

ALMA Common Software Basic Track

Software Engineering Basics





Software Module

- ✧ Set of related files grouped together in a directory structure
- ✧ Includes
 - ✧ Makefile
 - ✧ Implementation files (classes)
 - ✧ Unit tests
- ✧ Usually, a single component is stored in a single software module



Directory Structure

- ✧ <module>/idl Generic interface definition
- ✧ <module>/include Language specific header files (C++)
- ✧ <module>/src Source code
- ✧ <module>/lib Application/test code libs*
- ✧ <module>/bin Executables*
- ✧ <module>/test Test code (separated from app. code)

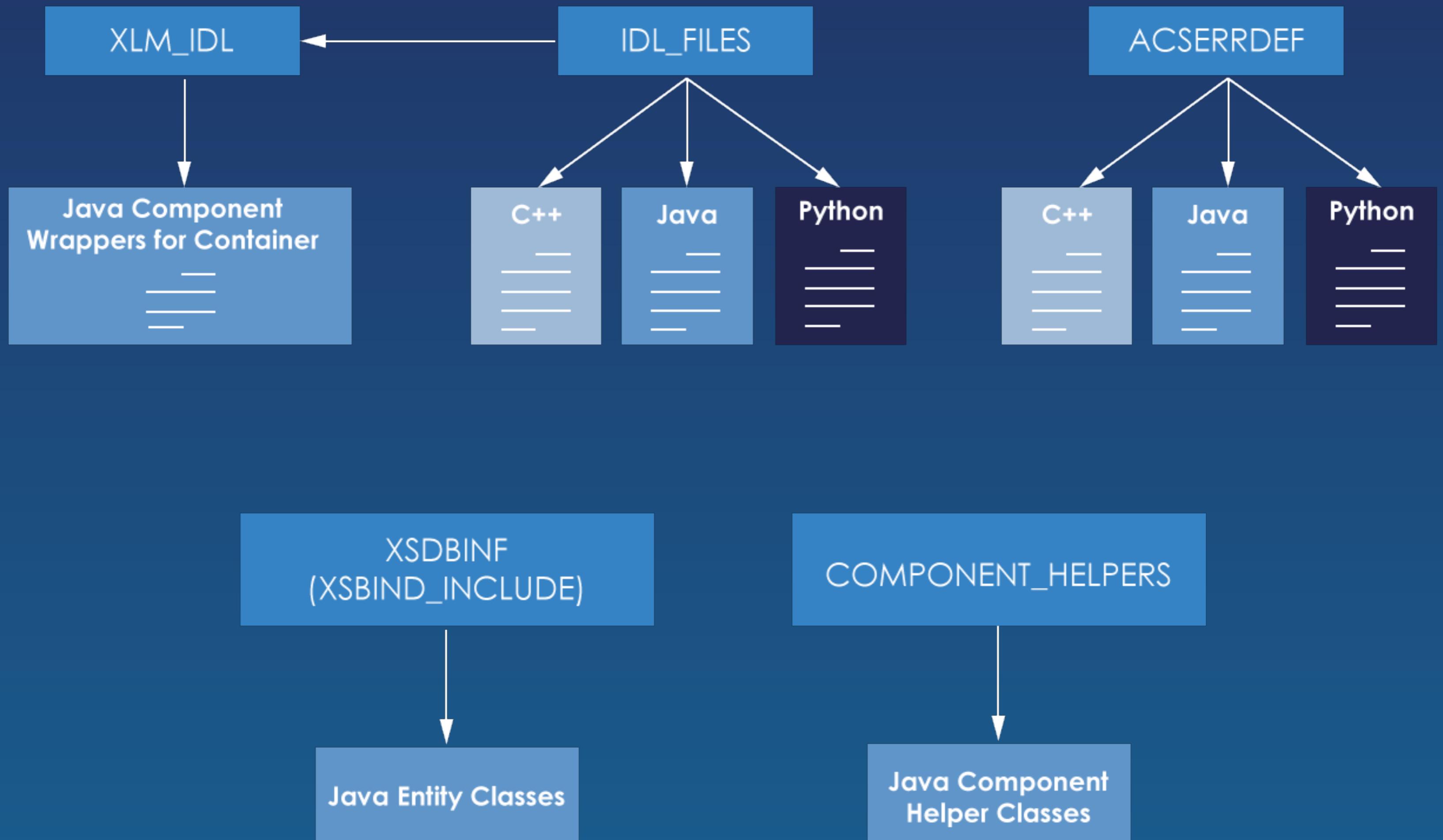
(*) Populated by the Makefile



ACS Makefile

- ✧ Project wide set of rules, centrally managed: `$ACSROOT/include/acsMakefile`
- ✧ Each developer has to add only the module specific part → file names
- ✧ Based on a normal `Makefile`
- ✧ Strictly correlated to the environment variables and software module standards

ACS Makefile: file sources and products





Test directory

- ✧ Place for all module specific test files
- ✧ Contains its own `Makefile`
- ✧ Usually contains a small CDB for component testing (deployment example)



ACSROOT

- ✧ Default location of installed ACS binaries and libraries
- ✧ Directory structure similar to module structure
- ✧ Reference through the `$ACSROOT` environment variable
- ✧ Populated during build, if no `INTROOT` defined
- ✧ Convention: **do not overwrite it**, use an `INTROOT` instead (next slide)



INTROOT

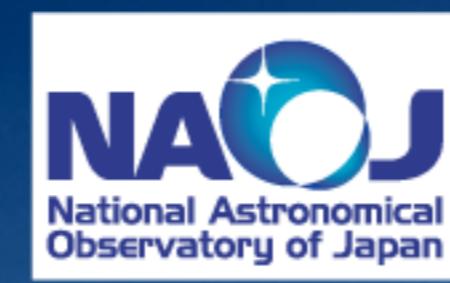
- ✧ Location for binaries and libraries for system parts under development
- ✧ Directory structure almost identical to ACSROOT
- ✧ Reference through the \$INTROOT environment variable
- ✧ Populated through Makefile build (make install)



getTemplate utility

- ✧ Tool to create ACS directory structures
- ✧ Also provides templates for files according to SE standards
 - ✧ Makefile
 - ✧ C++ headers and sources
 - ✧ ...
- ✧ Executables: `getTemplate`, `getTemplateForDirectory`

Questions?



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