ACCORD
A Consortium for COnvection-scale modelling Research and Development

Cycles and contribution practices

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Outline

Reminder

- CY48 : Sept. 3rd, 2020 — Latest common cycle with ECMWF
- CY48T1 : July 7th, 2021 — Release notes : https://opensource.umr-cnrm.fr/attachments/download/4074/Contents_48T1.pdf

48T2

- Contents :
  - rephasings of oper/pre-oper developments : 46T1_op1 + 46H1 + LACE local developments
  - OOPS major update (full 4DVar comparable to classical version, in 1 execution)
- Continuous integration with DAVAÏ, incl. toy test of IFS
- Final validation ongoing, declaration expected in a matter of days

48T1_op0

- MF interim branch in between 48T1 and 48T2
- include all rephasings of 46T1_op1 MF e-suite + OOPS
- extended validation ongoing ; performance close to 46t1 e-suite
- basis for MF e-suite 2022 (48T1_op1), incl. assim under OOPS

48T3

- Unplanned cycle, recently considered to integrate GPU adaptations based on 48T1 before too much divergence (some routines pretty much totally rewritten)
- Mostly GP calculations below `cpg_drv.F90` physics (cf. Ph. Marguinaud's talk), incl. `FIELD_API`
- Timing influenced by next RAPS exercise, presumably done with this cycle

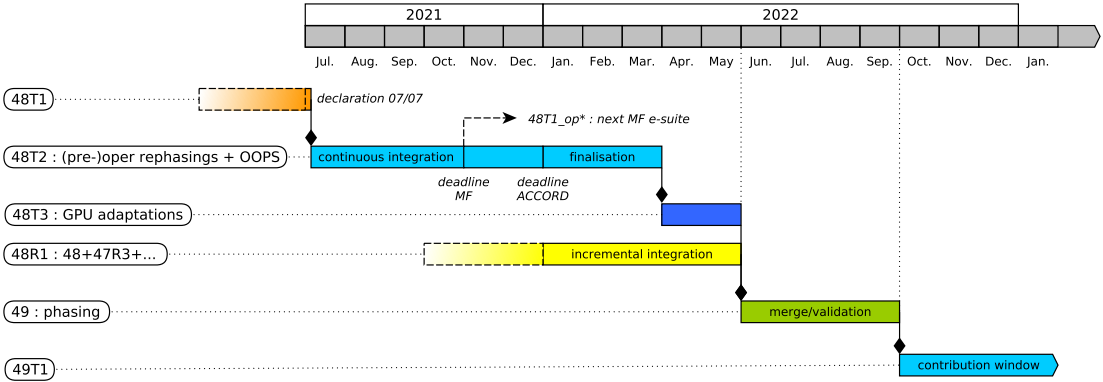
CY49

- Start merge 48T3 + 48r1 early June 2022
  (2 months delay to have time for 48T3 and update DAVAÏ tests)
- Waiting for 48r1/v9
- Will include converged history of ECMWF and MF Git repositories
- Regular validation by ECMWF during the process, with direct and frequent exchange (MF $\leftrightarrow$ ECMWF) of the updates of merge branch via Git, using ACCORD forge
- Expected declaration End of Sept. 2022

CY49T1

Next ACCORD Development cycle

- Call for contribution Oct22 $\rightarrow$ Jan23
- Include Surfex v8.1^{++} (48T2 + 46H1), able to run all CSCs ?
- Continuous Integration on ACCORD forge
- Would be a basis for next MF e-suite ? (2023-2024)
- Cycle for next MF HPC procurement benchmark ? (48T3 + 48r1 GPU developments)


2021
2022
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48T1
declaration 07/07
48T1_op* : next MF e-suite
48T2 : (pre-)oper rephasings + OOPS
continuous integration
finalisation
deadline MF
deadline ACCORD
48T3 : GPU adaptations
48R1 : 48+47R3+...
incremental integration
49 : phasing
merge/validation
49T1
contribution window

Outline

Coordination of cycles

- ACCORD Management Group to discuss the expected contents of cycles in advance.

↪ **Contributor to communicate the wish for integration of a development, to the relevant AL or CSC-L (e.g. for physics), and to IL, *as early as possible***

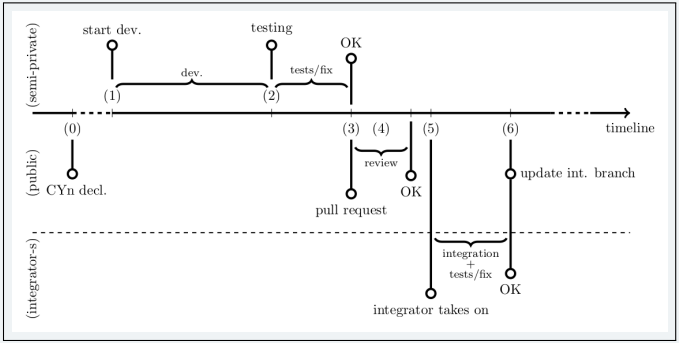
- Avoid "surprise" contributions
- Reviews will be given higher importance

ACCORD Forge

Web platform hosting repositories and their associated communication environment (wiki, ticketing, integration requests, reviews...) :

- ACCORD Organisation created on `github.com`, aimed at hosting any consortium project
- No major concerns from IFS-Arpege coordination level and ACCORD Assembly
- Assess a free plan is enough (or what needs would push for a paid plan ?)
- Assess Sys-AL & IL are enough for managing it
- IAL (IFS/Arpege&LAM) private repository, experimentaly used for a few contributions to `48T2`
  ↪ Should become default portal for `CY49T1` contributions
- Towards making it official :
  - reporting to STAC about the experimental use (June 2022)
  - declaration at the December 2022 Assembly
  - in parallel : training webinar(s)

Continuous Integration (CI)



(Announce contribution to AL/IL)

1. Develop branch
2. Test, (Fix)
3. Push + Integration request
   [forge]
4. Review
   [forge]
5. Merge, Test, (Fix)
6. Update integration branch
   [forge]

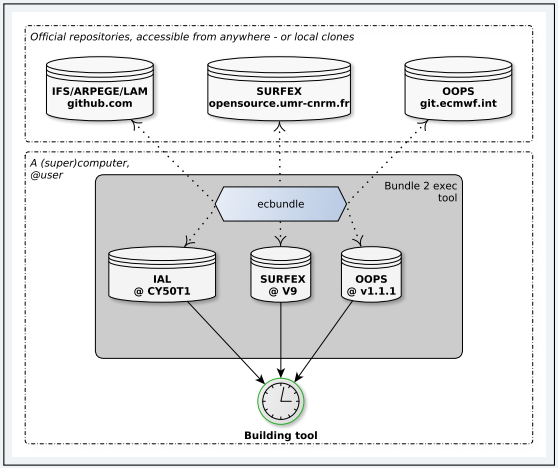
DAVAÏ (scripted)

- First scripted version last autumn, first beta-testers for 48T2
- Internal architecture → **stabilised**
- Bundle as input → **almost OK**
- Tests scope (CSCs, SP, ...) → **no big update...**
- Porting to ECMWF & workstation → **not yet**
- Accessible dashboard → **not yet** (but workaround)
- Aim : generalised use for contributions to 49T1

DAVAÏ trainings

- Users-oriented webinar(s) (for 49T1 contributors – this autumn)
- Developers-oriented in WW Q4 : porting, maintaining, addition of tests

Bundling



- Tendency : sub-projects to be *externalised* : oops (CY49 !), fiat, ectrans, SURFEX, FA-LFI, PHYEX...
- $\hookrightarrow$ ***bundle*** : versions of projects that are compatible for the build of an application
- Tool *ecbundle* from ECMWF for cloning/fetching & checking-out
- Home-made tool(s) to make the link with building tool (gmkpack : *bundle2pack*)
- *Bundling for IAL* : whitepaper under redaction ; need for **bundle version control**, implications on CI

Bundle example for OOPS in CY49

```
projects :
    - arpifs :
        git     : https://github.com/ACCORD-NWP/IAL.git
        version : CY49
    - oops :
        git     : https://github.com/ACCORD-NWP/oops.git
        version : feature/develop-IFS-CY48T1op0
    - fckit :
        git     : https://github.com/ecmwf/fckit.git
        version : 0.6.4
    - eckit :
        git     : https://github.com/ACCORD-NWP/eckit.git
        version : mf_1.4.4_for48T2
    - ecbuild :
        git     : https://github.com/ecmwf/ecbuild.git
```

Hvala !
Comments, questions ?

Davaï : structure