

ERA-CLIM2 WP3 Status Report

EUMST, FFCUL, FMI, METFR, METO, RIHMI, UNIBE

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April 25, 2016

Main tasks

- T3.1 - Data rescue for in-situ observations, quality control and metadata
- T3.2 - Satellite data rescue, reprocessing and inter-calibration
- T3.3 - Boundary constraints and external forcing

Status of Deliverables

Number	Description (Lead beneficiary)	Month
D3.1	Data catalogue (UBERN)	6
D3.2	Priorities for data rescue (UBERN)	6
D3.3	Meta-database update (UBERN)	48
D3.4	In-situ data for reanalysis (UBERN)	36
D3.5	In-situ data (other) (UBERN)	42
D3.6	Quality-controlled version of D3.4 (UBERN)	48
D3.7	Quality-controlled version of D3.5 (UBERN)	48
D3.8	RTTOV updates (METO)	36
D3.9	Early satellite data (METO)	36
D3.10	AVHRR polar winds (EUMST)	36
D3.11	SSM/T2 and AMSU-B/MHS radiance data (EUMST)	24
D3.12	Geostationary radiance data (EUMST)	36
D3.13	AMV from MFG (EUMST)	42
D3.14	Radio occultation data (EUMST)	36
D3.15	HadISST2 update (METO)	18
D3.16	Ice thickness data (METO)	12
D3.17	Ocean database update (METO)	30
D3.18	Snow data product (FMI)	36
D3.19	Quality controlled version of snow data base (in situ) (FMI)	48
D3.20	HadISD update (METO)	12

Status T3.1: Data Rescue Activities

- Imaging **completed**
- Digitisation **very far advanced**
- QC **in process**
- Large amounts of rescued data already delivered, deliverables extended to keep going and to do also the “nice to have”

FFCUL: Data Rescue Activities

- Surface data: 100% imaged, 96% digitised
(surface station days ERACLIM1+2: 2,216,604)
- Upper-air data: 100% imaged, 77% digitized
- Maritime data (Chile): 100% imaged, digitizing is starting
- ERA-CLIM global registry online:
eraclim-global-registry.fc.ul.pt/era

METFR: Data Rescue Activities

Imaging (June 2015 - April 2016)

- France mainland daily weather reports and France mainland aerological reports

Digitising (June 2015 - April 2016)

- France overseas pilot balloon wind (5 stations, 1923-48 completed, 4 stations, 1948-60, ongoing)
- France mainland pilot balloon wind (1 station, 1938-57) and radiosondes (4 stations, 1937-1948, ongoing)

QC

- France mainland radioaonde data, 11 stations complete

METO: Data rescue activities

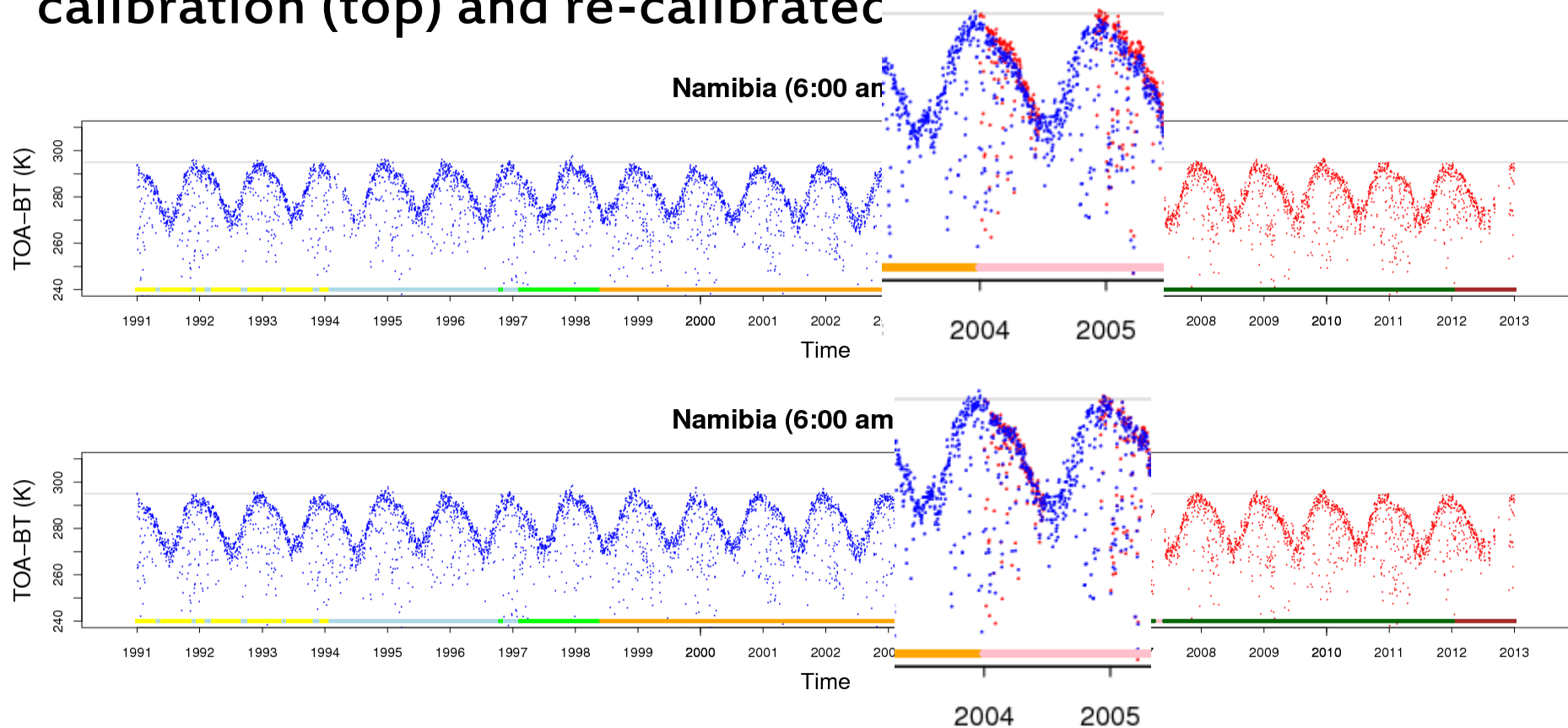
- MetOffice supports ACE coordination (Rob Allan)
- Southern Ocean Data Rescue (sea-ice and atmospheric variables)
sub-contracted: Clive Wilkinson

Status T3.2: Satellite Data Reprocessing

- Radio Occultation Bending Angle Profiles: Metop-A GRAS **completed**, COSMIC preprocessing for all satellites (orbits, etc.) **completed**, CHAMP and COSMIC wave optics processing **in Q3/2016**;
- Microwave Sounder Radiances: ATBD, software and SSM/T2, **AMSU-B, MHS data at EUMETSAT**, SSM/T2 also at ECMWF, evaluation **ongoing**;
- Meteosat radiances: Re-calibration completed, some issues in the 1980s with first two instruments;
- AVHRR winds: QC'ed radiance data imported from CM SAF, AMV algorithm implemented, chain under test, processing **in Q3/2016**;
- Meteosat Winds: Tests with cloud analysis ongoing, **processing in Q4/2016-Q1/2017**.

EUMETSAT: Status of old satellites for ERA-CLIM2

Every image IR 10.8 mm at Namibia site with original calibration (top) and re-calibrated



METO: Status of old satellites for ERA-CLIM

All listed have RTTOV coeffs computed, D3.8/D3.9 (due month 36)

Satellite	Sensor	Period	Status of data
NIMBUS-3	IRIS	1969-1971	Data at ECMWF
NIMBUS-6	PMR	1975-1978	Data at Met Office under assessment
NIMBUS-6	HIRS-1	1975-1976	Available at NASA/GSFC
NIMBUS-7	SMMR	1978-1987	Data at CM-SAF
NOAA	SSU	1979-2005	Data at ECMWF
DMSP	SSM/T	1992-2005	Data in NOAA CLASS archive
DMSP	SSM/T2	1992-2005	Data at ECMWF
NIMBUS-6	SCAMS	1975-1976	Only L2 products available
Revised spectral responses			
NOAA/Metop	HIRS	1979-now	Data at ECMWF
NOAA/Metop	AMSU-A	1998-now	Data at ECMWF

Status T3.3: Boundary constraints, external forcing

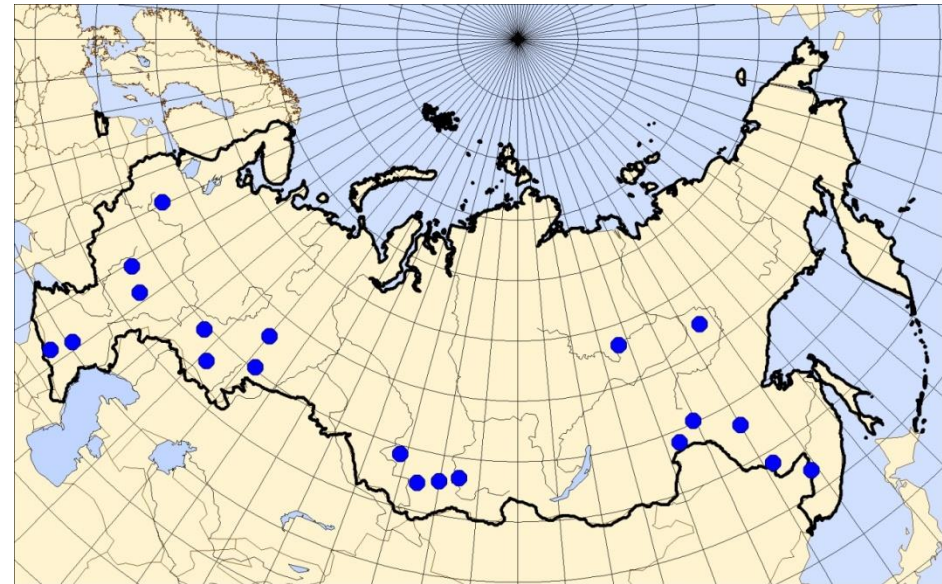
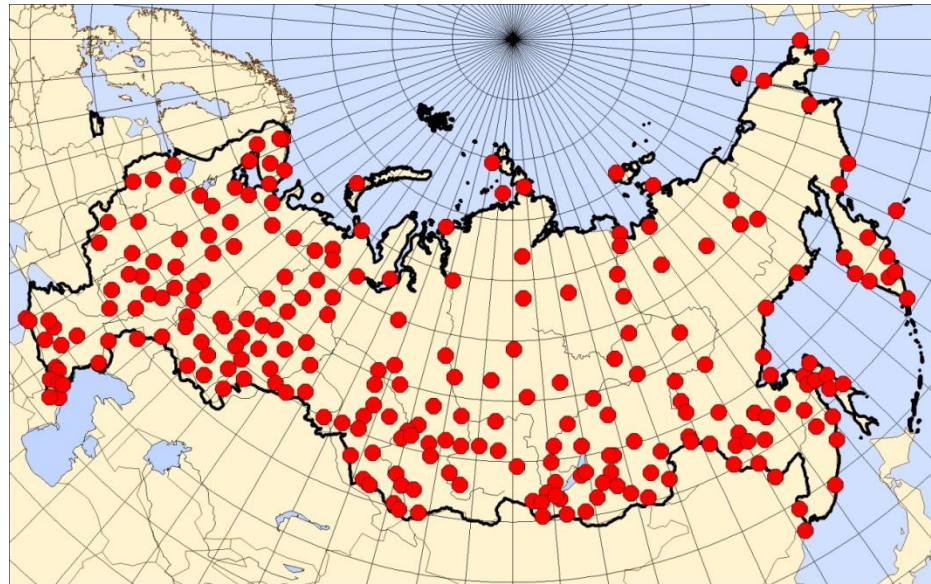
- HadISST2, ice thickness, HadISD update -> delivered
- Updates to marine database on track to be delivered (month 30)
- In situ product for Snow Water Equivalent: Snow courses data set now available
- Data rescue in situ snow observations: completed
- Prototype snow data product (GlobSnow development product) for reanalysis in process

FMI: SWE snow course observations



- Compilation of long-term in situ snow observations from different sources (up to ~100 years if possible and where possible)
 - Distributed snow course observations from Eurasia and North America on Snow Water Equivalent (SWE)
 - Russia/Formal Soviet Union, Finland, Canada
- Prototype snow course data archive established in 2016 by FMI as recommended by the EU FP7 Core-Climax coordination meeting
- Data set is **now available** at: <http://litdb.fmi.fi/eraclim2.php>

RIHMI: Complemented Snow Cover Data



For 246 stations: Compilation of data from various sources, formatting, gap filling by digitizing
For 20 stations: Data rescue (right)

Plan: Next 12 moths

- Conference: Observations for Reanalyses (22 June 2016, Maynooth, Ireland, together with ACRE meeting)
- Data rescue: South Pacific log books, “International Days”, etc.
- Efforts to make data rescue sustainable across projects and services
- July: D3.11 and D3.17
End of year: D3.4, D3.8, D3.9, D3.10, D3.12, D3.14. D3.18
- Satellites: Finalize data records

Publications

- Bližňák, V., Valente, M. A. and Bethke, J. (2015), Homogenization of time series from Portugal and its former colonies for the period from the late 19th to the early 21st century. *Int. J. Climatol.*, **35**: 2400–2418. doi:10.1002/joc.4151
- Brönnimann S (2015) *Climatic Changes Since 1700*. Springer, Adv Global Change Res **55**, 375 pp.
- Brugnara Y et al (2015) A collection of sub-daily pressure and temperature observations for the early instrumental period with a focus on the “year without a summer” 1816. *Clim Past* **11**:1027-1047.
- Schmocker, J., H. P. Liniger, J N. Ngeru, Y. Brugnara, R. Auchmann, and S. Brönnimann (2016) Trends in mean and extreme precipitation in the Mount Kenya region from observations and reanalyses. *Int. J. Climatol.* **36**, 1500-1514.
- Stickler A et al (2015) Upper-air observations from the German Atlantic Expedition (1925–27) and comparison with the Twentieth Century and ERA-20C reanalyses. *Meteorol Z* **22**:349-358