

# UFO

Miroslav Blaško

November 16, 2017

## 1 Exercises – Development an UFO compliant ontology about ZOO

The exercises are divided into two separate sections – 1.1) specifying requirements of an ontology, 1.2) development of an ontology compliant with UFO methodology.

Consider the ZOO web site application from the previous seminar – the web application should be able to represent information about species as well concrete animals located within the ZOO. In addition, opening hours of the ZOO, information about animal shows, representation of animal behaviors, body parts, food that they eat should be included within the website. Internally, the application should be able to manage transportation of food and animals.

### 1.1 Requirements engineering

To complete following exercises any text editor can be used.

**Ex. 1** — The following text was taken from “news“ section of the Prague ZOO website showing information about new animal joining the ZOO (see sec. 2) :

*“The breeding bull Tipito, who arrived from Berlin, is going to replace the older male from Amsterdam. The aim is to rejuvenate the herd and its breeding lines which is necessary for the closed groups of animals in captivity,” Miroslav Bobek, the Zoo director, explained. The transport went well; although only a year-and-a-half of age, the bull was calm. “In the following days we will introduce him to our females. Due to his youth he is still rather small, however, his constitution suggests that he will grow to be a majestic bull when full grown,” Barbora Crkvová, a curator of ungulates in the Prague Zoo, added.* Consider having similar ”news section“ within our ZOO website. Mark at least 5 interesting words within the text that could be used within filters of advanced search of the news. Explain your selection.

**Ex. 2** — Create ontology requirement specification document (ORSB) based on the needs of our ZOO web application. Consider the advanced search use-case from previous exercise as well. As a template for creation of the ORSB use guidelines from the NeOn methodology (see sec. 2).

## 1.2 Creation of an UFO ontology

OntoUML is extension of UML language that provides stereotypes and model constraints for representation of UFO-compliant ontologies. To complete following exercises it is advised to install OntoUML editor – Menthor Editor (see Sec. 2). Use the editor to validate your model.

**Ex. 3** — Create an UFO-compliant conceptual model for a non-trivial fragment of ORSD from the last exercise. The model should contain at least 5 of the following UFO entities: *Kind*, *SubKind*, *Role*, *Phase*, *Category*, *RoleMixin*, *Mixin*.

**Ex. 4** — Export created conceptual model into an OWL2 ontology and examine it in Protege 5.

## 2 References for exercises

- Zoo related resources:
  - **The news about bison “Tripito” within Prague ZOO website** – <https://www.zoopraha.cz/en/about-zoo/news/7931-a-handsom-young-bison-to-add-zest-to-local-herd>
  - BBC website of wildlife animals as inspiration of our ZOO ontology :
    - \* List of species – <http://www.bbc.co.uk/nature/species>
    - \* Example animal – [http://www.bbc.co.uk/nature/life/Python\\_sebae](http://www.bbc.co.uk/nature/life/Python_sebae)
    - \* Hint: add “.rdf” extension to the url to retrieve rdf data about the url (e.g. <http://www.bbc.co.uk/nature/species.rdf>)
- Ontological Engineering resources from NeOn project :
  - The NeOn methodology – <http://mayor2.dia.fi.upm.es/oeg-upm/index.php/en/methodologies/59-neon-methodology/>
  - **Requirements engineering guideline (ORSD template + example)** – <http://www.neon-project.org/web-content/media/book-chapters/Chapter-05.pdf>
  - Re-engineering Non-Ontological Resources guideline – <http://www.neon-project.org/web-content/media/book-chapters/Chapter-08-1.pdf>
- UFO and OntoUML resources:
  - **Menthor Editor (an OntoUML editor + installation guide)** – <http://www.menthor.net/menthor-editor.html>
  - **OntoUML portal** – <http://ontouml.org>
  - UFO represented in OWL2 – <http://onto.fel.cvut.cz/ontologies/ufo>

- Ontology Design Patterns from portal <http://ontologydesignpatterns.org>:
  - List of all ODP patterns – <http://ontologydesignpatterns.org/wiki/Community:ListPatterns>
  - List of ODP content patterns – <http://ontologydesignpatterns.org/wiki/Category:ProposedContentOP>