Installation Guide

For

Vehicular Architectural Blended Modeling in EAST-ADL

(Timing and Variability Packages)

1. Prerequisites

- Eclipse IDE for Java Developers (we utilized version: 4.21.0.20210910-1200, build id: 20210910-1417)
- Xtext (we utilized version: 2.25.0.v20210301-1429, build id: R20210301-0843)
- EATOP tool for EAST-ADL graphical modeling

  You can download EATOP tool at: http://synligare.eu/Tooling.html

2. Download Instructions

EAST-ADL blended modeling repository is available on GitHub: https://github.com/MDH-BUMBLE/EASTADL-Blended

There are three folders as shown in **Figure 1**. The description of each folder is as follows:

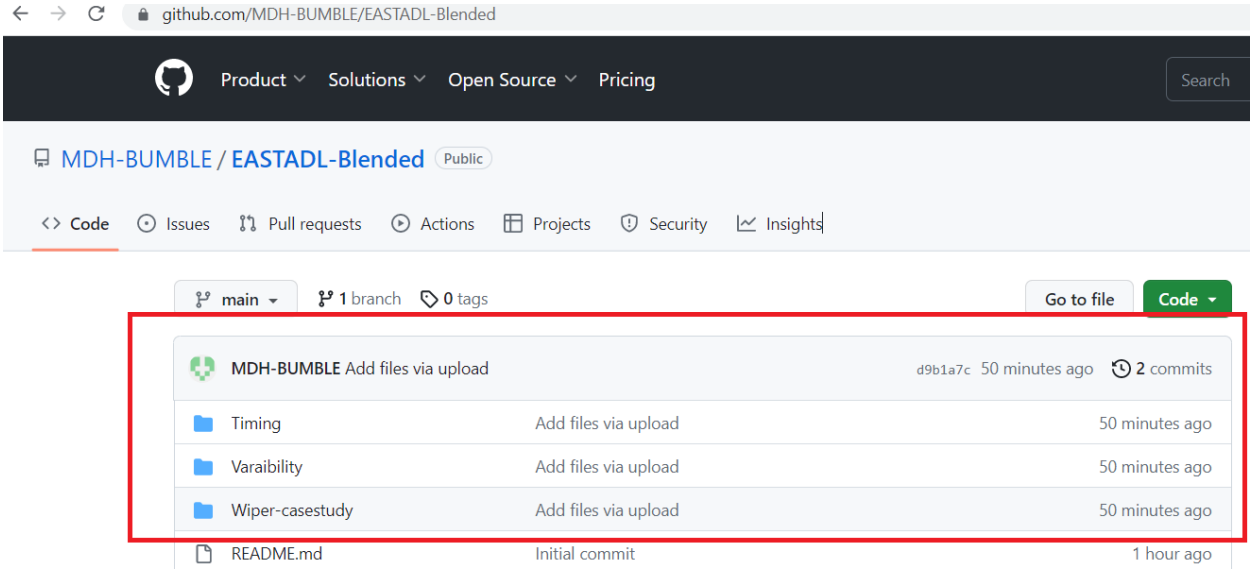

Figure 1: EAST-ADL blended modeling repository on GitHub

- The timing folder contains three project archive zip files as shown in **Figure 2**. TimingDSL.zip archive file contains source code for EAST-ADL timing grammar in Xtext. Furthermore, it also contains source code for EAXML parser and content assistance in textual editor. Timing-integration.zip archive file contains the logic for change propagation from textual to graphical editor. Finally, TimingRuntime.zip contains the sample instance model for textual editor.

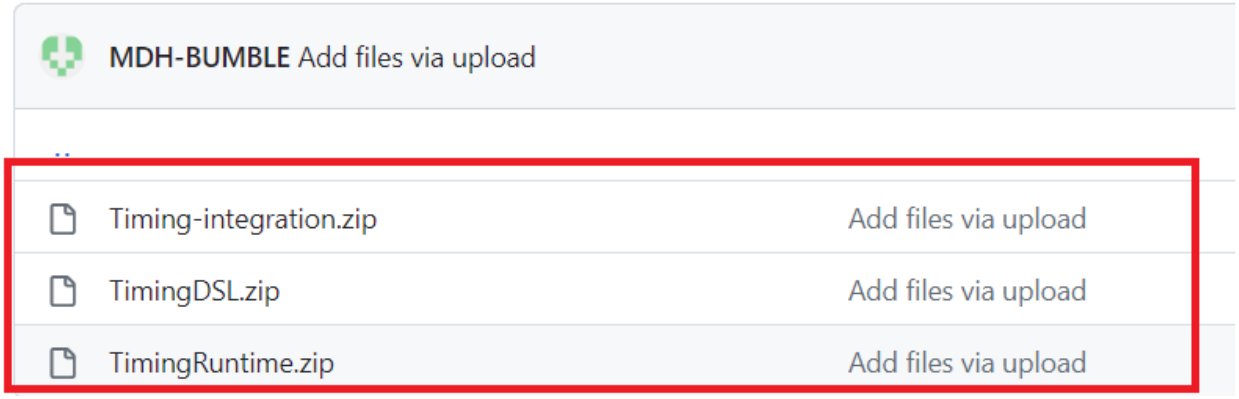

Figure 2: Project archive files under timing folder

- The variability folder contains three project archive zip files as shown in **Figure 3**. VariabilityDSL.zip archive file contains source code for EAST-ADL variability grammar in Xtext. Furthermore, it also contains source code for EAXML parser and content assistance in textual editor. Variability-integration.zip archive file contains the logic for change propagation from textual to graphical editor. Finally, VariabilityRuntime.zip contains the sample instance model for textual editor.

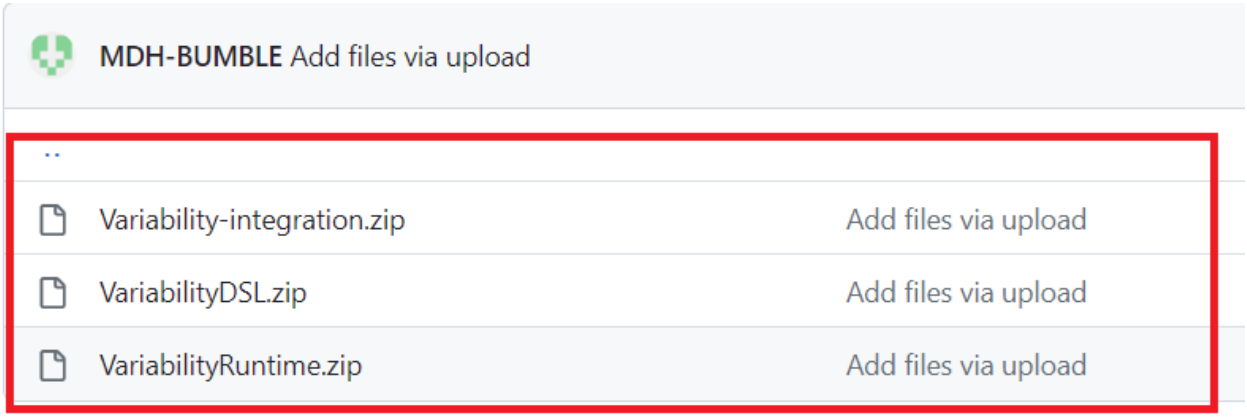

Figure 3: Project archive files under variability folder

- The wiper-casestudy folder contains wiper use case as EAXML file (BasicWW3.eaxml) that can be loaded in EATOP for experimentation.

2.1 Import Projects in Eclipse

You can import projects in eclipse like: - open file menu and navigate to “import” and select “project from folder or archive” and select the path of project archive zip file. Subsequently, all projects can be imported successfully into Eclipse as shown in **Figure 4**.

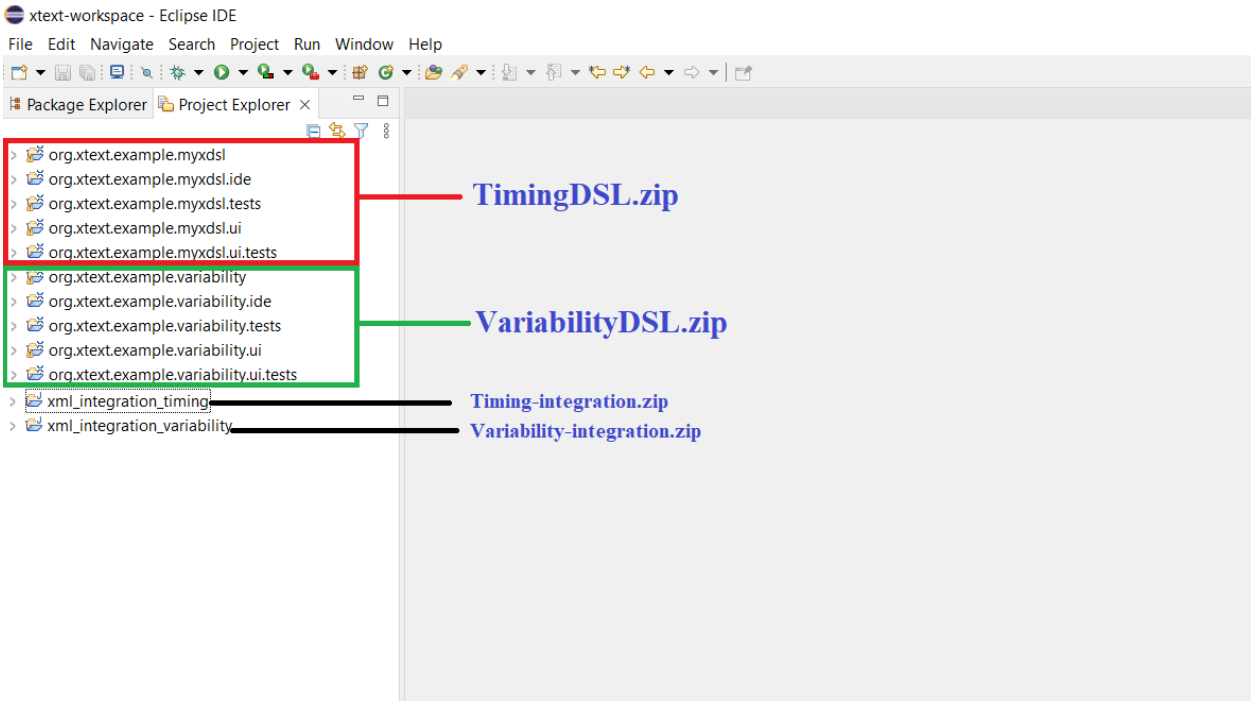

Figure 4: Imported Projects in Eclipse

In the same way, instance models (TimingRuntime.zip and VariabilityRuntime.zip) can be imported in Eclipse runtime as shown in **Figure 5**.

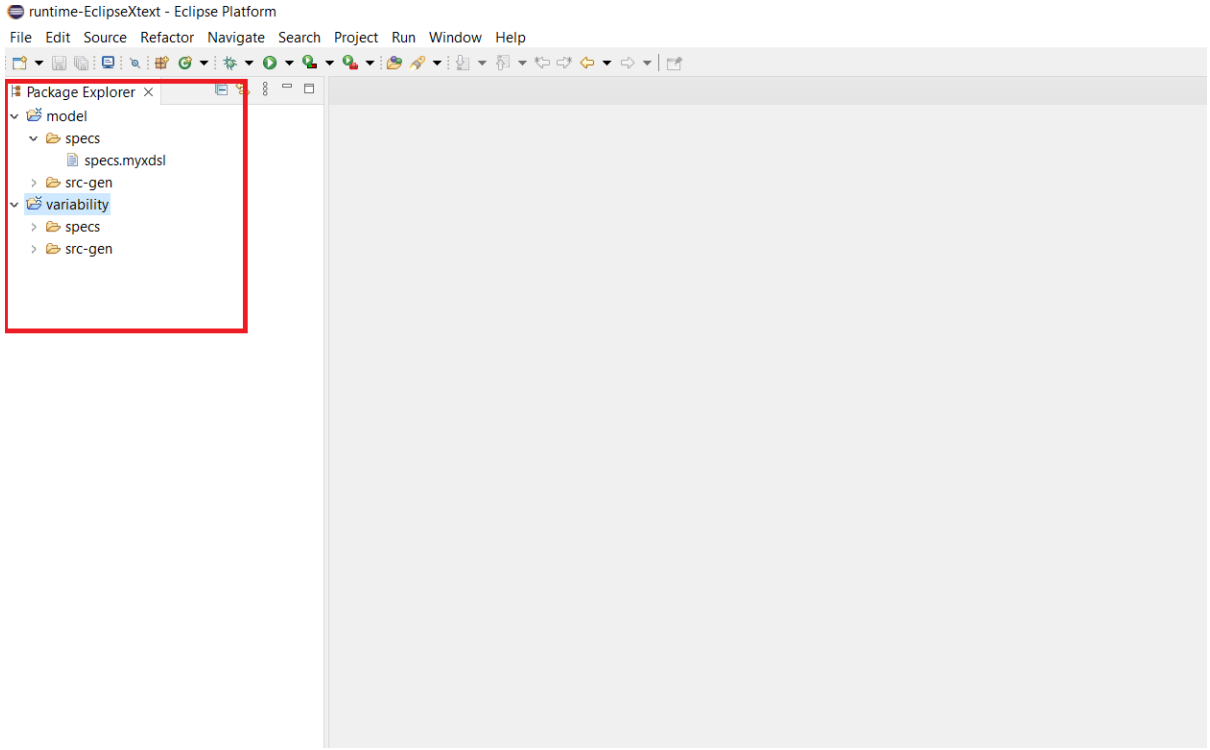

Figure 5: Import Projects in Eclipse Runtime

2.2 Import / Open Wiper Case Study in EATOP

You can create a new project in EATOP – File--New—"EAST-ADL project". Subsequently, drag / drop EAXML file (BasicWW3.eaxml) on project (name) and click "link" to associate it with project. Wiper case study will be opened in EATOP as shown in **Figure 6**.

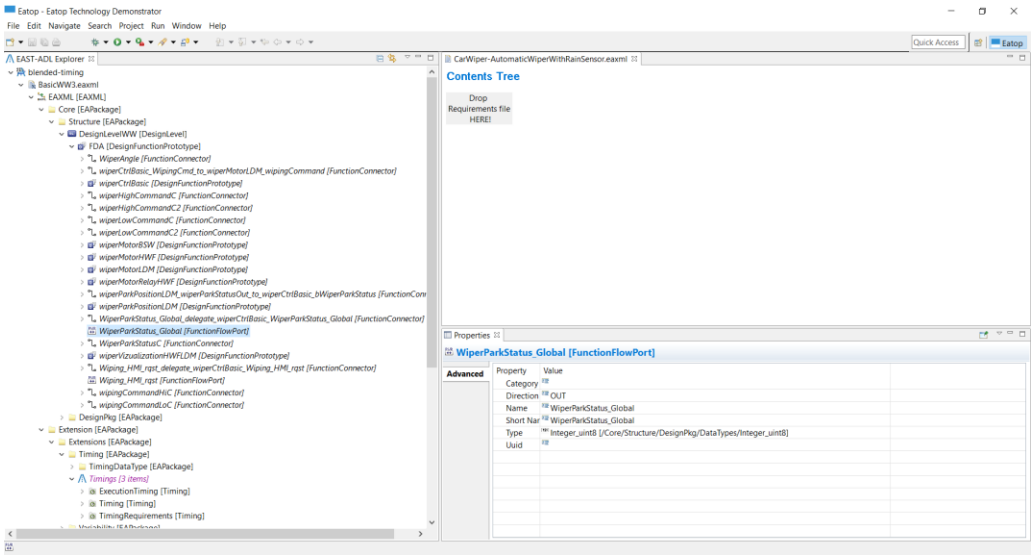

Figure 6: Wiper case study in EATOP

2.3 Execution in Eclipse

The projects such as "TimingDSL" and "VariabilityDSL" can be executed like: - navigate to Xtext DSL file - right click on it and select run as "Generate Xtext Artifacts", as shown in **Figure 7**. Subsequently, as shown in **Figure 8**, you can open Eclipse runtime as: right click on project – navigate to Run As and select Eclipse Application.

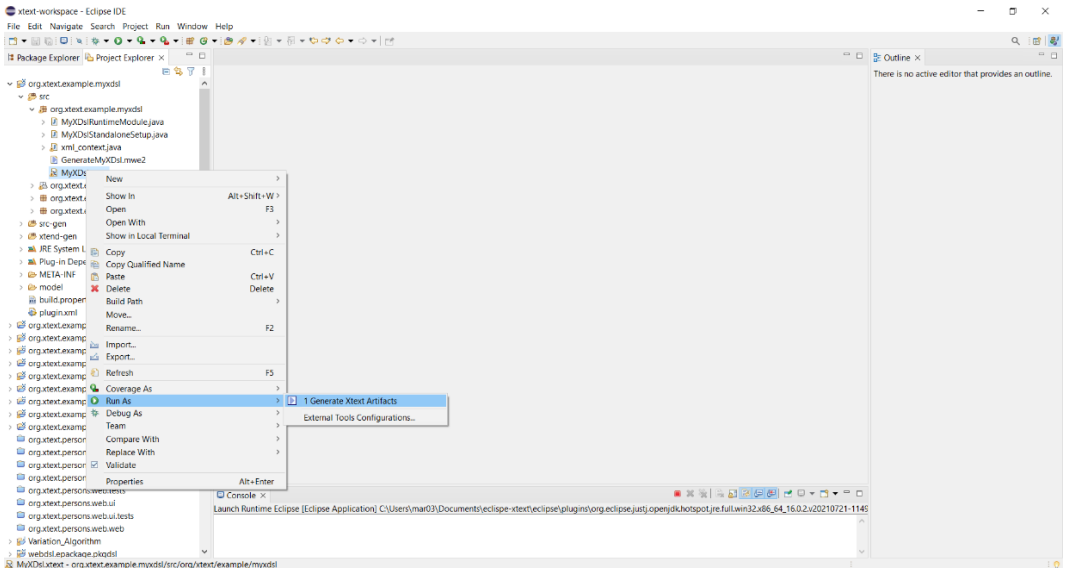

Figure 7: Execute Xtext Projects in Eclipse

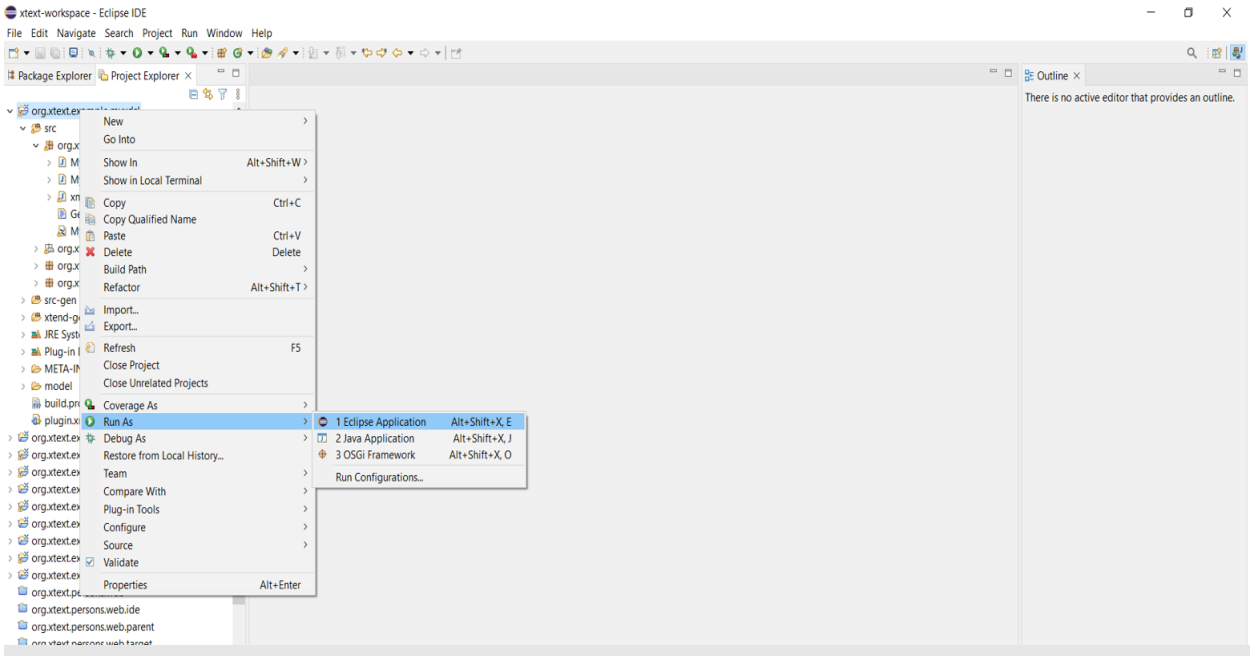

Figure 8: Execute Eclipse Runtime

The execution of projects such as "timing-integration.zip" and "variability-integration.zip" is straightforward as shown in **Figure 9**: right click main java file and select Run As - Java Application.

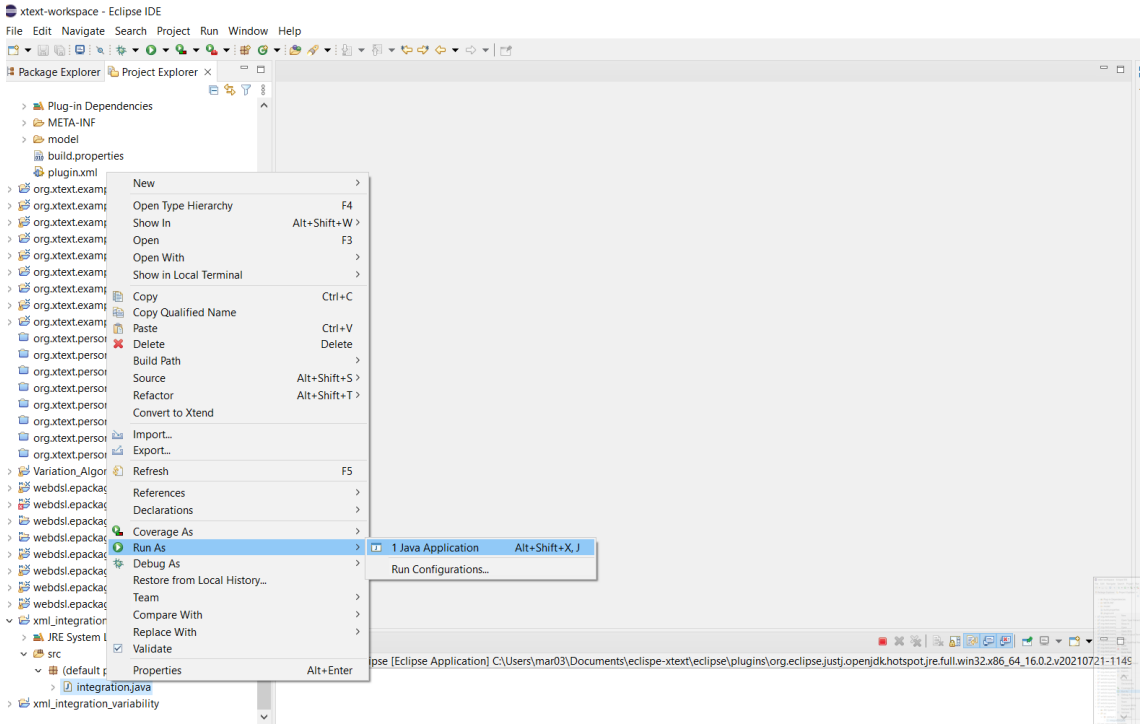

Figure 9: Execute Java Projects in Eclipse

In Eclipse runtime, you can import and visualize the sample instance models in textual editor as shown in **Figure 10**.

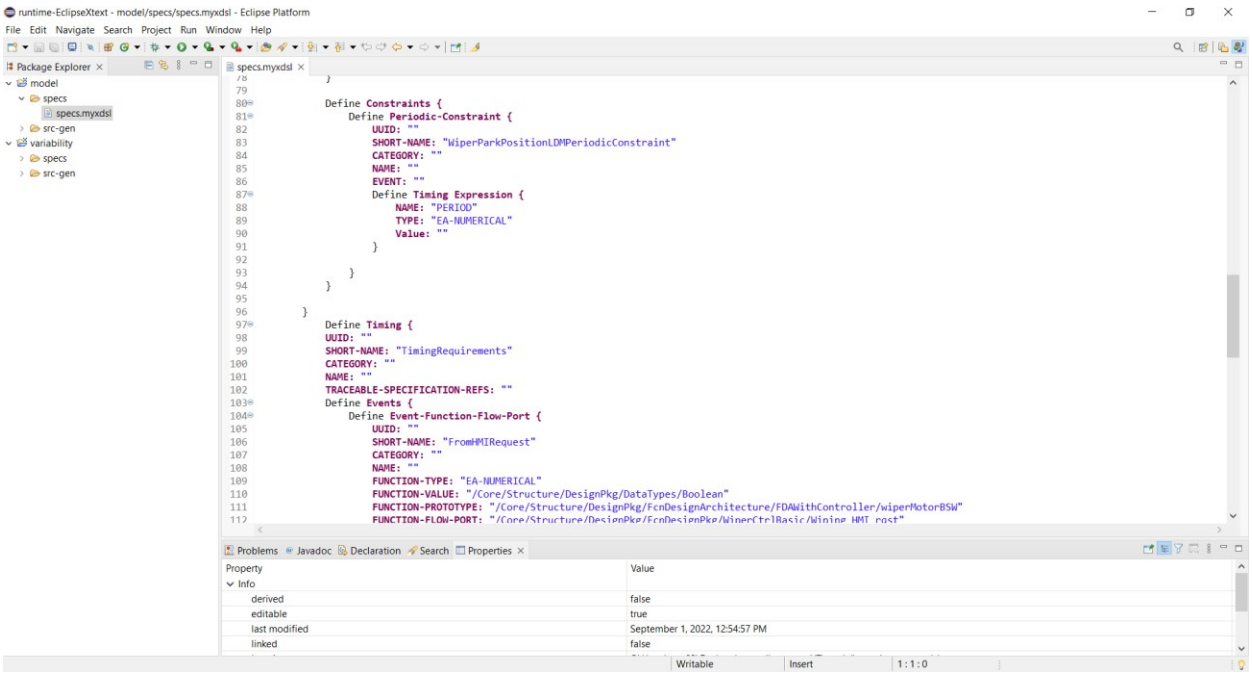

Figure 10: Sample instance models in Textual Editor

Please note that this document only provides installation guidelines. The detailed working of components and steps to reproduce results / experimentation can be found in the user manual.