

UERRA

Objectives and achievements

Year 3

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Management Support Team

Partner scientists

Objectives of UERRA

To produce long-term high-resolution climate quality datasets over Europe

- 3 and 4D reanalyses and ensemble assimilation over Europe 30-50+ years
- 2D downscaling reanalyses
- extending gridded observation data sets
- estimations of their quality and uncertainty

To provide additional observations for these RAs, other projects and for the community at large

These areas are actively worked on and there are only partial results. The 3-dimensional RA are in production and the others are in final testing or/and their initial production.

This is being actively worked on and developed but no long-term results yet, The methods and trials on EURO4M data sets and on DWD data sets against observations have been carried out and is ongoing for satellite data. The main work awaits the availability of UERRA data in MARS..

Yes, a large number, much more than promised, of the targeted number of observations have been digitised.

Objectives of UERRA

To make the RA **available** to a large number of **users** and downstream applications

- provide data services and visualisation
- Provide **useful** data sets

*active development and the RA data have only been produced for short periods, , 5*3-5 years and up to 5+5*2+5 years for the different partners. SMHI has almost 30 years but non-contiguous data and not all archived in MARS yet)*

There have been demonstrations of the capability at/after the GA 2016 inter alias so the capacity exists.

Objectives of UERRA

To support **Climate change services** and climate **adaptation**

To support and aid **policy development** and **monitoring of climate** for European wide and national applications

To establish good **user contacts** and get early **feedback** on the user products

The first steps have been taken quite successfully through the User WS in Toulouse 2016 and prior as well as subsequent contacts.

To have a long **lasting impact** also after the end of the project



Historical observations Summary of achievements

Data rescue

- Digitisation has gone further and faster –
 - more experienced staff

Gridded data sets improvements

- Added many obs to E-OBS and CRU TEM
- Impact of station density / coverage (D1.9)
- New Interpolation methods of precipitation data
- Uncertainty estimations of precipitation gridding



UERRA Deterministic models

11 km European 3D-VAR re-analysis 50 years

- HARMONIE 2 model physics (ALADIN/ALARO) run for 5 years
- 50+ years started in parallel streams for ALADIN
- Additional observations from MF/SMHI



5 km European 2D MESCOAN (MF) and cooperation with SMHI

- ALADIN and ALARO inputs and different downscaling and perturbations added

5 km European cloud MESAN analysis (SMHI)

- Structure functions and data available
- Half the period first – slight delay

Ensemble Data Assimilation

Met Office EDA

- Full runs in production

DWD / Uni Bonn Ensemble Kalman Filter EDA

- Ensemble nudging successfully run but not completed tested and reported (D2.12)

WP3 definition of methods:

Archiving parameters iterated and decided on

- With WP2, WP4
- Much harder than anticipated

Discussions arriving at report and tables for validation and parameters to archive and use

Dependency on WP4 and WP2 (EURO4M test data 2008-2009 and DWD used before)

Validation procedures in D3.2 (and paper)

Software package developed according to the validation procedures (D3.3)

Evaluation procedures and work following meeting at EMS

- Experiences – table in D3.4

WP4 – Facilitating downstream services



EURO4M 2008-09 test archive in MARS

UERRA archiving in common format:

- Definition tables and GRIB2

MARS and ESGF,

Hydrological downstream modelling- 2016 and
next year

Project Management and Scientific coordination WP5 & WP6



Communications within Project

Much with archiving and Deliverables

5 MST meetings

Web site maintained, updated and expanded

Communications with our PO at REA and ESAB

Reporting

Outreach and impact C3S

UERRA becomes more and more known

Regional reanalyses being used more

SMHI EURO4M RA exists for 1979-2014

EURO4M reanalysis data requests to SMHI

Publications, magazines and meetings

UERRA is discussed in connection with C3S

User interaction WP8

User 3rd party WS February 2016 (D8.2)