

# Questions for breakout session

- Which digitized data can be made available for assimilation in near future ~end 2016?
- Steps to ensure that upper air data are available through OFA
- What can be prepared to be included in CERA-SAT?
- Coupled diagnostics, trend estimates
- What should be postponed into ERA-CLIM3?

# From ERA-CLIM2 proposal

- Additional information about the usage and assimilation of observations is fundamental to a full understanding of uncertainties in many applications. Nevertheless, it has always been very difficult, if not impossible, for users to access this type of information.
- The ERA-CLIM project has addressed this shortcoming by developing the **Observation Feedback Archive** (OFA).
- It **will continue to be maintained, developed, and supported in ERA-CLIM2**, and will provide a permanent source of information about the quality of the observational record.

# Current status

- OFA is great for surface data
- The OFA for **upper air data** is **scattered over many places, incomplete, hard to access**
- Responsibility for ingestion of newly digitized data is currently unclear
- Using upper air background departure statistics for QC is still too challenging, especially if they have not been assimilated
- **Could that be changed until the end of ERA-CLIM2?**

## Global Reanalyses

- ▶ [ERA-20C \(Jan 1900 - Dec 2010\)](#)
- ▶ [ERA-Interim \(Jan 1979 - present\)](#)
- ▶ [ERA-Interim/LAND \(Jan 1979 - Dec 2010\)](#)
- ▶ [ERA-20CM \(Jan 1900 - Dec 2010\)](#)
  - ▶ [Final](#)
  - ▶ [Experimental](#)
- ▶ [ERA-40 \(Sep 1957 - Aug 2002\)](#)
- ▶ [ERA-15 \(Jan 1979 - Dec 1993\)](#)

## Observation Feedback

- ▶ [ERA-20C \(Jan 1900 - Dec 2010\)](#)
- ▶ [ISPD v2.2](#)
- ▶ [ICOADS v2.5.1 with interpolated NOAA 20CR feedback](#)

## Multi-model

- ▶ [S2S \(NEW: Reforecasts added\)](#)
- ▶ [TIGGE](#)
- ▶ [TIGGE LAM](#)

Upper air



WP4 session start Dec 10, 2015



Deliverable	Description (Lead beneficiary)	Delivery month		Comment
		Original	Amended	
D4.1	RS bias adjustments (UNIVIE)	12	20	<b>delivered</b>
D4.2	Updated RS bias adjustments (UNIVIE)	36	48	ERA5 and a ERA-preSAT rerun are expected to be much better reference than previous reanalyses but are not available in month 36. Value of deliverable would be significantly degraded FFCUL had difficulties in personnel recruitment and works hard on digitization of Chilean and other data. This has priority for now. QC aspect would improve a lot if 12 months more are available
D4.3	QC for obs from FFCUL (FFCUL)	36	48	
D4.4	Visualization tool for QC (FFCUL)	12	12	
D4.5	QC for upper-air, surface, and snow obs. (RIHMI)	36	36	no impact expected
D4.6	Methodology for quantifying obs error (UBERN)	36	36	no impact expected
D4.7	Verification of precipitation against GPCP (DWD)	36	48	Data set will be ready but validation of ERA5, CERA-20C would not be possible
D4.8	Global energy, water, carbon cycles (ECMWF, UNIVIE, UVSQ)	36	48	Evaluations without ERA5, CERA-20C would be much less innovative
D4.9	Upper air data qc (UBERN, RIHMI)	24	24	no impact expected
D4.10	Comparison with other reanalyses (UNIVIE; ECMWF)	36	48	Comparisons without ERA5, CERA-20C would be much less innovative
D4.11	Low frequency variability and trends (ALL)	36	48	Without completed ERA5, CERA-20C many evaluations would have to be based on data not created in ERA-CLIM2
D4.12	Uncertainty of input parameters for carbon budget (UVSQ)	12	20	<b>delivered</b>
D4.13	Confidence intervals on carbon fluxes (UVSQ)	36	48	Those would have to be based on existing ERA-20C, not new CERA-20C
D4.14	Comparison of CTESSEL, ORCHIDEE flux estimates (ECMWF, UVSQ, UNIVIE)	36	48	This could be done partly with unfinished CERA-20C but much value would be added if complete CERA-20C set were available

# From ERA-CLIM proposal

- Together with other in-situ and remote-sensing datasets available from existing data archives, **the observations collected for ERA-CLIM will be included in a newly developed Observation Feedback Archive.**
- **Quality feedback information** for this archive, including data departures and bias estimates, **will be generated during several new pilot reanalyses**, as well as from existing reanalysis datasets.
- The **pilot reanalyses** and the Observation Feedback Archive will be made available to users world-wide as a **unique resource for climate research** and observational studies of the Earth system.