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D6.2 Documentation of Schema mappings and metadata exchange interfaces

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Revision History

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Statement of originality:

1. Overview of the Problem and Adopted Solution

The EFG data infrastructure that was built in the first EFG project (www.efgproject.eu) and on which the presentation of the materials digitised in EFG1914 built upon, delivers two main requirements:

- *Single access point to material aggregated from European film archives*: it supports advanced search and browse over all different types of collections (videos, images, textual documents), visualization of detailed metadata descriptions, and metadata export to third-party services, including Europeana.
- *High-quality metadata descriptions*: the EFG information space does not contain documents with poor descriptions and avoids duplication of information.

These requisites are made difficult by the highly heterogeneous nature of the archives' databases and data exports delivered by them. Data coming from different archives generally conforms to different metadata models and XML schemas, whose structure may vary from complex element trees to simple flat sets of elements. Moreover, such content may describe different entities or the same entities, but with distinct semantics; e.g., different vocabularies of terms and format representation standards for dates, names, time durations.

To tackle such heterogeneity, EFG1914 delivered two main outcomes: the EFG common data model and relative XML schema, onto which archive metadata records can be mapped; the EFG data infrastructure, whose services offer functionality for (i) collecting XML records from the archives and transforming them onto records matching the common XML metadata schema, and (ii) curating the resulting records by identifying and fixing semantic errors and duplicates. The data infrastructure was realized by adopting the D-NET Software Toolkit [6] and extending it with D-NET services for data curation.

The data ingestion workflow (sketched in **Fig. 1.** below) consists of four phases and requires an interaction between domain experts and infrastructure administrators, adequately supported by the infrastructure services. These actors are driven by a detailed methodology, whose aim is to enable a controlled data ingestion life-cycle which will incrementally lead to the publication in production of a high-quality information space. Such workflow consists of four phases:

Phase 1: metadata mapping definition. Domain experts from the archives analyze the metadata they provide to determine how such information may structurally and semantically map onto the EFG1914 metadata schema. The relative structural and semantic mapping rules are handed over to infrastructure administrators, who encode them in the form of D-NET scripts.

Phase 2: metadata transformation and cleaning. Archive metadata records are collected via OAI-PMH or FTP protocols to be processed through the mapping scripts produced in phase 1 and generate corresponding EFG1914 records. The resulting records are not immediately available for access, but stored in a "pre-production" information space, where the Phase 3 of the workflow can take place. As we shall see, the Phase 1 and Phase 2 may be fired several times to refine the mapping rules and achieve the best metadata quality.

Phase 3: metadata quality control and enrichment. Records in the pre-production Information Space can be validated and inspected to identify mapping errors, mistakes (e.g., typos), and duplicates. Specifically, the Content Checker Tool can be used to verify that structural mapping was properly performed, the Vocabulary Checker Tool notifies data providers about EFG1914 records not yet complying with the common vocabularies, and the

Vocabulary Editor Tool now put into place allows the creation of vocabularies of terms. Terms can be increasingly added to a vocabulary, modified or deleted. Synonyms are managed as well. The vocabulary is then used by the system to implement the cleaning phase of the aggregation workflow. ISTI also implemented a Cleaning Rules Editor: this unplanned activity was undertaken to implement a new curation tool which allows the definition of rules to be associated to an XPath and applied by the system to implement the cleaning phase of the aggregation workflow.

This quality control process may lead to the redefinition of the mapping rules (Phase 1), the adjustments of the mapping scripts (Phase 2), or to a subsequent data enrichment process. The Metadata Editor Tool enables curators to edit EFG1914 records.

Phase 4: metadata publishing. EFG1914 records which passed Phase 3 are moved to the production Information Space, where they become visible from the EFG1914 portal and can also be exported to third-party providers, such as Europeana (see also cahpter 4.3).
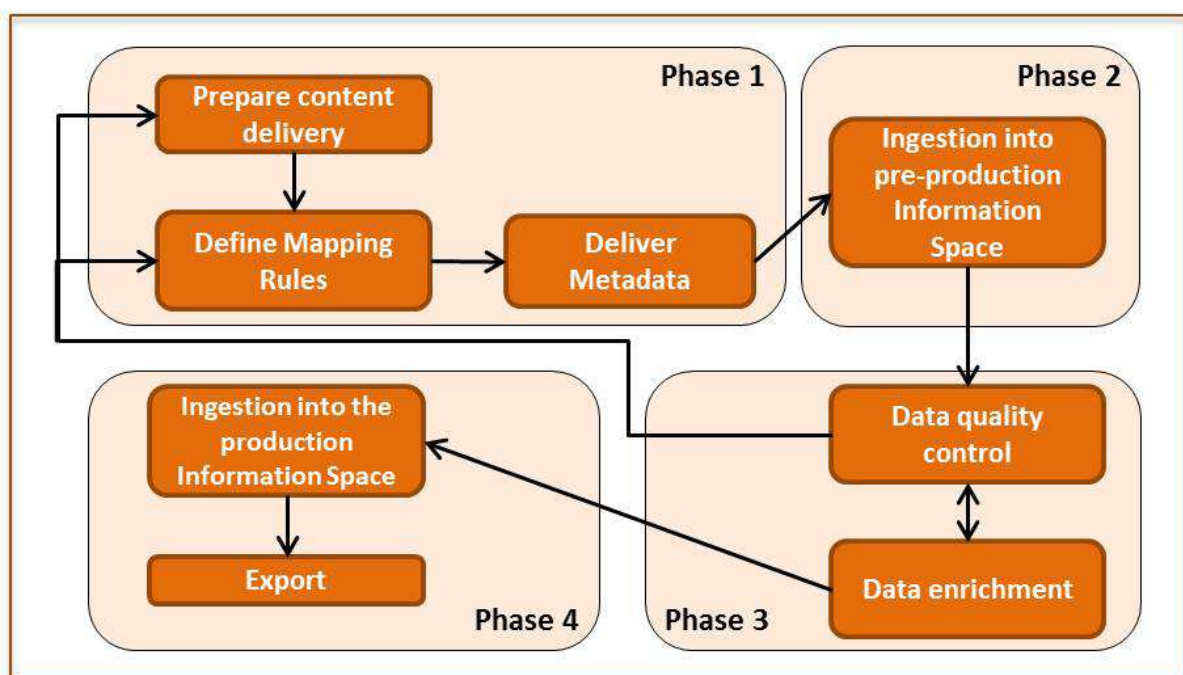

Fig. 1. Phases of the EFG1914 data ingestion workflow
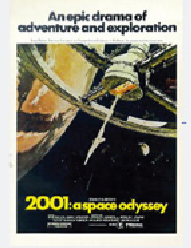
2. EFG Common Metadata Model and XML Schema

The EFG Common Metadata Model used in EFG1914 was designed after the analysis of the metadata models and schemas adopted within various organisations operating in the audio/video domain, starting from the data providers of the EFG1914 consortium. This study took into consideration standards such as FRBR [2] and Dublin Core [3], as well as more film-specific standards such as the Cinematographic Works Standards EN 15907 [4]. As a result, eight interrelated entities have been defined in the EFG1914 Common Metadata Model [12][10]:

- The *AVCreation* contains the properties of a cinematographic work: the film title, the record source (archive), the country of reference, the publication year, etc.
- The *AVManifestation* contains the information about the physical embodiment of an audiovisual creation. Examples are archival copies (analogue or digital) and database

files. Properties of an AVManifestion include language, dimension, duration, coverage, format, rights holder, and provenance.

- The *NonAVCreation* describes all non audiovisual creations that can be represented in EFG1914. These are pictures, photos, correspondence, books or periodicals. The properties of NonAVCreations are: title, record source, keywords, description, date of creation and language.
- The *NonAVManifestation* entity keeps track of copies of non-audiovisual objects. It has properties such as type (e.g. text, image, sound), specific type (e.g. photograph, poster, letter), language, dates (i.e. a date or period associated with the issue of the manifestation), digital format (including its status, size, resolution), physical format, geographic scope, rights holder.
- The *Item* entity points to the digital file held in the source archive. Its attributes are isShownBy (i.e. the URL reference to the digital object on the content provider's web site), isShownAt (i.e. the URL reference of the object in its information context), digital format, provider and country.
- The *Agent* is defined as an entity that can perform an action. The model includes three agent types: Person, Corporate Body and Group. For example, the Person Agent has the following properties: name (composed of prefix, forename and family name), type of activity, date (which specifies the temporal properties of the person in relation with his activity), place (where the activity was performed), sex. Similar properties are defined for Corporate Body and Group.
- The *Event* is an entity that can occur within the lifecycle of an audiovisual or non-audiovisual creation. Examples of Events are Physical Event (e.g. a public screening or a broadcast), Decision Event (e.g. when a manifestation of a creation was evaluated by a censorship body), IPR registration, Award (i.e. the award obtained by an audiovisual creation or an agent), Production event (e.g. dates and places where castings took place, dates and locations of shooting).
- The *Collection* is defined as a compilation of creations (audiovisual or non-audiovisual).

In order to better illustrate the model and the relationships it defines among the above entities, we show a real-case example about the film "2001: A Space Odyssey" directed by Stanley Kubrik. We may have a record description of the AVCreation as follows:

The record description includes some metadata elements plus a thumbnail describing the AVCreation. We will have several AVManifestations associated to the AVCreation, such as all national versions of the movie, for example the Italian and the American versions. At the same time we may have several Agents related to this movie. As an example, we show a record description for the movie director, Stanley Kubrick:

Furthermore we may have NonAVCreations such as posters and film reviews. All these entities are connected through relationships (see **Fig. 2**). The metadata record associated to each entity will be used to retrieve the archived object, while the relationships will be used to support browsing. As an example, it is possible to search for all movies directed by Stanley Kubrick in the '50s and browse all received awards, biographies of actors, etc.
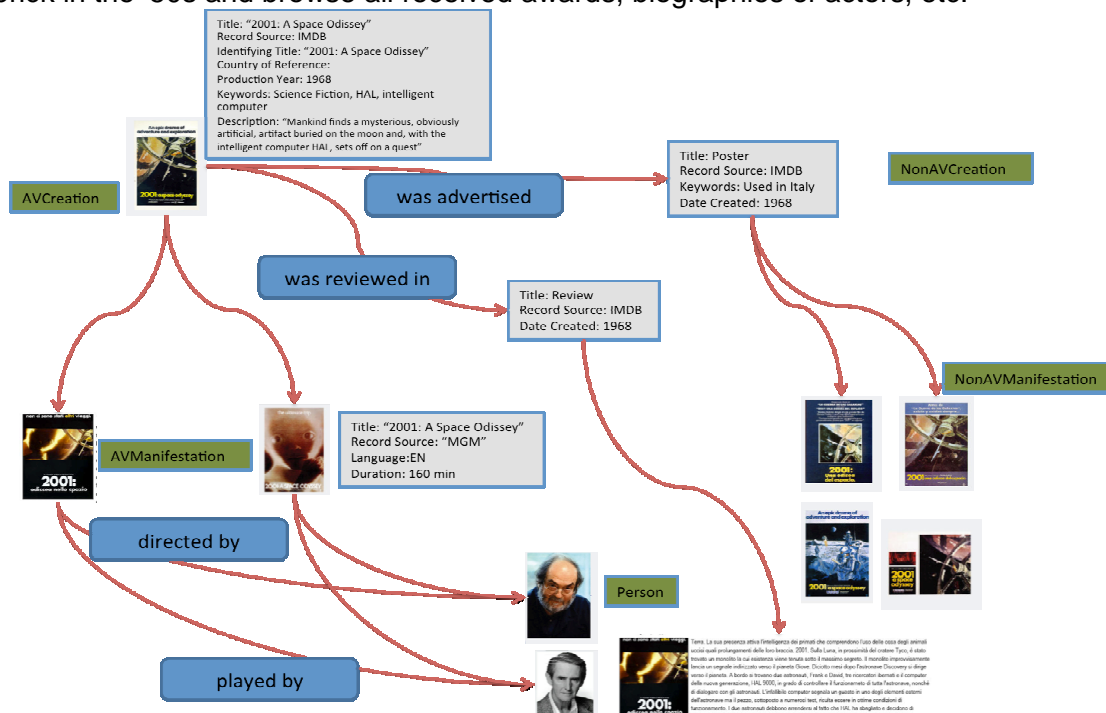

Fig. 2. Example of metadata associated for the film "2001: A Space Odyssey"

The EFG1914 Common Metadata XML Schema [12] implements the common model described so far. It defines XML element types and attributes for all the eight entities and their relevant properties. The common schema is conceived as the type union of eight XML schemas (one for each entity) in such a way that one EFG1914 XML record represents one entity together with its relationships to other entities. Furthermore, the schema defines the so-called "controlled elements", which are the XML elements whose values must comply with a given vocabulary of terms.

3. Enabling Data Infrastructures: the D-NET Software Toolkit

The diffusion of Digital Libraries which took place in the last ten-twenty years in several communities, has been followed by an urgent need for integrating and aggregating content from such DLs to make it available through a single access point. In the last three

Framework Programme calls, the European Union initiated the so called *knowledge infrastructure vision*, inspired by the same goal of unifying data resources of all kinds available in Europe. The idea was that of devising *data infrastructures*, which are environments through which several organizations can share, process, aggregate their data resources by adopting an economy of scale approach. Several technological solutions were devised in such projects, to offer functionality for collecting data from heterogeneous data sources (e.g. repository systems, archives, databases), curating such data to form a homogeneous information space, and offering customized portal services to operate over such space; e.g. search, inference of references between publications, citation calculation, etc.
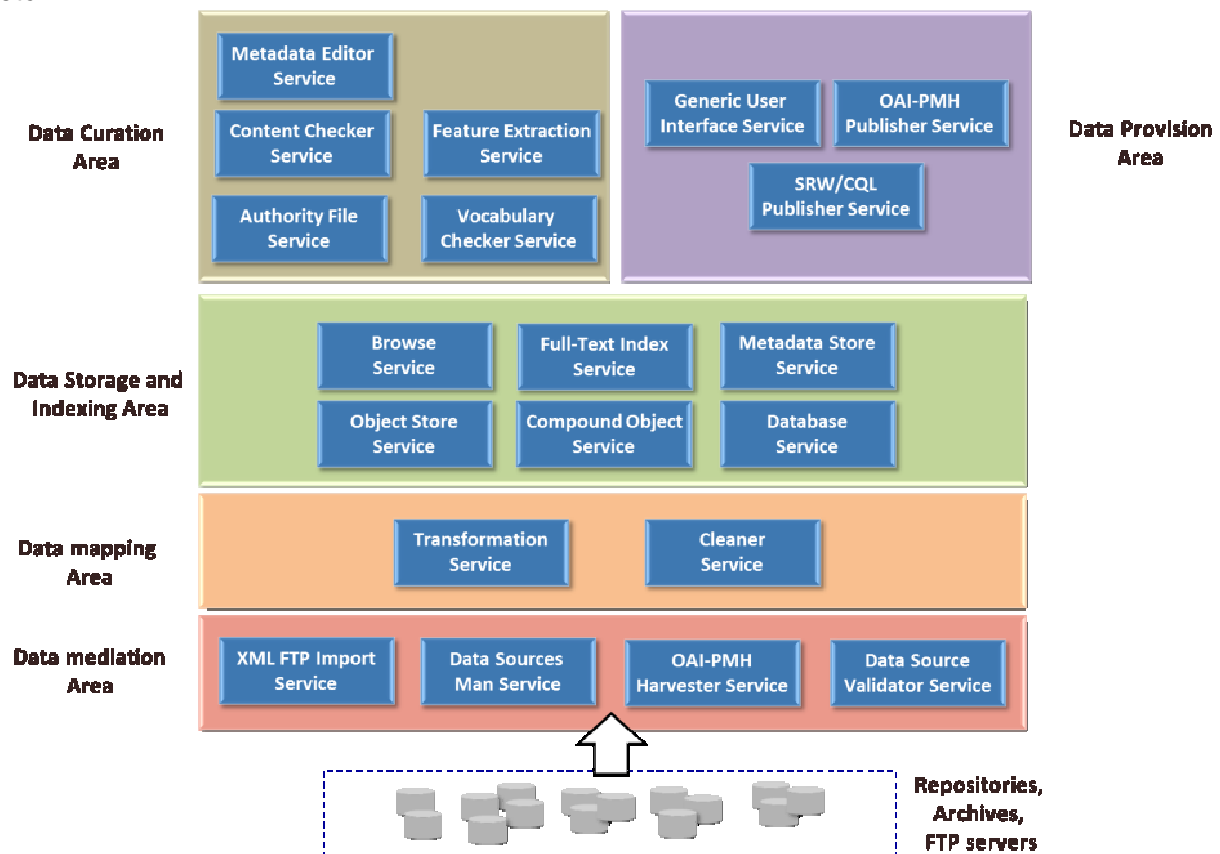

Fig. 3. D-NET service architecture

Of particular interest to Digital Libraries is the *D-NET software toolkit* [6]. D-NET is an open source solution specifically devised for the construction and operation of customized data infrastructures. D-NET provides a service-oriented framework where data infrastructures can be constructed in a LEGO-like approach, by selecting and properly combining the required D-NET services (such architectural concept was devised at CNR-ISTI by the authors of this deliverable). The resulting infrastructures are customizable (e.g., transformation into common metadata formats can be configured to match community preferences), extensible (e.g. new services can be integrated, to offer functionality not yet supported by D-NET), and scalable (e.g., storage and index replicas can be maintained and deployed on remote nodes to tackle multiple concurrent accesses or very-large data size). D-NET offers a rich set of services (see **Fig. 3**) targeting aspects such as data collection (mediation area), data mappings from formats to formats (mapping area), and data access (provision area). Services can be customized and combined to meet the data workflow requirements of a target user community. As proven by the several installations and adoption in a number of European projects (DRIVER, DRIVER II [7], OpenAIRE [8], HOPE [9], EAGLE [5]), D-NET represents an optimal and sustainable solution [11] for the realization of the EFG1914 infrastructure. In the context of the EFG1914 project, D-NET has been successfully extended with further

generic and configurable services (curation area) for advanced curation and validation of XML metadata records.

4. EFG1914 Data Infrastructure

The EFG1914 data infrastructure consists of the D-NET services shown in **Fig. 3**, appropriately combined to support the data ingestion workflow presented in Section 2. In particular, the services in the Data Curation resulted from project activities. They were devised in order to meet the requirements of EFG1914 archive partners, but engineered to support their functionalities when operating over arbitrary XML schemas.

4.1 Metadata Mapping Definition, Transformation, and Cleaning

Archives and their experts joining the EFG1914 data infrastructure are supported with a methodology that facilitates the definition of *structural mappings* from their archive schema onto the EFG1914 common metadata schema and *semantic mappings* from their vocabularies onto the common vocabularies. Experts must keep consistent and updated a number of forms (see Appendix A) whose structure guides the experts at specifying how metadata records from the original archive format must map onto the EFG1914 metadata records. These forms contain Xpaths mapping original XML elements onto common schema XML elements, as well as correspondences between original vocabularies to common vocabularies. Each archive may have several forms describing their mappings, depending on the ways different entities map onto the EFG common format. To give an idea of the complexity of the problem, **Table 1** reports on the number of mappings and pages for each mapping that have been necessary to map all archives onto the common EFG data model.

Table 1 – EFG1914 archives and mapping forms

Repository	Mapping	Pages
Arhiva Nazionale – ANF	Mapping_AV_Zoho_2012-09-19_AV	64
Bundesarchiv – Filmarchiv	Mapping_AV_Zoho_2012-09-19_AV	
Centre national du cinéma et de l'image animée - Archives françaises du Film	Mapping AV	19
Cinecitta LUCE	LUCE_mapping_documentaries_3.5.3.doc LUCE_mapping_newsreels_2.9.3.doc	18 27
Cinémathèque Royale de Belgique	Mapping AV	19
Cineteca del Comune di Bologna	Mapping AV	22
Det Danske Filminstitut - DFI	Mapping_Film_Works_Version9.9 Mapping_Names_Version_9.9 Mapping_Samling_Version1.10	36 14 15
Deutsche Kinemathek - DK	Mapping_AV_Zoho_2012-09-19_AV Mapping_AV_Zoho_2012-09-19_nonAV	 60
Deutsches Filminstitut – DIF	mapping_DIF_filmworks_EFG1914_01 Mapping_DIF_Images_Text_EFG1914_01 Mapping_DIF_Videos_EFG1914_01 Mapping_AV_Zoho_2012-09-19_nonAV	29 20 21
EFA - Estonian Film Archive	Mapping_AV_EVA_2013-03-20 Mapping_nonAV_EVA_2012-12-10	18 21
eye Film Instituut Nederland	Mapping_EYE_1.6 Mapping_posters_20130318	25 13
FCI - Fondazione Cineteca Italiana	Mapping_AV_Zoho_2012-09-19_AV	
Filmarchiv Austria	Mapping_AV_Zoho_2012-09-19_AV	
Instituto de la Cinematografia y Artes Audiovisuales -	Mapping_AV_20121025	20

Filmoteca Española		
IVAC	Mapping_AV_IVAC_2012-11-01.doc	42
IWM - Imperial War Museums	Mapping_AV_IWM_2013-01-21 IWM nested data	24
Jugoslavenska Kinoteka	Mapping_AV_Zoho_2012-09-19_AV	
La Cineteca del Friuli	Mapping_AV_Zoho_2012-09-19_AV	
Landesfilmsammlung Baden-Württemberg	Mapping_AV_Zoho_2012-09-19_AV	
Lietuvos Centrinis Valstybés Archyvas[1]	Mapping_AV_LCVA.doc	26
MaNDA	Mapping_AV_MaNDA_2012-11-29	26
Museo del Cinema	Mapping_AV_Zoho_2012-09-19_AV	
Národní Filmový Archiv - NFA	Mapping_NFA_Film_2012-10-26 Mapping_NFA_Foto_1.4 Mapping_NFA_Monographs_2.7 Mapping_NFA_Periodicals_2.7	35 18 16 17
National Library of Norway	Mapping_NNBProd_Vers_3 9_2012-09-12 kr 201219	26
Österreichisches Filmmuseum – OFM	Mapping_AV_Zoho_2012-09-19_AV	
Scottish Screen Archive at National Library	Mapping_AV_SSA_2012-12-07	54
Vintage Films Ltd - VF	Mapping_AV_Zoho_2012-09-19_AV	
Swedish Film Institute	Mapping_SFI_nonAV	18
TOTAL	**Exports from 28 archives maintained or newly implemented**	**743 pages of mappings**

A mapping consists in a set of rules, which serve as input to the infrastructure administrators to configure the services in the Data Mapping Area. Here, the Transformator Service and the Cleaner Service run PERL scripts which parse, validate and transform the source records into EFG1914 records according to the defined rules.

The *Transformator Service* is responsible for the application of *structural rules*. Such rules define the correspondence among elements and attributes of the archive schema and elements and attributes of the EFG1914 schema. Structural mapping is not as trivial as it may seem, due to the fact that input XML records are typically mapped onto several interrelated EFG1914 records, representing different EFG1914 data model entities. More in detail, a structural mapping rule consist of the following information:

1. *Source element*: xpath identifying the schema element relative to the input value;
2. *Target element*: xpaths identifying the schema elements (and the sub-entity) onto which the source value should be mapped;
3. *Mandatory element*: states if the source element is mandatory (if not, the record is rejected);
4. *Element multiplicity*: states if the source element is repeatable;
5. *Comment*: description of the mapping rule.

The *Cleaner Service* is instead responsible for the application of *semantic rules*. Such rules identify an element of the archive schema and the corresponding element of the EFG1914 schema (i.e., source element and target element of structural rules), and define the correspondence between the terms of the respective vocabularies.

As shown in **Table 2**, EFG1914 interoperates today with 26 archives for a total of 586'996 items collected[2].

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[1] Not an EFG1914 partner, but a partner in the first EFG project. They have sent a new data export with further content, which required a completely new mapping since LCVA had implemented a new database locally.

[2] The numbers presented in table 2 include the item numbers contributed by some partnres already in the first EFG project.

Table 2. - EFG1914 archives

Partner	AV	nonAV
Arhiva National de Filme (ANF)	12	0
Cinetca di Bologna (CCB)	476	31'120
Cineteca Del Friuli (CDF)	32	0
Archives Francaises du Film – Centre National de la Cinematography (CNC)	141	0
Cinémathèque Royale de Belgique (CRB)	178	0
Det Danske Filminstitut (DFI)	2030	68'250
Deutsches Filminstitut (DIF)	1401	99'344
Deutsche Kinemathek (DK)	41	270
Estonian Film Archives (EFA)	6	2'345
EYE Film Institute Netherlands (EYE)	573	916
Fondazione Cineteca Italiana (FCI)	77	0
Filmoteca Española (FE)	53	0
Filmarchiv Austria (FAA)	10	0
Institut Valencià de l'Audiovisual i de la Cinematografia (IVAC)	8	1
Imperial War Museums (IWM)	1257	0
Jugoslovenska Kinoteka (JK)	63	63
Cinecittà Luce (LUCE)	21'104	351'315
Hungarian National Digital Archive (MANDA)	11	2'209
Národní filmový archiv (NFA)	224	1'584
Nasjonalbiblioteket (NNB)	294	0
Österreichisches Filmmuseum (OFM)	48	0
Bundesarchiv Filmarchiv	118	0
Museo Nazionale del Cinema	18	0
Landesfilmsammlung Baden-Württemberg	19	0
National Library of Scotland	1'379	0
Vintage Films	6	0
TOTAL	29'579	557'417

4.2 Metadata quality control and enrichment

For the realization of the EFG1914 data infrastructure the D-NET software toolkit has been extended with the following services, constituting the D-NET Data Curation Area.

Content Checker. The Content Checker (see **Fig. 4**) is a validation tool that allows low-level searching and browsing the pre-production Information Space in order to check if metadata records have been correctly harvested and mapped.

Vocabulary Checker. The Vocabulary Checker gives access to the metadata records that do not satisfy the constraints imposed by the common metadata schema and vocabularies after the transformation and cleaning phases. The Vocabulary Checker displays the number, the types and the positions of errors in the records of the Information Space. Thanks to the browse by error typology functionality, curators can decide if an error can be solved directly in the Information Space via the Metadata Editor Tool or in the original source archive.

Metadata Editor Tool. The Metadata Editor Tool (MET) is a cataloguing tool for the enrichment of the Information Space. It allows data curators to add, edit and delete metadata records in the Information Space, as well as to establish relationships between existing (authority) records, even if coming from different sources. The MET is aware of controlled vocabularies, hence supports data curators while editing controlled elements by proposing a drop down list with all and only the terms defined by the associated controlled vocabulary. For example, let us suppose the Det Danske Filminstitut (DFI) EFG1914 data provider provides a metadata record relative to the movie "*Olsen Banden over alle bjerge*", which features the actor *Ove Sprogøe*, but the actor is not mentioned in the metadata record. In order to make the record retrievable through the EFG1914 portal to end users searching for "Ove Sprogøe", the movie record must be enriched with such information. The MET allows data curators to construct a relationship between the DFI movie metadata record and the person record, be the latter provided by harvesting other archives or created by data curators themselves.

Fig. 4. EFG1914 content checker

Tasks unplanned in the DOW that ISTI worked on were the implementation of two further tools that turned out to be necessary for the project:

Vocabulary Editor Tool. This new curation tool allows the creation of vocabularies. Terms can be increasingly added to a vocabulary, modified or deleted. Synonyms are managed as well. The vocabulary is then used by the system to implement the cleaning phase of the aggregation workflow. This tool was considered necessary as new vocabularies used at the archives and that need to be matched to EFG came up all the time. It turned out to be a major effort for ISTI to constanty adapt the terms. It was considered more cost-effective to simply develop a new tool with an interface that can also be handled by porject coordinator DIF.

Cleaning Rules Editor: this unplanned activity was undertaken to implement a new curation tool which allows the definition of rules to be associated to an XPath and applied by the system to implement the cleaning phase of the aggregation workflow.

The implantation of the Vocabulary Editor as well as the Cleaning Rules Editor cost ISTI an extra of two PMs that were not foreseen in the DOW.

4.3 Metadata Publishing

Metadata publishing has to do with the provision of the EFG1914 Information Space via standard APIs.

SRW/CQL The EFG1914 Portal accesses the information space via SRW/CQL RES APIs as provided by Apache Solr, the underlying full-text index technology. Facilities like advanced metadata search and browse (by collection, provider, date, language and media type),

search results filtering, video streaming, photo gallery and news highlights enhance the user experience in the phases of search and access.

OAI-PMH Moreover, D-NET offers services to export metadata records through OAI-PMH protocol. EFG1914 operate such services to automatically serve its information space to third-party consumers, above all the Europeana project [1], of which EFG1914 is a direct feeder. Specifically, the infrastructure exposes metadata records according to two OAI-PMH metadata formats: EFG1914 records and EDM (Europeana Data Model) records. To this aim, the infrastructure defines and implements a mapping from EFG1914 metadata scheme to EDM's.

5. References

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Appendix A – EFG Mapping Form

EFG Mapping Form

1. Basic Information

Institution

Date

Collection/Dataset

Version   1

Person in charge

E-mail

Phone

Object type(s) provided in the collection/dataset:

☐ Text   ☐ Video

☐ Image   ☐ Sound

Authority data provided:

☐ Film works   ☐ Persons

☐ Corporate Bodies

General comments on your collection/dataset:

2. Mapping

Preliminary note: Please list *all* elements that should be represented on the EFG website and fill in information only in English language.[3] In case the default number of form fields should not be sufficient, please add fields by copy&paste. Please do not be shy at putting in information overlapping several lines.

Source Data Element Name

Please indicate an element name. This must not be the "official" name and it will not be displayed on the EFG website; it is only a landmark helping the editor in recognizing the context.

Example: Content Description

Source Data Element Path

Please insert the *full path* of each element from your record (from the top XML hierarchy to the individual record tag).

Example: <FilmRecords>.<FilmWork>.<ContentDescription>

Mandatory field?

Please indicate if the element is mandatory *in you local database*.

Equivalent EFG Data Element

Use this field to assign the equivalent data element from the EFG metadata schema. If you cannot map, please leave the field empty and explain in the comments field.

Example: AVCreation.ContentDescription

Comments

The clarification of elements is highly appreciated. In particular, please indicate if a controlled vocabulary is in use for this element. In case you have multiple possibility of mapping, please indicate which element should be preferred by EFG for mapping. You can also use the comment field for giving examples.

Example: "Content descriptions are always given in Ancient Greek and Latin."

Processing Comments

This field is designed for the person in charge at DIF (for adding questions and comments regarding the further processing of the element). Please leave it empty.

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[3] The partners have agreed at the WG 3 workshop in Copenhagen (May 2009) that also XML element names shall be delivered English. Please follow this convention as far as possible at the moment.

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name		
Source Data Element Path		
Mandatory field?	☐ Yes	☐ No
Value Space	☐ External controlled vocabulary; please specify:	☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element		
Comments		
Processing Comments		

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
Comments	
Processing Comments	

Source Data Element Name	
Source Data Element Path	
Mandatory field?	☐ Yes ☐ No
Value Space	☐ External controlled vocabulary; please specify: ☐ Self-defined value list ☐ Free text
Equivalent EFG Data Element	
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Source Data Element Name	
Source Data Element Path	
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