

Building new cycles: towards new practices

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ACCORD ASW 2021

① Building development cycles

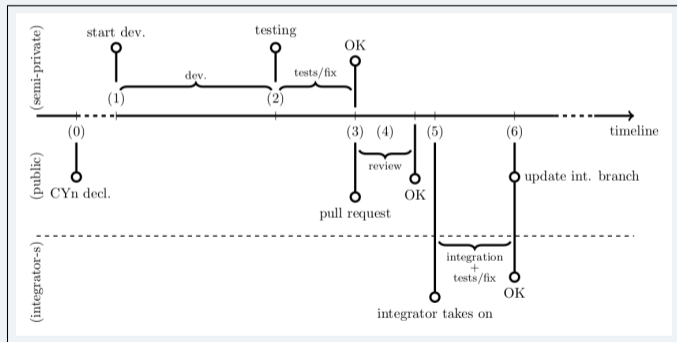
② Testing : Davaï

③ A bundled ecosystem ?

Outline

- ① Building development cycles
- ② Testing : Davai
- ③ A bundled ecosystem ?

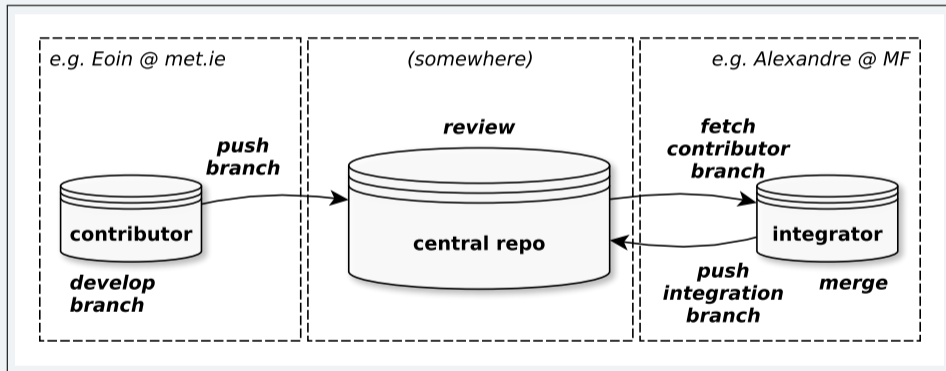
Contribution : timeline



(Substantial contributions to be announced through MG, well before starting integration)

- 1 Develop branch
- 2 Test, Fix issues
- 3 Push + Integration request
- 4 Review
- 5 Merge, Test, Fix
- 6 Update integration branch

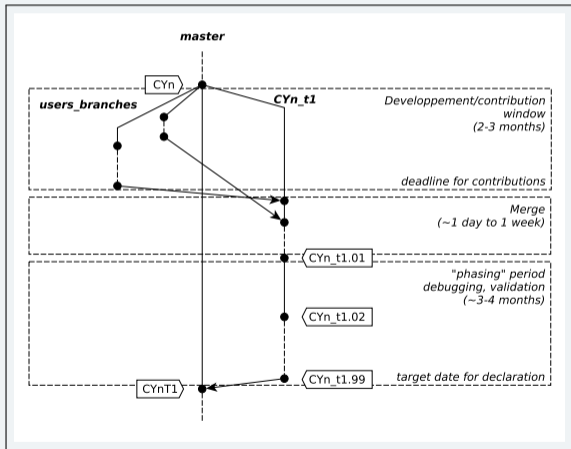
Contribution : flow without barriers



What will change *from a contributor perspective*

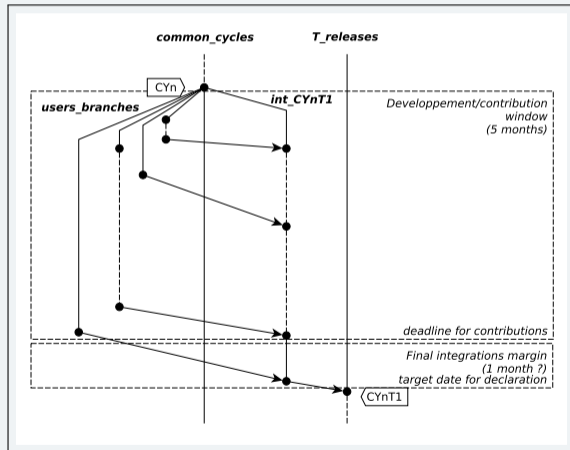
- Central repository **accessible** :
from **anywhere**, get releases or push a contribution = `git fetch / git push`
(no more manual transfers to merou or other MF internal network servers/clusters!).
(*Location to be addressed*)
- **Systematical testing** of any branch, with a standardized set of Canonical configurations, as a contributor's duty. Cf. later slides (Davai)
- Integration requests : **web platform** (github-like)
- Reviews : more solicitations, but avoid to discover issues later on + pre-merging

Non-Continuous Integration



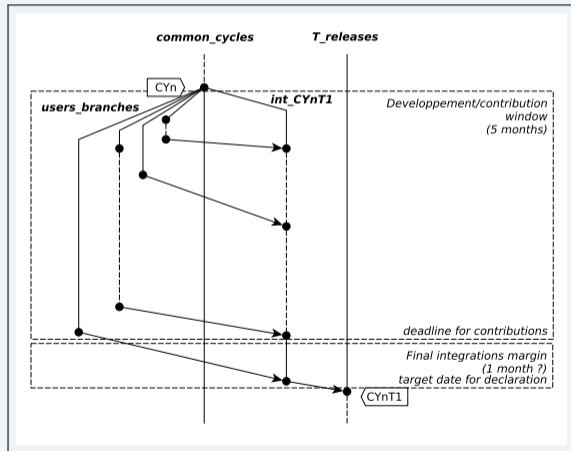
(until 47T1)

Continuous Integration



(from 48T1 on)

Continuous Integration



- Continuous Integration (CI) :
 - validation of each branch + after each merge : branch is **continuously validated**
 - extended contribution window
- Pool of integrators around IL :
 - shared work
 - merge conflicts solved by thematic experts

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Davai : status

- helped to reach an ***unprecedented level of validation*** for common cycle CY48
- intensively used on contributions to CY48T1 : by contributors in MF, by integrator for partners
↳ prevented ***a number of issues***
- v1/Olive = proof of concept, but not accessible/portable outside MF, unfortunately for some contributions
↳ proof of ***necessity for a portable system***
- Portable v2 Davai (Vortex, scripted definitions, Git-managed) :
under development, prototype OK with : {build, bator, screening, minimization} for Arpege/4D & Arome/3D, full observations & by obstype

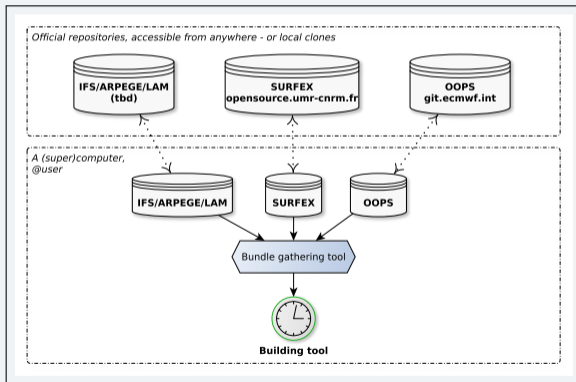
Davai : perspectives

- Summer 2021 : **first release to partners** (at least same content of tests as the v1/Olive version) + documentation
- Then some welcome help across ACCORD for :
 - pluggability of a build system other than `gmkpack`
 - tests of CSC Alaro and Harmonie-Arome
 - other relevant tests
 - porting to ECMWF HPC (Vortex OK)
 - set of 32b tests
- And subsequently :
 - porting to other HPCs
 - set of toy tests on workstation (GNU compiler)
 - input switch to *bundle* (separation of repositories, e.g. OOPS, SURFEX)

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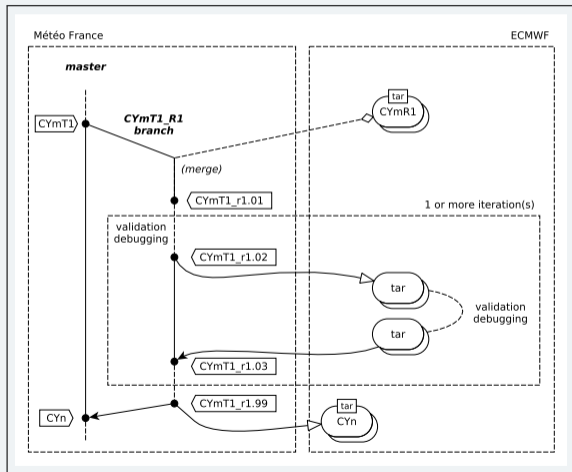
Separation of interfaced projects



- Today : side-projects *forked* in the NWP repository (OOPS, SURFEX, ...)
- Tomorrow : remove them & pick from actual projects, managed on their own
↔ interface : need to tie together the versions of projects that are compatible
⇒ *bundle*
- Maintain *NWP* branches therein
- Tool *ecbundle* from ECMWF
- *Need to adapt contribution procedure in case it addresses several projects ?*

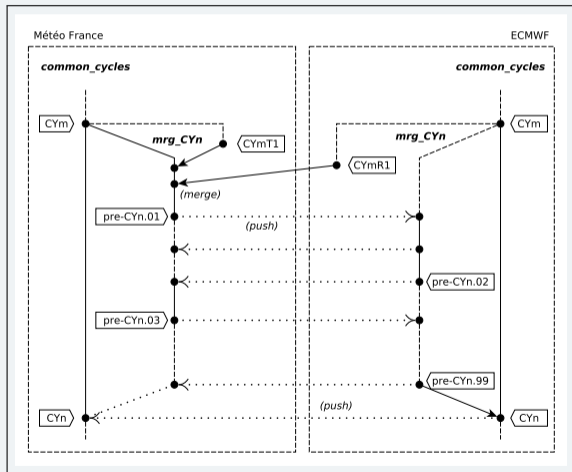
Thank you for your attention.
Happy to discuss : alexandre.mary@meteo.fr

Merge of a R cycle and a T cycle



(until now)

Merge of a R cycle and a T cycle



Convergence of EC & MF Git repositories, creation of a *common* branch

- (the merge remains a tricky step)
 - Communications via Git commands
 - More frequent and atomic updates of the merge branch
 - Easier *pre-phasing* & *post-phasing* (*git blame*)
- + mutual tests

Davai : structure

