

The EXPRESS-UML Project Demonstrations

This document explains the demonstrations of the EXPRESS/UML mapping software implemented as part of the project.

Table of contents

1 Initial exff V0.1 Demonstration.....	2
1.1 EXPRESS to UML.....	2
1.2 UML to EXPRESS.....	2

1. Initial exff V0.1 Demonstration

1.1. EXPRESS to UML

The initial EXPRESS/UML mapping software was developed as a proof-of-concept as part of the early exff idea. A subset of EXPRESS Edition 1 can be converted into UML 1.5 static class diagram constructs. The EXPRESS text schemas were converted into the XML representation used in the STEP Modules Repository (see [the STEPMod DTD](#) or [the DTD as text to Save as](#)) and then converted to UML 1.5 XMI files using XSLT. Additionally, a few EXPRESS structural constraints are mapped into OCL to test the concepts. The architecture of the initial demo is shown in Figure 1.

exff V0.1 Architecture

ISO 10303-25 EXPRESS to XMI Binding (Part 25) is a standard being developed in ISO as part of the STEP suite of standards. It defines a mapping from EXPRESS 1 into UML 1.5. While the mapping defined here is in the spirit of Part 25, it is not yet identical. Part 25 Edition 1 is complete and future releases of exff will fully support Part 25.

Example schemas and the resulting XMI files are available as follows.

- the ISO 15926-2 Life cycle integration schema as [EXPRESS](#), [XML per the STEPMod DTD](#), and [XMI](#)

1.2. UML to EXPRESS

The early exff work also implemented a proof-of-concept UML class diagrams to EXPRESS translation. A smaller subset of capability was implemented than for the reverse direction. UML allows structures that cannot be easily mapped into EXPRESS (e.g. unnamed Associations) so guidelines were written explaining how to create UML that would map successfully. This work showed the beginning of what would be a "UML Profile for EXPRESS". A UML profile is a set of guidelines, stereotypes and other requirements defining a specialized use of the more general UML language.

Screenshots from this demo are available (as). The [template as XMI](#) used in the demo contains built-in datatypes and other constructs supporting the translation (i.e. the UML Profile for EXPRESS).