



europæana  
think culture

# EDM and data quality

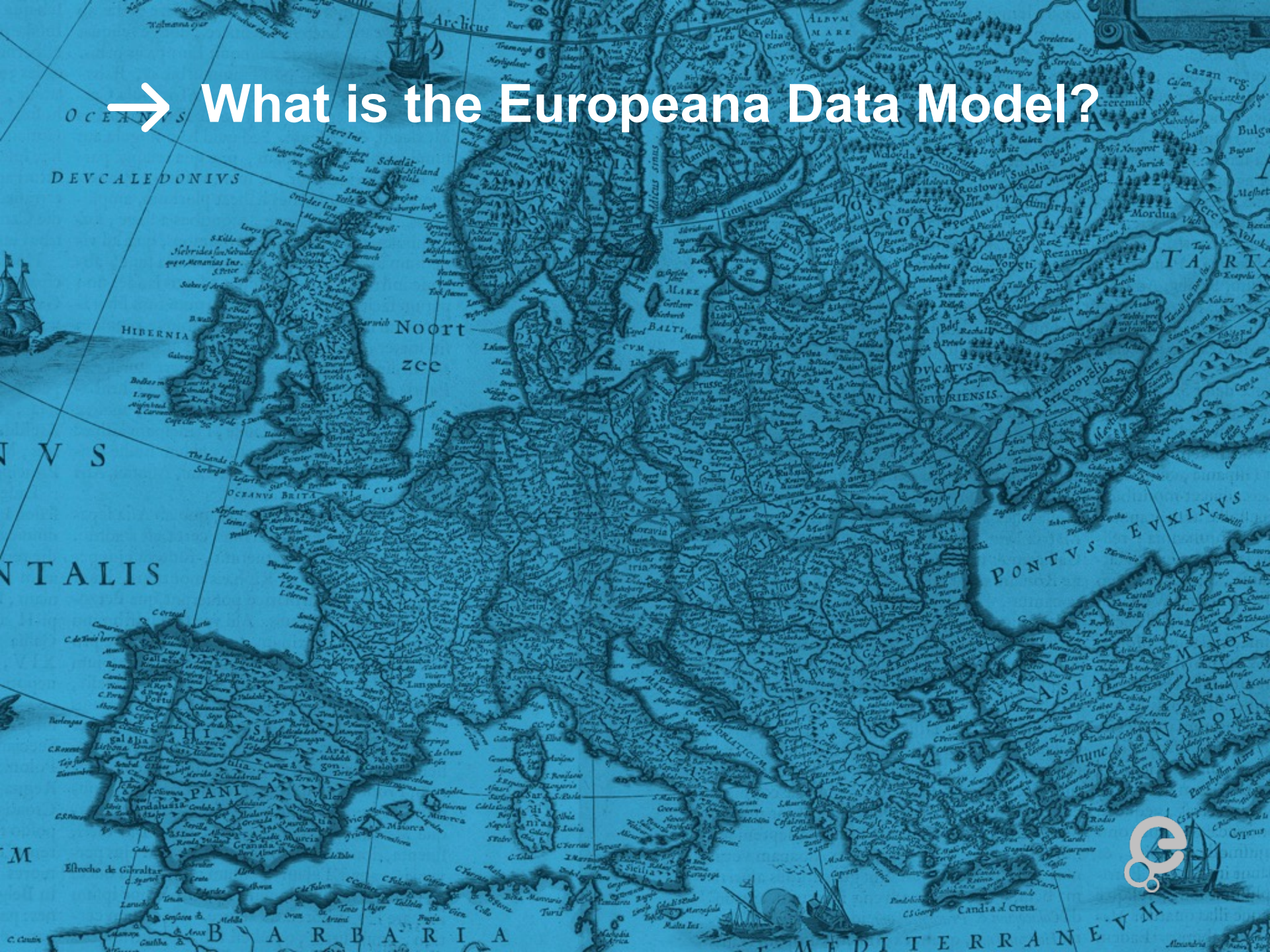
**Cécile Devarenne**  
**Operations Officer**  
Aggregation Workshop  
Belgrade, 28th January 2015

# Content

- What is the Europeana Data Model (EDM)?
- EDM, how does it work?
  - Classes in EDM: edm:ProvidedCHO, ore:Aggregation, edm:WebResource, contextual classes
  - Connections in EDM
  - Representation of cultural objects in EDM
- What is data quality in EDM: mandatory elements, rich contextualized data and rich digital representations modeled in the best possible way from the source data

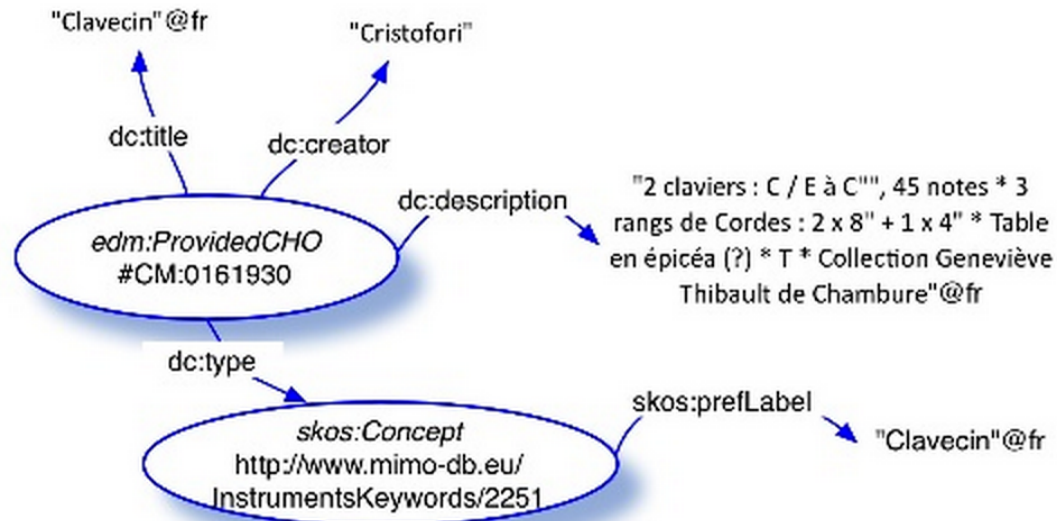


# → What is the Europeana Data Model?

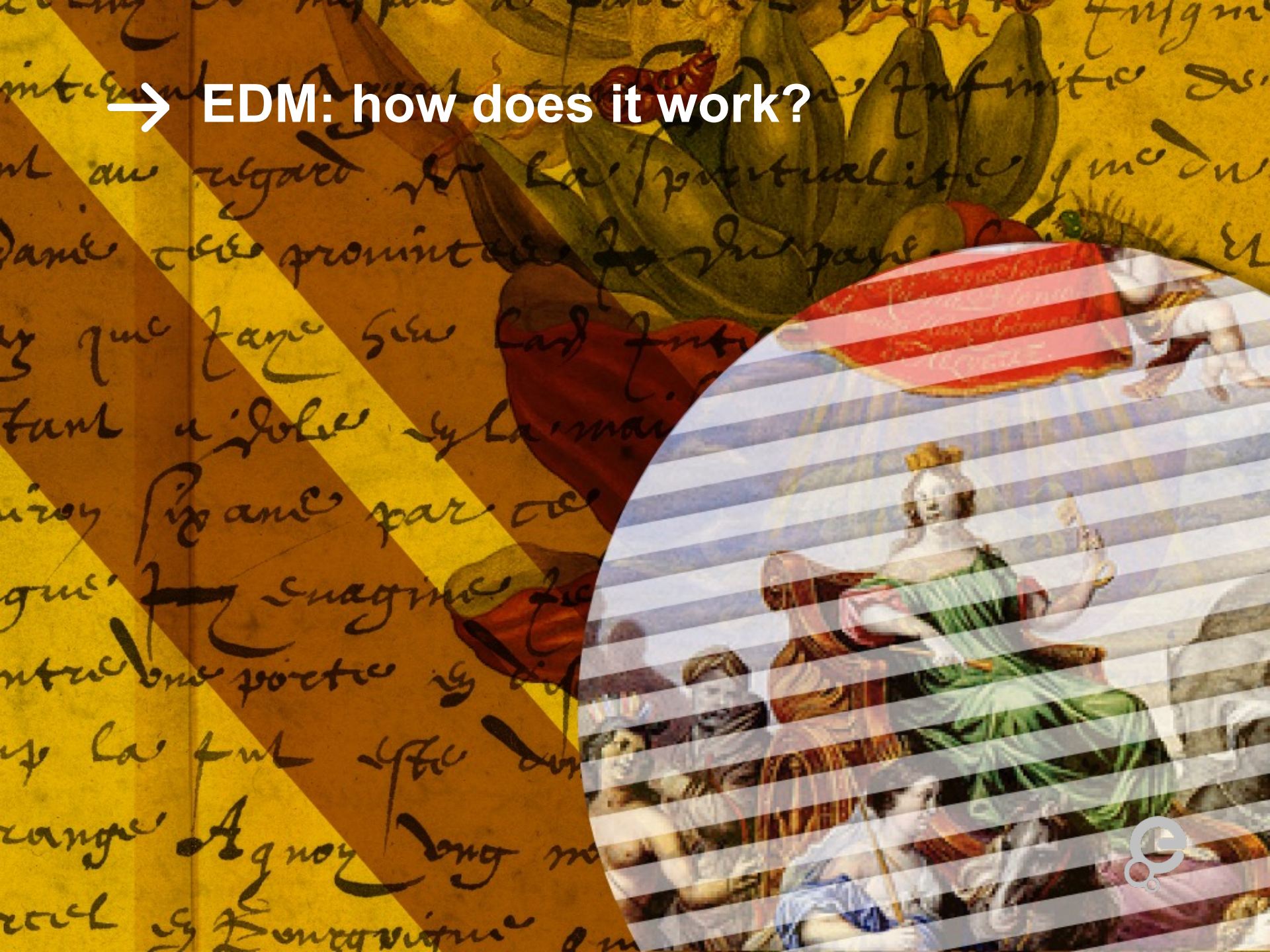


# What is the Europeana Data Model?

- The EDM is a theoretical data model that allows data to be presented in different ways according to the practices of the various domains who contribute data to Europeana
- Before EDM, ESE: flat data model, data on real objects and digital object mixed together, no links between objects and context (e.g agents and concepts and places)
- EDM was implemented to enable enhanced descriptive metadata



# → EDM: how does it work?



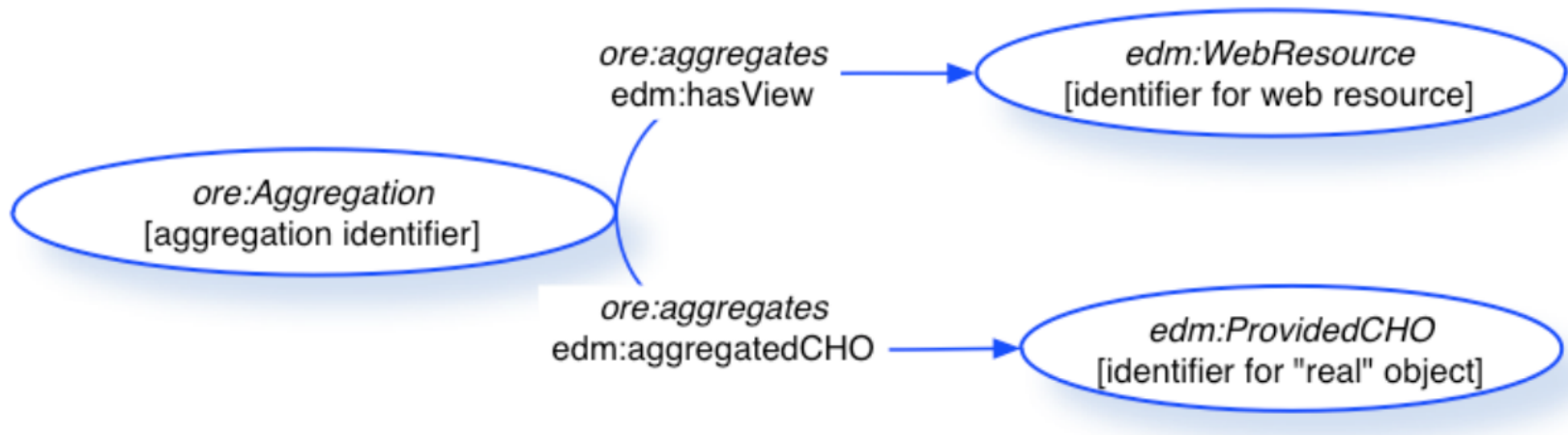
# EDM classes enabling the description of cultural heritage objects

- Three core classes:
  - **edm:ProvidedCHO** - the provided cultural heritage object  
*A map*
  - **edm:WebResource** - the web resource that is the digital representation  
*One digitization of the map*
  - **ore:Aggregation** - the aggregation that groups the classes together
- Four contextual classes:
  - **edm:Agent** – who
  - **edm:Place** – where  
*The places depicted by the map*
  - **edm:TimeSpan** - when
  - **skos:Concept** - what



# EDM classes enabling the description of cultural heritage objects

- Visualization of the three core classes



# EDM classes enabling the description of cultural heritage objects



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Cite on Wikipedia



Select language

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Toonneel des Aerdriicx, ofte Nieuwe Atlas, dat is beschryving van alle landen. Nu nieulycx uytgegeven, door Wilhelm en Iohannem Blaeu

**Creator:**  
[Blaeu, Joan](#)

**Geographic coverage:**  
[Serbia](#);  
Kroatië; Bosnië

**Publication date:**  
1649; 1658

**Type:**  
[map chart](#)

**Format:**  
Volgnummer 138, spread 0, positie S

**Subject:**  
[historische atlassen](#); [encyclopedieën](#)

**Identifier:**  
LEI050000001\_138

**Language:**  
NL

**Publisher:**  
Blaeu, Joan

**Data provider:**  
[Erfgoed Leiden en Omstreken](#)

**Provider:**  
[Digitale Collectie](#)



# EDM classes enabling the description of cultural heritage objects

- Provided CHO: descriptive metadata about the cultural object

Toonneel des Aerdriicx, ofte Nieuwe Atlas, dat is beschryving van alle landen. Nu nieulycx uytgegeven, door Wilhelm en Iohannem Blaeu

**Creator:**

[Blaeu, Joan](#)

**Geographic coverage:**

[Serbia](#);

Kroatië; Bosnië

**Publication date:**

1649; 1658

**Type:**

[map chart](#)

**Format:**

Volgnummer 138, spread 0, positie S

**Subject:**

[historische atlassen](#); [encyclopedieën](#)

**Identifier:**

LEI050000001\_138

**Language:**

NL

**Publisher:**

Blaeu, Joan



# EDM classes enabling the description of cultural heritage objects

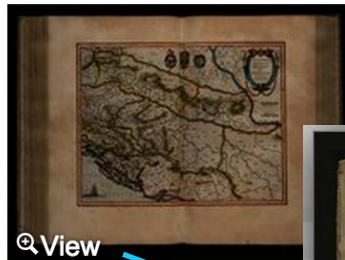
- Provided CHO: descriptive metadata about the cultural object, xml view

```
<edm:ProvidedCHO rdf:about="/2021625/LEI050000001_138">
  <dc:creator>Blaeu, Joan</dc:creator>
  <dc:format>Volgnummer 138, spread 0, positie S</dc:format>
  <dc:identifier>LEI050000001_138</dc:identifier>
  <dc:language>NL</dc:language>
  <dc:publisher>Blaeu, Joan</dc:publisher>
  <dc:subject xml:lang:"nl">historische atlasen</dc:subject>
  <dc:subject xml:lang:"nl">encyclopedieën</dc:subject>
  <dc:title xml:lang:"nl">Toonneel des Aerdriicx, ofte Nieuwe Atlas,
dat is beschryving van alle landen. Nu nieuwlycx uytgegeven, door Wilhelm
en Iohannem Blaeu</dc:title>
  <dc:type xml:lang:"nl">cartografische documenten</dc:type>
  <dc:type xml:lang:"nl">Kaart</dc:type>
  <dcterms:issued>1649</dcterms:issued>
  <dcterms:issued>1658</dcterms:issued>
  <dcterms:spatial>Europa</dcterms:spatial>
  <dcterms:spatial>Kroatië</dcterms:spatial>
  <dcterms:spatial>Bosnië</dcterms:spatial>
  <dcterms:spatial rdf:resource="http://sws.geonames.org/6290252/" />
  <edm:type>IMAGE</edm:type>
</edm:ProvidedCHO>
```



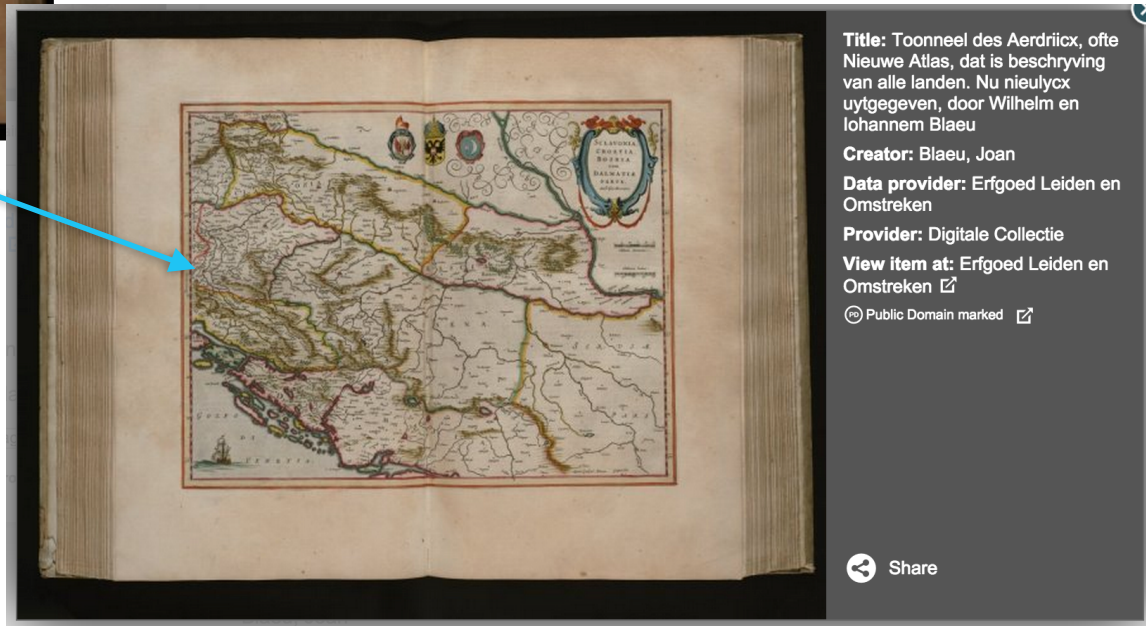
# EDM classes enabling the description of cultural heritage objects

- Web resource: digital representation of the cultural object / edm:isShownBy, direct link to the object



View

Public Domain marked



**Title:** Toonneel des Aerdrixc, ofte Nieuwe Atlas, dat is beschryving van alle landen. Nu nieuylcx uytgegeven, door Wilhelm en Iohannem Blaeu

**Creator:** Blaeu, Joan

**Data provider:** Erfgoed Leiden en Omstreken

**Provider:** Digitale Collectie

**View item at:** Erfgoed Leiden en Omstreken

Public Domain marked

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# EDM classes enabling the description of cultural heritage objects

- Web resource: digital representation of the cultural object, xml view

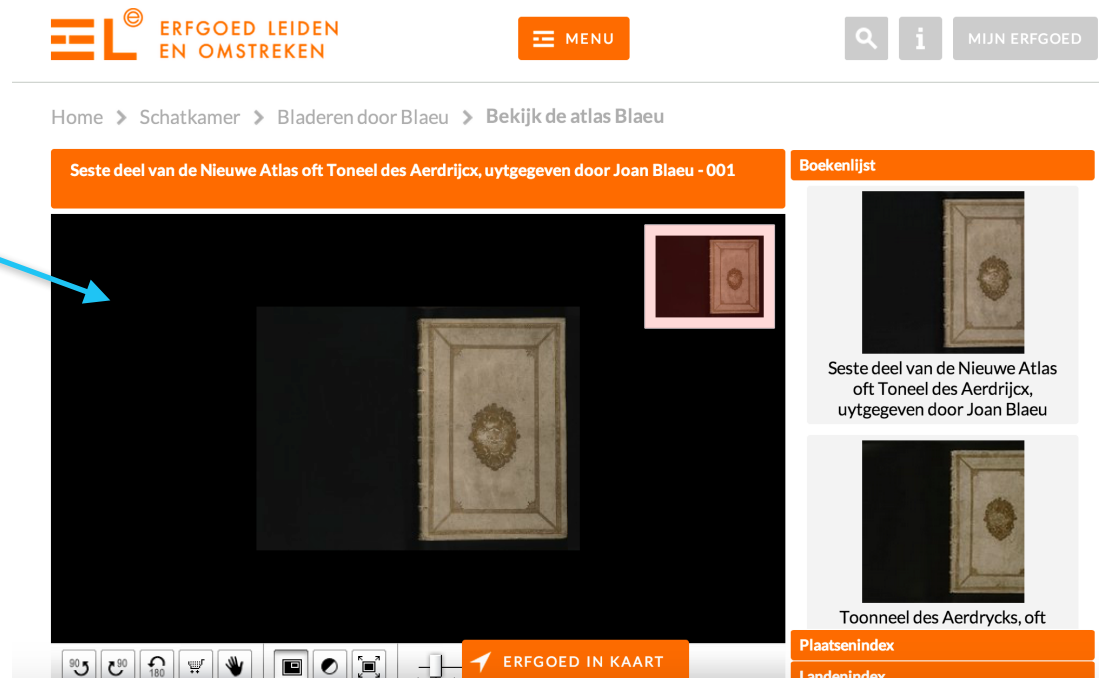
```
<edm:WebResource rdf:about="https://images.memorix.nl/lei/
thumb/640x480/dbfb4645-8039-d25c-bb12-18763884f3dd.jpg">
  <dc:format>jpeg</dc:format>
  <edm:rights rdf:resource="http://creativecommons.org/
publicdomain/mark/1.0/" />
</edm:WebResource>
```



# EDM classes enabling the description of cultural heritage objects

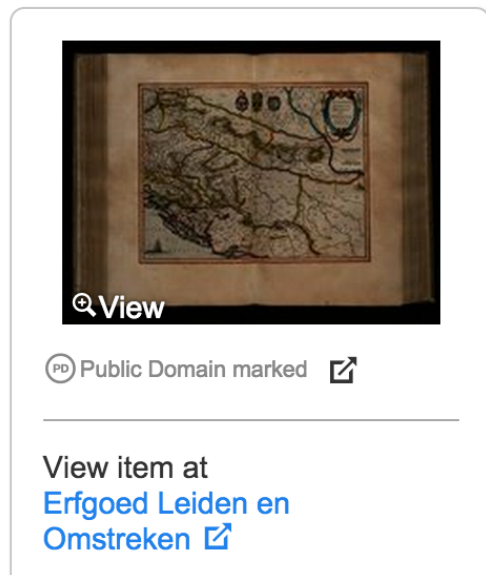
- Web resource: digital representation of the cultural object / edm:isShownAt

View item at  
[Erfgoed Leiden en Omstreken](#)



# EDM classes enabling the description of cultural heritage objects

- Aggregation: links the web resources and the descriptive metadata together in a bundle, includes specific properties about the source of the record as well as the rights that can be applied to all the web resources



**Data provider:**  
[Erfgoed Leiden en Omstreken](#)

**Provider:**  
[Digitale Collectie](#)

**Providing country:**  
Netherlands



# EDM classes enabling the description of cultural heritage objects

- Aggregation: the record in its entirety, xml view showing connections

```
<edm:ProvidedCHO rdf:about="/2021625/LEI050000001_138">
  <dc:creator>Blaeu, Joan</dc:creator>
  <dc:format>Volgnummer 138, spread 0, positie S</dc:format>
  ...
  <edm:type>IMAGE</edm:type>
</edm:ProvidedCHO>
<edm:WebResource rdf:about="https://images.memorix.nl/lei/thumb/640x480/dbfb4645-8039-
d25c-bb12-18763884f3dd.jpg">
  <dc:format>jpeg</dc:format>
  <edm:rights rdf:resource="http://creativecommons.org/publicdomain/mark/1.0/">
</edm:WebResource>
<ore:Aggregation rdf:about="LEI050000001_138">
  <edm:aggregatedCHO rdf:resource="/2021625/LEI050000001_138"/>
  <edm:dataProvider>Erfgoed Leiden en Omstreken</edm:dataProvider>
  <edm:isShownAt rdf:resource="http://erfgoedleiden.nl/webexposities/bladeren-door-
blaeu/bekijk-de-atlas-blaeu"/>
  <edm:isShownBy rdf:resource="https://images.memorix.nl/lei/thumb/640x480/
dbfb4645-8039-d25c-bb12-18763884f3dd.jpg"/>
  <edm:object rdf:resource="https://images.memorix.nl/lei/thumb/640x480/dbfb4645-8039-
d25c-bb12-18763884f3dd.jpg"/>
  <edm:provider>Digitale Collectie</edm:provider>
  <edm:rights rdf:resource="http://creativecommons.org/publicdomain/mark/1.0/">
</ore:Aggregation>
```



# EDM classes enabling the description of cultural heritage objects

- edm:Place: contextual information

## Geographic coverage:

Serbia;

Kroatië; Bosnië

Geographical coverage ▾

Place Term:

<http://sws.geonames.org/6290252/>

Place Label:

[Serbya] (tl); [Sèrbia] (ca); [Sirbistan] (tr); [Serbia] (no); [Serbia] (nn); [Servje] (fy); [Srbija] (bs); [An tSeirbia] (ga); [ประเทศไทยเซอร์เบีย, เซอร์เบีย] (th); [সার্বিয়া] (bn); [சேர்வியா] (bo); [Serbia] (oc); [Serbia] (fi); [Serbien] (sv); [Serbie] (fr); [Сърбия] (bg); [სერბეთი, სერბია] (ka); [Сэрбия] (be); [Srbija] (sl); [Srbsko] (sk); [Serbia, Serbien] (da); [Sirbistan] (ku); [Србија] (sr); [Serbia] (sq); [세르비아] (ko); [Serbia] (cy); [סרביה] (he); [Serbia] (se); [Srbija] (sh); [Сръбїя] (cu); [Srbsko] (cs); [Servië] (li); [Serbia, Serbia - Србија] (gl); [Serbia] (pl); [Serbia] (la); [Сербия] (ru); [Srbija] (hr); [塞尔维亚] (zh); [Serbia] (ro); [Xéc-bi] (vi); [Szerbia] (hu); [Srbija] (lv); [सर्बिया] (hi); [Srbija] (it); [Särbän] (vo); [Serbia] (id); [Serbien] (de); [Serbiya] (uz); [RS, Serbia] (def); [Sirbya] (qu); [Սերբիա] (hy); [Србија] (mk); [செர்வியா] (ml); [Serbia] (eu); [Serbia, Serbía] (is); [Сербия] (uk); [Serbia] (it); [Srbja] (mt); [سېرېبېه] (ug); [Serbia] (ms); [صربستان] (fa); [جمهورية صربيا, صربيا] (ar); [Serbia] (io); [Serbia] (nb); [Σερβία] (el); [ሰርቢያ] (am); [Serbia] (an); [सर्बिया] (ne); [Sérvia] (pt); [Serbio] (eo); [Serbia] (en); [Serbia] (et); [Serbia] (es); [Servië] (nl); [セルビア] (ja)

Part of: [Serbia](#)

# EDM classes enabling the description of cultural heritage objects

- edm:Place: contextual information, xml view

```
<edm:ProvidedCHO rdf:about="/2021625/LEI050000001_138">
  <dcterms:spatial rdf:resource="http://sws.geonames.org/6290252/" />
</edm:ProvidedCHO>
<edm:Place rdf:about="http://sws.geonames.org/6290252/">
  <skos:prefLabel xml:lang="tl">Serbya</skos:prefLabel>
  <skos:prefLabel xml:lang="ca">Sèrbia</skos:prefLabel>
  <skos:prefLabel xml:lang="tr">Sirbistan</skos:prefLabel>
  <skos:prefLabel xml:lang="no">Serbia</skos:prefLabel>
  <skos:prefLabel xml:lang="nn">Serbia</skos:prefLabel>
  <skos:prefLabel xml:lang="bo">ཤེར་བི་ཡ།</skos:prefLabel>
  <skos:prefLabel xml:lang="ka">სერბიის</skos:prefLabel>
  <skos:prefLabel xml:lang="be">Сэрбія</skos:prefLabel>
  <skos:prefLabel xml:lang="sl">Srbija</skos:prefLabel>
  <skos:prefLabel xml:lang="sk">Srbsko</skos:prefLabel>
  <skos:prefLabel xml:lang="da">Serbia</skos:prefLabel>
  ...
  <dcterms:isPartOf rdf:resource="http://sws.geonames.org/6290252/" />
</edm:Place>
```



# → Quality in EDM



# Quality in EDM: requirements

- Basic requirements all specified in the Publication Policy
  - Mandatory elements: a set of descriptive properties needs to be provided so that the object can be searched and discovered with minimal context.
  - Digital object: at least one digital representation of each object needs to be provided with information about the potential re-use:
    - Either a link to a web page showing the object in context with the metadata (edm:isShownAt)
    - Or a direct link to the downloadable object (edm:isShownBy)
    - The provision of a link to a thumbnail that can be cached is for all objects recommended.



# Mandatory properties

| Applicable class | Mandatory Properties (or alternatives)                                       |
|------------------|--|
| Aggregation      | edm:dataProvider   |
| Aggregation      | edm:isShownAt <b>or</b> edm:isShownBy  |
| Aggregation      | edm:provider   |
| Aggregation      | edm:rights   |
| Aggregation      | edm:aggregatedCHO  |
| Aggregation      | edm:ugc (when applicable)  |
| ProvidedCHO      | dc:title <b>or</b> dc:description  |
| ProvidedCHO      | dc:language for text objects   |
| ProvidedCHO      | dc:subject <b>or</b> dc:type <b>or</b> dc:coverage <b>or</b> dcterms:spatial |
| ProvidedCHO      | edm:type   |



# What does the minimum look like?



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 Translate details

Arellano

**Type:** Photography ;  
<http://www.eionet.europa.eu/gemet/concept/13123>

**Data provider:** Generalitat de Catalunya. Arxiu Nacional de Catalunya

**Provider:** EuropeanaPhotography

**Providing country:** Spain



# And with richer data?



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[Generalitat de Catalunya. Arxiu Nacional de Catalunya](#) 



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Cite on Wikipedia



Translate details

## Arellano

**Description:** Retrat de cos sencer de l'actriu Arellano asseguda en un tamboret.

**Creator:** Antoni Esplugas

**Geographic coverage:** Europa ; Espanya ; Catalunya ; Barcelona (província) ; Barcelonès ; Barcelona

**Date of creation:** 1920-01-01/1925-12-31

**Type:** Photography ;

<http://www.eionet.europa.eu/gemet/concept/13123>

**Format:** PLÀSTIC ; negatiu de gelatina de plata ; Negatiu de gelatina de plata ; <http://bib.arts.kuleuven.be/photoVocabulary/12007>; 14 x 9 cm

**Subject:** retrat d'estudi ; retrat ; retrat individual ; actors ; tamborets ; Retrat d'estudi ; Arellano (actriu) ;

<http://bib.arts.kuleuven.be/photoVocabulary/21000>;

<http://bib.arts.kuleuven.be/photoVocabulary/21006>

**Identifier:** ANC-1-402-N-6273

**Rights:** Domini públic

**Data provider:** Generalitat de Catalunya. Arxiu Nacional de Catalunya

**Provider:** EuropeanaPhotography

**Providing country:** Spain



# Digital objects and rights statements

- As mentioned above, at least one link needs to be provided
- Of course, if available, several links is a preferable option!
- Europeana as indicated in the publication policy would recommend the provision of a direct link to the digital object, and if possible with a rights statement that enables the re-use of the digital object
- The rights statement in EDM always applies to the digital object, not to the object itself



# Digital objects and rights statements



**Title:** Toonneel des Aerdrickx, ofte Nieuwe Atlas, dat is beschryving van alle landen. Nu nieulycx uytgegeven, door Wilhelm en Iohannem Blaeu

**Creator:** Blaeu, Joan

**Data provider:** Erfgoed Leiden en Omstreken

**Provider:** Digitale Collectie

**View item at:** Erfgoed Leiden en Omstreken [↗](#)

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# Searchability and discoverability

- The possibilities of EDM enable a better end user experience on the portal and other interfaces built to represent EDM data.
- For Europeana, the focus is always the discoverability of your cultural heritage!
- What is best?
  - Rich descriptions and context
  - If possible multilingual data
  - If possible multiple digital representations



# Searchability & discoverability: rich descriptions and context!



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Translate details

## Српски и француски војници

### Alternative Title:

Serbian and French soldiers

### Description:

"Руку под руку француски и српски коморџија испред профијантског одељења, вероватно негде у позадини II српске армије" --> преузето са реверсне стр. фотографије.

### Geographic coverage:

Б. м.; <http://id.loc.gov/vocabulary/countries/rb>

### Publication date:

1916?; 1916

### Type:

[Monograph](#); [Still image](#); [photograph](#)

### Format:

црно-бела ;; 1 фотографија ;; 23 x 29 cm.

### Subject:

[World War, 1914-1918 -- Campaigns -- Balkan Peninsula](#); [Universal Decimal Classification: 94\(100\)](#); [Први светски рат 1914-1918, Фотографије., Солунски фронт](#); [photograph](#); [First World War, Great War, WW1, WWI, World War 1, World War I, World War One](#)



# Searchability: importance of multilingual data

- Providing multilingual data or linking multilingual resources to your original data enable a user to retrieve your collections in his own language
- How can multilingual resources be linked to your data?
  - Multilingual standardized vocabularies are already used in your institution for cataloguing: possibilities to map the links to your EDM data
  - From your data, Europeana performs semantic enrichment



# Searchability: importance of multilingual data, example of the use of AAT thesaurus



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[Museo Galileo - Istituto e Museo di Storia della Scienza](#)

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## "Cannone di mezzogiorno"

### Title:

"Noon cannon"

### Description:

Questo orologio solare, realizzato da Rousseau, è costituito da una lastra rotonda di marmo sulla quale è incisa una meridiana completa di gnomone in ottone. Alla lastra è fissato un cannoncino, anch'esso in ottone, sul quale è disposta una lente inclinabile. A mezzogiorno i raggi solari, concentrati [...];

This dial, made by Rousseau, consists of a round marble slab engraved with a sundial and carrying a brass gnomon. A small brass cannon holding a tilting lens is attached to the slab. At noon, the Sun's rays, focused by the lens, ignite the gunpowder and thus cause the cannon to fire. For this reason [...]

### Creator:

Rousseau; Rousseau

### Geographic coverage:

Fattura francese; French

### Date of creation:

inizi sec. XIX; 1801; 1820; early 19th cent.

### Type:

Orologio solare **sundials** sun-dials; Sundial

### Format:

diametro 302 mm; diameter 302 mm; marmo, ottone, vetro **brass (alloy)**, copper-zinc alloy; marble, brass, glass

### Subject:

**astronomy** astronomical

### Identifier:

urn:imss:instrument:402089

### Relation:

<http://catalogue.museogalileo.it/biography/Rousseau.html>

### Language:

### Publisher:

Museo Galileo - Istituto e Museo di Storia della Scienza



# Searchability: importance of multilingual data, example of the use of AAT thesaurus

Auto-generated tags ▾

What ▾

**Concept Term:**

<http://vocab.getty.edu/aat/300054534>

**Concept Label:**

[tian wen xue] (zh-latn-pinyin-x-notone); [???] (zh-hant) [astronomy] (en) [ti?n w?n xu?] (zh-latn-pinyin-x-hanyu); [astronom?a] (es); [astronomie] (nl); [t'ien wen hs?eh] (zh-latn-wadegile)

**Concept Term:**

<http://vocab.getty.edu/aat/300041614>

**Concept Label:**

[ri gui] (zh-latn-pinyin-x-notone); [??] (zh-hant) [sundials] (en) [r? gu?] (zh-latn-pinyin-x-hanyu); [relojes de sol] (es); [zonnwijzers] (nl); [jih kuei] (zh-latn-wadegile)

**Concept Term:**

<http://vocab.getty.edu/aat/300010946>

**Concept Label:**

[ottone] (it); [laiton] (fr); [brass (alloy)] (en) [lat?n (aleaci?n)] (es); [messing] (nl)

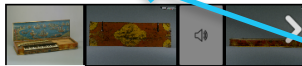


# Further with EDM: multiple web resources

## Clavicorde lié dit de Lépante



View



CC BY-NC-SA

View item at  
[MIMO - Musical Instrument Museums Online](#)



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Translate details

Select language

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### Description:

Etendue : C/E - c3, 45 notes  
Laiton, tangentes en fer \* 2  
motifs floraux et animalier  
floraux en rinceaux \* Intér  
en résineux (sapin ?) \* To  
sculptés, feintes en bois n  
datation (16e siècle) et la  
sa décoration extérieure a  
allemande \* (Source : dos

### Creator:

Anonyme

### Coverage:

ITALIE / EUROPE

### Date:

16e ?

### Subject:

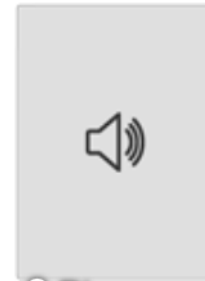
Musical Instruments

### Provider:

MIMO - Musical Instrumen

### Providing country:

Europe



Play



CC BY-NC-SA



# Further with EDM: hierarchical data



CC BY-NC-SA

View item at  
[National Library of Serbia](#)



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Translate details

Select language

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## Beogradske novine - 1918-02-15

### Description:

god. IV, br. 43

### Date:

1918; Part of: [Early 20th century](#); From: 01-01-1918 — To: 31-12-1918

### Publication date:

1918-02-15

### Type:

[newspapers](#); [newspaper](#); [Newspaper Issue](#); [Analytic serial](#)

### Identifier:

<http://velikirat.nb.rs/items/show/8777>

### Is part of:

<http://data.theeuropeanlibrary.org/BibliographicResource/3000114990042>; <http://data.theeuropeanlibrary.org/Collection/a1265>; Europeana Newspapers

### Next in sequence:

<http://data.theeuropeanlibrary.org/BibliographicResource/3000113569143>

### Language:

Serbian (srp)

### Data provider:

[National Library of Serbia](#)

### Provider:

[The European Library](#)

### Providing country:


Serbia



# Further with EDM: hierarchical data

Related items:

Beogradske novine (645)

- [view items above](#)
- 400. Beogradske novine - 1918-02-15 
  - 401. [Beogradske novine - 1918-02-16](#) 
  - 402. [Beogradske novine - 1918-02-17](#) 
  - 403. [Beogradske novine - 1918-02-18](#) 
  - 404. [Beogradske novine - 1918-02-20](#) 
  - 405. [Beogradske novine - 1918-02-21](#) 
  - 406. [Beogradske novine - 1918-02-22](#) 
  - 407. [Beogradske novine - 1918-02-23](#) 
  - 408. [Beogradske novine - 1918-02-24](#) 
  - 409. [Beogradske novine - 1918-02-25](#) 
  - 410. [Beogradske novine - 1918-02-26](#) 
  - 411. [Beogradske novine - 1918-02-27](#) 
  - 412. [Beogradske novine - 1918-02-28](#) 
  - 413. [Beogradske novine - 1918-03-01](#) 
  - 414. [Beogradske novine - 1918-03-02](#) 
  - 415. [Beogradske novine - 1918-03-03](#) 
- [view items below](#)



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Questions?





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# Thank you!

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