

iiRDS Consortium

Implementation Guide

Transforming iiRDS 1.1 to VDI 2770

excerpt

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Practical Guides

excerpt

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Contents

About this document.....	4
Overview	4
Scope.....	4
Document History	4
Terms and Definitions.....	5
Conventions	6
Document.....	6
Requirements.....	6
Transformations	6
Code examples	7
Metadata Requirements.....	8
Basic Requirements	8
Information Modelling	8
Identity and Organization	8
Product Variants	9
Content Lifecycle	9
Packages	9
Documents.....	10
Document Types.....	10
Renditions	10
Revisions and Lifecycle of Documents	10
Language Specifics of Documents	11
Mapping	12
iiRDS DocumentType to VDI 2770 ClassId	12
iiRDS IdentityType to VDI 2770 ObjectId attributes.....	13
High-level mapping between concepts (examples)	14
High-level mapping between properties (examples).....	15
Transformation.....	15
VDI 2770 Main Document	16
VDI 2770 Metadata file	23
VDI 2770 package	31
Hybrid iiRDS / VDI 2770 package	32
Schematics of an Hybrid package	33
Examples.....	34
iiRDS data compliant to VDI 2770	34
VDI 2770 Metadata file	36

VDI 2770 Main Document	37
iiRDS Main Document (Outer Package)	38
References.....	39
Literature.....	39
Notes.....	40

About this document

Overview

This document serves as a guide for implementers who want to transform iiRDS packages to VDI 2770 compliant packages.

Package transformation comprises two steps:

1. Ensure that the iiRDS data meets all requirements listed in section **Metadata Requirements**.
2. Apply the steps defined in section **Transformation** to the iiRDS data to generate VDI output.

For a high-level overview of the relations between the two metadata models, refer to section **Mapping**. Sample code of content in the two formats is provided in the section **Examples**.

Scope

Due to the complexity of the subject, this Implementation Guide focuses on one specific set-up. Other transformations approaches that are compliant to VDI 2770 are possible but cannot be explained in detail here for the sake of clarity.

The scope of this document is defined as follows:

- Transformation from iiRDS to VDI 2770
- The generation of nested packages is not discussed.
- Hybrid packages can be read by both VDI-2770- and iiRDS-compliant systems but iiRDS-compliant systems will in most cases extract more detailed metadata from the available data.

Document History

- 09.11.18 – First draft (Jan Oevermann)
- 30.08.20 – Revised version (Jan Oevermann & Mark Schubert)

Terms and Definitions

- **Content objects**
A content object is the combination of one or more file renditions (such as a PDF document) and the associated metadata.
- **Export collection**
In this document an Export collection is defined as a group of content objects designated for export into another system or for handover to another organization. This includes the content files and their associated metadata as well as information about the package itself.
- **Hybrid package**
A hybrid package is a ZIP container that can be consumed by both VDI-2770- and iiRDS-compliant software systems. The package contains different metadata serializations to comply to both standards, however, file renditions are included only once and are referred to their respective metadata descriptions.
- **iiRDS**
intelligent information Request and Delivery Standard. iiRDS enables applications to exchange technical documentation across suppliers and devices. [IIRDS1.1]
- **IRI**
Internationalized Resource Identifier (IRI) is the internationalized form of Uniform Resource Identifier (URI). IRIs extend the set of characters permitted in URIs from a subset of the ASCII character set to almost all characters of the Universal Character Set. [RFC3987].
- **RDF**
Describes a technical approach on the Internet to formulate logical statements about arbitrary things (resources). Originally, RDF was conceived by the World Wide Web Consortium (W3C) as a standard for describing metadata. In the meantime, RDF has become a fundamental building block of the Semantic Web. [RDF-CAS]

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Mapping

iiRDS DocumentType to VDI 2770 ClassId

Defines a unidirectional mapping from an iiRDS:DocumentType to a VDI 2770 ClassId⁴⁰

iiRDS IRI iirds:=http://iirds.tekom.de/iirds#	iiRDS label (English)	VDI 2770 ClassId	VDI 2770 Category (de)	VDI 2770 Category (en)
iirds:AdministratorGuide	Administrator guide	03-02	Bedienung	Operation
iirds:AssemblyInstructions	Assembly instructions	03-01	Montage, Inbetriebnahme, Demontage	Assembly, Disassembly
iirds:BillOfMaterials	Bill of materials	02-03	Bauteile	Components
iirds:CEDeclarationOfConformity	CE declaration of conformity	02-04	Zeugnisse, Zertifikate, Bescheinigungen	Certificates
iirds:Certificate	Certificate	02-04	Zeugnisse, Zertifikate, Bescheinigungen	Certificates
iirds:ContractualDocument	Contractual document	04-01	Vertragsunterlagen	Contract documents
iirds:ElectronicIdentificationPlate	Electronic identification plate	01-01	Identifikation	Identification
iirds:IdentificationDocument	Identification document	01-01	Identifikation	Identification
iirds:InstallationInstructions	Installation instructions	03-01	Montage, Inbetriebnahme, Demontage	Assembly, Disassembly
iirds:MaintenanceInstructions	Maintenance instructions	03-04	Inspektion, Wartung, Prüfung	Inspection, Maintenance, Control
iirds:OperatingInstructions	Operating instructions	03-02	Bedienung	Operation
iirds:PartsCatalog	Parts catalog	03-06	Ersatzteile	Spare parts
iirds:Plan	Plan	02-02	Zeichnungen/ Pläne	Drawings, Plans
iirds:QuickGuide	Quick reference guide	03-01	Montage, Inbetriebnahme, Demontage	Assembly, Disassembly
iirds:RepairInstructions	Repair instructions	03-05	Instandsetzung	Repair
iirds:SafetyInstructions	Safety instructions	03-03	Allgemeine Sicherheit	General Safety
iirds:SalesCatalog	Sales catalog	04-01	Vertragsunterlagen	Contract documents
iirds:Specification	Specification	02-01	Technische Spezifikation	Technical specification
iirds:TechnicalDrawingDiagram	Technical drawing/ diagram	02-02	Zeichnungen/ Pläne	Drawings, Plans
iirds:TransportInstructions	Transport instructions	03-01	Montage, Inbetriebnahme, Demontage	Assembly, Disassembly

iiRDS IdentityType to VDI 2770 ObjectId attributes⁴¹

Defines a unidirectional mapping from an iiRDS:IdentityType to attributes of VDI 2770 ObjectId

iiRDS IRI iirds:=http://iirds.tekom.de/iirds#	iiRDS label (English)	VDI 2770 RefType	VDI 2770 ObjectType	VDI 2770 IsGlobally BiUnique
iirds:ArticleCode	<i>Article code</i>	article number	Type	False
iirds:OrderCode	<i>Order code</i>	order code	Type	False
iirds:ProductType	<i>Product type</i>	product type	Type	False
iirds:GlobalTradeItemNumber	<i>GTIN</i>	GTIN	Type	False
iirds:EuropeanArticleNumber	<i>EAN</i>	EAN	Type	False
iirds:RegistrationDataIdentifier	<i>IRDI</i>	product type	Type	False
iirds:ObjectInstanceURI	<i>Instance of object URI</i>	instance of object uri	Individual	True
iirds:SerialNumber	<i>Serial number</i>	serial number	Individual	False

Remarks:

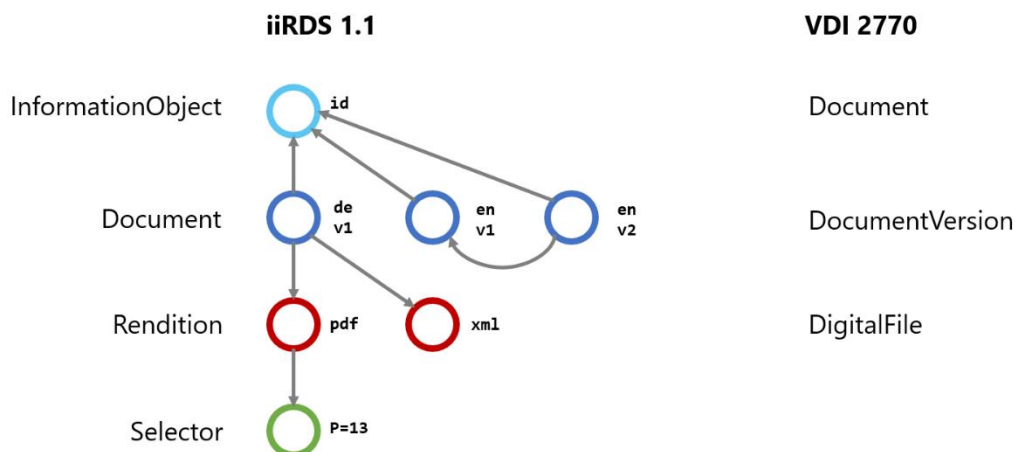
- Serial numbers are not necessarily globally biunique. Therefore, the default value for the Attribute "IsGloballyBiUnique" is mapped to "False". In cases where this requirement can be met, the value can be set to "True"
- In the VDI 2770 specification document, the English translation defines the RefType attribute values to start with an uppercase letter in cases "Instance of object uri" and "Serial number". We consider this to be a typo.

High-level mapping between concepts (examples)

Defines (non-contextualized) mapping for concepts (classes) between iiRDS and VDI 2770⁴²

iiRDS IRI	VDI 2770 XML Name	Remarks
iiRDS:Package	<Document>	Main document with information about the package and the files it contains
iiRDS:InformationObject	<Document>	Metadata file with information about one document and its versions
iiRDS:Document	<DocumentVersion>	All version- and language-specific metadata information
iiRDS:Rendition	<DigitalFile>	The reference to the physical file
iiRDS:Identity	<DocumentId> <ObjectId>	Domain-specific identifier, only unique in one domain
iiRDS:IdentityDomain	<DocumentIdDomain>	Definition of an identity domain
iiRDS:Party	<Party>	Similar concepts
iiRDS:PartyRole	<Party>/@Role	Shared subset of predefined roles
vcard:Organization	<Organization>	VDI 2770 requires both, an organization name and an official organization name
iiRDS:ProductVariant	<ReferencedObject>	VDI 2770 differentiates between references to products and product instances (with a specific serial number)
iiRDS:ContentLifeCycleStatus	<LifeCycleStatus>	Similar concepts
iiRDS:ContentLifeCycleStatusValue	<LifeCycleStatus>/@StatusValue	Shared subset of predefined status values
iiRDS:DocumentType	<DocumentClassification> <ClassId> <ClassName>	Unidirectional mapping from iiRDS to VDI 2770 defined in iiRDS DocumentType to VDI 2770 ClassId

Visualized mapping between different concepts



High-level mapping between properties (examples)

Defines (non-contextualized) mapping for properties (and relations) between iiRDS and VDI 2770

iiRDS IRI	VDI 2770 XML Name	Remarks
iiirds:revision	<DocumentVersionId>	<i>Is considered a semantic version number, not a unique identifier</i>
iiirds:language	<Language> <LanguageCode>	<i>Different notations for languages (only primary language subtag for VDI 2770)</i>
iiirds:identifier	<DocumentId> <ObjectId>	<i>Domain-specific identifier, only unique in one domain</i>
iiirds:title	<Title>	<i>Similar properties</i>
iiirds:has-abstract	<Description>	<i>Description of document/package. Not to be confused with iiirds:description</i>
iiirds:format	<DigitalFile>/@FileFormat	<i>Similar properties</i>
iiirds:source	<DigitalFile>	<i>VDI 2770 uses only file name instead of full path to file</i>
rdfs:label	<LifeCycleStatus>/@StatusValue <Party>/@Role <IdentityDomain>/@Description	<i>Labels from iiRDS concepts are used to fill list-based properties in VDI 2770</i>

Transformation

The following sections define how to apply transformations to the VDI-2770-compliant iiRDS data basis in order to generate packages that conform to the VDI specification (VDI 2770 package) or to the VDI as well as the iiRDS specification (so called "Hybrid package").