Copernicus Climate Change Service

COPERNICUS EUROPEAN REGIONAL REANALYSIS

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OVERVIEW: The regional reanalysis **CERRA** (**C**opernicus **E**uropean **R**egional **Re**-**A**nalyses) is produced as part of the Copernicus climate change services (C3S). It includes a total of three datasets: 1) The main product and high-resolution reanalysis **CERRA at 5.5 km resolution**. 2) The ensemble system CERRA-EDA with 10 members at 11 km resolution. 3) CERRA-Land at 5.5 km.

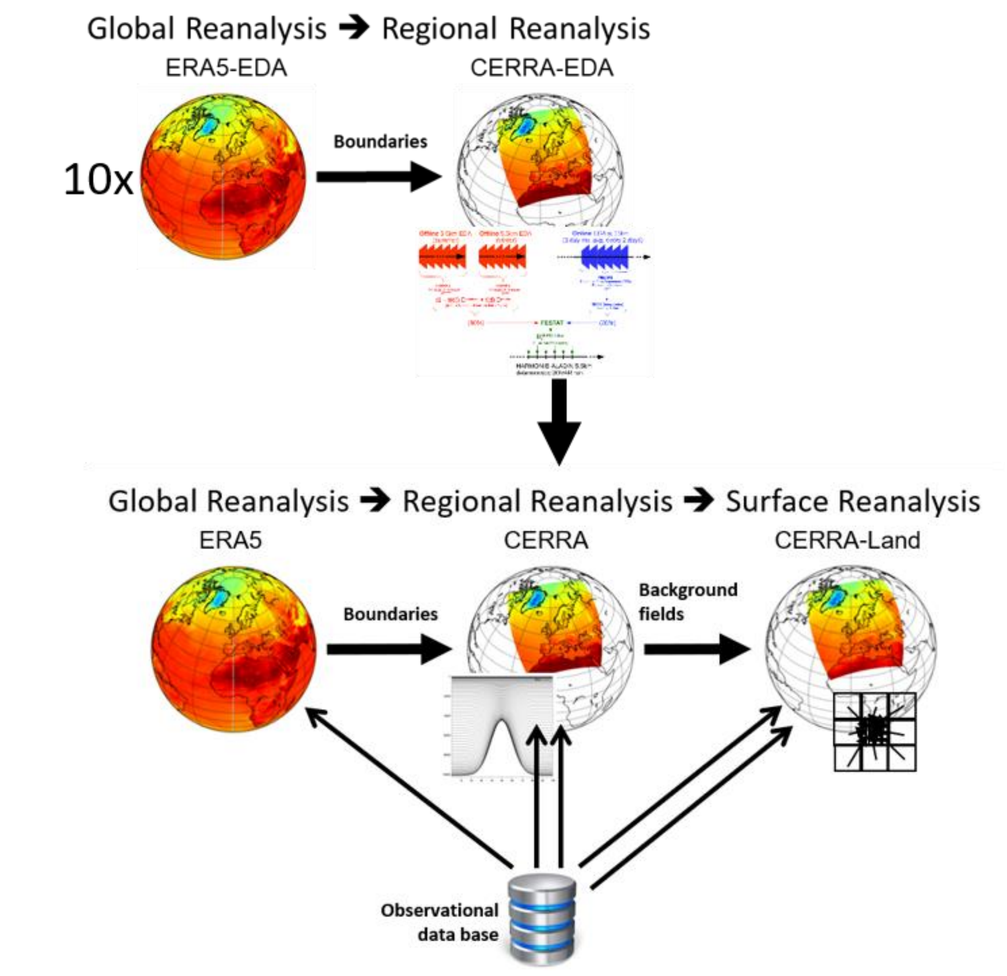


Fig: Schematic view on the CERRA systems production chain.

AVAILABLE CERRA DATA AND ADDED VALUE

Hourly data are available for September 1984 – June 2021. CERRA and CERRA-EDA include more than 50 parameters on surface, height, pressure and model levels. CERRA-Land offers surface and soil data.
All data are available at https://cds.climate.copernicus.eu

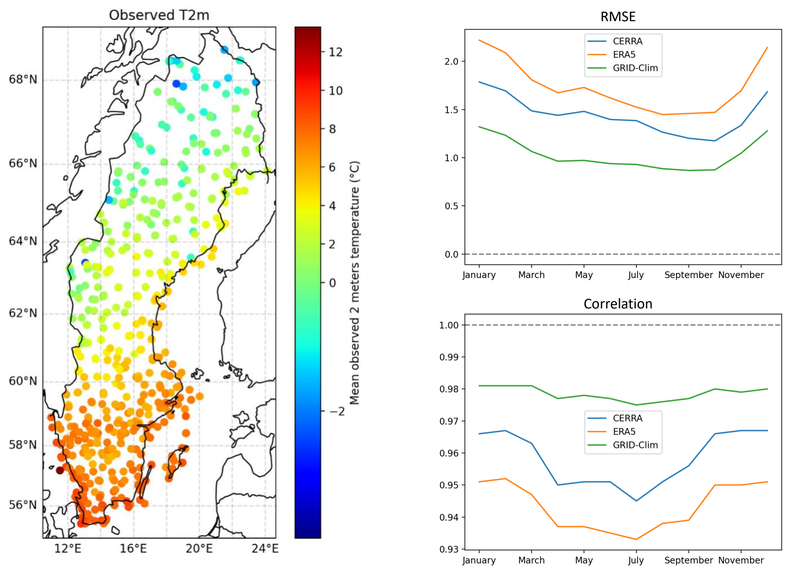
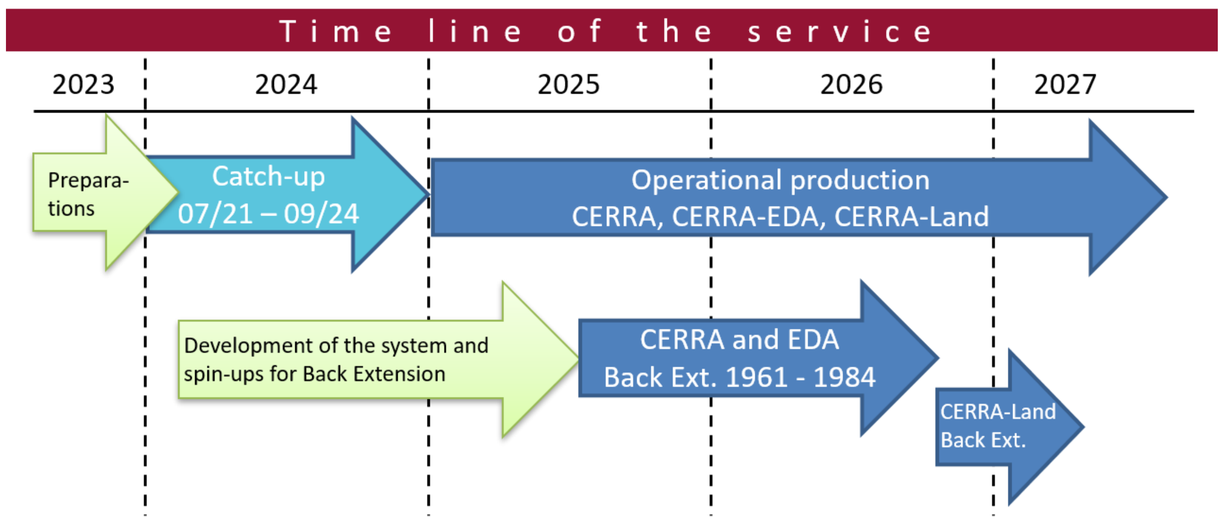


Fig: Observed mean 2m temperature at Swedish stations (left). Average RMSE and correlation of CERRA and ERA5 with Swedish stations based on hourly data for the period 1985 – 2018 (right). GridClim is a gridded surface analysis at 2.5 km horizontal resolution produced by SMHI.

MAIN OBJECTIVES FOR THE NEXT YEARS

- Catch up with real time (RRA period from July 2021)
- Operational monthly updates with a latency of 3.5 months (CERRA and CERRA-EDA) and 6 month (CERRA-Land)
- Back Extension for the period 1961 – 1984 including the assimilation of recently collected observations
- Computation of daily and monthly statistics for the CDS



CHALLENGES FOR THE OPERATIONAL PRODUCTION

- Only little margin to provide the data with the foreseen latency – especially during vacation periods
- Dependency on timeliness of external datasets
- Automate production and quality control as far as possible

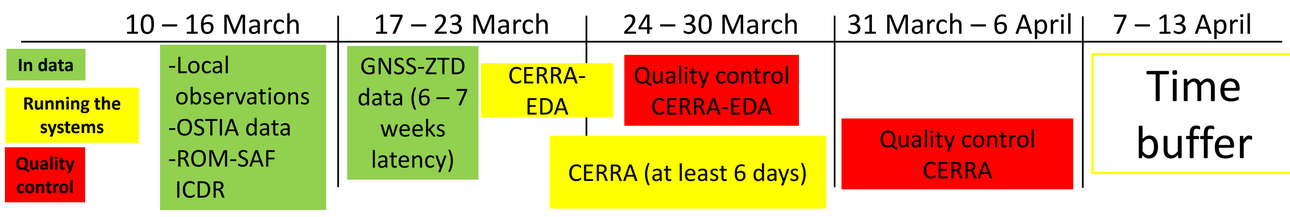
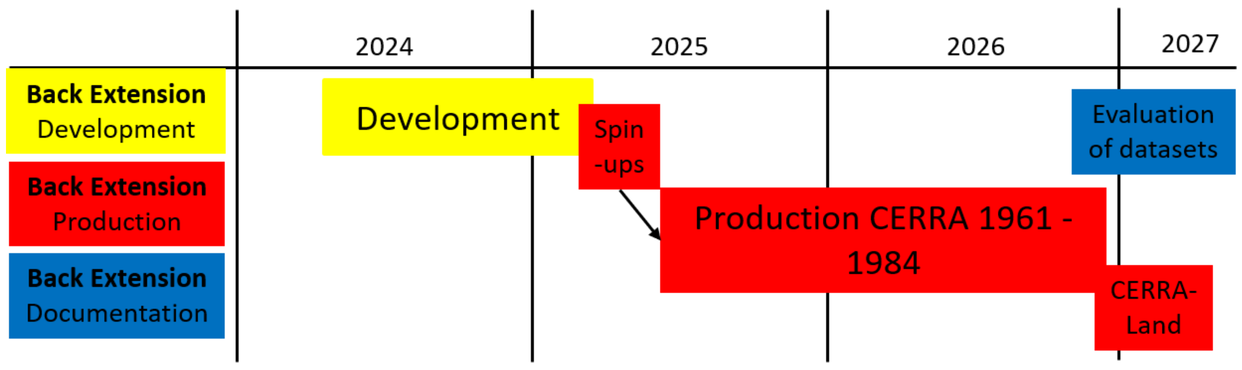


Fig: Timeline for the operational production of January 2024, which should become available in the CDS latest on 15th of April 2024.

CHALLENGES FOR THE BACK EXTENSION

- "Untested" observations will be used, which are currently prepared by Copernicus (C3S2_311 Lot 1 & 2). Special emphasis on their impact will be needed.
- Production in streams (likely 5 CERRA-EDA streams and 5 CERRA streams) will be challenging for the monitoring



HOMEPAGE OF THE SERVICE

https://climate.copernicus.eu/regional-reanalysis-europe

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PROGRAMME OF THE EUROPEAN UNION
IMPLEMENTED BY ECMWF