

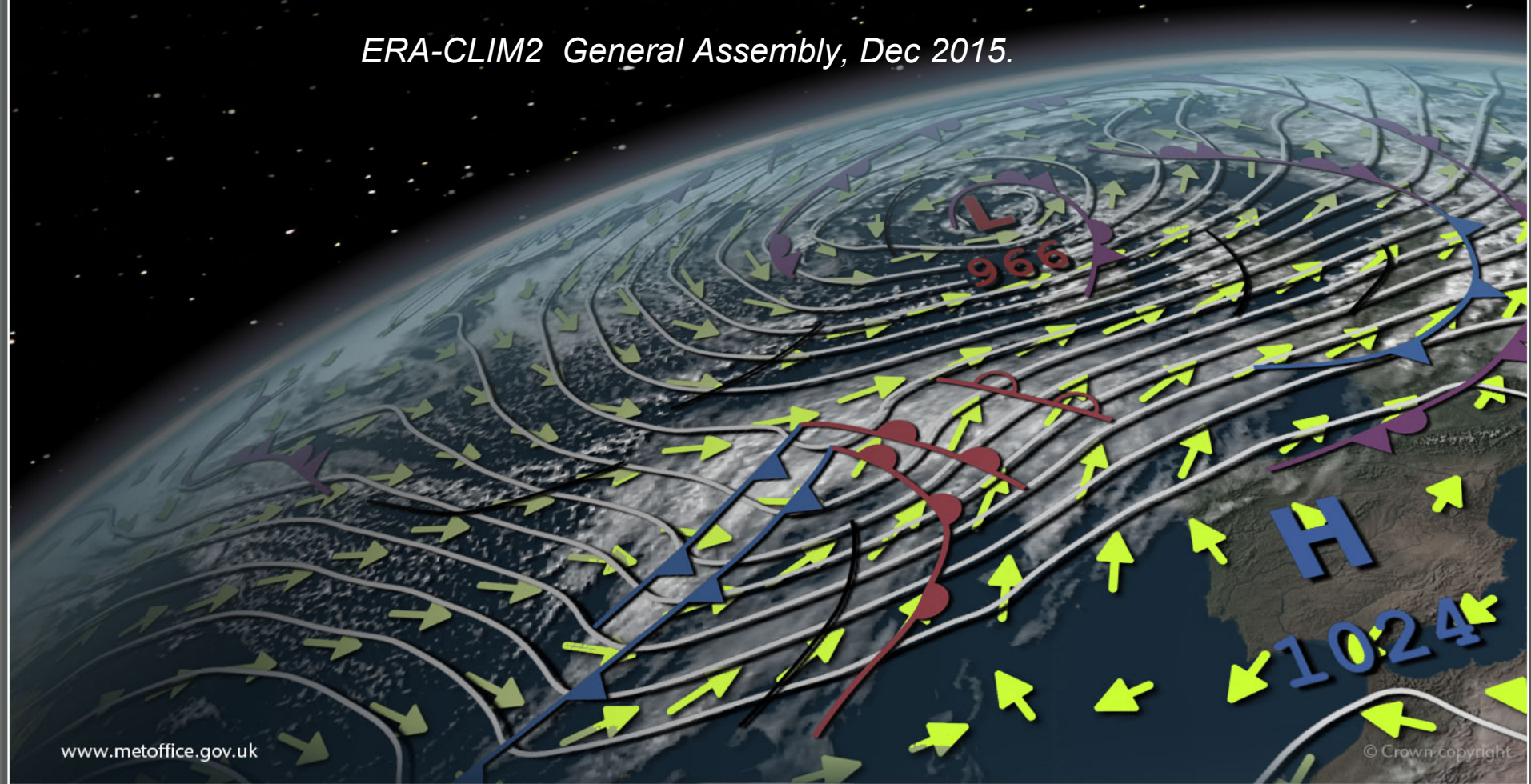
Met Office



WP2 introduction

Matt Martin

ERA-CLIM2 General Assembly, Dec 2015.





Met Office

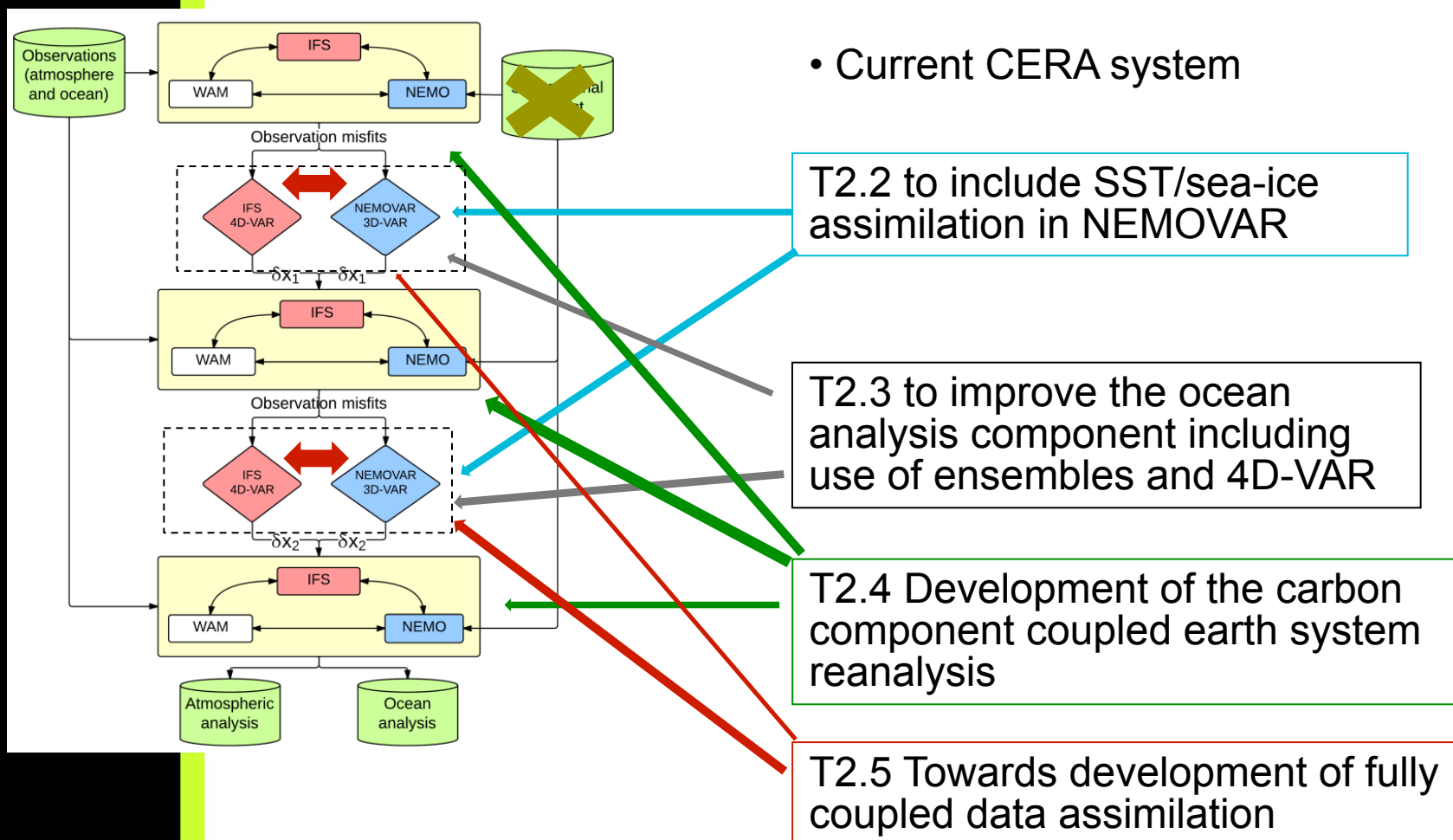


Contents

- Brief overview of WP2.
- Status of deliverables and impact of project extension.
- Coordination.
- Publications and presentations.

WP2 - Future coupling methods

Overview of system developments



WP2 status of deliverables

Deliverable number	Deliverable title	Delivery date
D2.1	Assimilation of sea-surface temperature observations [METO]	27 => 39
D2.2	Assimilation of sea-ice observations [MERCO]	27 => 39
D2.3	Ensemble-based covariance estimates [CERFACS]	34 => 46
D2.4	Ensemble-based covariances in coupled data assimilation [CMCC]	24 => 36
D2.5	4D-Var in NEMOVAR [INRIA]	27 => 39
D2.6	Optimised model parameters for the carbon cycle [UVSQ]	34 => 46
D2.7	Alternatives for coupling ocean Biogeochemistry [MERCO]	34 => 46
D2.8	Weakly coupled assimilation methods [UREAD]	18
D2.9	Covariances from weakly coupled data assimilation [METO]	18
D2.10	Coupled-model drift [UREAD]	34 => 46
D2.11	Fully coupled data assimilation [INRIA]	34 => 46
D2.12	Status report WP2 [METO]	8

- 3 deliverables complete.
- All others will be extended by 12 months in order to provide better quality deliverables.

WP2 coordination

- WP2 coordination meetings have been held:
 - kick-off meeting in February 2014,
 - 1st general assembly in November 2014,
 - A dedicated WP2 workshop at METO in May 2015.
 - A workshop of the GODAE OceanView Data Assimilation Task Team was held in conjunction with the latter meeting, which included participation and presentations from a number of ERA-CLIM2 WP2 participants.
- Collaboration between work for WP1 at ECMWF and WP2 partners (particularly INRIA, CERFACS, MERCO and UVSQ up to now) has taken place in order to test the impact of some developments made by WP2 in the CERA system, and to use CERA outputs for testing WP2 developments.
- The NEMOVAR steering group (consisting of representatives from CERFACS, ECMWF, METO and INRIA) held meetings in Dec 2014 (Toulouse) and Oct 2015 (ECMWF). Main aim has been to carry out merging of various WP2 code developments into a new NEMOVAR version.
- UREAD and METO jointly wrote the coupled error covariance report D2.9 which required considerable collaboration, including sharing of code for the error covariance calculations.

WP2 outreach

Submitted papers or papers in preparation related to ERA-CLIM2 work:

- Mulholland, D. P., P. Laloyaux, K. Haines and M.-A. Balmaseda. Origin and impact of initialisation shocks in coupled atmosphere-ocean forecasts, 2015. *Monthly Weather Review*, **143**, 4631–4644.
- Lea, D.J., I. Mirouze, M. J. Martin, R. R. King, A. Hines, D. Walters and M. Thurlow. Assessing a new coupled data assimilation system based on the Met Office coupled atmosphere, land, ocean, sea ice model, 2015. *Monthly Weather Review*, **143**, 4678–4694.
- Weaver, A. T., Tshimanga, J. and A. Piacentini, 2015. Representing correlation operators using an implicitly formulated diffusion equation solved with the Chebyshev iteration. In press in *Q. J. Roy. Met. Soc.*
- Peylin et al., A new multi-data stream Carbon Cycle Data Assimilation System part 1: system description. In preparation.
- Storto, A., C. Yang, S. Masina: Sensitivity of global ocean heat content from reanalyses to the atmospheric reanalysis forcing: a comparative study, in preparation for submission to GRL.
- Other papers relevant to WP2 work by Laloyaux included in WP1.

Presentations made at various conferences/workshops:

- World Weather Open Science Conference, Montreal, Canada, 16-21 August 2014.
- EGU General Assembly 2015, Vienna, 12-17 April 2015
- GODAE OceanView Data Assimilation Task Team workshop, Exeter, UK, 20-22 May 2015
- Copernicus Workshop on Climate Observation Requirements, ECMWF, Reading, UK, 29 June - 2 July 2015.
- The Year of Polar Prediction (YOPP) Summit, Geneva, Switzerland, 13-15 July 2015.
- Workshop on "Trait-based approaches to ocean life" Woods Hole Oceanographic Institution, 5-8 October, 2015
- GODAE OceanView Science Team meeting, Sydney, Australia, 2-6 Nov 2015.