

AlphaZ Repository

AlphaZ system is now designed based on eclipse plug-in projects for better collaboration with CAIRN group in IRISA, France. We currently have two repositories hosting different parts of the system, based on where it was initially developed.

Individual directories (with prefix like fr.irisa.cairn or edu.csu.melange) are individual projects in Eclipse, and it is designed to be checked out from Eclipse as projects.

Structure

CSU Repository

```

-----trunk
      |
      |---mde      // AlphaZ extensions based on MDE
      |   |
MDE   |   |---edu.csu.melange.alphaz.mde      // AlphaZ system with
      |   |
part  |   |---edu.csu.melange.alphaz.mde.tests // Test project for MDE
      |   |
alphabets |   |---edu.csu.melange.alphabets      //Xtext parser for
for alphabets |   |---edu.csu.melange.alphabets.ui      //Xtext generated editor
      |   |
      |   |---edu.csu.melange.alphabets.kermeta.visitor.gen // Project
used for visitor code generation
      |   |
      |   |---edu.csu.melange.alphaz.commands      // projects
for scripting interface
      |   |   |---.commands.edit      // Tree
editor for Command IF model for command description
      |   |   |---.commands.editor
      |   |   |---.commands.scripts.mde      //
Scripts that are generated completely automatically from commands project
      |
      |---tools      // Tools that are shared among projects
      |
      |---features      // Eclipse features and update site projects for
public release
      |   |
      |   |--- edu.csu.melange.alphabets.developer.feature // Group all
the plugins needed for Development
      |   |--- edu.csu.melange.alphabets.developer.update site // Used for

```

```

updating the Dev Release Website
    |    |--- edu.csu.melange.alphabets.users.feature // Group all the
plugins needed for Public Release
    |    |--- edu.csu.melange.alphabets.users.updatesite // Used for
updating the Public Release Website

```

INRIA gforge

The gecost SVN has a large number of eclipse projects. The list below are for projects that are used by AlphaZ and PolyhedralIR, and is not exhaustive. Consult MANIFEST.MF in `edu.csu.melange.alphaz.mde` for complete list of required plug-ins.

The PolyhedralIR chain. Following plug-ins are

```

gecos/trunk
  |
  |---polytools-emf
        |
        |---org.polymodel.scop // Project
for representing/manipulation Static Control Loops (SCoPs)
        |---org.polymodel.scop.cgenerator // C code
generation from Scop
        |---org.polymodel.scop.dtiler // D-Tiling
algorithm implemented on Scop
        |---org.polymodel.algebra // Model
for representing Integer (Linear) Algebra, used for library independent
representation of polyhedra
        |---org.polymodel // Model
for basic polyhedral objects (Domain/Function) and interface for external
polyhedral libraries for manipulating them
        |---org.polymodel.isl //
Implementation of polymodel using ISL
        |
        |---fr.irisa.cairn.jnimap.cloog // JNI
binding for ClooG (cloog-isl)
        |---fr.irisa.cairn.jnimap.isl // JNI
binding for ISL
        | // depends
on plug-ins under cairn-public/tools/jnimapper for changing bindings to ISL
(cairn-public is a separate SVN repository)
        |---org.polymodel.polyhedralIR // Common
IR for Polyhedral programs. Closely follows AlphaZ AST
        |---org.polymodel.polyhedralIR.codegen // Code
generation framework for PolyhedralIR and implemented code generators

```

The following plug-ins are the minimal plug-ins required from Gecos for using CS editor (the scripting interface). Modifying these plug-ins are necessary for extending the scripting interface, but modification must be done with great care.

```
gecos/trunk
| --- core
|
| --- fr.irisa.r2d2.gecos.framework
| --- fr.irisa.r2d2.parser.runtime
| --- fr.irisa.r2d2.gecos.cseditor
```

Location

CSU

Anonymous read only access is available through http. The repository is located at '<http://www.cs.colostate.edu/AlphaZsvn/Development>'

For developers in CSU, the following location should be used with your CS login
`svn+ssh://svn.cs.colostate.edu/s/chopin/e/proj/AlphaZ/AlphaZ_SVNRepositories/Development/`

INRIA

Anonymous read only access is available for the gecos repository. Follow instructions at https://gforge.inria.fr/scm/?group_id=510 for Gecos SVN and https://gforge.inria.fr/scm/?group_id=2888 for CAIRN-public

URLS are (for Anonymous and Developer access):

<https://scm.gforge.inria.fr/svn/gecos/trunk>
<https://scm.gforge.inria.fr/svn/cairn-public/trunk>

For developers that seek to develop within PolyhedralIR, write access may be needed. To acquire write access to the gforge repositories:

- Create a new account at <https://gforge.inria.fr/> (upper right corner)
- Once the account is created, log-in and access GeCoS website <https://gforge.inria.fr/projects/gecos>
- Request to join the group from the link at the bottom of list of developers

Common Problems

You may have some error connecting to the repository through eclipse

- When your connection gets lost while trying to connect:
 - Go to Preferences→Team→SVN and change the SVN interface to SVNKit(Pure Java) and try again.
 - The default SVN interface uses JNI bindings and it may not work depending on the machine. Pure Java version should.

External Plug-ins

For current version of AlphaZ following features from external providers are required:

- Starting Point: Eclipse 3.7.1 with Modeling Tools installed
- From Indigo Update Site (<http://download.eclipse.org/releases/indigo>), under Modeling category:
 - MWE 2 language SDK (2.0.1)
 - MWE 2 runtime SDK (2.0.1)
 - MWE runtime SDK (1.1.1)
 - Xpand SDK (2.0.1)
 - Xtext SDK (2.0.1)
- From itemis Update Site (<http://download.itemis.com/updates/milestones>):
 - Xtext Antlr Runtime (2.0.0)
 - Xtext Antlr SDK (2.0.0)
- From GeCoS update site, under Gecos core category (<http://gecos.gforge.inria.fr/fullupdates/stable/>):
 - Gecos Framework Feature (1.0.0)
- Optionally, install SVN support for eclipse to access source codes in the repositories

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<https://www.cs.colostate.edu/AlphaZ/wiki/> - **AlphaZ**

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