

**SIXTH FRAMEWORK PROGRAMME:
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Area 3.6 "the protection of cultural heritage and associated conservation strategies"



**SPECIFIC TARGETED RESEARCH PROJECT
COINS**

Deliverable D6 : Mapping Template

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Document description

This document describes the Mapping Template, i.e. the template developed within the COINS project to map information about coins collections onto the Domain Ontology.

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Executive summary

The present report describes the mapping templates provided defined by the COINS project for datasets recording numismatic collections to (a subset of) CIDOC CRM, the ISO standard for managing cultural information.

The templates are fully described in the Appendix.

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1. Introduction

One of the pillars of the COINS project concerns the standardization of the data organization. The task of defining standards for the digital management of numismatic collection is the main goal of WP2. This activity consists of three separate, but converging, tasks: the definition of the domain ontology, the mapping of existing or legacy data structures to the domain ontology and the creation of a multilingual thesaurus.

The present report concerns the third one of the above tasks, the creation of mapping templates. However, as the three tasks are tightly related to each other, some parts of it will be in common with the corresponding reports about the other two. These common parts are intentionally repeated in each report for the sake of self-consistency, but may be obviously skipped if the three reports are consulted together.

All the above-mentioned tasks have been completed with regard to the project needs. It is however clear that if new organizations would join the COINS system, the products may require adaptation. Nevertheless, the work done here paves the way for such potential new additions, demonstrating that the proposed solution is general enough to adapt to different circumstances.

In particular, any new dataset will require a specific mapping template. The related exercise will most likely be very similar to the ones described here.

2. CIDOC-CRM

According to its creators, “The CIDOC¹ Conceptual Reference Model (CRM) provides definitions and a formal structure for describing the implicit and explicit concepts and relationships used in cultural heritage documentation.

The CIDOC CRM is intended to promote a shared understanding of cultural heritage information by providing a common and extensible semantic framework that any cultural heritage information can be mapped to. It is intended to be a common language for domain experts and implementers to formulate requirements for information systems and to serve as a guide for good practice of conceptual modelling. In this way, it can provide the "semantic glue" needed to mediate between different sources of cultural heritage information, such as that published by museums, libraries and archives. The CIDOC CRM is the culmination of over 10 years work by the CIDOC Documentation Standards Working Group and CIDOC CRM SIG, which are working groups of CIDOC. Since 9/12/2006 it is official standard ISO 21127:2006.”

CIDOC CRM provides in fact an extensible ontology for concepts and information in cultural heritage and museum documentation, and as the acknowledged international standard (ISO 21127:2006) it provides the most suitable framework for the controlled exchange of cultural heritage information.

CIDOC CRM was selected by COINS as the core ontology within which to define a subset of concepts applicable to numismatics (Tasks 2.1 – 2.5) and to which any other numismatic data structure will be referred via a mapping (Tasks 2.3 – 2.7). A mapping template describes therefore the correspondence of a data structure to the CIDOC CRM one.

¹ CIDOC is the acronym of the Committee for Documentation of ICOM, the international Committee for Museums.

3. Defining mapping templates for numismatic datasets

The definition of a mapping template has been developed following an iterative approach, consisting of the following steps:

- i. detailed examination of the data structures used by partners with the interested party, i.e. the partner currently using the relevant data structure;
- ii. preliminary definition of the basic elements and concepts present in partners' data structures and correspondence with the elements of the COIN ontology;
- iii. verification of the intended meaning with the relevant partners, to assess the initial template design;
- iv. formulation of the mapping template.

The exercise was completed for the Fitzwilliam Museum and the SAR collection. The mapping for the Romanian national museum is in progress, due to some changes planned in the museum organization that will require some changes in the template, a development that is expected to complete shortly after the new system is set.

4. The mapping templates

The Appendixes describe in detail the mapping templates for two of the partner museums.

Appendix 1. The Mapping Template for the Fitzwilliam Collections

The top row contains the fields of the Fitzwilliam database. The corresponding elements in the column describe how each DB field maps on one CIDOC CRM class and the related properties.

	DB Field	Coinage		Dating	Dating	Technique	Maker MINT
Statement 1	Class	E12.Production	E12.Production	E12.Production	E12.Production	E12.Production	E12.Production
	Property	P2F.has_type		P116F.starts	P116F.starts	P32F.used_general_technique	P14F.carried_out_by
Statement 2	Class	E55.Type (<i>coinage</i>)		E2.Temporal_Entity	E2.Temporal_Entity	E55.Type (technique)	E40.Legal_Body (maker)
	Property		P108.has_produced	P4F.has_time-span	P4F.has_time-span		P131F.is_identified_by
Statement 3	Class		E22.Man_made_Object (object_category)	E52.Time_Span (date_early)	E52.Time_Span (date_late)		E82.Actor_Appellation (maker)
	Property						
Statement 4	Class						
	Property						
Statement 5	Class						
	Property						
	Class						

	DB Field	Maker_place	Maker_State	Maker	Maker_role	Maker_qualifier
Statement 1	Class	E12.Production	E12.Production	E12.Production	E12.Production	E12.Production
	Property	P14F.carried_out_by	P14F.carried_out_by	P11F.had_participant	P11F.had_participant	P11F.had_participant
Statement 2	Class	E40.Legal_Body (maker)	E40.Legal_Body (maker)	E40.Legal_Body (maker)	E39.Actor	E39.Actor
	Property	P74F.has_current_or_former_residence	P107F.has_current_or_former_member	P131F.is_identified_by	P131F.is_identified_by	P14.1.in_the_role_of
Statement 3	Class	E53.Place	E39.Actor	E82.Actor_Appellation (maker)	E82.Actor_Appellation (maker_role)	E55.Type (maker_qualifier)
	Property	P87F.is_identified_by	P131F.is_identified_by			
Statement 4	Class	E48.Place_Name (maker_place)	E82.Actor_Appellation (maker_state)			
	Property					
Statement 5	Class					
	Property					
	Class					

	DB Field	Denomination	Material	Dimension	Inscription	Inscription	Collection
Statement 1	Class	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)	E25.Man_Made_Feature (object_category)	E25.Man_Made_Feature (object_category)	E13.Attribute_Assignment (cataloguing)
	Property	P1F.is_identified_by	P45F.consists_of	P43F.has_dimension	P128F.carries	P128F.carries	P140F.assigned_attribute_to
Statement 2	Class	E41.Appellation (object_name)	E57.Material (material)	E54.Dimension (dimension)	E73.Information_Object	E73.Information_Object	E22.Man_made_Object (object_category)
	Property	P2F.has_type		P90F.has_value	P106F.is_composed_of	P106F.is_composed_of	P46B.forms_part_of
Statement 3	Class	E55.Type (denomination)		E60.Number (dimension_value)	E36.Visual_Item	E36.Visual_Item	E78.Collection (collection)
	Property			P91F.has_unit	P138F.represents	P2F.has_type	P109F.has_current_or_former_c urator
Statement 4	Class			E58.Measurement_Unit (dimension_unit)	E1.Entity	E55.Type (inscription_position)	E40.Legal_Body (museum)
	Property				P3F.has_note		
Statement 5	Class				E62.String (inscription_description)		
	Property						
	Class						

	DB Field	Administration_name	Object_type	Entry_date	object_number	alternative_object_number	location
Statement 1	Class	E13.Attribute_Assignment	E13.Attribute_Assignment	E13.Attribute_Assignment	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)
	Property	P14F.carried_out_by	P14F.carried_out_by	P14F.carried_out_by	P36B.was_registered_by	P36B.was_registered_by	P59B.is_located_in_or_within
Statement 2	Class	E39.Actor	E39.Actor	E39.Actor	E15.Identifier_Assignment	E15.Identifier_Assignment	E53.Place
	Property	P131F.is_identified_by	P14B.performed	P14B.performed	P37F.assigned	P37F.assigned	P87F.is_identified_by
Statement 3	Class	E82.Actor_Appellation (administration_name)	E7.Activity	E7.Activity	E42.Object_Identifier (object_number)	E42.Object_Identifier (alternative_object_number)	E46.Section_Definition
	Property		P2F.has_type	P2F.has_type			P58B.defines_section
Statement 4	Class		E55.Type (cataloguing)	E55.Type (cataloguing)			E22.Man_made_Object (location_type)
	Property		P67F.refers_to	P4F.has_time-span			P59B.is_located_in_or_within
Statement 5	Class		E31.Document (number_of_digital_form)	E52.Time-Span			E53.Place (location)

	DB Field	Dimension	Acquisition	Acquisition_from	Entry_date
Statement 1	Class	E25.Man_Made_Feature (object_category)	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)	E22.Man_made_Object (object_category)
	Property	P70B.is_documented_in	P24B.changed_ownership_through	P24B.changed_ownership_through	P24B.changed_ownership_through
Statement 2	Class	E31.Document (image_reference)	E8.Acquisition	E8.Acquisition	E8.Acquisition
	Property	P43F.has_dimension	P2F.has_type	P23F.transferred_title_from	P4F.has_time-span
Statement 3	Class	E54.Dimension (dimension_value)	E55.Type (acquisition_method)	E39.Actor (acquisition_from)	E52.Time-Span (entry_date)
	Property	P2F.has_type			
Statement 4	Class	E55.Type (dimension)			
	Property				
Statement 5	Class				

Appendix 2. The Mapping Template for the SAR Collections

The top row contains the fields of the SAR database. The corresponding elements in the column describe how each DB field maps on one CIDOC CRM class and the related properties.

	DB Field		Caratteristiche tecniche	Zecca	Zecca-Luogo	Zecchiere_nome	
Statement 1	Class	E12.Production	E12.Production	E12.Production	E12.Production	E12.Production	E12.Production
	Property			P14F.carried_out_by	P14F.carried_out_by	P14F.carried_out_by	
Statement 2	Class			E40.Legal_Body (zecca)	E40.Legal_Body (zecca)	E40.Legal_Body (zecchiere)	
	Property	P108.has_produced	P32F.used_general_technique	P131F.is_identified_by	P74F.has_current_or_former_residence	P107F.has_current_or_former_member	P108.has_produced
Statement 3	Class	E22.Man_made_Object (moneta)	E55.Type (caratteristiche tecniche)	E82.Actor_Appellation (nome della zecca)	E53.Place	E39.Actor	E22.Man_made_Object (moneta)
	Property						
Statement 4	Class						
	Property						
Statement 5	Class						
	Property						
	Class						

	DB Field	Stato	Autorità	Tipo_autorità	Moneta, Nominale	Caratteristiche fisiche	Metallo
Statement 1	Class	E12.Production	E12.Production	E12.Production	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)
	Property	P11F.had_participant	P11F.had_participant	P11F.had_participant	P1F.is_identified_by	P44F.has_condition	P45F.consists_of
Statement 2	Class	E40.Legal_Body	E39.Actor	E39.Actor	E41.Appellation (nominale)	E3.Condition_State (caratteristiche fisiche)	E57.Material (metallo)
	Property	P131F.is_identified_by	P131F.is_identified_by	P14.1.in_the_role_of			
Statement 3	Class	E82.Actor_Appellation (nome dello Stato)	E82.Actor_Appellation (nome della Autorità)	E55.Type (Tipo-Autorità)			
	Property						
Statement 4	Class						
	Property						
Statement 5	Class						
	Property						
	Class						

	DB Field	Peso	Spessore	Diametro_massimo Diametro_minimo	Tipo diametro	Posizione Coni	Coni
Statement 1	Class	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)
	Property	P43F.has_dimension	P43F.has_dimension	P43F.has_dimension	P43F.has_dimension	P57F.has_number_of_parts	P46F.is_composed_of
Statement 2	Class	E54.Dimension (peso)	E54.Dimension (spessore)	E54.Dimension (diametro)	E54.Dimension (diametro)	E60.Number (2)	E25.Man_Made_Feature (coni)
	Property	P90F.has_value	P90F.has_value	P90F.has_value	P2F.has_type	P2F.has_type	
Statement 3	Class	E60.Number	E60.Number	E60.Number	E55.Type (max, min, medio)	E55.Type (dritto, rovescio)	
	Property	P91F.has_unit	P91F.has_unit	P91F.has_unit		P59B.is_located_on_or_within	
Statement 4	Class	E58.Measurement_Unit (gr)	E58.Measurement_Unit (mm)	E58.Measurement_Unit (mm)		E53.Place	
	Property						
Statement 5	Class						
	Property						
	Class						

	DB Field	Collezione	Operatore inserimento	Compilazione	Data primo inserimento	Modifica scheda	Operatore modifica scheda
Statement 1	Class	E13.Attribute_Assignment (catalogazione)	E13.Attribute_Assignment (catalogazione)	E13.Attribute_Assignment (catalogazione)	E13.Attribute_Assignment (catalogazione)	E11.Modification	E11.Modification
	Property	P140F.assigned_attribute_to	P14F.carried_out_by	P14F.carried_out_by	P14F.carried_out_by	P31F.has_modified	P14F.carried_out_by
Statement 2	Class	E22.Man_made_Object (moneta)	E39.Actor	E39.Actor	E39.Actor	E31.Document (modifica scheda)	E39.Actor
	Property	P46B.forms_part_of	P131F.is_identified_by	P14B.performed	P14B.performed		P131F.is_identified_by
Statement 3	Class	E78.Collection (Collezione)	E82.Actor_Appellation	E7.Activity	E7.Activity		E82.Actor_Appellation
	Property		P14.1.in_the_role_of	P2F.has_type	P2F.has_type		P14.1.in_the_role_of
Statement 4	Class		E55.Type (operatore)	E55.Type (compilazione)	E55.Type (compilazione)		E55.Type (operatore)
	Property			P67F.refers_to	P4F.has_time-span		
Statement 5	Class			E31.Document (scheda)	E52.Time-Span		
	Property				P78F.is_identified_by		
	Class				E50.Date		

	DB Field	Data ultima modifica	N_Catalogo	Inventario	Macrogruppo, Gruppo	Vetrina o Cassetto, Stanza o Armadio	D_Negativo R_Negativo
Statement 1	Class	E11.Modification	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	E25.Man_Made_Feature (conio dritto o rovescio)
	Property	P4F.has_time-span	P36B.was_registered_by	P36B.was_registered_by	P41B.was_classified_by	P59B.is_located_in_or_within	P70B.is_documented_in
Statement 2	Class	E52.Time-Span	E15.Identifier_Assignment	E15.Identifier_Assignment	E17.Type_Assignment	E53.Place	E31.Document (fotografia)
	Property	P78F.is_identified_by	P37F.assigned	P37F.assigned	P42F.assigned	P87F.is_identified_by	P2F.has_type
Statement 3	Class	E50.Date (data ultima modifica)	E42.Object_Identifier (inventario generale)	E42.Object_Identifier (inventario)	E55.Type (serie)	E46.Section_Definition	E55.Type (negativo)
	Property		P70B.is_documented_in	P70B.is_documented_in	P127B.has_narrower_term	P58B.defines_section	P137F.is_exemplified_by
Statement 4	Class		E31.Document (N_Catalogo)	E31.Document (inventario)	E55.Type (sottoserie)	E22.Man_made_Object (vetrina o cassetto)	E42.Object_Identifier (inventario negativo)
	Property				P127B.has_narrower_term	P59B.is_located_in_or_within	
Statement 5	Class				E55.Type (sottosottoserie)	E53.Place (stanza o armadio)	
	Property					P47F.is_identified_by	
	Class					E42.Object_Identifier (numero stanza/armadio)	

	DB Field	Scavo monete		Area di scavo	AreaLotto	TrinceaSaggio	UStratigrafica
Statement 1	Class	E5.Event (discovery)	E5.Event (discovery)	E5.Event (discovery)	E5.Event (discovery)	E5.Event (discovery)	
	Property	P11F.had_participant	P8F.took_place_on_or_within	P7F.took_place_at	P7F.took_place_at	P7F.took_place_at	
Statement 2	Class	E39.Actor	E22.Man_made_Object (moneta)	E53.Place (area di scavo)	E53.Place (area di scavo)	E53.Place (area di scavo)	E53.Place (area di scavo)
	Property			P87F.is_identified_by	P88F.consists_of	P88F.consists_of	P88F.consists_of
Statement 3	Class			E44.Place_Appellation	E53.Place (area lotto)	E53.Place (area lotto)	E53.Place (area lotto)
	Property				P87F.is_identified_by	P88F.consists_of	P88F.consists_of
Statement 4	Class				E44.Place_Appellation	E53.Place (trincea, saggio)	E53.Place (trincea, saggio)
	Property					P87F.is_identified_by	P88F.consists_of
Statement 5	Class					E44.Place_Appellation	E53.Place (us)
	Property						P87F.is_identified_by
	Class						E44.Place_Appellation

	DB Field	Classe di scavo	Specifica di scavo	Donazione moneta, asta moneta, sequestro		Classe di scavo
Statement 1	Class			E22.Man_made_Object (moneta)	E22.Man_made_Object (moneta)	
	Property			P24B.changed_ownership_through	P24B.changed_ownership_through	
Statement 2	Class	E53.Place (area di scavo)	E53.Place (area di scavo)	E8.Acquisition	E8.Acquisition	E53.Place (area di scavo)
	Property	P41B.was_classified_by	P41B.was_classified_by	P9F.consists_of	P23F.transferred_title_from	P41B.was_classified_by
Statement 3	Class	E17.Type_Assignment	E17.Type_Assignment	E5.Event (donazione, asta, sequestro)	E39.Actor	E17.Type_Assignment
	Property	P41F.classified	P41F.classified			P41F.classified
Statement 4	Class	E53Place	E53Place			E53Place
	Property	P2F.has_type	P88F.consists_of			P2F.has_type
Statement 5	Class	E55.Type (necropoli, abitato)	E53Place			E55.Type (necropoli, abitato)
	Property		P2F.has_type			
	Class		E55.Type (ambiente, atrio)			