# Representation Powers and Mandates

## RPaM

DIGIT

4th Working Group Meeting

4th April 2019

Agenda

# RPaM Working Group Meeting #4

## Content

1. Round Table
2. Introduction
3. Open questions
4. Work done
5. Testing
6. Achievements
7. Considerations for the PoC
8. Next steps: PoC
9. Discussion on the open questions

Other questions and suggestions

# 1 Round Table

1

# Round Table

**DIGIT and MS**

European Commission

- Miguel Álvarez-Rodríguez (DIGIT, project owner)
- Frédéric Poels (DIGIT, project owner)
- Carlos Gómez-Muñoz (DG CNNECT, project owner)
- Valentin Mesaros (DIGIT, analyst)

Member States and Stakeholders in previous meetings:

MS →AT, BE, CZ, ES, FI, GR, HU, LU, NL, SI, SK, other?

Stakeholders → SEMPER, TOOP, other?

**everis team**

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- Virginia Gomáriz (project manager)
- Rui Venâncio (client manager)
- Enric Staromiejski (eGovernment and interoperability)
- Laia Bota (semantics analyst)
- Jade Maana (developer)

# 2 Introduction

# Introduction

***RPaM Objective:*** *Come up with a common European data model to represent cross-border eMandates. Documentation available in Joinup:* https://joinup.ec.europa.eu/solution/analysis-and-specifications-cross-border-emandates-system-ec

***PoC Objective:*** *Validate the RPaM data model and the correspondent artefacts.*

# 3 Open Questions

# Open questions

1. Do you consider a cross-border and cross-domain electronic RPaM system useful?
2. Do you have an eMandate system in place?
    1. If Yes, are you considering the integration of RPaM?
    2. If No, would you consider the adoption of RPaM?
3. Do you foresee systems as mandators or mandatees?
4. Do you think that the European Commission should provide the support the adoption and integration of RPaM?
5. What would be the use and value of eSignature in the context of RPaM?
6. What other initiative would you like ISA to put forward? E.g. support to the mapping between Member States and PAM models, support for testing and deployment…

4

Work done

# 4.1 Model stabilisation - Overview

- **Mapping** the MS information Requirements to the RPaM Ontology:
  - TAXUD is being proposed to be taken on board
  - Inputs taken from the GitHub issues (16) contributed to improve the ontology, e.g. coRepresentation.
  - Conversations with Member States clarified concepts and the glossary.

  https://github.com/everis-rpam/RPaM-Ontology/tree/v1.1.0/02-Conceptual_Data_Model/MS-RPaM

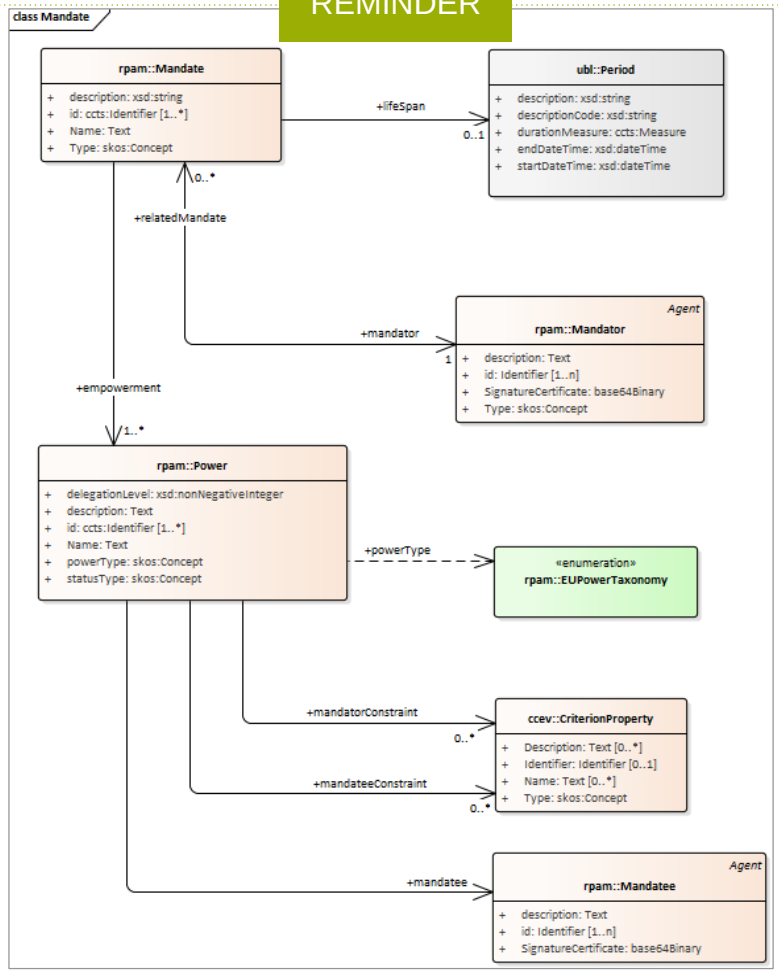
- **Conceptual Model,** the following diagrams have evolved: https://github.com/everis-rpam/RPaM-Ontology/wiki/Conceptual-Model-v1.1
  - Mandate
  - eMandate Request
  - eMandate Response
  - Agent
  - Criterion and Evidence model

- **OWL-DL-Turtle** syntax-binding: https://github.com/everis-rpam/RPaM-Ontology
  - Re-factoring of the T-Box
  - Example datasets
  - Example SPARQL queries

4.2

# Model stabilisation - Mandate

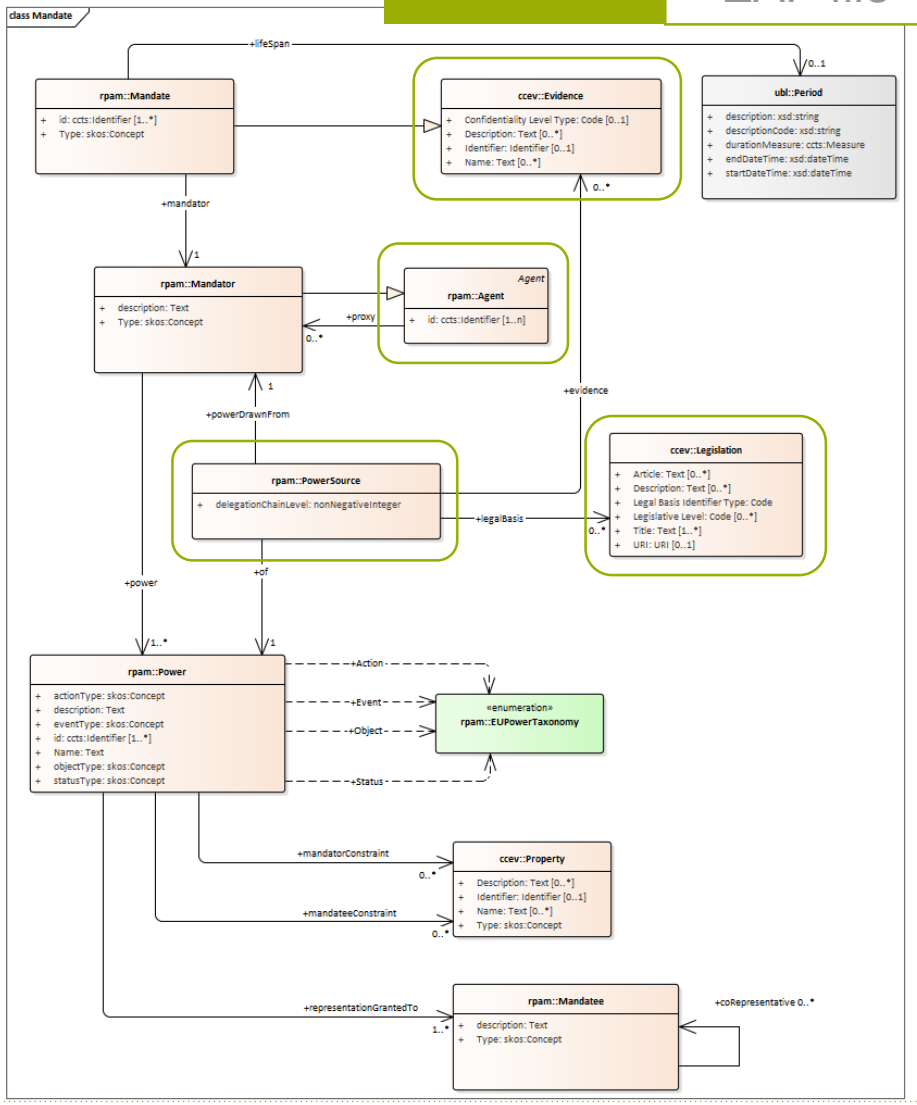
REMINDER




https://github.com/everis-rpam/RPaM-Ontology/blob/v1.1.0/02-Conceptual_Data_Model/RPaM.EAP

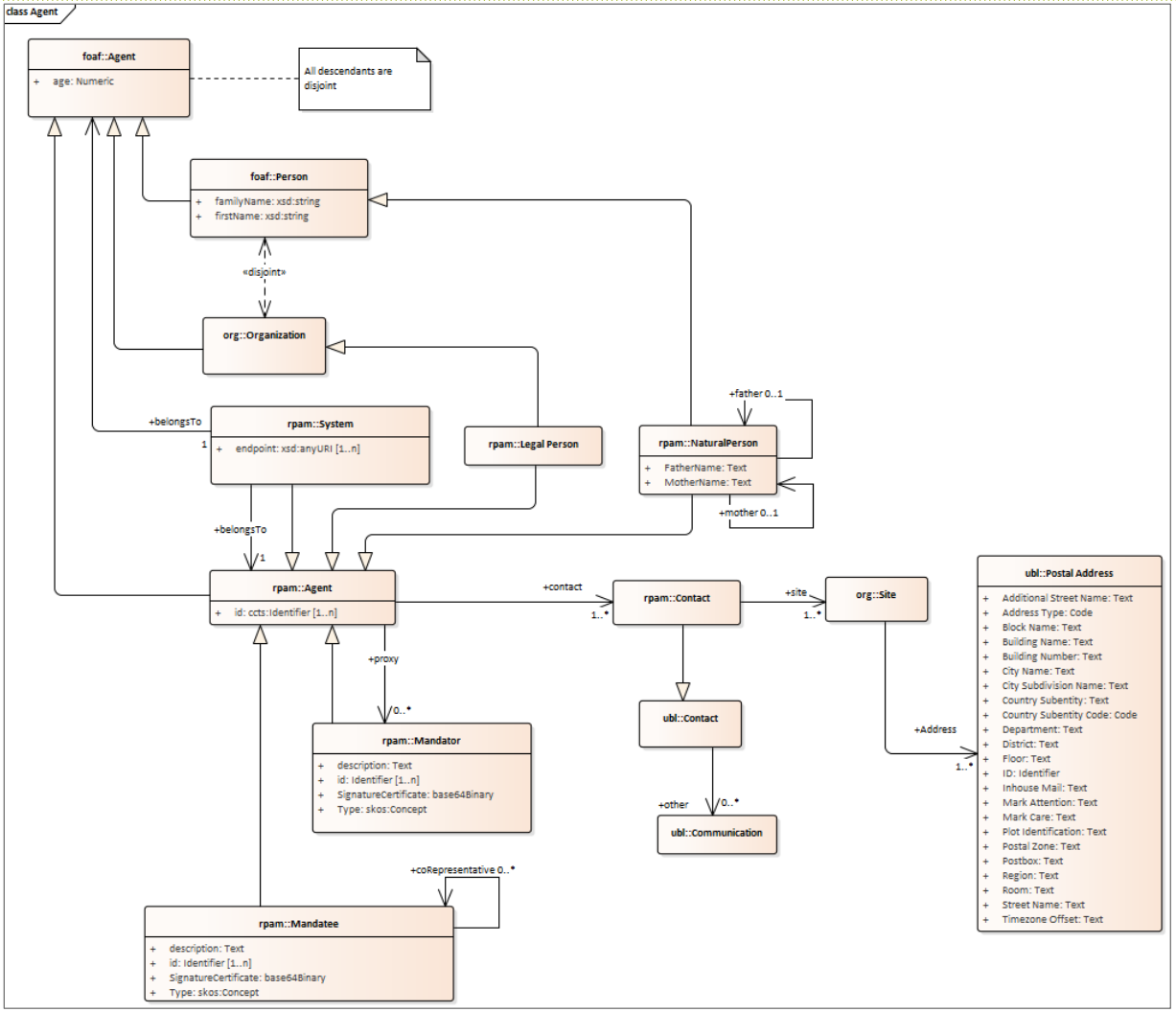
CURRENT

EAP file



4.3

# Model stabilisation - Agent



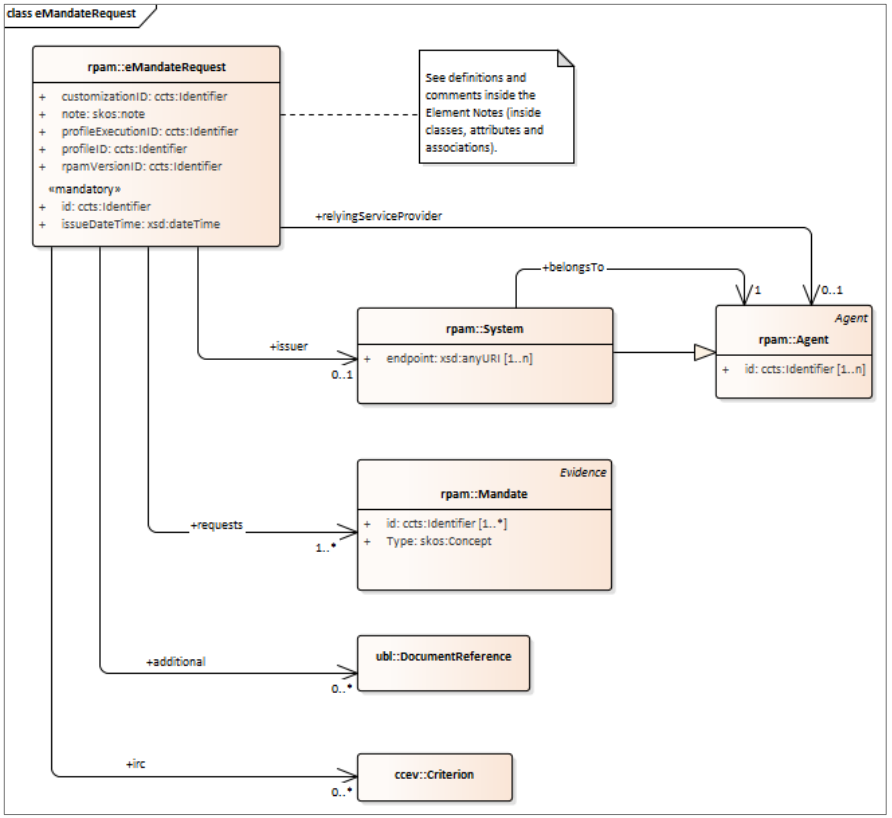

EAP file

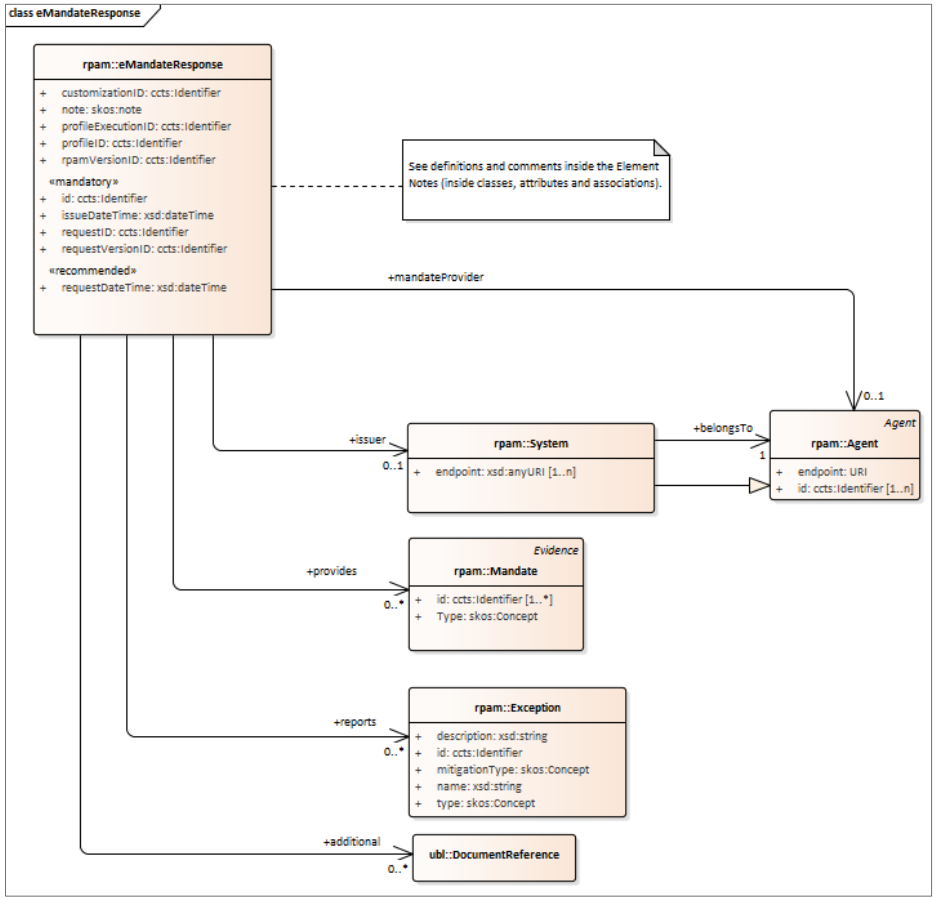
This model is relevant for fundamental definitions. See article Delegation and Revocation of Powers

https://github.com/everis-rpam/RPaM-Ontology/blob/v1.1.0/02-Conceptual_Data_Model/RPaM.EAP

# 4.4 Model stabilisation – eBusiness Documents

**eBusiness Document**: a set of interrelated information representing the facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audio-visual forms that the capability exchanges with other capabilities to support the execution of value streams.



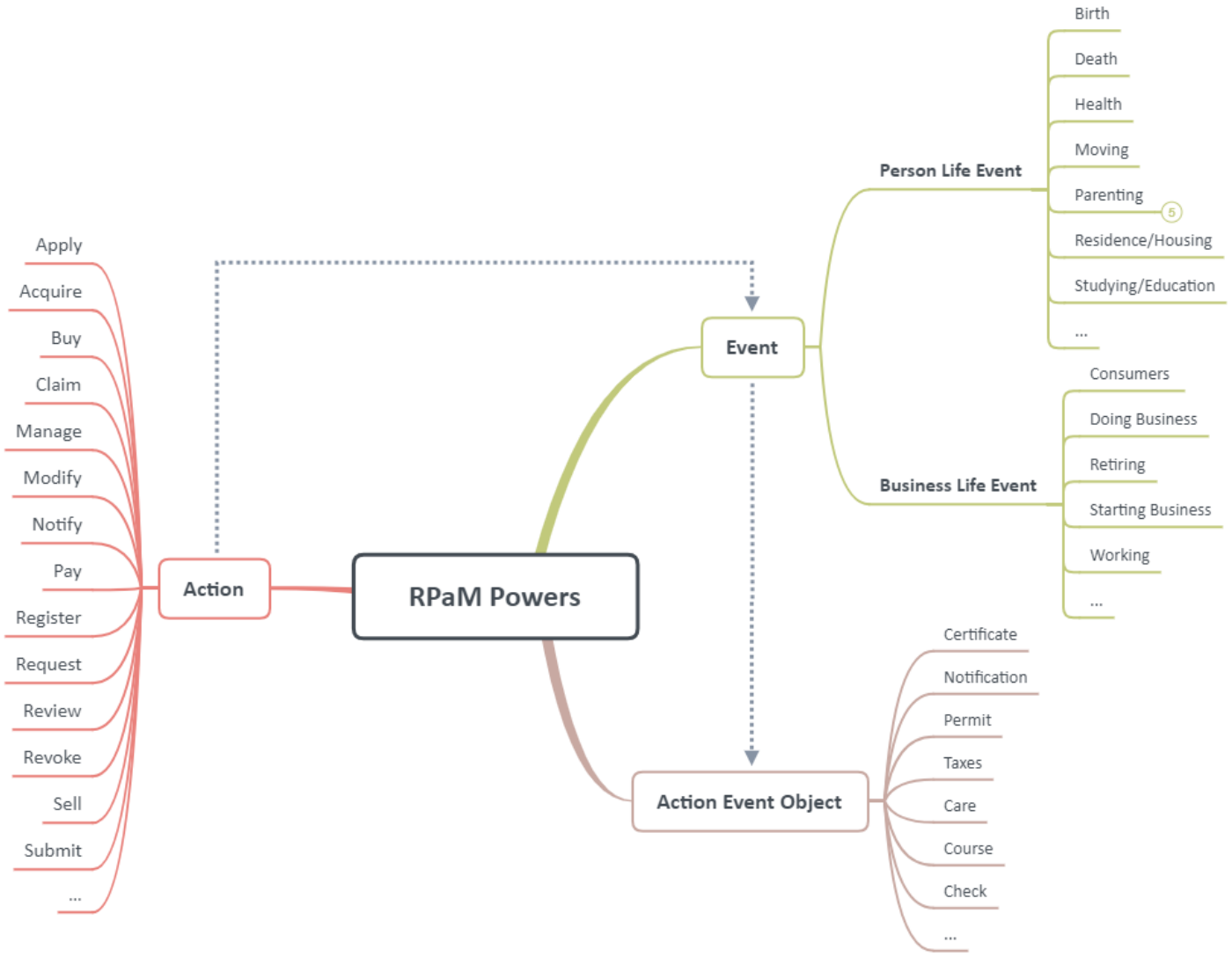




EAP file

https://github.com/everis-rpam/RPaM-Ontology/blob/v1.1.0/02-Conceptual_Data_Model/RPaM.EAP

4.5

# Enrichment of the EU Power Taxonomy Proposal



## 4.6 Business rules

In the context of RPAM, business rules must be considered at data validation time.

Examples:

- Delegations should not reach the level 3.
- Periods must check that the end date is not lesser than the start date.
- Periods must check the non-co-occurrence of the end-date and the duration measure.
- When a mandatee delegates to another mandatee, the the mandator and all the previous mandatees must be notified.
- A mandate must have one and only mandator.
- A mandate, power, mandator and mandatee must have an unique identifier.
- At least one instance of mandate or exception must be present in an eMandate Response.

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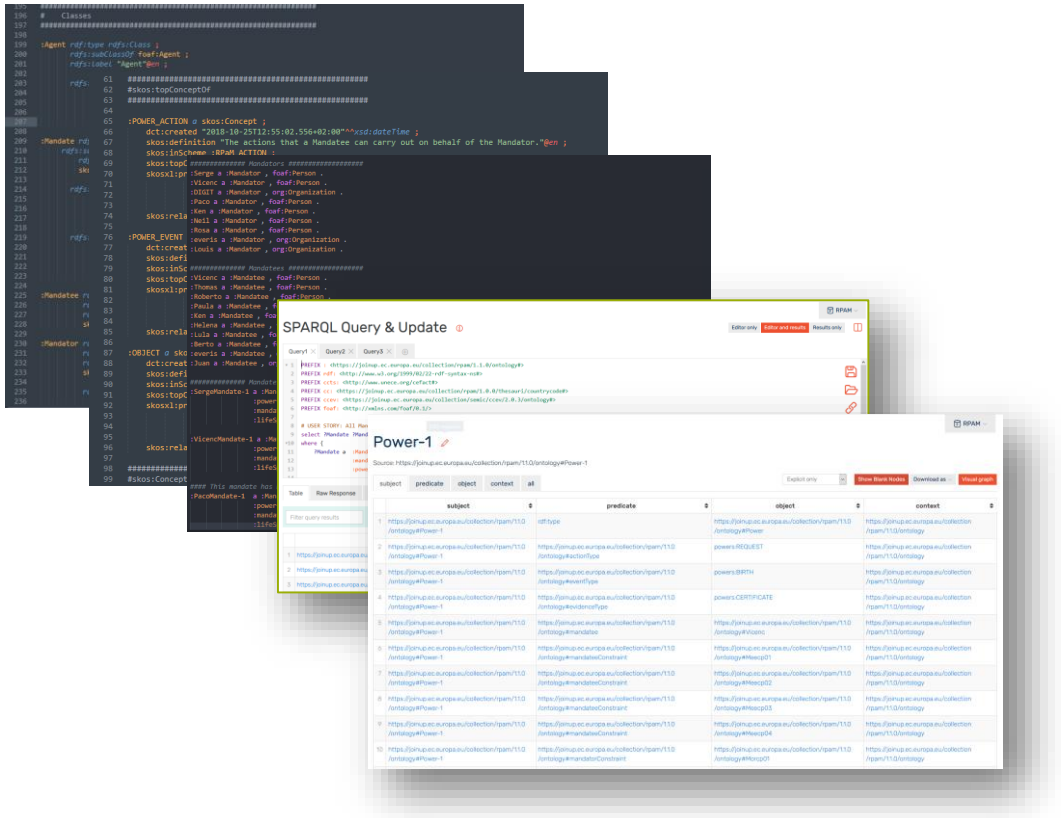
# 5 Testing

# 5.1 Testing materials

- RPaM Ontology
- EU Powers Taxonomy
- Dataset example
- Graph store
- SPARQL Queries




https://github.com/everis-rpam/RPaM-Ontology/tree/v1.1.0/07-Testing

5.2

# RPaM Ontology (TTL)

```
##############################################################
#    Classes
##############################################################

:Agent rdf:type rdfs:Class ;
       rdfs:subClassOf foaf:Agent ;
       rdfs:label "Agent"@en ;

       rdfs:subClassOf [
                        a owl:Restriction ;
                        owl:someValuesFrom :Mandator ;
                        owl:onProperty :proxy
                       ] .

:Mandate rdf:type owl:Class ;
     rdfs:subClassOf ccev:Evidence ;
         rdfs:label "Mandate"@en ;
         skos:definition "Collection of empowerments."@en ;

       rdfs:subClassOf [
                          a owl:Restriction ;
                          owl:cardinality "1"^^xsd:nonNegativeInteger ;
                          owl:onProperty :mandator
                        ] ;
       rdfs:subClassOf [
                          a owl:Restriction ;
                          owl:maxCardinality "1"^^xsd:nonNegativeInteger ;
                          owl:onProperty :lifeSpan
                        ] .

:Mandatee rdf:type owl:Class ;
          rdfs:subClassOf foaf:Agent ;
          rdfs:label "Mandatee"@en ;
          skos:definition "Natural or legal person that acts on behalf of another natural or legal person."@en .

:Mandator rdf:type owl:Class ;
          rdfs:subClassOf :Agent ;
          rdfs:label "Mandator"@en ;
          skos:definition "Person who needs an activity executed in his name; creator of the mandate."@en ;

          rdfs:subClassOf [
                          a owl:Restriction ;
```

https://github.com/everis-rpam/RPaM-Ontology/tree/v1.1.0/07-Testing

5.3

# EU Power Taxonomy (SKOS)

```
61  ################################################
62  #skos:topConceptOf
63  ################################################
64
65  :POWER_ACTION a skos:Concept ;
66      dct:created "2018-10-25T12:55:02.556+02:00"^^xsd:dateTime ;
67      skos:definition "The actions that a Mandatee can carry out on behalf of the Mandator."@en ;
68      skos:inScheme :RPaM_ACTION ;
69      skos:topConceptOf :RPaM_ACTION ;
70      skosxl:prefLabel [
71                          a skosxl:Label ;
72                          skosxl:literalForm "Power Actions"@en
73                        ] ;
74      skos:related :POWER_EVENT, :OBJECT .
75
76  :POWER_EVENT a skos:Concept ;
77      dct:created "2018-10-23T15:02:52.183+02:00"^^xsd:dateTime ;
78      skos:definition "The main areas where powers may be applied: life events and business events."@en ;
79      skos:inScheme :RPaM_EVENT ;
80      skos:topConceptOf :RPaM_EVENT ;
81      skosxl:prefLabel [
82                          a skosxl:Label ;
83                          skosxl:literalForm "Power Scope"@en
84                        ] ;
85      skos:related :POWER_ACTION, :OBJECT .
86
87  :OBJECT a skos:Concept ;
88      dct:created "2018-10-23T15:02:52.183+02:00"^^xsd:dateTime ;
89      skos:definition "The result expected from a specific event together with a specific action."@en ;
90      skos:inScheme :RPaM_OBJECT ;
91      skos:topConceptOf :RPaM_OBJECT ;
92      skosxl:prefLabel [
93                          a skosxl:Label ;
94                          skosxl:literalForm "Event action evidene"@en
95                        ] ;
96      skos:related :POWER_ACTION, :POWER_EVENT .
97
98  ################################################
99  #skos:Concepts ACTIONS
```

https://github.com/everis-rpam/RPaM-Ontology/tree/v1.1.0/07-Testing

5.4

# RPaM Dataset (TTL)

```
############## Mandators ###################
:Serge a :Mandator , foaf:Person .
:Vicenc a :Mandator , foaf:Person .
:DIGIT a :Mandator , org:Organization .
:Paco a :Mandator , foaf:Person .
:Ken a :Mandator , foaf:Person .
:Neil a :Mandator , foaf:Person .
:Rosa a :Mandator , foaf:Person .
:everis a :Mandator , org:Organization .
:Louis a :Mandator , org:Organization .

############## Mandatees ###################
:Vicenc a :Mandatee , foaf:Person .
:Thomas a :Mandatee , foaf:Person .
:Roberto a :Mandatee , foaf:Person .
:Paula a :Mandatee , foaf:Person .
:Ken a :Mandatee , foaf:Person .
:Helena a :Mandatee , foaf:Person .
:Lula a :Mandatee , foaf:Person .
:Berto a :Mandatee , foaf:Person .
:everis a :Mandatee , org:Organization .
:Juan a :Mandatee , org:Organization .

############## Mandates ###################
:SergeMandate-1 a :Mandate ;
                :power :Power-1, :Power-3, :Power-4 ;
                :mandator :Serge ;
                :lifeSpan [:startDateTime "2017-01-21T12:01:00"^^xsd:dateTime ] .

:VicencMandate-1 a :Mandate ;
                :power :Power, :Power-2 ;
                :mandator :Vicenc ;
                :lifeSpan [:startDateTime "2017-05-12T02:03:10"^^xsd:dateTime ] .

#### This mandate has been struck-off, see endDate
:PacoMandate-1  a :Mandate ;
                :power :Power-5 ;
                :mandator :Paco ;
                :lifeSpan [:startDateTime "2018-01-01T12:13:11"^^xsd:dateTime ; :endDateTime "2018-01-01T12:13:11"^^xsd:dateTime ] .
```

https://github.com/everis-rpam/RPaM-Ontology/tree/v1.1.0/07-Testing

# 5.5 Testing

```
PREFIX : <https://joinup.ec.europa.eu/collection/rpam/1.1.0/ontology#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX ccts: <http://www.unece.org/cefact#>
PREFIX cc: <https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/countrycode#>
PREFIX ccev: <https://joinup.ec.europa.eu/collection/semic/ccev/2.0.3/ontology#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

# USER STORY: The mandates, powers and mandatees of the mandator called Serge.
select distinct ?Mandate ?MandatorName ?MandateeName ?Power ?actionType ?eventType ?evidenceType

where {
    ?Mandate  a :Mandate ;
              :id [ccts:identifierValue ?MandateID] ;
```

Run

Table | Raw Response | Pivot Table | Google Chart

Download as

Filter query results

Showing results from 1 to 3 of 3. Query took 0.2s, today at 09:28.

| | Mandate | MandatorName | MandateeName | Power | actionType | eventType | evidenceType |
|---|---|---|---|---|---|---|---|
| 1 | agt:Mandate-1 | Serge Novack | Ken Goodman | agt:Power-3 | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#CANCEL | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#RESIDING | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#PERMIT |
| 2 | agt:Mandate-1 | Serge Novack | Thomas Shutterfield | agt:Power-3 | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#CANCEL | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#RESIDING | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#PERMIT |
| 3 | agt:Mandate-1 | Serge Novack | Vicenç Pons i Torra | agt:Power-1 | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#REQUEST | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#BIRTH | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#CERTIFICATE |

# 5.5 Testing

```
PREFIX : <https://joinup.ec.europa.eu/collection/rpam/1.1.0/ontology#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX ccts: <http://www.unece.org/cefact#>
PREFIX cc: <https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/countrycode#>
PREFIX ccev: <https://joinup.ec.europa.eu/collection/semic/ccev/2.0.3/ontology#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

# USER STORY: The mandates, powers and mandatees of the mandator called Vincenc and the power source of his powers.
select distinct ?Mandate ?MandatorName ?MandateeName ?PowerSourceEvidence ?actionType ?eventType ?objectType

where {
    ?Mandate  a :Mandate ;
              :id [ccts:identifierValue ?MandateID] ;
```

Run

Table | Raw Response | Pivot Table | Google Chart

Download as

Filter query results

Showing results from 1 to 1 of 1. Query took 0.2s, moments ago.

| | Mandate | MandatorName | MandateeName | PowerSourceEvidence | actionType | eventType | objectType |
|---|---|---|---|---|---|---|---|
| 1 | agt:Mandate--2 | Vicenç Pons i Torra | Thomas Shutterfield | agt:Mandate-1 | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#REQUEST | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#BIRTH | https://joinup.ec.europa.eu/collection/rpam/1.0.0/thesauri/power#CERTIFICATE |

# 6 Achievements

# Achievements

1. Stable ontology that meets the member states information requirements identified so far.
2. A proposal for the design of the EU Power Taxonomy, based on three axes:
   - Actions
   - Events
   - Action Event Targets
3. A reference implementation of the ontology as an OWL-DL syntax.
4. eAuthorisation criteria model and samples for service-specific requirements.
5. Power Use Constraints model and samples to check the validity of Powers.
6. Business rules for data validation in cross-border exchange scenarios .
7. Business requirements for the definition of organisational interoperability, i.e stakeholders capabilities definition.
8. Corresponding documentation produced an publicly available.

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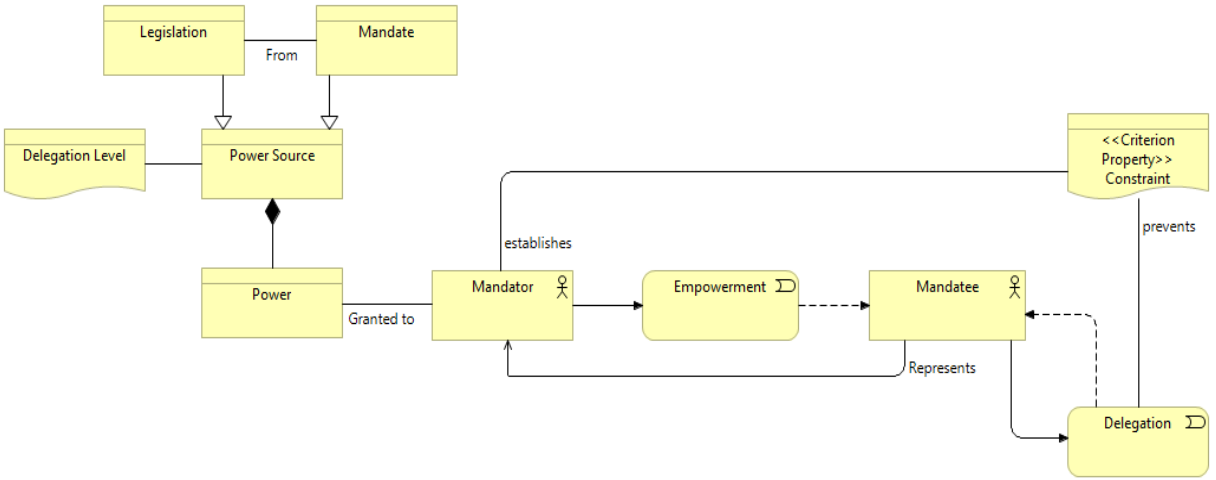
# 7 Considerations for the PoC

# 7.2 Delegation system

A delegation allows a mandatee to empower another person on behalf of the represented person.




RPAM Ontology delegation concepts:

- The delegation level: The number of times the power has been delegated.
- The delegation constraint: Power Use Constraint allowing the mandator, if needed, to allow or restrict the delegation of the power to another mandatee.

See Article: https://github.com/everis-rpam/RPaM-Ontology/wiki/Delegation-and-revocation-of-powers

# 7.1 Harmonisation of public services

Ongoing work the harmonisation of public services and RPAM:

1. The current development by the EU Catalogue of Services.
2. The RPAM definition of a harmonised service.
3. The RPAM eAuthorisation Criterion approach on the EU Catalogue of Services.
4. Synergies with the Single Digital Gateway Regulation and Portal.

*In regards to the RPaM Ontology, we state that two or more services are harmonised when 1) they have identical mandatee eAuthorisation criteria, and 2) the responses to these can be conveyed in a mandate.*

See Article: https://github.com/everis-rpam/RPaM-Ontology/wiki/Harmonised-services

## 7.4 Identification Policy

- Natural and Legal persons, eiDAS impact on the model, need for a rich Identifier data component (Extension of the ISO 15000-5:2014 CCTS), Assurance level.
- Mandate identification, rules for a common schemeID,
- Agent identification, e.g. Actors and Systems; e.g. Service Provider and eMandate Registry schemeIDs
- Other objects that need specific schemeIDs; e.g. Legislation could use ELI.

# 8 Next steps - PoC

# 8.1 Next steps - Proof of Concept

- **Objectives**
  - Validate the RPaM artefacts (data model, business rules, constraints…)
- **Duration**
  - From May 2019 until December 2019
- **Tasks**
  - Task 1 - Definition of a Proof of Concept (PoC)
  - Task 2 - Implementation of the PoC artefacts
  - Task 3 - Implementation of the pilot
  - Task 4 Testing and documentation
- **PoC results**
  - Components deployed in the systems of pilot's participants
  - RPaM artefacts updated, if required
  - Technical Specifications of RPaM artefacts
  - User manual for the installation of the components in production
  - Conformance testing service within TestBed

# 9 Discussion on the open questions

# Discussion on the open questions

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1. Do you consider a cross-border and cross-domain electronic RPaM system useful?
2. Do you have an eMandate system in place?
    1. If Yes, are you considering the integration of RPaM?
    2. If No, would you consider the adoption of RPaM?
3. Do you foresee systems as mandators or mandatees?
4. Do you think that the European Commission should provide the support the adoption and integration of RPaM?
5. What would be the use and value of eSignature in the context of RPaM?
6. What other initiative would you like ISA to put forward? E.g. support to the mapping between Member States and PAM models, support for testing and deployment…

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