Thesaurus of Geographic Names (Spatial), IPTC NewsCodes World Region (Spatial), GeoNames (Spatial), MARC List for Countries (Spatial), MARC List for Geographic Areas (Spatial)

Example code:

```
<pbcoreCoverage>
  <coverage>2007</coverage>
  <coverageType annotation="current">Temporal</coverageType>
</pbcoreCoverage>
<pbcoreCoverage>
  <coverage source="GeoNames" ref="
http://www.geonames.org/4766510/jamestown.html">Jamestown, VA</coverage>
  <coverageType>Spatial</coverageType>
</pbcoreCoverage>
```

### coverageType

Definition: coverageType is used to identify the actual type of keywords that are being used by its companion metadata element coverage. coverageType provides a picklist of two possible types – spatial or temporal – because coverage in intellectual content may be expressed spatially by geographic location or it may also be expressed temporally by a date, period, era, or time-based event.

Usage: optional, not repeatable

Controlled vocabularies: picklist (Spatial, Temporal)

Example code:

```
<pbcoreCoverage>
  <coverage source="Wikipedia"
ref="http://en.wikipedia.org/wiki/Werowocomoco">Werowocomoco</coverage>
  <coverageType source="PBCore coverageType
Vocabulary">Spatial</coverageType>
</pbcoreCoverage>
```

### pbcoreAudienceLevel

Definition: pbcoreAudienceLevel identifies a type of audience, viewer, or listener for whom the media item is primarily designed or educationally useful.

Usage: optional, repeatable

Attributes: source, ref, version, annotation

### Example code

```
<pbcoreAudienceLevel>Teen</pbcoreAudienceLevel>

<pbcoreAudienceLevel source="EBU Intended Audience Code"
ref="http://www.ebu.ch/metadata/cs/web/ebu_IntendedAudienceCodeCS_p.xml.htm">
Empty Nester</pbcoreAudienceLevel>
```

### **pbcoreAudienceRating**

Definition: pbcoreAudienceRating designates the type of users for whom the intellectual content of a media item is intended or judged appropriate. This element differs from the element pbcoreAudienceLevel in that it utilizes standard ratings that have been crafted by the broadcast television and film industries and that are used as flags for audience or age-appropriate materials.

Usage: optional, repeatable

Attributes: source, ref, version, annotation

Recommended controlled vocabularies: Motion Picture Association of America Classification and Rating Administration, TV Parental Guidelines

### Example code:

```
<pbcoreAudienceRating source="MPAA Movie Ratings">G</pbcoreAudienceRating>

<pbcoreAudienceRating source="TV Parental Guidelines"
ref="http://www.tvguidelines.org/ratings.htm">TV-Y7-FV</pbcoreAudienceRating>
```

### **pbcoreCreator**

Definition: pbcoreCreator is a container for sub-elements creator and creatorRole.

Usage: optional, repeatable

Required subelements: creator

Optional subelements: creatorRole

### Example code:

```
<pbcoreCreator>
  <!-- No data here directly; it's within sub-elements instead -->
  <creator>WGBH Educational Foundation</creator>
  <creatorRole source="PBCore creatorRole and contributorRole Vocabulary"
ref="http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-
contributorrole-vocabulary/Producer">Producer</creatorRole>
```



```
</pbcoreCreator>
```

## creator

Definition: creator identifies the primary person, people, or organization(s) responsible for creating the asset. Note that non-primary names and roles should be included within the pbcoreContributor container.

Usage: required within pbcoreCreator, not repeatable

Attributes: affiliation, affiliationSource, affiliationRef, affiliationVersion, affiliationAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Example code:

```
<pbcoreCreator>
  <creator>Paula Apsell</creator>
  <creatorRole>Senior Executive Producer</creatorRole>
</pbcoreCreator>

<pbcoreCreator>
  <creator source="LC Name Authority"
ref="http://id.loc.gov/authorities/names/n79077369">Sondheim,
Stephen</creator>
  <creatorRole>Composer and Lyricist</creatorRole>
</pbcoreCreator>
```

## creatorRole

Definition: creatorRole is used to identify the role played by the person, people or organization(s) identified in the companion descriptor creator. The PBCore schema allows for creatorRole to be repeated in the pbcoreCreator container element. This can be useful when a single person or organization is associated with multiple roles in an asset.

Usage: optional, repeatable

Attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore creatorRole and contributorRole Vocabulary

Example code:

```
<pbcoreCreator>
  <creator>Paula Apsell</creator>
  <creatorRole>Senior Executive Producer</creatorRole>
</pbcoreCreator>
```

```
<pbcoreCreator>
  <creator affiliation="WGBH">Jed Rauscher</creator>
  <creatorRole source="PBCore creatorRole and contributorRole"
ref="http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-
contributorrole-vocabulary/Editor">Editor</creatorRole>
</pbcoreCreator>
```

## **pbcoreContributor**

Definition: pbcoreContributor is a container for sub-elements contributor and contributorRole.

Usage: optional, repeatable

Required subelements: contributor

Optional subelements: contributorRole

Example code:

```
<pbcoreContributor>
  <!-- No data here directly; it's within sub-elements instead -->
  <contributor>Lisa Quijano Wolfinger</contributor>
  <contributorRole>Narrator</contributorRole>
</pbcoreContributor>
```

## **contributor**

Definition: contributor identifies a person, people, or organization that has made substantial creative contributions to the asset. This contribution is considered to be secondary to the primary author(s) (person or organization) identified in the descriptor creator.

Usage: required within pbcoreContributor, not repeatable

Optional attributes: affiliation, affiliationSource, affiliationRef, affiliationVersion, affiliationAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Example code:

```
<pbcoreContributor>
  <contributor>Kenneth Branagh</contributor>
  <contributorRole>Director</contributorRole>
</pbcoreContributor>

<pbcoreContributor>
  <contributor source="LC Name Authority"
ref="http://id.loc.gov/authorities/names/nr88009360" portrayal="Gilderoy
```

```
Lockhart">Branagh, Kenneth</contributor>
  <contributorRole>Actor</contributorRole>
</pbcoreContributor>
```

### **contributorRole**

Definition: contributorRole is used to identify the role played by the person, people or organizations identified in the companion element contributor. The PBCore schema allows for contributorRole to be repeated in the pbcoreContributor container element. This can be useful when a single person or organization is associated with multiple roles in an asset.

Usage: optional, repeatable

Optional attributes: portrayal, source, ref, version, annotation

Recommended controlled vocabularies: PBCore creatorRole and contributorRole Vocabulary

Example code:

```
<pbcoreContributor>
  <contributor source="IMDB"
ref="https://www.imdb.com/name/nm0189337/">Callie Crossley</contributor>
  <contributorRole source="credits">Interviewer</contributorRole>
</pbcoreContributor>

<pbcoreContributor>
  <contributor source="LC Name Authority">Yo-Yo Ma</contributor>
  <contributorRole source="PBCore creatorRole and contributorRole"
ref="http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-
contributorrole-vocabulary/Musician">Musician</contributorRole>
</pbcoreContributor>
```

### **pbcorePublisher**

Definition: pbcorePublisher is a container for sub-elements publisher and publisherRole.

Usage: optional, repeatable

Required subelements: publisher

Optional subelements: publisherRole

Example code:

```
<pbcorePublisher>
  <!-- No data here directly; it's within sub-elements instead -->
  <publisher>WGBH Educational Foundation</publisher>
```

```
<publisherRole>Copyright Holder</publisherRole>
</pbcorePublisher>
```

## **publisher**

Definition: publisher identifies a person, people, or organization primarily responsible for distributing or making the asset available to others. The publisher may be a person, a business, organization, group, project or service.

Usage: required within pbcorePublisher, not repeatable

Attributes: affiliation, affiliationSource, affiliationRef, affiliationVersion, affiliationAnnotation, source, ref, version, annotation, startTime, endTime, timeAnnotation

Example code:

```
<pbcorePublisher>
  <publisher source="LC Name Authority"
  ref="http://id.loc.gov/authorities/names/no94021892" annotation="back of
  box">PBS Home Video</publisher>
</pbcorePublisher>
```

## **publisherRole**

Definition: publisherRole is used to identify the role played by the specific publisher or publishing entity identified in the companion descriptor publisher. The PBCore schema allows for publisherRole to be repeated in the pbcorePublisher container element. This can be useful when a single person or organization is associated with multiple roles in an asset.

Usage: optional, repeatable

Attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore publisherRole Vocabulary

Example code:

```
<pbcorePublisher>
  <publisher>PBS</publisher>
  <publisherRole source="PBCore publisherRole"
  ref="http://pbcore.org/pbcore-controlled-vocabularies/publisherrole-
  vocabulary/Distributor">Distributor</publisherRole>
</pbcorePublisher>

<pbcorePublisher>
  <publisher>WGBH Educational Foundation</publisher>
  <publisherRole source="PBCore publisherRole"
```

```
ref="http://pbcore.org/pbcore-controlled-vocabularies/publisherrole-
vocabulary/Presenter">Presenter</publisherRole>
</pbcorePublisher>
```

## **pbcoreRightsSummary**

Definition: pbcoreRightsSummary is a container for sub-elements ‘rightsSummary’, ‘rightsLink’ and ‘rightsEmbedded’ used to describe Rights for the asset.

Best Practice: The pbcoreRightsSummary container can be repeated to express multiple rights statements. However, all rights information contained within a pbcoreRightsSummary container should apply to the entire asset. Rights that relate to a specific instantiation of an asset, such as those conferred along with an item in a donation agreement, can be documented in the instantiationRights element.

Usage: optional, repeatable

Optional attributes: startTime, endTime, timeAnnotation

Optional subelements: rightsSummary, rightsLink, rightsEmbedded

Example code:

```
<pbcoreRightsSummary>
  <!-- No data here directly; it's within sub-elements instead -->
  <rightsSummary source="Creative Commons"
ref="http://creativecommons.org/licenses/by/3.0" version="3.0">CC BY
3.0</rightsSummary>
</pbcoreRightsSummary>
```

## **rightsSummary**

Definition: rightsSummary is used as a general free-text element to identify information about copyrights and property rights held in and over an asset or instantiation, whether they are open access or restricted in some way. If dates, times and availability periods are associated with a right, include them. End user permissions, constraints and obligations may also be identified as needed.

Best Practice: For rights information that applies to the asset as a whole, use this element within the container pbcoreRightsSummary. For rights information that is specific to an instantiation of an asset, use it within the container instantiationRights.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreRightsSummary>
  <rightsSummary>Copyright belongs to WGBH; distribution rights granted in
  perpetuity</rightsSummary>
</pbcoreRightsSummary>
```

```
<pbcoreRightsSummary>
  <rightsSummary source="CD case">Copyright 2016 the Board of Regents of
  the University of Wisconsin System and the Donald Voegeli Copyright Trust.
  All rights reserved. For non-commercial use only. Not for sale. Produced by
  Jim Voegeli. Funded by Dawn and Jim Voegeli.</rightsSummary>
</pbcoreRightsSummary>
```

## rightsLink

Definition: rightsLink is a URI pointing to a declaration of rights.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreRightsSummary>
  <rightsLink>http://creativecommons.org/licenses/by/3.0</rightsLink>
</pbcoreRightsSummary>
```

```
<pbcoreRightsSummary>
  <rightsLink>https://rightsstatements.org/page/InC/1.0/?language=en</rig
  htsLink>
</pbcoreRightsSummary>
```

## rightsEmbedded

Definition: rightsEmbedded allows the inclusion of xml from another rights standard, e.g. ODRL, METS, etc. The included XML then defines the rights for the PBCore asset and/or PBCore instantiation.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreRightsSummary>
  <rightsEmbedded><?xml version="1.0" encoding="UTF-8"?>
  <modsCollection xmlns:xlink=http://www.w3.org/1999/xlink
```

```

xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
xmlns=http://www.loc.gov/mods/v3
xsi:schemaLocation=http://www.loc.gov/mods/v3
http://www.loc.gov/standards/mods/v3/mods-3-3.xsd
  <mods version="3.3">
    <accessCondition type="use and reproduction"
displayLabel="restricted">Unrestricted access</accessCondition>
  </mods>
</modsCollection>
<rightsEmbedded>
</pbcoreRightsSummary>

```

## pbcorePart

**Definition:** pbcorePart is an element that may be used to split up a single asset so as to enable the use of all available elements at the pbcoreDescriptionDocument level to describe the intellectual content of individual segments of an asset.

**Best Practice:** Splitting up an asset in this way allows for defining and describing segments, stories, episodes or other divisions within the asset, such as individual films in a compilation reel, or distinct segments of a news show when each may have their own titles, creators, publishers, or other specific intellectual content information that does not apply across the whole asset.

**Usage:** optional, repeatable

**Optional attributes:** partType, partTypeSource, partTypeRef, partTypeVersion, partTypeAnnotation, startTime, endTime, timeAnnotation

**Required subelements:** pbcoreIdentifier, pbcoreTitle, pbcoreDescription

**Optional subelements:** pbcoreAssetType, pbcoreAssetDate, pbcoreSubject, pbcoreGenre, pbcoreRelation, pbcoreCoverage, pbcoreAudienceLevel, pbcoreCreator, pbcoreContributor, pbcorePublisher, pbcoreRightsSummary, pbcoreInstantiation, pbcoreAnnotation, pbcorePart, pbcoreExtension

**Example code:**

```

<pbcoreDescriptionDocument>
  <pbcoreIdentifier source="WGBH">4220-4222</pbcoreIdentifier>
  <pbcoreTitle titleType="Series" source="PBCore Controlled Vocabulary"
version="2.0">Nova</pbcoreTitle>
  <pbcoreTitle titleType="Miniseries" source="PBCore Controlled Vocabulary"
version="2.0">Making North America</pbcoreTitle>
  <pbcoreDescription>Discover how forces of almost unimaginable power gave
birth to North America.</pbcoreDescription>
  <pbcorePart>
    <!-- No data here directly; it's within sub-elements instead -->
    <pbcoreIdentifier source="WGBH">4220</pbcoreIdentifier>

```

```

    <pbcoreTitle titleType="Program" source="WGBH">Origins</pbcoreTitle>
    <pbcoreDescription>The shaping of North America, including palm trees
that once thrived in Alaska and an eruption that nearly tore the Midwest in
two.</pbcoreDescription>
  </pbcorePart>
  <pbcorePart>
    <!-- No data here directly; it's within sub-elements instead -->
    <pbcoreIdentifier source="WGBH">4221</pbcoreIdentifier>
    <pbcoreTitle titleType="Program" source="WGBH">Life</pbcoreTitle>
    <pbcoreDescription>The intertwined story of life and the landscape
in North America -- from origins to dinosaurs and an ancient primate
invasion.</pbcoreDescription>
  </pbcorePart>
  <pbcorePart>
    <!-- No data here directly; it's within sub-elements instead -->
    <pbcoreIdentifier source="WGBH">4222</pbcoreIdentifier>
    <pbcoreTitle titleType="Program" source="WGBH">Life</pbcoreTitle>
    <pbcoreDescription>From Ice Age to the oil boom, humans face
challenges and uncover wealth hidden in North America's
landscape.</pbcoreDescription>
  </pbcorePart>
</pbcoreDescriptionDocument>

```

### **pbcoreAnnotation**

Definition: pbcoreAnnotation allows the addition of any supplementary information about the metadata used to describe the PBCore record. pbcoreAnnotation clarifies element values, terms, descriptors, and vocabularies that may not be otherwise sufficiently understood.

Usage: optional, repeatable

Optional attributes: annotationType, source, ref, version, annotation

Example code:

```
<pbcoreAnnotation>This is the edited version produced for the Digital
Learning Library</pbcoreAnnotation>
```

```
<pbcoreAnnotation>No surviving instantiations of this
content</pbcoreAnnotation>
```

### **pbcoreExtension**

Definition: pbcoreExtension is an extension element. Extensions are either a wrapper containing a specific element from another standard OR embedded xml containing the extension.

Best Practice: Use it to supplement other metadata sub-elements of the PBCore description document in which it appears.



Usage: optional, repeatable

Optional subelements: extensionWrap (required ONLY if extensionEmbedded is not used), extensionEmbedded (required ONLY if extensionWrap is not used)

Example code:

```
<pbcoreExtension>
<!-- No data here directly; it's within sub-elements instead -->
  <extensionWrap>
    <extensionElement>RightsHolderName</extensionElement>
    <extensionValue>WNET.org</extensionValue>
    <extensionAuthorityUsed>
http://www.loc.gov/standards/rights/METSRights.xsd</extensionAuthorityUsed>
  </extensionWrap>
</pbcoreExtension>
```

### **extensionWrap**

Definition: extensionWrap serves as a container for the elements extensionElement, extensionValue, and extensionAuthorityUsed.

Usage: required within pbcoreExtension, instantiationExtension, or essenceTrackExtension, if extensionEmbedded is not used; cannot be used with extensionEmbedded; repeatable

Required subelements: extensionElement, extensionValue

Optional subelement: extensionAuthorityUsed

Optional attributes: source, ref, version, annotation

Example code:

```
<pbcoreExtension>
  <extensionWrap>
    <extensionElement>RightsHolderName</extensionElement>
    <extensionValue>WNET.org</extensionValue>
    <extensionAuthorityUsed>
http://www.loc.gov/standards/rights/METSRights.xsd</extensionAuthorityUsed>
  </extensionWrap>
</pbcoreExtension>
```

### **extensionEmbedded**

Definition: extensionEmbedded is an element allows the inclusion of xml from another schema, e.g. TEI, METS, etc.

Usage: required within pbcoreExtension, instantiationExtension, or essenceTrackExtension, if extensionWrap is not used; cannot be used with extensionWrap; repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<extensionEmbedded>
  <TEI xmlns="http://www.tei-c.org/ns/1.0"
  xmlns:xhtml="http://www.w3.org/1999/xhtml"
  xmlns:smil="http://www.w3.org/2001/SMIL20/Language">
    <teiHeader>
      <fileDesc>
        <sourceDesc>
          <recordingStmt>
            <recording type="video">
              <p>INTERVIEW WITH JOHN DOE</p>
            </recording>
          </recordingStmt>
        </sourceDesc>
      </fileDesc>
    </teiHeader>
    <text>
      <body>
        <listPerson>
          <person xml:id="q">
            <persName xml:lang="en">Interviewer</persName>
          </person>
        </listPerson>
        <listPerson>
          <person xml:id="a">
            <persName xml:lang="en">Doe, John</persName>
          </person>
        </listPerson>
        <div type="tape" xml:id="barcode254870">
          <incident><desc>Part 1</desc></incident>
          <div type="qa" xml:id="q0">
            <u who="#q">
              <seg xml:id="para2" smil:begin="00:00:23.685"
              smil:end="00:00:42.25">What were the conditions like when you travelled to El
              Salvador in 1991?</seg>
            </u>
            <u who="#a">
              <seg xml:id="para3" smil:begin="00:00:42.25"
              smil:end="00:02:46.138">I travelled to El Salvador in 1991 by way of
              Nicaragua. I saw many different conditions depending on the locale...</seg>
            </u>
          </div>
        </div>
      </body>
    </text>
  </TEI>
</extensionEmbedded>>
```

## Instantiation Elements

### **pbcoreInstantiation**

Definition: pbcoreInstantiation contains subelements that describe a single instantiation of an asset. The definition is malleable, but it should be thought of as any discreet and tangible unit that typically (though not always) comprises a whole representation of the asset. For example, an original master videotape, a preservation master video file, and a low-bitrate access copy would all be considered Instantiations of a single video program. All of the sub-elements held by this element are used to describe the instantiation specifically, not necessarily the asset as a whole.

Usage: optional, repeatable

Required subelements: instantiationIdentifier, instantiationLocation

Optional subelements: instantiationDate, instantiationDimensions, instantiationPhysical, instantiationDigital, instantiationStandard, instantiationMediaType, instantiationGenerations, instantiationFileSize, instantiationTimeStart, instantiationDuration, instantiationDataRate, instantiationColors, instantiationTracks, instantiationChannelConfiguration, instantiationLanguage, instantiationAlternativeModes, instantiationEssenceTrack, instantiationRelation, instantiationRights, instantiationAnnotation, instantiationPart, instantiationExtension

Optional attributes: startTime, endTime, timeAnnotation

Example code:

```
<pbcoreInstantiation>
  <!-- No data here directly; it's within sub-elements instead -->
  <instantiationIdentifier>123456</instantiationIdentifier>
  <instantiationLocation>Shelf 46, Row 3</instantiationLocation>
</pbcoreInstantiation>
```

### **instantiationIdentifier**

Definition: instantiationIdentifier contains an unambiguous reference or identifier for a particular instantiation of an asset.

Usage: required, repeatable

Required attributes: source

Optional attributes: ref, version, annotation

Example code:

```
<instantiationIdentifier source="WGBH
BARCODE">0000313536</instantiationIdentifier>
```

```
<instantiationIdentifier source="YouTube ID"
ref="http://www.youtube.com/watch?v=eYi6v20fNmc">eYi6v20fNmc</instantiationId
entifier>
```

## **instantiationDate**

Definition: instantiationDate is a date associated with an instantiation.

Best practice: It's recommended to use ISO 8601 or some other date/time standard if possible.

Usage: optional, repeatable

Optional attributes: dateType, source, ref, version, annotation

Recommended controlled vocabularies: PBCore dateType Vocabulary

Example code:

```
<instantiationDate dateType="Created">2007-05-09</instantiationDate>
```

```
<instantiationDate dateType="Issued" >2007-06-02</instantiationDate>
```

## **instantiationDimensions**

Definition: instantiationDimensions is an element that specifies either the dimensions of a physical instantiation, or the high-level visual dimensions of a digital instantiation

Best Practice: For physical dimensions, usage examples might be 7" for an audio reel. When describing visual dimensions, use this for high-level descriptors such as 1080p. Use the element frameSize to describe the pixel dimensions of a visual resource.

Usage: optional, repeatable

Optional attributes: unitsOfMeasure, source, ref, version, annotation

Example code:

```
<instantiationDimensions
annotation="letterbox">720x480</instantiationDimensions>
```

```
<instantiationDimensions
unitsOfMeasure="inches">5x7</instantiationDimensions>
```

## instantiationPhysical

Definition: instantiationPhysical is used to identify the format of a particular instantiation as it exists in a physical form that occupies physical space (e.g., a tape on a shelf). This includes physical digital media, such as a DV tape, audio CD or authored DVD, as well as analog media.

Best Practice: PBCore provides a controlled vocabulary for media objects, though any controlled vocabulary can be used as long as it is referenced. For digital storage carriers that contain portable file-based media, such as data CDs, LTO tapes or hard drives, use instantiationDigital to convey the mime type of the file instead of describing the carrier.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore's instantiationPhysical (Video), instantiationPhysical (Film), instantiationPhysical (Audio)

Example code:

```
<instantiationPhysical>Piano roll</instantiationPhysical>
```

```
<instantiationPhysical source="PBCore instantiationPhysical Controlled
Vocabulary" ref="http://pbcore.org/pbcore-controlled-
vocabularies/instantiationphysical-video-vocabulary/#DigitalBetacam">Digital
Betacam</instantiationPhysical>
```

## instantiationDigital

Definition: instantiationDigital is used to identify the format of a particular instantiation of an asset as it exists as a digital file on a server, hard drive, or other digital storage medium. Digital instantiations should be expressed as a formal Internet MIME types.

Best Practice: InstantiationDigital should only be used to describe the MIME type of the digital file itself. There are multiple options to convey more information about the storage medium or location of the digital file, which are discussed in more detail on the PBCore site.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: Internet Assigned Numbers Authority MIME Types, PRONOM Technical Registry

Example code:

```
<instantiationDigital>Wav file</instantiationDigital>
```

```
<instantiationDigital source="IANA MIME Media types" ref="
https://www.iana.org/assignments/media-
types/video/H264">video/H264</instantiationDigital>
```

### **instantiationStandard**

Definition: If the instantiation is a physical item, `instantiationStandard` can be used to refer to the broadcast standard of the video signal (e.g. NTSC, PAL), or the audio encoding (e.g. Dolby A, vertical cut). If the instantiation is a digital item, `instantiationStandard` should be used to express the container format of the digital file (e.g. MXF).

Best Practice: While the usage described in the definition is best practice for 2.1, this usage is likely to change if new elements are added for PBCore 3.0.

Usage: optional, not repeatable

Optional attributes: profile, source, ref, version, annotation

Example code:

```
<instantiationStandard>NTSC</instantiationStandard>
```

```
<instantiationStandard source="Sustainability of Digital Formats Planning for
Library of Congress Collections" ref="
https://www.loc.gov/preservation/digital/formats/fdd/fdd000266.shtml">MXF
OPl</instantiationStandard>
```

### **instantiationLocation**

Definition: `instantiationLocation` may contain information about a specific location for an instantiation, such as an organization's name, departmental name, shelf ID and contact information. The `instantiationLocation` for a digital file should include domain, path or URI to the file.

Best Practice: For digital files, `instantiationLocation` should always include a path or URI to the file. There are multiple ways to convey additional information about the location of a carrier or storage medium of the digital file, which are expressed on the PBCore site.

Usage: required, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<instantiationLocation>Vault: ML007859.121.1.</instantiationLocation>
```

```
<instantiationLocation>drive2/sourcefiles/20070910/458.wmv</instantiationLocation>
```

### **instantiationMediaType**

Definition: instantiationMediaType identifies the general, high level nature of the content of an instantiation. It uses categories that show how content is presented to an observer, e.g., as a sound, text or moving image.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore’s instantiationMediaType Vocabulary, IPTC NewsCodes Media Type

Example code:

```
<instantiationMediaType>Audio</instantiationMediaType>
```

```
<instantiationMediaType source="PBCore instantiationMediaType Vocabulary"
ref="http://pbcore.org/pbcore-controlled-vocabularies/instantiationmediatype-
vocabulary/#MovingImage">Moving Image</instantiationMediaType>
```

### **instantiationGenerations**

Definition: instantiationGenerations identifies the use type and provenance of the instantiation. For example, the generation of a video tape may be an “Original Master” or “Dub,” the generation of a film reel may be an “Original Negative” or “Composite Positive,” an audiotape may be a “Master” or “Mix Element,” and an image may be a “Photograph” or a “Photocopy.”

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore’s instantiationGenerations Vocabulary, Thesaurus for Graphic Materials

Example code:

```
<instantiationGenerations>Preservation Master</instantiationGenerations>
```

```
<instantiationGenerations source="PBCore instantiationGenerations"
ref="http://pbcore.org/pbcore-controlled-
vocabularies/instantiationgenerations-vocabulary/#WorkTrack">Work
```

```
track</instantiationGenerations>
```

### **instantiationTimeStart**

Definition: instantiationTimeStart describes the point at which playback begins for a time-based instantiation. It is likely that the content on a tape may begin an arbitrary amount of time after the beginning of the instantiation.

Best Practice: Best practice is to use a timestamp format such as HH:MM:SS[:;]FF or HH:MM:SS.mmm or S.mmm.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<instantiationTimeStart>00:23:30:15</instantiationTimeStart>
```

### **instantiationFileSize**

Definition: instantiationFileSize indicates the file size of a digital instantiation. It should contain only numerical values. As a standard, express the file size in bytes. Units of Measure should be declared in the unitsOfMeasure attribute.

Usage: optional, not repeatable

Optional attributes: unitsOfMeasure, source, ref, version, annotation

Example code:

```
<instantiationFileSize unitsOfMeasure="MB">322</instantiationFileSize>
```

### **instantiationDuration**

Definition: instantiationDuration provides a timestamp for the overall length or duration of a time-based media item. It represents the playback time.

Best Practice: Best practice is to use a timestamp format such as HH:MM:SS[:;]FF or HH:MM:SS.mmm or S.mmm.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation



Example code:

```
<instantiationDuration>00:56:46</instantiationDuration>
```

### **instantiationDataRate**

Definition: `instantiationDataRate` expresses the amount of data in a digital media file that is encoded, delivered or distributed, for every second of time.

Best Practice: This should be expressed as numerical data, with the units of measure declared in the `unitsOfMeasure` attribute. For example, if the audio file is 56 kilobits/second, then 56 should be the value of `instantiationDataRate` and the attribute `unitsOfMeasure` should be `kilobits/second`.

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<instantiationDataRate unitsOfMeasure="kbps">56</instantiationDataRate>
```

### **instantiationColors**

Definition: `instantiationColors` indicates the overall color, grayscale, or black and white nature of the presentation of an instantiation, as a single occurrence or combination of occurrences in or throughout the instantiation.

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<instantiationColors>Color</instantiationColors>
```

### **instantiationTracks**

Definition: `instantiationTracks` is simply intended to indicate the number and type of tracks that are found in a media item, whether it is analog or digital. (e.g. 1 video track, 2 audio tracks, 1 text track, 1 sprite track, etc.) Other configuration information specific to these identified tracks should be described using `instantiationChannelConfiguration`.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<instantiationTracks">1 video track, 1 audio track</instantiationTracks>
```

### **instantiationChannelConfiguration**

Definition: instantiationChannelConfiguration is designed to indicate, at a general narrative level, the arrangement or configuration of specific channels or layers of information within an instantiation's tracks. Examples are 2-track mono, 8-track stereo, or video track with alpha channel.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<instantiationChannelConfiguration>Ch. 1: Stereo L, Ch. 2: Stereo R, Ch. 3: DVS</instantiationChannelConfiguration>
```

### **instantiationLanguage**

Definition: instantiationLanguage identifies the primary language of the tracks' audio or text. Languages must be indicated using 3-letter codes standardized in ISO 639-2 or 639-3. If an instantiation includes more than one language, the element can be repeated. Alternately, both languages can be expressed in one element by separating two three-letter codes with a semicolon, i.e. eng;fre.

Best Practice: Alternative audio or text tracks and their associated languages should be identified using the element instantiationAlternativeModes.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Controlled vocabularies: PBCore requires the use of the ISO 639.2 or ISO 639.3 3-letter language codes.

Example code:

```
<instantiationLanguage source="ISO 639.3" ref="https://iso639-3.sil.org/code/jpn">jpn</instantiationLanguage>
```

```
<instantiationLanguage source="ISO 639.2"
ref="http://www.loc.gov/standards/iso639-
2/php/code_list.php">eng;fra</instantiationLanguage>
```

### **instantiationAlternativeModes**

Definition: `instantiationAlternativeModes` is a catch-all metadata element that identifies equivalent alternatives to the primary visual, sound or textual information that exists in an instantiation. These are modes that offer alternative ways to see, hear, and read the content of an instantiation. Examples include DVI (Descriptive Video Information), SAP (Supplementary Audio Program), ClosedCaptions, OpenCaptions, Subtitles, Language Dubs, and Transcripts. For each instance of available alternativeModes, the mode and its associated language should be identified together, if applicable. Examples include ‘SAP in English,’ ‘SAP in Spanish,’ ‘Subtitle in French,’ ‘OpenCaption in Arabic.’

Best Practice: Best practice is to use a semi-colon as a delimiter when defining more than one alternative mode.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<instantiationAlternativeModes>Subtitle in French; DVI in
French</instantiationAlternativeModes>
```

### **instantiationEssenceTrack**

Definition: `instantiationEssenceTrack` is an XML container element that allows for grouping of related `essenceTrack` elements and their repeated use. Use `instantiationEssenceTrack` element to describe the individual streams that comprise an instantiation, such as audio, video, timecode, etc.

Best Practice: Essence tracks can exist in either the digital or physical realm. In the digital realm, they may refer to the separate audio and video tracks within a digital file. In the physical realm, they may refer to the video and audio tracks contained on a single video tape.

Usage: optional, repeatable

Optional subelements: `essenceTrackType`, `essenceTrackIdentifier`, `essenceTrackStandard`, `essenceTrackEncoding`, `essenceTrackDataRate`, `essenceTrackFrameRate`, `essenceTrackPlaybackSpeed`, `essenceTrackSamplingRate`, `essenceTrackBitDepth`, `essenceTrackFrameSize`, `essenceTrackAspectRatio`, `essenceTrackTimeStart`, `essenceTrackDuration`, `essenceTrackLanguage`, `essenceTrackAnnotation`, `essenceTrackExtension`

Example code:

```
<instantiationEssenceTrack>
<!-- No data here directly; it's within sub-elements instead -->
  <essenceTrackType>Video</essenceTrackType>
</instantiationEssenceTrack>
```

### **essenceTrackType**

Definition: `essenceTrackType` refers to the media type of the decoded data. Tracks may possibly be of these types: video, audio, caption, metadata, image, etc.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<essenceTrackType>Video</essenceTrackType>
```

### **essenceTrackIdentifier**

Definition: `essenceTrackIdentifier` is an identifier of the track. Several audiovisual containers include such identifier schema to identify each track, such as MPEG2 PIDs or QuickTime Track ids.

Usage: optional, repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<essenceTrackIdentifier source="Digital Asset Management System">
898_Laura.wav</essenceTrackIdentifier>

<essenceTrackIdentifier source="StreamOrder
(MediaInfo)">1</essenceTrackIdentifier>
```

### **essenceTrackStandard**

Definition: `essenceTrackStandard` should be used with file-based instantiations to describe the broadcast standard of the video signal (e.g. NTSC, PAL) or to further clarify the standard of the `essenceTrackEncoding` format.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

Example code:

```
<essenceTrackStandard>NTSC</essenceTrackStandard>
```

### **essenceTrackEncoding**

Definition: `essenceTrackEncoding` identifies how the actual information in an instantiation is compressed, interpreted, or formulated using a particular scheme. Identifying the encoding used is beneficial for a number of reasons, including as a way to achieve reversible compression; for the construction of document indices to facilitate searching and access; or for efficient distribution of the information across data networks with differing bandwidths or pipeline capacities. Human-readable encoding value should be placed here. Use `@ref` to identify the codec ID.

Best Practice: Use `@source` to describe the type of encoding reference used, such as `fourcc`. In `@ref`, use a URI/URL from the source to identify the codec utilized by its container format.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Recommended controlled vocabularies: EBU Video Compression Code, EBU Audio Compression Code, Wikipedia List of Codecs, IPTC NewsCodes video codec, IPTC NewsCodes audio codec

Example code:

```
<essenceTrackEncoding source="EBU Audio Compression Code"
ref="https://www.ebu.ch/metadata/cs/web/ebu_AudioCompressionCodeCS_p.xml.htm"
>WAV</essenceTrackEncoding>
```

```
<essenceTrackEncoding source="codecid" ref="avc1"
annotation="profile:High@L4">AVC</essenceTrackEncoding>
```

### **essenceTrackDataRate**

Definition: `essenceTrackDataRate` measures the amount of data used per time interval for encoded data. The data rate can be calculated by dividing the total data size of the track's encoded data by a time unit.

Best Practice: By default use bytes per second. Otherwise, this should be expressed as numerical data, with the units of measure declared in the `unitsOfMeasure` attribute.

Usage: optional, not repeatable

Optional attributes: unitsOfMeasure, source, ref, version, annotation

Example code:

```
<essenceTrackDataRate unitsOfMeasure="kbps"
annotation="compressed">1700</essenceTrackDataRate>
```

```
<essenceTrackDataRate unitsOfMeasure="bit/second"
annotation="VBR">10482976</essenceTrackDataRate>
```

### **essenceTrackFrameRate**

Definition: essenceTrackFrameRate is relevant to tracks of video track type only. The frame rate is calculated by dividing the total number of frames by the duration of the video track. By default measure frame rate in frames per second expressed as fps as a unit of measure. e.g., 24 fps.

Usage: optional, not repeatable

Optional attributes: unitsOfMeasure, source, ref, version, annotation

Example code:

```
<essenceTrackFrameRate unitsOfMeasure="fps"
annotation="interlaced">29.97</essenceTrackFrameRate>
```

```
<essenceTrackFrameRate annotation="rational_frame_rate:30000/1001
interlacement:Progressive">29.970</essenceTrackFrameRate>
```

### **essenceTrackPlaybackSpeed**

Definition: essenceTrackPlaybackSpeed specifies the rate of units against time at which the media track should be rendered for human consumption. e.g., 15ips (inches per second).

Usage: optional, not repeatable

Optional attributes: unitsOfMeasure, source, ref, version, annotation

Example code:

```
<essenceTrackPlaybackSpeed unitsOfMeasure="rpm">33
1/3</essenceTrackPlaybackSpeed>
```

**essenceTrackSamplingRate**

Definition: `essenceTrackSamplingRate` measures how often data is sampled when information from the audio portion from an instantiation is digitized. For a digital audio signal, the sampling rate is measured in kilohertz and is an indicator of the perceived playback quality of the media item (the higher the sampling rate, the greater the fidelity).

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<essenceTrackSamplingRate
unitsOfMeasure="kHz">44.1</essenceTrackSamplingRate>
```

```
<essenceTrackSamplingRate
unitsOfMeasure="Hz">48000</essenceTrackSamplingRate>
```

**essenceTrackBitDepth**

Definition: `essenceTrackBitDepth` specifies how much data is sampled when information is digitized, encoded, or converted for an instantiation (specifically, audio, video, or image). Bit depth is measured in bits and generally implies an arbitrary perception of quality during playback of an instantiation (the higher the bit depth, the greater the fidelity).

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<essenceTrackBitDepth>8</essenceTrackBitDepth>
```

```
<essenceTrackBitDepth annotation="color">10</essenceTrackBitDepth>
```

**essenceTrackFrameSize**

Definition: `essenceTrackFrameSize` measures the width and height of the encoded video or image track. The frame size refers to the size of the encoded pixels and not the size of the displayed image. It may be expressed as combination of pixels measured horizontally vs. the number of pixels of image/resolution data stacked vertically (interlaced and progressive scan).

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<essenceTrackFrameSize>320x240</essenceTrackFrameSize>
```

### **essenceTrackAspectRatio**

Definition: `essenceTrackAspectRatio` indicates the ratio of horizontal to vertical proportions in the display of a static image or moving image.

Usage: optional, not repeatable

Optional attributes: `unitsOfMeasure`, `source`, `ref`, `version`, `annotation`

Example code:

```
<essenceTrackAspectRatio>4:3</essenceTrackAspectRatio>
```

```
<essenceTrackAspectRatio>1.778</essenceTrackAspectRatio>
```

### **essenceTrackTimeStart**

Definition: `essenceTrackTimeStart` provides a time stamp for the beginning point of playback for a time-based essence track. It is likely that the content on a tape may begin an arbitrary amount of time after the beginning of the instantiation.

Best Practice: Use in combination with `essenceTrackDuration` to identify a sequence or segment of an essence track that has a fixed start time and end time. Best practice is to use a timestamp format such as `HH:MM:SS[:;]FF` or `HH:MM:SS.mmm` or `S.mmm`.

Usage: optional, not repeatable

Optional attributes: `source`, `ref`, `version`, `annotation`

Example code:

```
<essenceTrackTimeStart>00:00:32:05</essenceTrackTimeStart>
```

### **essenceTrackDuration**

Definition: `essenceTrackDuration` provides a timestamp for the overall length or duration of a track. It represents the track playback time.

Best Practice: Best practice is to use a timestamp format such as `HH:MM:SS[:;]FF` or `HH:MM:SS.mmm` or `S.mmm`.



Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Example code:

```
<essenceTrackDuration>00:56:22:13</essenceTrackDuration>
```

### **essenceTrackLanguage**

Definition: essenceTrackLanguage identifies the primary language of the tracks' audio or text. Languages must be indicated using 3-letter codes standardized in ISO 639-2 or 639-3. If an instantiation includes more than one language, the element can be repeated. Alternately, both languages can be expressed in one element by separating two three-letter codes with a semicolon, i.e. eng;fre.

Usage: optional, not repeatable

Optional attributes: source, ref, version, annotation

Controlled vocabularies: PBCore requires the use of the ISO 639.2 or ISO 639.3 3-letter language codes.

Example code:

```
<essenceTrackLanguage source="ISO 639.2"
ref="http://id.loc.gov/vocabulary/iso639-2/eng">eng</essenceTrackLanguage>
```

### **essenceTrackAnnotation**

Definition: essenceTrackAnnotation can store any supplementary information about a track or the metadata used to describe it. It clarifies element values, terms, descriptors, and vocabularies that may not be otherwise sufficiently understood.

Usage: optional, repeatable

Optional attributes: annotationType, source, ref, version, annotation

Example code:

```
<essenceTrackAnnotation annotationType="Condition note">Audio reel shows
faint signs of mold</essenceTrackAnnotation>
```

```
<essenceTrackAnnotation
annotationType="ChromaSubsampling">4:2:0</essenceTrackAnnotation>
```

## essenceTrackExtension

Definition: essenceTrackExtension is an extension element. Extensions are either a wrapper containing a specific element from another standard OR embedded xml containing the extension. The essenceTrackExtension element is a container to accomodate track-level metadata from external systems. Use it to supplement other metadata sub-elements of instantiationEssenceTrack in which it appears.

Usage: optional, repeatable

Optional subelements: extensionWrap (required ONLY if extensionEmbedded is not used), extensionEmbedded (required ONLY if extensionWrap is not used)

Example code:

```
<essenceTrackExtension>
<!-- No data here directly; it's within sub-elements instead -->
  <extensionWrap>
    <extensionElement>RightsHolderName</extensionElement>
    <extensionValue>WNET.org</extensionValue>
    <extensionAuthorityUsed>
http://www.loc.gov/standards/rights/METSRights.xsd</extensionAuthorityUsed>
  </extensionWrap>
</essenceTrackExtension>
```

## instantiationRelation

Definition: instantiationRelation is a container for sub-elements instantiationRelationType and instantiationRelationIdentifier to describe relationships to other instantiations.

Usage: optional, repeatable

Required subelements: instantiationRelationType, instantiationRelationIdentifier

Example code:

```
<instantiationRelation>
<!-- No data here directly; it's within sub-elements instead -->
  <instantiationRelationType source="PBCore relationType Vocabulary"
"http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-
vocabulary/#DerivedFrom">Derived from</instantiationRelationType>
  <instantiationRelationIdentifier source="WGBH
Barcode">233745</instantiationRelationType>
</instantiationRelation>
```

## **instantiationRelationType**

Definition: instantiationRelationType describes the relation between the instantiation being described and another instantiation.

Best Practice: The instantiations may be related in that they are different discrete parts of a single intellectual unit, they may be generationally related, one may be a derivative of another, they may be different versions.

Usage: required within instantiationRelation, not repeatable

Attributes: source, ref, version, annotation

Recommended controlled vocabularies: PBCore's instantiationRelationType Vocabulary, Dublin Core RDF Schema Declaration of Relation Types

Example code:

```
<instantiationRelationType source="PBCore relationType"
"http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-
vocabulary/#DerivedFrom">Derived from</instantiationRelationType>
```

## **instantiationRelationIdentifier**

Definition: instantiationRelationIdentifier is used to provide a name, locator, accession, identification number or ID where the related item can be obtained or found.

Best Practice: We recommend using a unique identifier or global unique ID in this element.

Usage: required within instantiationRelation, not repeatable

Attributes: source, ref, version, annotation

Example code:

```
<instantiationRelationIdentifier>FRON001108</instantiationRelationIdentifier>
```

## **instantiationRights**

Definition: instantiationRights is a container for sub-elements rightsSummary, rightsLink and rightsEmbedded to describe rights particular to this instantiation.

Best Practice: This element contains rights information that is specific to an instantiation of an asset, such as rights conferred in a donation agreement that apply only to a single donated item.

Usage: optional, repeatable

Optional subelements: rightsSummary, rightsLink, rightsEmbedded

Attributes: startTime, endTime, timeAnnotation

Example code:

```
<instantiationRights startTime="00:00:10" endTime="00:10:00">
<!-- No data here directly; it's within sub-elements instead -->
  <rightsSummary>Donation agreement provides rights to give access to users
on premises</rightsSummary>
</instantiationRights>
```

### **instantiationAnnotation**

Definition: instantiationAnnotation is used to add any supplementary information about an instantiation of the instantiation or the metadata used to describe it. It clarifies element values, terms, descriptors, and vocabularies that may not be otherwise sufficiently understood.

Usage: optional, repeatable

Attributes: annotationType, source, ref, version, annotation

Example code:

```
<instantiationAnnotation>Original recording lost, this serves as
master</instantiationAnnotation>
```

```
<instantiationAnnotation>Label on cassette reads "Do Not
Use"</instantiationAnnotation>
```

### **instantiationPart**

Definition: instantiationPart is a container that allows the instantiation to be split into multiple parts, which can describe the parts of a multi-section instantiation, e.g., a multi-disk DVD or vitagraph record and 35mm reel that are intended for synchronous playback. It contains all of the elements that a pbcoreInstantiation element would typically contain.

Usage: optional, repeatable

Required subelements: instantiationIdentifier, instantiationLocation

Optional subelements: instantiationDate, instantiationDimensions, instantiationPhysical, instantiationDigital, instantiationStandard, instantiationMediaType, instantiationGenerations, instantiationFileSize, instantiationTimeStart, instantiationDuration, instantiationDataRate,

instantiationColors, instantiationTracks, instantiationChannelConfiguration, instantiationLanguage, instantiationAlternativeModes, instantiationEssenceTrack, instantiationRelation, instantiationRights, instantiationAnnotation, instantiationPart, instantiationExtension

Attributes: startTime, endTime, timeAnnotation

Example code:

```
<pbcoreInstantiation>
  <instantiationPart>
    <!-- No data here directly; it's within sub-elements instead -->
    <instantiationIdentifier>654321-1</instantiationIdentifier>
    <instantiationLocation>Shelf 12, Row 7</instantiationLocation>
  </instantiationPart>
  <instantiationPart>
    <!-- No data here directly; it's within sub-elements instead -->
    <instantiationIdentifier>654321-2</instantiationIdentifier>
    <instantiationLocation>Shelf 12, Row 7</instantiationLocation>
  </instantiationPart>
</pbcoreInstantiation>
```

### **instantiationExtension**

Definition: instantiationExtension is an extension element. Extensions are either a wrapper containing a specific element from another standard OR embedded xml containing the extension.

Best Practice: Use it to supplement other metadata sub-elements of ‘instantiationPart’ or ‘pbcoreInstantiationDocument’ in which it appears.

Usage: optional, repeatable

Optional subelements: extensionWrap (required ONLY if extensionEmbedded is not used), extensionEmbedded (required ONLY if extensionWrap is not used)

Example code:

```
<instantiationExtension>
<!-- No data here directly; it's within sub-elements instead -->
  <extensionWrap>
    <extensionElement>RightsHolderName</extensionElement>
    <extensionValue>WNET.org</extensionValue>
    <extensionAuthorityUsed>
https://www.loc.gov/standards/rights/METSRights.xsd</extensionAuthorityUsed>
  </extensionWrap>
</instantiationExtension>
```

## Attributes Defined

Attributes are a way to structure additional types of information that PBCore records can include. Specifically, they are used to further clarify the information you provide as a value to an element.

The section below provides a definition for each attribute; best practice information, where it is available; and a list of the elements with which that attribute can be used.

**affiliation:** The affiliation attribute is used to indicate the organization with which an agent is associated or affiliated. Can be used as an attribute of the following elements - contributor, creator, publisher.

**affiliationAnnotation:** The affiliationAnnotation attribute includes narrative information intended to clarify the nature of data used in the attribute affiliation. Can be used as an attribute of the following elements - contributor, creator, publisher.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**affiliationRef:** The affiliationRef attribute is used supply a source's URI for the value of the attribute affiliation. Can be used as an attribute of the following elements - contributor, creator, publisher.

Best Practice: Attribute affiliationRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**affiliationSource:** The affiliationSource attribute provides the name of the authority used to declare the value of the attribute affiliation. Can be used as an attribute of the following elements - contributor, creator, publisher.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**affiliationVersion:** The affiliationVersion attribute identifies any version information about the authority or convention used to express data of the attribute affiliation. Can be used as an attribute of the following elements - contributor, creator, publisher.

**annotation:** The annotation attribute includes narrative information intended to clarify the nature of data used in the element. Can be used as an attribute of any element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**annotationType:** The annotationType attribute is used to indicate the type of annotation being assigned to the asset, such as a comment, clarification, or cataloging note. Can be used as an

attribute of the following elements - `essenceTrackAnnotation`, `instantiationAnnotation`, `pbcoreAnnotation`.

**collectionDate:** The `collectionDate` attribute provides the date of creation for a `pbcoreCollection` XML document. Can be used as an attribute of the `pbcoreCollection` element.

**collectionDescription:** The `collectionDescription` attribute is a description group of individual serialized XML records contained within one `pbcoreCollection` element. Can be used as an attribute of the `pbcoreCollection` element.

**collectionRef:** The `collectionRef` attribute provides a URL for the source organization, application, or individual for a group of XML records contained within a `pbcoreCollection` element. Can be used as an attribute of the `pbcoreCollection` element.

Best Practice: Attribute `collectionRef` can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**collectionSource:** The `collectionSource` attribute indicates a source organization, application, or individual for group of individual XML records contained within a `pbcoreCollection` element. Can be used as an attribute of the `pbcoreCollection` element.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**collectionTitle:** The `collectionTitle` attribute is a title or label for the group of individual serialized XML records contained within one `pbcoreCollection` element. Can be used as an attribute of the `pbcoreCollection` element.

**dateType:** The `dateType` attribute classifies by named type the date-related data of the element e.g., `created`, `broadcast`, `dateAvailableStart`. Can be used as an attribute of the following elements - `pbcoreAssetDate`, `instantiationDate`.

Best Practice: Used to clarify how the date is related to the asset or instantiation. `Date Created` may be the most common, but the element could also be used to describe the `Date Accessioned` or `Date Deaccessioned`, for example.

**descriptionType:** The `descriptionType` attribute is used to indicate the type of description being assigned to the element, such as ‘abstract,’ ‘summary,’ or ‘physical description.’ Can be used as an attribute of the `pbcoreDescription` element.

**descriptionTypeAnnotation:** The `descriptionTypeAnnotation` attribute includes narrative information intended to clarify the nature of data used in the element. Can be used as an attribute of the `pbcoreDescription` element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**descriptionTypeRef:** The descriptionTypeRef attribute is used to supply a source's URI for the value of the attribute descriptionType. Can be used as an attribute of the pbcoreDescription element.

Best Practice: Attribute descriptionTypeRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**descriptionTypeSource:** The descriptionTypeSource attribute provides the name of the authority used to declare data value of the attribute descriptionType. Can be used as an attribute of the pbcoreDescription element.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**descriptionTypeVersion:** The descriptionTypeVersion attribute identifies any version information about the authority or convention used to express data of the attribute descriptionType. Can be used as an attribute of the pbcoreDescription element.

**endTime:** The endTime attribute combines with a similar value in the startTime attribute to define a specific media segment within a broader timeline of an asset and/or instantiation. Can be used as an attribute of the following elements - contributor, coverage, creator, instantiationRights, pbcoreDescription, pbcoreGenre, pbcoreInstantiation, pbcoreInstantiationDocument, pbcorePart, pbcoreRightsSummary, pbcoreSubject, pbcoreTitle, publisher.

**partType:** The partType attribute is used to indicate the nature of the part into which the asset has been divided. Can be used as an attribute of the pbcorePart element.

**partTypeAnnotation:** The partTypeAnnotation attribute includes narrative information intended to clarify the nature of data used in the attribute partType. Can be used as an attribute of the pbcorePart element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**partTypeRef:** The partTypeRef attribute is used to supply a source's URI for the value of the attribute partType. Can be used as an attribute of the pbcorePart element.

Best Practice: Attribute partTypeRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**partTypeSource:** The partTypeVersion attribute is used to identify any version information about the authority or convention used to express data of the attribute partType. Can be used as an attribute of the pbcorePart element.



**portrayal:** The portrayal attribute identifies any roles or characters performed by a contributor. Can be used as an attribute of the contributorRole element.

**profile:** The profile attribute is used to further quantify the profile of the container format (e.g. Op1a). Can be used as a notes field to include any additional information about the element or associated attributes.

**ref:** The ref attribute is used to supply a source's URI for the value of the element. Can be used as an attribute of any element.

Best Practice: Attribute ref can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**schemaLocation:** The schema location attribute has two values, separated by a space. The first value is the namespace to use. The second value is the location of the XML schema to use for that namespace. Can be used as an attribute of the pbcoreDescriptionDocument element.

**segmentType:** The segmentType attribute is used to define the type of content contained in a segment. Can be used as an attribute of the pbcoreDescription element.

**segmentTypeAnnotation:** The segmentTypeAnnotation attribute includes narrative information intended to clarify the nature of data used in the attribute segmentType. Can be used as an attribute of the pbcoreDescription element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**segmentTypeRef:** The segmentTypeRef attribute is used to supply a source's URI for the value of the attribute segmentType. Can be used as an attribute of the pbcoreDescription element.

Best Practice: Attribute segmentTypeRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**segmentTypeSource:** The segmentTypeSource attribute provides the name of the authority used to declare data value of the attribute segmentType. Can be used as an attribute of the pbcoreDescription element.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**segmentTypeVersion:** The segmentTypeVersion attribute identifies any version information about the authority or convention used to express data of the attribute segmentType. Can be used as an attribute of the pbcoreDescription element.

**source:** The source attribute provides the name of the authority used to declare the value of the element. Required attribute for pbcoreIdentifier and instantiationIdentifier elements. Can be used as an attribute of any element.

Best Practice: Different elements will use the source attribute slightly differently. For example, identifier source (required) should be the name of the organization, institution, system or namespace that the identifier came from, such as “PBS NOLA Code” or an institutional database identifier. For other elements, this might be the name of a controlled vocabulary, namespace or authority list, such as Library of Congress Subject Headings. We recommend a consistent and human readable use.

**startTime:** The startTime attribute combines with the endTime attribute to define a specific media segment within a broader timeline of an asset and/or instantiation. Can be used as an attribute of the following elements - contributor, coverage, creator, instantiationRights, pbcoreDescription, pbcoreGenre, pbcoreInstantiation, pbcoreInstantiationDocument, pbcorePart, pbcoreRightsSummary, pbcoreSubject, pbcoreTitle, publisher.

Best Practice: This is a free text attribute and can be applied at the asset or instantiation level. When used at the asset level, it may be used to talk generally about the start/end time of a segment (e.g. “30 minutes”), or by providing a timestamp to a specific point in an instantiation. If you’re doing that for element at the asset level, we suggest referencing the instantiation ID you are referring to in timeAnnotation. One example would be if a six-hour long tape was broken into multiple programs, and each instantiation might have its start time labeled as when the instantiation began in the timeline of the broader tape. Another example for this usage might be a digital file created from a VHS tape that contains multiple segments. In the digital copy, color bars are removed from the beginning, and black from the end of the digital instantiation. Time references referring to the segments on the physical VHS are no longer relevant; therefore it’s important to tie start and end time references to a specific instantiation, e.g. use the asset ID and timestamp.

**subjectType:** The subjectType attribute is used to indicate the type of subject being assigned to the element, such as ‘topic,’ ‘personal name’ or ‘keyword.’ Can be used as an attribute of the pbcoreSubject element.

**subjectTypeAnnotation:** The subjectTypeAnnotation attribute includes narrative information intended to clarify the nature of data used in the attribute subjectType. Can be used as an attribute of the pbcoreSubject element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**subjectTypeRef:** The subjectTypeRef attribute is used to supply a source’s URI for the value of the attribute subjectType. Can be used as an attribute of the pbcoreSubject element.

Best Practice: Attribute subjectTypeRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**subjectTypeSource:** The subjectTypeSource attribute provides the name of the authority used to declare the value of the attribute subjectType. Can be used as an attribute of the pbcoreSubject element.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**subjectTypeVersion:** The subjectTypeVersion attribute identifies any version information about the authority or convention used to express data of the attribute subjectType. Can be used as an attribute of the pbcoreSubject element.

**timeAnnotation:** The timeAnnotation attribute includes narrative information intended to clarify the nature of data used in the element. Can be used as an attribute of the following elements - contributor, coverage, creator, instantiationRights, pbcoreDescription, pbcoreGenre, pbcoreInstantiation, pbcoreInstantiationDocument, pbcorePart, pbcoreRightsSummary, pbcoreSubject, pbcoreTitle, publisher.

**titleType:** The titleType attribute is used to indicate the type of title being assigned to the asset, such as series title, episode title or project title. Has a PBCore controlled vocabulary (recommended). Can be used as an attribute of the pbcoreTitle element.

**titleTypeAnnotation:** The titleTypeAnnotation attribute includes narrative information intended to clarify the nature of data used in the element. Can be used as an attribute of the pbcoreTitle element.

Best Practice: This attribute can be used as a notes field to include any additional information about the element or associated attributes.

**titleTypeRef:** The titleTypeRef attribute is used to supply a source's URI for the value of the attribute titleTypeSource. Can be used as an attribute of the pbcoreTitle element.

Best Practice: Attribute titleTypeRef can be used to point to a term in a controlled vocabulary, or a URI associated with a source.

**titleTypeSource:** The titleTypeSource attribute provides the name of the authority used to declare data value of the titleType attribute. Can be used as an attribute of the pbcoreTitle element.

Best Practice: This might be the name of a controlled vocabulary, namespace or authority list, such as the official PBCore recommended vocabulary.

**titleTypeVersion:** The titleTypeVersion attribute identifies any version information about the authority or convention used to express data of this element. Can be used as an attribute of the pbcoreTitle element.

**unitsOfMeasure:** The unitsOfMeasure attribute defines the unit used in the containing element, e.g. pixels, GB, Mb/s, ips, fps, kHz, inches, lines, dpi. Can be used as an attribute of the following elements - essenceTrackAspectRatio, essenceTrackBitDepth, essenceTrackDataRate, essenceTrackFrameRate, essenceTrackFrameSize, essenceTrackPlaybackSpeed, essenceTrackSamplingRate, instantiationDataRate, instantiationDimensions, instantiationFileSize.

Best Practice: We recommend standardizing the notation that is most widely recognized in your institution and using with consistency.

**version:** The version attribute identifies any version information about the authority or convention used to express data of this element. Can be used as an attribute of any element.

**xmlns:** The xmlns attribute is used to define a so-called namespace for the prefix, which is required when using prefixes in XML. The namespace is defined by the xmlns attribute in the start tag of an element. Can be used as an attribute of the pbcoreDescriptionDocument element.

**xsi:** The xsi attribute specifies the XML Schema Instance namespace, and should always be entered as the specific value “<http://www.w3.org/2001/XMLSchema-instance>”. Can be used as an attribute of the pbcoreDescriptionDocument element.

## Controlled Vocabularies

PBCore Controlled Vocabularies are sets of predefined, community-standardized terms for concepts related to audiovisual and broadcast collections. These terms can be used as drop-down value lists in a database or spreadsheet to ensure consistency in terminology, formatting and spelling, both internally and when exchanging information with outside organizations.

PBCore Controlled Vocabularies include the agreed-upon spelling and formatting for each term, a definition, and a Unique Resource Identifier (or URI). The vocabularies provide only the terms that the community has determined are most widely used and shared, and are not 100% comprehensive.

PBCore does not maintain controlled vocabularies for elements that have strong vocabulary options maintained by other authorities. Element definitions contain references to relevant external vocabularies, where applicable.

### pbcoreAssetTypeVocabulary

Usage: for pbcoreAssetType

#### Album

Definition: A collection of recordings issued as a single item on CD, record, or another medium.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Album>

#### Animation

Definition: A moving image production element created from static drawings or objects.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Animation>

#### Clip

Definition: A short excerpt taken from a moving image or audio resource. A clip may not convey a complete intellectual concept.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Clip>

#### Collection

Definition: A group of materials with some unifying characteristic. – 2. Materials assembled by a person, organization, or repository from a variety of sources; an artificial collection.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Collection>

#### Compilation

Definition: A single asset containing multiple different sub-assets; for example, a reel with programs, clips, and raw footage.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Compilation>

### **Episode**

Definition: A single installment of a series, whether linearly relate to other episodes in the series, or simply presented under the same branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Episode>

### **Miniseries**

Definition: A multi-episode resource of limited duration, aired daily or weekly, usually with a total running time of less than 15 hours.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Miniseries>

### **Program**

Definition: A resource that has been prepared for broadcast/publication and is presented as a single work, with no series branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Program>

### **Promo**

Definition: An edited piece of audio or video announcing an upcoming work (like a program or series).

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Promo>

### **Raw Footage**

Definition: Originally captured footage or other unedited content, not intended for broadcast in its current form.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#RawFootage>

### **Segment**

Definition: A self-contained portion of a program/episode, which serves its own function, but operates within the larger program/episode.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Segment>

### **Series**

Definition: A set of episodes broadcast in sequence, usually conceived without a definite end and aired on a regular schedule. Typically all episodes within a single series follow a specific theme or continuous storyline, or are all broadcast under the same series title and branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Series>

### **Season**

Definition: A set of episodes from a series, which were all aired in the same broadcast period.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Season>

### **Subseries**

Definition: A set of episodes that makes up its own series, which is broadcast under an umbrella series with its own branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcoreassettype-vocabulary/#Subseries>

## **@dateType Vocabulary**

Usage: for @dateType as an attribute on pbcoreAssetDate or instantiationDate

### **accepted**

Definition: Date of acceptance of an asset or instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#accepted>

### **available**

Definition: Date (often a range) that the asset or instantiation became or will become available.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#available>

### **available end**

Definition: Date that the asset or instantiation became or will become unavailable.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#availableend>

### **available start**

Definition: Date that the asset or instantiation became or will become available.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#availablestart>

### **broadcast**

Definition: Date the asset or instantiation was broadcast.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#broadcast>

### **captured**

Definition: Date that the asset or instantiation was digitized or a subsequent snapshot was taken.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#captured>

### **created**

Definition: Date on which the asset or instantiation was created.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#created>

### **copyright**

Definition: Date associated with a claim of protection under copyright or a similar regime for the asset or instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#copyright>

### **deletion**

Definition: Date an asset or instantiation was deleted.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#deletion>

### **digitized**

Definition: Date an asset or instantiation was digitized.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#digitized>

### **distributed**

Definition: Date on which the asset or instantiation was distributed or released.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#distributed>

### **dubbed**

Definition: Date an asset or instantiation was dubbed.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#dubbed>

### **edited**

Definition: Date on which the asset or instantiation was edited.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#edited>

### **encoded**

Definition: Date an asset or instantiation was encoded.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#encoded>

### **encrypted**

Definition: Date on which the asset or instantiation was encrypted.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#encrypted>

### **event**



Definition: Date, time or period of an event related to an asset or instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#event>

### **ingested**

Definition: Date an asset or instantiation was added to a preservation repository. This is a PREMIS event suggestion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#ingested>

### **issued**

Definition: Date of formal issuance (e.g. publication) of an asset or instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#issued>

### **licensed**

Definition: Date on which the asset or instantiation was licensed.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#licensed>

### **mastered**

Definition: Date on which the asset or instantiation's final master was created.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#mastered>

### **migrated**

Definition: Date an asset or instantiation was migrated to a new format. This is a PREMIS event suggestion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#migrated>

### **mixed**

Definition: Date on which the asset or instantiation's final mix was created.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#mixed>

### **modified**

Definition: Date on which the asset or instantiation was last changed.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#modified>

### **normalized**

Definition: Date an asset or instantiation was normalized to a preservation standard. This is a PREMIS event suggestion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#normalized>

**performed**

Definition: Date on which the intellectual content of an asset was performed live.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#performed>

**podcast**

Definition: Date on which the asset or instantiation was webcast.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#podcast>

**published**

Definition: Date on which the asset or instantiation was published.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#published>

**released**

Definition: The official release date of an asset or instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#released>

**restored**

Definition: Date on which the asset or instantiation was restored.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#restored>

**revised**

Definition: Date on which the asset or instantiation was revised.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#revised>

**transferred**

Definition: Date on which the asset or instantiation was transferred from one location to another.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#transferred>

**valid**

Definition: A date during which the content of an asset or instantiation is valid.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#valid>

**validated**

Definition: Date an asset or instantiation was confirmed to comply with documented information about the instantiation. This is a PREMIS event suggestion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#validated>

**webcast**

Definition: Date on which the asset or instantiation was webcast.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/datetype-vocabulary/#webcast>

**@titleType Vocabulary**

Usage: for @titleType as an attribute on pbcoreTitle

**Album**

Definition: The title of a collection of recordings issued as a single item on CD, record, or another medium.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Album>

**Collection**

Definition: The title naming a group of materials with some unifying characteristic, such as the materials assembled by a person, organization, or repository from a variety of sources; an artificial collection.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Collection>

**Episode**

Definition: The title of a single installment of a television or radio series.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Episode>

**Miniseries**

Definition: The title of a multi-episode asset of limited duration, aired daily or weekly, usually with a total running time of less than 15 hours.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Miniseries>

**Program**

Definition: The title of a single asset that has been broadcast on a on a specific occasion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Program>

**Segment**

Definition: The title of a self-contained portion of a program/episode, which serves its own function, but operates within the larger program/episode.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Segment>

**Series**

Definition: The title of a set of episodes broadcast in sequence, usually conceived without a definite end and aired on a regular schedule. Typically all episodes within a single series follow a specific theme or continuous storyline, and are all broadcast under the same series title and branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Series>

### **Subseries**

Definition: The title of set of episodes that makes up its own series, which is broadcast under an umbrella series with its own branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Subseries>

## **@descriptionType Vocabulary**

Usage: for @descriptionType as an attribute on pbcoreDescription

### **Abstract**

Definition: A summary of the contents of an asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/descriptiontype-vocabulary/#Abstract>

### **Awards**

Definition: A listing of any awards (i.e. Emmy, Golden Globe, Peabody) received by a production or asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/descriptiontype-vocabulary/#Awards>

### **Chapter**

Definition: A main division of an asset, typically with a number or title.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/descriptiontype-vocabulary/#Chapter>

### **Collection**

Definition: The title naming a group of materials with some unifying characteristic, such as the materials assembled by a person, organization, or repository from a variety of sources; an artificial collection.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Collection>

### **Comments**

Definition: More colloquial description, anecdotal comments, or reflections not typically viewable by staff outside the archives. Could include comments about the preservation process (this asset was difficult to digitize, the two tape instantiations are damaged, etc.) or also include

informal comments about the content (someone curses at minute 20, the content may upset some people, John Smith really likes this, etc.)

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Comments>

### **Description**

Definition: A general term for a description of the asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Description>

### **Episode Description**

Definition: A description of a single installment of a television or radio series.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#EpisodeDescription>

### **Event**

Definition: A thing that happens in the intellectual content of an asset, especially one of importance.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Event>

### **Excerpt**

Definition: A description of a short clip taken from a moving image or audio resource. An excerpt may not convey a complete intellectual concept.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Excerpt>

### **Item**

Definition: A description of a thing that can be distinguished from a group and that is complete in itself. An item may consist of several pieces, but is treated as a whole.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Item>

### **Movement**

Definition: A principal division of a longer musical work, self-sufficient in terms of key, tempo, and structure.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Movement>

### **Number**

Definition: A song, dance, piece of music, etc., especially one of several in a performance.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Number>

### **Playlist**

Definition: A list of the recordings to be played on the radio during a particular program or time period, often including their sequence, duration, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Playlist>

## **Program**

Definition: A description of an asset that has been prepared for broadcast/publication and is presented as a single work.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Program>

## **Reviews**

Definition: Evaluations, opinions, or critical appraisals of a program or asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Reviews>

## **Rundown**

Definition: A timeline or production cue-sheet for a TV or radio program.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Rundown>

## **Script**

Definition: A document of the dialogue and direction used in the production of a program or asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Script>

## **Segment**

Definition: A description of a self-contained portion of a program/episode, which serves its own function, but operates within the larger program/episode.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Segment>

## **Series**

Definition: A description of a set of episodes broadcast in sequence, usually conceived without a definite end and aired on a regular schedule. Typically all episodes within a single series follow a specific theme or continuous storyline, and are all broadcast under the same series title and branding.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Series>

## **Shot List**

Definition: A document that lists, in chronological order, the sequences of footage used in the production of a program or asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#ShotList>

**Song**

Definition: A short poem or other set of words set to music or meant to be sung.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Song>

**Story**

Definition: A report of an item of news in a newspaper, magazine, or news broadcast; may also be used to refer to a plot or story line.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Story>

**Summary**

Definition: A brief statement or account of the main points of something.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Summary>

**Transcript**

Definition: A written document of the audio component of an audio or audiovisual asset.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/titletype-vocabulary/#Transcript>

**pbcoreRelationType Vocabulary**

Usage: for pbcoreRelationType

**Has Derivative**

Definition: The asset being described is the source for another asset which is based upon it (for example, a film and then a documentary about the making of that film).

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#HasDerivative>

**Derived From**

Definition: The asset being described has another asset as its source (for example, a documentary about the making of a film).

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#DerivedFrom>

**References**

Definition: The asset being described mentions, uses or discusses another asset (for example, a review program that discusses a recorded theatrical work).

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#References>

**Is Referenced By**

Definition: The asset being described is mentioned, used or discussed by another asset (for example, a recorded theatrical performance that is reviewed in another program).

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#IsReferencedBy>

**Is Related To**

Definition: The asset being described is related somehow to the asset being pointed to in this relation element (for example, two programs related to the same topic). This should be used as a default if the specific relationship is unknown.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#IsRelatedTo>

**Is Part Of**

Definition: The asset being described is part of the asset being pointed to in this relation element (for example, one segment of a multi-segment television program.) This relationship can also be described using pbcorePart.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#IsPartOf>

**Has Version**

Definition: The asset being described has an alternate intellectual version (for example, a different edit, or in a different language) which is being pointed to by this relation element. Use this when the asset being described is the ‘official’ or ‘master’ version of the asset; if not, use ‘Is Version Of’ to point to the master.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#HasVersion>

**Is Version Of**

Definition: The asset being described is an alternate intellectual version (for example, a different edit, or in a different language) of the resource being pointed to by this relation element. Use this if the asset being described is not the ‘official’ or ‘master’ version of the asset; if it is the master version, use ‘Has Version.’

URI: <http://pbcore.org/pbcore-controlled-vocabularies/pbcorerelationtype-vocabulary/#IsVersionOf>

**instantiationRelationType Vocabulary**

Usage: for instantiationRelationType

**Is Clone Of**



Definition: The instantiation being described was digitally or losslessly copied from another instantiation, which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#IsCloneOf>

### **Cloned To**

Definition: The instantiation being described has been digitally or losslessly copied to another instantiation, which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#ClonedTo>

### **Is Dub Of**

Definition: The instantiation being described was physically duplicated from another instantiation, which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#IsDubOf>

### **Dubbed To**

Definition: The instantiation being described has been physically duplicated onto another instantiation, which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#DubbedTo>

### **Is Format Of**

Definition: The instantiation being described is an alternate format of an original instantiation (for example, a digital file which was created from an analog video) which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#IsFormatOf>

### **Has Format**

Definition: The instantiation being described exists in an alternate format (for example, an analog video which also exists as a digital file) which is being pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#HasFormat>

### **Is Part Of**

Definition: The instantiation being described is part of the asset or instantiation being pointed to in this relation element (for example, a clip that has been taken from a longer piece.)

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#IsPartOf>

### **Has Part**

Definition: A portion of the instantiation being described exists as an independent instantiation (for example, a clip) which is pointed to in this relation element.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#HasPart>

### **Replaces**

Definition: The instantiation being described is a substitution for the instantiation being pointed to in the relation element (for example, because the original instantiation has been deaccessioned.)

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#Replaces>

### **Is Replaced By**

Definition: The instantiation being described is being substituted for by the instantiation being pointed to in the relation element (for example, because it has been deaccessioned.)

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationrelationtype-vocabulary/#IsReplacedBy>

## **creatorRole and contributorRole Vocabulary**

Usage: for creatorRole and contributorRole

### **Actor**

Definition: Person playing a character role in the production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Actor>

### **Artist**

Definition: Person primarily responsible for the artistic content of the production, or the visual content contained in the media work, and who may hold copyright to it – for example, a video artist like Andy Warhol, or a painter commissioned to provide a visual work for the production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Artist>

### **Artistic Director**

Definition: Person responsible for unifying the feel and vision of a television production, film production, theatrical company, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#ArtisticDirector>

### **Associate Producer**

Definition: Person who takes on responsibilities delegated to them by the Producer. They work on the development and pre-production stages, and on the production. Duties can range from supervising the production design team or post production, or co-ordinating the work of visual effects companies. This is an industry term, and specific roles and responsibilities may vary between jobs and productions.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#AssociateProducer>

### **Author**

Definition: Person primarily responsible for the intellectual content of the production and who may hold copyright to it – for example, a novelist whose work is adapted into a film.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Author>

### **Broadcast Engineer**

Definition: Person who works with hardware and broadcast systems that are used across television, radio and new media to broadcast and distribute programs.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#BroadcastEngineer>

### **Camera Operator**

Definition: Person responsible for manning the camera. Several people may fill this role on one production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#CameraOperator>

### **Caption Writer**

Definition: Person or organization responsible for editing/adding closed captioning.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#CaptionWriter>

### **Casting Director**

Definition: Person responsible for initially finding the cast members chosen for a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#CastingDirector>

### **Choreographer**

Definition: Person responsible for selection or creation of dance compositions and plans and arranges dance movements and patterns for dances and especially for ballets.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Choreographer>

### **Cinematographer**

Definition: See Director of Photography, the recommended term for this position.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Cinematographer>

### **Co-Producer**

Definition: Person who performs a substantial portion of a creative producing function, or who is primarily responsible for one or more managerial producing functions. A co-producer has less responsibility than a producer for the completion of a project. This is an industry term, and specific roles and responsibilities may vary between jobs and productions.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#CoProducer>

### **Commentator**

Definition: Person who discusses news, sports events, weather, or the like, as on television or radio.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Commentator>

### **Composer**

Definition: Person who writes music for a specific production, or who is responsible for the artistic content of a piece of music used within a specific production and who may own copyright to that content. Composers of specific elements (for example, theme music) may be identified in an annotation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Composer>

### **Concept Artist**

Definition: Person who produces an artistic rendering of an element or elements in a film, TV show, or video game, created as part of the development and visualization of characters, costumes, environments, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#ConceptArtist>

### **Conductor**

Definition: Person who directs the performance of an orchestra or choir.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Conductor>

### **Costume Designer**

Definition: Person responsible for designing and creating costumes and wardrobe for a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#CostumeDesigner>

### **Describer**

Definition: Person or organization responsible for describing key visual elements in a production for visually-impaired viewers.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Describer>

### **Director**

Definition: Person who supervises the actors, camera crew, and other staff for a movie, play, television program, or similar production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Director>

### **Director of Photography**

Definition: Cinematographer or director of photography (sometimes shortened to DP or DOP) is the chief over the camera crews working on a film, television production or other live action piece and is responsible for achieving artistic and technical decisions related to the image.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#DirectorofPhotography>

### **Editor**

Definition: Person who assembles the footage for a production into the final end product.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Editor>

### **Executive Producer**

Definition: Person who secures funding for a production and oversees financial and organizational aspects of the production's development.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#ExecutiveProducer>

### **Filmmaker**

Definition: The person most prominently responsible for the making of a film, especially if they are involved in all phases of production – for example, an independent or experimental filmmaker.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Filmmaker>

### **Foley Artist**

Definition: Person that uses objects to create (or recreate) sound on a foley sound stage to be added to the final audio mix, such as footsteps, the opening and closing doors, or mechanical sounds.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#FoleyArtist>

### **Graphic Designer**

Definition: Person who creates and designs visual elements for a production, such as logos, posters or brochures.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#GraphicDesigner>

### **Graphic Editor**

Definition: Person who assembles graphics and animation for a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#GraphicEditor>

### **Guest**

Definition: Person who is invited to appear on one or several episodes of a television show, but is not a regular part of the cast or crew.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Guest>

### **Host**

Definition: Person who introduces a television or radio program, presents the various program elements, and interviews any guests.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Host>

### **Interviewee**

Definition: Person being interviewed.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Interviewee>

### **Interviewer**

Definition: Person who asks the questions during an interview.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Interviewer>

### **Lighting Technician**

Definition: Person responsible for the creation of the lighting design for a given production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#LightingTechnician>

### **Make-Up Artist**

Definition: Person responsible for designing and creating make-up and prosthetic effects for a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#MakeUpArtist>

### **Moderator**

Definition: Person who moderates a discussion.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Moderator>

### **Music Supervisor**

Definition: Person responsible for working with the director and composer of a production to manage, select, and/or edit music for the production; this may also be identified as music director or music editor.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#MusicSupervisor>

### **Musician**

Definition: Player of a musical instrument.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Musician>

### **Narrator**

Definition: Person whose voice explains what is happening in a television program or movie, but who generally is not seen.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Narrator>

### **Panelist**

Definition: Member of a small group of persons gathered for formal public discussion, judging, or playing a radio or television game.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Panelist>

### **Performer**

Definition: Broader term for Actor, Musician, Vocalist or Comedian. A person who entertains people by acting, singing, dancing, playing music, or providing some other form of entertainment.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Performer>

### **Performing Group**

Definition: Company, band, or group of performers who work together to entertain people by dancing, singing, acting, playing music, or providing some other form of entertainment.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#PerformingGroup>

### **Photographer**

Definition: Person who takes photographs. In film and television this person may be called a unit still photographer or simply, still photographer, who creates still photographic images intended for use in promotion, continuity and documentation of films and television productions.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Photographer>

### **Producer**

Definition: Person who initiates, coordinates, supervises and controls all aspects of the production process, including creative, financial, technological and administrative. A Producer is involved throughout all phases of production from inception to completion. A production may have more than one producer.



URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Producer>

### **Production Unit**

Definition: Corporate sub-entity or department that initiates, coordinates, supervises and controls all aspects of the production process, including creative, financial, technological and administrative.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#ProductionUnit>

### **Recording Engineer**

Definition: Person who operates consoles and other equipment to record, control, replay, and mix sound from various live performances and in the production of radio, television, music, and film. Recording Engineers may also be called Sound Recordists, Sound Mixers, or Audio Engineers. There are also specialized engineers such as Sound Engineers (for film sets), ADR Recordists, and Foley Recordists.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#RecordingEngineer>

### **Reporter**

Definition: Person who conducts interviews, reports events, or presents news information for a broadcast.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Reporter>

### **Set Designer**

Definition: Person who designs and creates the set for a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#SetDesigner>

### **Sound Designer**

Definition: Person who works closely with the production team to design any required sounds to include in a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#SoundDesigner>

### **Sound Editor**

Definition: Person who creates the soundtrack by cutting and synchronizing all sound elements. There may be specialized editors for specific sound element types as well, such as a Sound Effects Editor.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#SoundEditor>

### **Speaker**

Definition: Broad term for a person whose speech or lecture is included in a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Speaker>

### **Technical Director**

Definition: Most senior technical person on a production team, who oversees the technical quality of the production and/or supervises the technical crew. This is an industry term, and specific roles and responsibilities may vary between jobs and productions.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#TechnicalDirector>

### **Video Engineer**

Definition: Person who is responsible for technical aspects of video recording and production systems. This is an industry term, and specific roles and responsibilities may vary between jobs and productions.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#VideoEngineer>

### **Vocalist**

Definition: Person who sings or otherwise vocally contributes a production or a composition used in a production.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Vocalist>

### **Voiceover Artist**

Definition: Unseen performer who adds their voice to the production in various ways, such as for animated characters or when dubbing into another language. For musical performances use Vocalist.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#VoiceoverArtist>

### **Writer**

Definition: Person who created or contributed to the script of a production; usually involved with the production as a work-for-hire.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/creatorrole-and-contributorrole-vocabulary/#Writer>

## **publisherRole Vocabulary**

Usage: for publisherRole

### **Distributor**

Definition: Person or corporate entity responsible for marketing and arranging for the release, exhibition, and/or distribution of a production. A distributor may deal with only particular areas of distribution, such as cinematic, home video, or digital; this should be identified in an annotation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/publisherrole-vocabulary/#Distributor>

### **Presenter**

Definition: Person or corporate entity responsible for acquiring rights to the source media, packaging it, and offering it to the publisher or distributor.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/publisherrole-vocabulary/#Presenter>

### **Publisher**

Definition: Person or corporate entity responsible for making a production available.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/publisherrole-vocabulary/#Publisher>

## **instantiationPhysical Audio Vocabulary**

Usage: for instantiationPhysical

### **Open reel audiotape**

Definition: A general term for unknown open reel audio formats. If more specific format information is known, please use the appropriate term from the list.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#OpenReelAudiotape>

### **Grooved analog disc**

Definition: A general term for unknown grooved audio formats. If more specific format information is known, please use the appropriate term from the list.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#GroovedAnalogDisc>

### **1 inch audio tape**

Definition: An open reel analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#1InchAudioTape>

### **1/2 inch audio tape**

Definition: An open reel analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#HalfInchAudioTape>

### **1/4 inch audio cassette**

Definition: A cassette-based analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#QuarterInchAudioCassette>

### **1/4 inch audio tape**

Definition: An open reel analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#QuarterInchAudioTape>

### **2 inch audio tape**

Definition: An open reel analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#2InchAudioTape>

### **8-track**

Definition: A cartridge-based 1/4-inch analog audiotape format. May also be known as Stereo 8.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#8Track>

### **Aluminum disc**

Definition: A grooved aluminum analog disc format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#AluminumDisc>

### **Audio cassette**

Definition: A cassette-based 1/8-inch analog audiotape format. If desired, format information can be included after a colon, for example "Audio cassette: Type I." Types of audio cassette include Type I, Type II, Type III and Type IV.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#AudioCassette>

**Audio CD**

Definition: An optical disc-based digital audio format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#AudioCD>

**DAT**

Definition: A cassette-based 4mm digital audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#DAT>

**DDS**

Definition: A cassette-based digital data format that can also be used to record audio data.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#DDS>

**DTRS**

Definition: A cassette-based 8mm digital audiotape format. May also be known as DARS. Types of DTRS include DA-88. This information can be included after a colon, as “DTRS: DA-88.”

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#DTRS>

**Flexi Disc**

Definition: A grooved vinyl analog disc format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#FlexiDisc>

**Grooved Dictabelt**

Definition: A grooved plastic analog format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#GroovedDictabelt>

**Lacquer disc**

Definition: A grooved lacquer analog disc format. Types of lacquer discs may include those with aluminum base, glass base, cardboard base, and steel base. More specific format information can be included in an annotation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#LacquerDisc>

**Magnetic Dictabelt**

Definition: A magnetic plastic analog format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#MagneticDictabelt>

**Mini-cassette**

Definition: A cassette-based 1/8-inch analog audiotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#MiniCassette>

**PCM Betamax**

Definition: A cassette-based digital audiotape format recorded onto Betamax videotape.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#PCMBetamax>

**PCM U-matic**

Definition: A cassette-based digital audiotape format recorded onto U-matic videotape.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#PCMUmatic>

**PCM VHS**

Definition: A cassette-based digital audiotape format recorded onto VHS videotape.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#PCMVHS>

**Piano roll**

Definition: A paper-based musical storage format used to operate a player piano.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#PianoRoll>

**Plastic cylinder**

Definition: A grooved plastic analog phonograph cylinder format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#PlasticCylinder>

**Shellac disc**

Definition: A grooved shellac analog disc format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#ShellacDisc>

### **Super Audio CD**

Definition: An optical disc-based digital audio format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#SuperAudioCD>

### **Vinyl recording**

Definition: A grooved vinyl analog disc format. If desired, format information can be included after a colon, for example: “Vinyl recording: EP.” Types of records may include EP, LP, 45, 78. LP may also be known as 33 1/3.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#VinylRecording>

### **Wax cylinder**

Definition: A grooved wax analog phonograph cylinder format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#WaxCylinder>

### **Wire recording**

Definition: A wire-based magnetic analog audio format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-audio-vocabulary/#WireRecording>

## **instantiationPhysical Film Vocabulary**

Usage: for instantiationPhysical

### **Film**

Definition: A general term for unknown moving image celluloid formats. If more specific format information is known, please use the appropriate term from the list.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#Film>

### **8mm film**

Definition: A gauge of moving image printed on celluloid, 8mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#8mmFilm>

**9.5mm film**

Definition: A gauge of moving image printed on celluloid, 9.5mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#9andaHalfmmFilm>

**Super 8mm film**

Definition: A gauge of moving image printed on celluloid, 8mm in width, with an expanded picture area.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#Super8mmFilm>

**16mm film**

Definition: A gauge of moving image printed on celluloid, 16mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#16mmFilm>

**Super 16mm film**

Definition: A gauge of moving image printed on celluloid, 16mm in width, with an expanded picture area.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#Super16mmFilm>

**22mm film**

Definition: A gauge of moving image printed on celluloid, 22mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#22mmFilm>

**28mm film**

Definition: A gauge of moving image printed on celluloid, 28mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#28mmFilm>

**35mm film**

Definition: A gauge of moving image printed on celluloid, 35mm in width. Some 35mm films may be printed on paper.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#35mmFilm>



**70mm film**

Definition: A gauge of moving image printed on celluloid, 70mm in width.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-film-vocabulary/#70mmFilm>

**instantiationPhysical Video Vocabulary**

Usage: for instantiationPhysical

**Videocassette**

Definition: A general term for unknown video cassette formats. If more specific format information is known, please use the appropriate term from the list below.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Videocassette>

**Open reel videotape**

Definition: A general term for unknown open reel video formats. If more specific format information is known, please use the appropriate term from the list below.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#OpenReelVideoTape>

**Optical video disc**

Definition: A general term for unknown optical video formats. If more specific format information is known, please use the appropriate term from the list below.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#OpticalVideoDisc>

**1 inch videotape**

Definition: An open reel analog videotape format. If desired, format information can be included after a colon, for example: "1 inch videotape: MVC-10." Types of 1 inch videotape include MVC-10, PI-3V, EV-200, EL-3400, IVC-700, IVC-800, IVC-900, UV-340, EV-210, BVH-1000, HDV-1000, HDD-1000, SMPTE Type A, SMPTE Type B, and SMPTE Type C.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#1InchVideotape>

**1/2 inch videotape**

Definition: An open reel analog videotape format. May also be known as helical scan tape. If desired, format information can be included after a colon, for example: "1/2 inch videotape:

EIAJ Type 1.” Types of 1/2 inch video tape include: CV, EIAJ Type 1, Hawkeye, Recam, V200, and VCR.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#HalfInchVideotape>

### **1/4 inch videotape**

Definition: An open reel analog videotape format. May also be known as Akai.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#QuarterInchVideotape>

### **2 inch videotape**

Definition: An open reel analog videotape format. If desired, format information can be included after a colon, for example: “2 inch videotape: Quadruplex.” Types of 2 inch videotape include: Quadruplex, Octaplex, VR-1500, VR-1600, IVC-9000, Helical SV-201, and ACR 25.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#2InchVideotape>

### **Betacam**

Definition: A cassette-based 1/2-inch analog videotape format. Types of Betacam also include the higher-quality Betacam SP. This information can be included after a colon, as “Betacam: SP.”

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Betacam>

### **Betacam SX**

Definition: A cassette-based 1/2-inch digital videotape format. Betacam SX is a digital version of Betacam SP.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#BetacamSX>

### **Betamax**

Definition: A cassette-based 1/2-inch analog videotape format. May also be know as Beta. If desired, format information can be included after a colon, for example: “Betamax: ED.” Types of Betamax also include Beta Hi-Fi, ED Betamax and Super Betamax.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Betamax>

### **Blu-ray disc**

Definition: An optical disc-based digital video format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#BluRayDisc>

### **Cartrivision**

Definition: A cassette-based 1/2-inch analog videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Cartrivision>

### **D1**

Definition: A cassette-based 3/4-inch digital videotape format. Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D1>

### **D2**

Definition: A cassette-based 3/4-inch digital videotape format. Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D2>

### **D3**

Definition: A cassette-based 1/2-inch digital videotape format. Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D3>

### **D5**

Definition: A cassette-based 1/2-inch digital videotape format. Types of D5 also include D5 HD. This information can be included after a colon, as “D5: HD.” Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D5>

### **D6**

Definition: A cassette-based 3/4-inch digital videotape format. Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D6>

**D9**

Definition: A cassette-based 1/2-inch digital videotape format. Types of D9 also include D9 HD. This information can be included after a colon, as “D9: HD.” Different “D” formats are not necessarily backwards compatible: for example, a D-2 tape cannot be played on a D-1 machine.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#D9>

**DCT**

Definition: A cassette-based 3/4-inch digital videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DCT>

**Digital Betacam**

Definition: A cassette-based 1/2-inch digital videotape format. May also be known as DigiBeta or D-Beta. Digital Betacam is a digital version of Betacam SP.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DigitalBetacam>

**Digital8**

Definition: A cassette-based 8mm digital videotape format. Digital Betacam is a digital version of Hi8.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Digital8>

**DV**

Definition: A cassette-based 1/4-inch digital videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DV>

**DVCAM**

Definition: A cassette-based 1/4-inch digital videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DVCAM>

**DVCPRO**

Definition: A cassette-based 1/4-inch digital videotape format. If desired, format information can be included after a colon, for example: “DVCPRO: 25.” Types of DVCPRO include DVCPRO 25, DVCPRO 50, DVCPRO Progressive, and DVCPRO HD.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DVCPRO>

## **DVD**

Definition: A digital optical disc video format. If desired, format information can be included after a colon, for example: “DVD: DVD-R.” Types of DVD also include DVD+R, DVD+R DL, DVD-R, DVD-RW, and DVD+RW.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#DVD>

## **EIAJ**

Definition: Cartridge A cartridge-based 1/2-inch analog videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#EIAJ>

## **EVD**

Definition: Videodisc A digital optical disc video format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#EVD>

## **HDCAM**

Definition: A cassette-based 1/2-inch digital videotape format. Types of HDCAM also include HDCAM SR. This information can be included after a colon, as “HDCAM: SR.”

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#HDCAM>

## **HDV**

Definition: A cassette-based 1/4-inch digital videotape format. This is a high-definition version of MiniDV.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#HDV>

## **Hi8**

Definition: A cassette-based 8mm analog videotape format. Hi8 is a high-band version of Video8.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Hi8>

**LaserDisc**

Definition: A digital optical disc video format. May also be known as DiscoVision. If desired, format information can be included after a colon, for example: “LaserDisc: CAV.” Types of LaserDisc include CAV, CLV, and CAA.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#LaserDisc>

**MII**

Definition: A cassette-based 1/2-inch analog videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#MII>

**MiniDV**

Definition: A cassette-based 1/4-inch digital videotape format. May also be known as DVC.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#MiniDV>

**Super Video CD**

Definition: A digital optical disc video format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#SuperVideoCD>

**U-matic**

Definition: A cassette-based 3/4-inch analog videotape format. May also be known as 3/4-inch tape. If desired, format information can be included after a colon, for example: “U-matic: S.” Types of U-matic include the smaller U-matic S and the high-quality U-matic SP.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Umatic>

**Universal Media Disc**

Definition: A digital optical disc video format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#UniversalMediaDisc>

**V-Cord**

Definition: A cassette-based 1/2-inch analog videotape format. If desired, format information can be included after a colon, for example: “V-Cord: I.” Types of V-Cord include V-Cord I and V-Cord II.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#VCord>

## **VHS**

Definition: A cassette-based 1/2-inch analog videotape format. If desired, format information can be included after a colon, for example: “VHS: S-VHS.” Types of VHS include S-VHS, W-VHS and VHS-C.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#VHS>

## **Video8**

Definition: A cassette-based 8mm analog videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#Video8>

## **VX**

Definition: A cassette-based 1/2-inch analog videotape format.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationphysical-video-vocabulary/#VX>

## **instantiationMediaType**

Usage: for instantiationMediaType

### **Moving Image**

Definition: Time-based media material experienced primarily visually, such as motion pictures or video recordings; may also include audio.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationmediatype-vocabulary/#MovingImage>

### **Audio**

Definition: Time-based media material experienced through sound, without a visual component, such as music recordings or radio programs.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationmediatype-vocabulary/#Audio>

## **instantiationGenerations**

Usage: for instantiationGenerations

**A-B rolls**

Definition: Reels of film used as an intermediate step in the production process to create transitions, fades and dissolves in the final production. Each roll contains distinct shots, with black leader in between to account for shots which will be dissolved in from other reels of film for the final production. Some film productions may utilize several such reels, labeled as A, B, C, D, etc. ‘A-B rolls’ should be used as a broad term for any such reels.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#ABRolls>

**Answer print**

Definition: The version of a film that is printed to film after color correction and with the sound properly synced to the picture, generally used as the last production element before final approval for release.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#AnswerPrint>

**Composite**

Definition: Refers to the combination of several original rolls or elements in one print or negative — for example, a reel with the combined sound and image or a composite track that includes music, effects and dialog.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Composite>

**Copy**

Definition: A general term for an item that has been reproduced or duplicated from an original instantiation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Copy>

**Copy: Access**

Definition: An instantiation of an asset, typically of low quality, that is designated by an archive or library for use by patrons, researchers, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#CopyAccess>

**Dub**

Definition: An analog copy from a film, videotape or audiotape master instantiation or earlier generation, typically involving some generation loss.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Dub>



**Duplicate**

Definition: An exact copy of another instantiation of an asset, generally digital, and involving no generation loss.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Duplicate>

**Fine cut**

Definition: A working edit of a film or program which contains the correct sequences in the correct order, but may still undergo revisions in scene and sequence order to refine the final visuals.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#FineCut>

**Intermediate**

Definition: A broad term for a reel of motion picture film, such as an intermediate positive or intermediate negative, that exists as a generational step between the original negative and a release print. This term should be used in conjunction with a generation element reading 'positive' or 'negative'. More specific terms may also be used, such as interpositive, IP or master positive for intermediate positive; internegative for intermediate negative; or CRI for color reversal intermediate.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Intermediate>

**Kinescope**

Definition: A recording of a live television program on motion picture film, used for the purpose of recording programs before the wide adoption of videotape.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Kinescope>

**Line cut**

Definition: A working edit of a program which is created by the use of a video-switcher to make an in-the-moment edited version of the live show.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#LineCut>

**Magnetic track**

Definition: An analog sound recording stored on a reel of film with a magnetic coating.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#MagneticTrack>

**Master**

Definition: A final product or item which is considered the highest quality version. A production master is intended for distribution; a preservation master is the designated highest-quality version of an item maintained in a library or archive for the purposes of long-term preservation.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Master>

**Master: distribution**

Definition: A version of an asset which is packaged for a specific form of distribution, and may include packaging elements such as trailers, teasers, logos, credits, opens, closes, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#MasterDistribution>

**Master: production**

Definition: The final edit of a given asset in its highest-quality format, which can be re-packaged for broadcast and distribution.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#MasterProduction>

**Mezzanine**

Definition: A version of an asset which is not the master, but is of high enough quality to be used for editing and to generate access copies.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Mezzanine>

**Negative**

Definition: A version of a film asset recorded with colors inverted. Most motion picture film is originally shot in negative.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Negative>

**Optical track**

Definition: An analog sound recording stored on film by printing a waveform on a film strip.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#OpticalTrack>

## Original

Definition: The first generation of an instantiation — either the material that came directly from the camera, in the case of raw footage, or, in the case of an edited master, the first master version created.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Original>

## Original footage

Definition: Raw footage that was shot directly on camera, before dubbing, editing, or reformatting.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#OriginalFootage>

## Original recording

Definition: Raw audio that was captured directly, before dubbing, editing or reformatting.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#OriginalRecording>

## Outs and trims

Definition: Negative or positive prints of materials used for the production of a motion picture film but not included in the final version, such as outtakes, second takes, tests, sound and dialogue tracks, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#OutsandTrims>

## Picture lock

Definition: A near-final edit of a film or program which contains the correct scenes and sequences in the correct order for the final version, but has not yet undergone post-production work.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#PictureLock>

## Positive

Definition: Film printed on stock that matches the colors and/or tonal values of those in the original subject matter.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Positive>

## Preservation

Definition: Typically the highest-quality version of an asset in the possession of a library or archive, which is not accessed, but instead kept for the purposes of long-term preservation. A preservation instantiation may be a preservation master, which is considered the original or most important version to preserve, or a preservation copy, which exists as an exact or near-exact duplicate of the preservation master in case of destruction or damage, and which is often used to make mezzanine or access copies.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Preservation>

## Print

Definition: A film that contains a positive image printed from a duplicate negative or a reversal film, intended for projection.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Print>

## Proxy file

Definition: A lower-quality instantiation of an asset, such as a preview, that is provided to allow users to review files before accessing the original. May be the same as an access copy.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#ProxyFile>

## Reversal

Definition: A type of moving image film that directly produces a positive image on the camera original, rather than a negative.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Reversal>

## Rough cut

Definition: An early edit of a film or program which contains the approximate shot selection and timing that will be used for the final version, but may still require significant editing for sound, color, titles, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#RoughCut>

## Separation master

Definition: A preservation instantiation for motion picture film which consists of three black-and-white copies, each filtered for one of the RGB spectrums.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#SeparationMaster>

### **Stock footage**

Definition: Film or video footage that was not created specifically for a program, but repurposed by the filmmakers from a pre-existing source. Generally licensed from a stock footage library or archive.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#StockFootage>

### **Submaster**

Definition: A full master version of a program that was copied from an existing video master, and may be used to create specialized master versions, such as a foreign language master or syndication master.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#Submaster>

### **Transcription disc**

Definition: A phonograph record intended for, or recorded from, a radio broadcast; used within the radio industry to distribute syndicated programs and preserve live broadcasts.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#TranscriptionDisc>

### **Work print**

Definition: A rough edit of a motion picture film used during the editing process, which contains the approximate shot selection and timing that will be used for the final version, but may still include placeholder clips and require significant editing for sound, animation, special effects, etc.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#WorkPrint>

### **Work tapes**

Definition: Unedited or partly edited pre-release or pre-broadcast audio or video recordings generated as part of the production process. Work tapes generally correspond to master material of original footage or stock footage. Recommended usage should be in conjunction with Original Footage or Original Recording.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#WorkTapes>

### **Work track**

Definition: A rough edit of a soundtrack which the editor uses to develop the final soundtrack.

URI: <http://pbcore.org/pbcore-controlled-vocabularies/instantiationgenerations-vocabulary/#WorkTrack>

## Sample Records

Demo PBCore records showing how to use each root element are included under the ‘PBCore Structure’ section of the Handbook. This section provides example real-world XML records gathered from organizations that are using PBCore. Each organization uses PBCore slightly differently to fit their specific needs.

**American Archive of Public Broadcasting Record:** This record is an example of the PBCore that underlies the American Archive of Public Broadcasting website, with digital instantiations represented.

```
<?xml version="1.0" encoding="UTF-8"?>
<pbcoreDescriptionDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
http://www.pbcore.org/PBCore/PBCoreSchema.xsd">
  <pbcoreAssetType>Program</pbcoreAssetType>
  <pbcoreAssetDate dateType="Broadcast">2002-00-00</pbcoreAssetDate>
  <pbcoreIdentifier source="http://americanarchiveinventory.org">cpb-
aacip/508-sf2m61cj57</pbcoreIdentifier>
  <pbcoreIdentifier source="VMM Inventory #">2013-00236</pbcoreIdentifier>
  <pbcoreIdentifier source="Sony
Ci">483c4c6536624dcd9c0d90143784323c</pbcoreIdentifier>
  <pbcoreTitle titleType="Title">The Great American Footrace</pbcoreTitle>
  <pbcoreDescription descriptionType="Program">Facing scorching
temperatures, 19-year-old Andy Payne, a small-town Cherokee boy, takes home
the gold after winning a grueling 3,422-mile foot race designed to bring
attention to the newly constructed Route 66 Highway. The race recounted in
this Emmy-nominated film became one of the wildest promotion schemes in
history, allowing Andy to win enough money to marry his girl and keep the
family farm.</pbcoreDescription>
  <pbcoreCreator>
    <creator>Bigbee, Dan</creator>
    <creatorRole>Producer</creatorRole>
  </pbcoreCreator>
  <pbcoreCreator>
    <creator>Shangreaux, Lilly</creator>
    <creatorRole>Producer</creatorRole>
  </pbcoreCreator>
  <pbcoreInstantiation>
    <instantiationIdentifier source="VMM Inventory #">2013-
00236</instantiationIdentifier>
    <instantiationPhysical>Digital Betacam</instantiationPhysical>
    <instantiationLocation>VMM Archives Vault - VHL 2 Shelf
D</instantiationLocation>
    <instantiationMediaType>Moving Image</instantiationMediaType>
    <instantiationGenerations>Master</instantiationGenerations>
    <instantiationDuration>0:56:46</instantiationDuration>
    <instantiationAnnotation annotationType="organization">Vision Maker
Media</instantiationAnnotation>
  </pbcoreInstantiation>
</pbcoreInstantiation>
```

```

    <instantiationIdentifier source="mediainfo">cpb-aacip-508-
sf2m61cj57.mp4</instantiationIdentifier>
    <instantiationIdentifier source="Sony
Ci">483c4c6536624dcd9c0d90143784323c</instantiationIdentifier>
    <instantiationIdentifier source="MD5
checksum">f04e8aa97a176860a2dbd437877abd84</instantiationIdentifier>
    <instantiationDate dateType="encoded">2016-12-06</instantiationDate>
    <instantiationDigital>video/mp4</instantiationDigital>
    <instantiationStandard>Base Media / Version 2</instantiationStandard>
    <instantiationLocation>N/A</instantiationLocation>
    <instantiationMediaType>Moving Image</instantiationMediaType>
    <instantiationGenerations>Proxy</instantiationGenerations>
    <instantiationFileSize unitsOfMeasure="MiB">796</instantiationFileSize>
    <instantiationDataRate unitsOfMeasure="950">1</instantiationDataRate>
    <instantiationTracks>1 video, 1 audio</instantiationTracks>
    <instantiationChannelConfiguration>2
channel</instantiationChannelConfiguration>
    <instantiationEssenceTrack>
    <essenceTrackType>video</essenceTrackType>
    <essenceTrackIdentifier
source="mediainfo">1</essenceTrackIdentifier>
    <essenceTrackStandard>NTSC</essenceTrackStandard>
    <essenceTrackEncoding ref="http://developers.videolan.org/x264.html"
source="mediainfo">AVC</essenceTrackEncoding>
    <essenceTrackDataRate unitsOfMeasure="821">1</essenceTrackDataRate>
    <essenceTrackFrameRate>29.970</essenceTrackFrameRate>
    <essenceTrackBitDepth>8</essenceTrackBitDepth>
    <essenceTrackFrameSize>1920 x 1080</essenceTrackFrameSize>
    <essenceTrackAspectRatio>16:10</essenceTrackAspectRatio>
    <essenceTrackDuration>00:57:04</essenceTrackDuration>
    <essenceTrackLanguage>eng</essenceTrackLanguage>
    <essenceTrackAnnotation
annotationType="colorspace">YUV</essenceTrackAnnotation>
    <essenceTrackAnnotation
annotationType="subsampling">4:2:0</essenceTrackAnnotation>
    </instantiationEssenceTrack>
    <instantiationEssenceTrack>
    <essenceTrackType>audio</essenceTrackType>
    <essenceTrackIdentifier
source="mediainfo">2</essenceTrackIdentifier>
    <essenceTrackEncoding source="mediainfo">AAC
LC</essenceTrackEncoding>
    <essenceTrackDataRate
unitsOfMeasure="kb/s">125</essenceTrackDataRate>
    <essenceTrackSamplingRate>48.0 kHz</essenceTrackSamplingRate>
    <essenceTrackDuration>00:57:04</essenceTrackDuration>
    <essenceTrackLanguage>eng</essenceTrackLanguage>
    </instantiationEssenceTrack>
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LTO">AB0001</instantiationAnnotation>
    <instantiationAnnotation annotationType="Preservation
Disk">ABDISK0002</instantiationAnnotation>
    <instantiationAnnotation annotationType="organization">American Archive
of Public Broadcasting</instantiationAnnotation>
    </pbcoreInstantiation>

```

```

    <pbcoreAnnotation annotationType="Transcript
URL">https://s3.amazonaws.com/americanarchive.org/transcripts/cpb-aacip-508-
sf2m61cj57/cpb-aacip-508-sf2m61cj57-transcript.json</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="Project Code">VM0001</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="Level of User Access">Online Reading
Room</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="special_collections">vision-maker-
media</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="Transcript
Status">Uncorrected</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="last_modified">2018-08-13
14:44:33</pbcoreAnnotation>
    <pbcoreAnnotation annotationType="organization">Vision Maker
Media</pbcoreAnnotation>
</pbcoreDescriptionDocument>

```

**CUNY Export from ProTrack:** This record is an example of a mapping performed by CUNY TV from ProTrack to export program metadata in PBCore. Note that in this example, instantiationLocation, a required element, is present to confirm to PBCore's specifications but contains no data.

```

<?xml version="1.0"?>
<pbcoreCollection xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
collectionDate="2018-05-24T15:04:29.135106-04:00">
  <pbcoreDescriptionDocument>
    <pbcoreAssetType>Episode</pbcoreAssetType>
    <pbcoreAssetDate dateType="broadcast" annotation="according to
ProTrack">2012-11-28T20:30:00</pbcoreAssetDate>
    <pbcoreIdentifier source="NOLA Code">INSO 000510</pbcoreIdentifier>
    <pbcoreIdentifier source="vsn_serial">4093</pbcoreIdentifier>
    <pbcoreTitle titleType="Series" annotation="unpreserved case">Independent
Sources</pbcoreTitle>
    <pbcoreTitle titleType="Episode" annotation="unpreserved case">Africa
Redux</pbcoreTitle>
    <pbcoreDescription descriptionType="GUIDE">On this edition of Independent
Sources, we take a look at President Obama's policies towards Africa. Then we
hear about an MIT doctoral student's global initiative to get high school
students more involved in community development projects in Sierra Leone.
Finally, we profile an immigrant artist organization fighting to get more
recognition for foreign artists. 12/3/12</pbcoreDescription>
    <pbcoreDescription descriptionType="Series">Independent Sources A studio-
based weekly news magazine with field segments about New York City's ethnic
and immigrant communities, and the media that cover them. The series seeks to
shed light on underreported stories and showcase guests who can offer lucid
perspectives on what's happening in these neighborhoods and
communities.</pbcoreDescription>
    <pbcoreDescription descriptionType="Version" annotation="unpreserved
case">12/3/2012</pbcoreDescription>
    <pbcoreInstantiation>
      <instantiationIdentifier
source="li_serial">3473</instantiationIdentifier>
      <instantiationIdentifier source="Media
ID">INS005010_V1</instantiationIdentifier>
      <instantiationDate dateType="availableStart">2012-09-
12T13:07:01</instantiationDate>

```



```

    <instantiationDate dateType="availableEnd" annotation=":-/">9999-12-
31T23:59:59</instantiationDate>
    <instantiationLocation/>
    <instantiationTimeStart>00:00:00:00</instantiationTimeStart>
    <instantiationDuration>00:29:30:01</instantiationDuration>
    <instantiationAnnotation
annotationType="accessRestriction">Restricted</instantiationAnnotation>
    </pbcoreInstantiation>
  </pbcoreDescriptionDocument>
</pbcoreCollection>

```

**Library of Congress MAVIS Export Mapped to PBCore:** This is an example of a PBCore-formatted export from MAVIS, the Merged Audio Visual Information System used for the Library of Congress' audiovisual catalog.

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<PBCoreDescriptionDocument
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xl="http://www.w3.org/1999/xlink"
xmlns:mv="http://www.wizardis.com.au/2005/12/MAVIS"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
http://www.pbcore.org/PBCore/PBCoreSchema.xsd">
  <pbcoreAssetType>Moving Image</pbcoreAssetType>
  <pbcoreAssetDate dateType="COPYRIGHT">1967-10-8</pbcoreAssetDate>
  <pbcoreIdentifier source="MAVIS Title Number">2000440</pbcoreIdentifier>
  <pbcoreIdentifier source="NET/PBS NOLA">CRPN</pbcoreIdentifier>
  <pbcoreIdentifier source="NET/PBS number">70</pbcoreIdentifier>
  <pbcoreTitle titleType="Preferred Title">Creative person. Fred
Rogers.</pbcoreTitle>
  <pbcoreTitle titleType="Alternate Title: Episode title">Fred
Rogers.</pbcoreTitle>
  <pbcoreTitle titleType="Alternate Title">Creative person. [No. 70], Fred
Rogers.</pbcoreTitle>
  <pbcoreSubject source="MAVIS Subject Authority List Library of Congress"
subjectType="Topic">Television personalities--United States--
Biography</pbcoreSubject>
  <pbcoreSubject source="MAVIS Subject Authority List Library of Congress"
subjectType="Topic">Children's television programs</pbcoreSubject>
  <pbcoreSubject source="MAVIS Name Authority List Library of Congress"
subjectType="About">Rogers, Fred</pbcoreSubject>
  <pbcoreDescription descriptionType="Original Summary">From NET microfiche:

```

Description of series:

This series focuses on the private vision of the creative person. Each program is devoted to a 20th century artist whose special qualities of imagination, taste, originality, intelligence, craftsmanship, and individuality have marked him as a pace-setter in his field. These artists -- whose fields span the entire gamut of the art world --- include film maker Jean Renoir, poet John Ciardi, industrial designer Raymond Loewy, Hollywood producer-director King Vidor, noted Broadway couple Ossie Davis and Ruby Dee, artist Leonard Baskin, humorist James Thurber, satirist Robert Osborn, Indian musician Ravi Shankar, poet P. G. Wodehouse, painter Georges Braque, former ballet star Olga Spessivtzeva, Rudolf Bing, and Marni Nixon.

The format for each program has been geared to the individual featured; Performance, interview, and documentary technique are employed interchangeably.

Program 70: Fred Rogers

Fred Rogers is a television phenomenon. He is a 39-year-old ordained minister, an educator, graduate musician, and a quiet, gentle, unselfconscious young man who possesses a mysterious and quite remarkable attraction for pre-school children.

When his daily half-hour program, "Mister Rogers' Neighborhood," was threatened with cancellation for lack of funds last spring in Boston, station WGBH-TV was deluged with protests. When Rogers himself made a personal appearance there, 6,000 pint-sized fans turned out to see him.

Since then, Rogers' program (a composite of songs, conversation, puppet neighbors, and people neighbors, palatable lessons and ideas) has attracted a Sears-Roebuck Foundation grant and will be a regular five-day-a-week children's feature on NET stations across the country this season.

This Creative Person film shows the man behind "Mister Rogers'," the television personality. Rogers is visited at his home, is seen at the studio rehearsing his television program and observed working with study groups. He talks about his feelings towards his own two children and explains his intense desire to find a means of communicating with children honestly on their own terms.

THE CREATIVE PERSON - FRED ROGERS was produced for National Educational Television by its Pittsburgh affiliate, WQED-TV. Matt von Brauchitsch, producer-writer; editor: N. Spies; narrator: William Francisco; camera: PJ O'Connell.

Producer for NET: Virginia Kassel

<pbcoreGenre source="MAVIS Genre Authority List Library of Congress">Biographical television programs (lcgft)</pbcoreGenre>

<pbcoreGenre source="MAVIS Genre Authority List Library of Congress">Cultural television programs (lcgft)</pbcoreGenre>

<pbcoreGenre source="MAVIS Genre Authority List Library of Congress">Documentary television programs (lcgft)</pbcoreGenre>

<pbcoreGenre source="MAVIS Genre Authority List Library of Congress">Nonfiction television programs (lcgft)</pbcoreGenre>

<pbcoreAnnotation annotationType="Note">Source used: PBS database (1994 list).; NET microfiche.

Record updated for NET cataloging. CMP 7/29/2017.</pbcoreAnnotation>

<pbcoreCreator>

<creator>WQED-TV ; for National Educational Television ; written and produced by M. Von Brauchitsch ; producer for NET, Virginia Kassel.</creator>

<creatorRole>Statement of Responsibility</creatorRole>

</pbcoreCreator>

<pbcoreContributor>

<contributor>Rogers, Fred</contributor>

<contributorRole>Appearing</contributorRole>

</pbcoreContributor>

<pbcoreContributor>

<contributor>National Educational Television and Radio Center</contributor>

<contributorRole>Broadcaster</contributorRole>

```

</pbcoreContributor>
<pbcoreCreator>
  <creator>WQED</creator>
  <creatorRole>Production Company</creatorRole>
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<pbcoreCreator>
  <creator>Brauchitsch, Matt von</creator>
  <creatorRole>Producer</creatorRole>
</pbcoreCreator>
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  <creator>Brauchitsch, Matt von</creator>
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<pbcoreCreator>
  <creator>Kassel, Virginia</creator>
  <creatorRole>Producer</creatorRole>
</pbcoreCreator>
<pbcoreContributor>
  <contributor>Francisco, William</contributor>
  <contributorRole>Narrator</contributorRole>
</pbcoreContributor>
<pbcoreInstantiation>
  <instantiationIdentifier source="MAVIS Component Number">2000440-
1</instantiationIdentifier>
  <instantiationIdentifier source="MAVIS Item
ID">5306498</instantiationIdentifier>
  <instantiationIdentifier source="NET/PBS number">598-11-
20</instantiationIdentifier>
  <instantiationIdentifier source="NET/PBS
number">CRPN</instantiationIdentifier>
  <instantiationLocation>Vault Site: Culpeper; RackNo: FBD
0587</instantiationLocation>
  <instantiationPhysical>Format: Safety Film; TypeMaterial: Black &
White film; TechCode: Composite Positive; Gauge: 16mm</instantiationPhysical>
  <instantiationStandard>Film</instantiationStandard>
  <instantiationMediaType>Moving Image</instantiationMediaType>
  <instantiationGenerations>Category: Access</instantiationGenerations>
  <instantiationDuration>0:29:9</instantiationDuration>
  <instantiationColors>Black & White film</instantiationColors>
  <instantiationLanguage>English</instantiationLanguage>
  <instantiationEssenceTrack>
    <essenceTrackType>Film</essenceTrackType>
  </instantiationEssenceTrack>
  <instantiationRelation>
    <instantiationRelationType>Copied To</instantiationRelationType>
    <instantiationRelationIdentifier source="MAVIS Component Number"
annotation="DigitalComponent Creative person. Fred Rogers.">2000440-
2</instantiationRelationIdentifier>
  </instantiationRelation>
  <instantiationRelation>
    <instantiationRelationType>Copied To</instantiationRelationType>
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annotation="DigitalComponent Creative person. Fred Rogers.">2000440-
3</instantiationRelationIdentifier>
  </instantiationRelation>
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```

    <instantiationRelationIdentifier source="MAVIS Component Number"
annotation="DigitalComponent Creative person. Fred Rogers.">2000440-
5</instantiationRelationIdentifier>
  </instantiationRelation>
  <instantiationRelation>
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annotation="DigitalComponent Creative person. Fred Rogers.">2000440-
4</instantiationRelationIdentifier>
  </instantiationRelation>
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Database; PBS-1994-Excel spreadsheet;

Title found on PBS-1994-Excel spreadsheet; therefore, assumed to be
associated with acquisition report 7916.</instantiationAnnotation>
  <instantiationAnnotation annotationType="Label Notes">r1 of
1</instantiationAnnotation>
  <instantiationPart>
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annotation="AcetateFilmCarrier 1 of 1">2000440-1-1</instantiationIdentifier>
    <instantiationIdentifier source="MAVIS Item ID"
annotation="AcetateFilmCarrier 1 of 1">5306499</instantiationIdentifier>
    <instantiationIdentifier source="NET/PBS rack number">598-11-
20</instantiationIdentifier>
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No.">F17396</instantiationIdentifier>
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Barcode">00416341965</instantiationIdentifier>
    <instantiationLocation>RackNo: FBD 0587</instantiationLocation>
    <instantiationDuration>0:29:9</instantiationDuration>
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annotation="DigitalCarrier Creative person. Fred Rogers.">2000440-3-
1</instantiationRelationIdentifier>
    </instantiationRelation>
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annotation="DigitalCarrier Creative person. Fred Rogers.">2000440-2-
1</instantiationRelationIdentifier>
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annotation="DigitalCarrier Creative person. Fred Rogers.">2000440-4-
1</instantiationRelationIdentifier>
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annotation="DigitalCarrier Creative person. Fred Rogers.">2000440-5-
1</instantiationRelationIdentifier>
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inventory #</instantiationAnnotation>
  </instantiationPart>

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```

</pbcoreInstantiation>
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urn:navcc:contentId:1116929</instantiationLocation>
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  <instantiationMediaType>Moving Image</instantiationMediaType>
  <instantiationGenerations>Category: Preservation
Copy</instantiationGenerations>
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  <instantiationLanguage>English</instantiationLanguage>
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  <instantiationIdentifier source="MAVIS Item ID"
annotation="DigitalCarrier 1 of 1">6658296</instantiationIdentifier>
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1">290f5bbb2aa2dbcd724af71d6f87369b15c20dd9</instantiationIdentifier>
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https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1116929</instantia
tionLocation>
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  <essenceTrackStandard>Video: M-JPEG 2000
Audio:</essenceTrackStandard>
  <essenceTrackEncoding>Video: M-JPEG 2000
Audio:</essenceTrackEncoding>
  </instantiationEssenceTrack>
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  <instantiationRelationType>Copied From</instantiationRelationType>
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  </instantiationPart>
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3</instantiationIdentifier>
  <instantiationIdentifier source="MAVIS Item
ID">6658297</instantiationIdentifier>
  <instantiationLocation>URL:
https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1116928; URN:
urn:navcc:contentId:1116928</instantiationLocation>

```

```

    <instantiationDigital>Video/MPEG4 HD</instantiationDigital>
    <instantiationMediaType>Moving Image</instantiationMediaType>
    <instantiationGenerations>Category: Access/Browsing
copy</instantiationGenerations>
    <instantiationFileSize
unitsOfMeasure="bytes">360958830</instantiationFileSize>
    <instantiationLanguage>English</instantiationLanguage>
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1</instantiationRelationIdentifier>
    </instantiationRelation>
    <instantiationPart>
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annotation="DigitalCarrier 1 of 1">2000440-3-1</instantiationIdentifier>
      <instantiationIdentifier source="MAVIS Item ID"
annotation="DigitalCarrier 1 of 1">6658298</instantiationIdentifier>
      <instantiationIdentifier source="checksum using SHA-
1">226adfeb719abc17acb41bff6597ce7f2690b822</instantiationIdentifier>
      <instantiationLocation>URL:
https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1116928</instantia
tionLocation>
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      <instantiationEssenceTrack>
        <essenceTrackType>Digital/Video</essenceTrackType>
        <essenceTrackStandard>Video: MPEG4 Audio:</essenceTrackStandard>
        <essenceTrackEncoding>Video: MPEG4 Audio:</essenceTrackEncoding>
      </instantiationEssenceTrack>
      <instantiationRelation>
        <instantiationRelationType>Copied From</instantiationRelationType>
        <instantiationRelationIdentifier source="MAVIS Carrier Number"
annotation="AcetateFilmCarrier Creative person. Fred Rogers.">2000440-1-
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    </instantiationPart>
  </pbcoreInstantiation>
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  <instantiationIdentifier source="MAVIS Item
ID">7066317</instantiationIdentifier>
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https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1207698; URN:
urn:navcc:contentId:1207698</instantiationLocation>
  <instantiationDigital>Video/JPEG2K 2K</instantiationDigital>
  <instantiationMediaType>Moving Image</instantiationMediaType>
  <instantiationGenerations>Category: Preservation
Copy</instantiationGenerations>
  <instantiationFileSize
unitsOfMeasure="bytes">236094216316</instantiationFileSize>
  <instantiationLanguage>English</instantiationLanguage>
  <instantiationRelation>
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    <instantiationIdentifier source="MAVIS Item ID"
annotation="DigitalCarrier 1 of 1">7066318</instantiationIdentifier>
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https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1207698</instantia
tionLocation>
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WAV</essenceTrackStandard>
      <essenceTrackEncoding>Video: M-JPEG 2000 Audio: Broadcast
WAV</essenceTrackEncoding>
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      <essenceTrackFrameRate>24 fps</essenceTrackFrameRate>
    </instantiationEssenceTrack>
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annotation="AcetateFilmCarrier Creative person. Fred Rogers.">2000440-1-
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  </instantiationPart>
</pbcoreInstantiation>
<pbcoreInstantiation>
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  <instantiationIdentifier source="MAVIS Item
ID">7066321</instantiationIdentifier>
  <instantiationLocation>URL:
https://navccwebp1.loc.gov:8080/navcc/content/view.seam?id=1207697; URN:
urn:navcc:contentId:1207697</instantiationLocation>
  <instantiationDigital>Video/MPEG4</instantiationDigital>
  <instantiationMediaType>Moving Image</instantiationMediaType>
  <instantiationGenerations>Category: Access/Browsing
copy</instantiationGenerations>
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unitsOfMeasure="bytes">361403638</instantiationFileSize>
  <instantiationLanguage>English</instantiationLanguage>
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    <instantiationRelationIdentifier source="MAVIS Component Number"
annotation="AcetateFilmComponent Creative person. Fred Rogers.">2000440-
1</instantiationRelationIdentifier>
  </instantiationRelation>
</instantiationPart>

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    <instantiationIdentifier source="MAVIS Carrier Number"
annotation="DigitalCarrier 1 of 1">2000440-5-1</instantiationIdentifier>
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annotation="DigitalCarrier 1 of 1">7066322</instantiationIdentifier>
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1">138ce4a73f768d8ade7626cf7dc7a5e5794fa58c</instantiationIdentifier>
    <instantiationLocation>URL:
https://navccwebpl.loc.gov:8080/navcc/content/view.seam?id=1207697</instantia
tionLocation>
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unitsOfMeasure="bytes">361403638</instantiationFileSize>
    <instantiationColors> Video Colour Space: SMPTE component
color</instantiationColors>
    <instantiationEssenceTrack>
    <essenceTrackType>Digital/Video</essenceTrackType>
    <essenceTrackStandard>Video: MPEG4 Audio: AAC</essenceTrackStandard>
    <essenceTrackEncoding>Video: MPEG4 Audio: AAC</essenceTrackEncoding>
    <essenceTrackFrameSize>720x480 Interlaced</essenceTrackFrameSize>
    <essenceTrackSamplingRate>48 kHz</essenceTrackSamplingRate>
    <essenceTrackFrameRate>30 fps</essenceTrackFrameRate>
    <essenceTrackAspectRatio>4:3 Standard TV
Frame</essenceTrackAspectRatio>
    </instantiationEssenceTrack>
    <instantiationRelation>
    <instantiationRelationType>Copied From</instantiationRelationType>
    <instantiationRelationIdentifier source="MAVIS Carrier Number"
annotation="AcetateFilmCarrier Creative person. Fred Rogers.">2000440-1-
1</instantiationRelationIdentifier>
    </instantiationRelation>
    </instantiationPart>
</pbcoreInstantiation>
</PBCoreDescriptionDocument>

```

**MediaInfo Digital Instantiation Record:** This record is an example of the PBCore 2.1 output from MediaInfo.

```

<?xml version="1.0" encoding="UTF-8"?>
<!-- Generated at 2019-11-21T14:51:34Z by MediaInfoLib - v18.12 -->
<pbcoreInstantiationDocument
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html">
    <instantiationIdentifier source="File
Name">IMG_9364.MOV</instantiationIdentifier>
    <instantiationDate dateType="recorded">2015-02-24T10:51:26-
0600Z</instantiationDate>
    <instantiationDate dateType="file modification">2015-02-
24T17:01:23Z</instantiationDate>
    <instantiationDate dateType="encoded">2015-02-
24T16:56:55Z</instantiationDate>
    <instantiationDate dateType="tagged">2015-02-
24T16:56:58Z</instantiationDate>
    <instantiationDigital>video/mp4</instantiationDigital>
    <instantiationStandard profile="QuickTime">MPEG-
4</instantiationStandard>

```



```

    <instantiationLocation>/Users/rebecca_fraimow/Downloads/IMG_9364.MOV</i
nstantiationLocation>
    <instantiationMediaType>Moving Image</instantiationMediaType>
    <instantiationFileSize
unitsOfMeasure="byte">1036927</instantiationFileSize>
    <instantiationDuration>00:00:10:08</instantiationDuration>
    <instantiationDataRate
unitsOfMeasure="bit/second">807733</instantiationDataRate>
    <instantiationTracks>2</instantiationTracks>
    <instantiationChannelConfiguration>Track 1: 1 channel
(C)</instantiationChannelConfiguration>
    <instantiationEssenceTrack>
        <essenceTrackType>Video</essenceTrackType>
        <essenceTrackIdentifier source="ID">2</essenceTrackIdentifier>
        <essenceTrackIdentifier source="StreamKindID
(MediaInfo)">0</essenceTrackIdentifier>
        <essenceTrackIdentifier source="StreamOrder
(MediaInfo)">1</essenceTrackIdentifier>
        <essenceTrackEncoding source="codecid" ref="avc1"
annotation="profile:Baseline@L3">AVC</essenceTrackEncoding>
        <essenceTrackDataRate
unitsOfMeasure="bit/second">737157</essenceTrackDataRate>
        <essenceTrackFrameRate
annotation="interlacement:Progressive">30.000</essenceTrackFrameRate>
        <essenceTrackBitDepth>8</essenceTrackBitDepth>
        <essenceTrackFrameSize>480x360</essenceTrackFrameSize>
        <essenceTrackAspectRatio>1.333</essenceTrackAspectRatio>
        <essenceTrackDuration>00:00:10:08</essenceTrackDuration>
        <essenceTrackAnnotation
annotationType="Format_Settings_CABAC">No</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Format_Settings_RefFrames">1</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Format_Settings_GOP">M=1,
N=30</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_Duration">10300</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Stored_Height">368</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Rotation">0.000</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="FrameCount">308</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_FrameCount">309</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="ColorSpace">YUV</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="ChromaSubsampling">4:2:0</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="StreamSize">946018</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_StreamSize">948785</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_StreamSize_Proportion">0.91500</essenceTrackAnnotation
>
        <essenceTrackAnnotation annotationType="Title">Core Media
Video</essenceTrackAnnotation>

```

```

        <essenceTrackAnnotation
annotationType="colour_description_present">Yes</essenceTrackAnnotation>
        <essenceTrackAnnotation
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Stream</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="colour_range">Limited</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="colour_range_Source">Stream</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="colour primaries">BT.601
NTSC</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="colour primaries_Source">Container /
Stream</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="transfer_characteristics">BT.709</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="transfer_characteristics_Source">Container /
Stream</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="matrix_coefficients">BT.601</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="matrix_coefficients_Source">Container /
Stream</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Codec configuration
box">avcC</essenceTrackAnnotation>
    </instantiationEssenceTrack>
    <instantiationEssenceTrack>
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        <essenceTrackIdentifier source="StreamKindID
(MediaInfo)">0</essenceTrackIdentifier>
        <essenceTrackIdentifier source="StreamOrder
(MediaInfo)">0</essenceTrackIdentifier>
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annotation="compression_mode:Lossy">AAC</essenceTrackEncoding>
        <essenceTrackDataRate unitsOfMeasure="bit/second"
annotation="CBR">64000</essenceTrackDataRate>
        <essenceTrackSamplingRate
unitsOfMeasure="Hz">44100</essenceTrackSamplingRate>
        <essenceTrackDuration>00:00:10:12</essenceTrackDuration>
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annotationType="Format_AdditionalFeatures">LC</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_Duration">10310</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="SamplesPerFrame">1024</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="FrameCount">442</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="Source_FrameCount">444</essenceTrackAnnotation>
        <essenceTrackAnnotation
annotationType="StreamSize">82094</essenceTrackAnnotation>
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annotationType="Source_StreamSize">82286</essenceTrackAnnotation>

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```

    <essenceTrackAnnotation
annotationType="Source_StreamSize_Proportion">0.07936</essenceTrackAnnotation
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Audio</essenceTrackAnnotation>
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annotationType="FrameCount">308</instantiationAnnotation>
    <instantiationAnnotation
annotationType="Encoded_Application">6.1.6</instantiationAnnotation>
    <instantiationAnnotation annotationType="Encoded_Library">Apple
QuickTime</instantiationAnnotation>
    <instantiationAnnotation
annotationType="Make">Apple</instantiationAnnotation>
    <instantiationAnnotation annotationType="Model">iPhone
3GS</instantiationAnnotation>
    <instantiationAnnotation
annotationType="com.apple.quicktime.make">Apple</instantiationAnnotation>
    <instantiationAnnotation
annotationType="com.apple.quicktime.creationdate">2015-02-24T10:51:26-
0600</instantiationAnnotation>
    <instantiationAnnotation
annotationType="com.apple.quicktime.software">6.1.6</instantiationAnnotation>
    <instantiationAnnotation
annotationType="com.apple.quicktime.model">iPhone
3GS</instantiationAnnotation>
</pbcoreInstantiationDocument>

```

**Yale Audio and Video Records:** These records, contributed by Yale University Library, represent an audio and a video asset from their mass digitization project. Their audio PBCore was developed with the help of George Blood Audio Video Film Data, and their video PBCore with the assistance of Media Preserve.

### Audio Record

```

<?xml version="1.0" encoding="UTF-8"?>
<pbcoreCollection xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
http://pbcore.org/xsd/pbcore-2.0.xsd" collectionTitle="Robert Shaw Papers"
collectionDescription="" collectionRef="" collectionDate="">
    <pbcoreDescriptionDocument>
        <pbcoreAssetType>12 inch lacquer disc</pbcoreAssetType>
        <pbcoreAssetDate dateType="Item Creation
Date">1948</pbcoreAssetDate>
        <pbcoreIdentifier source="Yale University Library"
annotation="ArchivesSpace
ID"/>/repositories/6/archival_objects/2685917</pbcoreIdentifier>
        <pbcoreIdentifier source="Yale University Library"
annotation="Call #">mss_86</pbcoreIdentifier>
        <pbcoreTitle
titleType="Filename">mss_86_39002126525667_39002126525444</pbcoreTitle>
        <pbcoreSubject/>

```

```

        <pbcoreDescription descriptionType="Display Title">Part 1: My
Romance, Part 2: Men of Horlech[?]; The Robert Shaw
Chorale</pbcoreDescription>
        <pbcoreRightsSummary>
            <rightsSummary source="Yale University Library"
annotation="Originator ">CtY-Gilmore Music</rightsSummary>
        </pbcoreRightsSummary>
        <pbcoreInstantiation>
            <!-- Physical Asset -->
            <instantiationIdentifier source="Yale University Library"
annotation="Item Barcode">39002126525444</instantiationIdentifier>
            <instantiationDate dateType="Item Creation
Date">1948</instantiationDate>
            <instantiationPhysical>12 inch lacquer
disc</instantiationPhysical>
            <instantiationStandard/>
            <instantiationLocation>
                <!-- Required Field -->
            </instantiationLocation>
            <instantiationMediaType>Sound</instantiationMediaType>
            <instantiationGenerations>Master</instantiationGenerations>
            <instantiationDuration>00:07:41</instantiationDuration>
            <instantiationTracks>2 audio tracks</instantiationTracks>
            <instantiationChannelConfiguration>Stereo; Ch1,
Ch2</instantiationChannelConfiguration>
            <instantiationLanguage source="ISO
639.2">eng</instantiationLanguage>
            <instantiationEssenceTrack>
                <essenceTrackType>Audio</essenceTrackType>
                <essenceTrackPlaybackSpeed
unitsOfMeasure="rpm">78</essenceTrackPlaybackSpeed>
            </instantiationEssenceTrack>
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Manufacturer">Soundcraft_Playback</instantiationAnnotation>
            <instantiationAnnotation annotationType="Stylus Type and
Size">ET 2.0</instantiationAnnotation>
            <instantiationAnnotation annotationType="Physical Condition
of Item">Cleaned Disc</instantiationAnnotation>
            <instantiationAnnotation annotationType="YU Quality
Control"/>
            <instantiationAnnotation annotationType="Transfer
Comments">Transferred by Brian Destremps; ; Audio Pops and/or Clicks, Audio
Hiss</instantiationAnnotation>
            <instantiationPart>
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Library" annotation="Item
Barcode">mss_86_39002126525667_39002126525444_a</instantiationIdentifier>
                <instantiationLocation>
                    <!-- Required Field -->
                </instantiationLocation>

                <instantiationDuration>00:03:12</instantiationDuration>
                <instantiationEssenceTrack>
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unitsOfMeasure="rpm">78</essenceTrackPlaybackSpeed>
                </instantiationEssenceTrack>

```

```

        </instantiationPart>
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Library" annotation="Item
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            <instantiationLocation>
                <!-- Required Field -->
            </instantiationLocation>

            <instantiationDuration>00:04:29</instantiationDuration>
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unitsOfMeasure="rpm">78</essenceTrackPlaybackSpeed>
            </instantiationEssenceTrack>
        </instantiationPart>
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    <pbcoreInstantiation>
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Film">mss_86_39002126525667_39002126525444.mst</instantiationIdentifier>
        <instantiationDate>2018-07-31</instantiationDate>
        <instantiationDigital>audio/vnd.wave</instantiationDigital>
        <instantiationStandard>Linear PCM
Audio</instantiationStandard>
        <instantiationLocation>
            <!-- required field -->
        </instantiationLocation>
        <instantiationMediaType>Sound</instantiationMediaType>
        <instantiationGenerations>Preservation
Master</instantiationGenerations>
        <instantiationTracks>2 audio tracks</instantiationTracks>
        <instantiationChannelConfiguration>Stereo; Ch1,
Ch2</instantiationChannelConfiguration>
        <instantiationLanguage source="ISO
639.2">eng</instantiationLanguage>
        <instantiationPart>
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Video Film" annotation="File
Name">mss_86_39002126525667_39002126525444_a.mst.wav</instantiationIdentifier
>
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Video Film 2018-08-01" annotation="messageDigest"
version="MD5">6cda114820548cb2b42eb2da03c53e84</instantiationIdentifier>
                <instantiationDate>2018-07-31</instantiationDate>
                <instantiationLocation>
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unitsOfMeasure="MiB">105</instantiationFileSize>

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                <essenceTrackStandard>Wave</essenceTrackStandard>

```

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        <essenceTrackSamplingRate
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ier>
        </instantiationRelation>
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Application">MIO Console 5.5.01.208</instantiationAnnotation>
        <instantiationAnnotation annotationType="Source
Deck">Technics_SP-15; DA9J05A043</instantiationAnnotation>
        <instantiationAnnotation
annotationType="Digitizer">MetricHalo_LIO8; 2601001</instantiationAnnotation>
        <instantiationAnnotation annotationType="Quality
Control">Quality Control was performed by George Blood Audio/Video/Film and
included a spot check of content, as well as the validation of the folder
nest, file name, duration, format variation, and
metadata</instantiationAnnotation>
    </instantiationPart>
    <instantiationPart>
        <instantiationIdentifier source="George Blood Audio
Video Film" annotation="File
Name">mss_86_39002126525667_39002126525444_b.mst.wav</instantiationIdentifier
>
        <instantiationIdentifier source="George Blood Audio
Video Film 2018-08-01" annotation="messageDigest"
version="MD5">033749b9fc90ae2984c15999f711461b</instantiationIdentifier>
        <instantiationDate>2018-07-31</instantiationDate>
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unitsOfMeasure="MiB">148</instantiationFileSize>
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        <essenceTrackBitDepth>24</essenceTrackBitDepth>
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ier>
        </instantiationRelation>

```

```

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        <instantiationAnnotation annotationType="Source
Deck">Technics_SP-15; DA9J05A043</instantiationAnnotation>
        <instantiationAnnotation
annotationType="Digitizer">MetricHalo_LI08; 2601001</instantiationAnnotation>
        <instantiationAnnotation annotationType="Quality
Control">Quality Control was performed by George Blood Audio/Video/Film and
included a spot check of content, as well as the validation of the folder
nest, file name, duration, format variation, and
metadata</instantiationAnnotation>
        </instantiationPart>
    </pbcoreInstantiation>
    <pbcoreInstantiation>
        <!-- Access -->
        <instantiationIdentifier source="George Blood Audio Video
Film">mss_86_39002126525667_39002126525444.u</instantiationIdentifier>
        <instantiationDate>2018-07-31</instantiationDate>
        <instantiationDigital>audio/mpeg</instantiationDigital>
        <instantiationLocation>
            <!-- required field -->
        </instantiationLocation>
        <instantiationMediaType>Sound</instantiationMediaType>
        <instantiationGenerations>Access</instantiationGenerations>
        <instantiationTracks>2 audio tracks</instantiationTracks>
        <instantiationChannelConfiguration>Stereo; Ch1,
Ch2</instantiationChannelConfiguration>
        <instantiationLanguage source="ISO
639.2">eng</instantiationLanguage>
        <instantiationPart>
            <instantiationIdentifier source="George Blood Audio
Video Film" annotation="File
Name">mss_86_39002126525667_39002126525444_a.u.mp3</instantiationIdentifier>
            <instantiationIdentifier source="George Blood Audio
Video Film 2018-08-01" annotation="messageDigest"
version="MD5">d6a74315ad41689c9289e1a94588ba5e</instantiationIdentifier>
            <instantiationDate>2018-07-31</instantiationDate>
            <instantiationLocation>
                <!-- required field -->
            </instantiationLocation>
            <instantiationFileSize
unitsOfMeasure="MiB">7.33</instantiationFileSize>

            <instantiationDuration>00:03:12</instantiationDuration>
            <instantiationEssenceTrack>
                <essenceTrackType>Audio</essenceTrackType>
                <essenceTrackStandard>MPEG
Audio</essenceTrackStandard>
                <essenceTrackDataRate
unitsOfMeasure="Kbps">320</essenceTrackDataRate>
                <essenceTrackSamplingRate
unitsOfMeasure="kHz">44.1</essenceTrackSamplingRate>
                <essenceTrackAnnotation>Compression
Mode:Lossy</essenceTrackAnnotation>
            </instantiationEssenceTrack>
        </instantiationRelation>

```

```

        <instantiationRelationType source="PBCore
relationType">Derived from</instantiationRelationType>
        <instantiationRelationIdentifier
annotation="File
Name">mss_86_39002126525667_39002126525444_a.mst.wav</instantiationRelationId
entifier>
                </instantiationRelation>
                <instantiationAnnotation annotationType="Quality
Control">Quality Control was performed by George Blood Audio/Video/Film and
included a spot check of content, as well as the validation of the folder
nest, file name, duration, format variation, and
metadata</instantiationAnnotation>
                </instantiationPart>
                <instantiationPart>
                        <instantiationIdentifier source="George Blood Audio
Video Film" annotation="File
Name">mss_86_39002126525667_39002126525444_b.u.mp3</instantiationIdentifier>
                        <instantiationIdentifier source="George Blood Audio
Video Film 2018-08-01" annotation="messageDigest"
version="MD5">ba5ab35e45135e8b7872f080ad59919d</instantiationIdentifier>
                        <instantiationDate>2018-07-31</instantiationDate>
                        <instantiationLocation>
                                <!-- required field -->
                        </instantiationLocation>
                        <instantiationFileSize
unitsOfMeasure="MiB">10.3</instantiationFileSize>

                <instantiationDuration>00:04:29</instantiationDuration>
                <instantiationEssenceTrack>
                        <essenceTrackType>Audio</essenceTrackType>
                        <essenceTrackStandard>MPEG
Audio</essenceTrackStandard>
                        <essenceTrackDataRate
unitsOfMeasure="Kbps">320</essenceTrackDataRate>
                        <essenceTrackSamplingRate
unitsOfMeasure="kHz">44.1</essenceTrackSamplingRate>
                        <essenceTrackAnnotation>Compression
Mode:Lossy</essenceTrackAnnotation>
                </instantiationEssenceTrack>
                <instantiationRelation>
                        <instantiationRelationType source="PBCore
relationType">Derived from</instantiationRelationType>
                        <instantiationRelationIdentifier
annotation="File
Name">mss_86_39002126525667_39002126525444_b.mst.wav</instantiationRelationId
entifier>
                                </instantiationRelation>
                                <instantiationAnnotation annotationType="Quality
Control">Quality Control was performed by George Blood Audio/Video/Film and
included a spot check of content, as well as the validation of the folder
nest, file name, duration, format variation, and
metadata</instantiationAnnotation>
                                </instantiationPart>
                                </pbcoreInstantiation>
                                <pbcoreAnnotation annotationType="YU Quality Control"/>
                                </pbcoreDescriptionDocument>
                </pbcoreCollection>

```



## Video Record

```

<?xml version="1.0" encoding="UTF-8"?>
<pbcoreCollection xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.pbcore.org/PBCore/PBCoreNamespace.html
  https://raw.githubusercontent.com/WGBH/PBCore_2.1/master/pbcore-2.1.xsd"
  collectionSource="Yale University Libraries"
  collectionTitle="School of Architecture Yale University
lectures and presentations">
  <pbcoreDescriptionDocument>
    <pbcoreAssetType>Media Object</pbcoreAssetType>
    <pbcoreAssetDate dateType="Created">4/10/2008</pbcoreAssetDate>
    <pbcoreIdentifier source="Yale University Libraries"
  annotation="Filename">ru_0880_s2008-a-115_b018</pbcoreIdentifier>
    <pbcoreIdentifier source="Yale University Libraries"
  annotation="Originator">CtY-MSSA</pbcoreIdentifier>
    <pbcoreIdentifier source="Yale University Libraries" annotation="Call
  Number">ru_0880</pbcoreIdentifier>
    <pbcoreIdentifier source="Yale University Libraries"
  annotation="ASpaceID">archival_objects/965265</pbcoreIdentifier>
    <pbcoreIdentifier source="Yale University Libraries" annotation="Item
  Barcode">39002075241167</pbcoreIdentifier>
    <pbcoreTitle titleType="Main">Frank O. Gehry Eero Saarinen Visiting
  Professor "Work" 2008 April 10</pbcoreTitle>
    <pbcoreDescription>Yale Identifiers</pbcoreDescription>
    <pbcorePart>
      <pbcoreIdentifier source="Yale University Libraries"
  annotation="Filename">ru_0880_s2008-a-115_b018</pbcoreIdentifier>
      <pbcoreTitle titleType="Main">Frank O. Gehry Eero Saarinen Visiting
  Professor "Work" 2008 April 10</pbcoreTitle>
      <pbcoreDescription>Yale Filename and Title</pbcoreDescription>
      <pbcoreInstantiation><!--Physical Asset and Capture History-->
        <instantiationIdentifier source="Yale University Libraries"
  annotation="Identifier">ru_0880_s2008-a-115_b018</instantiationIdentifier>
        <instantiationPhysical>DVCAM</instantiationPhysical>
        <instantiationLocation><!--Required Field-->
      </instantiationLocation>
        <instantiationDuration>00:57:31</instantiationDuration>
        <instantiationColors>Color</instantiationColors>
        <instantiationTracks>Sound</instantiationTracks>
        <instantiationChannelConfiguration>SplitCh1: Mono; Ch2:
  Mono</instantiationChannelConfiguration>
        <instantiationEssenceTrack>
          <essenceTrackType>Video</essenceTrackType>
          <essenceTrackFrameRate
  unitsOfMeasure="fps">29.97</essenceTrackFrameRate>
          <essenceTrackAspectRatio>4:3</essenceTrackAspectRatio>
        </instantiationEssenceTrack>
        <instantiationAnnotation annotationType="Stock
  Manufacturer">Sony</instantiationAnnotation>
        <instantiationAnnotation annotationType="Tape
  Model">DVCAM</instantiationAnnotation>
        <instantiationAnnotation annotationType="Tape Type"/>
    </pbcorePart>
  </pbcoreDescriptionDocument>
</pbcoreCollection>

```

```

        <instantiationAnnotation annotationType="Reel Size">124
min.</instantiationAnnotation>
        <instantiationAnnotation annotationType="Physical condition of
item"/>
        <instantiationAnnotation
annotationType="PictureQuality">Good</instantiationAnnotation>
        <instantiationAnnotation annotationType="Audio
Quality">Good</instantiationAnnotation>
        <instantiationAnnotation annotationType="Noise
Reduction">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Source Deck Type">DVCAM
/ MiniDV / DV Cassette Recorder</instantiationAnnotation>
        <instantiationAnnotation annotationType="Source Deck
Manufacturer">Sony</instantiationAnnotation>
        <instantiationAnnotation annotationType="Source Deck Model">HVR-
M35U</instantiationAnnotation>
        <instantiationAnnotation annotationType="Studio Transfer
Method">Firewire</instantiationAnnotation>
        <instantiationAnnotation annotationType="Source Deck Serial
Number">0110138</instantiationAnnotation>
        <instantiationAnnotation annotationType="Video Correction Device
Manufacturer">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Video Correction Device
Model Name">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Video Correction Device
Model Version">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Video Correction Device
Model Serial Number">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Transfer
Comments">Successful Native DV Ingest;Channel1 Mono; Channel2
Mono;</instantiationAnnotation>
    </pbcoreInstantiation>
    <pbcoreInstantiation><!--Preservation Master-->
        <instantiationIdentifier source="The MediaPreserve"
annotation="file name">ru_0880_s2008-a-
115_b018.mst.dv</instantiationIdentifier>
        <instantiationIdentifier source="The MediaPreserve" version="MD5"
annotation="checksum">F1A348855E9559754B75E532EFD83FB6</instantiationIdentifi
er>
        <instantiationDate>UTC 2019-04-02 15:50:35</instantiationDate>
        <instantiationDigital source="PRONOM Technical Registry"/>
        <instantiationStandard>dv</instantiationStandard>
        <instantiationLocation><!--Required Field--
></instantiationLocation>
        <instantiationMediaType>Moving Image</instantiationMediaType>
        <instantiationGenerations>Preservation
Master</instantiationGenerations>
        <instantiationFileSize
unitsOfMeasure="GB">11.55</instantiationFileSize>
        <instantiationColors>Color</instantiationColors>
        <instantiationTracks>Sound</instantiationTracks>
        <instantiationChannelConfiguration>SplitCh1: Mono; Ch2:
Mono</instantiationChannelConfiguration>
        <instantiationEssenceTrack>
            <essenceTrackType>Video</essenceTrackType>
            <essenceTrackDataRate
unitsOfMeasure="Mbps">24.4</essenceTrackDataRate>

```

```

        <essenceTrackFrameRate
unitsOfMeasure="fps">29.97</essenceTrackFrameRate>
        <essenceTrackBitDepth>8</essenceTrackBitDepth>
        <essenceTrackAspectRatio>4:3</essenceTrackAspectRatio>
        <essenceTrackTimeStart>00:00:00</essenceTrackTimeStart>
        <essenceTrackDuration>00:57:31</essenceTrackDuration>
        <essenceTrackAnnotation annotationType="Frame
Count">103433</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Scan
Type">Interlaced</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Color
Sampling">4:1:1</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Frame Size
Vertical">480</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Frame Size
Horizontal">720</essenceTrackAnnotation>
        </instantiationEssenceTrack>
        <instantiationEssenceTrack>
        <essenceTrackType>Audio</essenceTrackType>
        <essenceTrackStandard>PCM</essenceTrackStandard>
        <essenceTrackSamplingRate
unitsOfMeasure="kHz">48</essenceTrackSamplingRate>
        <essenceTrackBitDepth>16</essenceTrackBitDepth>
        <essenceTrackAnnotation annotationType="Audio Bit
Rate">1536Kbps</essenceTrackAnnotation>
        <essenceTrackAnnotation annotationType="Audio
Schema">Uncompressed</essenceTrackAnnotation>
        </instantiationEssenceTrack>
        <instantiationRelation>
        <instantiationRelationType source="PBCore
relationType">Derived from</instantiationRelationType>
        <instantiationRelationIdentifier annotation="Object
Identifier">ru_0880_s2008-a-115_b018</instantiationRelationIdentifier>
        </instantiationRelation>
        <instantiationAnnotation annotationType="Quality Control">Quality
Control was performed by MediaPreserve engineers, with Digimetrics Quality
Control.</instantiationAnnotation>
        <instantiationAnnotation annotationType="Computer
Manufacturer">Apple</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer Name">Mac
Mini</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer
Version">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer
Build">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Operating System">MAC OS
X</instantiationAnnotation>
        <instantiationAnnotation annotationType="Operating System
Version">Mac OS X v10.9.4</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Manufacturer">Square Box</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Name">CatDV Live Capture Plus</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Version">2.2.0</instantiationAnnotation>
        </pbcoreInstantiation>
        <pbcoreInstantiation><!--Access Copy-->

```

```

    <instantiationIdentifier source="The MediaPreserve"
annotation="file name">ru_0880_s2008-a-
115_b018.u.mp4</instantiationIdentifier>
    <instantiationIdentifier source="The MediaPreserve" version="MD5"
annotation="checksum">3280D2848306FA8E02778404B09BB639</instantiationIdentifi
er>
    <instantiationDate>UTC 2019-04-26 21:32:42</instantiationDate>
    <instantiationDigital source="PRONOM Technical
Registry">fmt/199</instantiationDigital>
    <instantiationStandard>AVC Main@L3 - avc1</instantiationStandard>
    <instantiationLocation><!--Required Field--
></instantiationLocation>
    <instantiationMediaType>Moving Image</instantiationMediaType>
    <instantiationGenerations>Access Copy</instantiationGenerations>
    <instantiationFileSize
unitsOfMeasure="GB">2.21</instantiationFileSize>
    <instantiationDuration>00:57:31</instantiationDuration>
    <instantiationColors>Color</instantiationColors>
    <instantiationTracks>Sound</instantiationTracks>
    <instantiationChannelConfiguration>SplitCh1: Mono; Ch2:
Mono</instantiationChannelConfiguration>
    <instantiationEssenceTrack>
    <essenceTrackType>Video</essenceTrackType>
    <essenceTrackDataRate
unitsOfMeasure="Mbps">5</essenceTrackDataRate>
    <essenceTrackFrameRate
unitsOfMeasure="fps">29.97</essenceTrackFrameRate>
    <essenceTrackBitDepth>8</essenceTrackBitDepth>
    <essenceTrackAspectRatio>4:3</essenceTrackAspectRatio>
    <essenceTrackTimeStart>00:00:00</essenceTrackTimeStart>
    <essenceTrackDuration>00:57:31</essenceTrackDuration>
    <essenceTrackAnnotation annotationType="Frame
Count">103433</essenceTrackAnnotation>
    <essenceTrackAnnotation annotationType="Scan
Type">Progressive</essenceTrackAnnotation>
    <essenceTrackAnnotation annotationType="Color
Sampling">4:2:0</essenceTrackAnnotation>
    <essenceTrackAnnotation annotationType="Frame Size
Vertical">480</essenceTrackAnnotation>
    <essenceTrackAnnotation annotationType="Frame Size
Horizontal">720</essenceTrackAnnotation>
    </instantiationEssenceTrack>
    <instantiationEssenceTrack>
    <essenceTrackType>Audio</essenceTrackType>
    <essenceTrackStandard>AAC (Low
Complexity)</essenceTrackStandard>
    <essenceTrackSamplingRate
unitsOfMeasure="kHz">44.1</essenceTrackSamplingRate>
    <essenceTrackBitDepth/>
    <essenceTrackAnnotation annotationType="Audio Bit
Rate">256Kbps</essenceTrackAnnotation>
    <essenceTrackAnnotation annotationType="Audio
Schema">Compressed</essenceTrackAnnotation>
    </instantiationEssenceTrack>
    <instantiationRelation>
    <instantiationRelationType source="PBCore
relationType">Derived from</instantiationRelationType>

```

```

        <instantiationRelationIdentifier annotation="Object
Identifier">ru_0880_s2008-a-115_b018.mst.dv</instantiationRelationIdentifier>
        </instantiationRelation>
        <instantiationAnnotation annotationType="Quality Control">Quality
Control was performed by MediaPreserve
engineers, with with
                Digimetrics Quality
Control.</instantiationAnnotation>
        <instantiationAnnotation annotationType="Computer
Manufacturer">Dell</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer
Name">Precision</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer
Version">T5600</instantiationAnnotation>
        <instantiationAnnotation annotationType="Host Computer
Build">N/A</instantiationAnnotation>
        <instantiationAnnotation annotationType="Operating
System">Windows Server</instantiationAnnotation>
        <instantiationAnnotation annotationType="Operating System
Version">2012 R2 Standard</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Manufacturer">Telestream</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Name">Vantage</instantiationAnnotation>
        <instantiationAnnotation annotationType="Encode Software
Version">7.1.172</instantiationAnnotation>
        </pbcoreInstantiation>
    </pbcorePart>
</pbcoreDescriptionDocument>
</pbcoreCollection>

```

## Acknowledgements

WGBH thanks the National Endowment for the Humanities for their support of the PBCore Development and Training Project (PR-253384-17).

Created in 1965 as an independent federal agency, the National Endowment for the Humanities supports research and learning in history, literature, philosophy, and other areas of the humanities by funding selected, peer-reviewed proposals from around the nation. Additional information about the National Endowment for the Humanities and its grant programs is available at: [www.neh.gov](http://www.neh.gov).

WGBH also would like to thank the members of the PBCore Development and Training Project Advisory Committee, including Rebecca Guenther, Julie Hardesty, Morgan Morel, and Kara van Malssen.

PBCore would not be possible without the generous support of volunteers from the Association of Moving Image Archivists' (AMIA) PBCore Advisory Sub-Committee.

## Appendix A: PBCore 2.1 XML Schema and Process History

```

<?xml version="1.0" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
  targetNamespace="http://www.pbcore.org/PBCore/PBCoreNamespace.html"
  elementFormDefault="qualified" version="2.1draft3">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">This is the PBCore version 2.1draft3
XML schema. All element descriptions can be found at
http://www.pbcore.org</xsd:documentation>
  </xsd:annotation>
  <!-- Change Log:
20150717
- Added the 'source, ref, version, annotation' collection of attributes
to all elements where they are not yet currently available.
- Added supplemental attribute groups 'titleTypeSource, titleTypeRef,
titleTypeVersion, titleTypeAnnotation'; 'subjectTypeSource, subjectTypeRef,
subjectTypeVersion, subjectTypeAnnotation'; 'descriptionTypeSource,
descriptionTypeRef,
descriptionTypeVersion, descriptionTypeAnnotation'; 'segmentTypeSource,
segmentTypeRef, segmentTypeVersion, segmentTypeAnnotation';
'affiliationSource, affiliationRef, affiliationVersion,
affiliationAnnotation'; and 'partTypeSource, partTypeRef, partTypeVersion,
and partTypeAnnotation' to allow for the sourcing of information in the
'titleType,' 'subjectType,' 'descriptionType,' 'segmentType', 'affiliation'
and 'partType' attributes.
- Updated descriptions for all elements and attributes.
-->
  <!-- the pbcoreCollection root element -->
  <xsd:element name="pbcoreCollection" type="pbcoreCollectionType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The pbcoreCollection
element groups multiple pbcoreDescriptionDocument XML into one container
element to allow for a serialized output. Uses might include API returns or
other web service output.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: This element is
not intended to be equivalent to the archive/library concept of a
'collection.' Please see pbcoreAssetType for information on how PBCore can be
used to express information about collections. The element is only applicable
to XML expressions of PBCore. This container enables a similar function to
RSS; pbcoreCollection would be similar to rss:channel and pbcoreDescription
document to rss:item.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcoreDescriptionDocument root element -->
  <xsd:element name="pbcoreDescriptionDocument"
type="pbcoreDescriptionDocumentType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: the
pbcoreDescriptionDocument element is a root XML element for the expression of
an individual PBCore record. pbcoreDescriptionDocument can be used to
express intellectual content only (e.g. a series or collection level record
with no associated instantiations), or intellectual content with one or more
instantiations (e.g. an episode of a program with copies/instantiations on

```

```

videotape and digital file). This element is only applicable to XML
expressions of PBCore.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<!-- the pbcoreInstantiationDocument root element -->
<xsd:element name="pbcoreInstantiationDocument" type="instantiationType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
pbcoreInstantiation element is the equivalent of the instantiation element,
but used for the expression of an instantiation record at the root of an XML
document. This is most commonly used when referenced from other schemas, or
if you want to create and express a single, stand-alone
instantiation.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: This is most
commonly used when Intellectual Content (in other words, descriptive
metadata) is not expressed using PBCore, but rather another standard such as
MODS or Dublin Core.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<!-- the pbcoreCollectionType -->
<xsd:complexType name="pbcoreCollectionType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
pbcoreCollectionType schema type allows the addition of attributes that
describe the PBCoreCollection. The attributes define the title, the
description, the source, the reference and the date of the
collection.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element maxOccurs="unbounded" minOccurs="1"
ref="pbcoreDescriptionDocument">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
pbcoreDescriptionDocument element assembles together all of PBCore knowledge
items into a single data record organized in a hierarchical structure. For
PBCore these knowledge items are metadata descriptions of media, including
all the knowledge items and metadata terms and values associated with its
content and containers.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
  <xsd:attribute name="collectionTitle" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
collectionTitle attribute is a title or label for the group of individual
serialized XML records contained within one pbcoreCollection
element.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attribute name="collectionDescription" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
collectionDescription attribute is a description group of individual
serialized XML records contained within one pbcoreCollection
element.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>

```



```

    <xsd:attribute name="collectionSource" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
collectionSource attribute indicates an organization, application, or
individual for group of individual XML records contained within a
pbcoreCollection element.</xsd:documentation>
      </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="collectionRef" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
collectionRef attribute provides a URL for the source organization,
application, or individual for a group of XML records contained within a
pbcoreCollection element.</xsd:documentation>
      </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="collectionDate" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
collectionDate attribute provides the date of of creation for a
pbcoreCollection XML document.</xsd:documentation>
      </xsd:annotation>
    </xsd:attribute>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
  </xsd:complexType>
  <!-- pbcoreDescriptionDocumentType -->
  <xsd:complexType name="pbcoreDescriptionDocumentType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
pbcoreDescriptionDocumentType schema type allows its use as a single asset or
repeated use in the pbcoreCollection.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <!-- the pbcore asset type -->
      <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreAssetType"
      type="sourceVersionStringType">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
pbcoreAssetType element is a broad definition of the type of intellectual
content being described. Asset types might include those without associated
instantiations (a collection or series), or those with instantiations
(programs, episodes, clips, etc.)" </xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: The asset
type should broadly describe all related instantiations -- for example, if an
asset includes many instantiations representing different generations of a
program, the asset type 'program' remains accurate for all of them."
</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <!-- the pbcore asset date - this element may occur many times
with different date types -->
      <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreAssetDate"
      type="dateStringType">
        <xsd:annotation>

```

```

        <xsd:documentation xml:lang="en">Definition: The
pbcoreAssetDate element is intended to reflect dates associated with the
Intellectual Content.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best practice: By
contrast, instantiationDate is intended to reflect date information for the
specific instance. For example, if you have a VHS copy of Gone With The Wind,
the pbcoreAssetDate would be 1939, while the instantiationDate of the VHS
copy could be 1985. pbcoreAssetDate may also be used to reflect availability
dates, etc. Date types should be specified using the @dateType attribute.
Dates or time-based events related to the content of the asset, on the other
hand, would be described in the 'coverage' element -- so, while the storyline
of Gone with the Wind takes place in the nineteenth century, this information
should be noted in the Coverage field, not the assetDate field. Best practice
is to use ISO 8601 or some other date/time standard if
possible.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore identifier - this element may occur as many times
as
        desired; however, an identifier source attribute is
required. -->
    <xsd:element maxOccurs="unbounded" minOccurs="1"
name="pbcoreIdentifier"
        type="requiredSourceVersionStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreIdentifier element provides an identifier that can apply to the asset.
This identifier should not be limited to a specific instantiation, but rather
is shared by or common to all instantiations of an asset. It can also hold a
URL or URI that points to the asset.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Identify
the asset by means of a string or number corresponding to an established or
formal identification system if one exists. Otherwise, use an identification
method that is in use within your agency, station, production company,
office, or institution.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore title - this element may occur as many times as
        desired, optionally, a titleType attribute may appear -
->
    <xsd:element maxOccurs="unbounded" minOccurs="1"
name="pbcoreTitle"
        type="titleStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreTitle element is a name or label relevant to the
asset.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: An asset
may have many types of titles, an asset may have, such as a series title,
episode title, segment title, or project title; therefore the element is
repeatable.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore subject - this element may occur as many times as
        desired, optional attributes can note subjectType as
well as time annotations -->

```

```

        <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreSubject"
        type="subjectStringType">
        <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
pbcoreSubject element is used to assign topic headings or keywords that
portray the intellectual content of the asset. A subject is expressed by
keywords, key phrases, or even specific classification codes. Controlled
vocabularies, authorities, formal classification codes, as well as
folksonomies and user-generated tags, may be employed when assigning
descriptive subject terms.</xsd:documentation>
        </xsd:annotation>
        </xsd:element>
        <!-- the pbcore description - this element may occur as many
times
        as desired, however if it does occur, then a
description tag is
        required. optionally, the description type may appear
- but
        it has a limited vocabulary -->
        <xsd:element maxOccurs="unbounded" minOccurs="1"
name="pbcoreDescription"
        type="descriptionStringType">
        <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
pbcoreDescription element uses free-form text or a narrative to report
general notes, abstracts, or summaries about the intellectual content of an
asset. The information may be in the form of an individual program
description, anecdotal interpretations, or brief content reviews. The
description may also consist of outlines, lists, bullet points, rundowns,
edit decision lists, indexes, or tables of content.</xsd:documentation>
        </xsd:annotation>
        </xsd:element>
        <!-- the pbcore genre - this element may occur as many times as
desired. -->
        <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreGenre"
        type="sourceVersionStartEndStringType">
        <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
pbcoreGenre element describes the Genre of the asset, which can be defined as
a categorical description informed by the topical nature or a particular
style or form of the content.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best practice: Genre
refers to the intellectual content of the asset, whereas the element
pbcoreAssetType defines a broader structural category; i.e. an asset might
have the Asset Type of Segment, with a Genre of News, together defining a
news segment.</xsd:documentation>
        </xsd:annotation>
        </xsd:element>
        <!-- the pbcore relation - this element may occur as many times
as
        desired. -->
        <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreRelation">
        <xsd:annotation>

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        <xsd:documentation xml:lang="en">Definition: The
pbcoreRelation element contains the pbcoreRelationType and
pbcoreRelationIdentifier elements. In order to properly use these two
elements they must be nested with the pbcoreRelation element, and
pbcoreRelation must contain both pbcoreRelationType and
pbcoreRelationIdentifier if it is included.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1"
name="pbcoreRelationType"
                type="sourceVersionStringType">
                    <xsd:annotation>
                        <xsd:documentation xml:lang="en">Definition:
The pbcoreRelationType element describes the relationship between the asset
being describe by the pbcore document and any other asset. Ideally it would
contain text from a controlled vocabulary for describing relationships. There
is some depth to what a relationship could be. The assets can be related as
different episodes in a series, different tapes in a box set, or different
versions of an original, among others.</xsd:documentation>
                            <xsd:documentation xml:lang="en">Best
practice: The assets may be related in that they are different discrete parts
of a single intellectual unit, one may be a derivative of another, or they
may be different versions that are distinct enough to be described as
separate assets.</xsd:documentation>
                                </xsd:annotation>
                            </xsd:element>
                        <xsd:element maxOccurs="1" minOccurs="1"
name="pbcoreRelationIdentifier"
                                type="sourceVersionStringType">
                                    <xsd:annotation>
                                        <xsd:documentation xml:lang="en">Definition:
The pbcoreRelationIdentifier element contains the identifier of the related
asset. In the case that the related asset has a PBCore record, this
identifier should correspond with the pbcoreIdentifier of the related asset.
However, it is possible to use this element with a record that isn't in
PBCore, in which case the source attribute should identify the source of the
identifier.</xsd:documentation>
                                            </xsd:annotation>
                                        </xsd:element>
                                    </xsd:sequence>
                                </xsd:complexType>
                            </xsd:element>
                        <!-- the pbcore coverage - this element may occur as many times
as
                                desired, and within it a Spatial or a Temporal
coverageType -->
                                    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreCoverage">
                                        <xsd:annotation>
                                            <xsd:documentation xml:lang="en">Definition: The
pbcoreCoverage element is a container for sub-elements 'coverage' and
'coverageType'.</xsd:documentation>
                                                </xsd:annotation>
                                            <xsd:complexType>
                                                <xsd:sequence>

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        <xsd:element maxOccurs="1" minOccurs="1"
name="coverage"
        type="sourceVersionStartEndStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition:
The coverage element refers to either the geographic location or the time
period covered by the asset's intellectual content. For geographic locations
('spatial' descriptors), it is expressed by keywords such as place names
(e.g. 'Alaska' or 'Washington, DC'), numeric coordinates or geo-spatial data.
For time-based events ('temporal' descriptors), it is expressed by using a
date, period, era, or time-based event that is portrayed or covered in the
intellectual content (e.g. '2007' or 'Victorian Era'). The PBCore metadata
element coverage houses the actual spatial or temporal keywords. The
companion element coverageType is used to identify the type of keywords that
are being used.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element maxOccurs="1" minOccurs="0"
name="coverageType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition:
The coverageType element is used to identify the actual type of keywords that
are being used by its companion metadata element coverage. coverageType
provides a picklist of two possible types - spatial or temporal - because
coverage in intellectual content may be expressed spatially by geographic
location or it may also be expressed temporally by a date, period, era, or
time-based event." </xsd:documentation>
            </xsd:annotation>
            <xsd:simpleType>
                <xsd:restriction base="xsd:string">
                    <xsd:enumeration value="Spatial"/>
                    <xsd:enumeration value="Temporal"/>
                </xsd:restriction>
            </xsd:simpleType>
        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<!-- the pbcore audienceLevel - this may occur as many times as
desired
        within the document -->
        <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreAudienceLevel"
        type="sourceVersionStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreAudienceLevel element identifies a type of audience, viewer, or
listener for whom the media item is primarily designed or educationally
useful.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <!-- the pbcore audienceRating - this may occur as many times as
desired
        within the document -->
        <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreAudienceRating"
        type="sourceVersionStringType">

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        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreAudienceRating element designates the type of users for whom the
intellectual content of a media item is intended or judged appropriate. This
element differs from the element pbcoreAudienceLevel in that it utilizes
standard ratings that have been crafted by the broadcast television and film
industries and that are used as flags for audience or age-appropriate
materials.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore creator - may appear as many times as
necessary, but when it does appear, the creator tag is required.
the
    creatorRole tag is optional. -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreCreator">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">The pbcoreCreator
element is a container for sub-elements 'creator' and
'creatorRole'.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element maxOccurs="1" minOccurs="1"
name="creator"
                    type="affiliatedStringType">
                        <xsd:annotation>
                            <xsd:documentation xml:lang="en">Definition:
The creator element identifies the primary person, people, or organization(s)
responsible for creating the asset. Note that non-primary names and roles
should be included within the pbcoreContributor container. Best practice: We
recommend providing a consistent internal standard for entering proper names
and organizational names, such as 'Last name, First name, Middle name,' or
'Main group, subdivision.' We also recommend supplying separate pbcoreCreator
containers for each creator to be named for a resource. </xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
                <xsd:element maxOccurs="unbounded" minOccurs="0"
name="creatorRole"
                    type="sourceVersionStringType">
                        <xsd:annotation>
                            <xsd:documentation xml:lang="en">Definition:
The creatorRole element is used to identify the role played by the person,
people or organization(s) identified in the companion descriptor creator.
The PBCore schema allows for creatorRole to be repeated in the pbcoreCreator
container element. This can be useful when a single person or organization is
associated with multiple roles in an asset.</xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <!-- the pbcore contributor - this element may appear as many
times as necessary, but when it does appear, the contributor tag must appear
inside it. the contributor role is optional. -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreContributor">

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        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreContributor element is a container for sub-elements 'contributor' and
'contributorRole'.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element maxOccurs="1" minOccurs="1"
name="contributor"
                    type="affiliatedStringType">
                        <xsd:annotation>
                            <xsd:documentation xml:lang="en">Definition:
The contributor element identifies a person, people, or organization that has
made substantial creative contributions to the asset. This contribution is
considered to be secondary to the primary author(s) (person or organization)
identified in the descriptor creator. Best practice: We recommend providing a
consistent internal standard for entering proper names and organizational
names, such as 'Last name, First name, Middle name,' or 'Main group,
subdivision.' We also recommend supplying separate pbcoreCreator containers
for each creator to be named for a resource.</xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
                <xsd:element maxOccurs="unbounded" minOccurs="0"
name="contributorRole"
                    type="contributorStringType">
                        <xsd:annotation>
                            <xsd:documentation xml:lang="en">Definition:
The contributorRole element is used to identify the role played by the
person, people or organizations identified in the companion element
contributor. The PBCore schema allows for contributorRole to be repeated in
the pbcoreContributor container element. This can be useful when a single
person or organization is associated with multiple roles in an
asset.</xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <!-- the pbcore publisher - this follows the same guidelines as
the
        contributor and the creator.  this may exist as many
times as
        we wish, but inside it there must be a publisher tag.
a
        publisherRole tag is optional. -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcorePublisher">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcorePublisher element is a container for sub-elements 'publisher' and
'publisherRole.'</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element maxOccurs="1" minOccurs="1"
name="publisher"
                    type="affiliatedStringType">

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        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition:
The publisher element identifies a person, people, or organization primarily
responsible for distributing or making the asset available to others. The
publisher may be a person, a business, organization, group, project or
service. Best practice: We recommend providing a consistent internal standard
for entering proper names and organizational names, such as 'Last name, First
name, Middle name,' or 'Main group, subdivision.' We also recommend supplying
separate pbcoreCreator containers for each creator to be named for a
resource.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="publisherRole"
          type="sourceVersionStringType">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition:
The publisherRole element is used to identify the role played by the specific
publisher or publishing entity identified in the companion descriptor
publisher. The PBCore schema allows for publisherRole to be repeated in the
pbcorePublisher container element. This can be useful when a single person or
organization is associated with multiple roles in an
asset.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<!-- the pbcore rights - this may appear as many times as needed
-->
  <xsd:element name="pbcoreRightsSummary" type="rightsSummaryType"
maxOccurs="unbounded"
  minOccurs="0">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: Th
pbcoreRightsSummary element is a container for sub-elements 'rightsSummary',
'rightsLink', and 'rightsEmbedded' used to describe Rights for the
asset.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcore instantiation - this contains all the details on
how
        the asset is actualized -->
  <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreInstantiation"
        type="instantiationType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
instantiationType element contains sub-elements that describe a single
instantiation of an asset. The definition is malleable but it should be
thought of as any discreet and tangible unit that typically (though not
always) comprises a whole representation of the asset. For example, an
original master videotape, a preservation master video file, and a low-
bitrate access copy would all be considered Instantiations of a single video
program. All of the sub-elements held by this element are used to describe
the instantiation specifically, not necessarily the asset as a whole."
    </xsd:documentation>

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        </xsd:annotation>
    </xsd:element>
    <!-- PBCore Annotation -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreAnnotation"
        type="annotationStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreAnnotation element allows the addition of any supplementary information
about the metadata used to describe the PBCore record. pbcoreAnnotation
clarifies element values, terms, descriptors, and vocabularies that may not
be otherwise sufficiently understood.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- PBCore Part -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcorePart" type="pbcorePartType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcorePart element may be used to split up a single asset so as to enable the
use of all available elements at the pbcoreDescriptionDocument level to
describe the intellectual content of individual segments of an asset."
</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Splitting
up an asset in this way allows for defining and describing segments, stories,
episodes or other divisions within the asset, such as individual films in a
compilation reel, or distinct segments of a news show when each may have
their own titles, creators, publishers, or other specific intellectual
content information that does not apply across the whole
asset.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- PBCore Extension -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="pbcoreExtension"
        type="extensionType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
pbcoreExtension element can be used as either a wrapper containing a specific
element from another standard OR embedded xml containing the
extension.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Use it to
supplement other metadata sub-elements of the PBCore description document in
which it appears.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- For Readability - DescriptionDocument sequence end -->
</xsd:sequence>
<xsd:attributeGroup ref="sourceVersionGroup"/>
    <!-- For Readability - DescriptionDocument complexType end -->
</xsd:complexType>
<!-- the pbcore instantiationType -->
<xsd:complexType name="instantiationType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
pbcoreinstantiationType schema type uses a common structure to allow for a

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single instantiation or multiple instantiations within a
pbcoreDocumentDescription.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <!-- the pbcore instantiationIdentifier -->
    <xsd:element maxOccurs="unbounded" minOccurs="1"
name="instantiationIdentifier"
  type="requiredSourceVersionStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
instantiationIdentifier element contains an unambiguous reference or
identifier for a particular instantiation of an asset.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: Identify
the media item (whether analog or digital) by means of a string or number
corresponding to an established or formal identification system if one
exists. Otherwise, use an identification method that is in use within your
agency, station, production company, office, or
institution.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
    <!-- the pbcore instantiationDate -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationDate"
  type="dateStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
instantiationDate element is a date associated with an
instantiation.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: Use ISO
8601 or some other date/time standard if possible.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
    <!-- the pbcore instantiationDimensions -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationDimensions"
  type="technicalStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
instantiationDimensions element specifies either the dimensions of a physical
instantiation, or the high-level visual dimensions of a digital
instantiation.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: For
physical dimensions, usage examples might be 7" for an audio reel. When
describing visual dimensions, use this for high-level descriptors such as
1080p. Use the element frameSize to describe the pixel dimensions of a visual
resource.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
    <!-- the pbcore instantiationPhysical -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationPhysical"
  type="sourceVersionStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
instantiationPhysical element is used to identify the format of a particular
instantiation as it exists in a physical form that occupies physical space

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(e.g., a tape on a shelf). This includes physical digital media, such as a DV
tape, audio CD or authored DVD, as well as analog media.</xsd:documentation>
  <xsd:documentation xml:lang="en">Best practice: PBCore
provides a controlled vocabulary for media objects, though any controlled
vocabulary can be used as long as it is referenced. For digital storage
carriers that contain portable file-based media, such as data CDs, LTO tapes
or hard drives, use instantiationDigital to convey the mime type of the file
instead of describing the carrier.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<!-- the pbcore instantiationDigital -->
<xsd:element maxOccurs="1" minOccurs="0"
name="instantiationDigital"
  type="sourceVersionStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
instantiationDigital element is used to identify the format of a particular
instantiation of an asset as it exists as a digital file on a server, hard
drive, or other digital storage medium. Digital instantiations should be
expressed as a formal Internet MIME types.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice:
instantiationDigital should only be used to describe the MIME type of the
digital file itself. There are multiple options to convey more information
about the storage medium or location of the digital file, which are discussed
in more detail on the PBCore site.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<!-- the pbcore instantiationStandard -->
<xsd:element maxOccurs="1" minOccurs="0"
name="instantiationStandard"
  type="instantiationStandardStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
instantiationStandard element can be used, if the instantiation is a physical
item, to refer to the broadcast standard of the video signal (e.g. NTSC,
PAL), or the audio encoding (e.g. Dolby A, vertical cut). If the
instantiation is a digital item, instantiationStandard should be used to
express the container format of the digital file (e.g.
MXF).</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: While the
usage described in the definition is best practice for 2.1, this usage is
likely to change if new elements are added for PBCore
3.0.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<!-- the pbcore instantiationLocation -->
<xsd:element maxOccurs="1" minOccurs="1"
name="instantiationLocation"
  type="sourceVersionStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
instantiationLocation element may contain information about a specific
location for an instantiation, such as an organization's name, departmental
name, shelf ID and contact information. The instantiationLocation for a
digital file should include domain, path or URI to the
file.</xsd:documentation>

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        <xsd:documentation xml:lang="en">Best practice: For
digital files, instantiationLocation should always include a path or URI to
the file. There are multiple ways to convey additional information about the
location of a carrier or storage medium of the digital file, which are
expressed on the
        PBCore site.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<!-- the pbc core instantiationMediaTypes -->
<xsd:element maxOccurs="1" minOccurs="0"
name="instantiationMediaTypes"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationMediaTypes element identifies the general, high level nature of
the content of an instantiation. It uses categories that show how content is
presented to an observer, e.g., as a sound, text or moving
image.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<!-- the pbc core instantiationGenerations -->
<xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationGenerations"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationGeneration element identifies the use type and provenance of the
instantiation. The generation of a video tape may be an "Original Master" or
"Dub", the generation of a film reel may be an "Original Negative" or
"Composite Positive", an audiotape may be a "Master" or "Mix Element", an
image may be a "Photograph" or a "Photocopy.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<!-- the pbc core instantiationFileSize -->
<xsd:element maxOccurs="1" minOccurs="0"
name="instantiationFileSize"
    type="technicalStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationFileSize element indicates the file size of a digital
instantiation. It should contain only numerical values. As a standard,
express the file size in bytes. Units of Measure should be declared in the
unitsOfMeasure attribute.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<!-- the pbc core instantiationTimeStart -->
<xsd:element maxOccurs="1" minOccurs="0"
name="instantiationTimeStart"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationTimeStart element describes the point at which playback begins
for a time-based instantiation. It is likely that the content on a tape may
begin an arbitrary amount of time after the beginning of the instantiation.
Best practice is to use a timestamp format such as HH:MM:SS[;:]FF or
HH:MM:SS.mmm or S.mmm.</xsd:documentation>
    </xsd:annotation>

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    </xsd:element>
    <!-- the pbcore instantiationDuration -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationDuration"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationDuration element provides a timestamp for the overall length or
duration of a time-based media item. It represents the playback time. Best
practice is to use a timestamp format such as HH:MM:SS[:|;]FF or HH:MM:SS.mmm
or S.mmm.</xsd:documentation>
    </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationDataRate -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationDataRate"
    type="technicalStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationDataRate element expresses the amount of data in a digital media
file that is encoded, delivered or distributed, for every second of time.
This should be expressed as numerical data, with the units of measure
declared in the unitsOfMeasure attribute. For example, if the audio file is
56 kilobits/second, then 56 should be the value of instantiationDataRate and
the attribute unitsOfMeasure should be kilobits/second.</xsd:documentation>
    </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationColors -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationColors"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationColors element indicates the overall color, grayscale, or black
and white nature of the presentation of an instantiation, as a single
occurrence or combination of occurrences in or throughout the
instantiation.</xsd:documentation>
    </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationTracks -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationTracks"
    type="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationTracks element is simply intended to indicate the number and
type of tracks that are found in a media item, whether it is analog or
digital. (e.g. 1 video track, 2 audio tracks, 1 text track, 1 sprite track,
etc.) Other configuration information specific to these identified tracks
should be described using
instantiationChannelConfiguration.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best practice: Best
practices is to use essenceTracks, as this element has been
deprecated.</xsd:documentation>
    </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationChannelConfiguration -->

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        <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationChannelConfiguration"
        type="sourceVersionStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
                instantiationChannelConfiguration element is designed
to indicate, at a general narrative level, the arrangement or configuration
of specific channels or layers of information within an instantiation's
tracks. Examples are 2-track mono, 8- track stereo, or video track with alpha
channel.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationLanguage -->
    <xsd:element name="instantiationLanguage"
type="threeLetterStringType"
        maxOccurs="unbounded" minOccurs="0">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationLanguage element identifies the primary language of the tracks'
audio or text. Languages must be indicated using 3-letter codes standardized
in ISO 639-2 or 639-3. If an instantiation includes more than one language,
the element can be repeated. Alternately, both languages can be expressed in
one element by separating two three-letter codes with a semicolon, i.e.

<instantiationLanguage>eng;fre</instantiationLanguage>. + Best practice:
Alternative audio or text tracks and their associated languages should be
identified using the element
instantiationAlternativeModes.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationAlternativeModes -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="instantiationAlternativeModes"
        type="sourceVersionStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationAlternativeModes element is a catch-all metadata element that
identifies equivalent alternatives to the primary visual, sound or textual
information that exists in an instantiation. These are modes that offer
alternative ways to see, hear, and read the content of an instantiation.
Examples include DVI (Descriptive Video Information), SAP (Supplementary
Audio Program), ClosedCaptions, OpenCaptions, Subtitles, Language Dubs, and
Transcripts. For each instance of available alternativeModes, the mode and
its associated language should be identified together, if applicable.
Examples include 'SAP in English,' 'SAP in Spanish,' 'Subtitle in French,'
'OpenCaption in Arabic.'</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationEssenceTrack -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationEssenceTrack"
        type="essenceTrackType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationEssenceTrack element is an XML container element that allows for
grouping of related essenceTrack elements and their repeated use. Use
instantiationEssenceTrack element to describe the individual streams that

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comprise an instantiation, such as audio, video, timecode,
etc.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: Essence
tracks can exist in either the digital or physical realm. In the digital
realm, they may refer to the separate audio and video tracks within a digital
file. In the physical realm, they may refer to the video and audio tracks
contained on a single video tape.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<!-- the pbcore InstantiationRelation - this element may occur as
many times as desired. if it does occur, the instantiationRelationIdentifier
must appear, also the relationType must also appear -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationRelation">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiationRelation element is a container for sub-elements
instantiationRelationType and instantiationRelationIdentifier to describe
relationships to other instantiations.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1"
name="instantiationRelationType"
                type="sourceVersionStringType">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition:
The
                        instantiationRelationType element
describes the relation between the instantiation being described and another
instantiation.</xsd:documentation>
                <xsd:documentation xml:lang="en">Best
practice: Use to express relationships between instantiations, for example to
note that they are different discrete parts of a single intellectual unit,
generationally related, derivative of another, or different
versions.</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element maxOccurs="1" minOccurs="1"
name="instantiationRelationIdentifier"
                type="sourceVersionStringType">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition:
The instantiationRelationIdentifier element is used to provide a name,
locator, accession, identification number or ID where the related item can be
obtained or found.</xsd:documentation>
                <xsd:documentation xml:lang="en">Best
practice: We recommend using a unique identifier or global unique ID in this
element.</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<!-- the pbcore instantiationRights -->
    <xsd:element name="instantiationRights" type="rightsSummaryType"
maxOccurs="unbounded"

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        minOccurs="0">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationRights element is a container for sub-elements rightsSummary,
rightsLink and rightsEmbedded to describe rights particular to this
instantiation.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
element contains rights information that is specific to an instantiation of
an asset, such as rights conferred in a donation agreement that apply only to
a single donated item.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationAnnotation -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationAnnotation"
        type="annotationStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationAnnotation element is used to add any supplementary information
about an instantiation of the instantiation or the metadata used to describe
it. It clarifies element values, terms, descriptors, and vocabularies that
may not be otherwise sufficiently understood.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationPart -->
    <xsd:element name="instantiationPart" type="instantiationType"
maxOccurs="unbounded"
        minOccurs="0">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationPart element is a container that allows the instantiation to be
split into multiple parts, which can describe the parts of a multi-section
instantiation, e.g., a multi-disk DVD or vitagraph record and 35mm reel that
are intended for synchronous playback. It contains all of the elements that a
pbcoreInstantiation element would typically contain.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiationExtension -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="instantiationExtension"
        type="extensionType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
instantiationExtension element can be used as either a wrapper containing a
specific element from another standard OR embedded xml containing the
extension.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Use it to
supplement other metadata sub-elements of 'instantiationPart' or
'pbcoreInstantiationDocument' in which it appears.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
<!-- instantiationStartEndTimeGroup -->
<xsd:attributeGroup ref="startEndTimeGroup">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
instantiation level attribute group startEndTimeGroup may be used when there

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is a multi-part instantiation and time notation is important.
</xsd:documentation>
  </xsd:annotation>
</xsd:attributeGroup>
<xsd:attributeGroup ref="sourceVersionGroup">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
instantiation level attribute group sourceVersionGroup may be used when there
is a multi-part instantiation and notation is important. </xsd:documentation>
  </xsd:annotation>
</xsd:attributeGroup>
</xsd:complexType>
<!-- the pbcore instantiation essenceTrackType -->
<xsd:complexType name="essenceTrackType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The essenceTrackType
schema type uses a common structure to allow for grouping of the essence
related elements and their repeated use.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <!-- the pbcore instantiation essenceTrackType -->
    <xsd:element maxOccurs="1" minOccurs="0" name="essenceTrackType"
      type="sourceVersionStringType">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
essenceTrackType element refers to the media type of the decoded data. Tracks
may possibly be of these types: video, audio, caption, metadata, image,
etc.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackIdentifier -->
    <xsd:element maxOccurs="unbounded" minOccurs="0"
name="essenceTrackIdentifier"
      type="sourceVersionStringType">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
essenceTrackIdentifier element is an identifier of the track. Several
audiovisual containers include such identifier schema to identify each track,
such as MPEG2 PIDs or QuickTime Track IDs.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackStandard -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackStandard"
      type="sourceVersionStringType">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
essenceTrackStandard element should be be used with file-based instantiations
to describe the broadcast standard of the video signal (e.g. NTSC, PAL) or to
further clarify the standard of the essenceTrackEncoding
format.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackEncoding -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackEncoding"
      type="sourceVersionStringType">

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        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
essenceTrackEncoding element essenceTrackEncoding identifies how the actual
information in an instantiation is compressed, interpreted, or formulated
using a particular scheme. Identifying the encoding used is beneficial for a
number of reasons, including as a way to achieve reversible compression; for
the construction of document indices to facilitate searching and access; or
for efficient distribution of the information across data networks with
differing bandwidths or pipeline capacities. Human-readable encoding value
should be placed here. Use @ref to identify the codec ID.</xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: Use
@source to describe the type of encoding reference used, such as fourcc. In
@ref, use a URI/URL from the source to identify the codec utilized by its
container format.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <!-- the pbcore instantiation essenceTrackDataRate -->
      <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackDataRate"
          type="technicalStringType">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
essenceTrackDataRate element measures the amount of data used per time
interval for encoded data. The data rate can be calculated by dividing the
total data size of the track's encoded data by a time unit. By default use
bytes per second.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      <!-- the pbcore instantiation essenceTrackFrameRate -->
      <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackFrameRate"
          type="technicalStringType">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
essenceTrackFrameRate element is relevant to tracks of video track type only.
The frame rate is calculated by dividing the total number of frames by the
duration of the video track. By default measure frame rate in frames per
second expressed as fps as a unit of measure. e.g., 24
fps.</xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: Example:
1920x1080.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      <!-- the pbcore instantiation essenceTrackPlaybackSpeed -->
      <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackPlaybackSpeed"
          type="technicalStringType">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
essenceTrackPlaybackSpeed element specifies the rate of units against time at
which the media track should be rendered for human consumption. e.g., 15ips
(inches per second).</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      <!-- the pbcore instantiation essenceTrackSamplingRate -->
      <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackSamplingRate"

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        type="technicalStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
essenceTrackSamplingRate element measures how often data is sampled when
information from the audio portion from an instantiation is digitized. For a
digital audio signal, the sampling rate is measured in kilohertz and is an
indicator of the perceived playback quality of the media item (the higher the
sampling rate, the greater the fidelity).</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackBitDepth -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackBitDepth"
        type="technicalStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
essenceTrackBitDepth element specifies how much data is sampled when
information is digitized, encoded, or converted for an instantiation
(specifically, audio, video, or image). Bit depth is measured in bits and
generally implies an arbitrary perception of quality during playback of an
instantiation (the higher the bit depth, the greater the fidelity).
</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackFrameSize -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackFrameSize"
        type="technicalStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
essenceTrackFrameSize element measures the width and height of the encoded
video or image track. The frame size refers to the size of the encoded pixels
and not the size of the displayed image. It may be expressed as combination
of pixels measured horizontally vs. the number of pixels of image/resolution
data stacked vertically (interlaced and progressive
scan).</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackAspectRatio -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackAspectRatio"
        type="technicalStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
essenceTrackAspectRatio element indicates the ratio of horizontal to vertical
proportions in the display of a static image or moving
image.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <!-- the pbcore instantiation essenceTrackTimeStart -->
    <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackTimeStart"
        type="sourceVersionStringType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
essenceTrackTimeStart element provides a time stamp for the beginning point
of playback for a time-based essence track. It is likely that the content on

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a tape may begin an arbitrary amount of time after the beginning of the
instantiation.</xsd:documentation>
  <xsd:documentation xml:lang="en">Best practice: Use in
combination with essenceTrackDuration to identify a sequence or segment of an
essence track that has a fixed start time and end time. Best practice is to
use a timestamp format such as HH:MM:SS[:|;]FF or HH:MM:SS.mmm or
S.mmm.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcore instantiation essenceTrackDuration -->
  <xsd:element maxOccurs="1" minOccurs="0"
name="essenceTrackDuration"
  type="sourceVersionStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
essenceTrackDuration element provides a timestamp for the overall length or
duration of a track. It represents the track playback time. Best practice is
to use a timestamp format such as HH:MM:SS[:|;]FF or HH:MM:SS.mmm or
S.mmm.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcore instantiation essenceTrackLanguage -->
  <xsd:element maxOccurs="unbounded" minOccurs="0"
name="essenceTrackLanguage"
  type="threeLetterStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
essenceTrackLanguage element identifies the primary language of the tracks'
audio or
          text.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice:
Alternative audio or text tracks and their associated languages should be
identified using the element alternativeModes.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcore instantiation essenceTrackAnnotation -->
  <xsd:element maxOccurs="unbounded" minOccurs="0"
name="essenceTrackAnnotation"
  type="annotationStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
essenceTrackAnnotation element can store any supplementary information about
a track or the metadata used to describe it. It clarifies element values,
terms, descriptors, and vocabularies that may not be otherwise sufficiently
understood.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <!-- the pbcore instantiation essenceExtension -->
  <xsd:element maxOccurs="unbounded" minOccurs="0"
name="essenceTrackExtension"
  type="extensionType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
essenceTrackExtension element can be used as either a wrapper containing a
specific element from another standard OR embedded xml containing the
extension. The essenceTrackExtension element is a container to accomodate
track-level metadata from external systems. Use it to supplement other

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metadata sub-elements of instantiationEssenceTrack in which it
appears.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
<xsd:attributeGroup ref="sourceVersionGroup"/>
</xsd:complexType>
<!-- extensionType -->
<xsd:complexType name="extensionType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The extensionType
schema type uses a common structure to allow for the use of multiple,
qualified extensions at the asset, instantiation and essence
levels.</xsd:documentation>
  </xsd:annotation>
  <xsd:choice>
    <xsd:element maxOccurs="unbounded" minOccurs="1"
name="extensionWrap">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
extensionWrap element serves as a container for the elements
extensionElement, extensionValue, and
extensionAuthorityUsed.</xsd:documentation>
      </xsd:annotation>
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element maxOccurs="1" minOccurs="1"
name="extensionElement"
          type="xsd:string">
            <xsd:annotation>
              <xsd:documentation xml:lang="en">Definition:
The extensionElement element should contain the name of an element used from
another metadata standard, in the case that an element from another metadata
standard is used. While we recommend the usage of an existing standard, this
element can also be used to define local elements that may not be part of an
existing standard." </xsd:documentation>
              <xsd:documentation xml:lang="en">Best
practice: These extensions fulfill the metadata requirements for communities
identifying and describing their own types of media with specialized, custom
terminologies.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
          <xsd:element maxOccurs="1" minOccurs="1"
name="extensionValue"
          type="xsd:string">
            <xsd:annotation>
              <xsd:documentation xml:lang="en">Definition:
The extensionValue element is used to express the data value of the label
indicated by extensionElement.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
          <xsd:element maxOccurs="1" minOccurs="0"
name="extensionAuthorityUsed"
          type="xsd:anyURI">
            <xsd:annotation>

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        <xsd:documentation xml:lang="en">Definition:
The extensionAuthorityUsed element identifies the authority used for the
extensionElement.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best
practice: If metadata extensions to PBCore are assigned to a media item with
the element extensionElement, and the terms used are derived from a specific
authority or metadata scheme, use extensionAuthorityUsed to identify whose
metadata extensions are being used.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
</xsd:complexType>
</xsd:element>
    <xsd:element maxOccurs="unbounded" minOccurs="1"
name="extensionEmbedded"
    type="embeddedType">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
extensionEmbedded element allows the inclusion of xml from another schema,
e.g. TEI, METS, etc.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:choice>
</xsd:complexType>
<!-- pbcorePartType -->
<xsd:complexType name="pbcorePartType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The pbcorePartType
schema type uses a common structure to allow for the repeating of descriptive
sub-documents to define different segments, episodes etc., just as super-
element 'pbcoreDescriptionDocument' can be collected and used to describe
higher-level media programs.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexContent>
        <xsd:extension base="pbcoreDescriptionDocumentType">
            <xsd:attributeGroup ref="startEndTimeGroup">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
group of attributes "startTime', 'endTime' and 'timeAnnotation' could be used
when a there is a multipart asset and time notation is important.
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:attributeGroup>
            <xsd:attribute name="partType" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation>Definition: The partType attribute
is used to indicate the nature of the part into which the asset has been
divided.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attribute name="partTypeSource" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation>Definition: The partTypeSource
attribute provides the name of the authority used to declare data value of
the partType attribute.</xsd:documentation>

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        <xsd:documentation>Best practice: This might be the
name of a controlled vocabulary, namespace or authority list, such as the
official PBCore vocabulary. We recommend a consistent and human readable
use.</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="partTypeRef" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation>Definition: The partTypeRef
attribute is used to supply a source's URI for the value of the attribute
titleTypeSource.</xsd:documentation>
        <xsd:documentation>Best practice: The partTypeRef
attribute can be used to point to a term in a controlled vocabulary, or a URI
associated with a source.</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="titleTypeVersion" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation>Definition: The partTypeVersion
attribute identifies any version information about the authority or
convention used to express data of this element.</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="titleTypeAnnotation" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation>Definition: The partTypeAnnotation
attribute includes narrative information intended to clarify the nature of
data used in the element.</xsd:documentation>
        <xsd:documentation>Best practice: This attribute can
be used as a notes field to include any additional information about the
element or associated attributes</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<!-- dateStringType -->
<xsd:complexType name="dateStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The dateStringType
schema type allows for the addition of the dateType
attribute.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute name="dateType" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
dateType attribute classifies by named type the date-related data of the
element e.g., created, broadcast, dateAvailableStart.</xsd:documentation>
                    <xsd:documentation xml:lang="en">Best practice: Used
to clarify how the date is related to the asset or instantiation. Date
Created may be the most common, but the element could also be used to
describe the Date Accessioned or Date Deaccessioned, for
example.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>

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        <xsd:attributeGroup ref="sourceVersionGroup"/>
    </xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- sourceVersionStringType -->
<xsd:complexType name="sourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
sourceVersionStringType schema type is used with a number of elements to
allow the attachment of the attributes: source, ref, version and
annotation.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attributeGroup ref="sourceVersionGroup"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- requiredSourceVersionStringType -->
<xsd:complexType name="requiredSourceVersionStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
requiredSourceVersionStringType schema type type is the same as
sourceVersionStringType with the addition that the source attribute is
required instead of optional.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute name="source" type="xsd:string"
use="required">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
source attribute provides the name of the authority used to declare the value
of the element.</xsd:documentation>
                    <xsd:documentation xml:lang="en">Best practice:
Different elements will use the source attribute slightly differently. For
example, identifier source (required) should be the name of the organization,
institution, system or namespace that the identifier came from, such as "PBS
NOLA Code" or an institutional database identifier. For other elements, this
might be the name of a controlled vocabulary, namespace or authority list,
such as Library of Congress Subject Headings. We recommend a consistent and
human readable use.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attribute name="ref" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The ref
attribute is used to supply a source's URI for the value of the
element.</xsd:documentation>
                    <xsd:documentation xml:lang="en">Best practice:
Attribute ref can be used to point to a term in a controlled vocabulary, or a
URI associated with a source.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attribute name="version" type="xsd:string">
                <xsd:annotation>

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        <xsd:documentation xml:lang="en">Definition: The
version attribute identifies any version information about the authority or
convention used to express data of this element.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="annotation" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
annotation attribute includes narrative information intended to clarify the
nature of data used in the element.</xsd:documentation>
    </xsd:annotation>
</xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- titleStringType -->
<xsd:complexType name="titleStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The titleStringType
schema type allows for the addition of a titleType attribute as well as the
standard sourceVersionGroup attributes and a startEndTimeGroup or
attributes.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute name="titleType" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
titleType attribute is used to indicate the type of title being assigned to
the asset, such as series title, episode title or project
title.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attribute name="titleTypeSource" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
titleTypeSource attribute is used to provides the name of the authority used
to declare data value of the titleType attribute.</xsd:documentation>
                    <xsd:documentation xml:lang="en">Best practice: This
might be the name of a controlled vocabulary, namespace or authority list,
such as the official PBCore vocabulary. We recommend a consistent and human
readable use.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attribute name="titleTypeRef" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: The
titleTypeRef attribute is used to supply a source's URI for the value of the
attribute titleTypeSource.</xsd:documentation>
                    <xsd:documentation xml:lang="en">Best practice:
Attribute titleTypeRef can be used to point to a term in a controlled
vocabulary, or a URI associated with a source.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>

```

```

        <xsd:attribute name="titleTypeVersion" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
titleTypeVersion attribute identifies any version information about the
authority or convention used to express data of this
element.</xsd:documentation>
          </xsd:annotation>
        </xsd:attribute>
        <xsd:attribute name="titleTypeAnnotation" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
titleTypeAnnotation attribute includes narrative information intended to
clarify the nature of data used in the element.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
          </xsd:annotation>
        </xsd:attribute>
        <xsd:attributeGroup ref="sourceVersionGroup"/>
        <xsd:attributeGroup ref="startEndTimeGroup"/>
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>
  <!-- subjectStringType -->
  <xsd:complexType name="subjectStringType">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
subjectStringType schema type allows for the addition of a subjectType
attribute as well as the standard sourceVersionGroup attributes and a
startEndTimeGroup or attributes.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
      <xsd:extension base="xsd:string">
        <xsd:attribute name="subjectType" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
subjectType attribute is used to indicate the type of subject being assigned
to the attribute subjectType, such as 'topic,' 'personal name,' or
'keyword'.</xsd:documentation>
          </xsd:annotation>
        </xsd:attribute>
        <xsd:attribute name="subjectTypeSource" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
subjectTypeSource attribute provides the name of the authority used to
declare the value of the attribute subjectType.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
might be the name of a controlled vocabulary, namespace or authority list,
such as the official PBCore vocabulary. We recommend a consistent and human
readable use.</xsd:documentation>
          </xsd:annotation>
        </xsd:attribute>
        <xsd:attribute name="subjectTypeRef" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
subjectTypeRef attribute is used to supply a source's URI for the value of
the attribute subjectType.</xsd:documentation>
          </xsd:annotation>
        </xsd:attribute>
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>

```

```

        <xsd:documentation xml:lang="en">Best practice:
Attribute subjectTypeRef can be used to point to a term in a controlled
vocabulary, or a URI associated with a source.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attribute name="subjectTypeVersion" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
subjectTypeVersion attribute identifies any version information about the
authority or convention used to express data of the attribute
subjectType.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attribute name="subjectTypeAnnotation"
type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
subjectTypeAnnotation attribute includes narrative information intended to
clarify the nature of data used in the attribute
subjectType.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attributeGroup ref="sourceVersionGroup"/>
  <xsd:attributeGroup ref="startEndTimeGroup"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- descriptionStringType -->
<xsd:complexType name="descriptionStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The descriptionType
schema type is a complex group of attributes that help define the description
type, as well as allowing for descriptions of segments and relevant
times.</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="xsd:string">
      <xsd:attribute name="descriptionType" type="xsd:string">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
descriptionType attribute is used to indicate the type of description being
assigned to the element, such as 'abstract,' 'summary,' or 'physical
description.'</xsd:documentation>
        </xsd:annotation>
      </xsd:attribute>
      <xsd:attribute name="descriptionTypeSource"
type="xsd:string">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
descriptionTypeSource attribute provides the name of the authority used to
declare data value of the attribute descriptionType.</xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: This
might be the name of a controlled vocabulary, namespace or authority list,

```

```

such as the official PBCore recommended vocabulary. We recommend a consistent
and human readable use.</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="descriptionTypeRef" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
descriptionTypeRef attribute is used to supply a source's URI for the value
of the attribute descriptionType.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: The
descriptionTypeRef attribute can be used to point to a term in a controlled
vocabulary, or a URI associated with a source.</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="descriptionTypeVersion"
type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
descriptionTypeVersion attribute identifies any version information about the
authority or convention used to express data of the attribute
descriptionType.</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="descriptionTypeAnnotation"
type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
descriptionTypeAnnotation attribute includes narrative information intended
to clarify the nature of data used in the element.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="segmentType" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
segmentType attribute is used to define the type of content contained in a
segment.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: We
recommend using description and descriptionType instead of
segmentType.'</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="segmentTypeSource" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
segmentTypeSource attribute provides the name of the authority used to
declare data value of the attribute segmentType.</xsd:documentation>
    <xsd:documentation xml:lang="en">Best practice: This
might be the name of a controlled vocabulary, namespace or authority list,
such as the official PBCore recommended vocabulary.</xsd:documentation>
  </xsd:annotation>
</xsd:attribute>
<xsd:attribute name="segmentTypeRef" type="xsd:string">
  <xsd:annotation>

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        <xsd:documentation xml:lang="en">Definition: The
segmentTypeRef attribute is used to supply a source's URI for the value of
the attribute segmentType.</xsd:documentation>
        <xsd:documentation xml:lang="en">Best practice:
Attribute segmentTypeRef can be used to point to a term in a controlled
vocabulary, or a URI associated with a source.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="segmentTypeVersion" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
segmentTypeVersion attribute identifies any version information about the
authority or convention used to express data of the attribute
segmentType.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="segmentTypeAnnotation"
type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
segmentTypeAnnotation attribute includes narrative information intended to
clarify the nature of data used in the attribute
segmentType.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
    <xsd:attributeGroup ref="startEndTimeGroup"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- sourceVersionStartEndStringType -->
<xsd:complexType name="sourceVersionStartEndStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
sourceVersionStartEndStringType adds attributes that define the source of the
string with the option of time related attributes</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attributeGroup ref="sourceVersionGroup"/>
            <xsd:attributeGroup ref="startEndTimeGroup"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- affiliatedStringType -->
<xsd:complexType name="affiliatedStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
affiliatedStringType adds attributes of affiliation and time
relevance.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute name="affiliation" type="xsd:string">

```

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        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
affiliation attribute is used to indicate the organization with which an
agent is associated or affiliated.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="affiliationSource" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
affiliationSource attribute provides the name of the authority used to
declare the value of the attribute affiliation.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
might be the name of a controlled vocabulary, namespace or authority list,
such as the official PBCore recommended vocabulary.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="affiliationRef" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
affiliationRef attribute is used to supply a source's URI for the value of the
attribute affiliation.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice:
Attribute affiliationRef can be used to point to a term in a controlled
vocabulary, or a URI associated with a source.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="affiliationVersion" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
affiliationVersion attribute identifies any version information about the
authority or convention used to express data of the attribute
affiliation.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="affiliationAnnotation"
type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The
affiliationAnnotation attribute includes narrative information intended to
clarify the nature of data used in the attribute
affiliation.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
    <xsd:attributeGroup ref="startEndTimeGroup"/>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- contributorStringType -->
<xsd:complexType name="contributorStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
contributorString helps define the portrayal role as well as the general
source and version group attributes.</xsd:documentation>

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</xsd:annotation>
<xsd:simpleContent>
  <xsd:extension base="xsd:string">
    <xsd:attribute name="portrayal" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
portrayal attribute identifies any roles or characters performed by a
contributor.</xsd:documentation>
      </xsd:annotation>
    </xsd:attribute>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
  </xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- technicalStringType -->
<xsd:complexType name="technicalStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
technicalStringType schema type adds the attributes of unitsOfMeasure and
annotation.</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="xsd:string">
      <xsd:attribute name="unitsOfMeasure" type="xsd:string">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
unitsOfMeasure attribute defines the unit used in the containing element,
e.g. pixels, GB, Mb/s, ips, fps, kHz, inches, lines, dpi.</xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: We
recommend standardizing the notation that is most widely recognized in your
institution and using with consistency.</xsd:documentation>
        </xsd:annotation>
      </xsd:attribute>
      <xsd:attributeGroup ref="sourceVersionGroup"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>
<!-- instantiationDigitalStringType -->
<xsd:complexType name="instantiationStandardStringType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The
instantiationStandardStringType schema type allows for the addition of a
profile attribute along with the sourceVersionGroup.</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleContent>
    <xsd:extension base="xsd:string">
      <xsd:attribute name="profile" type="xsd:string">
        <xsd:annotation>
          <xsd:documentation xml:lang="en">Definition: The
profile attribute is used to further quantify the profile of the container
format (e.g. Opla).</xsd:documentation>
          <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
        </xsd:annotation>
      </xsd:attribute>
      <xsd:attributeGroup ref="sourceVersionGroup"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>

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        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- annotationStringType -->
<xsd:complexType name="annotationStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The stringType
schema type added an annotationType attribute and a
reference.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute name="annotationType" type="xsd:string">
                <xsd:annotation>
                    <xsd:documentation xml:lang="en">Definition: Use the
attribute annotationType to indicate the type of annotation being assigned to
the asset, such as a comment, clarification, or cataloging
note.</xsd:documentation>
                </xsd:annotation>
            </xsd:attribute>
            <xsd:attributeGroup ref="sourceVersionGroup"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- rightsSummaryType -->
<xsd:complexType name="rightsSummaryType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The rightsSummaryType
schema type allows the use of rights at the asset level and the instantiation
level. The rights can be expressed as a summary or a link or an embedded XML
record. These can also contain time relations.</xsd:documentation>
    </xsd:annotation>
    <xsd:choice>
        <xsd:element maxOccurs="1" minOccurs="0" name="rightsSummary"
            type="sourceVersionStringType">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">Definition: The
rightsSummary element is used as a general free-text element to identify
information about copyrights and property rights held in and over an asset or
instantiation, whether they are open access or restricted in some way. If
dates, times and availability periods are associated with a right, include
them. End user permissions, constraints and obligations may also be
identified as needed.</xsd:documentation>
                <xsd:documentation xml:lang="en">Best practice: For
rights information that applies to the asset as a whole, use this element
within the container pbcoreRightsSummary. For rights information that is
specific to an instantiation of an asset, use it within the container
instantiationRights.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element maxOccurs="1" minOccurs="0" name="rightsLink"
            type="rightsLinkType">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">Definition: The
rightsLink element is a URI pointing to a declaration of
rights.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
    </xsd:choice>
</xsd:complexType>

```



```

        </xsd:element>
        <xsd:element name="rightsEmbedded" type="embeddedType"
maxOccurs="1" minOccurs="0">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">Definition: The
rightsEmbedded element allows the inclusion of xml from another rights
standard, e.g. ODRL, METS, etc. The included XML then defines the rights for
the PBCore asset and/or PBCore instantiation.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
    </xsd:choice>
    <xsd:attributeGroup ref="startEndTimeGroup"/>
</xsd:complexType>
<!-- rightsLinkType -->
<xsd:complexType name="rightsLinkType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The rightsLinkType
schema type allows for the addition of an annotation attribute to the
rightsLink.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="xsd:anyURI">
            <xsd:attributeGroup ref="sourceVersionGroup"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- embeddedType -->
<xsd:complexType name="embeddedType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The embeddedType
schema type allows for the addition of an annotation attribute to the
embeddedType.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:any namespace="##any" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attributeGroup ref="sourceVersionGroup"/>
</xsd:complexType>
<!-- threeLetterStringType -->
<xsd:complexType name="threeLetterStringType">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The
threeletterStringType adds the sourceVersionGroup to threelettercode for
source references.</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleContent>
        <xsd:extension base="threeLetterCode">
            <xsd:attributeGroup ref="sourceVersionGroup"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<!-- threelettercode Algorithm -->
<xsd:simpleType name="threeLetterCode">
    <xsd:annotation>

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        <xsd:documentation xml:lang="en">Definition: This algorithm
controls the language element to insure the use of three letter
codes.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:pattern value="([a-z]{3}((;[a-z]{3})?)*)?"/>
        <!-- allows for null -->
    </xsd:restriction>
</xsd:simpleType>
<!-- sourceVersionGroup -->
<xsd:attributeGroup name="sourceVersionGroup">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Definition: The grouping of
attributes: source, reference, version and annotation.</xsd:documentation>
    </xsd:annotation>
    <xsd:attribute name="source" type="xsd:string" use="optional">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The source
attribute provides the name of the authority used to declare the value of the
element.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Different
elements will use the source attribute slightly differently. For example,
identifier source (required) should be the name of the organization,
institution, system or namespace that the identifier came from, such as "PBS
NOLA Code" or an institutional database identifier. For other elements, this
might be the name of a controlled vocabulary, namespace or authority list,
such as Library of Congress Subject Headings. We recommend a consistent and
human readable use.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="ref" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The ref
attribute is used to supply a source's URI for the value of the
element.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: Attribute ref
can be used to point to a term in a controlled vocabulary, or a URI
associated with a source.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="version" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The version
attribute identifies any version information about the authority or
convention used to express data of this element.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>
    <xsd:attribute name="annotation" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation xml:lang="en">Definition: The annotation
attribute includes narrative information intended to clarify the nature of
data used in the element.</xsd:documentation>
            <xsd:documentation xml:lang="en">Best practice: This
attribute can be used as a notes field to include any additional information
about the element or associated attributes.</xsd:documentation>
        </xsd:annotation>
    </xsd:attribute>

```

```

</xsd:attributeGroup>
<!-- startEndTimeGroup -->
<xsd:attributeGroup name="startEndTimeGroup">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Definition: The grouping of
attributes: startTime, endTime and timeAnnotation.</xsd:documentation>
  </xsd:annotation>
  <xsd:attribute name="startTime" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The startTime
attribute combines with the endTime attribute to define a specific media
segment within a broader timeline of an asset and/or
instantiation.</xsd:documentation>
      <xsd:documentation xml:lang="en">Best practice: This is a
free text attribute and can be applied at the asset or instantiation level.
When used at the asset level, it may be used to talk generally about the
start/end time of a segment (e.g. "30 minutes"), or by providing a timestamp
to a specific point in an instantiation. If you're doing that for element at
the asset level, we suggest referencing the instantiation ID you are
referring to in timeAnnotation. One example would be if a six-hour long tape
was broken into multiple programs, and each instantiation might have its
start time labeled as when the instantiation began in the timeline of the
broader tape. Another example for this usage might be a digital file created
from a VHS tape that contains multiple segments. In the digital copy, color
bars are removed from the beginning, and black from the end of the digital
instantiation. Time references referring to the segments on the physical VHS
are no longer relevant; therefore it's important to tie start and end time
references to a specific instantiation, e.g. use the asset ID and
timestamp.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attribute name="endTime" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The endTime
attribute combines with a similar value in the startTime attribute to define
a specific media segment within a broader timeline of an asset and/or
instantiation.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
  <xsd:attribute name="timeAnnotation" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Definition: The
timeAnnotation attribute includes narrative information intended to clarify
any time-oriented nature of data used in the element.</xsd:documentation>
    </xsd:annotation>
  </xsd:attribute>
</xsd:attributeGroup>
</xsd:schema>

```

## Update to the Public Broadcasting Metadata Dictionary project

After a long process of review, we are excited to announce the updated PBCore 2.1 schema!

In deciding what changes to implement for PBCore 2.1, the PBCore Schema Team considered the following criteria:

What problems and challenges with the PBCore 2.0 schema were brought up during our open call for PBCore users to submit issues on GitHub as of September 30, 2014?

What issues required a change to the schema, and what issues could be resolved by improving the documentation around PBCore elements and attributes to clarify their usage?

What changes would allow the 2.1 schema to remain backwards compatible with PBCore 2.0, so that current users could continue to validate their metadata? Keep in mind that PBCore 2.1 is an incremental version, not a major release.

After balancing these considerations, we decided to implement the following schema changes for PBCore 2.1:

In 2.0, the collection of attributes that includes ‘@source, @ref, @version, @annotation’ -- which is designed to allow catalogers to provide accurate information about the source of their metadata -- was available to most elements, but not all of them.

The updated schema provides the option to include ‘@source, @ref, @version, @annotation’ information to all elements. This change affects:

pbcoreDescription  
 pbcoreAssetDate  
 creator  
 contributor  
 publisher  
 instantiationLocation  
 instantiationDimensions  
 instantiationDataRate  
 instantiationFileSize  
 instantiationTimeStart  
 instantiationDuration  
 instantiationDate  
 instantiationTracks  
 instantiationChannelConfiguration  
 instantiationAlternativeModes  
 essenceTrackType  
 essenceTrackDataRate  
 essenceTrackFrameRate  
 essenceTrackPlaybackSpeed  
 essenceTrackSamplingRate  
 essenceTrackBitDepth  
 essenceTrackTimeStart  
 essenceTrackDuration

In all of these cases, these attributes are optional, but they will allow users to document their metadata in greater detail if they so choose. The increased ability to provide URIs for PBCore XML data elements will benefit users who wish to convert their PB Core XML records to Linked

Data. Discussions are ongoing with EBU Core to provide a common RDF ontology for this purpose.

Several PBCore elements include attributes -- specifically, the @titleType attribute (for pbcoreTitle), the @subjectType attribute (for pbcoreSubject), and the @affiliation attribute (for pbcoreCreator, pbcoreContributor, and pbcorePublisher) -- for which users also requested the ability to provide the source of the value used to express the type. In future releases of PBCore, the schema could be altered such that these attributes become elements in their own right. However, in order to comply with goal of keeping PBCore 2.1 backwards compatible, this was not possible for 2.1. Therefore, we created several new optional attribute groups for inclusion with the following elements:

**for pbcoreTitle:**

@titleTypeSource  
 @titleTypeRef  
 @titleTypeVersion  
 @titleTypeAnnotation

**for pbcoreSubject:**

@subjectTypeSource  
 @subjectTypeRef  
 @subjectTypeVersion  
 @subjectTypeAnnotation

**for pbcorePart:**

@partType  
 @partTypeSource  
 @partTypeRef  
 @partTypeVersion  
 @partTypeAnnotation

**for creator, contributor and publisher:**

@affiliationSource  
 @affiliationRef  
 @affiliationVersion  
 @affiliationAnnotation

In PBCore 2.0, the element essenceTrackBitDepth did not include the option to add a @unitofMeasure attribute. PBCore 2.1 now includes this optional attribute.

In PBCore 2.0, the elements instantiationLanguage and essenceTrackLanguage are not repeatable. This required that if an instantiation or essence track contains multiple languages, both of them would have to be entered in the same data field as three-letter language codes separated by a semicolon, e.g.

```
<instantiationLanguage>eng;fre</instantiationLanguage>.
```

While this form of entering data is still valid, we have made those fields repeatable in 2.1 to allow for the option of entering language information separately, e.g.

```
<instantiationLanguage>eng</instantiationLanguage>
<instantiationLanguage>fre</instantiationLanguage>
```

This allows for more specificity and searchability in entering metadata.

In order to provide more flexibility in accommodating local metadata elements and values (e.g. from an in-house database), the requirement to use `extensionAuthorityUsed` when using the container `extensionWrap` has been removed. However, we still highly recommend using this element whenever possible to document the source system or schema of the element.

One newly suggested element, to define asset version, was approved by the Schema Team. However, it was not explicitly added to the schema at this time due to the ongoing work to merge some efforts between PBCore and EBUCore (currently limited to a common RDF ontology). This element does exist in EBUCore; therefore, the team suggests that this (and other similar elements) be considered for future releases of PBCore and/or a future merger with EBUCore. In the meantime, it should be expressed in PBCore using extensions, with the EBUCore element as the `extensionElement` and EBUCore as `extensionAuthorityUsed`, as follows:

version - The purpose of this element is to express the version of the intellectual content of the asset being described. In this case, version is specific to content, not to the instantiations of that content (e.g. UK edit, Hulu version, etc.). Use the EBUCore element `version` to express this information. In a PBCore extension, this could look like:

```
<extensionWrap>
  <extensionElement>version</extensionElement>
  <extensionValue>Hulu Version</extensionValue>
  <extensionAuthorityUsed>EBUCore</extensionAuthorityUsed>
</extensionWrap>
```

The schema team found that several of the issues raised on GitHub were caused by confusion over the definition or usage of an element or attribute. Many of these were addressed by changes to the documentation, specifically the element and attribute definitions, which have been completely revised. Best practice guidelines for nearly all elements have also been added, and will appear on the website alongside definitions. Longer explanations addressing common use cases (e.g. when and how to use extensions) will be provided in blog posts on the updated PBCore website.

Several other changes were suggested over the course of this process. Many would require changes that may be implemented for the eventual release of PBCore 3.0, which will provide a broader revision of the PBCore data model. Please also note that this release does not include changes to the PBCore vocabularies. Suggested changes for these are forthcoming.

We welcome your questions and comments about PBCore 2.1!