TECHNISCHE UNIVERSITÄT DRESDEN

Software Technology Group

Faculty of Computer Science Institute of Software and Multimedia Technology, Software Technology Group

WS2017/18 – Model-driven Software Development in Technical Spaces

Model-to-Model Transformation with Epsilon

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1 Epsilon

This exercise provides a tutorial on model-to-model transformation. For brevity, this exercise focuses on introducing the *Epsilon* language family [1]. In general, the task will be to transform source models to a target model. Hence, in this exercise you are tasked to develop two model transformators.

1.1 Task 1: Transforming State Machines to Petri Nets

The first task is to implement a model transformator from state machines to Petri-Nets using the *Epsilon Transformation Language* (ETL) [2].

- Install and understand the Epsilon transformation engine.[1]
- Declare a model transformation that translate *state machine* model instances to equivalent *Petri-Net* model instances.
- Test your model transformation providing it with various state machine instances.

1.2 Task 2: Transforming UML Class Diagrams to ECore Models

- Declare a model transformation that translates *class diagrams* to *Ecore* models.
- Test your model transformation providing it with various class diagrams.

Both transformations must be implemented as `*.etl` declaration within an Eclipse plugin project, accompanied by several example state machine (`*.statechart`) instances and class diagrams (`*.classdiagram`), respectively. These files must be handed in on the day before the next exercise.

[1] https://www.eclipse.org/epsilon/

1.3 Additional Information

- Epsilon[2], is a family of languages for model-to-model transformation, model validation, comparison.
- Epsilon tutorial[3], is a small tutorial on model-to-model transformations using *Epsilon*.
- A sample plugin-project[4] is provided containing a standalone Epsilon engine linked to a popup menu entry *"Epsilon Model to Model"*.

References

[1] Dimitrios Kolovos, Louis Rose, Richard Paige, and A Garcıa-Domınguez. The epsilon book. *Structure*, 178:1–10, 2010.

[2] Dimitrios S Kolovos, Richard F Paige, and Fiona AC Polack. The epsilon transformation language. *ICMT*, 8:46–60, 2008.

[2] https://www.eclipse.org/epsilon/
[3] https://www.eclipse.org/epsilon/examples/index.php?example=org.eclipse.epsilon.examples.rss2atom
[4] The project can be found on the MOST website in the exercise section.