

Verification of issue: Error while loading Ontology to Protege #562

After generating the documentation of the ontology by running the widoco.py script including the latest changes in the versioning process we observe the following:

1. The ontology.ttl file generated as part of the serialization process, presents a wrong output.

For example, the accrualPeriodicity is defined as both: Data and Object Property

```
### https://w3id.org/idsa/core/accrualPeriodicity
<https://w3id.org/idsa/core/accrualPeriodicity> rdf:type owl:ObjectProperty ;
      rdfs:domain <https://w3id.org/idsa/core/DigitalContent> ;
      rdfs:range <https://w3id.org/idsa/core/Frequency> .

### https://w3id.org/idsa/core/action
<https://w3id.org/idsa/core/action> rdf:type owl:ObjectProperty ;
      rdfs:domain [ rdf:type owl:Class ;
                    owl:unionOf ( <https://w3id.org/idsa/core/Rule>
                                   <https://w3id.org/idsa/core/UsageControlObject>
                                 )
                  ] ;
      rdfs:range <https://w3id.org/idsa/core/Action> .

#####
#   Data properties
#####

### http://purl.org/dc/terms/accrualPeriodicity
<http://purl.org/dc/terms/accrualPeriodicity> rdf:type owl:DatatypeProperty .
```

The screenshot shows the Protege software interface. On the left, the 'Ontology header' section displays the ontology IRI as 'file:/Users/linan...' and the version IRI as 'e.g. file:/Users/...'. Below this, there are sections for 'Annotations' (showing 'rdfs:label [language: en] IDS Information Model') and 'Metrics' (showing 'Class hierarchy' and 'Ontology metrics:').

The main window displays a log of errors from the 'emanticweb.elk.reasoner.config.ReasonerConfiguration'. The log contains the following text:

```
emanticweb.elk.reasoner.config.ReasonerConfiguration
www.semanticweb.org/linamolinascmet/ontologies/2022/6/untitled-ontology-244. URI scheme is not "file"

2
again.

emanticweb.elk.reasoner.config.ReasonerConfiguration
ents/TESTWIDOCO-CHECKOBJDATAPROP/docs/4.1.0/serializations/ontology.ttl
://www.w3.org/2002/07/owl#UnionOf -> _:genid-nodeid-node1g7u8u5qkx18
s://w3id.org/idsa/core/action in punning not allowed [AnnotationProperty: action, ObjectProperty: action]
s://w3id.org/idsa/core/rightOperandReference in punning not allowed [AnnotationProperty: rightOperandReference,
s://w3id.org/idsa/core/accrualPeriodicity in punning not allowed [DataProperty: accrualPeriodicity, ObjectPropert
s://w3id.org/idsa/core/latitude in punning not allowed [DataProperty: latitude, AnnotationProperty: latitude]
s://w3id.org/idsa/core/corporateHomepage in punning not allowed [DataProperty: corporateHomepage, AnnotationProp
s://w3id.org/idsa/core/postDuty in punning not allowed [ObjectProperty: postDuty, AnnotationProperty: postDuty]
s://w3id.org/idsa/core/pipEndpoint in punning not allowed [ObjectProperty: pipEndpoint, DataProperty: pipEndpoi
s://w3id.org/idsa/core/operator in punning not allowed [AnnotationProperty: operator, ObjectProperty: operator]
s://w3id.org/idsa/core/source in punning not allowed [DataProperty: source, ObjectProperty: source]
s://w3id.org/idsa/core/recipientAgent in punning not allowed [ObjectProperty: recipientAgent, DataProperty: rec
s://w3id.org/idsa/core/familyName in punning not allowed [DataProperty: familyName, AnnotationProperty: familyNa
s://w3id.org/idsa/core/and in punning not allowed [AnnotationProperty: and, ObjectProperty: and]
s://w3id.org/idsa/core/accessed in punning not allowed [DataProperty: accessed, ObjectProperty: accessed]
s://w3id.org/idsa/core/issued in punning not allowed [DataProperty: issued, AnnotationProperty: issued]
s://w3id.org/idsa/core/temporalResolution in punning not allowed [DataProperty: temporalResolution, ObjectPropert
s://w3id.org/idsa/core/prohibition in punning not allowed [ObjectProperty: prohibition, AnnotationProperty: issued]
s://w3id.org/idsa/core/data in punning not allowed [ObjectProperty: data, DataProperty: data]
```

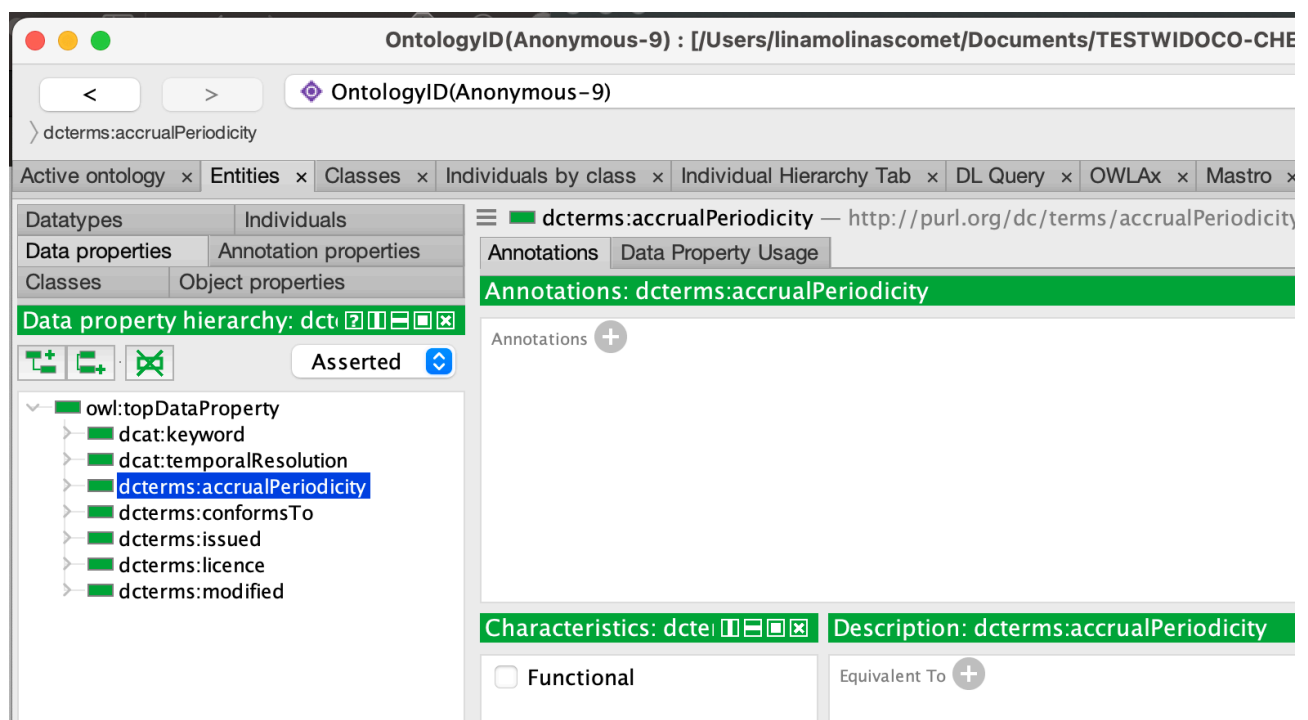
At the bottom of the log window, there are buttons for 'Show log file', 'Preferences', 'Time stamp', and 'Clear log'. An 'OK' button is located at the bottom right of the interface.

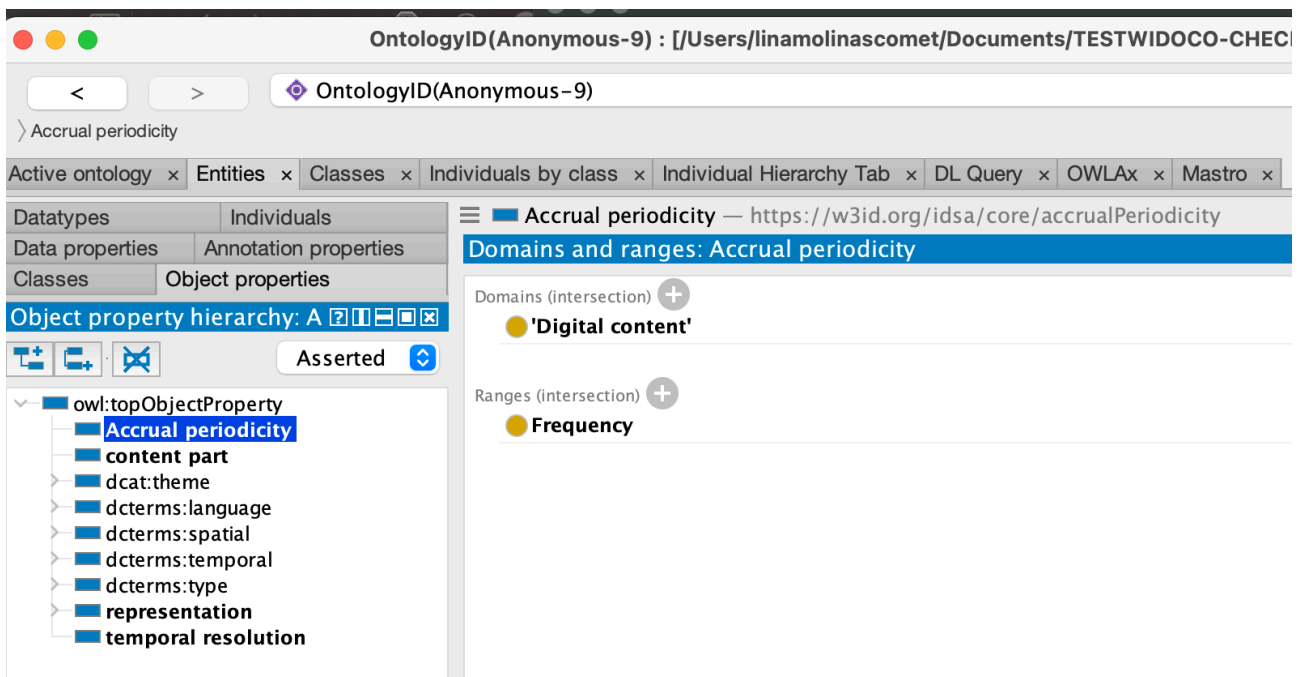
We know that `ids:accrualPeriodicity` is defined in `DigitalContent.ttl` as follows:

```
ids:accrualPeriodicity # consider irregular updates as well
a owl:DatatypeProperty;
rdfs:subPropertyOf dct:accrualPeriodicity ;
rdfs:label "Accrual periodicity"@en;
rdfs:comment "The regular period with which items are added to a
collection."@en ;
rdfs:domain ids:DigitalContent;
rdfs:range ids:Frequency;
```

Which indicates is a `owl:DatatypeProperty`.

However, by looking at the same file (`DigitalContent.ttl`) in Protege, we observe that **`ids:accrualPeriodicity`** is treated as an Object Property, and **`dct:accrualPeriodicity`** as a Data Property



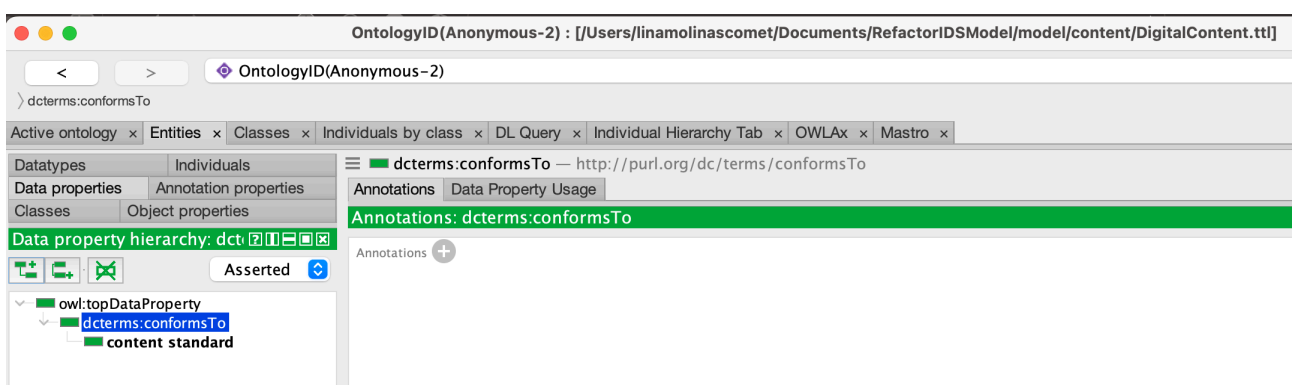


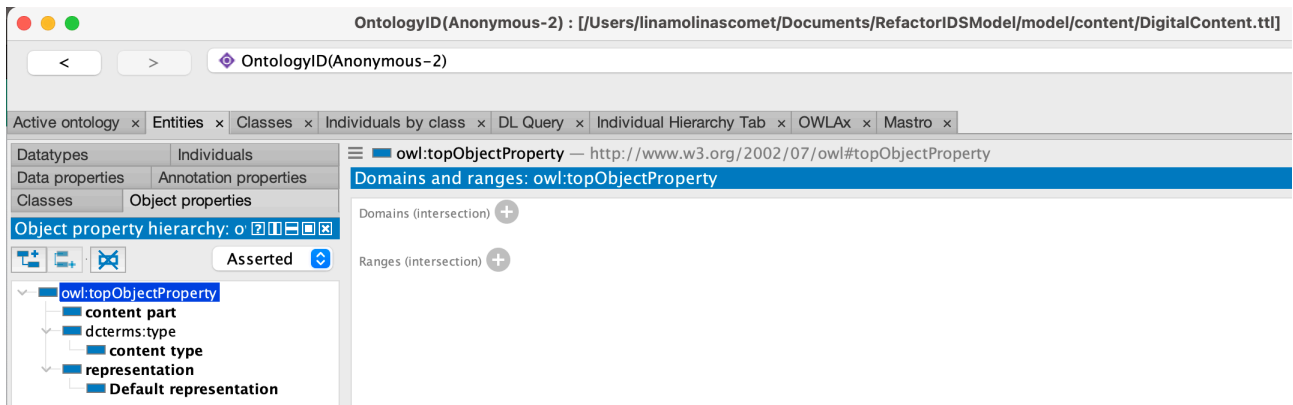
We take the widoco.py version before versioning and run it for version 4.1.0 of our ontology.

The result is the same as described in **point 1**.

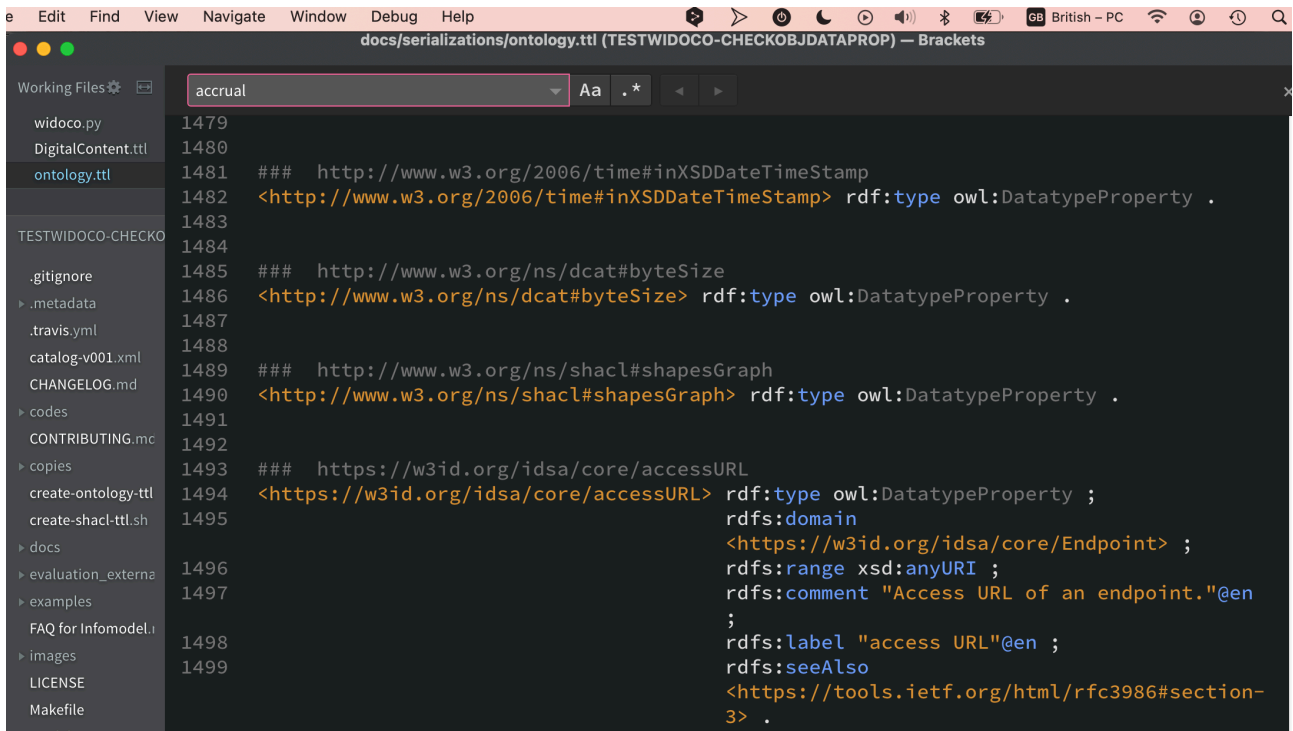
We now change the definition of `ids:accrualPeriodicity` as the result of the Refactor IDS Model process in which we removed redundant definitions and proceed to first check it on Protégé

As we can observe, there are no internal `ids:accrualPeriodicity` definition, nor a reference to the external `dct:accrualPeriodicity`.

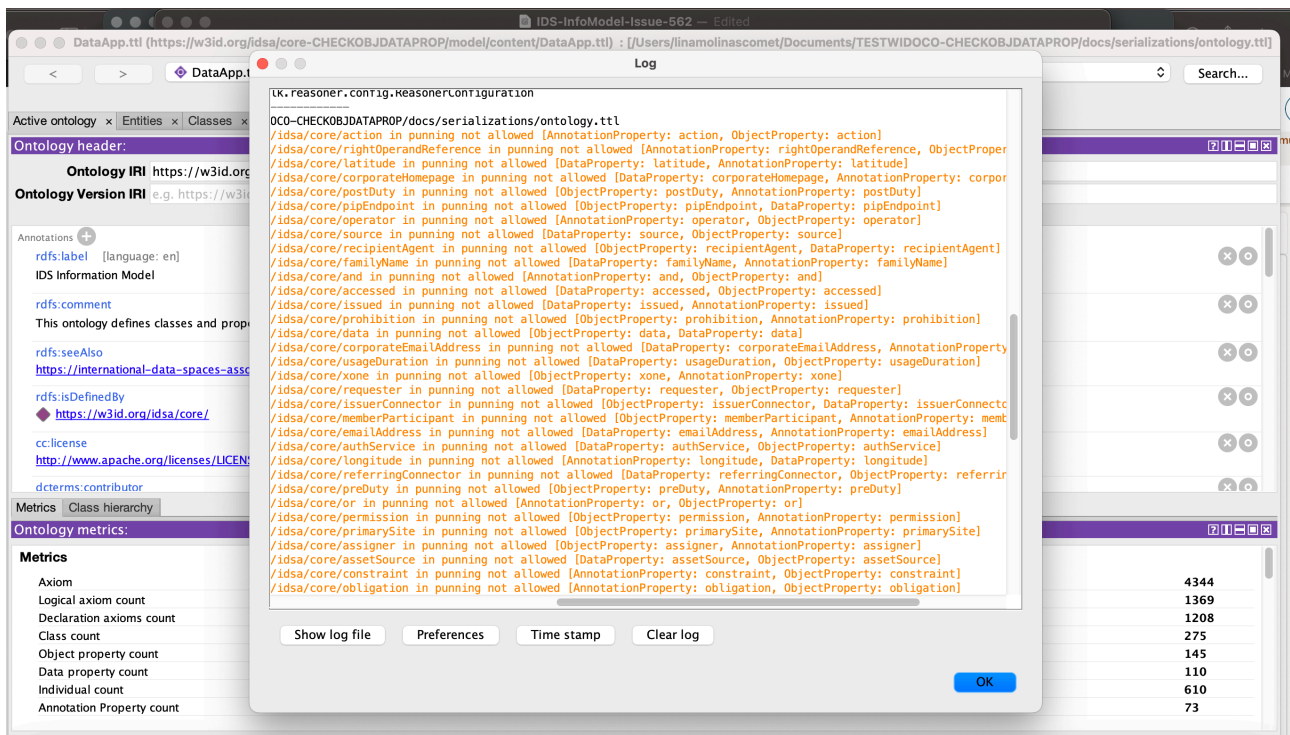




Now we generate documentation and generalization with the old version of the widoco.py script. The results are as follows:



Also, when loading the new ontology.ttl file, there is no warning regarding the illegal redefinition of the accrualPeriodicity property:



We replace the old widoco.py script with the latest one, resulting in the following:

The local changes are not reflected in the ontology.ttl file as in the script we are taking the model files from the repository, and only consider released versions. The latest version 4.1.0 does not yet consider the changes from the refactoring process implemented based on the issue: **Refactor identified refactoring options for the IDS information model #490**

```

37 # Get files from the repository by release tag (the last release) and build
    directories
38 def get_files_from_repository():
39     url_api = 'https://api.github.com/repos/International-Data-Spaces-
        Association/InformationModel/releases'
40

```