ISSN: Transitioning to linked data
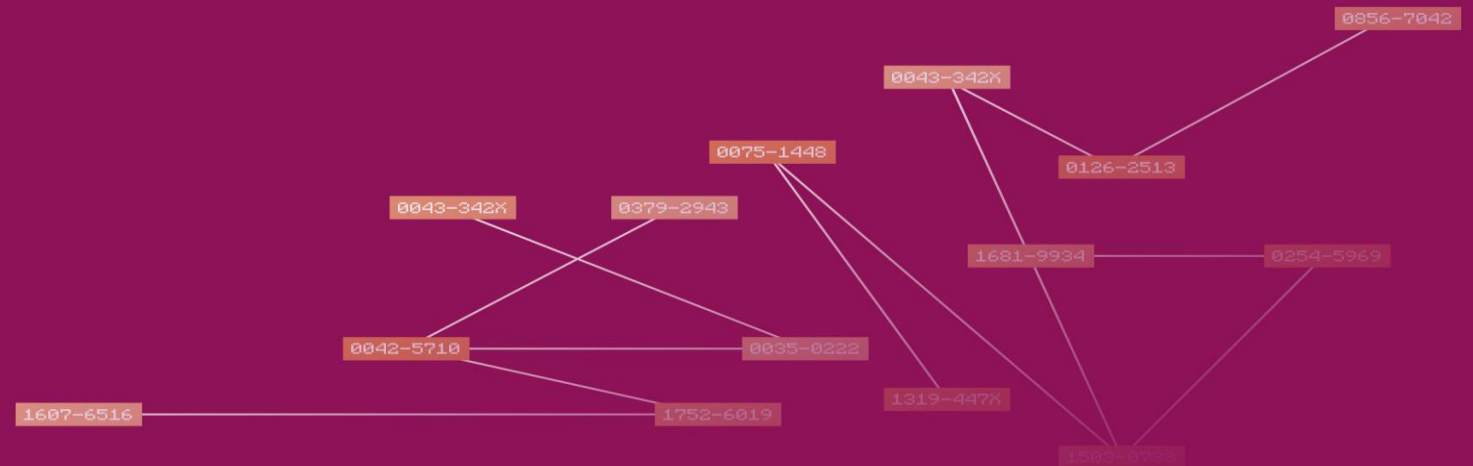
IFLA satellite conference "Data in libraries: the big picture"
University of Chicago, August 10th, 2016

Clément Oury

ISSN International Centre
clement.oury@issn.org
@ISSN_IC

INTERNATIONAL
STANDARD
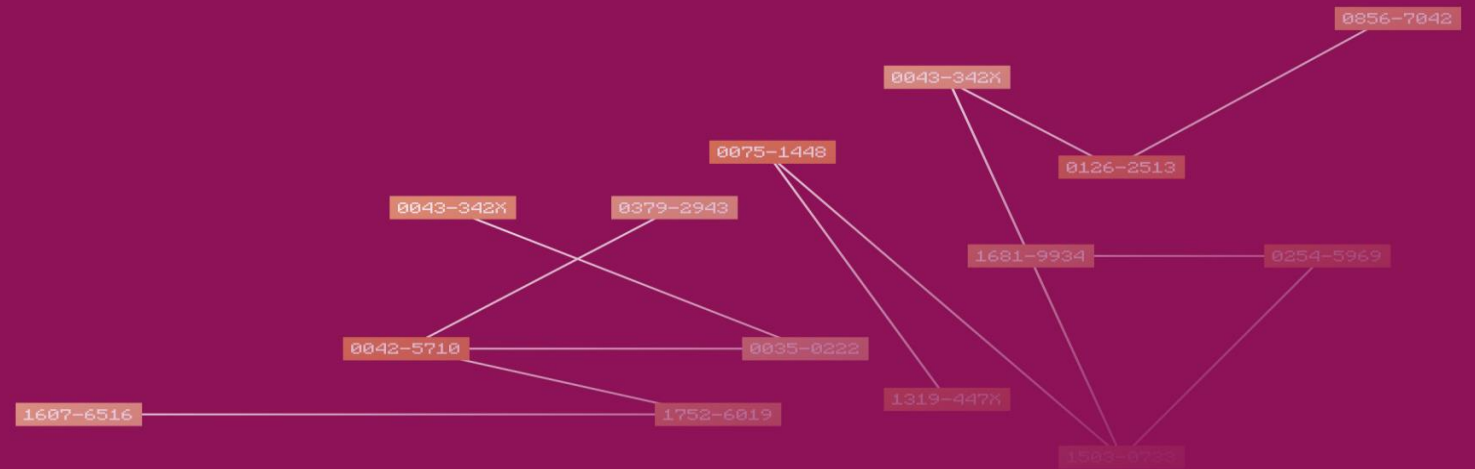SERIAL
NUMBER
INTERNATIONAL CENTRE

Overview of the presentation

- The ISSN system and network
- ISSN and linked data
- Current achievements
- Going further: data, tools and services

The International Standard Serial Number

What, how… and why?
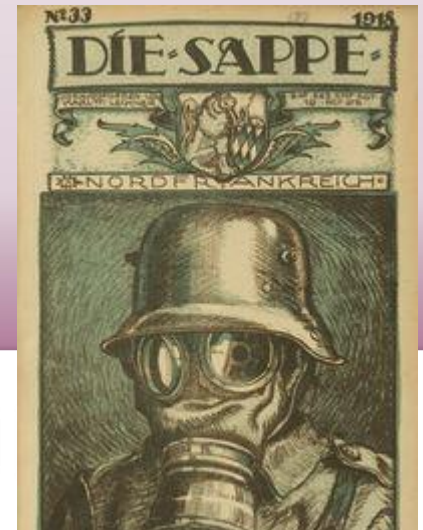
An identifier for continuing resources

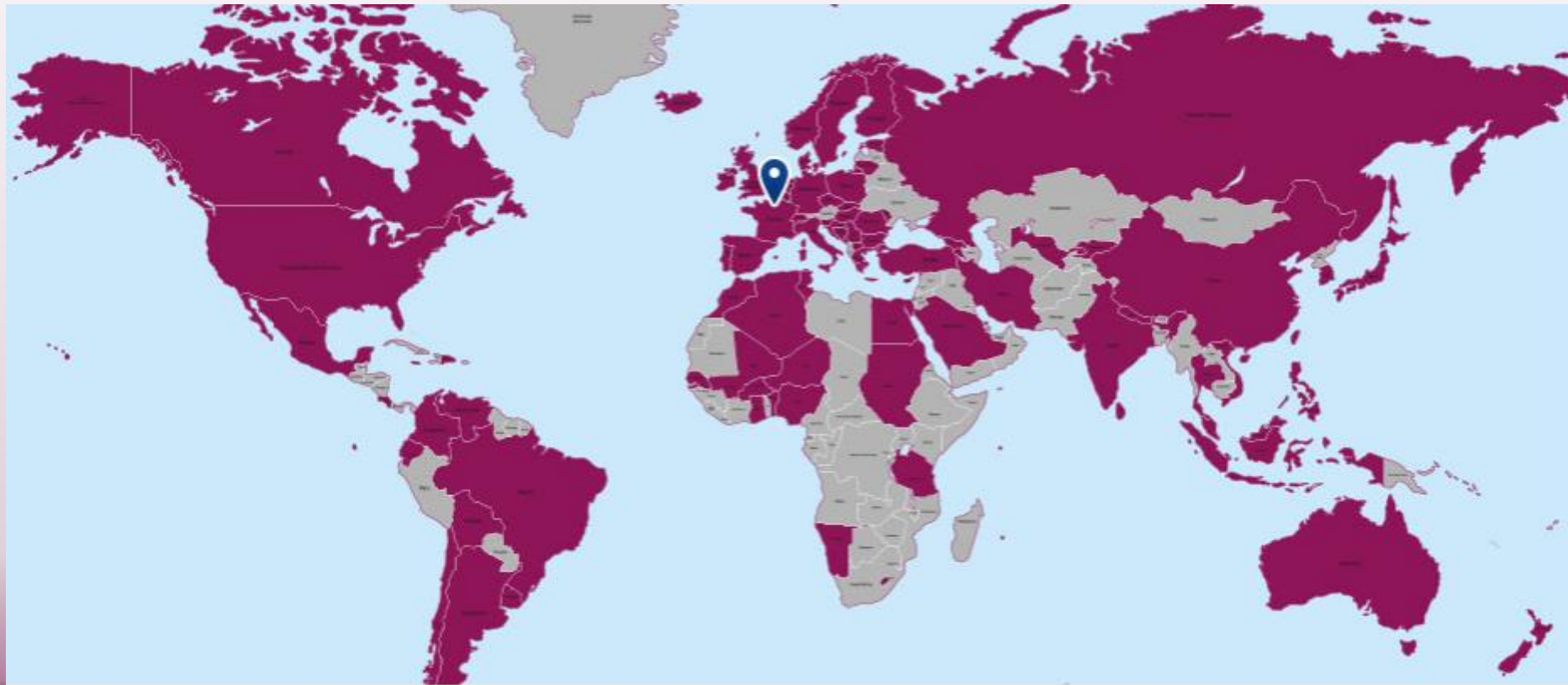Newspapers & Magazines

Periodicals

Annual reports

Monographic series

Blogs

Serials

Continuing resources

Ongoing Continuing resources

Loose-leaf publications

Databases

Websites

Alive

Not sure

Ceased

DIE·SAPPE

# ISSN assigned by a network of 89 National Centres + International Centre

A common database: the ISSN Register

- 1 title on a specific media = 1 ISSN = 1 "key-title" = 1 bibliographic record

- ISSN Register = 1,9 million records
  - 75 000 new records per year
  - Around 30% are for online resources

- Different access solutions, subscription-based
  - ISSN Portal
  - Retrieval of the "data file" (=bulk download)
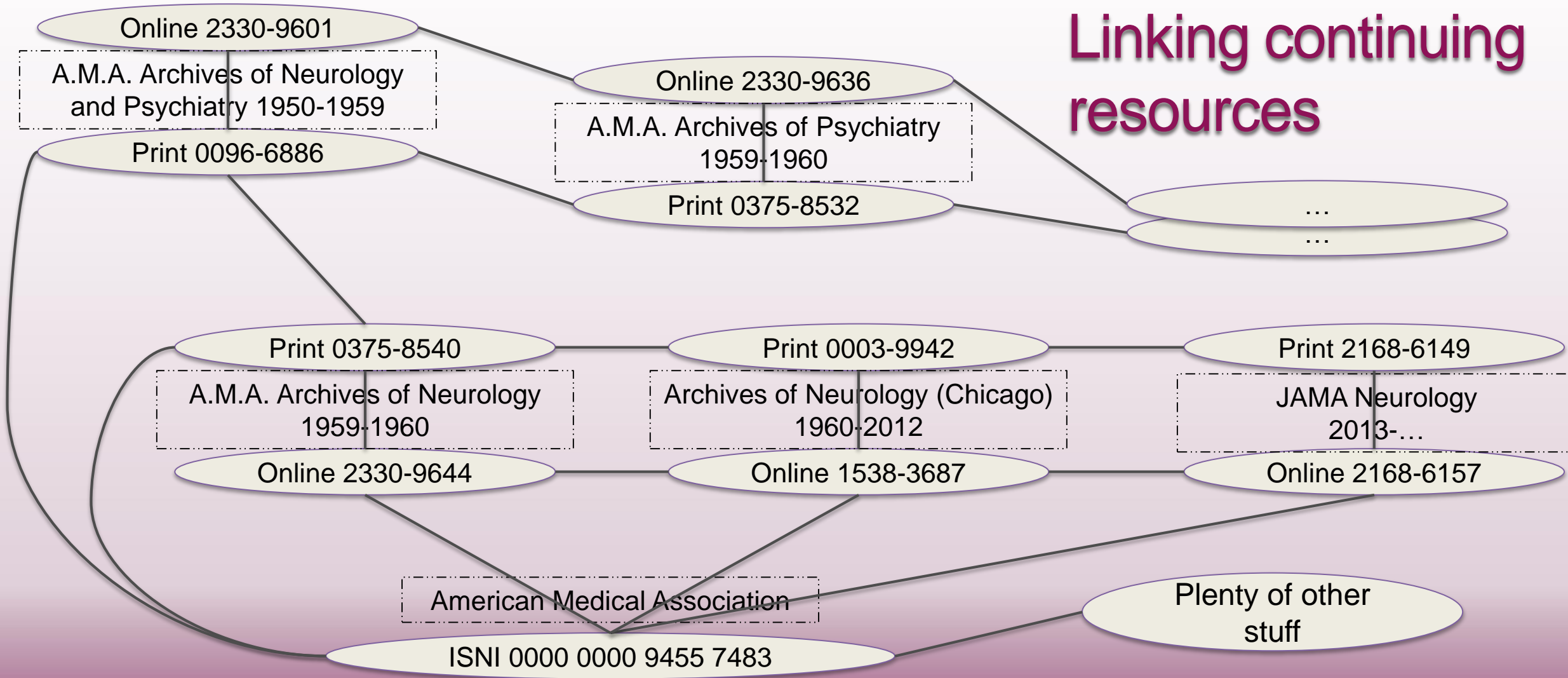 - Tailored services e.g. OAI-PMH

ISSN and Linked Data

A continuation of the same mission by other means?
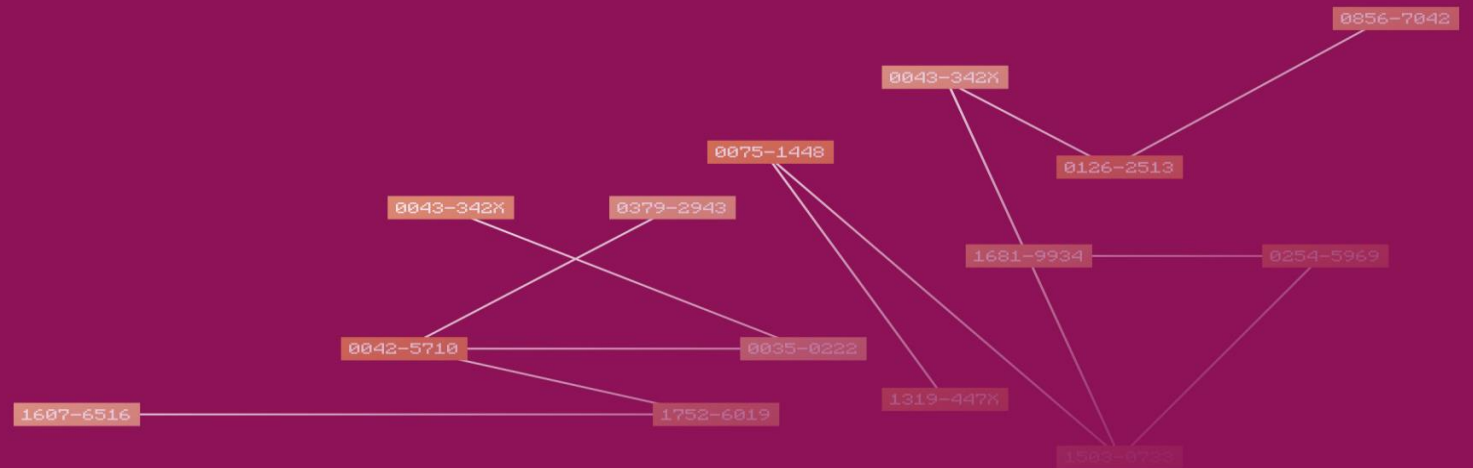
ISSN as URIs

- Are ISSN URIs?
  - ISSN follow an international standard (ISO 3297:2007)
  - ISSN are unique within the Register
  - ISSN are persistent (even though they may be suppressed)

- ISSN are not HTTP URI
  - But they link resources anyway

Linking continuing resources

Four rules of linked data, Tim Berners-Lee, 2006

- Use URIs as names for things
- Use HTTP URIs so that people can look up those names.
- When someone looks up a URI, provide useful information, using the standards (RDF*, SPARQL)
- Include links to other URIs. so that they can discover more things

Four rules of ISSN, 1975

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- ~~Use HTTP URIs so that people can look up those names~~

  - Provide customers with an access to the Register

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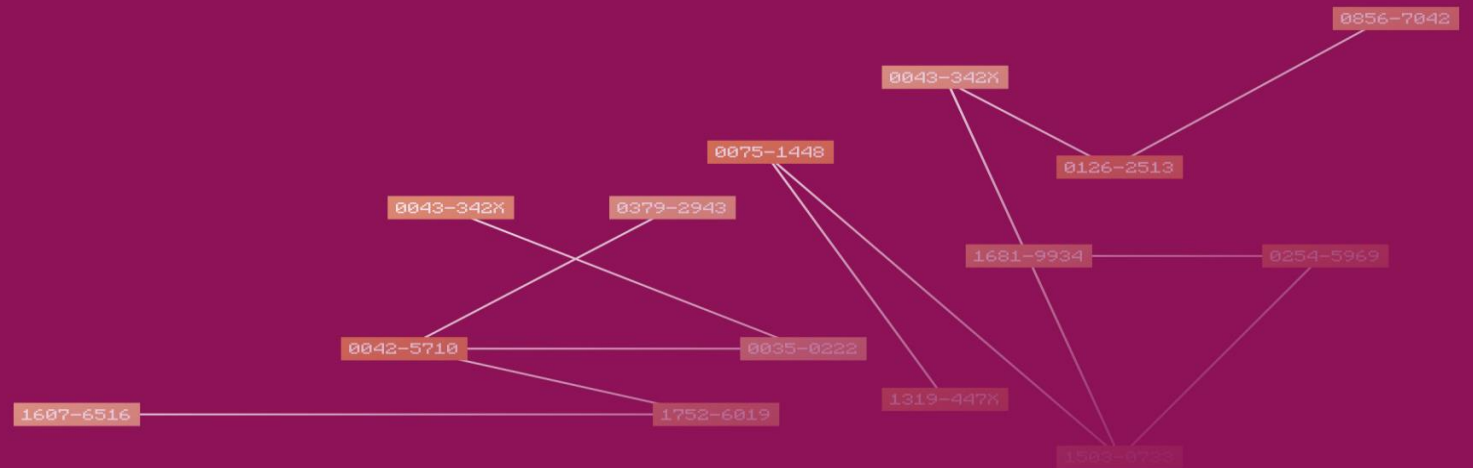
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- When someone looks up a URI [through the Register], provide useful information, using the standards ([ISBD, MARC])

- Include links to other URIs so that they can discover more things

Four rules of ISSN, 1975

- Use URIs as names for [continuing resources]

- ~~Use HTTP URIs so that people can look up those names~~

  • Provide customers with an access to the Register

- When someone looks up a URI [through the Register], provide useful information, using the standards ([ISBD, MARC])

- Include links to other URIs so that they can discover more [resources]

Current achievements

Stepping progressively into the linked data world

PRESS$_{OO}$: an ontology for continuing resources

- FRBR$_{OO}$: object-oriented version of FRBR
- PRESS$_{OO}$: FRBR$_{OO}$ for serials and other continuing resources
  - "An ontology which aims to represent the underlying semantics of bibliographic information about continuing resources, and more specifically about periodicals"
- FRBR$_{OO}$ chosen as the reference standard
  - For its object-oriented approach: convenient for linked data
  - More suitable than FRBR$_{ER}$ to express the dynamic nature of serials
  - As it allows interoperability with other cultural fields (as a CIDOC-CRM extension).

Addressing the specific issues of continuing resources

- A specialized data model to represent serials and ongoing integrating resources
  - "features" (frequency, medium...)
  - changes that affect them over the time (continuations, absorptions, splits...)
  - relationships they can have with other serials (linguistic editions...)
- Prepared by ISSN IC and the BnF
  - Endorsed by IFLA cataloguing section and intended to become an IFLA standard

How to use PRESS$_{OO}$?

- High-level model against which practical rules should be assessed
  - E.g. examination of PRESS$_{OO}$ by RDA WG on Aggregates
- A "toolbox": a complete set of classes and properties to describe continuing resources
  - Which are derived from the ISSN Manual
  - Suitable for object-centric and event-centric modelling
- A complete ontology to publish a linked dataset
  - In conjunction with CIDOC-CRM and FRBR$_{OO}$
  - Using shortcuts sometimes
  - As experimented in ROAD

ROAD: opening access to a subpart of the Register

- Directory of Open Access Scholarly Resources
  - Developed by ISSN International Centre with UNESCO support
- Free access to bibliographic information pertaining to OA resources worldwide
  - Journal, monographic series, repositories, conference proceedings, blogs
- Use ISSN as a matching key with partner databases
  - Abstracting services, DOAJ, Keepers…
- A model for a future ISSN Portal?
  - 1 ISSN = 1 webpage = 1 persistent URL
  - Semantic information in HTML pages
  - Possibility to download ROAD records in PRESS$_{OO}$ ontology

ISSN: Transitioning to linked data - Clément Oury - IFLA

ROAD
DIRECTORY
OF OPEN ACCESS
SCHOLARLY
RESOURCES

▸ Road in a nutshell | ▸ About us | ▸ Data sources | ▸ For scholars and researchers | ▸ For publishers | ▸ Open Access publishing | ▸ Statistics about Open Access

↗ SEARCH ROAD DIRECTORY

E.g. : ISSN, title, subject...   OK

> Advanced search

Road.issn.org

Plan | Satellite

World (15959) | Africa (298) | Arab States (621) | Asia and the Pacific (4096) | Europe and North America (8784) | Latin America and the Caribbean (2001)

INTERNATIONAL
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SERIAL
NUMBER
INTERNATIONAL CENTRE

SEARCH IN ROAD DIRECTORY

Your search neurology **SEARCH** >> Adva

25 publications match your search criteria.

SORT BY

Relevance
Publication date (ascending)
Publication date (descending)
Title (A - Z)
Title (Z - A)

DISPLAY
10 ▾ items

FILTER

Coverage by indexing/abstracting services
Not indexed (8)
Indexed by 1 to 5 services (17)
Global Health (5)
Medline (4)
PubMed Central® (14)
Scopus (13)

Coverage by journal indicators
Not ranked (25)

Coverage by registries and archives
Not listed (8)
Catalogo (Latindex) (1)
DOAJ (17)
The Keepers (8)

Subjects
+ Medical sciences (24)
+ Applied sciences, technology (1)

Countries
United States (3)
Switzerland (3)

Neurology. Genetics
ISSN: 2376-7839
Publisher-s: Philadelphia, PA : Wolters Kluwer/Lippincott
Country: United States
Start date: 2015 (Current)
Subject-s: Zoology
ROAD date: 2015-09-10

Functional neurology
ISSN: 1971-3274
Publisher-s: Roma : CIC Edizioni internazionali
Country: Italy
Start date: 1985 (Current)
Subject-s: Medecine
ROAD date: 2007-01-24

Case reports in neurology
ISSN: 1662-680X
Publisher-s: Basel : Karger
Country: Switzerland
Start date: 2009 (Current)
Subject-s: Medecine
Covered by: DOAJ / The Keepers
ROAD date: 2009-09-02

BMC neurology
ISSN: 1471-2377
Publisher-s: London : BioMed Central, 2001-
Country: United Kingdom
Start date: 2001 (Current)
Subject-s: Medecine
Covered by: DOAJ / The Keepers
ROAD date: 2004-01-01

European medical journal. Neurology
ISSN: 2054-4529
Publisher-s: Chelmsford : Gorely New Media
Country: United Kingdom
Start date: 2013 (Current)
Subject-s: Medecine
Covered by: DOAJ
ROAD date: 2013-12-02

Cardiovascular Psychiatry and Neurology (Online)
ISSN: 2090-0171
Publisher-s: Cairo ; New York : Hindawi Publishing
Country: Egypt
Start date: 2009 (Current)
Subject-s: Medecine / Psychiatry

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http://road.issn.org/issn/1471-2377

BMC NEUROLOGY

▸ Other title: BioMed Central neurology

Other title: Neurology

Publisher-s: London : BioMed Central, 2001-

Country: United Kingdom

Geographic area: Europe and North America

Dates of publication: 2001

Sequential and/or chronological designations: Vol. 1 (2001)-

Status of publication: current

Type of publication: periodical

Language: English

Medium: computer remote

▸ ISSN Centre responsible for the record: United Kingdom

Creation / Last update of the record: 2015-10-29

↗ If you wish to provide an update or suggest a correction, please send us a message

Note: the ISSN identifies serials and other continuing resources: journals, being scholarly or not, but also newspapers, magazines, annual reports, monographic series, websites and databases... Like the other ISO identifiers, the ISSN does not provide any guarantee as to the content of the resources identified, or any evaluation of their content, and does not provide evidence of their validity

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URL: http://www.biomedcentral.com/bmcneurol/

URL: http://www.ncbi.nlm.nih.gov/pmc/journals/48/

ISSN: 1471-2377

ISSN-L: 1471-2377

Key Title: BMC neurology (Online)

Abbreviated key title: BMC neurol. (Online)

ROAD date: 2004-01-01

Subject: Medecine

Category of ROAD resource: Journals

Indexed by: PubMed Central® / Global Health / Scopus / Medline

Registries, archives: DOAJ / The Keepers

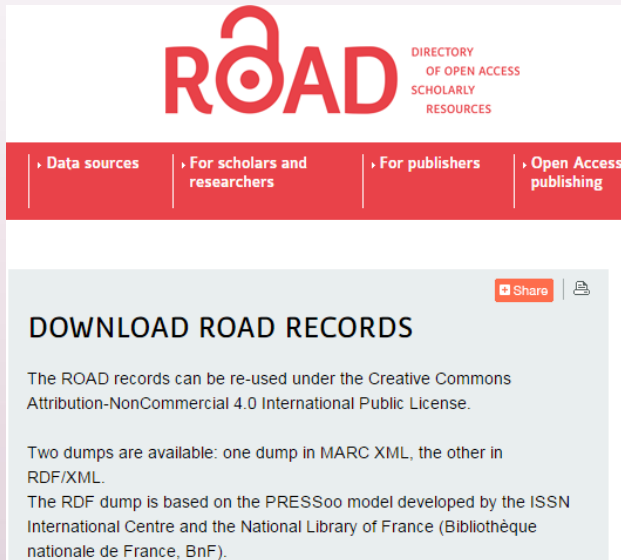› Other publications of **BioMed Central,**

› Other publications from **United Kingdom**

› Other publications about **Medecine**

› Other publications covered by **DOAJ** / **The Keepers**

Download ROAD data as RDF

Going further

To infinite and beyond?

Linked data or linked open data?

- LOD policy: promote the ISSN as the reference identifier for continuing resources
  - For every person or organization producing, publishing or using bibliographic information
  - Offering reliable ways to find the ISSN of a resource
  - Providing "essential" metadata that allow its precise and reliable identification

- Linked Data policy: putting the linking of resources at the center of ISSN strategy
  - More and more links in the Register!
  - Use the links to retrieve additional information and enhance our knowledge
  - Publish linked information

Poor and popular or Rich and lonely?

- ISSN "light"
  - For "essential" information freely available
  - Maybe based on schema.org
- ISSN "full"
  - Based on popular ontologies to promote re-utilisation of ISSN data (e.g. DC, FOAF, schema.org…)
  - May require some simplifications and loss of information (notably context information)
- ISSN "expert"
  - Based on CIDOC-CRM, $FRBR_{OO}$ and $PRESS_{OO}$
  - Full semantic richness of ISSN data…
  - … but maybe difficult to use by stakeholders not originating from the library world

On publishing side: a new Portal to distribute free and paid-for content

- Completeness of displayed bibliographic information will depend on
  - the consultation context (if free access = only essential information)
  - the type of resource (= free access to records of OA resources)
- Searching facilities
  - Search facilities provided by the Portal
  - Possibility to access to each record displayed in a dedicated webpage: http://issn.org/[ISSN]
  - Webpages should be indexed by web search engines
- Download facilities
  - Individual downloads
  - Machine requests through REST API
  - Envisaged formats: RDF/XML, TTL, JSON LD (+ "traditional" ones: MARC21, MARCXML…)

On production side

- Setting up a "data computing platform"
  - A tool to ingest, store, re-compute, export bibliographic metadata
  - A RDF triplestore accessible from a SPARQL endpoint?
- Enriching Register data with information from
  - libraries (e.g. classifications)
  - publishers
  - ROAD partners
  - any organization publishing in the LOD
- A support for additional services
  - For librarians, publishers or researchers

As a conclusion

- ISSN system and linked data principles & tools seek similar objectives…
  - Distribution of enhanced and more usable knowledge through the linking of resources
- … following parallel roads
  - It's time to cross roads!
- ISSN Network and ISSN International Centre have already performed experiments in Linked Data and Open Data
  - $PRESS_{OO}$ and ROAD
- We need to go a step further and provide (freely or not)
  - More data, enriched data
  - Through enhanced tools - to provide better services

I thank you for your attention!

Questions? (ISSN: 0954-920X)