Merging and Refactoring Software AG IDL

IDL refactoring is a process that checks all programs and structures in a single library if they contain identical groups. All identical groups are extracted in a single structure in the same library, and replaced with a structure reference. If a structure exists that is identical to the structure to be created, all references will point to the existing structure and a new one will not be created. Two groups are identical if each group has the same number and order of parameters, and each parameter in one group has the same name and the same type as the corresponding parameter in the other group. IDL refactoring can be performed on single or multiple IDL files.

This chapter covers the following topics:

- Refactoring a Single IDL File
- Merging and Refactoring Multiple IDL Files
- Notes on Merging
- Command-line Mode

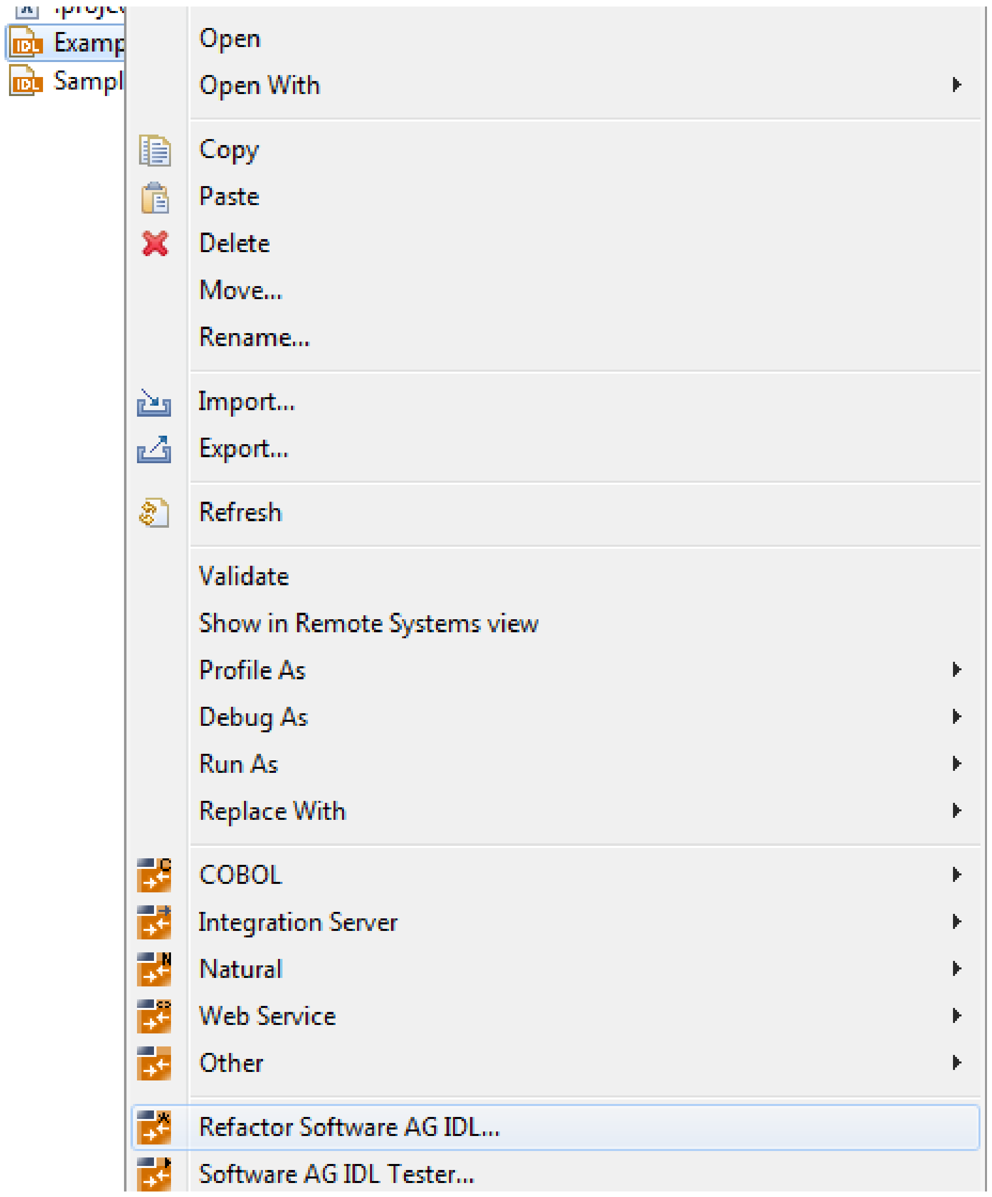
Refactoring a Single IDL File

In the case of a single IDL file, all programs and structures in every single library are checked if they contain identical groups. You will be asked for the name of the new IDL file.

To illustrate refactoring, create an example IDL file *Example.idl*:

```
library ’EXAMPLE’ is
  program ’SUM’ is
    define data parameter
    1 Operands
      2 Operand1        (I4)  In
      2 Operand2        (I4)  In
    1 Function_Result   (I4)  Out
    end-define

  program ’SUBTRACTION’ is
    define data parameter
    1 Ops
      2 Operand1        (I4)  In
      2 Operand2        (I4)  In
    1 Function_Result   (I4)  Out
    end-define

  program ’MULTIPLICATION’ is
    define data parameter
    1 Operands
      2 Operand       (I4)  In
      2 Multiplier    (I4)  In
    1 Function_Result (I4)  Out
    end-define
```

By selecting this file in the workbench, the **Refactor Software AG IDL...** command in the context menu is enabled.



Executing the command and entering the target IDL file will result in a file *Example.refactored.idl*:

```
library ’EXAMPLE’ is
  struct ’Operands’ is
    define data parameter
    1 Operand1    (I4)
    1 Operand2    (I4)
    end-define

  program ’SUM’ is
    define data parameter
    1 Operands          (’Operands’)  In Out
    1 Function_Result   (I4)          Out
    end-define

  program ’SUBTRACTION’ is
```

```
    define data parameter
    1 Ops               ('Operands')  In Out
    1 Function_Result   (I4)          Out
    end-define

  program 'MULTIPLICATION' is
    define data parameter
    1 Operands          In Out
      2 Operand       (I4)
      2 Multiplier    (I4)
    1 Function_Result (I4)      Out
  end-define
```

As can be seen from above, the common group with parameters

```
Operand1    (I4)
Operand2    (I4)
```

is extracted as a single structure and the former groups are transformed to structure references. However, the group `Operands` from the `MULTIPLICATION` program is not replaced, because its members have different names, although parameters are equal in quantity and type.

Now, let us assume the *example.idl file* already contains a structure such as:

```
struct 'strct' is
   define data parameter
    1 Operand1    (I4)
    1 Operand2    (I4)
    end-define
```

Although its name differs, the structure's signature (number of parameters, parameter names and types) is the same as the one to be created. In this case, a new structure will not be created, but all references will point to the existing one - `strct`.

Merging and Refactoring Multiple IDL Files

If there is more than one IDL file, all files are first merged and then refactoring is run on the assembled file. You will be asked for the new IDL file's name.

To illustrate IDL merging, create two IDL files *Example1.idl* and *Example2.idl* with the following content:

- **Example1.idl**

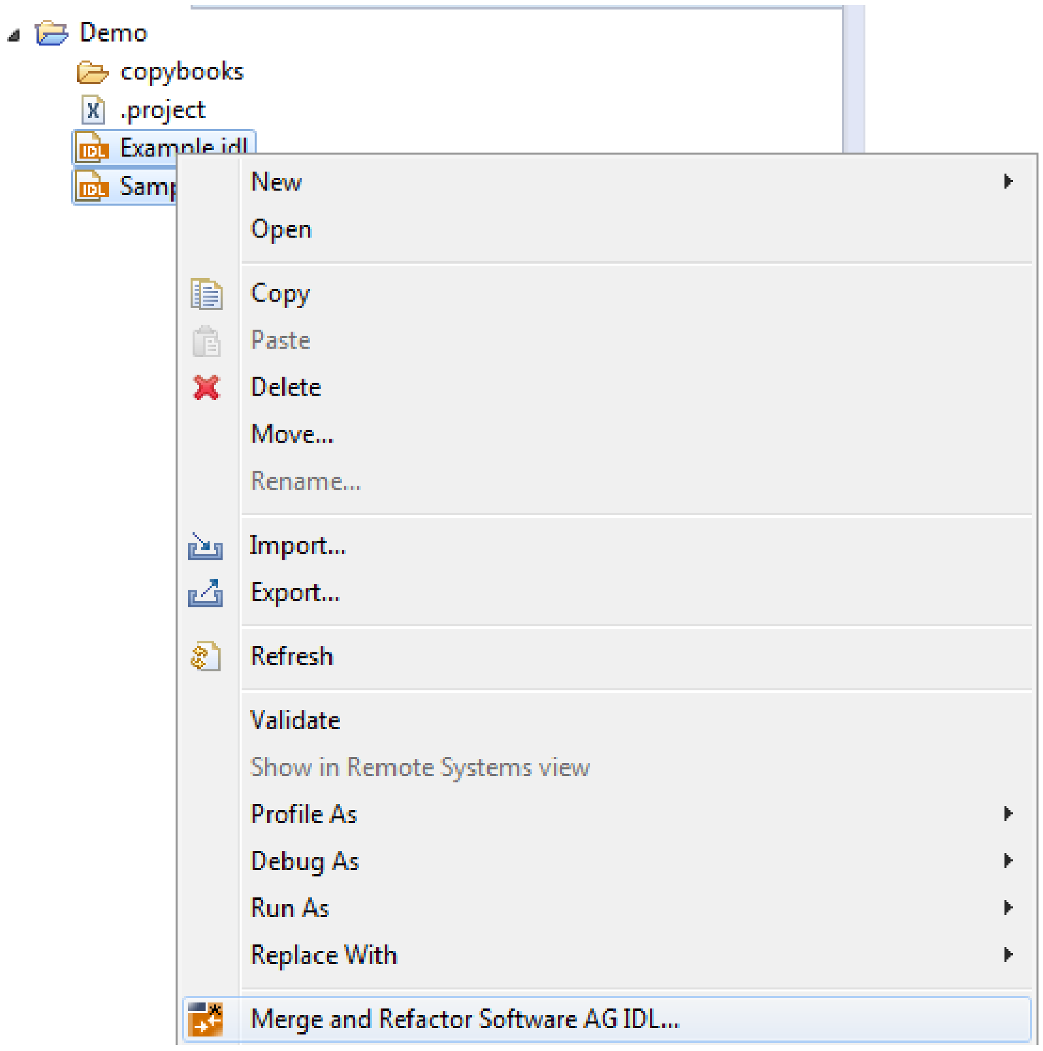
```
library 'EXAMPLE' is
    program 'SUM' is
        define data parameter
        1 Operands
          2 Operand1      (I4)  In
          2 Operand2      (I4)  In
        1 Function_Result (I4)  Out
        end-define

    program 'MULTIPLICATION' is
        define data parameter
        1 Operands
```

```
              2 Number        (I4)  In
              2 Multiplier    (I4)  In
            1 Function_Result (I4)  Out
            end-define
```

- **Example2.idl**

```
library ’EXAMPLE’ is
    program ’SUBTRACTION’ is
        define data parameter
        1 Ops
          2 Operand1      (I4)  In
          2 Operand2      (I4)  In
        1 Function_Result (I4)  Out
        end-define
```

Selecting these two files in the workbench will enable the **Merge and Refactor Software AG IDL...** command in the context menu.



Executing this command and entering the target IDL name will result in exactly the same file content as *Example.refactored.idl*. As the two source IDL files have libraries with one and the same name, an attempt to merge their programs is made. If successful, the result is a single EXAMPLE library containing all programs from the both libraries. This resulting library is then refactored as described above.

Notes on Merging

- Two libraries with different names will be simply copied into the target IDL file.
- For libraries with same names, an attempt to merge their programs and structures will be made. For a merge operation to be successful, the name of each program and structure must be unique. The only exception are pairs of programs or structures that are exactly the same. For example, if *Example2.idl* above contains the `MULTIPLICATION` program from *Example1.idl*, merging will be successfully completed.

Command-line Mode

See *Using the EntireX Workbench in Command-line Mode* for the general command-line syntax. There are no specific command-line options for IDL Refactoring. If a single IDL file is passed, it will be refactored. If more than one IDL file is passed, they will be merged into one IDL file and it will be refactored. Example:

```
<workbench> -idl:refactor C:/Demo/example1.idl C:/Demo/example2.idl
```

where `<workbench>` is a placeholder for the actual Workbench starter as described under *Using the EntireX Workbench in Command-line Mode*.