

Metadata Crosswalk for a Museum Collection in a Thematic Digital Library

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The BDArt Digital Library hosted by the Thematic Repository at the University of Porto (Repositório Temático da U.Porto), aggregates documents from the Library and the Archive collections belonging to the Fine Arts School of the University of U.Porto (Faculdade de Belas Artes da U.Porto, FBAUP). This School has a museum collection containing a significant set of world-class objects managed with distinct processes and tools from those currently used in libraries and archives elsewhere. Interoperability between the collections of the Archive, the Library and the Museum is necessary, because many works allocated to different collections are closely related and can only be seen as a whole by cross collection search functionalities. The goal of this work, the first of its kind to be developed at the University of Porto (U.Porto), is to integrate the museum collection with archives and library collections in the repository and to use an open source technology (DSpace). Our experiment involved the selection of appropriate representations of the objects and the definition of a metadata crosswalk between the original metadata standards and qualified Dublin Core. As a result, we created the BDA Museum Collection as a BDART sub-community using an XML export procedure which we expect to be helpful in future developments of other museum collections in the Thematic Repository at U.Porto.

KEYWORDS *Digital Museum, DSpace, Metadata Crosswalk, Interoperability and Information integration, Repositório Temático da U. Porto*

Digital libraries around the world are being used as repositories of cultural heritage, providing access to digital versions of documents, objects and artifacts of recognized value. Following this lead, the University of Porto (U.Porto) maintains a “Thematic Repository”, aimed at aggregating digital libraries’ collections, which often arise in the context of the institution and are designed as solutions for integrated access to digital assets, contributing therefore to the dissemination and preservation of collections of unique value held by the University.

The Thematic Repository is supported on the DSpace¹ open-source platform and uses qualified Dublin Core² (DC) descriptors. One of the collections presented in the Thematic Repository is the BDArt – Arts Digital Library, which includes documents from the Library and the Historical Archive collections originated from the Fine Arts School (FBAUP). The developers of this collection were successful in reusing metadata imported from other information systems within the U.Porto institutional context and created a metadata crosswalk from their original metadata standard format (MARCXML and ISAD (G), respectively) to the DC qualified and exported it using an XML format file³. FBAUP also retains an important Museum Collection. Interoperability between this collection, the Library and the Historical Archive is a frequent need. Our main objective was to achieve this interoperability by integrating the Museum collection in the existing BDArt, providing a single search point for students and researchers while adding visibility to this valuable collection (Barroso, I., Azevedo, M., Ribeiro, C., 2009).

In order to reach our goal, it was necessary to develop a metadata crosswalk between all original metadata standards, including ICOM/CIDOC present in the *in arte museum system* (a proprietary museum collection management platform used in several Portuguese museums) and the target metadata format (DC) of the Thematic Repository. The following sections detail the requirements and advantages of the integration proposed in this work and the steps taken while developing the metadata crosswalk.

¹ <http://www.dspace.org/>

² <http://dublincore.org/>

³ <http://www.w3.org/XML>

INTEGRATING THE MUSEUM IN THE BDART COLLECTION

FBAUP holds an important collection of historic documents from the 15th to the 19th century belonging to the Library, the Historical Archive and the Museum collections, which are managed by different information systems. The Library has a bibliographic catalogue which uses the ALEPH system⁴ though without access to full text documents; the Historical Archive is not available to online research and the Museum collection is managed by the *in arte* software package. Since the development of the BDart in 2009, Archive and Library collections have become integrated and are searchable from a single access point, bridging an important gap for students and researchers who frequently needed to go both to the Library and the Archive to access their documentation.

The Library collection was mapped from MARCXML to Qualified Dublin Core (APPENDIX A) and the Historical Archive documents were inserted manually following ISAD (G) rules and in accordance with Qualified Dublin Core (APPENDIX B).

The integration of Library and Archive documents allowed users not only to have free access to digital objects from the FBAUP collection but, most importantly, it also provided them with a single way of retrieving documents by subject, author, artist or time period.

FBAUP also holds a valuable Museum collection with works dating from the 15th century to the present, making the Faculty a singular holder of a remarkable heritage in painting, sculpture and drawing. Some works by Leonardo da Vinci, Allegrini, Aspertini and many other mannerists stand out, as well as a set of 16th century engravings. Interoperability between collections from the Archive, the Library and the Museum was essential because many works allocated to different collections are closely related and can only be seen as a whole by cross collection search functionalities. This need for interoperability led to the integration of the Museum's digital collection as a sub-community in the structure of the existing BDart.

The Museum digital collection in the BDart is arranged in collections, keeping in mind the intended views for its potential users and leaving room for the addition of new records. The

⁴ <http://catalogo.up.pt/>

Museum metadata integration in BDart provided access and visibility to the Museum’s vast collection while enabling the full integration of services (Library, Historical Archive and Museum) at search level. With complete integration a researcher that needs information about “Silva Porto”, a well-known Portuguese painter, can retrieve with a simple search in the BDart flyers, books, news and exhibition catalogues available in the Library, his personal file, the minutes from meetings, letters and course registrations located in the Historical Archive; and drawings and paintings from the Museum collection. See Figure 1 for a sample of a results list.

Figure 1: Keyword search “Silva Porto”

E.g. Search by Keyword “Silva Porto”

Item hits:			
Issue Date	Title	Author(s)	Type
1994	Silva Porto : estudante da Academia Portuense das Bellas Artes 1865-1879	Universidade do Porto, Faculdade de Belas Artes	Folheto
1908	Exposição de quadros de Silva Porto : catálogo	Sociedade de Belas Artes	Catálogo
1944	Francisco Valença, Alfredo de Mora's e Manuel Monterroso - no salão Silva Porto	Jornal de Noticias	Noticia
1884-1894	Correspondência de Tadeu de Almeida Furtado	Secção Secretário, 1836-1911	Correspondência
1865-1872	António Carvalho da Silva Porto	Secção Secretário, 1836-1911; Sub-secção Secretaria, 1836-1911; Sub-sub-secção Alunos e Pensionistas	Processo individual aluno
1873 - 1877	Desenho/Estátua	Porto, António Carvalho da Silva	Desenho
1949	Processo do centenário do nascimento de Silva Porto	Secção Secretaria, 1911-1957; Sub-secção Expediente	Correspondência
[18-7]	Desenho/Modelo nu	Oliveira, João Marques da Silva	Desenho
[18-7]	Desenho/Modelo nu	Porto, António Carvalho da Silva	Desenho
1864-1872	João Marques da Silva Oliveira	Secção Secretário, 1836-1911; Sub-secção Secretaria, 1836-1911; Sub-sub-secção Alunos e Pensionistas	Processo individual aluno

Library

Archive

Museum

METADATA CROSSWALK FROM *IN ARTE* TO DSPACE

FBAUP’s Museum objects are managed using the *in arte* software package for museum object’s description, which has more than three hundred metadata fields based on the recommendations of “The International Guidelines for Museum Object Information: the CIDOC Information Categories” by the International Council of Museums (ICOM, 2014). The *in arte* descriptors include historical data regarding the object’s origins and author, the identification of materials and techniques, the dimensions and current conservation state, as well as the date and place of all exhibitions in which the object took part, its known bibliographic references and a photographic representation (Hartmann, 2011). Due to this great number of specific fields, we

had to define a subset of metadata fields which could provide an appropriate representation of a museum object in the digital library.

The need to integrate the BDA Museum Collection with other existing collections in the BDART, providing thus an integrated search point, led to the development of a specific metadata crosswalk, which took into consideration not only the field equivalence in ICOM/CIDOC format (present in *in arte*) and qualified Dublin Core (present in DSpace), but also the fields already in use in the remaining collections of the BDART, as illustrated in Table 1. Crosswalks were necessary in order to allow the integration of different metadata standards whenever digital materials from different origins (such as archives, museums and libraries) had been described using different standards (Godby, C. J., Young, J. A., & Childress, E., 2004).

The first step in developing the crosswalk was the verification of the actual use in FBAUP's Museum for the selected fields. It is common even with well-established standards to have a general use for the descriptors and then fine tune their meaning. For instance, we noticed that the "Incorporation (provenance)" metadata field, which in ICOM/CIDOC is destined for information about geographic provenance of the objects, was seldom used here. Instead, this information was available in the "History" and "Notes" fields, thus forcing us to map all three metadata fields for the BDA Museum Collection.

Table 1: Metadata Integration Schema in BDART

Collection	Original System	Metadata source format	Target metadata format	Search Interface
BDA Archive	Manual control	ISAD (G)	DC Qualified	Thematic Repository (DSpace)
BDA Library	Aleph	UNIMARC	DC Qualified	Thematic Repository (DSpace)
BDA Museum	<i>in arte</i>	ICOM/CIDOC	DC Qualified	Thematic Repository (DSpace)

The next step was to identify the corresponding metadata fields in qualified Dublin Core already in use in the Thematic Repository. In the cases where we lacked equivalent fields for our specific typologies, we resorted to the complete base of Metadata Terms from the Dublin Core Metadata Initiative (DCMI, 2011). This helped us finding appropriate metadata fields or obtaining instructions on how to create new qualified Dublin Core metadata fields based on the controlled vocabulary terms. For instance, it was necessary to create a new metadata *sub-community* field to show which sub-community in the BDart a record belonged to, e.g. to the Archive, the Library or the Museum. In this process, we favoured a general description as much as possible, as our main goal was the integration between the collections in the BDart whilst not compromising the specificity required for the representation of a museum collection. Table 2 contains an excerpt from the developed crosswalk; the whole mapping is in Appendix C.

Table 2: The final Metadata Crosswalk (shortcut)

UNIMARC field	UNIMARC subfield	Library (UNIMARC labels)	Historical Archive ISAD (G)	Museum (ICOM/CIDOC)	Dublin Core Qualified	Search Interface (DSpace)
700 710 701 711	^a ^b ^c ^d ^e ^f	Primary Intellectual Responsibility	Name of Creators	Author	dc.contributor.author	Author/Creator
702	^a ^b ^c ^d ^e ^f ^4	Secondary Intellectual Responsibility	Other Contributors	field without correspondence	dc.contributor.other	Other Contributors
545	^a	Section Title	field without correspondence	Collection(Type)	dc.collection	Collections

Once the metadata crosswalk was defined, it served as basis for the development of an export procedure using an XML standard format which, once created, allowed us to export metadata fields from an *in arte* collection to DSpace. This required some professional assistance from the *in arte* software team for the configuration of existing scripts. For instance, SQL queries on the *in arte* database were designed to assign the target collection for each record in the BDA Museum Collection. The exported XML file (APPENDIX D) was imported into the DSpace platform and, during this process, some inconsistencies in the information provided by the *in arte* metadata fields were identified. A critical case which illustrates the need for adjustments on the data from a museum collection is the metadata field *Date* (used in *dc.date.issued*); most of

the *in arte* records do not have values for this field, as this information is often unknown for museum objects. However, the date field is used in a search index and as a browsing classifier and needs to be filled in. In order to remedy this situation, we decided to automatically introduce the approximate chronology ([17 -?], e.g.), based on the information retrieved from the *chronological scope* field, for all cases where the *date field* could not be filled in.

The whole process resulted in the creation of the BDA Museum Collection, which is currently available online in the U.Porto Thematic Repository as a sub-community in the structure previously defined for BDart, and its complete integration at search and browsing level with the other collections (<http://repositorio-tematico.up.pt/handle/10405/814>).

CONCLUSIONS AND ONGOING WORK

The boundaries between library, archive and museum objects are not clearly defined and the organization of digital collections contributes to blurring them further. Digital collections built from existing assets are a good ground for interoperability experiments and the task of assembling representations and metadata from library, archives and museum objects into a single collection can be challenging.

We addressed the problem by including an existing museum collection into the BDart at FBAUP, where library and archive documents had been previously imported and organized. The experience with the harmonization of library and archival collections was used in the preparation of the BDA Museum Collection, but new issues had to be dealt with. The description of museum objects has different assumptions from those in libraries and archives: metadata must account for the unique nature of the objects, provide information on their context of creation and history, and help managing its curation and exhibition.

For a Digital Library with the characteristics of BDart, where collections are of different nature and originate in different sources, crosswalks that extend interoperability are essential, so that the object can be accessible through related collections and its history can be understood as a

whole. Our project is the first developed at U.Porto which aims at integrating a museum collection with archives and library collections using an open source technology (DSpace). Interoperability was our main goal and every effort was made to crosswalk the different metadata formats using standards-based vocabularies.

As the existing museum collection has valuable assets, their inclusion in the BDART provides added interest to the physical library and makes cross-collection search trivial. Moreover, considering that the Thematic Repository at U.Porto, where BDART is supported, is making its collections suitable to be exported to Europeana, the addition of the BDA Museum Collection, which has a high potential for international visibility, can be regarded as the first step towards this contribution. Europeana is an aggregation platform providing uniform access to a valuable part of European cultural heritage content. Using the metadata resources from cultural institutions such as libraries, museums and archives, users and application developers can currently explore more than 36 million objects provided by over 3,000 institutions in 35 countries.

We expect the inclusion of all of the museum collection now that the process of metadata import has been streamlined and all the interoperability effort has helped the Museum in creating more quality metadata (for this experience we imported around 500 records). This process also offers the advantage of automatically adding new records through *in arte* to the BDART. In addition, we expect this crosswalk to be used in future initiatives of other museum collections integrated in the Thematic Repository at U. Porto, since all museums use the *in arte* system.

REFERENCES

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ICOM: International Council of Museums: The World Museum Community (ICOM). (2011). Retrieved from <http://icom.museum>

APPENDIX A. MARCXML TO QUALIFIED DUBLIN CORE DESCRIPTORS

Document type – Pamphlet

```
<record xmlns="http://www.loc.gov/MARC21/slim"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.loc.gov/MARC21/slim
    http://www.loc.gov/standards/marcxml/schema/MARC21slim.xsd">
  <leader>00783nam000000325 4500</leader>
  <datafield tag="001" ind1=" " ind2=" ">
    <subfield code="1">000013048</subfield>
  </datafield>
  <datafield tag="100" ind1=" " ind2=" ">
    <subfield code="a">19941214d1994---k--y0pory0303----ba</subfield>
  </datafield>
  <datafield tag="101" ind1="0" ind2=" ">
    <subfield code="a">por</subfield>
  </datafield>
  <datafield tag="102" ind1=" " ind2=" ">
    <subfield code="a">PT</subfield>
    <subfield code="b">Porto</subfield>
  </datafield>
  <datafield tag="200" ind1="1" ind2=" ">
    <subfield code="a">Silva Porto</subfield>
    <subfield code="e">estudante da Academia Portuense das Bellas Artes 1865-1879</subfield>
    <subfield code="f">Faculdade de Belas Artes da Universidade do Porto</subfield>
  </datafield>
  <datafield tag="210" ind1=" " ind2=" ">
    <subfield code="a">Porto</subfield>
    <subfield code="c">FBAUP</subfield>
    <subfield code="d">1994</subfield>
  </datafield>
  <datafield tag="215" ind1=" " ind2=" ">
    <subfield code="a">1 fol.</subfield>
    <subfield code="c">il.</subfield>
    <subfield code="d">30 cm</subfield>
  </datafield>
  <datafield tag="345" ind1=" " ind2=" ">
    <subfield code="c">folheto</subfield>
  </datafield>
  <datafield tag="545" ind1="1" ind2=" ">
    <subfield code="a">FOL.BIB</subfield>
  </datafield>
  <datafield tag="675" ind1=" " ind2=" ">
    <subfield code="a">75 (064) SILVA PORTO</subfield>
    <subfield code="x">BN</subfield>
    <subfield code="z">por</subfield>
  </datafield>
  <datafield tag="600" ind1=" " ind2="0">
    <subfield code="a">Silva Porto</subfield>
    <subfield code="f">1850-1893</subfield>
    <subfield code="x">Exposições</subfield>
    <subfield code="y">Porto, Portugal</subfield>
  </datafield>
  <datafield tag="606" ind1=" " ind2=" ">
    <subfield code="a">Pintura portuguesa</subfield>
    <subfield code="z">Séc. 19</subfield>
  </datafield>
  <datafield tag="702" ind1=" " ind2="0">
    <subfield code="a">Silva Porto</subfield>
    <subfield code="4">040</subfield>
  </datafield>
  <datafield tag="710" ind1="0" ind2="2">
    <subfield code="a">Universidade do Porto</subfield>
    <subfield code="b">Faculdade de Belas Artes</subfield>
  </datafield>
  <datafield tag="801" ind1=" " ind2="0">
```

```
- <dublin_core schema="dc">
  <dcvalue element="source" qualifier="uri">http://catalogo.up.pt/F?func=find-b&find_code=SYS&request=000013048</dcvalue>
  <dcvalue element="title" qualifier="none">Silva Porto : estudante da Academia Portuense das Bellas Artes 1865-1879</dcvalue>
  <dcvalue element="contributor" qualifier="author">Universidade do Porto, Faculdade de Belas Artes</dcvalue>
  <dcvalue element="contributor" qualifier="other">Silva Porto</dcvalue>
  <dcvalue element="publisher" qualifier="none">Porto : FBAUP</dcvalue>
  <dcvalue element="date" qualifier="issued">1994</dcvalue>
  <dcvalue element="format" qualifier="none">1 fol.</dcvalue>
  <dcvalue element="type" qualifier="none">folheto</dcvalue>
  <dcvalue element="collection" qualifier="none">FOL.BIB</dcvalue>
  <dcvalue element="language" qualifier="iso">por</dcvalue>
  <dcvalue element="subject" qualifier="none">Silva Porto, 1850-1893--Exposições--Porto, Portugal</dcvalue>
  <dcvalue element="subject" qualifier="none">Pintura portuguesa--Séc. 19</dcvalue>
</dublin_core>
```

APPENDIX B. ISAD (G) to DUBLIN CORE

DUBLIN CORE	ISAD(G)	DSPACE ITEM RECORD
dc.identifier	Reference code	Identifier
dc.identifier.other	without correspondence	Call number
dc.title	Title	Title
dc.title.alternative	Alternative title	Alternative title
dc.contributor.author	Name of creator(s)	Author (s)
dc.contributor.other	without correspondence	Contribution
dc.periodOfTime	Dates of accumulation	Date of accrual
dc.date.issued	Date(s)	Issue date
dc.date.modified	without correspondence	Modified date
dc.provenance	Administrative / Biographical History	Provenance
dc.description	Level of description	Description
	Notes area	Description
dc.description.abstract	Scope and content	Abstract
dc.format	Extent of the unit description	Format
dc.format.medium	Physical characteristics and technical requirements	Physical medium
dc.relation	Related units of description	Related information
dc.relation.ispartofseries	Series	Series
dc.relation.isreferencedby	Document title/item	Document / piece
dc.relation.uri	without correspondence	Document link
dc.rights	Conditions of access and use area	Rights
dc.subject	without correspondence	Subject
dc.language.iso	Language/scripts of material	Language
dc.type	without correspondence	Document type

APPENDIX C. Metadata crosswalk

Complete Metadata Crosswalk between the different original metadata format involved in BDAR collection (MARXML, ICOM/CIDOC and ISAD(G)) to the target metadata format Dublin Core and how they are presented in the search Interface DSpace.						
Organized by Dublin Core Qualified Descriptors						
UNIMARC FIELD	UNIMARC SUBFIELD	LIBRARY (UNIMARC LABELS)	HISTORICAL ARCHIVE ISAD (G)	MUSEUM (ICOM/CIDOC)	DUBLIN CORE Qualified	Search Interface DSPACE
					dc:accrual.method	Incorporation
				incorporation(Type) incorporation(Date)	dc:accrual.periodicity	Date of Incorporation
333	aa	Intended Audience Note			dc:audience	Audience
702	aa ab af	Secondary Intellectual Responsibility			dc:contributor.advisor	Contributor(s)
712	aa ab ac ad ae af				dc:contributor.author	Author (s)
700 710 701	aa ab ac ad ae af	Primary Intellectual Responsibility	Name of Creator(s)	Author	dc:contributor.author	Author (s)
711						
702	aa ab ac ad ae af aa	Secondary Intellectual Responsibility	without correspondence		dc:contributor.other	Contributor(s)
545	aa	Section Title		Collection(Type)	dc:collection	Collections
				Chronology(Contextual)	dc:coverage.temporal	Chronological Scope
				production(place); School; style	dc:coverage.spatial	Geographical Scope
210	ad ah	Publication, Distribution, etc.	Date(s)	Chronology(Initial Date; Final Date)	dc:date.issued	Issued Date
			without correspondence		dc:date.modified	Modified Date
207	aa	Material Specif Area: Serials-Numbering	Level of Description	Description	dc:description	Description
300		General Notes	Notes area			
305		Notes to Edition and Bibliographic History				
307		Notes to Physical Description				
316		Note relating to the Copy in Hand				
317		Provenance Note				
327		Contents Note				
328		Dissertation (Thesis) Note				
330	aa	Summary or Abstract	Scope and Content		dc:description.abstract	Abstract
					dc:event	Exhibitions
215	aa	Physical Description		Exhibitions(Title; Place; Initial Date; Ending Date)	dc:format	Format
			Extent of the unit of description	Material(Type)		
215	ad	Physical Description		Measures(Type; Unit of measure; Values)	dc:format.extent	Size or Duration
230	aa	Electronic Resource Characteristics		Condition	dc:format.medium	Physical Medium
318	aa	Action Note	Physical characteristics and technical requirements			
			Reference Code	Inventory number	dc:identifier	Identifier
010	aa	ISBN International Standard Book Number			dc:identifier.isbn	ISBN
011	aa	ISSN International Standard Serial Number			dc:identifier.isn	ISSN
			without correspondence		dc:identifier.other	Call Number
			Language / scripts of material		dc:language.iso	Language
101	aa	Language of the Item	Dates of Accumulation		dc:periodOfTime	Date of Accrual

UNIMARC FIELD	UNIMARC SUBFIELD	LIBRARY (UNIMARC LABELS)	HISTORICAL ARCHIVE ISAD (G)	MUSEUM (ICOM/CIDOC)	DUBLIN CORE Qualified	Search Interface DSPACE
			Administrative / Biographical History	History; Notes; Incorporation (Provenance)	dc:provenance	Provenance
210	a1 a6 a7 a8	Publication, Distribution, etc.			dc:publisher	Publisher
				Dissertation (Title; Author; Editor; Type); Magazines(Title; Author; Editor; Type)	dc:references	Bibliographic references
			Related units of description		dc:relation	Related Information
421	a1 a4 a7	Supplement			dc:relation;haspart	Article/ Chapter/Supplement
461	a1 a4 a7 a8 a9 a10 a11 a12	Set Level			dc:relation;ispartof	Magazine / Book
463	a1 a4 a8 a9 a10 a11 a12	Piece Level	Series		dc:relation;ispartseries	Serie
			Document Title / Item		dc:relation;isreferencedby	Document/Part
430	a1 a4 a7 a8 a9 a10 a11 a12	Continues			dc:relation;replaces	Former Title
440	a1 a4 a7	Continued by			dc:relation;isreplacedby	New Title
310	a1	Notes Pertaining to Binding and Availability	Conditions of Access and Use Area	Rights(Description)	dc:rights	Rights
				Copyright Holder	dc:rights;holder	Copyright Holder
001	a1	Record Identifier			dc:source:uri	Catalogue Link
600	a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12 a13 a14 a15 a16 a17 a18 a19 a20 a21 a22 a23 a24 a25 a26 a27 a28 a29 a30 a31 a32 a33 a34 a35 a36 a37 a38 a39 a40 a41 a42 a43 a44 a45 a46 a47 a48 a49 a50 a51 a52 a53 a54 a55 a56 a57 a58 a59 a60 a61 a62 a63 a64 a65 a66 a67 a68 a69 a70 a71 a72 a73 a74 a75 a76 a77 a78 a79 a80 a81 a82 a83 a84 a85 a86 a87 a88 a89 a90 a91 a92 a93 a94 a95 a96 a97 a98 a99	Personal Name Used as Subject	without correspondence		dc:subject	Subject
601	a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12 a13 a14 a15 a16 a17 a18 a19 a20 a21 a22 a23 a24 a25 a26 a27 a28 a29 a30 a31 a32 a33 a34 a35 a36 a37 a38 a39 a40 a41 a42 a43 a44 a45 a46 a47 a48 a49 a50 a51 a52 a53 a54 a55 a56 a57 a58 a59 a60 a61 a62 a63 a64 a65 a66 a67 a68 a69 a70 a71 a72 a73 a74 a75 a76 a77 a78 a79 a80 a81 a82 a83 a84 a85 a86 a87 a88 a89 a90 a91 a92 a93 a94 a95 a96 a97 a98 a99	Corporate Body Name used as Subject				
606	a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12 a13 a14 a15 a16 a17 a18 a19 a20 a21 a22 a23 a24 a25 a26 a27 a28 a29 a30 a31 a32 a33 a34 a35 a36 a37 a38 a39 a40 a41 a42 a43 a44 a45 a46 a47 a48 a49 a50 a51 a52 a53 a54 a55 a56 a57 a58 a59 a60 a61 a62 a63 a64 a65 a66 a67 a68 a69 a70 a71 a72 a73 a74 a75 a76 a77 a78 a79 a80 a81 a82 a83 a84 a85 a86 a87 a88 a89 a90 a91 a92 a93 a94 a95 a96 a97 a98 a99	Topical Name Used as Subject				
607	a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12 a13 a14 a15 a16 a17 a18 a19 a20 a21 a22 a23 a24 a25 a26 a27 a28 a29 a30 a31 a32 a33 a34 a35 a36 a37 a38 a39 a40 a41 a42 a43 a44 a45 a46 a47 a48 a49 a50 a51 a52 a53 a54 a55 a56 a57 a58 a59 a60 a61 a62 a63 a64 a65 a66 a67 a68 a69 a70 a71 a72 a73 a74 a75 a76 a77 a78 a79 a80 a81 a82 a83 a84 a85 a86 a87 a88 a89 a90 a91 a92 a93 a94 a95 a96 a97 a98 a99	Geographical Name used as Subject			dc:text	Stamp / Inscriptions
					dc:title	Title
200	a1 a2 a3 a4	Title and Statement of Responsibility	Title	Title / Designation	dc:title;alternative	Alternative Title
304	a1	Notes Pertaining to Title and Statement of Responsibility	Alternative Title	Designations		
518		Title in Standard Modern Spelling				
345	a1	Acquisition Information Note	without correspondence	Category	dc:type	Document Type

CAPTION

	Not Applied
	Applied
	there's no field in ISAD (G) for DC Descriptor

APPENDIX D. Example of a XML export file

XML

```
<?xml version="1.0" encoding="UTF-8" ?>
<dublin_core schema="dc">
  <dcvalue element="title" qualifier="none">Desenho\Estátua</dcvalue>
  <dcvalue element="subject" qualifier="none">Desenho\Estátua\Figura jovem</dcvalue>
  <dcvalue element="subject" qualifier="none">Tirador de espinhos</dcvalue>
  <dcvalue element="contributor" qualifier="author">Ferreira, José de Oliveira</dcvalue>
  <dcvalue element="provenance" qualifier="none">Provavelmente é uma prova do 4º ou
5.º ano do Curso de Desenho Histórico.</dcvalue>
  <dcvalue element="provenance" qualifier="none">Academia Portuense de Belas Artes</dcvalue>
  <dcvalue element="identifier" qualifier="none">99.Des.1270</dcvalue>
  <dcvalue element="coverage" qualifier="temporal">Século XIX / XX</dcvalue>
  <dcvalue element="date" qualifier="issued">1898 - 1903 </dcvalue>
  <dcvalue element="type" qualifier="none">Desenho</dcvalue>
  <dcvalue element="format" qualifier="none">Carvão\sobre papel</dcvalue>
  <dcvalue element="format" qualifier="none">Carvão</dcvalue>
  <dcvalue element="format" qualifier="none">Papel</dcvalue>
  <dcvalue element="format" qualifier="extent">Altura 610 mm [Margem lateral
esquerda]</dcvalue>
  <dcvalue element="format" qualifier="extent">Largura 600 mm [Margem lateral direita]</dcvalue>
  <dcvalue element="format" qualifier="extent">Largura 469 mm [Margem superior]</dcvalue>
  <dcvalue element="format" qualifier="extent">Largura 445 mm [Margem inferior]</dcvalue>
  <dcvalue element="format" qualifier="medium">Razoável</dcvalue>
  <dcvalue element="rights" qualifier="holder">Faculdade de Belas Artes Universidade do
Porto</dcvalue>
  <dcvalue element="rights" qualifier="none">Sem restrições de acesso</dcvalue>
  <dcvalue element="collection" qualifier="none">Produção artística escolar</dcvalue>
  <dcvalue element="text" qualifier="none">J.º Ferreira</dcvalue>
  <dcvalue element="text" qualifier="none">2º prémio</dcvalue>
  <dcvalue element="text" qualifier="none">108</dcvalue>
  <dcvalue element="text" qualifier="none">4</dcvalue>
  <dcvalue element="text" qualifier="none">Academia Portuense n.º 4 de Bellas Artes</dcvalue>
  <dcvalue element="coverage" qualifier="spatial">Academia portuense de Belas Artes</dcvalue>
  <dcvalue element="accrual" qualifier="method">Produção artística escolar\Aluno</dcvalue>
  <dcvalue element="identifier" qualifier="other">Gabinete de Desenho - gaveta 35</dcvalue>
  <dcvalue element="subcommunity" qualifier="none">BDA Museu</dcvalue>
</dublin_core>
```