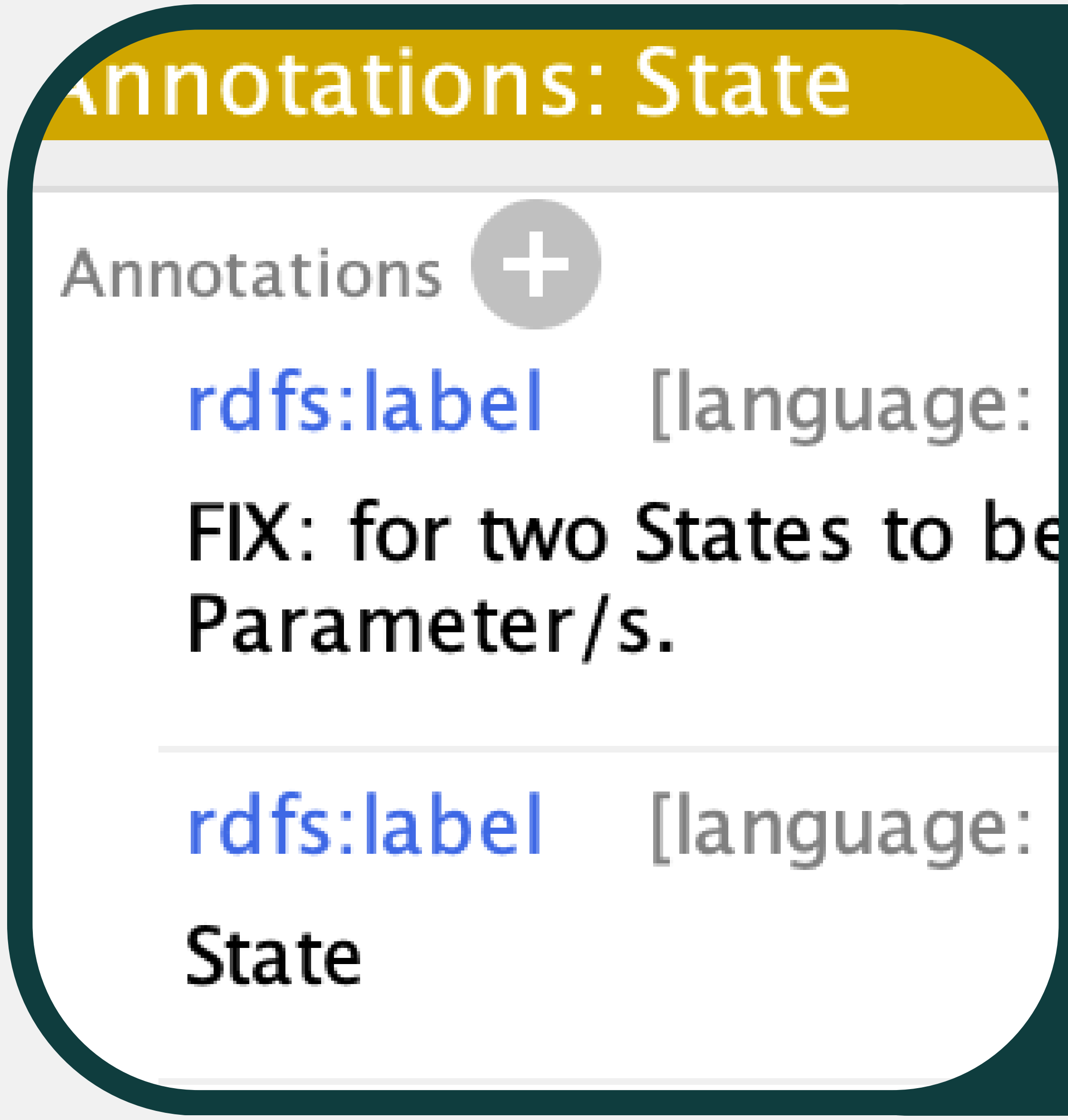
Report

HYPERLEDGER CASIG STANDARDS WG

Lucia Pauw, Wouter Dercksen, Pieter-Ruan Cronjé

THE ONTOLOGY

- SOURCE: WIKI AND PROTOBUFS
- CURRENTLY HOSTED AT HTTP://PURL.ORG/AIAONTOLOGY
- INTEGRATED EXISTING ONTOLOGIES, SOME ADDITIONS
- GITHUB (.OWL)
- TRIPLY (.TTL)
    - SPARQL ENDPOINT (UNTIL 6/02)
- PYLODE UI



Annotations: State

rdfs:label [language:

FIX: for two States to be
Parameter/s.

rdfs:label [language:

State

NOTES

- Edits made are indicated by comments containing the word EDIT
- Problems/TODOs indicated by comments containing the word FIX
- Definitions that are not final are indicated by rdfs:comment tags containing the words NOT FINAL

Page 04

WHAT'S NEXT?

CONSIDERATIONS

- Complete axioms and definitions
- Role subClassOf Agent?
- Arithmetic operations?
- dcterms integration
- Which properties are compulsory and must be specified? (Protobuf should have content in all fields)

ADDITIONS

- Procedures, Plans, Objectives/Goals, Processes, Requirements, Specifications, standards all Controls
- State (ParVal deprecated)
- Location
- More expressive logic (axioms)

VOCABULARIES

C

CDM

G T H

G

GS

G T H

V

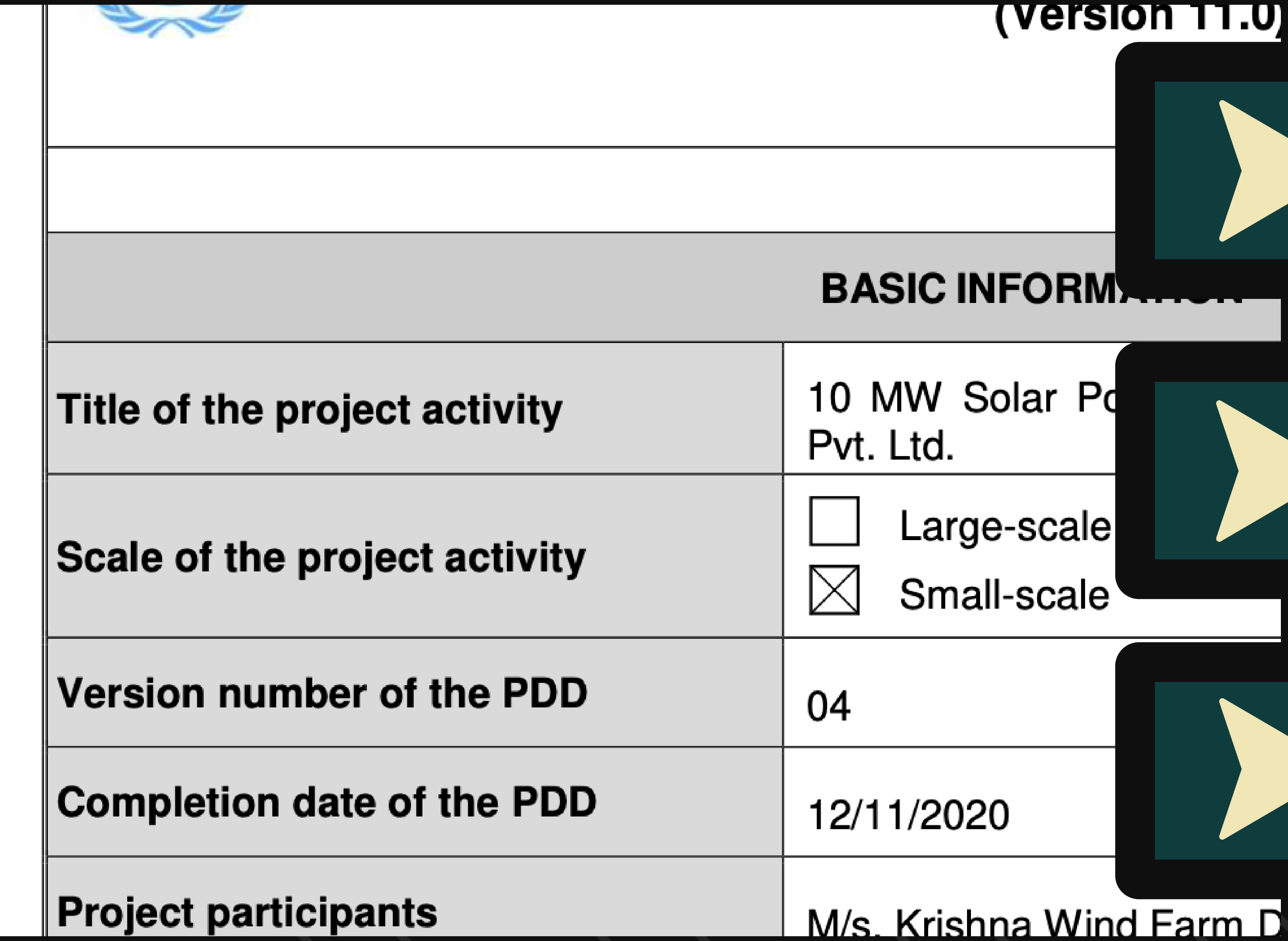
vcs

G T H

What's next?

- Add classes and properties from aia; glossaries
- How to approach vocabularies? As an “addendum” to aia, or independently?
- Host on actual website, no redirect.
- SPARQL endpoint
- Content negotiation

ANNOTATION



(Version 11.0)

BASIC INFORM

Title of the project activity	10 MW Solar Po Pvt. Ltd.
Scale of the project activity	□ Large-scale ☒ Small-scale
Version number of the PDD	04
Completion date of the PDD	12/11/2020
Project participants	M/s. Krishna Wind Farm D

Goal

Generate linked data, according to our ontology and vocabularies. Soort soek soort - similar things belong together.

Workflow

- Newspaper article approach: Who, where, when, how, why, what.

Problems

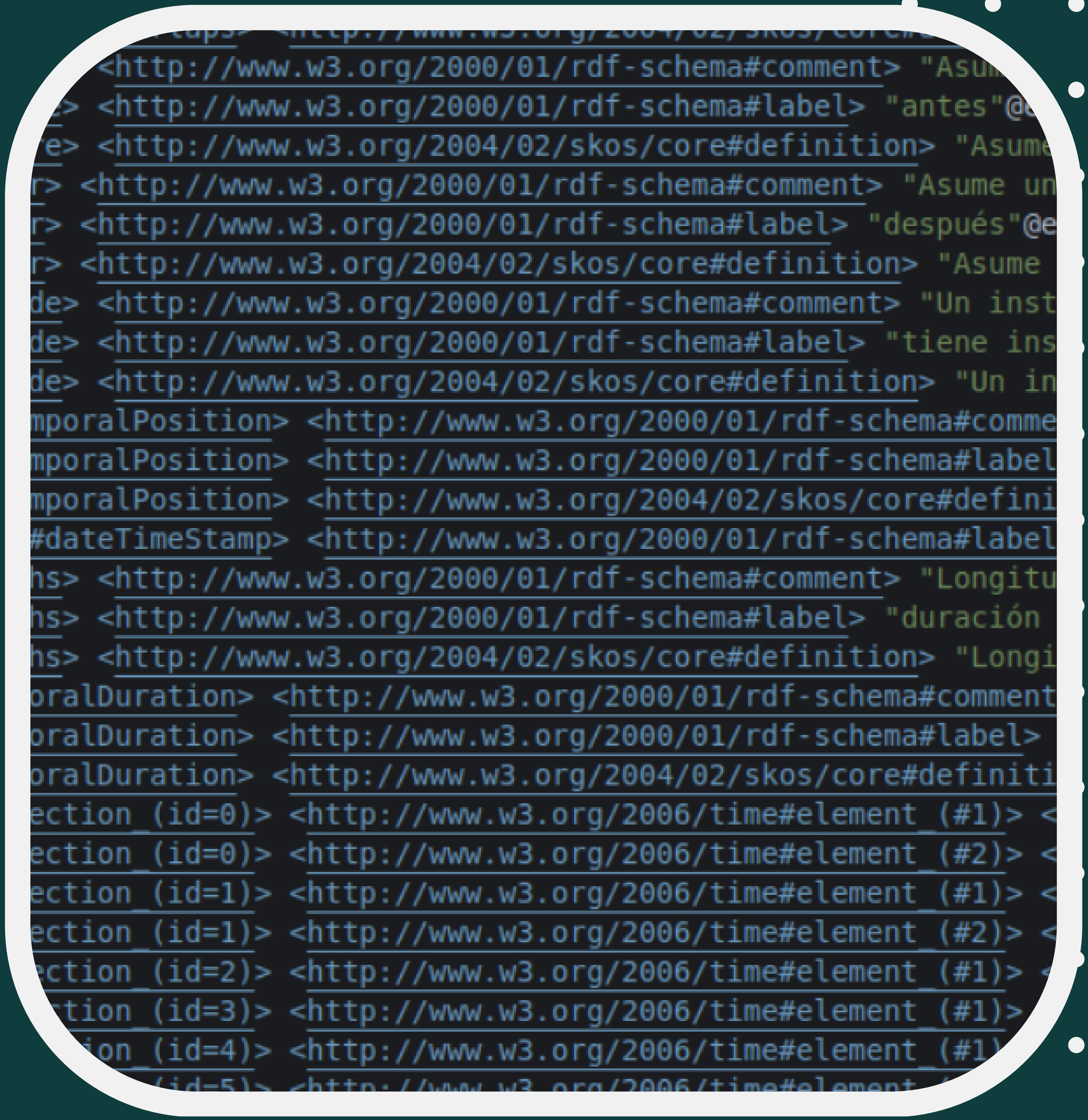
- Very tedious

RESOURCES CONT'D: DEVELOPED RESOURCES

TURTLE PARSER

Takes RDF turtle data as input and parses it into RDF triples.

- ✓ **Dereferenceable blank nodes**
- ✓ **Multiple output formats**
- ✓ **Use with a tool like this (downloads ontologies locally to check declarations; saves time)**



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VALIDATOR?

- Developed as part of an effort to develop an RDF data validator:
  - Potentially unfeasible because all the data must be categorised into classes and every individual must have a rdf:type property, which is often not the case.
  - It can be possible if you have the end goal of validating the data in mind while writing the data as well as the ontology. Very detailed disjointWith declarations needed, for example.
  - The program would additionally need the capability to detect inverses and other relations in the object properties (which this program cannot yet do).
  - Checking subject and object against domain and range.

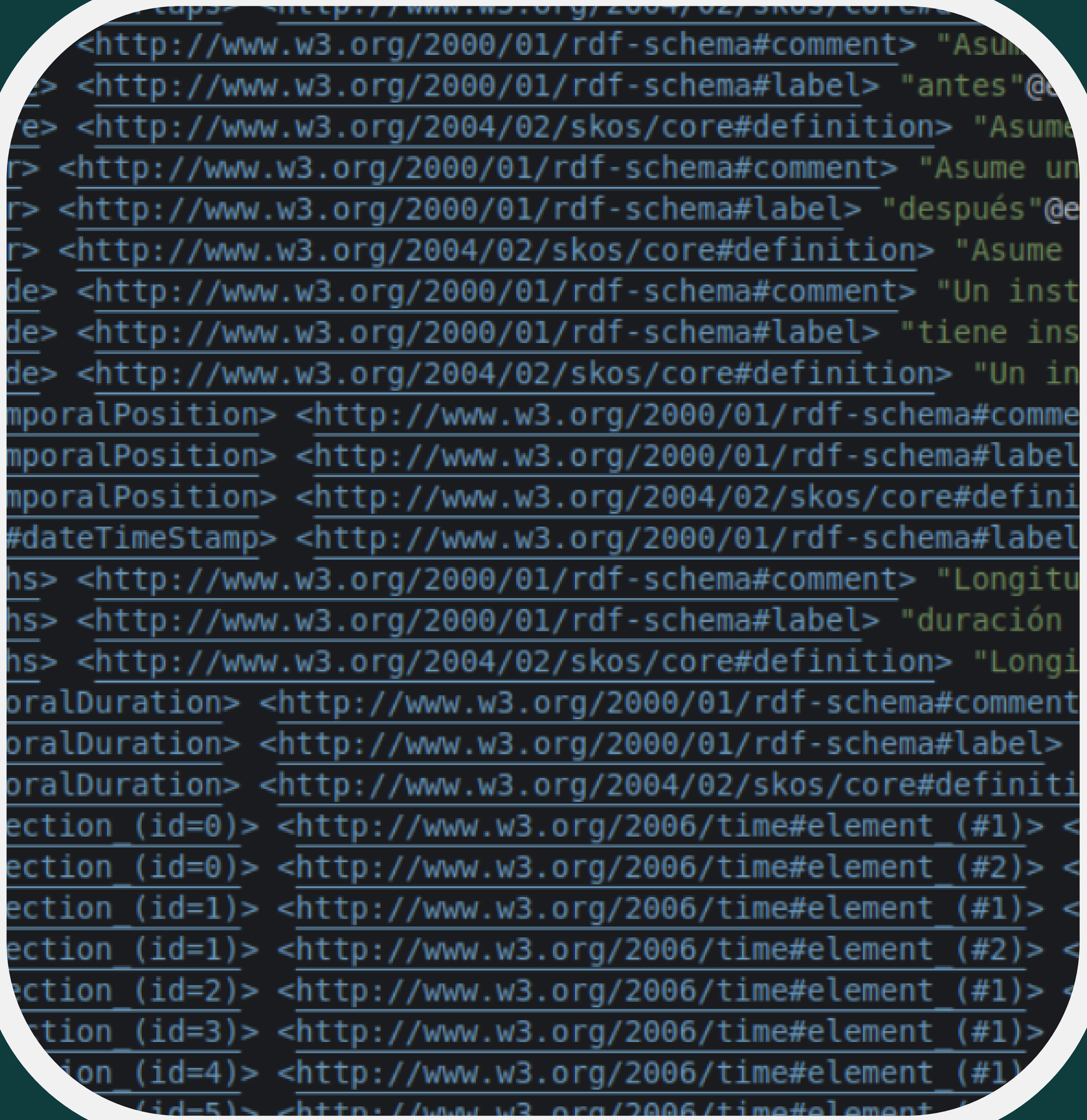
RESOURCES CONT'D: DEVELOPED RESOURCES

WEBSCRAPING

We have the ontology. Now we need the data, e.g. from the CDM and GS registries, and PDDs.

Possible solutions: Webscraping, PDF-"scraping", semantic annotation

✓ **Work in progress (indicated with comments)**



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USEFUL RESOURCES

✓ Protégé

- For viewing/editing ontologies
- Note some bugs; use in conjunction with IDE of your choice and extensions like RDFox and RDF Sketch

✓ Triply

- For storing and querying linked databases
- SaaS or self-hosted

✓ PyLODE

- Generate OWL documentation
- Easiest way to use: python module (only requires 3 lines of code to produce the documentation)

✓ Other

- Python libraries for RDF related development:
  - RDFLib
  - PyLDAPI
  - Ontology rdflib python (youtube)
- Linked Data API training
- Linked Data APIs
- Ontotext Metadata Studio
- Open Semantic Search
- RDF2RDF (convert between serialization formats)

WHAT'S NEXT?

WHAT DO WE NEED?

- Data validation
- Webscraping or similar
- Tool to enable users to semantically annotate their data (e.g. PDDs) and export RDF.

TL;DR

- Data
- POC
- MVP for use of ontology

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