

OCL_EMA2Java

An overview to the
status of the EMA project
OCL_EMA2Java

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Language/Tool at a Glance

- Name: OCL_EMA2Java
- Developed by: Ferdinand Mehlan

- Purpose of the language / tool:
 - Extend the OCL2Java generator with EMA specific features
 - Verify these constraints on EMA models
 - Verify non-functional properties (NFP) on EMA using OCL

Technical Briefing

- Can be found in: github:
 - https://github.com/EmbeddedMontiArc/OCL_EMA2Java

- Open accessible: Yes
- MC version: 4.5.3
- Uses: OCL2Java, tagging, OCL, SIUnit

- Current state:
 - not stable
 - Old project, contains legacy code
 - Uses old OCL version, pre-grammar rework
 - Witness generation only proof-of-concept level

Algorithms and Functionality

- OCLEMA2JavaInplaceVisitor, OCLEMA2JavaDeclarationVisitor
 - Extend the OCL2Java visitors to integrate EMA specific code
 - Uses realThis pattern
 - (experimental) witnesses created in generated code

- OCLEMA2Java extends OCL2Java
 - Entry point
 - Same as OCL2Java but EMA specific
 - Test in OCLEMA2CoCosTest

Algorithms and Functionality

- EMAOCLVerifyTool
 - CLI
 - Loads OCL model and EMA model
 - Can load tags from tagging language
 - Generates Java code from OCL
 - Executes on EMA model
 - Saves witnesses to file
- OCLVerifyToolTest
 - Multiple tests which include:
 - EMA model with tags
 - OCL for semantic constraints

Algorithms and Functionality

- EMANFPWitness
 - This class contains witnesses for an OCL constraints.
 - The generator includes code to create such objects
 - Uses hardcoded names and structure to work
 - Experimental, not very robust

Tests

- This project is missing some test coverage and code stability
- Reasons being:
 - Split into OCL2Java and OCLMA2Java
 - Migration to EmbeddedMontiArc -> OCL_EMA2Java
 - Shift of attention to improving underlying OCL language