



User Survey of SCE

Topics

- **General remarks**
- **Benefits**
- **Drawbacks and Requirements**
 - **Coding rules**
 - **Source code structure**
 - **Precompiled code**
- **Other suggestions**



User Survey of SCE

General remarks

- **Small number of responses**
- **People use the PRISM SCE/SRE tools without knowing it**
- **Adaptation to new software is slow**



User Survey of SCE

Benefits mentioned

- **Portability / Easy to port to new platforms [4]**
- **Ease of use [3]**
- **Consistent/standard environment [3]**
- **Only modified files are compiled [2]**

Design principles

- **Portability**
- **Ease of use**
- **Common look&feel with all models and platforms**
- **Efficiency**

- **Supporting replacement of components in coupled models**
- **Facilitating exchange of (component) models**

A benefit not mentioned explicitly was modularity in terms of components in ESM

This was one of the main requirements to the PRISM system in the PRISM contract and DoW

- **no centre feels the urgent need for a system that supports plug-in-plug-out of components in ESM**
- **Did PRISM just anticipate future needs ?**
- **Will this ever be an urgent need ?**

Relax this requirement?

At least one returned questionnaire stressed the benefit of that aspects in the SCE (M&D)

- **M&D handles a large number of (component) models**
- **M&D supports model users without indepth knowledge of the model**

Component modularity may become more important when PSI support MIP projects like GEMS or ENSEMBLES etc.



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Make tools ,component and ESM compliant‘ ?

or

Make the models ,PRISM compliant‘ ?

- **Coding rules**
- **Component modularity**



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Make tools ,component and ESM compliant‘ ?

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Make the models ,PRISM compliant‘ ?

Coding rules

- **enforce ,good practices‘ in programming.**
 - 1 program unit per file (SBR, Module)
 - file name = module (unit) name
 - Standard file suffixes
 - FORTRAN90 and c(++) ANSI standard only
- **Work in progress to relax these requirements**
 - suboptimal use of the SCE tools

Make tools ,component and ESM compliant‘ ?

or

Make the models ,PRISM compliant‘ ?

Component modularity

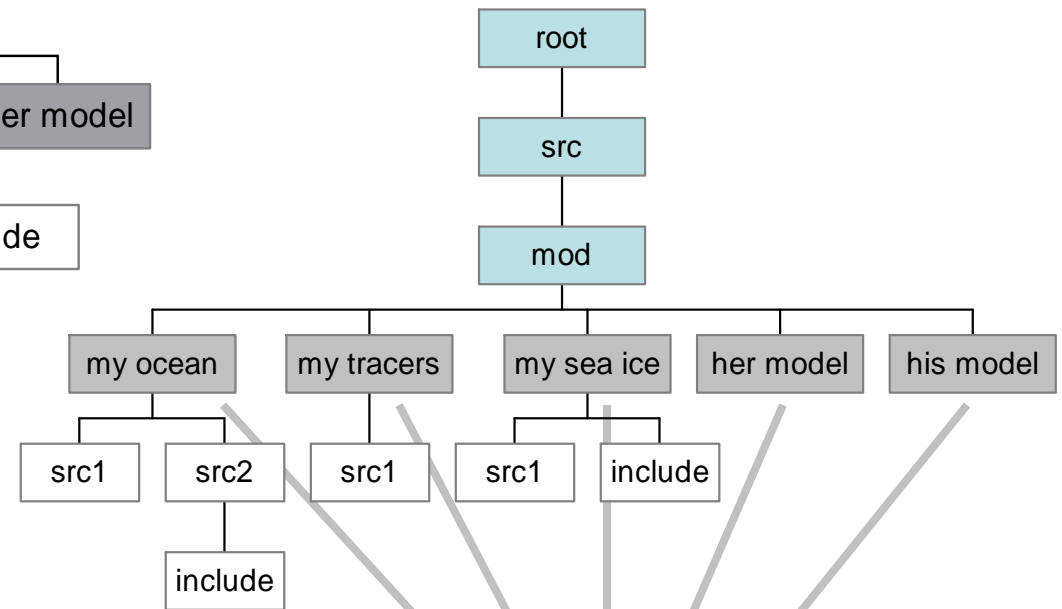
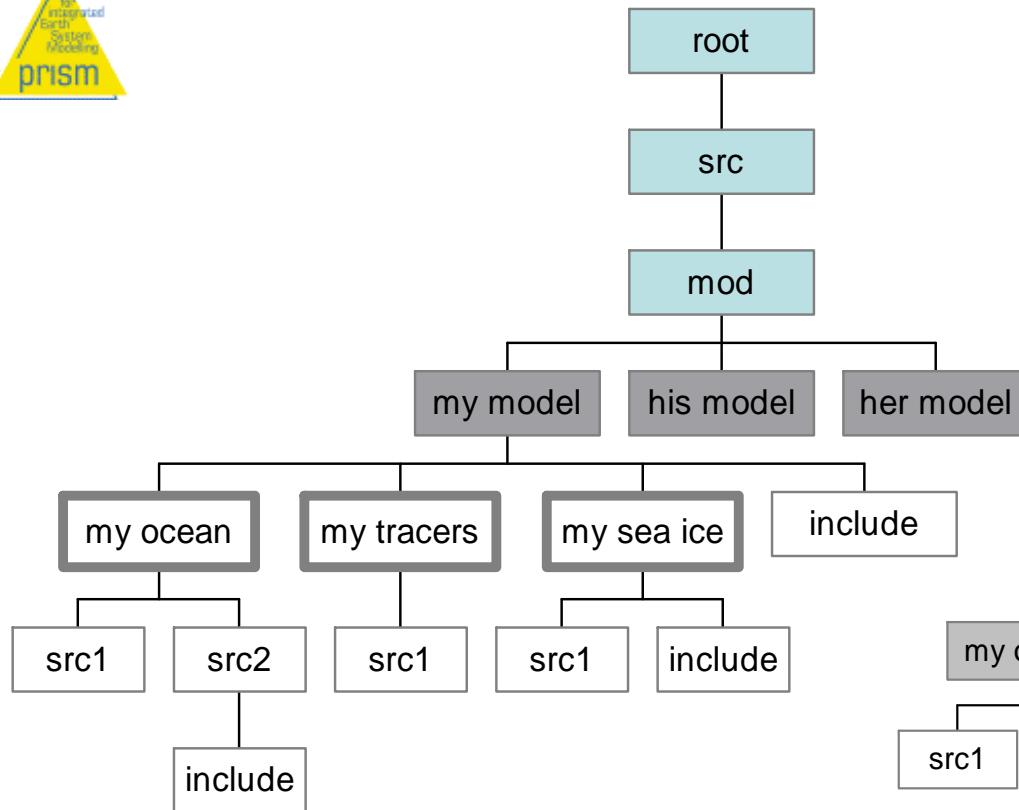
▪ Package rule

- For submodel (cloud parameterisation, sea ice, etc.)
- Clear interface between submodel and calling model

▪ Source code structure

- Enforce component modularity and pluggability of components
- Common look&feel with model codes
- [Facilitate maintenance and script writing]

User Survey of SCE



- Provide tools to convert from customer's structure to SCE required structure -or-
- Change SCE tools not to rely on the SCE source code structure

libmy_ocean.a
libmy_tracers.a

Use of precompiled Code: **Libraries / Models**

Precompiled libraries

- Done with the SCE since libraries are non-configurable

Precompiled model code

- Requires the Makefiles to react on changes of cpp flags
(on the ToDo list)

Other drawbacks and required improvements

- **„Fault-prone“**
 - Improve documentation
 - Include more consistency checks

- **„Hard to modify“**
 - Restructure header file script code base
 - Modify the compile scripts and let us do the header file base update
 - Improve documentation; step-by-step guide

Other drawbacks and required improvements

- **„Dont use m4‘**
 - May be replaced by perl, however this will not add anything beneficial for the user
 - Script generation can be done on WSs

- **„Improve user interface‘**
 - Replace positional command line parameter
 - More model dependent parameters but without trying to simulate a GUI

Other drawbacks and required improvements

- **‘Do not try to cover all cases but provide simpler scripts easier to modify‘**
 - In conflict with automating and GUI interfacing
 - Hide more of unused features at script generation time

- **‘Support non-FORTRAN code‘**
 - Any other source code processing can be integrated into the rules part in the Makefiles

**“Instead of trying to foresee the future,
we have added features as required
and will continue to do so. ”**

J. Gregory (2003)

- ... if it fits into the system and philosophy
- ... if it is really needed
- ... If we have the time to do so

- The END -

Answers to the critical points raised in the returned questionnaires have been included into the doc

- Copies available
- Put it on the web ?
(If nobody has objections)