

# Report of the ENSEMBLES RT4/RT5 Kick-Off Meeting

Paris, France

10-11 February 2005

## **Background**

The ENSEMBLES project started in September 2004 and is divided into ten Research Themes (RT). Due to the overlaps in some of the areas that RT4 and RT5 will be investigating, a good coordination between the partners involved is paramount for the success of the projects. Hence, it was agreed that it would be useful to have an RT4/RT5 kick-off meeting and Herve Le Treut (coordinator of RT4 together with Julia Slingo) offered to host it. Jean-Louis Dufresne (IPSL) acted as the local host and he indeed did an excellent job. The meeting was very successful as an introduction to the status of both RTs and opened the communication pathways among the partners. All the presentations can be found in the RT4 WebPages (<http://www.cgam.nerc.ac.uk/research/ensembles-rt4/>)

## **Purpose of the meeting**

- To ensure coordination of activities between RT4 and RT5.
- To identify overlaps and links especially concerning variability and extreme events studies.
- To review the 18 month Milestones and Deliverables.

## **Contents**

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## **1 Overview of ENSEMBLES and Links with other RTs**

Overview of ENSEMBLES (Chris Hewitt) – *Hewitt\_Overview\_RT4\_5\_Feb05.ppt*

Links of RT4/RT5 with other RTs

- RT1: Ensemble Prediction System (Paco Doblas) – *Doblas\_RT1\_Feb05.ppt*
- RT2A: Seasonal to decadal hindcast (Paco Doblas) – *Doblas\_RT1\_Feb05.ppt*
- RT2A: Climate change scenarios (Jean-Francois Royer) – *Royer\_Murphy\_RT1\_RT2A\_Feb05.ppt*

- RT2B: Regional Climate Scenarios (Markku Rammukainen) – *Rummukainen\_RT3-RT2B\_Feb05.ppt*
- RT3: Regional Climate Model Ensembles for Europe (Markku Rammukainen) - *Rummukainen\_RT3-RT2B\_Feb05.ppt*
- RT6: Impacts (Andy Morse) – *Morse\_RT6\_Feb06.ppt*

Overview of RT4 (Jean-Louis Dufresne) – *Dufresne\_RT4\_Feb04.ppt*

Overview of RT5 (Antonio Navarra) – *Navarra\_RT5\_Feb05.ppt*

Chris Hewitt, Director of Ensembles, gave us an overview of the project. One aspects to note is that the 6-months reports are due in March 05. He also encouraged all partners to do a practise run of the end-of-the-year report due to the cost statement. The end-of-year report, due in September 2005, should include a summary of the year's activity and a detailed plan of the next 18 months.

The date for the General Assembly is 5-9 September in Athens (day 1: Optional day for RTs/WPs; day 2: RT meetings; Days 3 and 4: General Assembly; Day 5 Management Board).

### 1.1 Links of RT4/RT5 with other RTs

RT1 will develop an Ensemble Prediction System (EPS) for use in the generation of multi-model simulations of future climate in RT2. RT1 will start developing the EPS with 7 coupled GCMs running at ECMWF. One of the aims of RT1 is to assess the best method to estimate model uncertainty (using multi-model ensembles, stochastic physics scheme, perturbed parameter).

RT2A work will be organised in two streams:

- first stream (years 1 and 2) will use existing coupled models and forcing fields
- second stream (years 3 and 4) will use ESM provided by RT1.

And in two timescales:

- Seasonal-to-decadal hindcasts
- Century climate scenarios

RT2A will need from RT4 and RT5 feedbacks on which perturbed run give a better description of reality. The discussion turned into the definition of a climate prediction index and how best to include all the aspects that a model should be able to perform be in the "accepted list".

RT4 and RT5 work on the outputs of RT2A will only start on year 2 from the first stream. Some questions about where would the model results be stored were raised. Some clarification on this is needed. According to the DoW WP2A.4 the data will be stored at ECMWF and MPIMET-MD). **Action: Paco Doblas to clarify.**

RT3 and RT2B will develop Regional Climate Model Ensembles for Europe and produce regional climate scenarios for impact assessment. RT4 might be able to give some guidance into the mechanisms and feedbacks that RCMs are lacking. Will RT5 evaluate any of the RCMs results? RT2B, RT4 and RT5 common work on extremes will need coordination. RT3 need inputs regarding the final "wish-list" of RCM outputs, especially from the impact community. **Action: All to send inputs to RT3.**

RT6 will assess the impacts of climate change using the ENSEMBLES ESM and RCM outputs. Their links with RT5 would be through the validation process, mainly with WP5.5. They are also very interested in the findings from RT4 regarding the understanding of the main processes that govern climate variability and extreme events.

## 1.2 Overview of RT4 and RT5

Jean-Louis Dufresne gave an overview of RT4 and emphasized the need of a scientific based approach to explain which uncertainties may be reduced, and which uncertainties may be more fundamental. This RT will aim to use the range of models within ENSEMBLES to explore climate surprises, feedbacks, predictability and climate variability and extreme events.

Antonio Navarra gave an overview of RT5 and posed a few issues to consider: i) coordination of analysis work with RT1-2; (ii) new ideas for organising large datasets? (iii) Climate assessments: how different are the ensemble members?; are they outside the envelope?. There was a discussion regarding the possibility of a check list that each ensemble member would have to satisfy, or what weights to put on each model. How to define this and ultimately define a climate prediction index?

## 2 Workpackages

- WP4.1: Feedbacks and climate surprises (Pierre Friedlingstein) – Friedlingstein\_WP4.1\_Feb05.ppt
- WP4.2: Mechanisms of regional-scale climate change and the impact of climate change on natural climate variability (Silvio Gualdi) – Gualdi\_WP4.2\_Feb05.ppt
- WP4.3: Understanding extreme weather and climate events (David Stephenson) – Stephenson\_WP4.3\_Feb05.ppt
- WP4.4: Sources of predictability in current and future climates (Laurent Terray) – Terray\_WP4.4\_Feb05.ppt
- Coordinated experiments (Rowan Sutton) – Sutton\_RT4\_coordinated\_expts\_v3.ppt
- WP5.2: Evaluation of climate variability (Pascale Braconnot) – Braconnot\_WP5.2\_Feb05.ppt
- WP5.3: Assessment of forecasts quality (Paco Doblus; Richard Graham) – Doblus\_WP5.3\_Feb05.ppt; Graham\_WP5.3\_Feb05.ppt
- WP5.5: Evaluation of seasonal-to-decadal scale impact-models forced with downscaled ERA-40, hindcasts and gridded observational datasets (Andy Morse) – Morse\_WP5.5\_feb05.ppt; Mason\_WP5.5.ppt; JRC\_WP5.5\_Feb05.ppt
- RT4 Website (Maria Noguera) – Noguera\_WP4.0\_Feb05.ppt

### 2.1 General points

Each WP gave a summary of the activities that the partners are undertaken and the developments towards the deliverables and milestones. More details can be found in each of the presentations.

Some common points:

- Which format should the deliverables be in? **Action: Some guidance from Chris might be needed here.**
- It would be useful to have a table of the runs that will be performed, together with the models that will be used as the basis for ENSEMBLES. **Action: RT5 will coordinate.**
- David Stephenson (WP4.3-extremes) suggested the use of a common software to analyse data. More discussion within WP4.3 on this issue is needed.
- There seem to be some inconsistency between the original person/months for some of the WP and what is recorded in the DoW. **Action: Chris to clarify these discrepancies.**

## 2.2 Coordinated experiments

Rowan Sutton presented a proposal for the coordinated time-slice experiments. The aim of these experiments is to advance understanding of the factors/processes controlling future climate and related uncertainty in climate forecasts. This is a cross-cutting activity in RT4 linking all WPs. He presented the proposed experiments together with a possible way to proceed. Please refer to his presentation of the actual details of the proposal. The proposal instigated a big discussion but unfortunately there was no decision at the end regarding the acceptance, or rejection for that matter, of Rowan's proposal. **Action: Decision regarding the coordinated experiments need to be taken.**

## 3 Summary

- **Linkages**  
Communication, coordination and links between the WP, RTs and all the partners are essential issues to address for the project to succeed. Information from other projects must be captured and use within ENSEMBLES.
- **Which models, which data?**  
Partners to provide information to WP leaders on which model/integrations they will focus on. RT5 to coordinate  
Data format: Take advantage of the work done for IPCC. RT5 to coordinate.
- **WP Implementation plan**  
Detailed implementation plans for each of the WP should be developed, assigning clear responsibilities for each of the partners
- **Some Issues to resolve**  
Climate Prediction Index?  
Different modelling systems from season-to-decadal and for climate?  
Coordinated experiments?
- **Meetings**  
RT4/RT5 Workshop to agree priorities for years 2 to 5 – Day 0 of the General Assembly in Athens (5-9 September 05). To be confirmed.
- **Reporting**  
6 month Report due in March 05.  
Annual Report + cost statements ready by September 05.

## **4 Participants**

Arzel Olivier (UCL)  
Braconnot Pascale (IPSL)  
Corti Susanna (ISAC)  
Doblas Reyes Francisco (ECMWF)  
Cassou Christophe (CERFACS)  
Douville Hervé (CNRM)  
Drange Helge (Nansen Center and Bjerknes Centre)  
Dufresne JeanLouis (IPSL)  
Hewitt Chris (Hadley Center)  
Friedlingstein Pierre (IPSL)  
Falloon Pete (Hadley Centre)  
Fil Clarisse (EdF)  
Genovese Fabio (JRC)  
Gualdi Silvio (NGV)  
Guilyardi Eric (IPSL)  
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Latif Mojib (IFM, Kiel)  
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Micale Fabio (JRC)  
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Morse Andy (UNILIV)  
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Noguer Maria (CGAM)  
Parey Sylvie (EDF)  
Rogel Philippe (CEFRACS)  
Royer JeanFrançois (CNRM)  
Salas David (CNRM)  
Schmidt Hauke (MPI)  
Slingo Julia (CGAM)  
Sutton Rowan (CGAM)  
Stephenson David (UREADMM)  
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