



University of Texas Libraries

**University of Texas Libraries
Metadata Guidelines for Still Images**

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Introduction

Purpose and Scope

This document aims to support the internal needs of the University of Texas Libraries and also to guide and shape local descriptive metadata practices of our contributing partners. UT Libraries staff will work with contributing partners to transform any existing descriptive and source metadata; technical and preservation metadata will be automatically generated by UT Libraries staff during the course of the digitization process. All of this metadata will be packaged at the digital object level and ingested into the digital archive. See the *UT Still Images and METS* section on page 7 for more information on our digital object model.

This document is expected to be modified and refined over time to accommodate new requirements for describing and preserving digitized and born-digital images.

Acknowledgments

The following individuals from the University of Texas Libraries participated in many meetings and discussions, making significant contributions to the development of this document:

Amy Rushing - Head of Digital Access Services

Franny Gaede - Student Technician, UT School of Information (2012-2013)

Jennifer Lee - Head of Preservation Services

Wendy Martin - Assistant Head Librarian & Conservator and Manager, Digital Preservation

Using the Guidelines

In following these guidelines, metadata contributors will be describing the original still image or digitized object (“source object”), the digital surrogate of the original entity (“image object”), and the files that comprise the image object (“image files”) in various parts of the record.

Terminology

These guidelines use a consistent descriptive terminology for the different aspects of image metadata; they are defined as follows:

Source Object: The original physical or digital image or physical object (such as a book, journal, or manuscript) from which an image object is created.

Image Object: The digital surrogate of a source object. An image object may be a single digital image file or comprised of multiple digital image files.

Image File(s): A distinct image file (e.g. .tif, .jpg, .png) that makes up an image object.

Sequence: The ordered parts of a distinct textual narrative, divided into pages as separate image files.

Conventions

Throughout the guideline we indicate the following level of requirement for each element:

M=Mandatory: an element that is an absolute requirement. *Please see the “At-A-Glance Mandatory Requirements” on page 11 for a simple view of every mandatory element in this document.*

R=Recommended: an element that implementers may ignore, but only if they have fully weighed the implications of doing so.

RA=Recommended if Applicable: an element that is recommended if it is applicable to the object being described.

O=Optional: an element that implementers may use at their own discretion.

We have attempted to follow the same conventions for each metadata section; there are slight variations, specifically between the descriptive metadata section and the remaining metadata sections. The conventions are as follows:

Name of Element: Name of metadata element.

Element Parts: Lists the parts of element, if any.

Definition: Definition of element and element parts.

Input Guidelines: May include references to appropriate content standard, authority file, thesaurus, controlled vocabulary, etc. To guide data value entry. The **Note!** Alert is used throughout the guidelines to draw attention to mandatory elements that may require special treatment.

Repeatable: Indicates whether an element and its parts may be repeated.

Examples of Use and Mappings: Provides examples of preferred data values within MODS and Dublin Core elements or other designated schema.

UT Still Images and METS

These guidelines are based on a data architecture which can be used in a METS-based or METS-compliant environment. METS,¹ the *Metadata Encoding and Transmission Standard*, is a metadata standard for encoding descriptive, administrative, and structural metadata regarding digital objects.

This document addresses the descriptive and administrative (source, technical, and preservation) metadata that will be used to build a METS package. METS packages used by the UT Libraries conform to a METS application profile for still images which is described in detail in the *UT Still Images METS Profile*².

The descriptive and administrative metadata outlined within this document uses a set of descriptive fields that can be mapped to MODS or Dublin Core, the MIX schema for technical and source metadata, and PREMIS:event for preservation metadata. We define the descriptive and administrative metadata component in METS as follows:

Descriptive metadata

describes information about the image object, such as names of people directly involved with creation of the object and the subject headings that could describe its contents, as well as the **rights** and any restrictions on access pertaining to the image object.

Source metadata describes the physical characteristics of the source object from which the image file(s) were created.

Technical metadata describes the digital characteristics of each image file(s) created from the source object.

Preservation metadata records any actions where the image object is modified.

UT METS Profile for Still Images



¹ <http://www.loc.gov/standards/mets/>

² Registered METS profile URL will go here

Structural Metadata

While these guidelines do not address the structural metadata component of METS, below is a brief explanation of the <fileSec> and <structMap> sections in the *UT Still Images METS Profile*. This explanation does not attempt to cover everything needed to build a METS package. For more information about the specific rules and requirements, please refer to the *UT Still Images METS Profile*.

<fileSec>

In a METS document, the <fileSec> lists all the files which comprise an image object. The <fileSec> section contains one or more <fileGrp> elements, which are used to group the individual audio files into sets based on the use of the audio file. The designation of a file's use or type is achieved by the USE attribute of the <fileGrp> element. In the *UT Still Images METS Profile*, values of the USE attribute can be "archival master," "publication master," and derivative." The USE attribute of "archival master" is for grouping the archival quality TIFF. The USE attribute of "publication master" is for grouping the publication-quality master files. The USE attribute "derivative" is for grouping compressed image files for common use, which may include JPEG or PDF files on a project-by-project basis. The basic structure of the file section looks like this:

```
<mets:fileSec>
  <mets:fileGrp USE="archival master"></mets:fileGrp>
  <mets:fileGrp USE="publication master"></mets:fileGrp>
  <mets:fileGrp USE="derivative"></mets:fileGrp>
</mets:fileSec>
```

Within each <fileGrp> individual files must be listed within a <file> element and assigned a unique identifier with the FILEID attribute. Each <file> element must contain a <FLocat> element which specifies the external location of the image file in an xlink:href attribute. A pointer to any metadata unique to the individual file should also be included at this level.

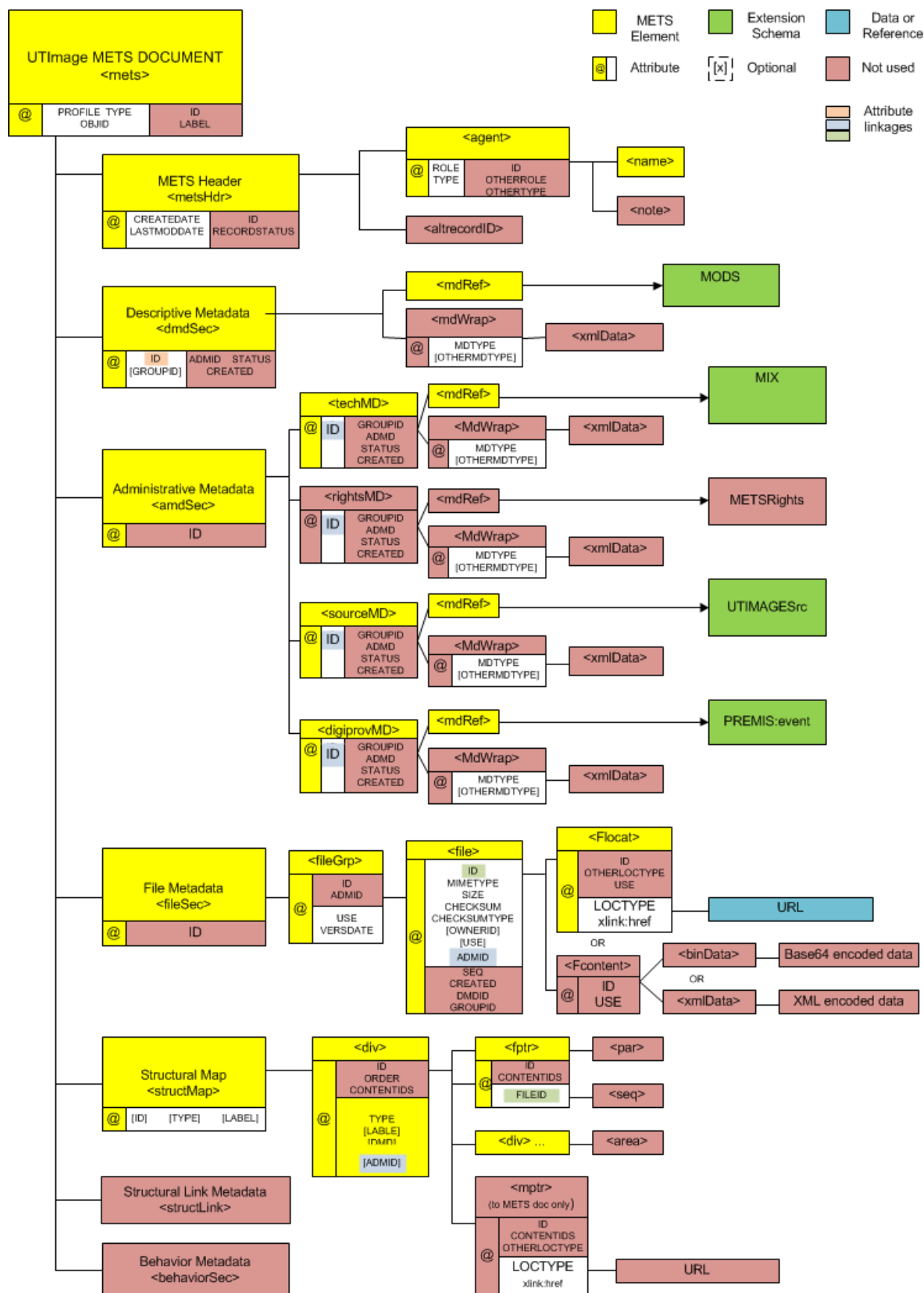
<structMap>

In the structural map section, using the <structMap> TYPE attribute, we indicate that the structure of the image files is "physical." The structural divisions of the hierarchical organization in a <structMap> are represented by <div> elements, which can be nested to any depth. In *UT Still Image METS* the structure is organized around the type of file and is designated through the TYPE attribute. These TYPES may be "graphical image" or "textual image." Within each TYPE div, another nested <div> specifies the order of the image files, for example, the order of pages in a book. Every <div> node in the structural hierarchy is connected to the image files listed in the <fileSec> via <fptr> elements. The basic structure of a <structMap> section looks like this:


```
<mets:structMap TYPE="physical">
  <div>
    <div TYPE="textual image">
      <div ORDER="1" TYPE="page"><fptr/></div>
      <div ORDER="2" TYPE="page"><fptr/></div>
    </div>
  </mets:structMap>
```

The diagram on the following page represents³ how the various METS components work in the *UT Still Images METS Profile*:

³ Adopted from the Australian Partnership for Sustainable Repositories' APSR-NLA METS Profile diagram. Original diagram drawn by Gerard Clifton. http://www.apsr.edu.au/nla-mets/mets_profile_report.pdf



At-A-Glance Mandatory Elements

Descriptive Metadata

Title
Creator
Date Created
Subjects
Type of Resource
Identifier
Rights

Source Metadata

ID
Generation
Identifier Type
Identifier Value

Technical Metadata

File Information
Image Information
Sampling Metrics
Color Encoding

Preservation Metadata

Event Identifier
Event Type
Event Date/Time

Descriptive Metadata

This section provides specifications for describing a digital image object. The guidelines are structured according to a set of high-level descriptive elements. Although we intend for MODS⁴ to be our primary descriptive metadata schema, the element names used here vary slightly from the MODS top-level elements for ease of use. We have mapped each element to MODS; mappings to Dublin Core have also been provided to accommodate systems that require Dublin Core. We recommend that metadata authors be familiar with the MODS schema in addition to the guidelines here. Please see *Appendix A* for a summary chart of the requirements and recommendations for descriptive metadata.

High-Level Descriptive Elements

Title (M)

Alternative Title (O)

Creator (M)

Contributor (O)

Publisher (R)

Date Created (M)

Language (R)

Abstract/Summary (O)

Physical Description (R)

Subjects (M)

Type of Resource (M)

Table of Contents (O)

Note (O)

Identifier (M)

Location (R)

Rights (M)

⁴ <http://www.loc.gov/standards/mods>

Title (M)

Element Parts: None

Definition: The title for the image object assigned by the creator or owner, or a descriptive title assigned by Libraries staff.

Input Guidelines: The title of the image can be transcribed from the original source object. It should be assigned when a title does not appear. Make the title as descriptive as possible, avoiding simple generic titles such as “IMG” or “Page 2.”

Repeatable: No. In cases where the image object has multiple titles (such as the same title in multiple languages) use the Alternative Title element.

Mapping to MODS:

```
<mods:titleInfo>
  <mods:title>
    Contributions in marine science volume 12
  </mods:title>
</mods:titleInfo>
```

Mapping to DC:

```
<dc.title>Contributions in marine science volume 12</dc.title>
```

Alternative Title (O)

Element Parts: None

Definition: Any form of the title used as a substitute or alternative to the title of the image object, such as translation of title from another language, or a title with alternate spellings, omissions, abbreviations, or acronyms. If alternative title is a former title, note the use of the *displayLabel* attribute. If alternative title is in another language, the *lang* attribute may also be used in the title element. *Please see Translation example and Mapping to MODS

Input Guidelines: Enter varying form of the title if it contributes to the further identification of the item.

Repeatable: Yes.

Mapping to MODS:

```
<mods:titleInfo type="alternative" displayLabel="Former Title">
  <mods:title>
    Publications of the Institute of Marine Science
  </mods:title>
</mods:titleInfo>
```

Mapping to DC:

```
<dc.title.former>
  Publications of the Institute of Marine Science
```

```
</dc.title.former>
```

***Translation example and Mapping to MODS**

```
<mods:titleInfo type="alternative" lang="spa">  
  <mods:title>  
    Contribuciones en ciencias del mar tomo 12  
  </mods:title>  
</mods:titleInfo>
```

Creator (M)

Element Parts: *Creator Name*, *Display Form*, *Creator Type*, *Creator Affiliation*, *Creator Role*

Definition: *Creator Name* designates the name of the person(s), institution, agent, or organization responsible for the creation of the image or image object. *Creator Name* is mandatory. *Display Form* is used to indicate how a personal name should be displayed. *Creator Type* designates whether the creator is a person or organization. *Creator Role* designates the role of the creator. The *Role* "creator" is mandatory. *Creator Affiliation* designates the name of an organization the creator is associated with.

Repeatable: Yes. In cases where the image object has multiple creators use a separate creator field for each creator name.

Creator Name (M)

Input Guidelines: Enter the authorized form of the person or organization's name if possible. For personal names, enter the family and given name separately. Use *Display Form* to indicate when a personal name should be displayed in some other way than the default: GivenName FamilyName. **Note!** The creator's name is mandatory. If creator is unknown, do not leave the element empty. Enter the value "unknown."

Display Form (O)

Input Guidelines: Use this field to indicate how a personal name should be displayed (e.g. in reversed order rather than direct.) The default display is GivenName FamilyName.

Creator Type (R)

Input Guidelines: Enter "personal" or "corporate" to indicate whether the creator is a person or a company, institution, or other organization. The term "corporate" is used to encompass all types of companies and organizations (including non-profits and nongovernmental agencies), not just those belonging to a corporation.

Creator Affiliation (O)

Input Guidelines: Enter the organization, institution, or group the creator was affiliated with at the time the resource was created. Use the official or authorized form of the organization's name.

Creator Role (M)

Input Guidelines: Note! The role “creator” is mandatory. Entering additional roles of the creator is optional. Use *MARC Relators and Roles*⁵ controlled vocabulary to enter additional roles. Terms from the controlled list that may be appropriate for images are terms like “artist,” “photographer,” “cartographer,” or “author.”

Note about pseudonyms, noms de guerre, nicknames, and aliases—

In cases where a person’s real name and pseudonym are known, please follow these guidelines: Nested within the `<mods:name>` element of the creator, enter the pseudonym in a separate `<mods:namePart>` element; indicate which name (real name, pseudonym, or both) should be displayed in the `<mods:displayForm>` element; and add the `<mods:description>` element to define the relationship between the real name and the pseudonym. **Note!** All pseudonyms should be entered with double quotation marks. *Please see Real Name/Pseudonym example below. In cases where only a pseudonym is known, enter the pseudonym as you would any other name, with no `<mods:description>` element. *See Pseudonym Only example below.

Mapping to MODS:

```
<mods:name type="corporate">
  <mods:namePart>
    University of Texas Marine Science Institute
  </mods:namePart>
  <mods:role>
    <mods:roleTerm>creator</mods:roleTerm>
  </mods:role>
</mods:name>
```

Mapping to DC:

```
<dc.creator>
  University of Texas Marine Science Institute
</dc.creator>
```

***Real Name/Pseudonym example and Mapping to MODS:**

```
<mods:name type="personal">
  <mods:namePart type="family">Jones</mods:namePart>
  <mods:namePart type="given">John</mods:namePart>
  <mods:namePart>"Ranger"</mods:namePart>
  <mods:displayForm>John Jones "Ranger"</mods:displayForm>
  <mods:role>
    <mods:role>
      <mods:roleTerm>creator</mods:roleTerm>
```

⁵ <http://loc.gov/marc/relators/relaterm.html>

```

        <mods:roleTerm>photographer</mods:roleTerm>
    </mods:role>
    <mods:description>
        "Ranger" is nickname of John Jones.
    </mods:description>
</mods:name>

```

***Real Name/Pseudonym example and Mapping to DC:**

```

<dc.creator>John Jones</dc.creator>
<dc.creator>"Ranger"</dc.creator>
<dc.description>
    "Ranger" is nickname of John Jones.
</dc.description>

```

***Pseudonym Only example and Mapping to MODS:**

```

<mods:name type="personal">
    <mods:namePart>"Ranger"</mods:namePart>
    <mods:displayForm>"Ranger"</mods:displayForm>
    <mods:role>
        <mods:roleTerm>creator</mods:roleTerm>
        <mods:roleTerm>cartographer</mods:roleTerm>
    </mods:role>
</mods:name>

```

***Pseudonym Only example and Mapping to DC:**

```

<dc.creator>"Ranger"</dc.creator>

```

Contributor (O)

Element Parts: *Contributor Name*, *Display Form*, *Contributor Type*, *Contributor Affiliation*, *Contributor Role*

Definition: *Contributor Name* designates the name of a person or organization that has played an important but secondary role in creating the content of the resource and is not specified in the *Creator* element. *Display Form* is used to indicate how a personal name should be displayed. *Creator Type* designates whether the contributor is a person or organization. *Contributor Role* designates the role of the contributor. *Creator Affiliation* designates the name of an organization the contributor is associated with.

Repeatable: Yes. In cases where the image object has multiple contributors use a separate contributor field for each contributor name.

Contributor Name (O)

Input Guidelines: Enter the authorized form of the person or organization's name if possible. For personal names, enter the family and given name separately. Use *Display Form* to indicate when a personal name should be displayed in some other way than the default: GivenName FamilyName.

Display Form (O)

Input Guidelines: Use this field to indicate how a personal name should be displayed (e.g. in reversed order rather than direct.) The default display is GivenName FamilyName.

Contributor Type (O)

Input Guidelines: Enter “personal” or “corporate” to indicate whether the contributor is a person or a company, institution, or other organization. The term “corporate” is used to encompass all types of companies and organizations (including non-profits and nongovernmental agencies), not just those belonging to a corporation.

Contributor Affiliation (O)

Input Guidelines: Enter the organization, institution, or group the contributor was affiliated with at the time the resource was created. Use the official or authorized form of the organization’s name.

Contributor Role (MA)

Input Guidelines: Note! If a contributor is listed, use the *Role* of “contributor.” Entering additional roles of the contributor is optional. Use *MARC Relators and Roles*⁶ controlled vocabulary to enter additional roles. Terms from the controlled list that may be appropriate for images are terms like “colorist” or “editor.”

Note about pseudonyms, noms de guerre, nicknames, and aliases—

In cases where a person’s real name and pseudonym are known, please follow these guidelines: Nested with in the <mods:name> element of the creator, enter the pseudonym in a separate <mods:namePart> element; indicate which name (real name, pseudonym, or both) should be displayed in the <mods:displayForm> element; and add the <mods:description> element to define the relationship between the real name and the pseudonym. **Note!** All pseudonyms should be entered with double quotation marks. *Please see Real Name/Pseudonym example below. In cases where only a pseudonym is known, enter the pseudonym as you would any other name, with no <mods:description> element. *See Pseudonym Only example below.

Mapping to MODS:

```
<mods:name type="corporate">
  <mods:namePart>
    University of Texas Marine Science Institute
  </mods:namePart>
  <mods:role>
    <mods:roleTerm>creator</mods:roleTerm>
```

⁶ <http://loc.gov/marc/relators/relaterm.html>

```

    </mods:role>
</mods:name>

```

Mapping to DC:

```

<dc.contributor>
    University of Texas Marine Science Institute
</dc.contributor>

```

***Real Name/Pseudonym example and Mapping to MODS:**

```

<mods:name type="personal">
    <mods:namePart type="family">Jones</mods:namePart>
    <mods:namePart type="given">John</mods:namePart>
    <mods:namePart>"Ranger"</mods:namePart>
    <mods:displayForm>John Jones "Ranger"</mods:displayForm>
    <mods:role>
        <mods:role>
            <mods:roleTerm>contributor</mods:roleTerm>
            <mods:roleTerm>photographer</mods:roleTerm>
        </mods:role>
    <mods:description>
        "Ranger" is nickname of John Jones.
    </mods:description>
</mods:name>

```

***Real Name/Pseudonym example and Mapping to DC:**

```

<dc.contributor>John Jones</dc.contributor>
<dc.contributor>"Ranger"</dc.contributor>
<dc.description>
    "Ranger" is nickname of John Jones.
</dc.description>

```

***Pseudonym Only example and Mapping to MODS:**

```

<mods:name type="personal">
    <mods:namePart>"Ranger"</mods:namePart>
    <mods:displayForm>"Ranger"</mods:displayForm>
    <mods:role>
        <mods:roleTerm>contributor</mods:roleTerm>
        <mods:roleTerm>cartographer</mods:roleTerm>
    </mods:role>
</mods:name>

```

***Pseudonym Only example and Mapping to DC:**

```

<dc.contributor>"Ranger"</dc.contributor>

```

Publisher (R)

Element Parts: None

Definition: The entity responsible for making the image object available.

Input Guidelines: Expressed in the authorized form of the publisher's name if possible.

Repeatable: Yes. In the case of multiple publishers, use a separate publisher field for each publisher.

Mapping to MODS:

```
<mods:originInfo>
  <mods:publisher>
    Port Aransas Marine Laboratory, University of Texas
    Marine Science Institute
  </mods:publisher>
  <mods:publisher>
    University of Texas Libraries
  </mods:publisher>
</mods:originInfo>
```

Mapping to DC:

```
<dc:publisher>
  Port Aransas Marine Laboratory, University of Texas Marine
  Science Institute
</dc:publisher>
<dc:publisher>
  University of Texas Libraries
</dc:publisher>
```

Date Created (M)

Element Parts: None

Definition: The date or date range of creation of the image.

Input Guidelines: As specified by ISO 8601⁷, enter date as Year-Month-Date, separating the sections with a single hyphen (e.g. YYYY-MM-DD). Include partial dates only if the year or only the month and year are known (e.g. YYYY or YYYY-MM). For date ranges, follow the same basic format but separate the dates with a slash mark (e.g. YYYY-MM-DD/YYYY-MM-DD or YYYY/YYYYY). For circa dates, follow the ISO format but add the word "circa" in front (e.g. circa YYYY or circa YYYY-MM or circa YYYY/YYYYY) **Note!** The date element is mandatory. If date is unknown, do not leave field blank; use the term "undated."

Repeatable: No

⁷ http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=40874

Mapping to MODS:

```
<mods:originInfo>
  <mods:dateCreated encoding="iso8601">
    1967-07
  </mods:dateCreated>
</mods:originInfo>
```

Mapping to DC:

```
<dc.date.created>1967-07</dc.date.created>
```

Language (R)

Element Parts: None

Definition: The written language of the content of images that are textual in nature.

Input Guidelines: Use the three-letter ISO 639-3⁸ code for the representation of the name of the language(s).

Repeatable: Yes. In cases where content is written in more than one language, use a separate language field for each language.

Mapping to MODS:

```
<mods:language>
  <mods:languageTerm type="code" authority="iso639-3">
    eng
  </mods:languageTerm>
</mods:language>
```

Mapping to DC:

```
<dc.language.iso>eng</dc.language.iso>
```

Abstract/Summary (R)

Element Parts: None

Definition: A summary of the content of the image.

Input Guidelines: Describe the subject matter of the image or summarize the content of the image. Use complete sentences with proper grammar and punctuation. Avoid any commentary on or interpretation of the image being described.

Repeatable: No

Mapping to MODS:

```
<mods:abstract>The University of Texas Marine Science Institute
has been in the forefront of research, education, and outreach
```

⁸ <http://www.sil.org/iso639-3/codes.asp>

in the Texas Coastal zone for over 60 years. Its first director and a professor of zoology, Dr. E. J. Lund established the scientific journal, Publications of the Institute of Marine Science, now known as Contributions in Marine Science. Its first volume began in 1945 with Lund as editor. Current issues include reviews and monographs of basic or regional importance in marine science, with emphasis on the Gulf of Mexico and surrounding areas.</mods:abstract>

Mapping to DC:

<dc.description.abstract>The University of Texas Marine Science Institute has been in the forefront of research, education, and outreach in the Texas Coastal zone for over 60 years. Its first director and a professor of zoology, Dr. E. J. Lund established the scientific journal, Publications of the Institute of Marine Science, now known as Contributions in Marine Science. Its first volume began in 1945 with Lund as editor. Current issues include reviews and monographs of basic or regional importance in marine science, with emphasis on the Gulf of Mexico and surrounding areas.</dc.description.abstract>

Physical Description (R)

Element Parts: *Extent*, *Reformatting Quality*, *Note*

Definition: *Extent* is the total number of component parts of the image object. *Note* is a textual statement about the image object. *Reformatting Quality* indicates the purpose of the digitization.

Repeatable: No

Extent (R)

Input Guidelines: Enter the number and material of units associated with the image object (e.g. 1 photograph, 177 p., 5 slides)

Note (O)

Input Guidelines: Enter a textual statement about the component parts of an image object, including its material using the *UT Libraries' Type Vocabulary* found in Appendix B.

Reformatting Quality (O)

Input Guidelines: Enter reformatting quality as one or more of the following values in repeated element parts: access, preservation, or replacement.

Mapping to MODS:

```
<mods:physicalDescription>
  <mods:extent>289</mods:extent>
```

```

    <mods:note>
      This journal is comprised of 289 pages.
    </mods:note>
    <mods:reformattingQuality>
      preservation
    </mods:reformattingQuality>
    <mods:reformattingQuality>
      Replacement
    </mods:reformattingQuality>
  </mods:physicalDescription>

```

Mapping to DC:

```

<dc.format.extent>289</dc.format.extent>
<dc.format.note>
  This journal is comprised of 289 pages.
</dc.format.note>
<dc.format.note>preservation</dc.format.note>
<dc.format.note>replacement</dc.format.note>

```

Subjects (Topics, Named Entities) (M)

Element Parts: *Topics, Named Entities*

Definition: *Topic* is a term or phrase representing the primary topic(s) of the image. *Named Entities* refers to people or organizations who are significant in some way to the content of the image. **Note!** At least one *Topic* must be assigned.

Repeatable: Yes. All element parts are repeatable.

Topics (M)

Input Guidelines: Choose appropriate topic(s) according to University of Texas Libraries cataloging standards. Must choose at least one topic, but more than one can be assigned. Enter the full hierarchy of the topic, separating each term with two dashes (e.g. "--").

Named Entities (O)

Input Guidelines: Enter names of people or organizations that are significant in some way to the image object.

Mapping to MODS:

```

<mods:subject>
  <mods:topic authority="lcsch">
    Marine biology -- Gulf Coast (U.S.)
  </mods:topic>
  <mods:topic authority="lcsch">
    Marine biology -- Mexico, Gulf of

```

</mods:topic>

Mapping to DC:

```
<dc.subject.lcsh>Marine biology--Gulf Coast (U.S.) </
dc.subject.lcsh>
<dc.subject.lcsh>Marine biology--Mexico, Gulf of</
dc.subject.lcsh>
```

Type of Resource (M)

Element Parts: None

Definition: The broad, high-level term that categorizes the type of material being described (such as journal, book, photograph, map, etc.)

Input Guidelines: Use the most appropriate term from the *UT Libraries' Type Vocabulary* found in Appendix B.

Repeatable: No

Mapping to MODS:

```
<mods:typeOfResource authority="uttype">journal</
mods:typeOfResource>
```

Mapping to DC:

```
<dc.type>journal</dc.type>
```

Table of Contents (O)

Element Parts: None

Definition: A detailed and structured description of the contents of the image object.

Input Guidelines: Describe the contents of the image object.

Repeatable: No

Mapping to MODS:

```
<mods:tableOfContents>
  A Study of the Atlantic Midshipman, Porichthys Porosissimus,
  in the Vicinity of Port Aransas, Texas / E.D. Lane (p. 1-53)
  -- Physioecology of the Grass Shrimp, Palaemonetes pugio, in
  the Galveston Bay Estuarine System / Carl E. Wood (p. 54-79)
  -- A Review of the Recent Marine Podocopid and Platycopid
  Ostracods in the Gulf of Mexico / Neil C. Hulings (p. 80-100)
  -- Incidence of Trypanorhynchan Plerocercoids in Some Texas
  Coast Sciaenid Fishes / Frank G. Schlicht and William N.
  McFarland (p. 101-112) -- Fatty Acids in Sea Grasses and
  Marsh Plants / Larry G. Maurer and P.L. Parker (p. 113-119)
  -- Forms of the Dinoflagellate, Gymnodinium breve Davis, in
```

Cultures / William B. Wilson (p. 120-134) -- Fatty Acids in Recent Sediment / Patrick L. Parker (p. 135-142) -- Metabolic Responses of Some Estuarine Organisms to an Industrial Effluent / David L. Steed and B.J. Copeland (p. 143-159) -- Assessment of a Low Level Stress on the Respiratory Metabolism of the Pinfish (*Lagodon rhomboides*) / Donald E. Wohlschlag and James N. Cameron (p. 160-171) -- Reflecting Cells of the Elasmobranch tapetum lucidum / A. C. G. Best and J. A. C. Nicol (p. 172-201) -- Symposium. Effects of Supersaline Conditions on Aquatic Ecosystems (p. 202) -- Comments of the Conveners / George K. Reid and Frank J. Schwartz (p. 203-206) -- Environmental Characteristics of Hypersaline Lagoons / B. J. Copeland (p. 207-218) -- Invertebrates in Relation to Hypersaline Habitats / Lars H. Carpelan (p. 219-229) -- Vertebrates in Hypersaline Waters / Gordon Gunter (p. 230-241) -- Plants and the Supersaline Habitat / Leon Bernstein (p. 242-248) -- Effect of Higher Than Normal Salinities on Salt Marshes / H. Dickson Hoese (p. 249-261) -- Introduction of Commercially Important Species into Inland Mineral Waters, A Review / Richard R. Whitney (p. 262-280) -- Contributions of Marine Science Institute Staff, 1966 (p. 281)

</mods:tableOfContents>

Mapping to DC:

<dc.description.tableOfContents>

A Study of the Atlantic Midshipman, *Porichthys Porosissimus*, in the Vicinity of Port Aransas, Texas / E.D. Lane (p. 1-53) -- Physioecology of the Grass Shrimp, *Palaemonetes pugio*, in the Galveston Bay Estuarine System / Carl E. Wood (p. 54-79) -- A Review of the Recent Marine Podocopid and Platycopid Ostracods in the Gulf of Mexico / Neil C. Hulings (p. 80-100) -- Incidence of Trypanorhynchan Plerocercoids in Some Texas Coast Sciaenid Fishes / Frank G. Schlicht and William N. McFarland (p. 101-112) -- Fatty Acids in Sea Grasses and Marsh Plants / Larry G. Maurer and P.L. Parker (p. 113-119) -- Forms of the Dinoflagellate, *Gymnodinium breve* Davis, in Cultures / William B. Wilson (p. 120-134) -- Fatty Acids in Recent Sediment / Patrick L. Parker (p. 135-142) -- Metabolic Responses of Some Estuarine Organisms to an Industrial Effluent / David L. Steed and B.J. Copeland (p. 143-159) -- Assessment of a Low Level Stress on the Respiratory Metabolism of the Pinfish (*Lagodon rhomboides*) / Donald E. Wohlschlag and James N. Cameron (p. 160-171) -- Reflecting Cells of the Elasmobranch tapetum lucidum / A. C. G. Best and J. A. C. Nicol (p. 172-201) -- Symposium. Effects of Supersaline Conditions on Aquatic Ecosystems (p. 202) -- Comments of the

Conveners / George K. Reid and Frank J. Schwartz (p. 203-206) -- Environmental Characteristics of Hypersaline Lagoons / B. J. Copeland (p. 207-218) - Invertebrates in Relation to Hypersaline Habitats / Lars H. Carpelan (p. 219-229) - Vertebrates in Hypersaline Waters / Gordon Gunter (p. 230-241) -- Plants and the Supersaline Habitat / Leon Bernstein (p. 242-248) -- Effect of Higher Than Normal Salinities on Salt Marshes / H. Dickson Hoese (p. 249-261) -- Introduction of Commercially Important Species into Inland Mineral Waters, A Review / Richard R. Whitney (p. 262-280) -- Contributions of Marine Science Institute Staff, 1966 (p. 281)
</dc.description.tableOfContents>

Note (O)

Element Parts: None

Definition: Any information relating to the image that cannot be entered in other elements, such as collection name, project name, administrative information, or other information to assist with the management of the project,

Input Guidelines: Use proper grammar and punctuation.

Repeatable: Yes

Mapping to MODS:

```
<mods:note>
    Project Name: DPOC-2011-F-07-DeHart
</mods:note>
```

Mapping to DC:

```
<dc.description.note>
    Project Name: DPOC-2011-F-07-DeHart
</dc.description.note>
```

Identifier (M)

Element Parts: None

Definition: Any unique standard number(s) or code(s) that distinctively identifies the image object.

Input Guidelines: Enter the root file name of the image object and/or other unique number(s).

Repeatable: Yes

Mapping to MODS:

```
<mods:identifier>0082-3449</mods:identifier>
```

```
<mods:identifier>txu-oclc-1565005-12</mods:identifier>
```

Mapping to DC:

```
<dc:identifier>0082-3449</dc:identifier>
```

```
<dc:identifier>txu-oclc-1565005-12</dc:identifier>
```

Location (R)

Element Parts: None**Definition:** Identifies location of image object in archival repository.**Input Guidelines:** System supplied handle or URL.**Repeatable:** Yes**Mapping to MODS:**

```
<mods:location>
```

```
    <mods:url>http://hdl.handle.net/2152/18016</mods:url>
```

```
</mods:location>
```

Mapping to DC:>

```
<dc:identifier.url>
```

```
    http://hdl.handle.net/2152/18016
```

```
</dc:identifier.url>
```

Rights (M)

Element Parts: *Rights Type*, *Rights Information***Definition:** Information about rights relating to access and use of the image object.

Rights Type designates the “restriction on access” and the terms of “use and reproduction.” *Rights Information* designates whether the image object can be made public, or whether it must remain private, or whether there are restrictions on parts of the content.

Repeatable: Yes**Rights Type (M)**

Input Guidelines: There are two types of information that must be documented in the *Rights Information* section: “restriction on access” and “use and reproduction.”

Rights Information (M)

Input Guidelines: When entering “restriction on access” information, enter one of three values: “public,” “private,” or “restricted.”

public: access is open or there are no restrictions

private: access is restricted to content holders and/or their designees and digital archive administrators

restricted: content or parts of content is restricted and the conditions of the restriction is documented in the “use and reproduction section”

“Use and reproduction” information should be entered to document the terms and conditions of the “restriction on access.” If “restriction on access” is “public,” enter this statement: “This electronic resource is made available by the University of Texas Libraries solely for the purposes of research, teaching, and private study. All intellectual property rights are retained by the legal copyright holders. The University of Texas does not hold copyright to the content of this file. Formal permission to reuse or republish this content must be obtained from the copyright holder.”

If “restriction on access” is “restricted,” enter the conditions of the restriction. Use complete sentences with proper grammar and punctuation.

Mapping to MODS

```
<mods:accessCondition type="restriction on access">
  public
</mods:accessCondition>
<mods:accessCondition type="use and reproduction">
  This electronic resource is made available by the University
  of Texas Libraries solely for the purposes of research,
  teaching, and private study. All intellectual property rights
  are retained by the legal copyright holders. The University
  of Texas does not hold copyright to the content of this file.
  Formal permission to reuse or republish this content must be
  obtained from the copyright holder.
</mods:accessCondition>
```

OR

```
<mods:accessCondition type="restriction on access">
  restricted
</mods:accessCondition>
<mods:accessCondition type="use and reproduction">
  This journal is not for public access. Only users logged in
  with EID credentials will be permitted access.
</mods:accessCondition>
```

Mapping to DC:

```
<dc:rights.restriction>public</dc:rights.restriction>
<dc:rights>
  This electronic resource is made available by the University
  of Texas Libraries solely for the purposes of research,
  teaching, and private study. All intellectual property rights
```

are retained by the legal copyright holders. The University of Texas does not hold copyright to the content of this file. Formal permission to reuse or republish this content must be obtained from the copyright holder.

</dc.rights>

OR

<dc.rights.restriction>restricted</dc.rights.restriction>
<dc.rights>
 This journal is not for public access. Only users logged in with EID credentials will be permitted access.
</dc.rights>

Source Metadata

Source Metadata describes the original source object from which the digital image file(s) were created. The source object is described mostly in terms of its physical characteristics. Outlined below is the UTIMAGESrc xml schema⁹ created by the UT Libraries for capturing source metadata. It is loosely based on the UTVIDEOSrc xml schema¹⁰ created by the UT Libraries for capturing source metadata and the Library of Congress' MIX schema¹¹. Please see *Appendix C* for a summary chart of the requirements and recommendations for source metadata.

High-Level Source Elements

ID (M)

Condition (RA)

Disposition (RA)

Generation (M)

Identifier Type (M)

Identifier Value (M)

Note (O)

Source Size (O)

⁹ Insert forthcoming URL

¹⁰ www.lib.utexas.edu/schema/UTVIDEOSrc.xsd

¹¹ <http://www.loc.gov/standards/mix/mix20/mix20.xsd>

ID (R)

Element Name: id

Element Parts: None

Definition: Unique identifier for each source object. For example, if a book is divided into two volumes, each volume will be treated as a unique source object. Do not confuse with the volume's own unique identifier, such as an accession, inventory, or call number; for those numbers, use the element "Identifier Value."

Encoding Guidelines: Encode information on source ID in <UTIMGSrc:id> element.

Input Guidelines: Positive integer

Repeatable: No

Example of use:

```
<UTIMAGESrc:id>1</UTIMAGESrc:id>
```

Condition (RA)

Element Name: condition

Element Parts: None

Definition: Describes the physical condition of the source object.

Encoding Guidelines: Encode information about the physical condition of the source object in the <UTIMAGESrc:condition> element.

Input Guidelines: The possible values for this element are "good," "acceptable," "poor," or "un-usable." Further description of physical condition can be included in the note field.

good: source is of good quality, is not damaged in any way

acceptable: source has some issues but is still easily digitized

poor: source has significant integral issues requiring careful handling during digitization

un-usable: source could not be digitized

Repeatable: Yes

Example of use:

```
<UTIMAGESrc:condition>good</UTIMAGESrc:condition>
```

Disposition (RA)

Element Name: disposition

Element Parts: None

Definition: Describes what became of the source object.

Encoding Guidelines: Encode information regarding the disposition of the source object in the <UTIMAGESrc:disposition> element.

Input Guidelines: The possible values for this element are: “retained,” “de-accessioned” “destroyed,” “missing,” or “relocated.”

retained: source object was retained by owning institution

de-accessioned: source object was removed from circulation by owning institution

destroyed: source object was damaged beyond use

missing: source object is lost but not necessarily destroyed

relocated: source object has been relocated from the owning institution to another institution

Repeatable: Yes

Example of use:

```
<UTIMAGESrc:disposition>de-accessioned</UTIMAGESrc:disposition>
```

Generation (M)

Element Name: generation

Element Parts: None

Definition: The generation of the source object.

Encoding Guidelines: Encode the generation of the source object in the

<UTIMAGESrc:generation> element

Input Guidelines: Value must be either “original,” “copy of original,” or “unknown.”

Repeatable: Yes.

Example of use:

```
<UTIMAGESrc:generation>original</UTIMAGESrc:generation>
```

Identifier Type (RA)

Element Name: identifierType

Element Parts: None

Definition: The type of tracking identifier of the source object.

Encoding Guidelines: Encode the type of identifier in the

<UTIMAGESrc:identifierType> element.

Input Guidelines: Free text with values like barcode number, call number, OCLC number, or project ID.

Repeatable: Yes.

Example of use:

```
<UTIMAGESrc:identifierType>
  call number
</UTIMAGESrc:identifierType>
<UTIMAGESrc:identifierType>
  OCLC number
```

</UTIMAGESrc:identifierType>

Identifier Value (RA)

Element Name: identifierValue

Element Parts: None

Definition: The actual tracking identifier of source object.

Encoding Guidelines: Encode the tracking identifier in the <UTIMAGESrc:identifierValue> element

Input Guidelines: Free text.

Repeatable: Yes.

Example of use:

```
<UTIMAGESrc:identifierValue>
  GZZ IC116
</UTIMAGESrc:identifierValue>
<UTIMAGESrc:identifierValue>
  21357983
</UTIMAGESrc:identifierValue>
```

Note (O)

Element Name: note

Element Parts: None

Definition: Miscellaneous information about the source object.

Encoding Guidelines: Encode any general information relating to the source object that cannot be entered in other elements in the <UTIMAGESrc:note> element, including preservation notes, special instructions, and other administrative metadata necessary to the digitization process.

Input Guidelines: Free text.

Repeatable: Yes.

Example of use:

```
<UTIMAGESrc:note>
  Rare - handle carefully! The textblock opens fairly easily
  but do not try to force it to open flat for scanning! Scan
  all edges and the front and rear cover as well as the
  interior.
</UTIMAGESrc:note>
```

Source Size (O)

Element Name: sourceSize

Element Parts: *Source X Dimension (Source X Dimension Value, Source X Dimension Unit), Source Y Dimension (Source Y Dimension Value, Source Y Dimension Unit), Source Z Dimension (Source Z Dimension Value, Source Z Dimension Unit)*

Definition: The physical dimensions of the source object.

Encoding Guidelines: Encode the physical dimensions of the source object in the <UTIMAGESrc:sourceSize> element and subelements.

Input Guidelines: Dimension values should be given in positive numbers, with decimal places as necessary. Dimension units should be given in units of measure, imperial or metric, as given in the catalog.

Repeatable: No

Example of use:

```
<sourceSize>
  <sourceXDimension>
    <sourceXDimensionValue>
      8.5
    </sourceXDimensionValue>
    <sourceXDimensionUnits>
      inches
    </sourceXDimensionUnits>
  </sourceXDimension>
  <sourceYDimension>
    <sourceYDimensionValue>
      10
    </sourceYDimensionValue>
    <sourceYDimensionUnits>
      inches
    </sourceYDimensionUnits>
  </sourceYDimension>
  <sourceZDimension>
    <sourceZDimensionValue>
      .25
    </sourceZDimensionValue>
    <sourceZDimensionUnits>
      inches
    </sourceZDimensionUnits>
  </sourceZDimension>
</sourceSize>
```

Technical Metadata

This section provides specifications for capturing technical metadata on each image file that comprises the image object. We have chosen FITS¹² as our tool for automatically generating technical metadata. We have selected several elements from the MIX¹³ schema to record this metadata. Not all elements are listed; we recommend that metadata authors be familiar with the MIX schema in addition to the guidelines listed here. Please see *Appendix D* for a summary chart of the requirements and recommendations for technical metadata.

High-Level Technical Elements

File Information

Image Information

Image Capture Information

Image Assessment

¹² <http://code.google.com/p/fits/>

¹³ <http://www.loc.gov/standards/mix/mix20/mix20.xsd>

File Information (M)

Element Name: BasicDigitalObjectInformation

Element Parts: *File Name, File Size, File Format, Byte Order, Compression*

Definition: Container element relating to the overall technical data of the image file.

Example of use: See the end of the File Information section for a full example of use.

File Name (M)

Element Name: objectIdentifierValue

Definition: The name of the image file.

Encoding Guidelines: Encode the name of the image file in the

`<mix:objectIdentifierValue>` subelement within a

`<mix:ObjectIdentifier>` container.

Input Guidelines: Free text. Will usually incorporate root file name created by Digitization.

File Size (M)

Element Name: fileSize

Definition: The size of the file. The unit of measurement attribute will be the largest unit where the value is greater than one.

Encoding Guidelines: Encode information about the size of the file in a

`<mix:fileSize>` subelement within the

`<mix:BasicDigitalObjectInformation>` container.

Input Guidelines: Integer.

File Format (M)

Element Name: formatName

Definition: Official name of the file format.

Encoding Guidelines: Encode information about the file format in a

`<mix:formatName>` subelement within a `<mix:FormatDesignation>` container.

Input Guidelines: Free text. Use values like “tiff,” “jpeg,” etc. that specifically identify the format.

Byte Order (M)

Element Name: byteOrder

Definition: Indicates whether the most or least significant byte is stored first.

Encoding Guidelines: Encode information about the byte order in a

`<mix:byteOrder>` subelement within the

`<mix:BasicDigitalObjectInformation>` container.

Input Guidelines: Value must be either “big_endian” or “little_endian.”

Compression (M)

Element Name: compressionScheme

Definition: The compression scheme used.

Encoding Guidelines: Encode information about the compression scheme in a `<mix:compressionScheme>` subelement within a `<mix:Compression>` container.

Input Guidelines: Free text; e.g. “Uncompressed,” “JPEG 2000 Lossless,” etc.

Example of Use:

```
<mix:BasicDigitalObjectInformation>
  <mix:ObjectIdentifier>
    <mix:objectIdentifierValue>
      txu-oclc-1565005-12.tiff
    </mix:objectIdentifierValue>
  <mix:fileSize>
    192
  </mix:fileSize>
  <mix:FormatDesignation>
    <mix:formatName>
      TIFF
    </mix:formatName>
  </mix:FormatDesignation>
  <mix:byteOrder>
    little_endian
  </mix:byteOrder>
  <mix:Compression>
    <mix:compressionScheme>
      Uncompressed
    </mix:compressionScheme>
  </mix:Compression>
</mix:BasicDigitalObjectInformation>
```

Image Information (M)

Element Name: BasicImageCharacteristics

Element Parts: *Image Width, Image Height, Photometric Interpretation, Color Space, Reference Black/White*

Definition: Container element relating to the technical specifications of basic image characteristics.

Example of use: See the end of the Image Information section for a full example of use.

Image Width (M)

Element Name: imageWidth

Definition: The horizontal dimension of the image in pixels.

Encoding Guidelines: Encode the width of the image file in the

<mix:imageWidth> subelement within the

<mix:BasicImageCharacteristics> container.

Input Guidelines: Integer.

Image Height (M)

Element Name: imageHeight

Definition: The vertical dimension of the image in pixels.

Encoding Guidelines: Encode the height of the image file in the

<mix:imageHeight> subelement within the

<mix:BasicImageCharacteristics> container.

Input Guidelines: Integer.

Photometric Interpretation (M)

Element Name: PhotometricInterpretation

Element Parts: *Color Space, Reference Black/White*

Definition: Container for information required to interpret pixel values.

Color Space (M)

Element Name: colorSpace

Definition: Designates the color model of the image

Encoding Guidelines: Encode information about the color space of the

image in a <mix:colorSpace> subelement within the

<mix:PhotometricInterpretation> container .

Input Guidelines: Free text, e.g. RGB or CMYK.

Reference Black/White (RA)

Element Name: ReferenceBlackWhite

Definition: Encodes a pair of black and white reference values.

Encoding Guidelines: Encode headroom and footroom values in component containers for each color channel in a

<mix:ReferenceBlackWhite> subelement within the

<mix:PhotometricInterpretation> container.

Input Guidelines: Integer.

Example of use:

```
<mix:BasicImageCharacteristics>
  <mix:imageWidth>
    15400
  </mix:imageWidth>
  <mix:imageHeight>
    9472
  </mix:imageHeight>
```

```

<mix:PhotometricInterpretation>
  <mix:colorSpace>
    RGB
  </mix:colorSpace>
  <mix:ReferenceBlackWhite>
    <mix:Component>
      <mix:componentPhotometricInterpretation>
        R
      </mix:componentPhotometricInterpretation>
      <mix:footroom>
        <mix:numerator>
          25500
        </mix:numerator>
        <mix:denominator>
          100
        </mix:denominator>
      </mix:footroom>
      <mix:headroom>
        <mix:numerator>
          0
        </mix:numerator>
        <mix:denominator>
          100
        </mix:denominator>
      </mix:headroom>
    </mix:Component>
  </mix:ReferenceBlackWhite>
</mix:PhotometricInterpretation>
</mix:BasicImageCharacteristics >

```

Image Capture Information (M)

Element Name: GeneralCaptureInformation

Element Parts: *Date Created, Image Producer, Capture Device, Scanner Capture, Digital Camera Capture*

Definition: Container element relating to the technical specifications of the image capture.

Example of use: See the end of the Image Capture Information section for a full example of use.

Date Created (M)

Element Name: dateTimeCreated

Definition: The date of the image capture.

Encoding Guidelines: Encode the date of image capture in the

<mix:dateTimeCreated> subelement within the

<mix:GeneralCaptureInformation> container.

Input Guidelines: Express the encoded date as specified in ISO 8601 (e.g. 2013-04-17T18:10:12).

Image Producer (M)

Element Name: imageProducer

Definition: The production unit and/or individual responsible for image capture.

Encoding Guidelines: Encode the name(s) of the person/people responsible for image capture in the <mix:imageProducer> subelement within the

<mix:GeneralCaptureInformation> container.

Input Guidelines: Free text. Must incorporate "University of Texas at Austin; Preservation & Digitization Services." May incorporate the personal name of the individual responsible for image capture.

Capture Device (RA)

Element Name: captureDevice

Definition: The device by which the image was captured.

Encoding Guidelines: Encode the device used for image capture in the

<mix:captureDevice> subelement within the

<mix:GeneralCaptureInformation> container.

Input Guidelines: Value must be "flatbed scanner" or "digital camera."

Scanner Capture (RA)

Element Name: ScannerCapture

Element Parts: *Scanner Manufacturer, Scanner Model*

Definition: Container for the manufacturer and model of the scanner used to capture the image.

Scanner Manufacturer (RA)

Element Name: scannerManufacturer

Definition: Designates the manufacturer of the scanner used to capture the image.

Encoding Guidelines: Encode information about the scanner manufacturer in a <mix:scannerManufacturer> subelement within the

<mix:ScannerCapture> container.

Input Guidelines: Free text, e.g. i2s Digibook Scanner.

Scanner Model (RA)

Element Name: scannerModelName

Definition: Designates the model of the scanner used to capture the image.

Encoding Guidelines: Encode information about the scanner model in a

<mix:scannerModelName> subelement within a

<mix:ScannerModel> container.

Input Guidelines: Free text, e.g. Suprascan A0 10000 RGB

Digital Camera Capture (RA)

Element Name: DigitalCameraCapture

Element Parts: *Digital Camera Manufacturer, Digital Camera Model*

Definition: Container for the manufacturer, model, and sensor of the digital camera used to capture the image.

Digital Camera Manufacturer (RA)

Element Name: digitalCameraManufacturer

Definition: Designates the manufacturer of the digital camera used to capture the image.

Encoding Guidelines: Encode information about the digital camera manufacturer in a `<mix:digitalCameraManufacturer>` subelement within the `<mix:DigitalCameraCapture>` container.

Input Guidelines: Free text, e.g. Canon.

Digital Camera Model (RA)

Element Name: digitalCameraModelName

Definition: Designates the model of the digital camera used to capture the image.

Encoding Guidelines: Encode information about the digital camera model in a `<mix:digitalCameraModelName>` subelement within a `<mix:DigitalCameraModel>` container.

Input Guidelines: Free text, e.g. EOS 5D Mark III

Orientation (R)

Element Name: orientation

Definition: Designates the orientation of the image.

Encoding Guidelines: Encode information about the orientation of the image in a `<mix:orientation>` sub-element within the `<mix:GeneralCaptureInformation>` container.

Input Guidelines: The possible values for this element are: "1," "2," "3," "4," "5," "6," "7," "8," or "9."

- 1: normal*
- 2: normal, image flipped (mirror image of 1)
- 3: normal, rotated 180°
- 4: normal, image flipped, rotated 180°
- 5: normal, image flipped, rotated clockwise 90°
- 6: normal, rotated counterclockwise 90°
- 7: normal, image flipped, rotated counterclockwise 90°
- 8: normal, rotated clockwise 90°
- 9: unknown

Example of use:

```
<mix:GeneralCaptureInformation>
  <mix:dateTimeCreated>
    2013-04-17T18:10:12
  </mix:dateTimeCreated>
  <mix:imageProducer>
    University of Texas at Austin; Preservation &
    Digitization Services
  </mix:imageProducer>
  <mix:captureDevice>
    Flatbed scanner
  </mix:captureDevice>
  <mix:ScannerCapture>
    <mix:scannerManufacturer>
      i2s Digibook Scanner
    </mix:scannerManufacturer>
    <mix:ScannerModel>
      <mix:scannerModelName>
        Suprascan A0 10000 RGB
      </mix:scannerModelName>
    </mix:scannerModel>
  <mix:orientation>
    1
  </mix:orientation>
</mix:GeneralCaptureInformation>
```

Image Assessment (M)

Element Name: ImageAssessmentMetadata

Element Parts: *Spatial Metrics, Color Encoding*

Definition: Container element relating to the technical specifications of image quality for preservation and migration.

Example of use: See the end of the Image Capture Information section for a full example of use.

Spatial Metrics (M)

Element Name: SpatialMetrics

Element Parts: *Sampling Frequency Plane, Sampling Frequency Unit, X Sampling Frequency, Y Sampling Frequency*

Definition: Container element relating to the sampling frequency of the source object.

Sampling Frequency Plane (M)

Element Name: `samplingFrequencyPlane`

Definition: Designates the reference plane location.

Encoding Guidelines: Encode information about the reference plane location in a `<mix:samplingFrequencyPlane>` subelement within the `<mix:SpatialMetrics>` container.

Input Guidelines: The possible values for this element are: "1," "2" or "3."

1: camera/scanner focal plane

2: object plane (direct scanning of source objects)

3: source object plane (scanning of intermediate sources, e.g. microfilm)

Sampling Frequency Unit (M)

Element Name: `samplingFrequencyUnit`

Definition: Designates the unit of measurement at which the source object was sampled

Encoding Guidelines: Encode information about the unit of measurement for the sampling frequency in a `<mix:samplingFrequencyUnit>` subelement within the `<mix:SpatialMetrics>` container.

Input Guidelines: The possible values for this element are "in.," "cm.," or "no absolute unit of measurement."

X Sampling Frequency (M)

Element Name: `xSamplingFrequency`

Definition: Designates the number of pixels per sampling unit in the image width

Encoding Guidelines: Encode information about the number of pixels per sampling unit in a `<mix:xSamplingFrequency>` subelement within the `<mix:SpatialMetrics>` container.

Input Guidelines: Integer.

Y Sampling Frequency (M)

Element Name: `ySamplingFrequency`

Definition: Designates the number of pixels per sampling unit in the image length

Encoding Guidelines: Encode information about the number of pixels per sampling unit in a `<mix:ySamplingFrequency>` subelement within the `<mix:SpatialMetrics>` container.

Input Guidelines: Integer.

Color Encoding (M)

Element Name: `ImageColorEncoding`

Element Parts: *Bits Per Sample, Samples Per Pixel*

Definition: Container element related to color encoding within an image.

Bits Per Sample (M)

Element Name: BitsPerSample

Element Parts: *Bits Per Sample Value, Bits Per Sample Unit*

Definition: Container element related to bits per pixel within an image.

Bits Per Sample Value (M)

Element Name: bitsPerSampleValue

Definition: Designates the number of bits per pixel.

Encoding Guidelines: Encode information about the number of bits per pixel in a `<mix:bitsPerSampleValue>` subelement within the `<mix:BitsPerSample>` container.

Input Guidelines: Either a single integer or a string of integers separated by commas if encoding the number of bits per pixel for more than one channel.

Bits Per Sample Unit (M)

Element Name: bitsPerSampleUnit

Definition: Designates whether the number of bits is an integer or floating point value.

Encoding Guidelines: Encode information about the number of bits per pixel in a `<mix:bitsPerSampleUnit>` subelement within the `<mix:BitsPerSample>` container.

Input Guidelines: The possible values for this element are “integer” or “floating point.”

Samples Per Pixel (M)

Element Name: samplesPerPixel

Definition: Designates the number of color components per pixel.

Encoding Guidelines: Encode information about the number of color components in a `<mix:samplesPerPixel>` subelement within the `<mix:SpatialMetrics>` container.

Input Guidelines: The possible values for this element are “1,” “3,” or “4.”

Example of use:

```
<mix:ImageAssessmentMetadata>
  <mix:SpatialMetrics>
    <mix:spatialFrequencyPlane>
      2
    </mix:spatialFrequencyPlane>
    <mix:spatialFrequencyUnit>
      in.
    </mix:spatialFrequencyUnit>
    <mix:xSamplingFrequency>
```

```

        <mix:numerator>
            400
        </mix:numerator>
        <mix:denominator>
            1
        </mix:denominator>
    </mix:xSamplingFrequency>
    <mix:ySamplingFrequency>
        <mix:numerator>
            400
        </mix:numerator>
        <mix:denominator>
            1
        </mix:denominator>
    </mix:ySamplingFrequency>
</mix:SpatialMetrics>
<mix:ColorEncoding>
    <mix:BitsPerSample>
        <mix:bitsPerSampleValue>
            16
        </mix:bitsPerSampleValue>
        <mix:bitsPerSampleUnit>
            Integer
        </mix:bitsPerSampleUnit>
    </mix:BitsPerSample>
    <mix:samplesPerPixel>
        3
    </mix:samplesPerPixel>
</mix:ColorEncoding>
</mix:ImageAssessmentMetadata>

```

Preservation Metadata

This section provides specifications for capturing event-based metadata. An event is any action which modifies the image object. We have selected several elements from the *Event* entity of the PREMIS¹⁴ schema to record this metadata. Not all *Event* entity elements are listed; we recommend that metadata authors be familiar with the PREMIS schema in addition to the guidelines listed here. Please see *Appendix E* for a summary chart of requirements and recommendations for preservation metadata.

High-Level Preservation Elements

Event Identifier (M)

Event Type (M)

Event Date/Time (M)

Event Detail (O)

Event Outcome Information (O)

¹⁴ <http://www.loc.gov/standards/premis/premis.xsd>

Event Identifier (M)

Element Name: eventIdentifier

Element Parts: *Event Identifier Type*, *Event Identifier Value*

Definition: Container element for recording a unique identifier for the event being described.

Repeatable: No

Event Identifier Type (M)

Definition: A designation of the domain within which the event identifier is unique (e.g., “UUID,” “FDA,” “UT Repository Event ID”)

Encoding Guidelines: Encode the type of identifier in a `<PREMIS:eventIdentifierType>` element within the `<PREMIS:eventIdentifier>` container element.

Input Guidelines: For most preservation repositories, the *eventIdentifierType* will be its own internal numbering system. It can be implicit within the system and provided explicitly only if the data is exported.

Repeatable: No

Event Identifier Value (M)

Definition: The value of the *eventIdentifier*.

Encoding Guidelines: Encode the identifier in a `<PREMIS:eventIdentifierValue>` element within the `<PREMIS:eventIdentifier>` container element.

Input Guidelines: Binary integer

Repeatable: No

Example of use:

```
<PREMIS:eventIdentifier>
  <PREMIS:eventIdentifierType>
    UT Repository Event ID
  </PREMIS:eventIdentifierType>
  <PREMIS:eventIdentifierValue>
    0012
  </PREMIS:eventIdentifierValue>
</PREMIS:eventIdentifier>
```

Event Type (M)

Element Name: eventType

Element Parts: none

Definition: A categorization of the nature of the event. Recommended practice is to record detailed information about the event itself in *eventDetail* rather than using a very granular value for *eventType*.

Encoding Guidelines: Encode the type of event in a `<PREMIS:eventType>` element.

Input Guidelines: Value must come from controlled list of event type terms found in *Appendix F*.

Repeatable: No

Example of use:

```
<PREMIS:eventType>capture</PREMIS:eventType>
```

Event Date/Time (M)

Element Name: `eventDateTime`

Element Parts: none

Definition: The single date and time, or date and time range, at or during which the event occurred.

Encoding Guidelines: Encode the date and time of the event in the `<PREMIS:eventDateTime>` element.

Input Guidelines: Express date and time as specified in ISO 8601.

Repeatable: No

Example of use:

```
<PREMIS:eventDateTime>
    2013-04-17T18:10:12
</PREMIS:eventDateTime>
```

Event Detail (O)

Element Name: `eventDetail`

Element Parts: none

Definition: Additional information about the event. *eventDetail* is not intended to be processed by machine. It may record any information about an event and/or point to information stored elsewhere.

Encoding Guidelines: Encode event information in a `<PREMIS:eventDetail>` element.

Input Guidelines: Free text. Use proper grammar and punctuation.

Repeatable: No

Example of use:

```
<PREMIS:eventDetail>
  Volume was unbound for processing.
</PREMIS:eventDetail>
```

Event Outcome Information (O)

Element Name: eventOutcomeInformation

Element Parts: *Event Outcome, Event Outcome Detail, Event Outcome Detail Note*

Definition: Container element to record information about the overall result of an event.

Repeatable: Yes. Since events may have more than one outcome, this container is repeatable.

Event Outcome (O)

Element Name: eventOutcome

Definition: Information about the overall result of the event.

Encoding Guidelines: Encode the success level of the event in a

<PREMIS:eventOutcome> subelement within the

<PREMIS:eventOutcomeInformation> container element.

Input Guidelines: Value must be “success,” “partial success,” or “failure.”

Repeatable: No

Event Outcome Detail (O)

Element Name: eventOutcomeDetail

Definition: Container element for detailed description of event outcome. This may be used to record all error and warning messages issued by a program involved in the event or to record a pointer to an error log. If the event was a validity check (e.g., profile conformance) any anomalies or quirks discovered would be recorded here. Contains *Event Outcome Detail Note*.

Repeatable: Yes

Event Outcome Detail Note (O)

Element Name: eventOutcomeDetailNote

Definition: A detailed description of the result or product of the event in textual form.

Encoding Guidelines: Encode any textual notes about the event in the

<PREMIS:eventOutcomeDetailNote> subelement within the

<PREMIS:eventOutcomeDetail> container element.

Input Guidelines: Free text.

Example of use:

```
<PREMIS:eventOutcomeInformation>
  <PREMIS:eventOutcome>success</PREMIS:eventOutcome>
  <PREMIS:eventOutcomeDetail>
```



```
<PREMIS:eventOutcomeDetailNote>  
    Non-standard tags found in header.  
</PREMIS:eventOutcomeDetailNote>  
</PREMIS:eventOutcomeDetail>  
</PREMIS:eventOutcomeInformation>
```

Appendices

Appendix A: Descriptive Metadata Summary of Requirements

Appendix B: UT Libraries' Type Vocabulary

Appendix C: Source Metadata Summary of Requirements

Appendix D: Technical Metadata Summary of Requirements

Appendix E: Preservation Metadata Summary of Requirements

Appendix F: Controlled Vocabulary for <eventType> in Preservation Metadata

Appendix B: UT Libraries' Type Vocabulary

- collection
- dataset
- event
- image
 - musical score/notation
 - postcard
 - architectural drawing
 - map
 - photograph
 - rendering
- interactive resource
- moving image
- service
- software
- sound
- text
 - article
 - book
 - journal
 - manuscript
 - newsprint
 - thesis
- website

Appendix F: Controlled Vocabulary for <eventType> in Preservation Metadata

Controlled Value	Definition
capture	the process whereby a repository actively obtains an object
compression	the process of coding data to save storage space or transmission time
creation	the act of creating a new object
deaccession	the process of removing an object from the inventory of the repository
decompression	the process of reversing the effects of compression
decryption	the process of converting encrypted data to plaintext
deletion	the process of removing an object from repository storage
digital signature validation	the process of determining that a decrypted digital signature matches an expected value
dissemination	the process of retrieving an object from repository storage and making it available to users
fixity check	the process of verifying that an object has not been changed in a given period
ingestion	the process of adding objects to a preservation repository
message digest calculation	the process by which a message digest ("hash") is created
migration	a transformation of an object creating a version in a more contemporary format
transformation	process performed on an image object that results in one or more new image files that are not bit-wise identical to the source object