EMMO-python - working with EMMO in python.

Francesca L. Bleken[1] and Jesper Friis[2]

[1] SINTEF Industry, SINTEF, Pb. 124 Blindern, 0314 Oslo, Norway, Francesca.l.bleken@sintef.no
[2] SINTEF Industry, SINTEF, P.O. Box 4760 Torgarden, NO-7465 Trondheim, Norway, jesper.friis@sintef.no

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EMMO-python [1] is a Python API for the European Materials & Modelling Ontology (EMMO) [2]. The package is built on top of Owlready2 [3], a python package with extensive support for ontology development and usage. EMMO-python has developed organically with EMMO, and a set of tools intended for easier development and documentation of (EMMO-based) ontologies has been created:

- **ontoversion** returns the version of the given ontology based on the version IRI.
- **ontoconvert** enables conversion between different formats for the ontology. This is particularly useful for converting between the turtle (.ttl) and rdf/xml (.owl) formats. An option for reasoning the ontology with Fact++ is included, e.g. reasoning can be done directly from the command line.
- **ontograph** makes graphs of the ontology. Leafs and roots can be specified so that only the desired parts of the ontology are included in the Figure. Furthermore, module-interdependencies can be plotted instead of their content.
- **ontodoc** is a tool to document your ontology. It will generate a minimal documentation without arguments, but options for format as well as content templates are available.
- **emmocheck** is a particularly useful tool during development of ontologies based on EMMO. This tool checks that the given ontology conforms to the conventions of EMMO.

Several options are available for these tools, and we refer to the documentation [4] for complete instructions.

In this interactive session small examples on the use of the tools as well as some demo-examples on possible usage will be presented.

EMMO-python is packaged and available through pypi [5] for easy installation. Also, a Dockerfile is made available for easier installation with regards to dependencies, particularly graphviz, pandoc and pdflatex, required for the documentation and generation of figures. EMMO-python is an ongoing effort, adapting to the developments in EMMO. New features are being added when the need has been identified. Contributions and suggestions are very welcome and may be opened on the github repository.

We propose the formation of an EMMC Task group: 'Tools for working with ontologies', within the EMMC focus area 'Interoperability', and we welcome discussions on the formation and interest for such a group during this interactive session.

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REFERENCES

[1] https://github.com/emmo-repo/EMMO-python

[2] https://emmo-repo.github.io/

[3] Lamy JB, Artificial Intelligence In Medicine 2017;80:11-28

[4] https://github.com/emmo-repo/EMMO-python/blob/master/docs/tools-instructions.md

[5] https://pypi.org/project/EMMO/