



A Consortium for CONvection-scale modelling
Research and Development

Topical session on common deployment

All Staff Workshop, Marrakech, 2026-04-14

What we have today

A new IAL cycle release (often several times per year) provides:

- **The fortran code and the means to build binaries**
- **A documentation of the content of the release**
 - **main items of development**
- **An approval of the code by Davai tests**
- **There are several such cycle releases coordinated over a year**
 - **some are defined jointly with ECMWF (eg CY50)**
 - **others only at MF-ACCORD level (eg CY50T1, CY50T2, CY50T3 ...)**
 - **some of these releases are focussing on technical code changes, while others contain a number of scientific contributions**
 - **vocabulary: our suggestion is to call them “*integration releases*” from now on**

What we aim for in addition

We propose to introduce the concept of a “*deployment release*”:

A new combined release of an IAL cycle and of a Tactus version also comes with:

- A corresponding Tactus scripting environment including
 - Namelists, Environment scripts, Code building, Climate generation for domains, Boundary generation and initial conditions, Forecast, some DA setups, some EPS options, ...
- Standard CSC namelist setups
- We would also include a HARP meteorological validation based on the CSC setups for
 - a few domains, a few periods, a few configurations ...
- A release report including quality assurance and input/output data accessibility.
- The two last bullets are what makes the deployment release different from an integration release

What is the purpose of a “deployment release”

- **Ready to be used by the ACCORD researchers**
 - **researchers belonging to different CSC environments should be able to work together on common development**
- **No ambition of "guaranteed" operational readiness from simply downloading and installing a release => balance expectations with feasibility (there are very many operational applications based on the ACCORD codes)**
- **Relevant documentation included. To be discussed in detail at the **Topical session of “Documentation”** on Thursday afternoon, but we can mention already now**
 - **A deployment user's guide**

Development needs to reach the aim

- The Tactus aspects to be discussed more in detail at the **Topical session of “Common Scripting System”** on Wednesday afternoon.
- A namelist structure exists under Tactus. It needs
 - Documentation, i.e. description of namelist
 - Settings per CSC
- An agreed data assimilation setup (atmosphere and surface), but what does it mean in detail...
- An agreed EPS setup, but what does it mean in detail...
- HARP validation setup. The validation aspects to be discussed in detail at the **Topical session of “MQA”** on Thursday afternoon.

What aspects should be fulfilled

- **Numerical performance evaluation**
 - **Davai partly does this (based on its own namelists settings)**
 - **In addition we need numerical performance evaluation also w.r.t. CSC namelists**
- **Sufficient evaluation of efficiency at selected HPCs (profiling): execution time, memory use, compared with respect to the previous deployment release**
- **Additional performance evaluation including**
 - **Probabilistic performance**

Concrete suggestion for the first release

- One domain (not any operational) including all tiles nearby our ACCORD area
- CANARI surface data assimilation including cycling
- Upper-air atmosphere is a cold start from boundary fields for each cycle (no upper-air DA)
- Start with the same horizontal and vertical resolutions (for all tests? for all CSCs? which one?)
- Extended tests to cover two seasons, one summer and one winter
- Time periods 1-2 months for each season
- EPS tests: model uncertainty representation, bnd uncertainty, a few members, one-two short periods
- Boundaries: ECMWF
- HPC: ECMWF-Atos
- A release of a first deployment setup during autumn 2026
- Note: The next (second) deployment release would then be more ambitious in content (2027): upper-air DA, etc.

Discussion time

The way we will develop and implement the concept of the common deployment is work in progress.

Please make comments, raise questions.

Support material

What Makes a Deployment Release Different?

Integration Release

- IAL Cycle release
- Tactus version
- Scripting environment
- Standard CSC namelist setups

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Only in Deployment Release

★ HARP Meteorological Validation

Domains · Periods · Configurations

★ Full Release Report

Quality Assurance + I/O Data Accessibility

HARP validation + Release Report are the defining features of a Deployment Release