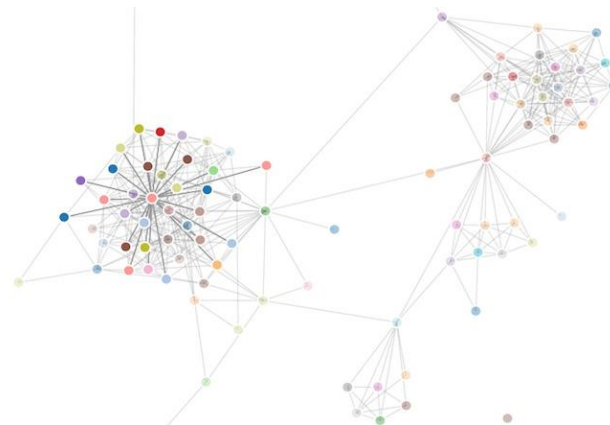




# e-Procurement Ontology

*Publications Office – Unit C2*

6<sup>th</sup> Working Group Meeting: 2018-05-16





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# 1. Roll call

2. Conceptual Data Model
3. Development of the PoC
4. Any other business



1. Roll call

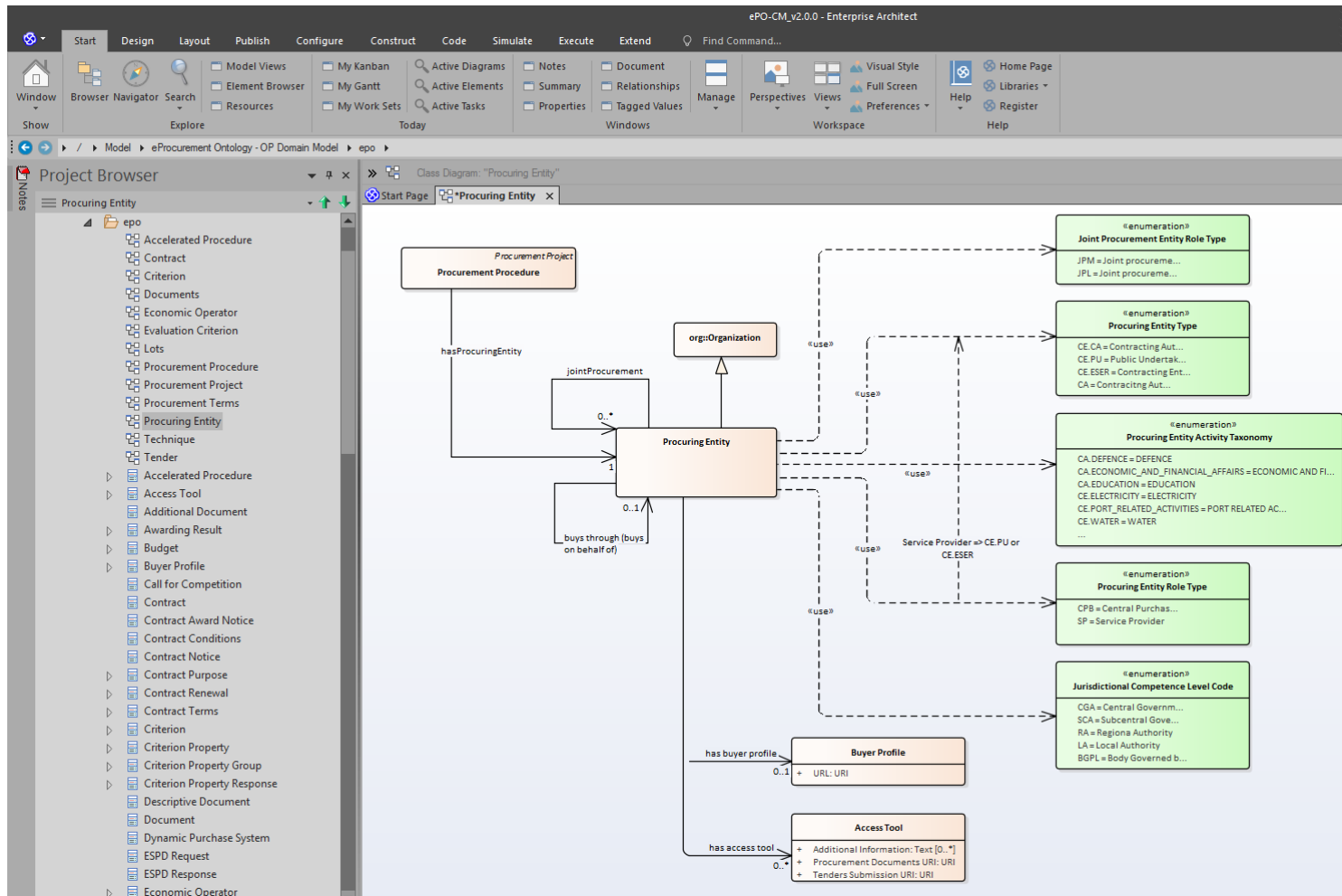
## 2. Conceptual Data Model

3. Development of the PoC

4. Any other business

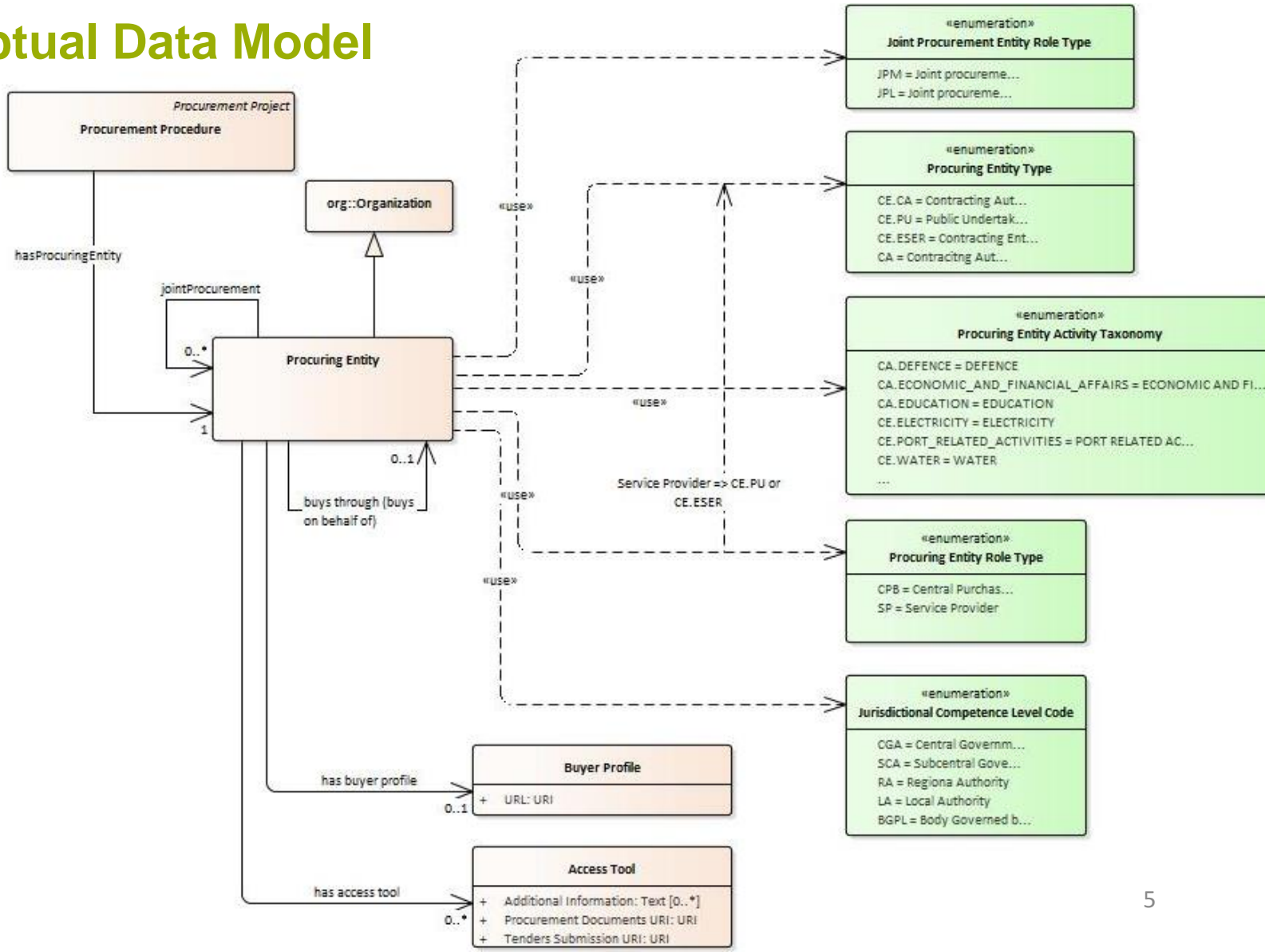
## 2. Conceptual Data Model

Internal analysis re-iteration (OP + contractor)



## 2. Conceptual Data Model

### Procuring Entity Diagram



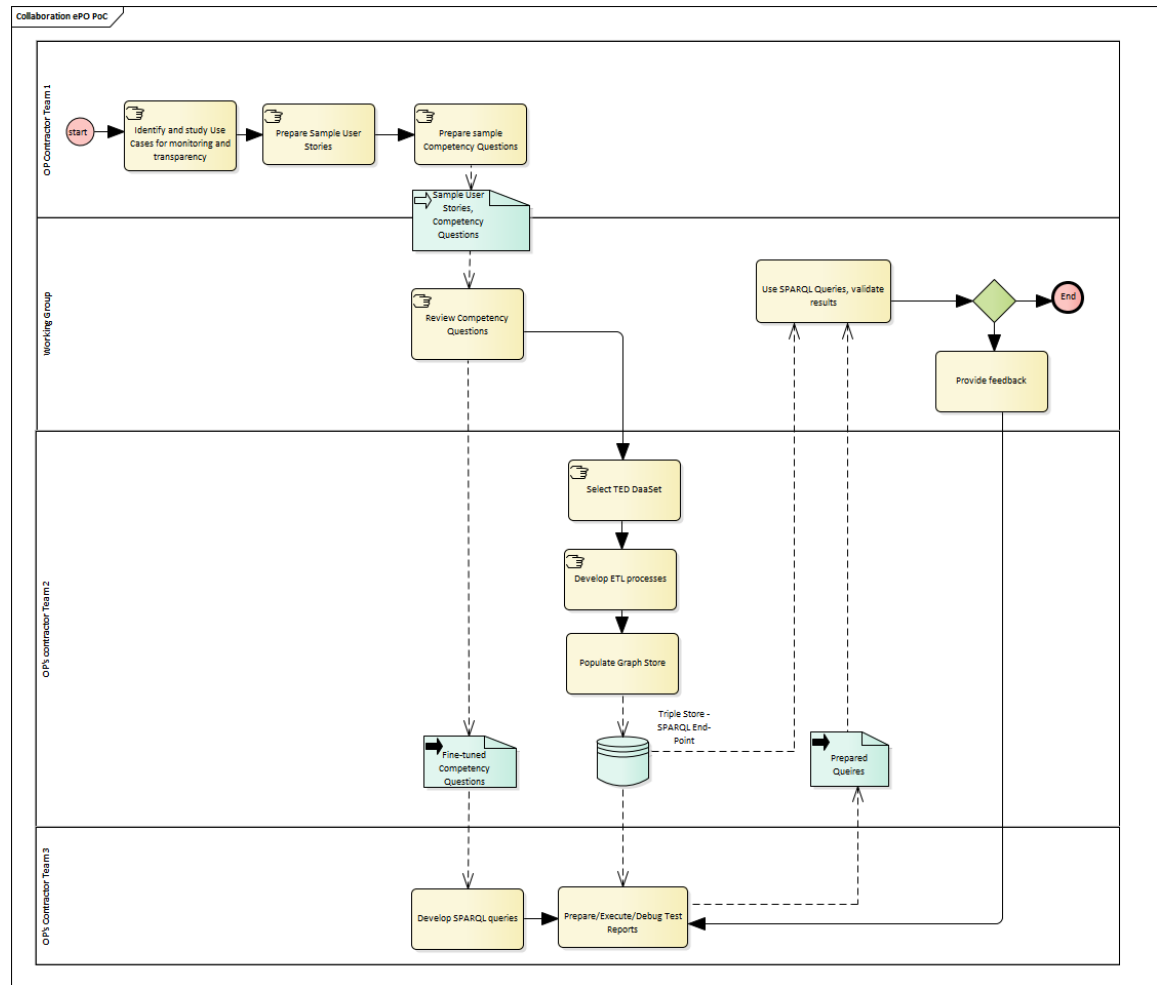




1. Roll call
2. Conceptual Data Model
- 3. Development of the PoC**
4. Any other business

### 3. Development of the PoC

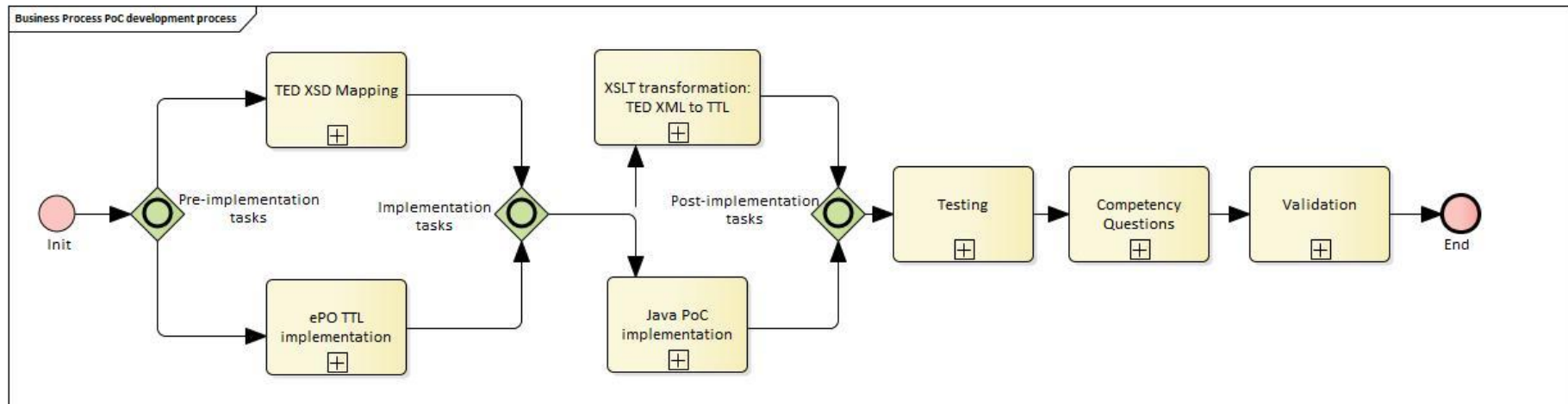
#### PoC Workflow (reminder)





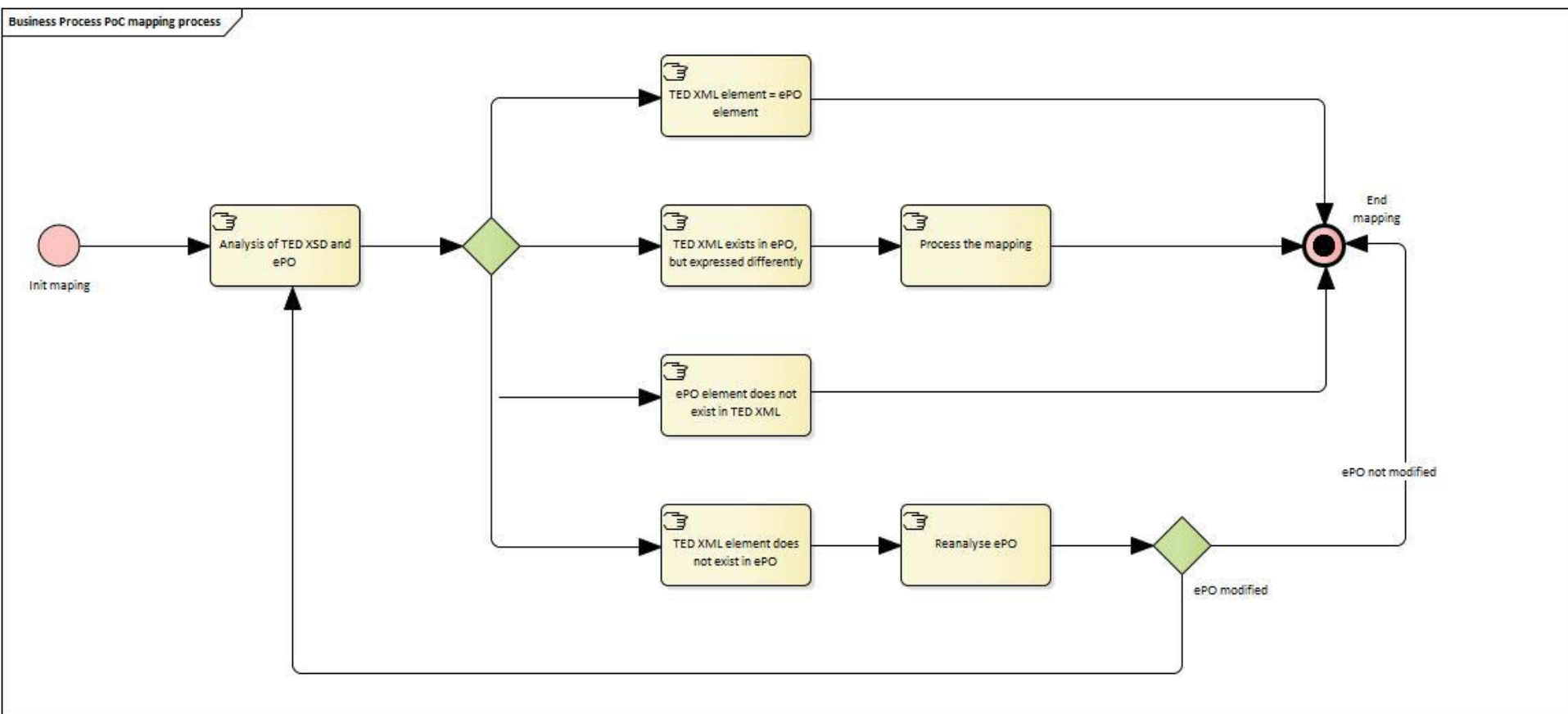
### 3. Development of the PoC

PoC development sub-process



### 3. Development of the PoC

#### TED XSD to ePO Mapping sub-process



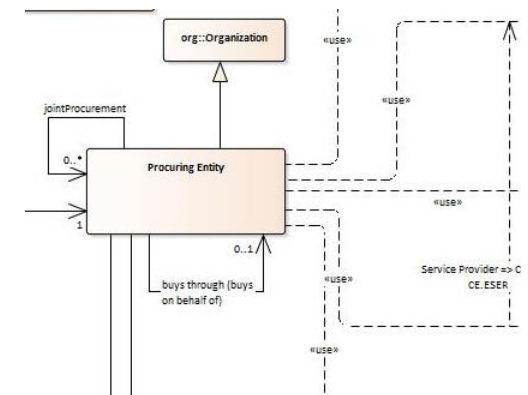
### 3. Development of the PoC

- Mapping TED into ePO (summary)

#### TED XML

```
<?xml version="1.0" encoding="UTF-8"?>
<TED_EXPORT xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="ted/R2.0.9.S02/publication"
  xmlns:n2016="ted/2016/nuts" xsi:schemaLocation="ted/R2.0.9.S02/publication TED_EXPORT.xsd"
  VERSION="R2.0.9.S02.E01" DOC_ID="196078-2018" EDITION="2018087">
  <TECHNICAL_SECTION> [5 lines]
  <LINKS_SECTION> [7 lines]
  <CODED_DATA_SECTION> [51 lines]
  <TRANSLATION_SECTION> [192 lines]
  <FORM_SECTION>
    <NOTICE_UUID>fd47edc7-0a01-4657-8f9b-45116d68d0c7</NOTICE_UUID>
    <F03_2014 CATEGORY="ORIGINAL" FORM="F03" LG="EN">
      <CONTRACTING_BODY>
        <ADDRESS_CONTRACTING_BODY>
          <OFFICIALNAME>Business Services Organisation, Procurement and Logistics Service on
            behalf of Health and Social Care in Northern Ireland</OFFICIALNAME>
          <ADDRESS>The Cottage, 5 Greenmount Avenue, Ballymena</ADDRESS>
          <TOWN>Ballymena</TOWN>
          <POSTAL_CODE>BT43 6DA</POSTAL_CODE>
          <COUNTRY VALUE="UK"/>
          <E_MAIL>sourcing.palsballymena@hscni.net</E_MAIL>
          <n2016:NUTS CODE="UK"/>
          <URL_GENERAL>https://etendersni.gov.uk/epps</URL_GENERAL>
          <URL_BUYER>https://etendersni.gov.uk/epps</URL_BUYER>
        </ADDRESS_CONTRACTING_BODY>
        <ADDRESS_CONTRACTING_BODY_ADDITIONAL> [10 lines]
        <ADDRESS_CONTRACTING_BODY_ADDITIONAL> [10 lines]
        <ADDRESS_CONTRACTING_BODY_ADDITIONAL> [10 lines]
      </F03_2014>
    </NOTICE_UUID>
  </FORM_SECTION>
</TED_EXPORT>
```

#### eProcurement Ontology



```
see http://data.europa.eu/ePO/ontology#ProcurementProject
ProcurementProject rdf:type owl:Class .

see http://data.europa.eu/ePO/ontology#ProcuringEntity
ProcuringEntity rdf:type owl:Class ;
  rdfs:subClassOf org:Organization .

see http://data.europa.eu/ePO/ontology#ProcuringEntityRoleType
ProcuringEntityRoleType rdf:type owl:Class ;
  rdfs:subClassOf ccts:Code .

see http://data.europa.eu/ePO/ontology#ProcuringEntityType
ProcuringEntityType rdf:type owl:Class ;
  rdfs:subClassOf ccts:Code .

see http://data.europa.eu/ePO/ontology#ReservedContract
ReservedContract rdf:type owl:Class ;
  rdfs:subClassOf ccts:Code .

see http://data.europa.eu/ePO/ontology#ReservedContractType
ReservedContractType rdf:type owl:Class ;
  rdfs:subClassOf ccts:Code .
```

### 3. Development of the PoC

- Developing the TTL file from the Conceptual Map

The screenshot displays the Protégé ontology editor interface. The left pane shows the class hierarchy for **EconomicOperator**, which is a subclass of **RegisteredOrganization**. The right pane shows the **Class Usage** for **EconomicOperator**, listing 36 uses. The **Description** pane shows that **EconomicOperator** is equivalent to **RegisteredOrganization**.

**Active Ontology** x **Entities** x **Individuals by class** x **DL Query** x

**Annotation properties** | **Datatypes** | **Individuals**

**Classes** | **Object properties** | **Data properties**

**Class hierarchy: EconomicOperator**

- owl:Thing
  - AccessTool
  - BuyerProfile
  - Code
  - Contract
  - Criterion
  - Document
  - ExpressionOfInterest
  - FinancialAccount
  - FundsIdentification
  - Identifier
  - org:Organization
  - ProcurementProject
  - RegisteredOrganization
    - EconomicOperator**
    - EconomicOperatorGroup
    - ServiceProvider
  - Tender
  - TenderingTerms
  - TenderShortList

**Class Annotations** | **Class Usage**

**Usage: EconomicOperator**

Show: ☒ this ☒ disjoints ☒ named sub/superclasses

Found 36 uses of **EconomicOperator**

- EconomicOperator**
  - EconomicOperator **SubClassOf** RegisteredOrganization
  - Class: **EconomicOperator**
- EOPrepares**
  - EOPrepares **Domain** EconomicOperator
- groupsEconomicOperators**
  - groupsEconomicOperators **Range** EconomicOperator
- hasEconomicOperator**
  - hasEconomicOperator **Range** EconomicOperator
- hasFinancialAccount**
  - hasFinancialAccount **Domain** EconomicOperator
- hasLegalForm**
  - hasLegalForm **Domain** EconomicOperator
- hasLegalFormCode**
  - hasLegalFormCode **Domain** EconomicOperator
- hasPreselectedTenderers**
  - hasPreselectedTenderers **Range** EconomicOperator

**Description: EconomicOperator**

Equivalent To +

SubClass Of +

- RegisteredOrganization**

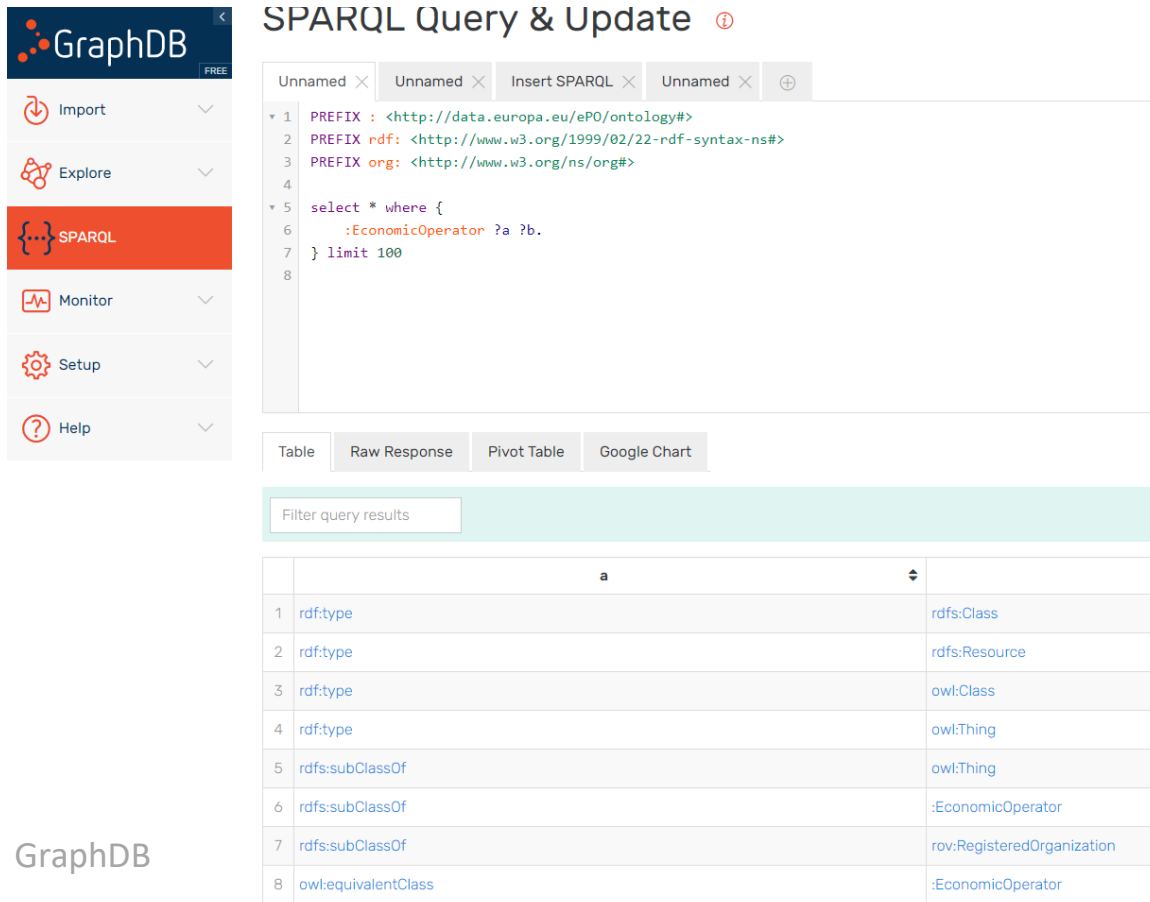
General class axioms +

SubClass Of (Anonymous Annotation)

Protégé

### 3. Development of the PoC

- Importing TTL file into GraphDB



The screenshot displays the GraphDB web interface. On the left is a sidebar with navigation options: Import, Explore, SPARQL (highlighted), Monitor, Setup, and Help. The main area is titled 'SPARQL Query & Update' and contains a query editor with a SPARQL query. Below the editor are tabs for 'Table', 'Raw Response', 'Pivot Table', and 'Google Chart'. The 'Table' tab is active, showing a table with 8 rows of query results. A 'Filter query results' input field is located above the table.

**SPARQL Query & Update**

```
1 PREFIX : <http://data.europa.eu/ePO/ontology#>
2 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
3 PREFIX org: <http://www.w3.org/ns/org#>
4
5 select * where {
6   :EconomicOperator ?a ?b.
7 } limit 100
8
```

Filter query results

	a	
1	rdf:type	rdfs:Class
2	rdf:type	rdfs:Resource
3	rdf:type	owl:Class
4	rdf:type	owl:Thing
5	rdfs:subClassOf	owl:Thing
6	rdfs:subClassOf	:EconomicOperator
7	rdfs:subClassOf	rov:RegisteredOrganization
8	owl:equivalentClass	:EconomicOperator



### 3. Development of the PoC

- Extraction of the information from TED XMLs and transform it into triples to import them into GraphDB



### 3. Development of the PoC

- **7<sup>th</sup> June**
  - PoC final report available for comments by WG.



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