

ISO 20104:2015-08 (E)

Space data and information transfer systems - Producer-Archive Interface Specification (PAIS)

Contents

Page

1	INTRODUCTION	1-1
1.1	PURPOSE AND SCOPE.....	1-1
1.2	APPLICABILITY.....	1-1
1.3	RATIONALE.....	1-2
1.4	CONFORMANCE.....	1-2
1.5	DOCUMENT STRUCTURE.....	1-2
1.6	DEFINITIONS.....	1-4
1.7	NOMENCLATURE.....	1-7
1.8	REFERENCES.....	1-8
2	OVERVIEW	2-1
2.1	GENERAL FRAMEWORK.....	2-1
2.2	FORMALLY DESCRIBING DATA OBJECTS FOR TRANSFER.....	2-2
2.3	SIP CREATION AND VALIDATION.....	2-4
3	DESCRIPTIONS OF PRODUCER DATA	3-1
3.1	GENERAL.....	3-1
3.2	TRANSFER OBJECT TYPE DESCRIPTOR SPECIFICATION (CCSD0014) ...	3-1
3.3	COLLECTION DESCRIPTOR SPECIFICATION (CCSD0015).....	3-16
3.4	SPECIALIZATION OF THE DESCRIPTOR MODELS.....	3-23
4	DEFINITION OF CONSTRAINTS ON TYPES OF SIPS (CCSD0016)	4-1
4.1	OVERVIEW.....	4-1
4.2	ABSTRACT SIP CONSTRAINTS.....	4-1
4.3	SIP SEQUENCING CONSTRAINTS IMPLEMENTATION.....	4-3
5	ABSTRACT SIP SPECIFICATION (CCSD0017)	5-1
5.1	OVERVIEW.....	5-1
5.2	SIP MODEL SPECIFICATION.....	5-1
5.3	DISCUSSION.....	5-8
5.4	SIP MODEL SPECIALIZATION.....	5-10
6	SIP IMPLEMENTATION	6-1
6.1	OVERVIEW.....	6-1
6.2	SIP IMPLEMENTATION USING XFDU.....	6-1
6.3	SPECIALIZATION OF THE SIP IMPLEMENTATION IN AN XFDU.....	6-8

ANNEX A	PAIS XML SCHEMAS (NORMATIVE)	A-1
ANNEX B	LEGEND FOR XML FIGURES (INFORMATIVE)	B-1
ANNEX C	INFORMATIVE REFERENCES (INFORMATIVE)	C-1
ANNEX D	MANAGEMENT OF IDS (INFORMATIVE)	D-1
ANNEX E	SECURITY, SANA, AND PATENT CONSIDERATIONS (INFORMATIVE)	E-1
ANNEX F	SIP TO XFDU MAPPING EXAMPLE (INFORMATIVE)	F-1

Figure

2-1	PAIS General Process	2-2
2-2	An Example of the Entities and Their Relationships Involved in Creating the Formal Specifications	2-4
2-3	SIP Process	2-6
3-1	First Decomposition Level of ‘transferObjectTypeDescriptor’	3-3
3-2	Complete Decomposition of the ‘transferObjectTypeDescriptor’	3-4
3-3	Transfer Object Type Descriptor ‘identification’	3-6
3-4	Transfer Object Type Descriptor ‘description’	3-8
3-5	Transfer Object Type Descriptor ‘relation’	3-9
3-6	Transfer Object Type Descriptor ‘groupType’	3-15
3-7	Transfer Object Type Descriptor ‘any’	3-16
3-8	First Decomposition Level of ‘collectionDescriptor’	3-18
3-9	Complete Decomposition of a ‘collectionDescriptor’	3-18
3-10	Collection Descriptor ‘identification’	3-20
3-11	Collection Descriptor ‘description’	3-21
3-12	Collection Descriptor ‘relation’	3-22
3-13	Collection Descriptor ‘any’	3-22
3-14	Specialization of the Descriptor Models.....	3-23
4-1	Decomposition of ‘sipConstraints’	4-3
5-1	Abstract View of the SIP Container	5-2
5-2	Abstract View of the Transfer Object Container	5-4
5-3	Abstract View of the Transfer Object Group Container.....	5-5
5-4	Abstract View of the Data Object Container	5-7
5-5	Abstract View of SIP, Transfer Object, Transfer Object Group, and Data Object	5-9
5-6	Specialization of the SIP Model	5-10
6-1	SIP and XFDU Schemas Constrain the XFDU XML Manifest to Implement the SIP as an XFDU	6-2
6-2	SIP Global Information.....	6-3
6-3	SIP Transfer Object Identification and Status	6-4
6-4	SIP Transfer Object Group Identification.....	6-4
6-5	SIP Data Object Identification.....	6-5
6-6	SIP Transfer Object To Delete	6-5
6-7	Any Extension Type	6-5
6-8	sipGlobalInformation Mapped to XFDU.....	6-6
6-9	sipTransferObject Mapped to XFDU	6-7
6-10	Byte Stream Mapped to XFDU byteStream Element.....	6-8
B-1	Legend for XML Figures.....	B-2