



Metadata of the Dutch National Geo Register (NGR)

GeoDCAT-AP opportunities

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feitelijk verrassend

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Introduction

Trends in geo-information

- Incorporated in daily life
- Digitalization: Geo data on the web
- Open data: Access & sharing, use, re-use and distribution of data

To facilitate access & sharing:

Spatial Data Infrastructure (SDI)

Introduction

SDI

*'A SDI is a data infrastructure implementing a framework of geographic data, **metadata**, users and tools that are interactively connected in order to use spatial data in an efficient and flexible way'*

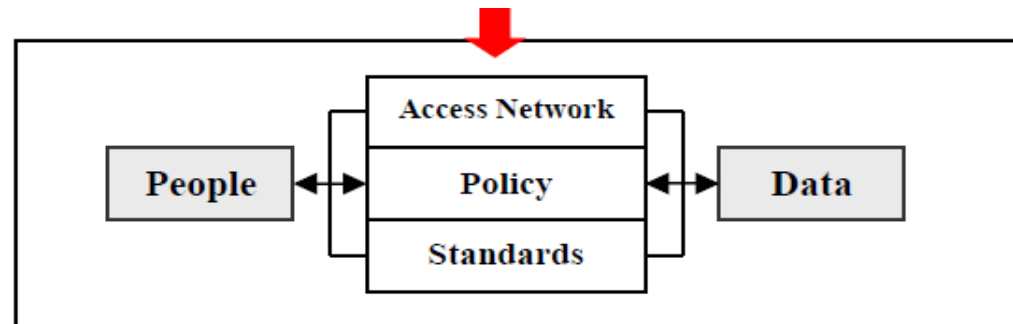


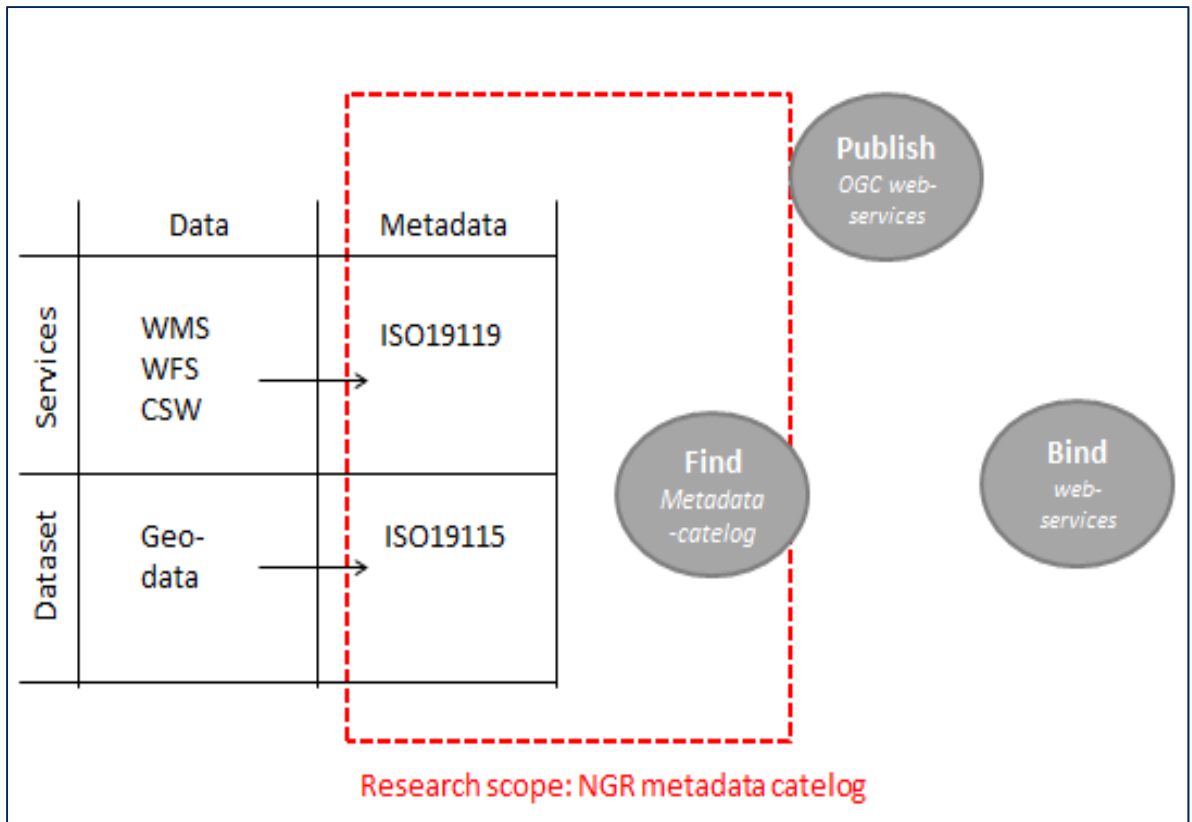
Figure 1: Nature and relations of SDI, Rajabifard et al. 2002

Introduction

Find, Publish & Bind

- Interoperability
- Standards
- NGR

- INSPIRE:
 - EDSI



Research problem

Lacking interoperability of geo (meta) data

- WFS, WMS and metadata from NGR is not found by search engines like Google
- metadata standards are dominated by ISO19115;19119 and INSPIRE MD TG inside the geo-domain.
- Alternative?
 - DCAT is a generic metadata profile that covers other data domains.

Research scope

National Geo Register (metadata catalog)

- Dutch core profile for describing for dataset and service metadata within NGR:
 - ISO19115 (datasets)
 - ISO19119 (services)
 - INSPIRE metadata (MD) technical guidelines (TG)

Research scope

GeoDCAT-AP

- Extension of DCAT-AP
- Alternative metadata profile?

Pro's:

- Improves cross domain interoperability (RDF, re-use)
- Enables Linked Open Data
- Extensible
- Decentralized publishing

Con's

- Doesn't provide the structure of ISO/INSPIRE
- Quality: format, contents and semantics are not conform

Research method

Metadataformat:

‘Metadata interoperability is achieved by the use of metadata standards and harmonization/transformations between different metadata standards (Longhorn. 2005)’.

Research question:

- How can NGR utilize GeoDCAT-AP?

Research method

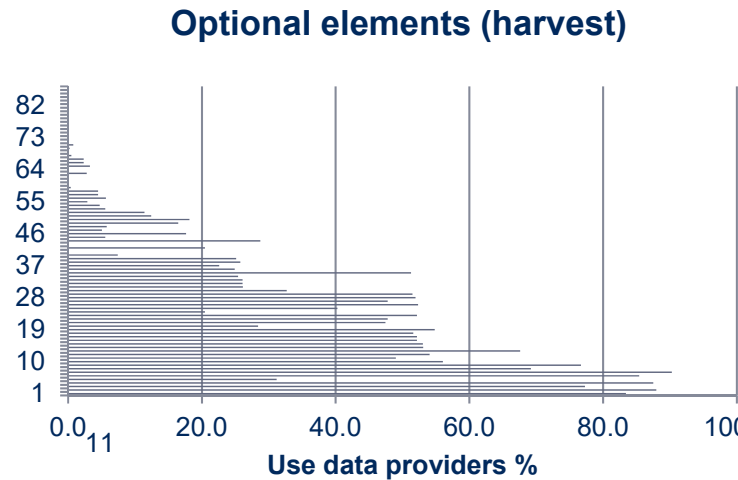
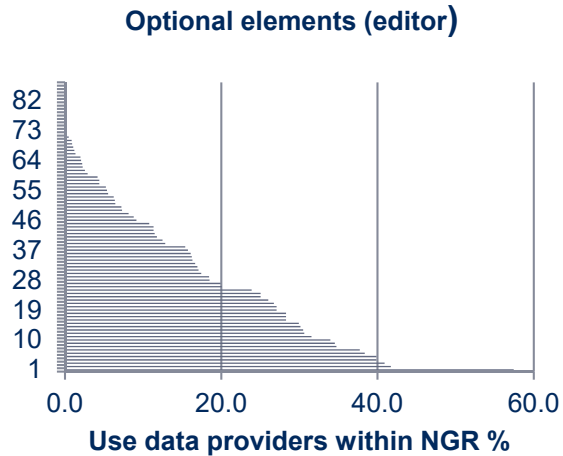
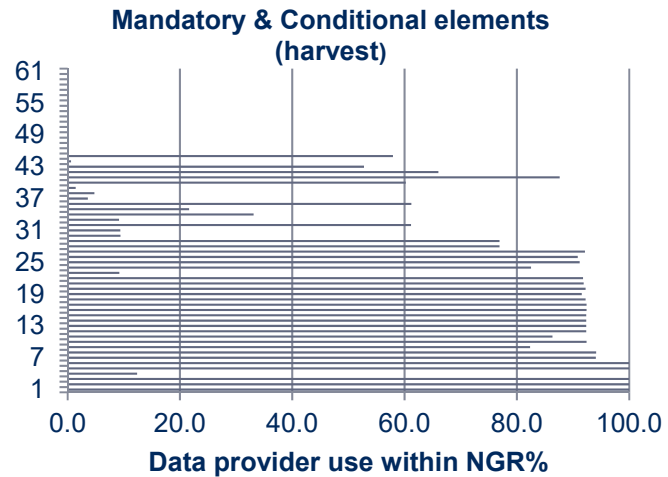
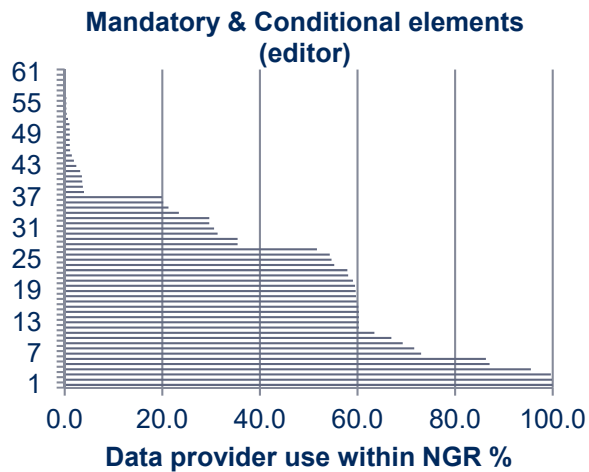
Research steps Metadataformat:

- I. Metadata implementation data providers
- II. Mapping (XSLT) from ISO19139 to GeoDCAT-AP (1)
- III. Information loss after transformation
- IV. Interviews with data providers

1: <https://webgate.ec.europa.eu/CITnet/stash/projects/ODCKAN/repos/iso-19139-to-dcat-ap/browse/documentation/Mappings.md#mapping-conformance-result>

Results

Metadata implementation data providers



Results

Mapping ISO13919 - GeoDCAT-AP

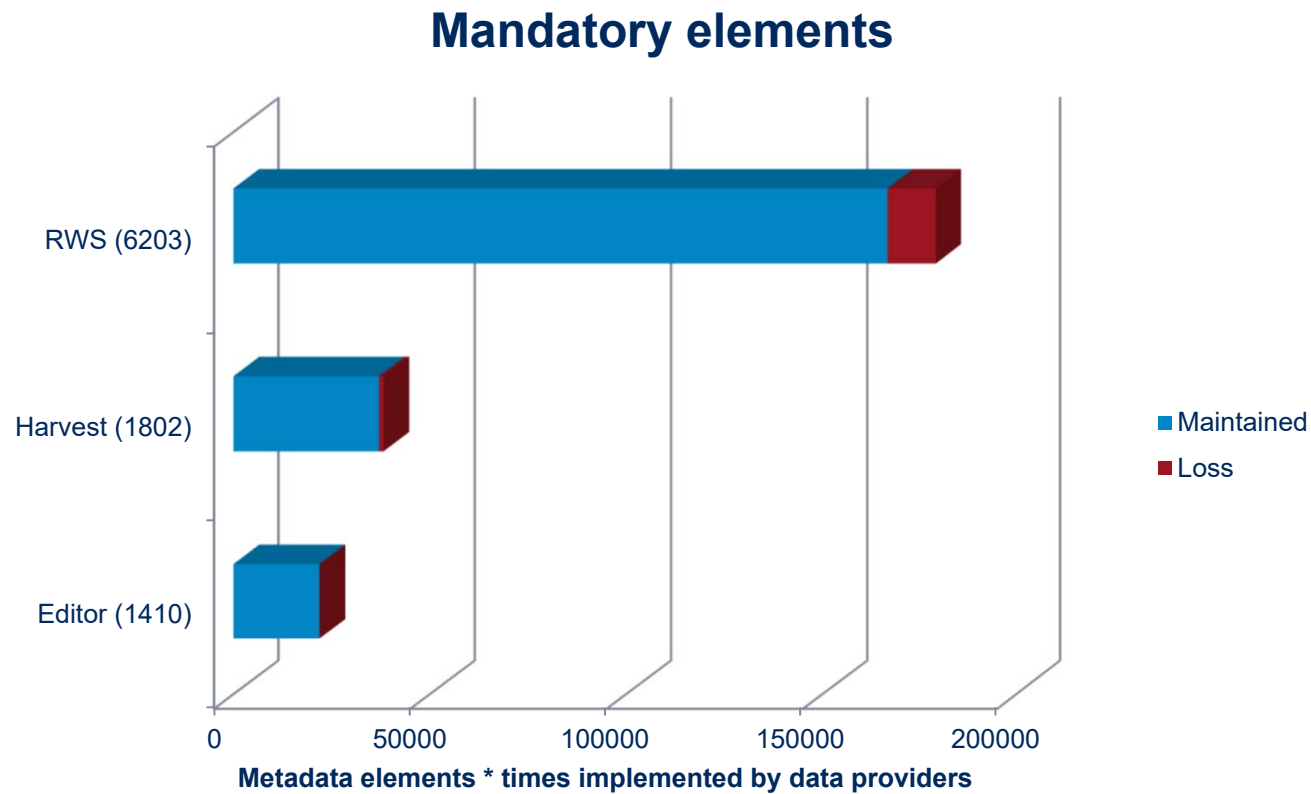
Metadata elements that have no mapping:

- One aspect of data Quality can be mapped:
 - conformity with the specification
- Optional elements that can be mapped:
 - temporal extent
 - Geographic identifier
 - Spatial representation type

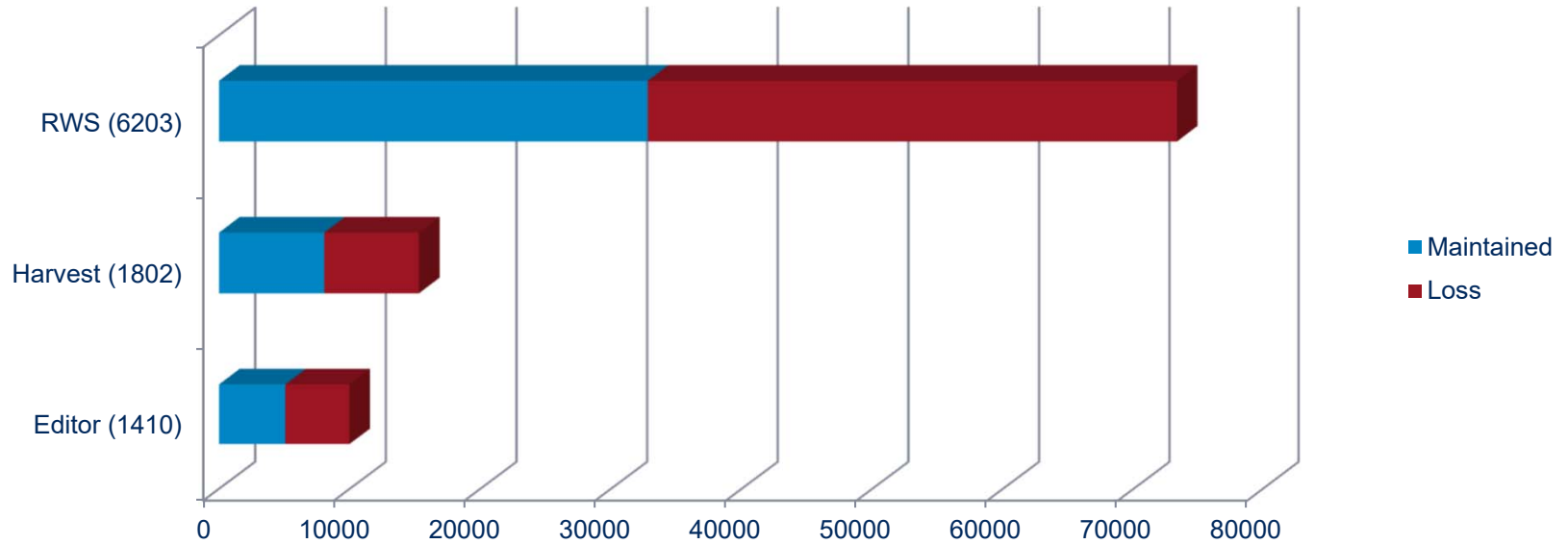
ISO:19115 /ISO19119	I %
Status (M)	0,2
Safetyrestrictions (M)	66,1
Scope quality description (M)	79,0
Parent identifier (C)	5,3
HierarchyLevelName (C)	4,8
Responsible organization namespace reference system (C)	93,6
Temporal reference system (C)	-
Thesaurus date type (C)/ Originating controlled vocabulary date type (service C)	52,1 / 1,2
Version distribution format (C) / INSPIRE (M)	15,3
Specification distribution format (C) / INSPIRE (M)	1,5
Protocol (C) / Mandatory if URL is present	94,8
Name (C) / Mandatory if URL is present	91,8
Specification date (C) / INSPIRE (M)	60,1
Explanation (C) / INSPIRE (M)	59,7
Topological consistency (C)	x
Connect Point Linkage (M) / ISO19119	5,5
Coupling Type (M) / ISO19119	x
Operation Name (M) / ISO19119	5,4
DCP (M) / ISO19119	X
Classification (M)/ ISO19119	1,2

Results

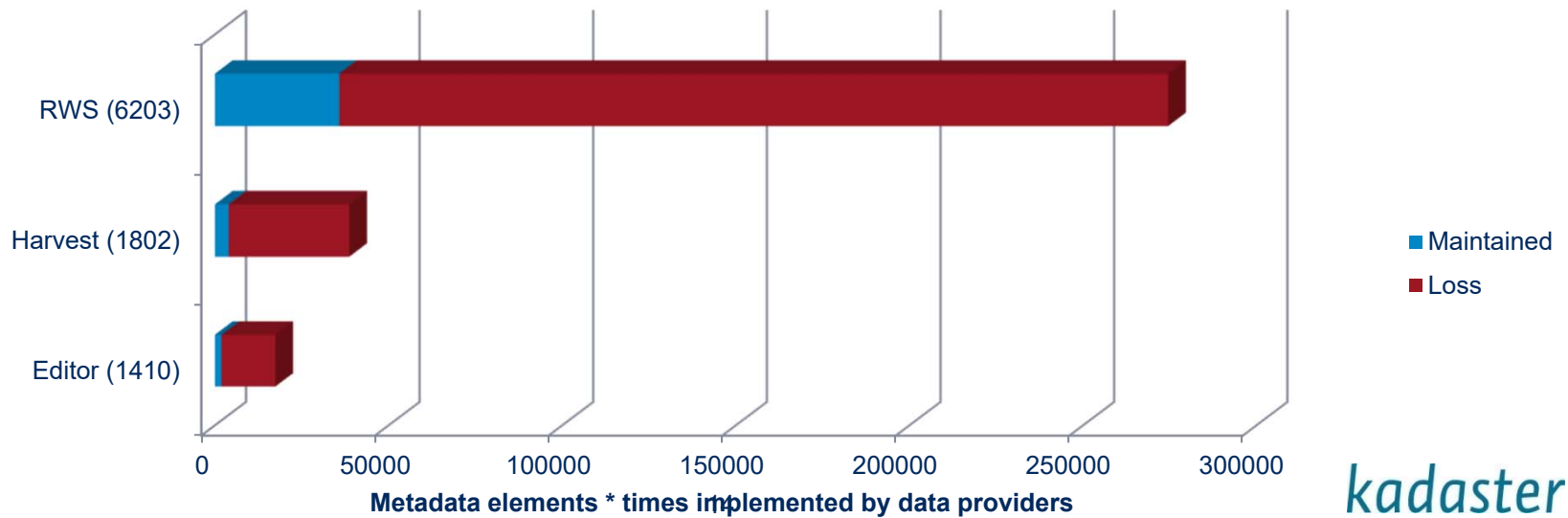
Information loss after transformation



Conditional elements



Optional elements



Metadata elements * times implemented by data providers

Results

Interviews with data providers

are discussed around the following topics:

1. Should metadata of the geo-domain and other general data domains be mixed?
2. Loss of information through mapping?
3. DCAT/GeoDCAT for import and export?
4. How NGR should utilize GeoDCAT?

Discussion

GeoDCAT-AP

Alternative metadata profile?

- Information loss after transformation.
 - Semantics are outside research scope.
- Elements don't fit one on one.
- Interviews
- Decentralized publishing.

Conclusion:

- ISO19115/19119 and ISPIRE MD TG metadata profiles are unsuited to bridge the interoperability between data domains.

Advice and Recommendation

Advice:

- A transformation to GeoDCAT-AP for exported records to improve cross sector interoperability of geo-metadata.

Recommendations:

- Further research is required for a gradual transition from the Dutch core profile to GeoDCAT-AP, one metadata format for the geo-domain and other do-mains
 - Feasibility study on technical & management level
 - ISO/INSPIRE metadata recommendation
 - Loss of information: semantics, concept and format conformity
 - User need study