

2.3 Diagram Interchange Methods

The UML transformations implemented as plugins in the Overture Tool use the XML Metadata Interchange (XMI) standard. It is created by OMG [13] with the purpose of exchanging information using the Extensible Markup Language (XML). XMI is often used as a standard for UML models but can be used for any meta model that is expressed in the OMG Meta-Object Facility (MOF).

A challenge using XMI is that the newest versions are not widespread, especially on the level of Diagram Interchange (XMI[DI]) [14]. Different tool vendors' implementations of XMI for UML vary quite a bit making the goal of free interchange of UML models difficult. The VDM to UML transformation implemented in Overture was developed with Modelio 2.2.1 in mind as the tool for visualisation, but even then it is difficult to import models correctly and there is no special information in the XMI standard as for how classes and links are placed in the diagram. In chapter 3, other methods for diagram interchange are taken into consideration.

2.4 Overture

In the mid 2000s the Overture project lead an initiative to provide an open source integrated development environment (IDE) for VDM and its various dialects [9]. This included the object oriented version of VDM, called VDM++. The Overture tool extends the VDMJ command line tool with a graphical user interface (GUI) provided by the Eclipse framework.

The core functionality of VDMJ is coupled with the Eclipse GUI components using a plugin architecture. This architecture leads to a high level of extensibility which enables plugins to be developed that extend the functionality of Overture, one of these being the bidirectional mapping between object oriented VDM languages (VDM++ and VDSL) and UML 2.1.

2.5 VDM VSCode

Overture Eclipse is currently the most complete and popular platform for VDM. However, it is getting competition from the Visual Studio Code (VS Code) platform in recent years. Using the VDM VSCode extension, VS Code can connect to a Language Server and work like an IDE while also having the advantage of being extendable to other languages.

VDM VSCode is an extension for the free source code editor Visual Studio Code developed by Jonas Rask and Frederik Palludan Madsen [16]. It provides language support for VDM++ among other VDM dialects in VS Code using the Language Server powered by VDMJ developed by Nick Battle [1].

The extension currently ~~already~~ contains many of the features of its Overture counterpart such as java code generation, debugging, combinatorial testing, etc. [16] This thesis will investigate adding translation between VDM and UML CDs as well as visualisation of the generated models.

The translation command will be similar to the already implemented Java Code Generation command. This command was implemented by taking the existing code

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