

Chapter 4

Assembled Models

4.1 Introductory Remarks on Model Assembly

The process of model assembly into the PRISM system is marked by three milestones.

The first milestone is the adaptation of all components of the coupled model to the PRISM software, i.e. the inclusion of calls to the PSMILe library for the field exchange (Valcke et al. (2004a)). Newly written code should meet the coding rules described in Mangili et al. (2003). In addition, the model source codes have to be adapted to the Standard Compile Environment (SCE) (see Chapter 3 and Legutke and Gayler (2004)). When this is achieved, the tools for model compilation can be used which gives a common look&feel with all models on all platforms.

The next milestone is the PRISM compliant combination of the component models. It includes the adaptation of the coupled model to the Standard Running Environment (SRE) (Gayler and Legutke (2004)). An experiment should be defined and run, which is meaningful for the interpretation of the results.

The third milestone is the import to the CVS PRISM model repository to make the model accessible by the scientific community. This is done when the model has been successfully ported to the PRISM platforms, i.e. it runs on at least one site with an SGI, a Fujitsu, and a NEC machine.

Once a coupled model is adapted to the SCE and SRE at the scripting level, it is possible to prepare and run experiments through the PRISM Graphical User Interfaces (GUIs) with little effort. All models which have been assembled at the end of the PRISM project period are also interfaced to the GUI system. The way to do this for a new model is described in the PRISM User Interface and Web Services Guide by Constanza et al. (2004).

The models which have been assembled in the project are adapted to the OASIS3 coupling software, which is the direct evolution of the OASIS coupler developed since more than ten years at CERFACS, and for which a new and upgraded version was released in the first year of the PRISM project (Valcke et al. (2004a)). In parallel during the project, a completely new coupler was also developed and produced, the new parallel OASIS4 coupler. Only few prototype couplings were performed in the project with OASIS4 as part of the PRISM demonstration runs, but not within the full PRISM SCE and SRE environment and are not described here.

The stage of adaptation and assembly of the models which participated in the project is detailed below with regards to these milestones.