



Funded by the
European Union



WP2: COUPLED SURFACE-ATMOSPHERE ASSIMILATION FOR GLOBAL AND REGIONAL REANALYSIS SYSTEMS

Kick-off meeting, 17 January 2023

Patricia de Rosnay and Jelena Bojarova
ECMWF, SMHI

WP2 team and resources

WP2 Lead: Patricia de Rosnay (ECMWF), Jelena Bojarova (SMHI)



Partners	Resources (person months)
ECMWF	46
MetNorway	24
SMHI	39
Total	109

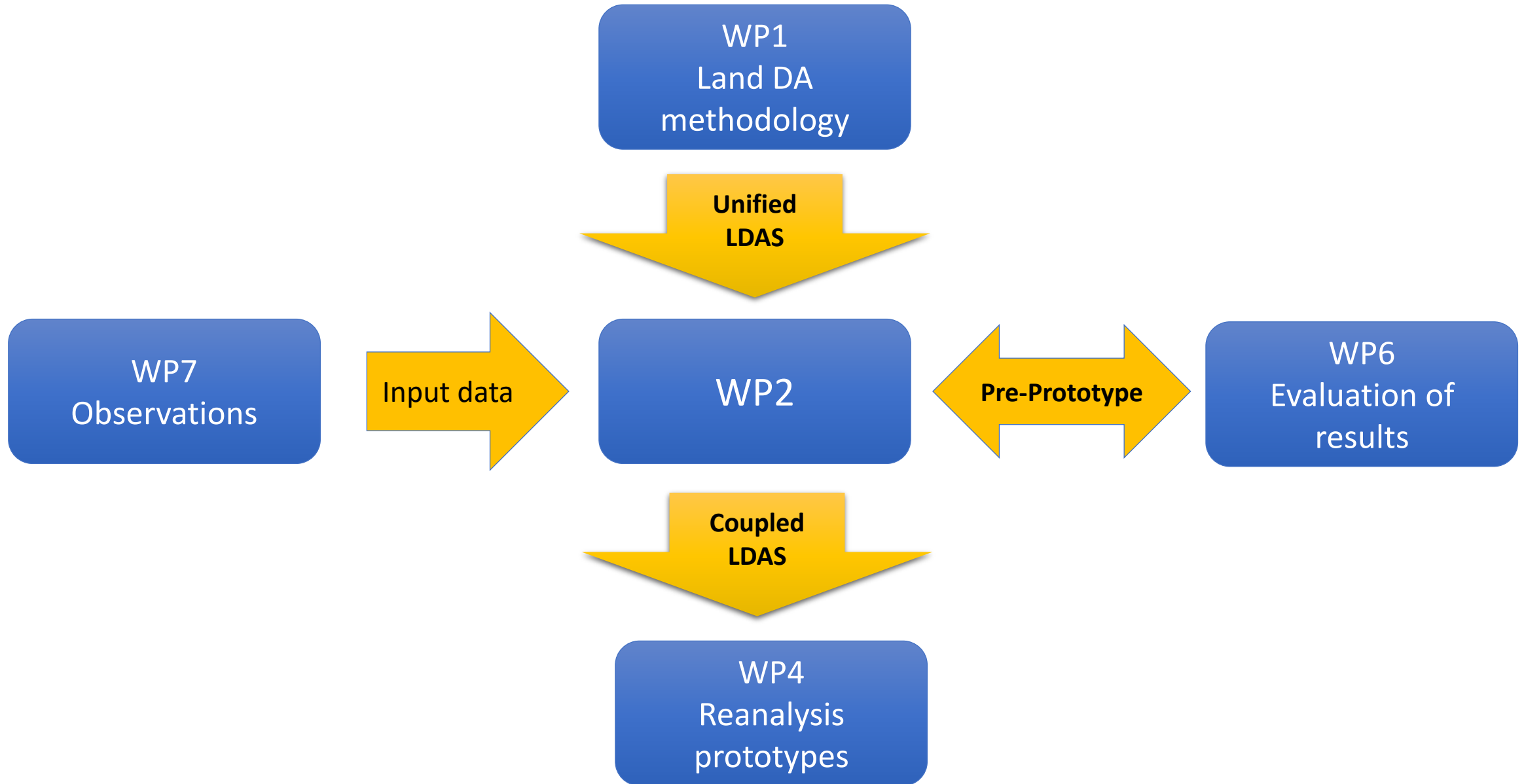
WP2 scientific / technical questions

- What is the optimal degrees of land-atmosphere data coupling to ensure balanced initial conditions at the land-atmosphere interface?
- What is benefit of AI-based observation operators in coupled land-atmosphere data assimilation framework? How dose they contribute to improve all-surface observation exploitation?
- How does the Extended Control Variable coupling approach benefit land and atmosphere analyses in the coupled DA ? How does it impact observation usage?

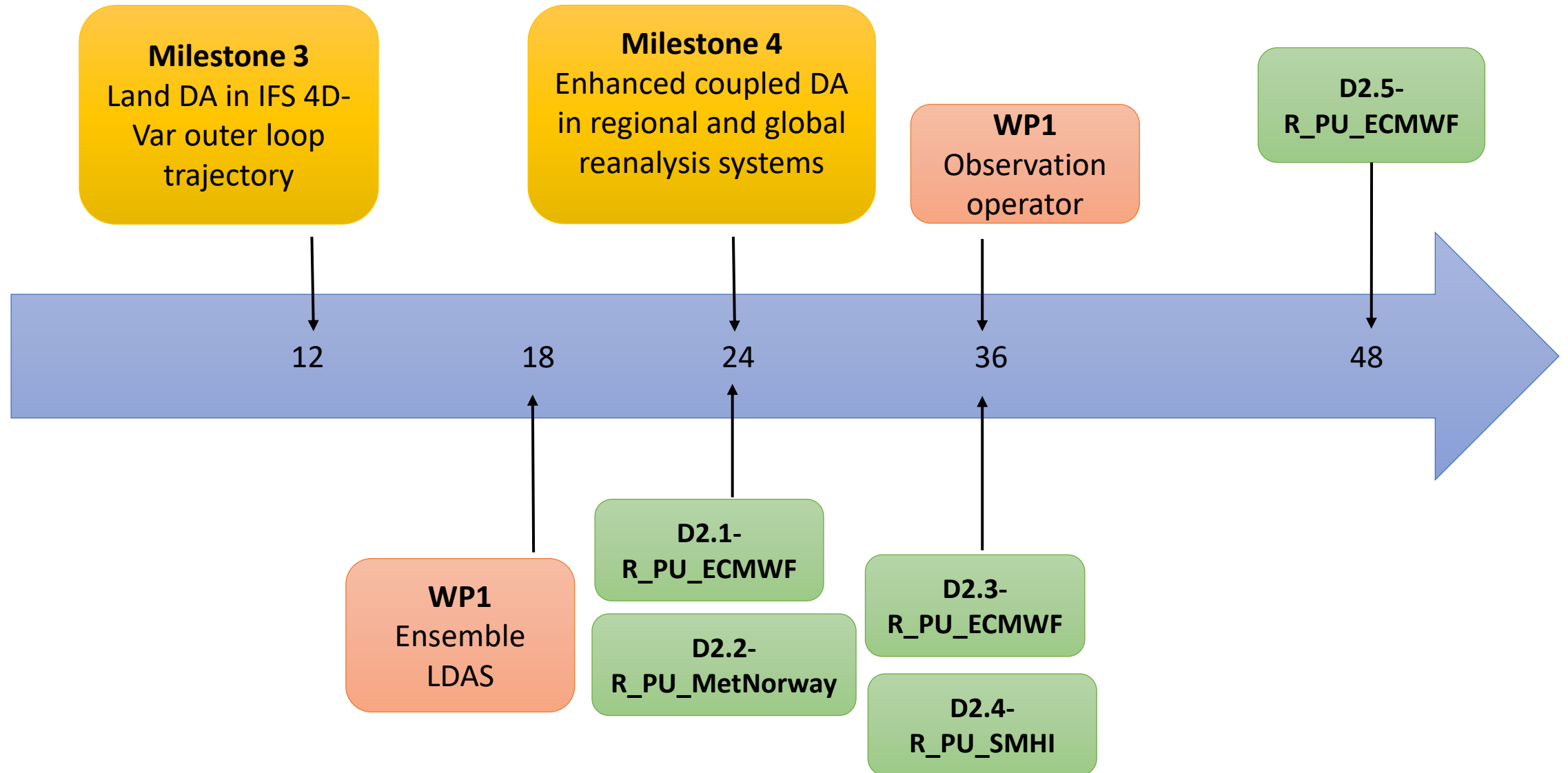
Goals of WP2

- Develop the C3S reanalysis codes infrastructure to support modular coupled assimilation and monitoring, and to improve coupled reanalysis production chain efficiency and scalability;
- Develop and implement innovative coupled surface-atmosphere assimilation for global and regional reanalysis systems;
- Improve the exploitation of surface-sensitive observations in the coupled framework for global and regional reanalysis prototypes.

WP2 links to other WPs



WP2 48-month timeline



WP2 Coupled data assimilation development Tasks

Task 2.1 (Lead ECMWF): Infrastructure developments to support coupled DA developments, and code efficiency and modularity (M1-24)

Task 2.2 (Lead ECMWF): Development of outer loop land-atmosphere coupling (M6-24)

Task 2.3 (Lead SMHI): Development of coupled skin temperature assimilation over land and sea ice (M15-36)

Task 2.4 (Lead Met Norway): Observation operator coupling developments for microwave data assimilation (M30-42)

Task 2.5 (Lead ECMWF): Testing and assessment in support of coupled assimilation methodological developments (M6-42)



Funded by
the European Union

Coordinated by
 ECMWF



Thank you

ECMWF, MetNorway, SMHI, Météo-France, DWD, CMCC, BSC, MetOffice, DMI, ESTELLUS, IPMA, NILU

The CERISE project (grant agreement No 101082139) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Commission. Neither the European Union nor the granting authority can be held responsible for them."