



European Commission's 7th Framework Programme
Grant Agreement No. **226520**

Project acronym: **COMBINE**

Project full title: **Comprehensive Modelling of the Earth System for Better
Climate Prediction and Projection**

Instrument: Collaborative Project & Large-scale Integrating Project

Theme 6: *Environment*

Area 6.1.1.4: *Future Climate*

ENV.2008.1.1.4.1: *New components in Earth System modelling
for better climate projections*

Start date of project: 1 May 2009

Duration: 48 Months

**Milestone Reference Number and Title:
M6.4: Potential predictability experiments Stream 2**

Lead work package for this milestone: WP6

Organization name of lead contractor for this milestone: KNMI

Due date of milestone: month 39, July 2012

Actual submission date: January 2013

M6.4: Potential predictability experiments Stream 2.

The M6.4 milestone concerns the realization of the second stream of potential predictability experiments (S2). The design of these experiments follows the same protocol adopted for stream 1, but now including the new initialisation schemes and model components developed within WP1-5. Most of the planned simulations are either completed, or ongoing. The list of S2 experiments is reported in Table 1. The delay of the predictability experiments with EC-EARTH is due to the delay of the new release 2.4, which is released half December. A detailed analysis of the impact of the new model components/initialisation procedures on potential predictability will be reported in deliverable D6.4 (month 54).

Partner	Model	Initialization	Model Component
CMCC	CMCC-CMS (ECHAM5 T63L95/ ORCA2L31)	Ocean and seaice initialization (1)	
MPI	MPI-ESM-MR	Ocean initialization (1)	
SMHI	EC-Earth	Sea-ice re-analysis (UCL)	Sea-ice albedo (2)
KNMI			Land-surface (3)
DMI			Stratosphere (4)
METO	HadGEM3_DPS (HadGEM3 N96L85)	–	–
CNRM	CNRM-CM	Sea-ice thickness and concentration (5)	
CERFACS	CNRM-CM	–	–

1. Historical experiments without information of observation in ocean (and/or sea ice) initialization (to be used with stream 2 prediction: Impact of initialization on the stratosphere).
2. Repeating potential predictability experiment with new LIM3 sea-ice model (delayed)
3. Impact of coupling EC_EARTH with LPJ guess on potential predictability (delayed)
4. Low-top predictability experiments (in progress)
5. Testing several nudging procedures (in progress)

Table 1. Experimental set-up for Stream 2 potential predictability simulations. CERFACS and METO are not performing potential predictability experiments.