CONSERVATION METADATA FOR ANALOGUE FILM - DATA DICTIONARY

VERSION 2.0

Content

ABBREVIATIONS & DEFINITIONS

IE – Intellectual Entity

"An **Intellectual Entity** is a distinct intellectual or artistic creation that is considered relevant to a designated community in the context of digital preservation: for example, a particular book, map, photograph, database, or hardware or software. An Intellectual Entity can include other Intellectual Entities; for example, a web site can include a web page and a web page can include an image. An Intellectual Entity may have one or more digital or non-digital Representations." (PREMIS Editorial Committee, p. 8)

REP – Representation

"A **Representation** is the set of files, including structural metadata, needed for a complete rendition of an Intellectual Entity. For example, a journal article may be complete in one PDF file; this single file constitutes the Representation. Another journal article may consist of one SGML file and two image files; these three files constitute the Representation. A third article may be represented by one TIFF image for each of 12 pages plus an XML file of structural metadata showing the order of the pages; these 13 files constitute the Representation. Starting with PREMIS version 3.0 physical items, such as manuscripts or printed documents, may also be Representations so that digital and non-digital Representations can be captured uniformly."
(PREMIS Editorial Committee, p. 8)

1. PURPOSE AND STRUCTURE

During the project "Digitalisierung EthnoLogischer FilmbesTand" (DELFT)[1] we searched for a standardized way to record and store the finding of an inspection of an analogue film in order to document the state of the analogue object at the moment of digitization. We found out that usually existing reports follow certain rules, but are written as freetext in a not standardized way. They come in the form of a word-file, or a description field in a database.
Transferring the findings of an inspection into XML which follows a metadata scheme comes with advantages. The report can be checked for completeness as certain fields are declared as mandatory. For certain metadata a fixed set of possible answers are defined. Furthermore the schematic way of capturing the metadata allows a faster way of searching e.g. finding all copies which have a high pH-value.

The data dictionary describes each element and gives more information of the structure of the xml. For each element a table with the following rows describes the components:

definition	Definition of the element
rationale	Why is there a need for the element?
diagram	A diagram of the element and subelements
properties	Cardinality (if defined), content (complex if element consists of child elements, simple if no child elements), necessity (mandatory, required,optional)
annotation	Annotations in German and English
children	Child elements
attributes	Attributes, their type and necessity (mandatory, required,optional)
source	Section of the xsd-scheme
example in XML	Example

---

[1] https://projects.tib.eu/delft/

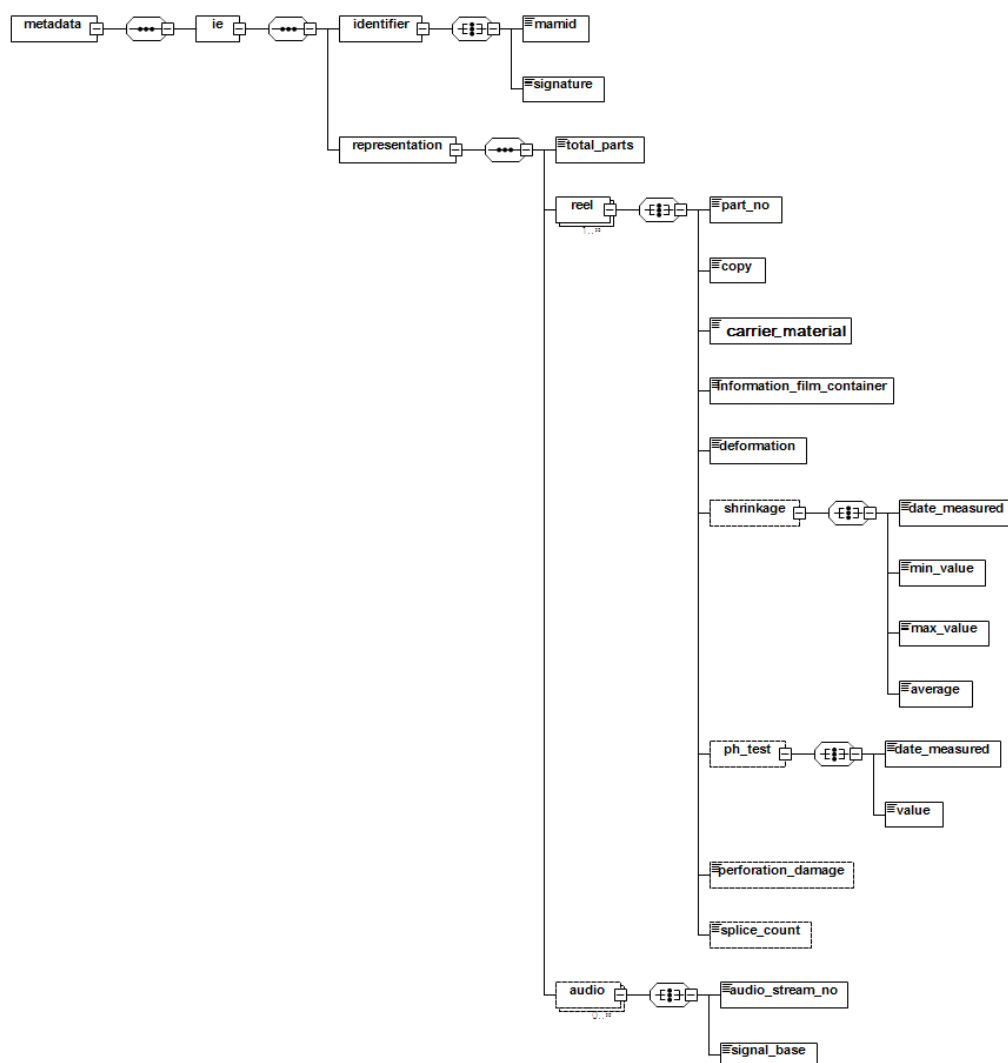# 2. ELEMENTS OF THE CONSERVATION METADATA SCHEME

Schema **TIBFilmConservationMetadata.xsd**

schema location:	**https://github.com/TIB-Digital-Preservation/FilmConservationMetadata/blob/main/ TIBFilmConservationMetadata.xsd**
attributeFormDefault:	**unqualified**
elementFormDefault:	**qualified**

General overview:

2.1. ELEMENT METADATA

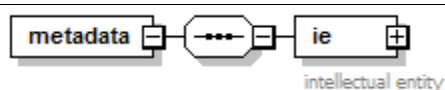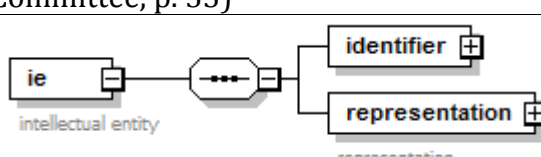| definition	describes the metadata.
rationale	Describes the Intellectual Entity as well as the conservation metadata.
diagram	intellectual entity
properties	Content: complex / mandatory
children	**ie**
attributes	Name Type Use version **xs:deci mal** required
source	<xs:element name="metadata"> <xs:complexType> <xs:sequence> […] </xs:sequence> </xs:complexType> </xs:element>
example in XML	<metadata xsi:noNamespaceSchemaLocation="https://github.com/TIB-Digital-Preservation/FilmConservationMetadata/blob/main/TIBFilmConservationMetadata.xsd" version="2.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
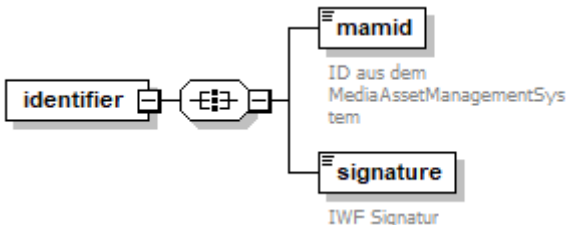
2.1.1. ATTRIBUTE METADATA/@VERSION

definition	describes the version of the metadata scheme which is applicable.
rationale	Changes in the metadata scheme lead to a new version of it. The metadata can be validated against the applicable metadata scheme.
type	xs:decimal
properties	required
source	<xs:attribute name="version" type="xs:decimal" use="required"/>
example in XML	<ie xsi:noNamespaceSchemaLocation="https://projects.tib.eu/fileadmin/data/delft/img/DelftConservationMetadata.xsd" version="2.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

definition	describes an intellectual entity (IE).
rationale	A set of content that is considered a single intellectual unit for purposes of management and description (PREMIS Editorial Committee, p. 33)
diagram	
properties	Content: complex / mandatory
children	**Identifier, representation**
source	<xs:element name="ie"> <xs:annotation> <xs:documentation>intellectual entity</xs:documentation> </xs:annotation> <xs:complexType> [...] </xs:complexType> </xs:element>
example in XML	<ie>

2.2.1. ELEMENT IDENTIFIER

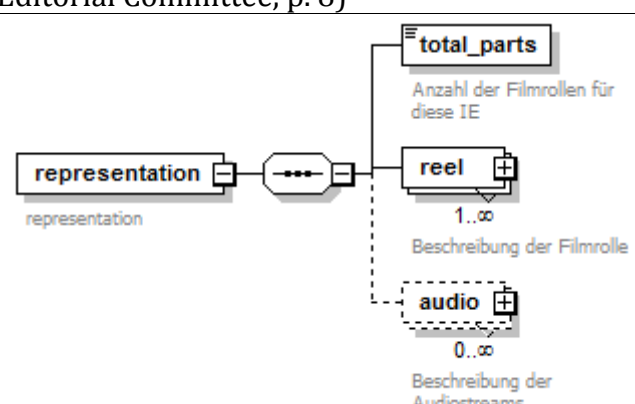|	
definition	contains internal identifiers of the intellectual entity.
rationale	The identifier is unique to the intellectual entity therefore the relation between metadata concerning the intellectual entity from different systems is maintained.
diagram	
properties	Content: complex / mandatory
children	mamid, signature

source	`<xs:element name="identifier">`
	`<xs:complexType>`
	`<xs:all>`
	`<xs:element name="mamid" type="xs:integer">`
	`<xs:annotation>`
	`<xs:documentation>ID aus dem MediaAssetManagementSystem</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`
	`<xs:element name="signature" type="xs:string">`
	`<xs:annotation>`
	`<xs:documentation>IWF Signatur</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`
	`</xs:all>`
	`</xs:complexType>`
	`</xs:element>`

example in XML	`<identifier>`
	`<mamid>16605</mamid>`
	`<signature>E 1399</signature>`
	`</identifier>`

2.2.1.1.   ELEMENT MAMID

definition	contains the Media Asset Management Identifier (MAMID). The MAMID is a running number and identifies a particular language version of the intellectual entity inside the Media Asset Management System of TIB.
rationale	The MAMID is the identifier which is used in the Media Assett Management System.
type	xs:integer
properties	Content: simple / mandatory
annotation	documentation ID aus dem MediaAssetManagementSystem
source	<xs:element name="mamid" type="xs:integer"> <xs:annotation> <xs:documentation>ID aus dem MediaAssetManagementSystem</xs:documentation> </xs:annotation> </xs:element>
example in XML	<identifier> <mamid>16605</mamid> <signature>E 1399</signature> </identifier>

2.2.1.2.   ELEMENT SIGNATURE

definition	contains the signature of the intellectual entity
rationale	The Signature is an identifier for the intellectual entity regardless the language version. It can be found on the physical item. For holdings of the TIB the Signature was assigned by the IWF and is furthermore searchable in the Media Asset Management System of TIB.
type	xs:string
properties	Content: simple / mandatory
annotation	documentation IWF Signatur
source	<xs:element name="signature" type="xs:string"> <xs:annotation> <xs:documentation>IWF Signatur</xs:documentation> </xs:annotation> </xs:element>
example in XML	<identifier> <mamid>16605</mamid> <signature>E 1399</signature> </identifier>
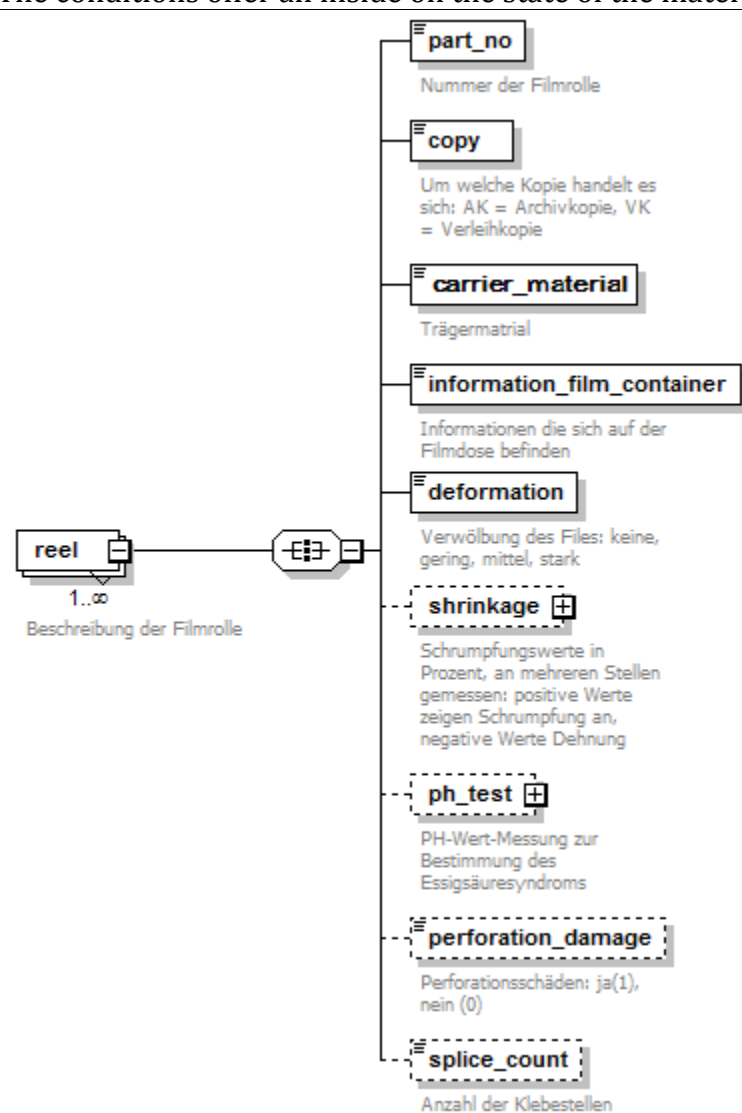
2.2.2. ELEMENT REPRESENTATION

definition	Describes the digital representation of the IE
rationale	A Representation is the set of files, including structural metadata, needed for a complete rendition of an Intellectual Entity (PREMIS Editorial Committee, p. 8)
diagram	
properties	Content: complex / mandatory
children	total_parts, reel, audio
annotation	documentation Anzahl der Filmrollen für diese IE

source	`<xs:element name="total_parts" type="xs:integer">`
	 `<xs:annotation>`
	  `<xs:documentation>`Anzahl der Filmrollen für diese IE`</xs:documentation>`
	 `</xs:annotation>`
	`</xs:element>`

example in XML	`<total_parts>1</total_parts>`

2.2.2.1. ELEMENT TOTAL_PARTS

definition	describes of how many reels the film consists.
rationale	A film might be spread over more than one reel, and for each reel the conditions are reported individually.
type	xs:integer
properties	Content: simple / mandatory
annotation	documentation Anzahl der Filmrollen für diese IE

source	`<xs:element name="total_parts" type="xs:integer">`
	  `<xs:annotation>`
	    `<xs:documentation>Anzahl der Filmrollen für diese IE</xs:documentation>`
	  `</xs:annotation>`
	`</xs:element>`

example in XML	`<total_parts>1</total_parts>`

2.2.2.2. ELEMENT REEL

definition	describes the conditions of the reel at the time of digitization.
rationale	The conditions offer an inside on the state of the material.
diagram	
properties	Content: complex / mandatory
	minOcc 1
	maxOcc unbounded
	repeatable
children	part_no, copy, carrier_material, shrinkage, ph_test, perforation_damage, splice_count, deformation, information_film_container
annotation	documentation Beschreibung der Filmrolle

source	`<xs:element name="reel" maxOccurs="unbounded">`
	`<xs:annotation>`
	`<xs:documentation>Beschreibung der Filmrolle</xs:documentation>`
	`</xs:annotation>`
	`<xs:complexType>`
	`[…]`
	`</xs:complexType>`
	`</xs:element>`

example in XML	`<reel>`
	`<part_no>1</part_no>`
	`<copy>AK</copy>`
	`<carrier_type>Azetat</carrier_type>`
	`<shrinkage>`
	`<date_measured>2019-12-17</date_measured>`
	`<min_value>-0.5705680000</min_value>`
	`<max_value>-0.4813880000</max_value>`
	`<average>-0.530762516491065</average>`
	`</shrinkage>`
	`<perforation_damage>0</perforation_damage>`
	`<splice_count>0</splice_count>`
	`<deformation>gering</deformation>`
	`<information_film_container>neue Testkopie v IN abgenommen Firma Atlantik Film Hamburg 22.2.90</information_film_container>`
	`</reel>`

2.2.2.2.1. ELEMENT PART_NO

definition	describes the number of the part. Each film begins with part/reel number one and may have more than one part/reel.
rationale	The conditions of the reels are recorded individually.
type	xs:integer
properties	Content: simple / mandatory
annotation	documentation Nummer der Filmrolle
source	\<xs:element name="part_no" type="xs:integer"\> \<xs:annotation\> \<xs:documentation\>Nummer der Filmrolle\</xs:documentation\> \</xs:annotation\> \</xs:element\>
example in XML	\<part_no\>1\</part_no\>

2.2.2.2.2. ELEMENT COPY

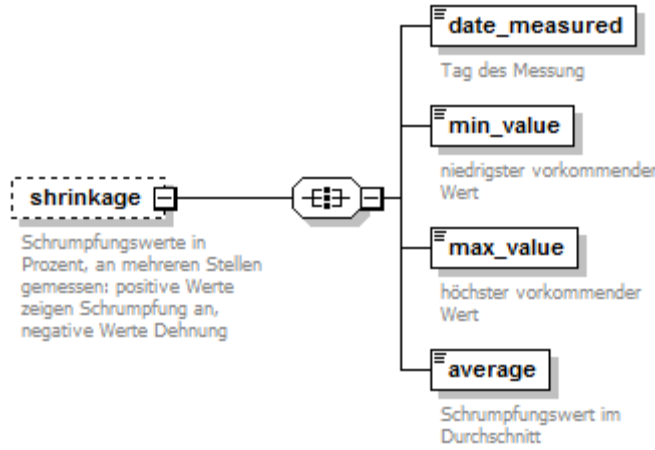| definition	describes the copy which was chosen for digitization. Each intellectual entity is available in different copies.
rationale	Different copies are available, the chosen copy is documented in order to identify the copy at a later point in time. Possible abbreviations: AK -> Archivkopie, is a reference copy where chroma is determined. VK -> Verleihkopie, copy for rental services, usually there is more than one renal copy
type	xs:string
properties	Content: simple / mandatory
annotation	documentation Um welche Kopie handelt es sich: AK = Archivkopie, VK = Verleihkopie
source	\<xs:element name="copy" type="xs:string"\> \<xs:annotation\> \<xs:documentation\>Um welche Kopie handelt es sich: AK = Archivkopie, VK = Verleihkopie\</xs:documentation\> \</xs:annotation\> \</xs:element\>
example in XML	\<copy\>AK\</copy\>

2.2.2.2.3. ELEMENT CARRIER_MATERIAL

definition	describes the carrier material.
rationale	The carrier material is an important information for the conservation of the material.
type	xs:string
properties	Content: simple / mandatory
annotation	documentation Trägermatrial
source	<xs:element name="carrier_material " type="xs:string"> <xs:annotation> <xs:documentation>Trägermatrial </xs:documentation> </xs:annotation> </xs:element>
example in XML	<carrier_material>acetate</carrier_material>

2.2.2.2.4. ELEMENT INFORMATION_FILM_CONTAINER

definition	contains the text from film container
rationale	The text contains important information, e.g. year of copy process, processing laboratory, remarks.
type	xs:string
properties	Content: simple / mandatory
source	<xs:element name="information_film_container" type="xs:string"> <xs:annotation> <xs:documentation>Informationen die sich auf der Filmdose befinden</xs:documentation> </xs:annotation> </xs:element>
example in XML	<information_film_container>neue Testkopie v IN abgenommen Firma Atlantik Film Hamburg 22.2.90</information_film_container>

2.2.2.2.5. ELEMENT SHRINKAGE

definition	describes the shrinkage in percent.
rationale	Shrinkage effects the possibilities of digitization.
diagram	
properties	Content: complex / optional
children	date_measured, min_value, max_value, average
annotation	documentation Schrumpfungswerte in Prozent, an mehreren Stellen gemessen: positive Werte zeigen Schrumpfung an, negative Werte Dehnung

source	`<xs:element name="shrinkage">`
	`<xs:annotation>`
	`<xs:documentation>`Schrumpfungswerte in Prozent, an mehreren Stellen gemessen: posivie Werte zeigen Schrumpfung an, negative Werte Dehnung`</xs:documentation>`
	`</xs:annotation>`
	`<xs:complexType>`
	[...]
	`</xs:complexType>`
	`</xs:element>`

example in XML	`<shrinkage>`
	`<date_measured>`2019-12-17`</date_measured>`
	`<min_value>`-0.5705680000`</min_value>`
	`<max_value>`-0.4813880000`</max_value>`
	`<average>`-0.530762516491065`</average>`
	`</shrinkage>`

2.2.2.2.5.1. ELEMENT SHRINKAGE/DATE_MEASURED

definition	describes the date the shrinkage was measured.
rationale	Contextualizes the value, and allows comparison of shrinkage over time.
type	xs:date
properties	Content: simple / mandatory
annotation	documentation Tag des Messung

source	`<xs:element name="date_measured" type="xs:date">`
	`<xs:annotation>`
	`<xs:documentation>Tag des Messung</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`

example in XML	`<date_measured>2019-12-17</date_measured>`

2.2.2.2.5.2. ELEMENT SHRINKAGE/MIN_VALUE

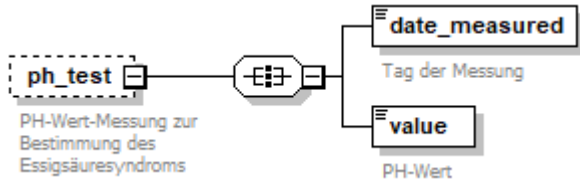| definition	describes the minimal measured shrinkage of the material.
rationale	The information from the scanning process mesures shrinkage at different positions of the film.
type	xs:decimal
properties	Content: simple / mandatory
annotation	documentation niedrigster vorkommender Wert

source	`<xs:element name="min_value" type="xs:decimal">`
	`<xs:annotation>`
	`<xs:documentation>niedrigster vorkommender Wert</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`

example in XML	`<min_value>-0.5705680000</min_value>`

2.2.2.2.5.3. ELEMENT SHRINKAGE/MAX_VALUE

definition	describes the maximal measured shrinkage of the material.
rationale	The information from the scanning process mesures shrinkage at different positions of the film.
type	xs:decimal
properties	Content: simple / mandatory
annotation	documentation höchster vorkommender Wert

source	`<xs:element name="max_value" type="xs:decimal">`
	`<xs:annotation>`
	`<xs:documentation>`höchster vorkommender Wert`</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`

example in XML	`<max_value>-0.4813880000</max_value>`

2.2.2.2.5.4. ELEMENT SHRINKAGE/AVERAGE

definition	describes the average measured shrinkage of the material.
rationale	The information from the scanning process mesures shrinkage at different positions of the film. The average allows an interpretation of the the tendency of shrinkage of reel.
type	xs:decimal
properties	Content: simple / mandatory
annotation	documentation Schrumpfungswert im Durchschnitt

source	`<xs:element name="average" type="xs:decimal">`
	`<xs:annotation>`
	`<xs:documentation>`Schrumpfungswert im Durchschnitt`</xs:documentation>`
	`</xs:annotation>`
	`</xs:element>`

example in XML	`<average>-0.530762516491065</average>`

2.2.2.2.6. ELEMENT PH_TEST

definition	describes the outcome of an Ph-Test, is not mandatory
rationale	Measuring the Ph-value leads to information on vinegar syndrome.
diagram	
properties	Content: complex / optional
children	date_measured, value

source	`<xs:element name="ph_test" minOccurs="0">`
	 `<xs:annotation>`
	  `<xs:documentation>`PH-Wert-Messung zur Bestimmung des Essigsäuresyndroms`</xs:documentation>`
	 `</xs:annotation>`
	 `<xs:complexType>`
	  […]
	 `</xs:complexType>`
	`</xs:element>`

example in XML	`<ph_test>`
	 `<date_measured>`02.03.2018`</date_measured>`
	 `<value>`4,8`</value>`
	`</ph_test>`

2.2.2.2.6.1. ELEMENT PH_TEST/DATE_MEASURED

definition	describes the date the Ph-value was measured.
rationale	Contextualizes the value, and allows comparison of Ph-values over time.
type	xs:date
properties	Content: simple / mandatory
annotation	documentation Tag der Messung

source	`<xs:element name="date_measured" type="xs:date">`
	 `<xs:annotation>`
	  `<xs:documentation>`Tag der Messung`</xs:documentation>`
	 `</xs:annotation>`
	`</xs:element>`

example in XML	`<date_measured>`02.03.2018`</date_measured>`

2.2.2.2.6.2.   ELEMENT PH_TEST/VALUE

definition	describes the Ph-Value of the material.
rationale	Measuring the Ph-value leads to information on vinegar syndrome.
type	xs:decimal
properties	Content: simple / mandatory
annotation	documentation PH-Wert

source	`<xs:element name="value" type="xs:decimal">`
	 `<xs:annotation>`
	  `<xs:documentation>PH-Wert</xs:documentation>`
	 `</xs:annotation>`
	`</xs:element>`

example in XML	`<value>4,8</value>`

2.2.2.2.7.   ELEMENT DEFORMATION

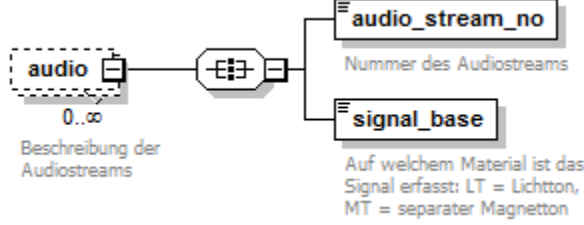| definition	describes the deformation of the film at the time of digitization
rationale	A deformed film leads to a more difficult process of digitization and may lead to blurriness in the resulting digital file.
type	restriction of xs:string
properties	Content: simple / mandatory
facets	kind Value Annotation enumeration keine enumeration gering enumeration mittel enumeration stark

source	`<xs:element name="deformation" block="restriction">`
	 `<xs:annotation>`
	  `<xs:documentation>Verwölbung des Files: keine, gering, mittel, stark</xs:documentation>`
	 `</xs:annotation>`
	 `<xs:simpleType>`
	  `<xs:restriction base="xs:string">`
	   `<xs:enumeration value="keine"/>`
	   `<xs:enumeration value="gering"/>`
	   `<xs:enumeration value="mittel"/>`
	   `<xs:enumeration value="stark"/>`
	  `</xs:restriction>`
	 `</xs:simpleType>`
	`</xs:element>`

example in XML	`<deformation>gering</deformation>`

2.2.2.2.8. ELEMENT PERFORATION_DAMAGE

definition	describes if the perforation is damaged. 1 for true (the perforation is damaged), 0 for false (the perforation is not damaged)
rationale	A filmreel with damaged perforation leads to a more difficult process of digitization and may lead to blurriness or unsteadyness in the resulting digital file. Capturing the value depends on the utilized equipment.
type	xs:boolean
properties	Content: simple / optional
annotation	documentation Perforationsschäden: ja(1), nein (0)
source	<xs:element name="perforation_damage" type="xs:boolean"> <xs:annotation> <xs:documentation>Perforationsschäden: ja(1), nein (0)</xs:documentation> </xs:annotation> </xs:element>
example in XML	<perforation_damage>0</perforation_damage>

2.2.2.2.9. ELEMENT SPLICE_COUNT

definition	describes the number of splices in the filmreel
rationale	Splices may lead to difficulties during digitization and may result in unsteadiness of frames in the digital file. Capturing the value depends on the utilized equipment.
type	xs:integer
properties	Content: simple / optional
annotation	documentation Anzahl der Klebestellen
source	<xs:element name="splice_count" type="xs:integer"> <xs:annotation> <xs:documentation>Anzahl der Klebestellen</xs:documentation> </xs:annotation> </xs:element>
example in XML	<splice_count>0</splice_count>

2.2.2.3. ELEMENT AUDIO

definition	describes the source material of the audio streams
rationale	The source material offers an insight on the quality of the audio streams.
diagram	
properties	Content: comlex / optional | minOcc	0
maxOcc	unbounded
repeatable		
children	audio_stream_no, signal_base
annotation	documentation Beschreibung der Audiostreams

source	`<xs:element name="audio" minOccurs="0" maxOccurs="unbounded">`
	`<xs:annotation>`
	`<xs:documentation>Beschreibung der Audiostreams</xs:documentation>`
	`</xs:annotation>`
	`<xs:complexType>`
	`[…]`
	`</xs:complexType>`
	`</xs:element>`

example in XML	`<audio>`
	`<audio_stream_no>1</ audio_stream _no>`
	`<signal_base>LT</signal_base>`
	`</audio>`
	`<audio>`
	`<audio_stream_no>2</ audio_stream _no>`
	`<signal_base>MT</signal_base>`
	`</audio>`

2.2.2.3.1. ELEMENT AUDIO_STREAM_NO

definition	describes the number of the audio stream
rationale	The number refers to the audio stream number in the preservation master.
type	xs:string
properties	Content: simple / mandatory
annotation	documentation Nummer des Audiostreams
source	<xs:element name="audio_stream_no" type="xs:integer"> <xs:annotation> <xs:documentation>Nummer des Audiostreams</xs:documentation> </xs:annotation> </xs:element>
example in XML	<audio_stream_no>1</ audio_stream _no>

2.2.2.3.2. ELEMENT SIGNAL_BASE

definition	describes the file base or carrier material.
rationale	The carrier material is an important information for the conservation of the material.
type	xs:string
properties	Content: simple / mandatory
annotation	documentation Auf welchem Material ist das Signal erfasst: LT = Lichtton, MT = separater Magnetton
source	<xs:element name="signal_base" type="xs:string"> <xs:annotation> <xs:documentation>Um welchen Ton handelt es sich: LT = Lichtton, MT = separater Magnetton</xs:documentation> </xs:annotation> </xs:element>
example in XML	<signal_base>MT</signal_base>

3. CHANGELOG

CHANGES FROM VERSION 1 TO VERSION 2

- Schema name changed from DelftConservationMetadata.xsd to TIBFilmConservationMetadata.xsd
- added namespace: xmlns:xs="http://www.w3.org/2001/XMLSchema"
- metadata: added as first level, child: version of the scheme
- ie: has now child elements representation and identifier
- representation: added layer, child element reel, audio
- shrinkage: was mandatory, is now optional, changed spelling error in description
- perforation_damage: was monitored during first digitization project, but holdings are homogenously not damaged, therefore optional in following projects.
- splice_count: was monitored during first digitization project, but holdings are homogenously not damaged, therefore optional in following projects.
- added optional information on audio streams: number of streams and signal base.

PUBLICATION BIBLIOGRAPHY

PREMIS Editorial Committee: PREMIS Data Dictionary for Preservation Metadata, Version 3.0, checked on 11/5/2020.

PREMIS Editorial Committee: PREMIS Data Dictionary for Preservation Metadata, Version 3.0. Available online at http://www.loc.gov/standards/premis/v3/premis-3-0-final.pdf, checked on 3/30/2021.