# Bachelor Thesis Topic: Dynamic Graph-based Simulation Webservice



Description

A webservice that is capable to simulate dynamic conceptual models.

#### Conceptual Foundation

Theoretical foundation on simulation approaches and algorithms for dynamic graph-based, conceptual models to assess their structure and quantitative information.

### Specification (Initial Input)

The webservice consumes the textual representation (e.g. XML, ADL, RDF) of a model from Bee-Up and evaluates the structure and quantitative facets/properties (e.g. time, cost, probability information) of the model. The algorithm produces the average/expected time and cost information for the overall process and individual paths in the process.

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of an open-source simulation framework (e.g. AnyLogic) is encouraged.

#### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

## Bachelor Thesis Topic: Static Graph-based Simulation Webservice



• Description

A webservice that is capable to simulate static conceptual models.

#### Conceptual Foundation

Theoretical foundation on simulation approaches and algorithms for static, graph-based conceptual models.

Specification (Initial Input)

The webservice consumes the textual representation (e.g. XML, ADL, RDF) of a model from Bee-Up and evaluates the structure (hierarchy) of decision models. Through user interaction decision models can be assessed.

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment.

#### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

## Bachelor Thesis Topic: Statistics Webservice



## Description

A webservice that is capable to statistically analyze the content of models and provide statistical results and visualization (e.g. charting)

### Conceptual Foundation

Theoretical foundation on statistical assessment and indicators for conceptual models.

## • Specification (Initial Input)

The webservice consumes the textual representation (e.g. XML, ADL, RDF) of a models from Bee-Up and evaluates the use of specific concepts within the models.

### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of an open-source statistics framework (e.g. R) is encouraged.

### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

## Bachelor Thesis Topic: Image Annotation Webservice



#### Description

A webservice that is capable to graphically annotate arbitrary images with concepts of a metamodel.

#### Conceptual Foundation

Theoretical foundation on annotation and semantic enrichment techniques.

### Specification (Initial Input)

The webservice consumes a) the images to be annotated and b) the textual representation (e.g. RDF) of the Bee-Up metamodel(s). Through user interaction the images can be annotated with the concepts from the modelling language.

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of an open-source semantic frameworks is encouraged.

#### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

## Bachelor Thesis Topic: Verification Webservice

## Description

A webservice that is capable to verify models according to the selected modelling language.

Conceptual Foundation

Theoretical foundation on verification of conceptual models.

Specification (Initial Input)

The webservice consumes the textual representation (e.g. XML, ADL, RDF) of a models from Bee-Up and evaluates those models using verification techniques formalized as rules (e.g. BPMN Model verification, enforce EPC modelling rules)

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of an open-source rule verification framework (e.g. Drools) is encouraged.

#### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.



## Bachelor Thesis Topic: Model Transformation Webservice



Description

A webservice that is capable to transform models for model interchange.

Conceptual Foundation

Theoretical foundation on transformation of conceptual models.

Specification (Initial Input)

The webservice consumes the textual representation (e.g. XML, ADL, RDF) of a models from Bee-Up and transform it to (standard) formats (e.g. BPMN model to BPMN DI, DMN model to DMN DI)

### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of an open-source rule transformation framework (e.g. XSLT) is encouraged.

### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

# Bachelor Thesis Topic: Publishing and Social Media Webservice



Description

A webservice that is capable to publish model content to social media platforms and continuously evaluate the networks response.

Conceptual Foundation

Theoretical foundation on network analytics.

Specification (Initial Input)

The webservice consumes the graphical and textual representation (e.g. XML, ADL, RDF) of a models from Bee-Up and publishes it to a selected social media platform. Feedback from the social media platform is gathered and available as part of the service.

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. The use of the APIs of the according Social Media providers is encouraged.

#### • Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.

# Bachelor Thesis Topic: Streaming Webservice



### Description

A webservice that is capable to prepare conceptual models for streaming purposes (e.g. OMiTV).

#### Conceptual Foundation

Theoretical foundation on streaming web-services and content preparation.

### Specification (Initial Input)

The webservice consumes the graphical and textual representation (e.g. XML, ADL, RDF) of a models from Bee-Up, allows for user interaction to extend and update user-driven content (video, audio, text, etc.) as input for streaming services such as OMiTV and provisioning.

#### Implementation Approach

It is required to realize a service which should be integrated into the OLIVE environment. An integration with the current Open Models TV is encouraged.

#### Deployment Guidelines

A continuous integration and deployment process must be foreseen during design and implementation phases of the project.