



$u^b$

<sup>b</sup>  
UNIVERSITÄT  
BERN

OESCHGER CENTRE  
CLIMATE CHANGE RESEARCH

ERA-CLIM2 General Assembly  
19-21 November 2014  
ECMWF, Reading, UK

## WP3 Summary Report

Stefan Brönnimann and WP3 members



# WP3 Overview

## WP3 Earth system observations

- > T3.1 - Data rescue for in-situ observations, quality control and metadata  
**UBERN, METO, FFCUL, RIHMI, METFR**
- > T3.2 - Satellite data rescue, reprocessing and inter-calibration  
**EUMST, METO**
- > T3.3 - Boundary constraints and external forcing  
**METO, RIHMI, FMI**

# Starting point and general comments

- > Mostly continuation of ERA-CLIM, everything installed, very efficient
- > Good collaboration, fast progress, momentum
- > ERA-CLIM overview paper published
- > Tasks more or less independent, potential for more interaction (WP4)
  - Radiative transfer work
  - Observation errors
  - QC across WP3 and WP4
- > Workshop on QC and Evaluation (together with WP4) held in August 2014, next workshop in spring/summer 2015

## Task 3.1: Data rescue for in-situ observations, quality control and metadata (UBERN, METO, FFCUL, RIHMI, METFR)



- > **D3.1 (inventory) and D3.2 (priorities)**  
*Progress:* delivered  
*Next:* Additionally, new inventory for maritime data  
*New task:* Prototype of global registry of rescued data/rescue efforts (June 2015 early enough for Copernicus call?)
- > **D3.3 (update meta-database)**  
*Progress:* constantly updated
- > **D3.4 (in-situ data for reanalysis) and D3.5 (in-situ data other)**  
*Progress:* Imaging/primary source recovery almost done (100% UBERN, 90% METFR, 95% FFCUL, 95% RIHMI), digitizing well underway (70% UBERN, 50% METFR, 80% FFCUL, 60% RIHMI)  
*Problem:* National Archives in Fontainebleau inaccessible since March
- > **D3.6 (QC'ed D3.4) and D3.7 (QC'ed D3.5)**  
*Next:* Reformatting and QC underway, meeting on QC held  
*Problem:* resources for QC and conversion to common format/unit (METFR) during 6 months

## Task 3.2: Satellite data rescue, reprocessing and inter-calibration EUMST, METO

- > **D3.8 (RTTOV updates)**  
*Progress:* coefficient files for new sensors and new versions for sensors with identified shifts
- > **D3.9 (Early satellite data)**  
*Progress:* Visiting scientist (Shinya Kobayashi) improving the SSM-T2 data, work on PMR data.
- > **D3.10 (Polar Winds)**  
*Progress:* Started reprocessing Metop AVHRR polar winds, started modifying the EUM algorithm, started collection of AVHRR GAC data (1982-2014)
- > **D3.11 (SSM/T2 radiance data)**  
*Progress:* Data converted to standard NetCDF, transferred to EUMETSAT, error characterisation

## Task 3.2: Satellite data rescue, reprocessing and inter-calibration EUMST, METO (cont'd)

- > **D3.12 (MFG/MSG recalibration)**  
*Progress:* MFG/MSG data and HIRS/AIRS/IASI data on-line (1982-2014), ongoing development of infra-red and water vapour re-calibration
- > **D3.13 (MFG/MSG AMVs)**  
*Progress:* Assessment of cloud properties and AMV algorithms
- > **D3.14 (Radio Occultation)**  
*Progress:* Development work on WaveOptics, reprocessing of Metop-A GRAS using GeoOptics and WaveOptics, validation of re-processed GeoOptics RO data (ERA-CLIM), COSMIC/CHAMP data collected.

## Task 3.3: Boundary constraints and external forcing METO, RIHMI, FMI

### > **D3.16 (ice thickness data)**

*Progress:* A catalogue is currently being made of all sources of ice thickness data.

*Next:* Making the information useful in discussion with ERA-CLIM2, on track to deliver end December 2014.

### > **D3.17 (ocean database update)**

Refine ERA-CLIM prototype sfc/sub-sfc database.

*Progress:* Code version controlled and documented. HadIOD update for 2011-2013, journal paper available.

*Next:* Main development of data base. On track to deliver in December 2015, then incorporation of feedback information.

## Task 3.3: Boundary constraints and external forcing METO, RIHMI, FMI (cont'd)

- > **D3.18 (snow data product) and D3.19 (QC'ed D3.18)**  
*Progress:* outlining/prototyping a global/hemispheric data collection of historical in situ snow cover characteristics. Collection of Snow Water Equivalent for Snow Depth for Eurasia has been established. Snow Water Equivalent and Snow Extent for hemisphere underway.  
*Next:* The work is proceeding as planned.  
*Problems:* Spatial and temporal coverage uncertain
- > **D3.20 (HadISD update)**  
*Progress:* Translating QC code to allow quick extension prior to 1973 (almost done).  
*Next:* station selection readdressed (almost done), Test version available by end December 2014.



# Challenges

- > Sustained data/data rescue activities for reanalyses:  
Role of «Copernicus»?
- > Sustain data rescue «community of communities»  
(ACRE, ISTI, NWS, WMO expert team, etc.)