

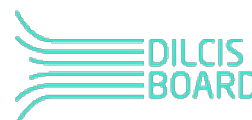
E-ARK SIP

Specification for Submission Information Packages



The European Commission eArchiving procurement recognizes the E-ARK specifications as the eArchiving specifications which are funded under the eArchiving Common Services Platform Agreement No. LC-01905904-CNECT/LUX/2021/OP/0077.

This specification is published, supported, and developed by the Digital Information LifeCycle Interoperability Standards (DILCIS) Board under the auspices of the DLM Forum.



This specification is maintained by Digital Information LifeCycle Interoperability Standards Board and is licensed under CC BY 4.0



This specification was previously developed with the support of the European Union:

E-ARK Grant No: 620998 CIP-ICT-PSP.2013.2.5
E-ARK4ALL Agreement No. LC-00921441 CEF-TC-2018-15
E-ARK3 Agreement No. LC-01390244 CEF-TC-2019-3

Executive Summary

This document provides a comprehensive specification for the creation and parsing of E-ARK Submission Information Packages (SIP). Its primary goals include outlining a general-purpose structure for Submission Information Packages that accommodates a diverse array of archival materials—such as document and image collections, databases, and geographical data. Additionally, it aims to improve interoperability between Producers and Archives by recommending best practices for metadata, content, and the structural organization of Submission Information Packages. This specification is designed for a broad audience, including record creators, archival institutions, and software providers tasked with the preparation, packaging, delivery, and reception of information packages for archiving within an Open Archival Information System (OAIS), specifically targeting the pre-ingest and ingest stages.

Preface

I. Aim of the Specification

This document is one of several related specifications which aim to provide a common set of usage descriptions of international standards for packaging digital information for archiving purposes. These specifications are based on common, international standards for transmitting, describing and preserving digital data. They also utilise the Reference Model for an Open Archival Information System (OAIS), which has Information Packages as its foundation. Familiarity with the core functional entities of OAIS is a prerequisite for understanding the specifications.

The specifications are designed to help data creators, software developers, and digital archives to tackle the challenge of short-, medium- and long-term data management and reuse in a sustainable, authentic, cost-efficient, manageable and interoperable way. A visualisation of the current specification network can be seen here:

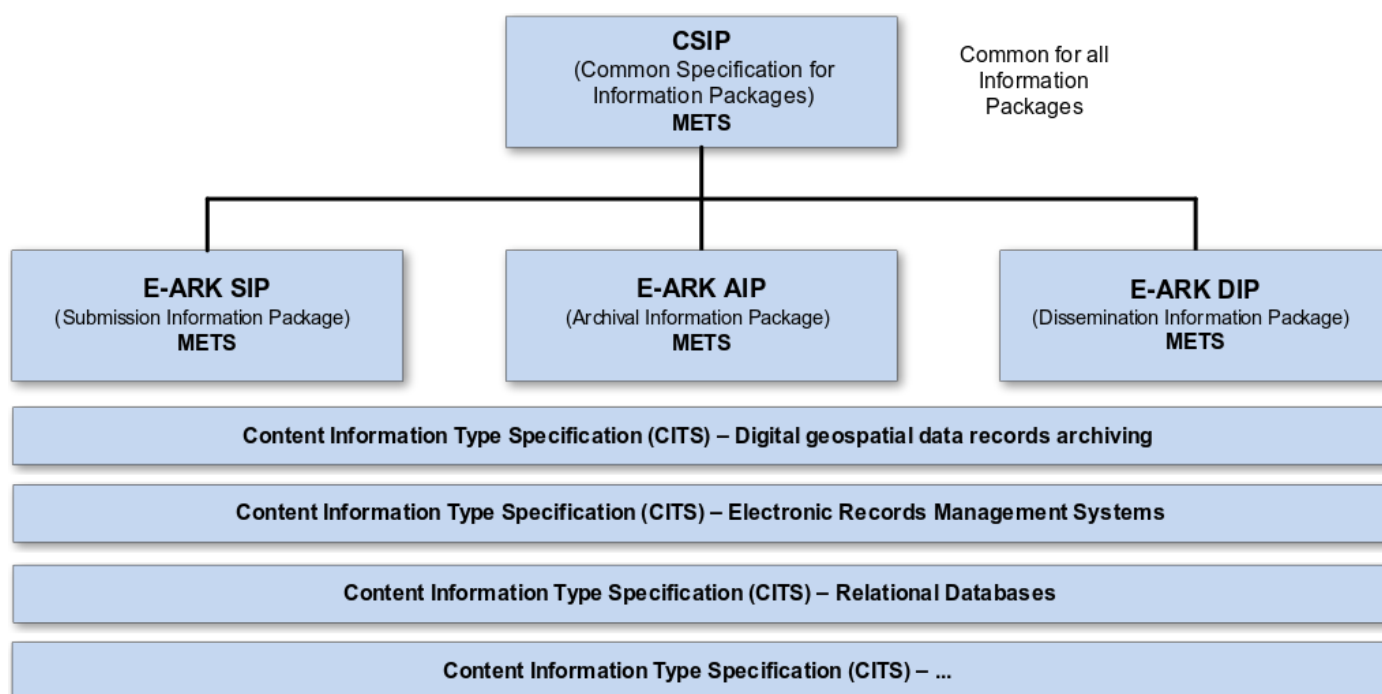


Figure I: Diagram showing E-ARK specification dependency hierarchy. Note that the image only shows a selection of the published CITS and isn't an exhaustive list.

Overview of the E-ARK Specifications

Common Specification for Information Packages (E-ARK CSIP)

This document introduces the concept of a Common Specification for Information Packages (CSIP). The main purposes of CSIP are to:

- Establish a common understanding of the requirements which need to be met to achieve interoperability of Information Packages.
- Establish a common base for the development of more specific Information Package definitions and tools within the digital preservation community.
- Propose the details of an XML-based implementation of the requirements using, to the largest possible extent, standards which are widely used in international digital preservation.

Ultimately the goal of the Common Specification is to reach a level of interoperability between all Information Packages so that tools implementing the Common Specification can be adopted by institutions without the need for further modifications or adaptations.

Specification for Submission Information Packages (E-ARK SIP)

The main aims of this specification are to:

- Define a general structure for a Submission Information Package format suitable for a wide variety of archival scenarios, such as document and image collections, databases or geospatial data.
- Enhance interoperability between Producers and Archives.
- Recommend best practices regarding the structure, content and metadata of Submission Information Packages.

Specification for Archival Information Packages (E-ARK AIP)

The main aims of this specification are to:

- Define a generic structure of the AIP format suitable for a wide variety of data types, such as document and image collections, archival records, databases or geospatial data.
- Recommend a set of metadata related to the structural and the preservation aspects of the AIP as implemented by the eArchiving Reference Implementation (eArkweb).
- Ensure the format is suitable to store large quantities of data.

Specification for Dissemination Information Packages (E-ARK DIP)

The main aims of this specification are to:

- Define a generic structure of the DIP format suitable for a wide variety of archival records, such as document and image collections, databases or geographical data.
- Recommend a set of metadata related to the structural and access aspects of the DIP.

Content Information Type Specifications (E-ARK CITS)

The main aim of a Content Information Type Specification (CITS) is to:

- Define, in technical terms, how data and metadata must be formatted and placed within a CSIP Information Package to achieve interoperability in exchanging specific Content Information.

The number of possible Content Information Type Specifications is unlimited. For a list of existing Content Information Type Specifications see the DILCIS Board webpage (DILCIS Board, <http://dilcis.eu/>).

II. Organisational Support

This specification is maintained by the Digital Information LifeCycle Interoperability Standards Board (DILCIS Board, <http://dilcis.eu/>). The role of the DILCIS Board is to enhance and maintain the draft specifications developed in the European Archival Records and Knowledge Preservation Project (E-ARK project, <http://eak-project.com/>), which concluded in January 2017. The Board consists of eight members, but no restriction is placed on the number of participants taking part in the work. All Board documents and specifications are stored in GitHub (<https://github.com/DILCISBoard/>), while published versions are made available on the Board webpage. The DILCIS Board have been responsible for providing the core specifications to the Connecting Europe Facility eArchiving Building Block <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eArchiving/>.

III. Authors & Revision History

A full list of contributors to this specification, as well as the revision history, can be found in the Postface material.

Table of contents

1	Introduction	8
1.1	Scope and purpose	8
1.2	Target audience	8
1.3	Definition of SIP	9
2	Structure	9
3	METS	11
3.1	Extended use of the METS root element (element mets)	12
3.2	Extended use of the METS header (element metsHdr)	14
3.3	Extended use of the METS descriptive metadata section (element dmdSec)	20
3.4	Extended use of METS administrative metadata section (element amdSec)	20
3.5	Extended use of the METS file section (element fileSec)	20
3.6	Extended use of the METS structural map (element structMap)	22
4	Content Information Type Specifications (CITS)	22
4.1	Submission Agreements	22
5	Glossary	23
6	Bibliography	25
7	Appendices	25
7.1	Appendix A: Submission Agreement semantic elements	25
7.1.1	Project information	26
7.1.2	Change management	26
7.1.3	Producer, Archive and Designated Community	26
7.1.4	Submission Information Package (SIP)	27
7.1.5	Submission Session Information	28
7.1.6	Ingest	28
7.1.7	Submission risks	28
7.2	Appendix B: E-ARK Information Package METS Example	28
7.2.1	Example 1: Example of a whole METS document describing an submission information package with no representations.	28
7.3	Appendix C: External Schema	32
7.3.1	E-ARK SIP METS Extension	32
7.3.2	E-ARK CSIP METS Extension	32

7.4	Appendix D: External Vocabularies	33
7.4.1	Package status	33
7.4.2	Alternative record ID's	33
7.4.3	Note type	33
7.4.4	OAIS Package type	33
7.5	Appendix E: E-ARK SIP Metadata Requirements	34
7.5.1	E-ARK SIP METS Profile 2.1 Requirements	34

1 Introduction

According to ISO 14721:2012 - Open archival information system (OAIS) Reference model, every submission to an archive is made through one or more distinct transmissions of Submission Information Packages (SIP). However, the OAIS Reference Model itself does not provide detailed guidelines on the structure of these information packages.

Addressing this gap, the European Union-funded E-ARK project, which ran from 2014 to 2017, recognized the issue and initiated the development of a standardized package specification. This effort aimed to define a clear and actionable framework for the creation and management of Submission Information Packages, thereby enhancing the interoperability and effectiveness of digital archiving processes.

Today, this specification is among a series of standards overseen by the Digital Information LifeCycle Interoperability Standards Board (DILCIS Board), an independent entity dedicated to the maintenance and promotion of digital information lifecycle standards.

1.1 Scope and purpose

This document describes how to produce and parse E-ARK Submission Information Packages (SIP). The main objectives of this specification are to:

- Define the general structure for a Submission Information Package format in a way that it is suitable for a wide variety of archival scenarios, e.g. document and image collections, databases, geographical data, etc.;
- Enhance interoperability between Producers and Archives;
- Recommend best practices regarding metadata, content and structure of Submission Information Packages.

1.2 Target audience

This specification is designed for a broad audience, including record creators, archival institutions, and software providers tasked with the preparation, packaging, delivery, and reception of information packages for archiving within an Open Archival Information System (OAIS), specifically targeting the pre-ingest and ingest stages.

1.3 Definition of SIP

The OAIS reference model defines a Submission Information Package (SIP) as follows:

An Information Package that is delivered by the Producer to the OAIS for use in the construction or update of one or more AIPs and/or the associated Descriptive Information.

The E-ARK SIP is aligned with this definition, expanding upon the E-ARK Common Specification for Information Packages (CSIP). It enhances this specification by incorporating specific requirements essential for selecting, packaging, transmitting, receiving, validating, and ingesting information originally held by a Producer.

2 Structure

The SIP specification follows a structure that is common to Information Packages in the E-ARK set of specifications. The common structure is fully described in the Common Specification for Information Packages (see Section 4. CSIP structure).

In its simplest form, an SIP consists of metadata and zero or more representations, also composed of `data` and `metadata`, as seen in Figure 2. A package with zero representations means that it only contains metadata. This is a special type of Information Package that enables Producers to deliver updates to the metadata to previously ingested packages.

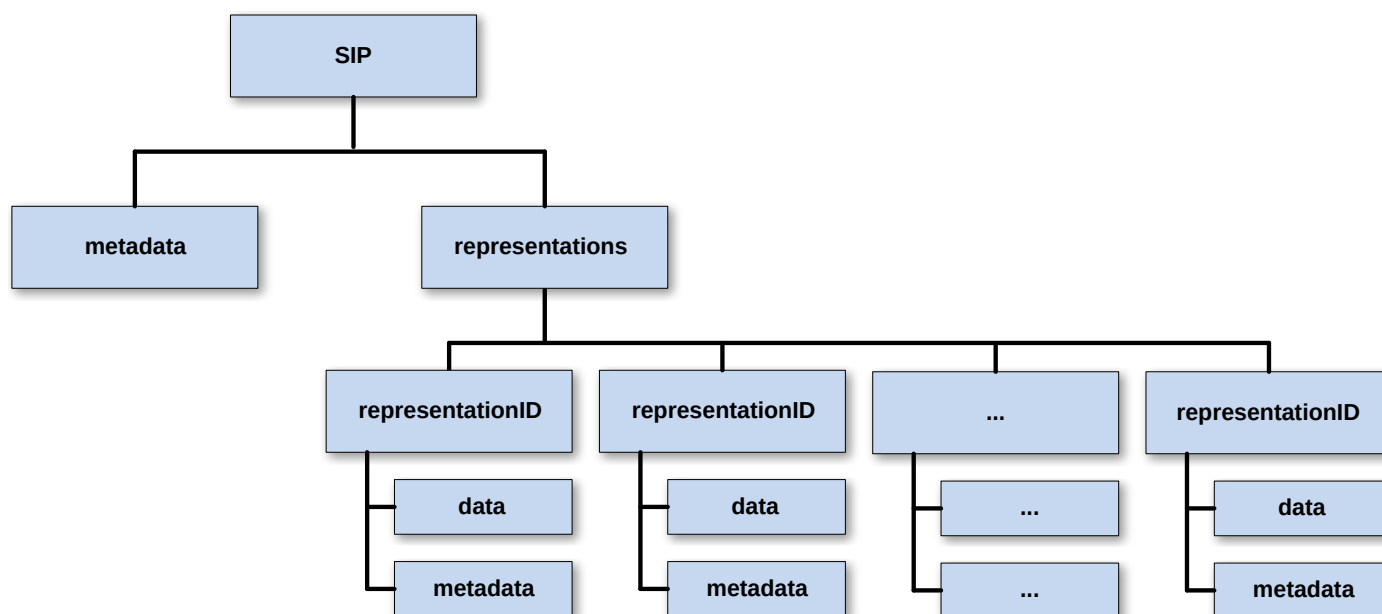


Figure 2: Simplified view of the structure of an information package.

According to PREMIS Version 3.0:

A representation is a set of files, including structural metadata, needed for a complete and reasonable 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.

As one SIP may contain multiple representations of the same intellectual entity, representations **MUST** be placed within distinct folders (i.e., `rep-001`, `rep-002`, `rep-n` under the `representations` folder). In contrast, metadata may exist within each representation folder or at the root level (next to the `representations` folder). Metadata can serve multiple purposes, being the most common one the support for discoverability of resources within the OAIS (i.e. descriptive metadata).

If metadata is stored at the root level of the package, then there is generally no need to include `metadata` at the representation level. In such cases, the `metadata` folder under representations is considered optional. The SIP also accounts for the following additional folders, which can exist both at the root level or under the `representations` folder (Figure 3):

- `documentation` – includes materials that provide additional context or clarification about the data it contains. For instance, this might encompass a data dictionary for a SIARD (Software-Independent Archiving of Relational Databases) file. Such documentation is crucial for ensuring that the data can be accurately interpreted, used, and preserved over time. It serves as a valuable resource for understanding the structure, meaning, and organization of the data, making it an essential component of the package for both current users and future stakeholder;
- `schemas` – designated for holding the schemas of XML files that are part of the data or metadata. It serves as a central repository for XML schemas, enabling consistent validation and interpretation of the XML structures within the package. This ensures that both the data and metadata are structured in a manner that adheres to predefined standards and formats, facilitating accurate data exchange and interoperability between systems.

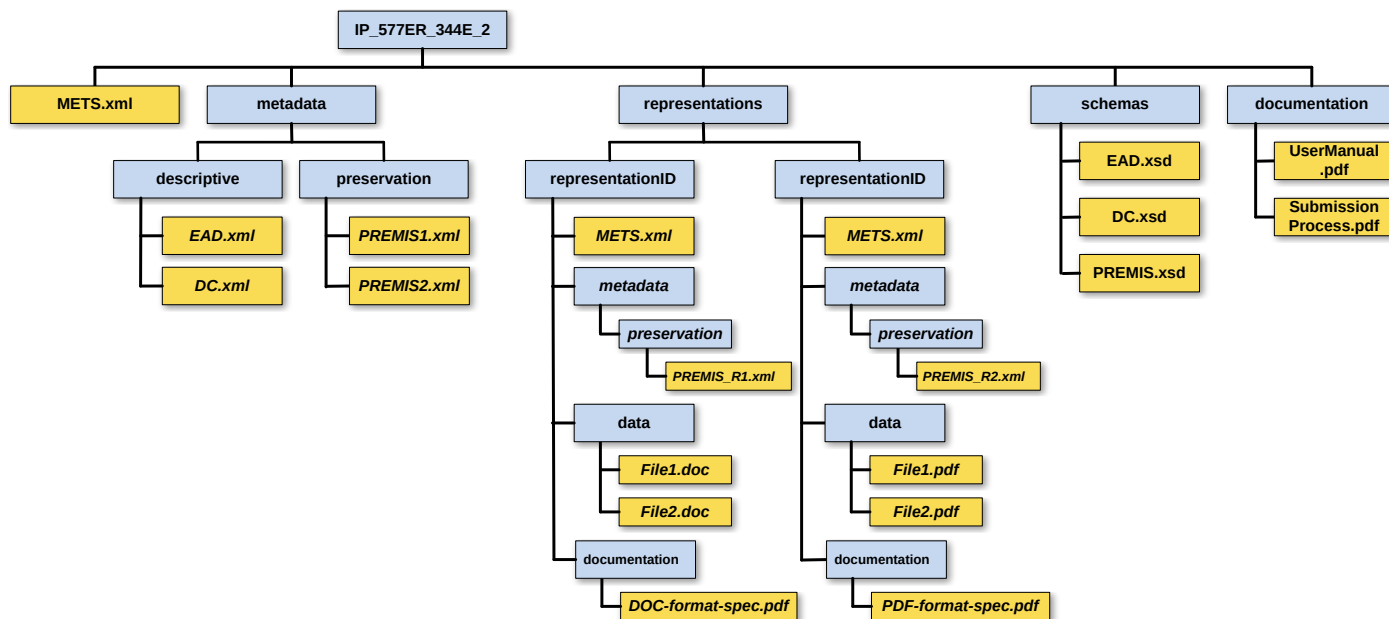


Figure 3: Example of the full use of the SIP structure

The details of the internal structure of an SIP including its **data** and **metadata** folders can be further specified by **Submission Agreements**. These can exist for a particular submission, a special collection or a specific Producer.

3 METS

The Metadata Encoding and Transmission Standard (METS) is a standard for encoding descriptive, administrative, and structural metadata expressed using the XML Schema Language.

METS schema is utilized across the various types of packages (SIP, AIP and DIP) maintaining a consistent approach to metadata encoding and data structuring. The specific application of the METS schema within an E-ARK packages is detailed in the Common Specification for Information Packages (CSIP), particularly in section “5.3 Use of METS”. This section outlines how METS should be implemented, including the precise requirements for its use within the E-ARK information packages.

Although the METS schema serves as a common foundation for SIPs, AIPs, and DIPs within E-ARK information packages, there are subtle differences in its application across these packages. These variations are mainly in the customization of attribute values, the definition of controlled vocabularies, and the adjustment of element optionality - transforming some optional elements into mandatory ones. Such adjustments ensure that the METS schema is optimally tailored to meet the specific needs of each package type, enhancing the precision and utility of metadata encoding for digital preservation and access.

The specific differences between the METS instances for SIP and the Common Specification for Information Packages (CSIP) are articulated through what is known as a METS profile. A METS profile is a detailed document that defines

how the METS schema is adapted or extended for particular use cases or types of digital packages. In this context, the SIP METS profile is an extension of the more general CSIP METS profile, focusing on the particular requirements and adaptations necessary for Submission Information Packages within the E-ARK Information Packages framework.

3.1 Extended use of the METS root element (element mets)

The root element of a METS document `<mets>` can contain a number of optional attributes, namespaces (`xmlns:`), locations for external schemas (`xsi:`) and a number of other elements.

The following table describes the differences in the `<mets>` element between the E-ARK SIP and the `<mets>` element of a Common Specification for Information Packages (CSIP).

ID	Name, Location & Description	Card & Level
SIP1	Package name <code>mets/@LABEL</code> An optional short text describing the contents of the package, e.g. "Accounting records of 2017".	0..1 MAY
SIP2	METS Profile <code>mets/@PROFILE</code> The value is set to "https://earksip.dilcis.eu/profile/E-ARK-SIP-v2-2-0.xml".	1..1 MUST

Example: METS example of altrecordID's, and SIP agents following the SIP profile as well as CS IP.

```
<agent ROLE="ARCHIVIST" TYPE="ORGANIZATION">
  <name>
    The Swedish health agency
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    VAT:SE201345098701
  </note>
</agent>
<agent ROLE="CREATOR" TYPE="ORGANIZATION">
  <name>
    The agency, Personnel
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    VAT:SE2098109810-AF87
  </note>
```

```

</agent>
<agent ROLE="OTHER" TYPE="INDIVIDUAL" OTHERROLE="SUBMITTER">
  <name>
    Sven Svensson
  </name>
  <note>
    Phone: 08-123456, Email: sven.svensson@mail.mail
  </note>
</agent>
<agent ROLE="PRESERVATION" TYPE="ORGANIZATION">
  <name>
    The archives
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    ID:1234567
  </note>
</agent>
<altRecordID TYPE="SUBMISSIONAGREEMENT">
  http://submissionagreement.kb.se/dnr331-1144-2011/20120711/
</altRecordID>
<altRecordID TYPE="PREVIOUSSUBMISSIONAGREEMENT">
  FM 12-2387/12726, 2007-09-19
</altRecordID>
<altRecordID TYPE="REFERENCECODE">
  SE/RA/123456/24/P
</altRecordID>
<altRecordID TYPE="PREVIOUSREFERENCECODE">
  SE/FM/123/123.1/123.1.3
</altRecordID>
</metsHdr>

```

Example: METS root element example with values from E-ARK-SIP as well as CS IP.

```

<mets OBJID="uuid-4422c185-5407-4918-83b1-7abfa77de182" LABEL="Accounting records of
2017" TYPE="OTHER" csip:OTHERTYPE="Accounting" PROFILE="https://earksip.dilcis.eu/
profileE-ARK-SIP-v2-2-0.xml" xsi:schemaLocation="http://www.loc.gov/METS/ http://
www.loc.gov/standards/mets/mets.xsd http://www.w3.org/1999/xlink http://www
.loc.gov/standards/mets/xlink.xsd https://DILCIS.eu/XML/METS/
CSIPExtensionMETS https://earkcsip.dilcis.eu/schema/DILCISExtensionMETS.xsd
https://DILCIS.eu/XML/METS/SIPExtensionMETS https://earksip.dilcis.eu/
schema/DILCISExtensionSIPMETS.xsd">

```

```
</mets>
```

3.2 Extended use of the METS header (element `metsHdr`)

The `<metsHdr>` (METS header) element is a crucial part of the METS schema, providing metadata about the creation and management of the Submission Information Package (SIP). This element encapsulates information about various actors involved in the creation, preparation, and submission of the SIP. These actors are referred to as “agents” and are represented within the METS schema by the `<agent>` element, which is nested within the `<metsHdr>` element.

Each `<agent>` element can describe a range of roles and responsibilities associated with the SIP, including but not limited to:

- **CREATOR:** This refers to the organization or individual responsible for assembling the SIP and preparing it for submission. This agent is typically responsible for ensuring that the SIP conforms to the required standards and specifications.
- **ARCHIVIST:** This agent refers to the individual or organization responsible for the document/collection.. In many cases, this may be different from the creator of the SIP, especially if the SIP contains archived materials or data collected from various sources.
- **SUBMITTER:** This details the contact information for the individual or entity responsible for the actual submission of the SIP to the archive or repository. This information is crucial for communication purposes, especially if there are queries or issues related to the SIP.
- **PRESERVATION:** This details the contact information for the individual or entity responsible for preservation functions.
- **OTHER:** There can be additional agents involved in the lifecycle of the SIP, such as editors, publishers, or custodians, each playing a specific role in the creation, maintenance, or submission of the digital content.

The `metsHdr/agent` elements allow for the detailed documentation of each agent’s role, name, note, and other identifiers, thereby providing a comprehensive record of all parties involved in the SIP’s creation and management. This structured approach not only facilitates accountability and transparency but also enhances the metadata’s richness and usefulness for future archival processing and access.

The `<metsHdr>` is also used to indicate the type of behaviour to be expected from the OAIS when processing a particular SIP. For example, one might indicate that an SIP should be used to “replace” a particular AIP in the repository or that an SIP is meant for “testing” purposes and therefore it should not create an AIP at the end of the ingest process (see attribute `metsHdr/@RECORDSTATUS`).

It is also in the `metsHdr` that the [Submission Agreement](#) to which a particular SIP conforms can be identified (see `metsHdr/altrecordID/@TYPE="SUBMISSIONAGREEMENT`).

The following table describes the differences in the `metsHdr` between an E-ARK SIP and the CSIP.

ID	Name, Location & Description	Card & Level
SIP3	<p>Package status</p> <p>metsHdr/@RECORDSTATUS</p> <p>A way of indicating the status of the package and to instruct the OAIS on how to properly handle the package. If not set, the expected behaviour is equal to NEW.</p>	<p>0..1</p> <p>MAY</p>
SIP4	<p>OAIS Package type information</p> <p>metsHdr/@csip:OAISPACKAGETYPE</p> <p>@csip:OAISPACKAGETYPE is used with the value “SIP”.</p>	<p>1..1</p> <p>MUST</p>
SIP5	<p>Submission agreement</p> <p>metsHdr/altRecordID</p> <p>A reference to the Submission Agreement associated with the package. @TYPE is used with the value “SUBMISSIONAGREEMENT”. Example: RA 13-2011/5329; 2012-04-12 Example: http://submissionagreement.kb.se/dnr331-1144-2011/20120711/Note: It is recommended to use a machine-readable format for a better description of a submission agreement. For example, the submission agreement developed by Docuteam GmbH http://www.loc.gov/standards/mets/profiles/00000041.xml</p>	<p>0..1</p> <p>MAY</p>
SIP6	<p>Previous Submission agreement</p> <p>metsHdr/altRecordID</p> <p>An optional reference to a previous submission agreement(s) which the information may have belonged to. @TYPE is used with the value “PREVIOUSSUBMISSIONAGREEMENT”. Example: FM 12-2387/12726, 2007-09-19 Example: http://submissionagreement.kb.se/dnr331-1144-2011/20120711/Note: It is recommended to use a machine-readable format for a better description of a submission agreement. For example, the submission agreement developed by Docuteam GmbH http://www.loc.gov/standards/mets/profiles/00000041.xml</p>	<p>0..*</p> <p>MAY</p>
SIP7	<p>Archival reference code</p> <p>metsHdr/altRecordID</p> <p>An optional reference code indicating where in the archival hierarchy the package shall be placed in the OAIS. @TYPE is used with the value “REFERENCECODE”. Example: FM 12-2387/12726, 2007-09-19</p>	<p>0..1</p> <p>MAY</p>

ID	Name, Location & Description	Card & Level
SIP8	<p>Previous archival reference code</p> <p><code>metsHdr/altRecordID</code></p> <p>In cases where the SIP originates from other institutions maintaining a reference code structure, this element can be used to record these reference codes and therefore support the provenance of the package when a whole archival description is not submitted with the submission. @TYPE is used with the value "PREVIOUSREFERENCECODE". Example: SE/FM/123/123.1/123.1.3</p>	<p>0..*</p> <p>MAY</p>
SIP9	<p>Archival creator agent</p> <p><code>metsHdr/agent</code></p> <p>A wrapper element that enables to encode the name of the organisation or person that originally created the data being transferred. Please note that this might be different from the organisation which has been charged with preparing and sending the SIP to the archives.</p>	<p>0..1</p> <p>MAY</p>
SIP10	<p>Archival creator agent role</p> <p><code>metsHdr/agent/@ROLE</code></p> <p>The role of the person(s) or institution(s) responsible for the document/collection.</p>	<p>1..1</p> <p>MUST</p>
SIP11	<p>Archival creator agent type</p> <p><code>metsHdr/agent/@TYPE</code></p> <p>The type of the archival creator agent is "ORGANIZATION" or "INDIVIDUAL".</p>	<p>1..1</p> <p>MUST</p>
SIP12	<p>Archival creator agent name</p> <p><code>metsHdr/agent/name</code></p> <p>The name of the organisation(s) that originally created the data being transferred. Please note that this might be different from the organisation which has been charged with preparing and sending the SIP to the archives.</p>	<p>1..1</p> <p>MUST</p>
SIP13	<p>Archival creator agent additional information</p> <p><code>metsHdr/agent/note</code></p> <p>The archival creator agent has a note providing a unique identification code for the archival creator.</p>	<p>0..1</p> <p>MAY</p>
SIP14	<p>Classification of the archival creator agent additional information</p> <p><code>metsHdr/agent/note/@csip:NOTETYPE</code></p> <p>The archival creator agent note is typed with the value of "IDENTIFICATIONCODE".</p>	<p>1..1</p> <p>MUST</p>

ID	Name, Location & Description	Card & Level
SIP15	Submitting agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the organisation or person submitting the package to the archive.	1..1 MUST
SIP16	Submitting agent role <i>metsHdr/agent/@ROLE</i> The role of the person(s) or institution(s) responsible for creating and/or submitting the package.	1..1 MUST
SIP17	Submitting agent type <i>metsHdr/agent/@TYPE</i> The type of the submitting agent is “ORGANIZATION” or “INDIVIDUAL”.	1..1 MUST
SIP18	Submitting agent name <i>metsHdr/agent/name</i> Name of the organisation submitting the package to the archive.	1..1 MUST
SIP19	Submitting agent additional information <i>metsHdr/agent/note</i> The submitting agent has a note providing a unique identification code for the submitter.	0..1 MAY
SIP20	Classification of the submitting agent additional information <i>metsHdr/agent/note/@csip:NOTETYPE</i> The submitting agent note is typed with the value of “IDENTIFICATIONCODE”.	1..1 MUST
SIP21	Contact person agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the contact person for the submission.	0..* MAY
SIP22	Contact person agent role <i>metsHdr/agent/@ROLE</i> The role of the contact person is “CREATOR”.	1..1 MUST
SIP23	Contact person agent type <i>metsHdr/agent/@TYPE</i> The type of the contact person agent is “INDIVIDUAL”.	1..1 MUST
SIP24	Contact person agent name <i>metsHdr/agent/name</i> Name of the contact person.	1..1 MUST

ID	Name, Location & Description	Card & Level
SIP25	Contact person agent additional information <i>metsHdr/agent/note</i> The submitting agent has one or more notes giving the contact information.	0..* MAY
SIP26	Preservation agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the organisation or person that preserves the package.	0..1 MAY
SIP27	Preservation agent role <i>metsHdr/agent/@ROLE</i> The role of the preservation agent is "PRESERVATION".	1..1 MUST
SIP28	Preservation agent type <i>metsHdr/agent/@TYPE</i> The type of the submitting agent is "ORGANIZATION".	1..1 MUST
SIP29	Preservation agent name <i>metsHdr/agent/name</i> Name of the organisation preserving the package.	1..1 MUST
SIP30	Preservation agent additional information <i>metsHdr/agent/note</i> The preservation agent has a note providing a unique identification code for the archival creator.	0..1 MAY
SIP31	Classification of the preservation agent additional information <i>metsHdr/agent/note/@csip:NOTETYPE</i> The preservation agent note is typed with the value of "IDENTIFICATIONCODE".	1..1 MUST

Example: METS example of altrecordID's, and SIP agents following the SIP profile as well as CS IP.

```
<agent ROLE="ARCHIVIST" TYPE="ORGANIZATION">
  <name>
    The Swedish health agency
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    VAT:SE201345098701
  </note>
```

```
</agent>
<agent ROLE="CREATOR" TYPE="ORGANIZATION">
  <name>
    The agency, Personnel
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    VAT:SE2098109810-AF87
  </note>
</agent>
<agent ROLE="OTHER" TYPE="INDIVIDUAL" OTHERROLE="SUBMITTER">
  <name>
    Sven Svensson
  </name>
  <note>
    Phone: 08-123456, Email: sven.svensson@mail.mail
  </note>
</agent>
<agent ROLE="PRESERVATION" TYPE="ORGANIZATION">
  <name>
    The archives
  </name>
  <note csip:NOTETYPE="IDENTIFICATIONCODE">
    ID:1234567
  </note>
</agent>
<altRecordID TYPE="SUBMISSIONAGREEMENT">
  http://submissionagreement.kb.se/dnr331-1144-2011/20120711/
</altRecordID>
<altRecordID TYPE="PREVIOUSSUBMISSIONAGREEMENT">
  FM 12-2387/12726, 2007-09-19
</altRecordID>
<altRecordID TYPE="REFERENCECODE">
  SE/RA/123456/24/P
</altRecordID>
<altRecordID TYPE="PREVIOUSREFERENCECODE">
  SE/FM/123/123.1/123.1.3
</altRecordID>
</metsHdr>
```

3.3 Extended use of the METS descriptive metadata section (element `dmdSec`)

The METS descriptive metadata section `<dmdSec>` is responsible for recording descriptive metadata for all the data items included in the package.

The SIP specification itself does not prescribe of any particular metadata format. It is a role of the OAIS together with the Producer to set the rules in terms of descriptive metadata. These rules should be set and agreed upon in the [Submission Agreement](#).

In the context of the `<dmdSec>` element, the SIP specification does not change or extend any of the requirements already defined by the Common Specification for Information Packages (for more information see section 5.3.3 of the CSIP).

3.4 Extended use of METS administrative metadata section (element `amdSec`)

The `<amdSec>` (administrative metadata section) in a METS document plays a crucial role in encapsulating or referencing the technical and preservation metadata related to a digital object or collection. This section is pivotal for maintaining the integrity, understanding, and long-term preservation of digital resources.

Preservation metadata, while not always found within Submission Information Packages, holds significant value, especially in recording the history of events affecting the state and stewardship of the information package. Preservation metadata is primarily associated with activities undertaken after a package's ingestion into a digital repository. However, certain preservation events, such as the digitization of analog materials, may occur prior to ingest and are thus relevant for inclusion within an SIP. Documenting such pre-ingest preservation activities provides a comprehensive record of the efforts taken to convert, preserve, and prepare digital objects for archiving and future access.

The Using PREMIS with METS guide by the Library of Congress offers detailed recommendations on how to effectively incorporate PREMIS metadata within a METS document, ensuring that vital preservation details are accurately represented and accessible.

In the context of `<amdSec>`, the SIP specification does not change or extend any of the requirements already defined by the Common Specification for Information Packages (for more information see section 5.3.4 of the CSIP).

3.5 Extended use of the METS file section (element `fileSec`)

The METS file section element `<fileSec>` is used to describe all the components included in the information package which have not been already included in the `<amdSec>` and `<dmdSec>` elements.

The main purpose of the METS `<fileSec>` element is to serve as a “table of contents” or “manifest” for all the files included in the package, thus allowing the OAIS to validate the integrity and completeness of the files that are part of the package.

This means that the location and checksum of all the files that compose the SIP must be enlisted within the <fileSec> element. This includes files in the *data*, *schemas* and in the *documentation* folders.

The following table describes the differences in the <fileSec> between an E-ARK SIP and the CSIP.

ID	Name, Location & Description	Card & Level
SIP32	File format name <i>fileSec/fileGrp/file/@sip:FILEFORMATNAME</i> An optional attribute may be used if the MIMETYPE is not sufficient for the purposes of processing the information package. Example: "Extensible Markup Language" Example: "PDF/A" Example: "ISO/IEC 26300:2006"	0..1 MAY
SIP33	File format version <i>fileSec/fileGrp/file/@sip:FILEFORMATVERSION</i> The version of the file format when the use of PREMIS has not been agreed upon in the submission agreement. Example: "1.0"	0..1 MAY
SIP34	File format registry <i>fileSec/fileGrp/file/@sip:FILEFORMATREGISTRY</i> The name of the format registry used to identify the file format when the use of PREMIS has not been agreed upon in the submission agreement. Example: "PRONOM"	0..1 MAY
SIP35	File format registry key <i>fileSec/fileGrp/file/@sip:FILEFORMATKEY</i> Key of the file format in the registry when use of PREMIS has not been agreed upon in the submission agreement. Example: "fmt/101"	0..1 MAY

Example: METS example of an SIP with file information together with the info from CS IP.

```
<file ID="docx-file" MIMETYPE="application/vnd.openxmlformats-officedocument.wordprocessingml.document" SIZE="2554366" CREATED="2012-08-15T12:08:15.432+01:00" CHECKSUM="91B7A2C0A1614AA8F3DAF11DB4A1C981F14BAA25E6A0336F715B7C513E7A1557" CHECKSUMTYPE="SHA-256" sip:FILEFORMATNAME="Microsoft Word for Windows" sip:FILEFORMATVERSION="2007 onwards" sip:FORMATREGISTRY="PRONOM" sip:FORMATREGISTRYKEY="fmt/412">
  <FLocat LOCTYPE="URL" xlink:type="simple" xlink:href="documentation/File.docx">
  </FLocat>
</file>
```

3.6 Extended use of the METS structural map (element `structMap`)

The mandatory METS structural map element `<structMap>` is intended to provide an overview of the components included in the package. It can also link elements of that structure to associated content files and metadata. In the CSIP the `structMap` describes the higher-level structure of all the content in the root and may link to existing representations.

In the context of `<structMap>`, the SIP specification does not change or extend any of the requirements defined by the Common Specification for Information Packages (for more information see section 5.3.6 of the CSIP)

4 Content Information Type Specifications (CITS)

The concept of Content Information Type Specifications (CITS) constitutes an extension method designed to improve the interoperability and adaptability of the E-ARK Information Packages (IPs) at a content-specific level. By introducing CITS, E-ARK provides detailed guidelines for handling various types of digital content within archival processes, ensuring that these diverse content types are managed, exchanged and preserved in a manner that is both standardized and tailored to their unique characteristics.

A Content Information Type can be understood as a category of Content Information, for example, relational databases, scientific data or digitised maps. A CITS defines in technical terms how data and metadata (mainly in regard to the Information Object) should be formatted and placed within an Information Package in order to achieve interoperability between different stakeholders.

The SIP specification does not introduce extensions or exceptions to the concept of Content Information Type as it is formalised in the Common Specification for Information Packages. More information on this subject can be found in sections 1.2, 1.3 and 6.1 of the CSIP.

4.1 Submission Agreements

Interactions between Producers and the OAIS are often guided by a [Submission Agreement](#), which establishes specific details about how these interactions should take place, e.g. the type of information expected to be exchanged, the metadata the Producer is expected to deliver, the logistics of the actual transfer, statements regarding access restrictions on the submitted material, etc.

Given the importance of [Submission Agreements](#), the E-ARK SIP specification provides a way of referring such documents regardless of their form. A Submission Agreement can be delivered as a digital file (e.g. PDF or XML) or in analogue forms (i.e. paper document). More information about how to reference the Submission Agreement within the SIP can be found in the section dedicated to the `structMap` element.

According to PAIMAS (Producer-Archive Interface Methodology Abstract Standard) a Submission Agreement should include a complete and precise definition of:

- Information to be transferred (e.g. SIP contents, SIP packaging, data models, identification of the designated community, legal and contractual aspects);
- Transfer definition (e.g. specification of the OAI Data Submission Sessions);
- Validation definition;
- Change management (e.g. conditions for modification of the agreement, for breaking the agreement);
- Schedule (submission timetable).

This specification includes a list of semantic elements that should be present in a standard [Submission Agreement](#) (see Appendix A). The list of semantic elements is inspired by PAIMAS and the Submission Agreement provided by the National Oceanic and Atmospheric Administration (NOAA).

The E-ARK SIP specification does not require the use of any of these semantic elements or in any way forbids the use of other Submission Agreement formats. This list is merely a recommendation.

5 Glossary

Term	Definition
Archival creator	Organisation unit or individual that creates records and/or manages records during their active use.
Archive	An organisation that intends to preserve information for Access and (re)use by a Designated Community.
Delivering organisation	The organisation delivering an information package to the archive. For stating and extending the information use of the “Producer organisation name” and “Submitting organisation name” elements is recommended.
ERMS	A type of content management software known as an Electronic Records Management System.
Information Package	A logical container composed of optional Content Information and optional associated Preservation Description Information. Associated with this Information Package is Packaging Information used to delimit and identify the Content Information and Package Description information used to facilitate searches for the Content Information.

Term	Definition
Ingest	The OAIS functional entity that contains the services and functions that accept Submission Information Packages from Producers, prepares Archival Information Packages for storage, and ensures that Archival Information Packages and their supporting Descriptive Information become established within the OAIS.
OAIS	The Open Archival Information System is an archive (and a standard: ISO 14721:2003), consisting of an organisation of people and systems that has accepted the responsibility to preserve information and make it available for a Designated Community.
Producing organisation	The organisational unit or individual that has the authority to transfer records to an archive. Usually the producer is also the records creator but this is not always the case, sometimes the producer is different from the records creator. For example: An author dies and her literary executor gains the authority to transfer her papers to an archive. The author is the records creator and the literary executor is the producer. For example: Department X gets reorganised out of existence and Department Y, which takes over the functional responsibilities of Department X, gains the authority to transfer the records of Department X to the archive. Department X is the records creator and Department Y is the producer. Counter example: The Department of Widget Science transfers some of its own records to the archive. The Department of Widget Science is the records creator and the producer.
Submission Information Package (SIP)	An Information Package that is delivered by the Producer to the OAIS for use in the construction or update of one or more AIPs and/or the associated Descriptive Information.
Submitting organisation	Name of the organisation submitting the package to the archive. Extends the delivery information since it may be the case that the content of a creator is held by another part of the organisation.

6 Bibliography

1. A Checklist for Documenting PREMIS-METS Decisions in a METS Profile, 2010, URL: http://www.loc.gov/standards/premis/premis_mets_checklist.pdf
2. E-ARK Report on Available Best Practices, 2014, URL: <http://e-ark-project.com/resources/project-deliverables/6-d31-e-ark-report-on-available-best-practices>
3. e-SENS (Electronic Simple European Networked Services) project, 2015, URL: <http://www.esens.eu/>
4. Encoded Archival Context for Corporate Bodies, Persons, and Families, 2015, URL: <http://eac.staatsbibliothek-berlin.de>
5. FGS packet structure, 2013, URL: https://riksarkivet.se/Media/pdf-filer/Projekt/FGS_Earkiv_Paket.pdf
6. Guidelines for using PREMIS with METS for exchange, Revised September 17, 2008, URL: <http://www.loc.gov/standards/premis/guidelines-premismets.pdf>
7. Media Types, 2015, URL: <https://www.iana.org/assignments/media-types/media-types.xhtml>
8. METS, 2015, URL: <http://www.loc.gov/standards/mets/>
9. METS Profile Components, 2011, URL: http://www.loc.gov/standards/mets/profile_docs/components.html
10. METS Profiles, 2012, URL: <http://www.loc.gov/standards/mets/mets-profiles.html>
11. Producer, Submission Agreements: Glossary of Terms, 2015, URL: <http://sites.tufts.edu/dca/about-us/research-initiatives/taper-tufts-accessioning-program-for-electronic-records/project-documentation/submission-agreements-glossary-of-terms/>
12. Producer-Archive Interface Methodology Abstract Standard (PAIMAS), 2004, URL: <https://public.ccsds.org/Pubs/651x0m1.pdf>
13. Producer-Archive Interface Specification (PAIS) – CCSDS, 2014, URL: <https://public.ccsds.org/Pubs/651x1b1.pdf>
14. Records Creator, Submission Agreements: Glossary of Terms, 2015, URL: <http://sites.tufts.edu/dca/about-us/research-initiatives/taper-tufts-accessioning-program-for-electronic-records/project-documentation/submission-agreements-glossary-of-terms/>
15. Reference Model for an Open Archival Information System (OAIS), 2012, URL: <https://public.ccsds.org/Pubs/650x0m2.pdf>
16. Lavoie B, The Open Archival Information System (OAIS) Reference Model: Introductory Guide (2nd Edition), 2014, URL: http://www.dpconline.org/component/docman/doc_download/1359-dpctw14-02

7 Appendices

7.1 Appendix A: Submission Agreement semantic elements

The following list of semantic elements provide a starting point for anyone willing to prepare a Submission Agreement. This list is not prescriptive, or by any means complete. It merely serves the purpose of outlining the most relevant semantic elements that should be present in a Submission Agreement.

7.1.1 Project information

- **Project** - Elements of a transfer project.
 - **Project Name** - Name of the transfer project (e.g. Transfer I, 2016).
 - **Project ID** - Identification code of the transfer project (e.g. 201601122044).

7.1.2 Change management

- **Version/Revision** - Elements for tracking the changes in versions of the submission agreement.
 - **Release date** - The date of the version.
 - **Change authority** - The information about the person who changed the submission agreement (e.g. John Smith (The National Archives of Estonia)).
 - **Change description** - A short textual description of the change.
 - **Section(s) affected** - This element is meant for recording more detailed information about changes.

7.1.3 Producer, Archive and Designated Community

- **Producer Organization** - Elements describing the Producer.
 - **Organization name - Elements describing the organisation**
 - **Main Contact** - Elements describing the main contact of the transfer project.
 - * **Address** - The address of the main contact.
 - * **Telephone** - The telephone number of the main contact.
 - * **E-mail** - The e-mail of the main contact.
 - * **Additional Information** - Meant for recording any additional information needed to describe the contact.
 - **Individual Contacts** - Elements describing other individual contacts of the organisation.
 - * **Name** - The full name of the contact person.
 - * **Role** - The role of the contact person.
 - * **Telephone** - The telephone number of the contact person.
 - * **E-mail** - The e-mail of the contact person.
 - * **Additional Information** - Meant for recording any additional information needed to describe the contact.
- **Archive Organization** - Elements describing the Archive.
 - **Organization name** - The official name of the organisation.
 - **Main Contact** - Elements describing the main contact of the transfer project.
 - * **Address** - The address of the main contact.
 - * **Telephone** - The telephone number of the main contact.
 - * **E-mail** - The e-mail of the main contact.

- * **Additional Information** - Meant for recording any additional information needed to describe the contact.
- **Individual Contacts** - Elements describing other individual contacts of the organisation.
 - * **Name** - The full name of the contact person.
 - * **Role** - The role of the contact person.
 - * **Telephone** - The telephone number of the contact person.
 - * **E-mail** - The e-mail of the contact person.
 - * **Additional Information** - Element for recording any additional information needed to describe the contact.
- **Designated Community** - Elements describing the Designated Community.
 - **Description** - The textual description of the skills and knowledge base of the designated community.
 - **Individual Contacts** - Elements describing the individual contacts of the designated community.
 - * **Name** - The full name of the contact person.
 - * **Role** - The role of the contact person.
 - * **Telephone** - The telephone number of the contact person.
 - * **E-mail** - The e-mail of the contact person.
 - * **Additional Information** - Meant for recording any additional information needed to describe the contact.

7.1.4 Submission Information Package (SIP)

- **Content and metadata** - Elements describing the content and metadata of the submission information package.
 - **Description** - A description of data origination, content and coverage.
 - **Platform Information** - A short description of the source system.
 - **Representation Information** - A description of the means to represent the data content (e.g. referencing to data dictionaries, decoding software, etc.).
 - **Preservation Descriptive Information** - A description for keeping data independently understandable (e.g. processing history, platform documentation, algorithm information, technical reports, user manuals, etc.).
 - **Supplemental Information** - Meant for recording any additional information needed to describe the content or metadata of the SIP.
 - **Access Constraints** - A description of access restrictions and other legal or contractual access aspects.
- **Data Model** - Elements describing the agreements for the SIP data model.
 - **Content Type** - A short description of the content type (e.g. ERMS content).
 - **Reference** - A reference to the full agreed data model description.
 - **Additional Information** - A description of any other additional information (e.g. description of the physical folder structure of the SIP) related to the data model.

7.1.5 Submission Session Information

- **Submission Session** - Elements describing the agreements for the submission session.
 - **Submission Method** - The description of the submission method (e.g. through a digital interface, a physical transfer).
 - **Delivery Schedule** - A description of a delivery schedule (a submission session may have a routine or a complex schedule).
 - **Data Submission Inventory** - A description of the complete inventory of data objects (and other items) in the submission session.

7.1.6 Ingest

- **Submission Reception** - Elements describing the agreements for the ingest.
 - **Validation** - A description of procedures for the quality assurance.
 - **Error Handling** - A description of procedures for the error handling.
 - **Receipt Confirmation** - A description of the receipt confirmation.

7.1.7 Submission risks

- **Risks** - Elements describing the risks and mitigation options of the submission.
 - **Risk Factor** - Meant for listing all risk factors (e.g. the designated community is not properly defined) of the submission.
 - **Mitigation Option** - Meant for listing all mitigation options (e.g. define the designated community together with producers) for the risks.

7.2 Appendix B: E-ARK Information Package METS Example

7.2.1 Example 1: Example of a whole METS document describing an submission information package with no representations.

```
<mets:mets xmlns:mets="http://www.loc.gov/METS/" xmlns:csip="https://DILCIS.eu/XML/METS/CSIPExtensionMETS" xmlns:sip="https://DILCIS.eu/XML/METS/SIPExtensionMETS"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" OBJID="uuid-4422c185-5407-4918-83b1-7abfa77de182" LABEL="
Accounting records of 2017" TYPE="OTHER" csip:OTHERTYPE="Accounting" PROFILE="https://earksip.dilcis.eu/profile/E-ARK-SIP-v2-2-0.xml" xsi:schemaLocation="http://www.
loc.gov/METS/ http://www.loc.gov/standards/mets/mets.xsd http://www.w3.org
/1999/xlink http://www.loc.gov/standards/mets/xlink.xsd https://DILCIS.eu/
XML/METS/CSIPExtensionMETS https://earkcsip.dilcis.eu/schema/DILCISExtensionMETS.
```

```
xsd      https://DILCIS.eu/XML/METS/SIPExtensionMETS https://earksip.dilcis.eu/
schema/DILCISExtensionSIPMETS.xsd">
<mets:metsHdr CREATEDATE="2018-04-24T14:37:49.602+01:00" LASTMODDATE="2018-04-24T14
:37:49.602+01:00" RECORDSTATUS="NEW" csip:OAISPACKAGETYPE="SIP">
  <mets:agent ROLE="CREATOR" TYPE="OTHER" OTHERTYPE="SOFTWARE">
    <mets:name>
      RODA-in
    </mets:name>
    <mets:note csip:NOTETYPE="SOFTWARE VERSION">
      2.7.2
    </mets:note>
  </mets:agent>
  <mets:agent ROLE="ARCHIVIST" TYPE="ORGANIZATION">
    <mets:name>
      The Swedish health agency
    </mets:name>
    <mets:note csip:NOTETYPE="IDENTIFICATIONCODE">
      VAT:SE201345098701
    </mets:note>
  </mets:agent>
  <mets:agent ROLE="CREATOR" TYPE="ORGANIZATION">
    <mets:name>
      The agency, Personnel
    </mets:name>
    <mets:note csip:NOTETYPE="IDENTIFICATIONCODE">
      VAT:SE2098109810-AF87
    </mets:note>
  </mets:agent>
  <mets:agent ROLE="CREATOR" TYPE="INDIVIDUAL">
    <mets:name>
      Sven Svensson
    </mets:name>
    <mets:note>
      Phone: 08-123456, Email: sven.svensson@mail.mail
    </mets:note>
  </mets:agent>
  <mets:agent ROLE="PRESERVATION" TYPE="ORGANIZATION">
    <mets:name>
      The archives
    </mets:name>
    <mets:note csip:NOTETYPE="IDENTIFICATIONCODE">
      ID:1234567
    </mets:note>
```

```
</mets:agent>
<mets:altRecordID TYPE="SUBMISSIONAGREEMENT">
  http://submissionagreement.kb.se/dnr331-1144-2011/20120711/
</mets:altRecordID>
<mets:altRecordID TYPE="PREVIOUSSUBMISSIONAGREEMENT">
  FM 12-2387/12726, 2007-09-19
</mets:altRecordID>
<mets:altRecordID TYPE="REFERENCECODE">
  SE/RA/123456/24/P
</mets:altRecordID>
<mets:altRecordID TYPE="PREVIOUSREFERENCECODE">
  SE/FM/123/123.1/123.1.3
</mets:altRecordID>
</mets:metsHdr>
<mets:dmdSec ID="dmdSecExample1" CREATED="2018-04-24T14:37:49.609+01:00">
  <mets:mdRef LOCTYPE="URL" MDTYPE="EAD" MDTYPEVERSION="2002" xlink:type="simple"
    xlink:href="metadata/descriptive/ead2002.xml" SIZE="903" CREATED="2018-04-24T14:
    37:49.609+01:00" CHECKSUM="
    F24263BF09994749F335E1664DCE0086DB6DCA323FDB6996938BCD28EA9E8153" CHECKSUMTYPE=
    "SHA-256">
  </mets:mdRef>
</mets:dmdSec>
<mets:amdSec>
  <mets:digiprovMD ID="appdx1.digiprov-premis-file-1" CREATED="2018-04-24T14
    :37:52.783+01:00">
    <mets:mdRef LOCTYPE="URL" xlink:type="simple" xlink:href="metadata/preservation/
      premis1.xml" MDTYPE="PREMIS" MDTYPEVERSION="3.0" MIMETYPE="text/xml" SIZE="
      1211" CREATED="2018-04-24T14:37:52.783+01:00" CHECKSUM="8
      aa278038dbad54bbf142e7d72b493e2598a94946ea1304dc82a79c6b4bac3d5" CHECKSUMTYPE
      ="SHA-256" LABEL="premis1.xml">
    </mets:mdRef>
  </mets:digiprovMD>
  <mets:digiprovMD ID="appdx1.digiprov-premis-file-2" CREATED="2018-04-24T14
    :47:52.783+01:00">
    <mets:mdRef LOCTYPE="URL" xlink:type="simple" xlink:href="metadata/preservation/
      premis2.xml" MDTYPE="PREMIS" MDTYPEVERSION="3.0" MIMETYPE="text/xml" SIZE="
      2854" CREATED="2018-04-24T14:37:52.783+01:00" CHECKSUM="
      d1dfa585dcc9d87268069dc58d5e47956434ec3db4087a75a3885d287f15126f"
      CHECKSUMTYPE="SHA-256" LABEL="premis2.xml">
    </mets:mdRef>
  </mets:digiprovMD>
</mets:amdSec>
<mets:fileSec ID="appdx1.filesec-docx-file-1">
```

```

<mets:fileGrp ID="appdx1.filegrp-doc" USE="Documentation">
  <mets:file ID="appdx1.docx-file" MIMETYPE="application/vnd.openxmlformats-
    officedocument.wordprocessingml.document" SIZE="2554366" CREATED="2012-08-15
    T12:08:15.432+01:00" CHECKSUM="91
    B7A2C0A1614AA8F3DAF11DB4A1C981F14BAA25E6A0336F715B7C513E7A1557" CHECKSUMTYPE=
    "SHA-256" sip:FILEFORMATNAME="Microsoft Word for Windows" sip:
    FILEFORMATVERSION="2007 onwards" sip:FORMATREGISTRY="PRONOM" sip:
    FORMATREGISTRYKEY="fmt/412">
    <mets:FLocat LOCTYPE="URL" xlink:type="simple" xlink:href="documentation/File.
      docx">
    </mets:FLocat>
  </mets:file>
  <mets:file ID="appdx1.file-2-docx" MIMETYPE="application/vnd.openxmlformats-
    officedocument.wordprocessingml.document" SIZE="2554366" CREATED="2012-08-15
    T12:08:15.432+01:00" CHECKSUM="91
    B7A2C0A1614AA8F3DAF11DB4A1C981F14BAA25E6A0336F715B7C513E7A1557" CHECKSUMTYPE=
    "SHA-256" sip:FILEFORMATNAME="Microsoft Word for Windows" sip:
    FILEFORMATVERSION="2007 onwards" sip:FORMATREGISTRY="PRONOM" sip:
    FORMATREGISTRYKEY="fmt/412">
    <mets:FLocat LOCTYPE="URL" xlink:type="simple" xlink:href="documentation/File2
      .docx">
    </mets:FLocat>
  </mets:file>
</mets:fileGrp>
<mets:fileGrp ID="appdx1.filegrp-schema" USE="Schemas">
  <mets:file ID="appdx1.file.ead" MIMETYPE="application/xml" SIZE="123917" CREATED
    ="2018-04-24T14:37:49.617+01:00" CHECKSUM="0
    BF9E16ADE296EF277C7B8E5D249D300F1E1EB59F2DCBD89644B676D66F72DCC" CHECKSUMTYPE
    ="SHA-256" sip:FILEFORMATNAME="XML Schema Definition" sip:FORMATREGISTRY="
    PRONOM" sip:FORMATREGISTRYKEY="x-fmt/280">
    <mets:FLocat LOCTYPE="URL" xlink:type="simple" xlink:href="schemas/ead2002.xsd
      ">
    </mets:FLocat>
  </mets:file>
</mets:fileGrp>
<mets:fileGrp ID="appdx1.filegrp.data" USE="Representations/Submission/Data" csip:
  CONTENTINFORMATIONTYPE="SIARDDK">
  <mets:file ID="appdx1.file.siard" MIMETYPE="application/xml" SIZE="1338744"
    CREATED="2018-04-24T14:37:49.617+01:00" CHECKSUM="7176
    A627870CFA3854468EC43C5A56F9BD8B30B50A983B8162BF56298A707667" CHECKSUMTYPE="
    SHA-256" ADMID="appdx1.digiprov-premis-file-2 appdx1.digiprov-premis-file-1"
    sip:FILEFORMATNAME="Extensible Markup Language" sip:FILEFORMATVERSION="1.0"
    sip:FORMATREGISTRY="PRONOM" sip:FORMATREGISTRYKEY="fmt/101">

```

```
<mets:FLocat LOCTYPE="URL" xlink:type="simple" xlink:href="representations/
  submission/data/SIARD.xml">
</mets:FLocat>
</mets:file>
</mets:fileGrp>
</mets:fileSec>
<mets:structMap ID="appdx1.struct" TYPE="PHYSICAL" LABEL="CSIP">
  <mets:div ID="appdx1.div.struct" LABEL="uuid-4422c185-5407-4918-83b1-7abfa77de182"
    >
    <mets:div ID="appdx1.div.md" LABEL="Metadata" ADMID="appdx1.digiprov-premis-file
      -1 appdx1.digiprov-premis-file-2" DMDID="dmdSecExample1">
    </mets:div>
    <mets:div ID="appdx1.div.doc" LABEL="Documentation">
      <mets:fptr FILEID="appdx1.filegrp-doc">
    </mets:fptr>
    </mets:div>
    <mets:div ID="appdx1.div.schm" LABEL="Schemas">
      <mets:fptr FILEID="appdx1.filegrp-schema">
    </mets:fptr>
    </mets:div>
    <mets:div ID="appdx1.div.reps" LABEL="Representations">
      <mets:fptr FILEID="appdx1.filegrp.data">
    </mets:fptr>
    </mets:div>
  </mets:div>
</mets:structMap>
</mets:mets>
```

7.3 Appendix C: External Schema

7.3.1 E-ARK SIP METS Extension

Location: <https://earksip.dilcis.eu/schema/DILCISExtensionSIPMETS.xsd>

Context: XML-schema for the attributes added by SIP

Note: An extension schema with the added attributes for use in this profile. The schema is used with a namespace prefix of sip.

7.3.2 E-ARK CSIP METS Extension

Location: <http://earkcsip.dilcis.eu/schema/DILCISExtensionMETS.xsd>

Context: XML-schema for the attributes added by CSIP

Note: An extension schema with the added attributes for use in this profile. The schema is identified using the namespace prefix csip.

7.4 Appendix D: External Vocabularies

7.4.1 Package status

Maintained By: DILCIS Board

Location: <http://earksip.dilcis.eu/schema/SIPVocabularyRecordStatus.xml>

Context: Used in [@RECORDSTATUS](#)

Note: Describes the status of the package.

7.4.2 Alternative record ID's

Maintained By: DILCIS Board

Location: <http://earksip.dilcis.eu/schema/SIPVocabularyRecordIDType.xml>

Context: Used in [altrecordID/@TYPE](#)

Note: Describes the type of the alternative record ID.

7.4.3 Note type

Maintained By: DILCIS Board

Location: <http://earksip.dilcis.eu/schema/CSIPVocabularyNoteType.xml>

Context: Used in [@csip:NOTETYPE](#)

Note: Describes the type of a note for an agent.

7.4.4 OAIS Package type

Maintained By: DILCIS Board

Location: <http://earksip.dilcis.eu/schema/CSIPVocabularyOAISPackageType.xml>

Context: Used in [@csip:OAISPACKAGETYPE](#)

Note: Describes the OAIS type the package belongs to in the OAIS reference model.

7.5 Appendix E: E-ARK SIP Metadata Requirements

7.5.1 E-ARK SIP METS Profile 2.1 Requirements

ID	Name, Location & Description	Card & Level
SIP1	<p>Package name</p> <p><code>mets/@LABEL</code></p> <p>An optional short text describing the contents of the package, e.g. "Accounting records of 2017".</p>	<p>0..1</p> <p>MAY</p>
SIP2	<p>METS Profile</p> <p><code>mets/@PROFILE</code></p> <p>The value is set to "https://earksip.dilcis.eu/profile/E-ARK-SIP-v2-2-0.xml".</p>	<p>1..1</p> <p>MUST</p>
SIP3	<p>Package status</p> <p><code>metsHdr/@RECORDSTATUS</code></p> <p>A way of indicating the status of the package and to instruct the OAIS on how to properly handle the package. If not set, the expected behaviour is equal to NEW.</p>	<p>0..1</p> <p>MAY</p>
SIP4	<p>OAIS Package type information</p> <p><code>metsHdr/@csip:OAISPACKAGETYPE</code></p> <p><code>@csip:OAISPACKAGETYPE</code> is used with the value "SIP".</p>	<p>1..1</p> <p>MUST</p>
SIP5	<p>Submission agreement</p> <p><code>metsHdr/altRecordID</code></p> <p>A reference to the Submission Agreement associated with the package. <code>@TYPE</code> is used with the value "SUBMISSIONAGREEMENT". Example: RA 13-2011/5329; 2012-04-12 Example: http://submissionagreement.kb.se/dnr331-1144-2011/20120711/ Note: It is recommended to use a machine-readable format for a better description of a submission agreement. For example, the submission agreement developed by Docuteam GmbH http://www.loc.gov/standards/mets/profiles/00000041.xml</p>	<p>0..1</p> <p>MAY</p>

ID	Name, Location & Description	Card & Level
SIP6	<p>Previous Submission agreement</p> <p>metsHdr/altRecordID</p> <p>An optional reference to a previous submission agreement(s) which the information may have belonged to. @TYPE is used with the value "PREVIOUSSUBMISSIONAGREEMENT". Example: FM 12-2387/12726, 2007-09-19 Example: http://submissionagreement.kb.se/dnr331-1144-2011/20120711/ Note: It is recommended to use a machine-readable format for a better description of a submission agreement. For example, the submission agreement developed by Docuteam GmbH http://www.loc.gov/standards/mets/profiles/00000041.xml</p>	<p>0..*</p> <p>MAY</p>
SIP7	<p>Archival reference code</p> <p>metsHdr/altRecordID</p> <p>An optional reference code indicating where in the archival hierarchy the package shall be placed in the OAI. @TYPE is used with the value "REFERENCECODE". Example: FM 12-2387/12726, 2007-09-19</p>	<p>0..1</p> <p>MAY</p>
SIP8	<p>Previous archival reference code</p> <p>metsHdr/altRecordID</p> <p>In cases where the SIP originates from other institutions maintaining a reference code structure, this element can be used to record these reference codes and therefore support the provenance of the package when a whole archival description is not submitted with the submission. @TYPE is used with the value "PREVIOUSREFERENCECODE". Example: SE/FM/123/123.1/123.1.3</p>	<p>0..*</p> <p>MAY</p>
SIP9	<p>Archival creator agent</p> <p>metsHdr/agent</p> <p>A wrapper element that enables to encode the name of the organisation or person that originally created the data being transferred. Please note that this might be different from the organisation which has been charged with preparing and sending the SIP to the archives.</p>	<p>0..1</p> <p>MAY</p>
SIP10	<p>Archival creator agent role</p> <p>metsHdr/agent/@ROLE</p> <p>The role of the person(s) or institution(s) responsible for the document/collection.</p>	<p>1..1</p> <p>MUST</p>

ID	Name, Location & Description	Card & Level
SIP11	Archival creator agent type <i>metsHdr/agent/@TYPE</i> The type of the archival creator agent is “ORGANIZATION” or “INDIVIDUAL”.	1..1 MUST
SIP12	Archival creator agent name <i>metsHdr/agent/name</i> The name of the organisation(s) that originally created the data being transferred. Please note that this might be different from the organisation which has been charged with preparing and sending the SIP to the archives.	1..1 MUST
SIP13	Archival creator agent additional information <i>metsHdr/agent/note</i> The archival creator agent has a note providing a unique identification code for the archival creator.	0..1 MAY
SIP14	Classification of the archival creator agent additional information <i>metsHdr/agent/note/@csip:NOTETYPE</i> The archival creator agent note is typed with the value of “IDENTIFICATIONCODE”.	1..1 MUST
SIP15	Submitting agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the organisation or person submitting the package to the archive.	1..1 MUST
SIP16	Submitting agent role <i>metsHdr/agent/@ROLE</i> The role of the person(s) or institution(s) responsible for creating and/or submitting the package.	1..1 MUST
SIP17	Submitting agent type <i>metsHdr/agent/@TYPE</i> The type of the submitting agent is “ORGANIZATION” or “INDIVIDUAL”.	1..1 MUST
SIP18	Submitting agent name <i>metsHdr/agent/name</i> Name of the organisation submitting the package to the archive.	1..1 MUST
SIP19	Submitting agent additional information <i>metsHdr/agent/note</i> The submitting agent has a note providing a unique identification code for the submitter.	0..1 MAY

ID	Name, Location & Description	Card & Level
SIP20	Classification of the submitting agent additional information <i>metsHdr/agent/note/@csip:NOTETYPE</i> The submitting agent note is typed with the value of "IDENTIFICATIONCODE".	1..1 MUST
SIP21	Contact person agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the contact person for the submission.	0..* MAY
SIP22	Contact person agent role <i>metsHdr/agent/@ROLE</i> The role of the contact person is "CREATOR".	1..1 MUST
SIP23	Contact person agent type <i>metsHdr/agent/@TYPE</i> The type of the contact person agent is "INDIVIDUAL".	1..1 MUST
SIP24	Contact person agent name <i>metsHdr/agent/name</i> Name of the contact person.	1..1 MUST
SIP25	Contact person agent additional information <i>metsHdr/agent/note</i> The submitting agent has one or more notes giving the contact information.	0..* MAY
SIP26	Preservation agent <i>metsHdr/agent</i> A wrapper element that enables to encode the name of the organisation or person that preserves the package.	0..1 MAY
SIP27	Preservation agent role <i>metsHdr/agent/@ROLE</i> The role of the preservation agent is "PRESERVATION".	1..1 MUST
SIP28	Preservation agent type <i>metsHdr/agent/@TYPE</i> The type of the submitting agent is "ORGANIZATION".	1..1 MUST
SIP29	Preservation agent name <i>metsHdr/agent/name</i> Name of the organisation preserving the package.	1..1 MUST

ID	Name, Location & Description	Card & Level
SIP30	Preservation agent additional information <i>metsHdr/agent/note</i> The preservation agent has a note providing a unique identification code for the archival creator.	0..1 MAY
SIP31	Classification of the preservation agent additional information <i>metsHdr/agent/note/@csip:NOTETYPE</i> The preservation agent note is typed with the value of "IDENTIFICATIONCODE".	1..1 MUST
REF_CSIP_1	Descriptive metadata N/A The SIP dmdSec element should comply with dmdSec requirements in the CSIP profile.	N/A SHOULD
REF_CSIP_2	Administrative metadata N/A The SIP amdSec element should comply with amdSec requirements in the CSIP profile.	N/A SHOULD
SIP32	File format name <i>fileSec/fileGrp/file/@sip:FILEFORMATNAME</i> An optional attribute may be used if the MIMETYPE is not sufficient for the purposes of processing the information package. Example: "Extensible Markup Language" Example: "PDF/A" Example: "ISO/IEC 26300:2006"	0..1 MAY
SIP33	File format version <i>fileSec/fileGrp/file/@sip:FILEFORMATVERSION</i> The version of the file format when the use of PREMIS has not been agreed upon in the submission agreement. Example: "1.0"	0..1 MAY
SIP34	File format registry <i>fileSec/fileGrp/file/@sip:FILEFORMATREGISTRY</i> The name of the format registry used to identify the file format when the use of PREMIS has not been agreed upon in the submission agreement. Example: "PRONOM"	0..1 MAY
SIP35	File format registry key <i>fileSec/fileGrp/file/@sip:FILEFORMATKEY</i> Key of the file format in the registry when use of PREMIS has not been agreed upon in the submission agreement. Example: "fmt/101"	0..1 MAY

ID	Name, Location & Description	Card & Level
REF_CSIP_3	Structural description of the package N/A The SIP structMap element should comply with structMap requirements in the CSIP profile.	N/A SHOULD
REF_METS_5	structLink N/A Section not defined or used in CSIP, additional own uses may occur. Information regarding the structural links is found in the METS Primer	N/A MAY
REF_METS_6	behaviorSec N/A Section not defined or used in CSIP, additional own uses may occur. Information regarding the behavior section is found in the METS Primer	N/A MAY

Postface

I Authors

Name	Organisation
Miguel Ferreira	KEEP SOLUTIONS (KEEPS)

I.I. Contributors to previous version

Name	Organisation
Carl Wilson	Open Preservation Foundation
Tarvo Kärberg	Estonian National Archives (NAE)
Anders Bo Nielsen	Danish National Archives (DNA)
Björn Skog	ES Solutions (ESS)
Gregor Završnik	Slovenian National Archives (SNA)
Hélder Silva	KEEP SOLUTIONS (KEEPS)
Miguel Ferreira	KEEP SOLUTIONS (KEEPS)
Karin Bredenberg	Kommunalförbundet Sydarkivera (SYD)

Name	Organisation
Kathrine Hougaard Edsen Johansen	Danish National Archives (DNA)
Levente Szilágyi	National Archives of Hungary (NAH)
Phillip Mike Tømmerholt	Danish National Archives (DNA)
Kuldar Aas	Estonian National Archives (NAE)
Sven Schlarb	Austrian Institute of Technology (AIT)
David Anderson	University of Brighton
Andrew Wilson	University of Brighton
Jaime Kaminski (reviewer)	Highbury Associates
Luís Miguel Ferros (reviewer)	KEEP SOLUTIONS (KEEPS)

II Revision History

Revision	Date	Authors(s)	Organisation	Description
0.1	20.10.2014	Tarvo Kärberg	NAE	First draft.
0.2	13.11.2014	Tarvo Kärberg	NAE	Updating content.
0.3	02.12.2014	Tarvo Kärberg	NAE	Updating content.
0.4	17.01.2015	Tarvo Kärberg	NAE	Updating content.
0.6	23.01.2015	Anders Bo Nielsen	DNA	Updating content.
0.5	21.01.2015	Karin Bredenberg	ESS	Updating content.
0.7	23.01.2015	Kathrine Hougaard Edsen	DNA	Updating content.
0.71	26.01.2015	Björn Skog	ESS	Updating content.
0.72	27.01.2015	Hélder Silva	KEEPS	Updating content.
0.8	27.01.2015	Angela Dappert	DLM/ UPHEC	Quality assurance and proof-reading.
0.9	29.01.2017	Kuldar Aas	NAE	Quality assurance and proof-reading.
0.91	30.01.2015	David Anderson	UPHEC	Quality assurance and proof-reading.
1.0	30.01.2015	Tarvo Kärberg	NAE	Final version (D3.2).

Revision	Date	Authors(s)	Organisation	Description
0.1	11.05.2015	Karin Bredenberg	ESS NAS	Updating content.
0.3	27.07.2015	Tarvo Kärberg	NAE	Updating content.
0.2	30.06.2015	Tarvo Kärberg	NAE	Updating content.
0.4	23.10.2015	Tarvo Kärberg	NAE	Updating content, synchronising with the SMURF profile.
0.41	17.11.2015	Tarvo Kärberg	NAE	Integrating the feedback.
0.41	17.11.2015	Tarvo Kärberg	NAE	Integrating the feedback.
0.42	07.12.2015	Tarvo Kärberg	NAE	Updating content.
0.5	12.01.2016	Tarvo Kärberg	NAE	Updating content, synchronising with the Common Specification.
0.6	15.01.2016	Anders Bo Nielsen	DNA	Updating content.
0.61	15.01.2016	Gregor Završnik	SNA	Updating content.
0.62	18.01.2016	Tarvo Kärberg	NAE	Updating content.
0.63	20.01.2016	Phillip Mike Tømmerholt	DNA	Updating content.
0.64	25.01.2016	Phillip Mike Tømmerholt	DNA	Updating content.
0.7	26.01.2016	Sven Schlarb	AIT	Quality assurance and proof-reading.
0.8	27.01.2016	Kuldar Aas	NAE	Quality assurance and proof-reading.
0.9	29.01.2016	Andrew Wilson David Anderson	Uni. Brgtn	Quality assurance and proof-reading.
1.0	29.01.2016	Tarvo Kärberg	NAE	Final version (general part of D3.3)
1.1	14.07.2016	Tarvo Kärberg	NAE	Incorporating agreements made in the Common Specification work group.
1.2	12.12.2016	Tarvo Kärberg	NAE	Incorporating agreements made in the Common Specification work group.
1.3	13.01.2017	Tarvo Kärberg	NAE	Small updates.
1.4	31.01.2017	Tarvo Kärberg	NAE	Finalising the specification.
2.0.0	15.03.2019	Miguel Ferreira	KEEP	Updated to v2.0 with CSIP

Revision	Date	Authors(s)	Organisation	Description
2.0.1	09.09.2019	Karin Bredenberg	SNA	Correction @LABEL and @USE attributes, typos, layout and PDF formatting.
2.0.2	28.10.2019	Karin Bredenberg	SYD	Fixed schema paths
2.0.3	08.01.2020	Karin Bredenberg, & C. Wilson	SYD OPF	Fixed error in value list note type.
2.0.4	12.06.2020	K.Bredenberg, C. Wilson, & J. Kaminski	SYD OPF HIGH	Update in example ID:s, preface text and output display update
2.1.0	15.10.2021	K.Bredenberg & C. Wilson	SYD OPF	Update of specification to version 2.1. Changed the cardinality of agent elements to follow METS and added more agents examples.
2.2.0	17.05.2024	Miguel Ferreira	KEEPS	Fixes to elements cardinality. Versioning of the METS profile. Overall improvements to the specification text.

III Acknowledgements

The Common Specification for Information Packages was first developed within the E-ARK project in 2014 – 2017. E-ARK was an EC-funded pilot action project in the Competitiveness and Innovation Programme 2007- 2013, Grant Agreement no. 620998 under the Policy Support Programme.

We would like to thank the National Archives of Sweden and Karin Bredenberg for their support and the availability of the Swedish national Common Specifications, upon which most of this document has been built.

The authors of this deliverable would like to thank all national archives, tool developers and other stakeholders who provided valuable knowledge about their requirements for information packages and feedback to this specification!

IV Contact & Feedback

The Common Specification for Information Packages is maintained by the Digital Information LifeCycle Interoperability Standard Board (DILCIS Board). For further information about the DILCIS Board or feedback on the current document please consult the website <http://www.dilcis.eu/> or contact us at <mailto:info@dilcis.eu>.