Phasing roadmap
Version 1.5, 18/12/09

Phasing general rules on source code:

due to the multiple application and multiple contributor characcetristics of the source code and common library[1] updates, some « guided » paths for source code contributions have been established (as trade-offs between constraining working practices and safety):

1. climate group contributions shall enter via the GMGEC phasing representative (presently, A. Alias); the code being intertwined with the NWP Arpège one, the Climate contribution generally will require phasing in the source code repository (GCO). Post-verification of phasing is ensured by GMGEC directly (AA again).

2. the Méso-NH atmospheric physics code (MASDEVa.b) shall enter via the Arome phasing representative at GMAP (presently, Y. Seity). However, the code contributions of various origins to the « mpa » project only shall be populated by GMAP. Thus, to be valid and to enter an official release, any contribution must first be given to GMME/Méso-NH (contact: C. Lac) and phased into the Méso-NH brand (the MASDEVa.b library) by the GMME/MC2 team. Post-verification inside the common libraries is ensured by GMAP (YS).

3. The externalized surface code (SURFEX) follows a similar rule: any contribution first must be handed over to the SURFEX core team (GMME/MC2; contact P. Le Moigne) before entering later on the « mse » common project and library. Post-verification of phasing is ensured by GMAP (YS or PROC).

4. Remote contacts in Aladin and Hirlam: Hirlam system expert diffusion list (alacode@meteo.fr) and specific Aladin contacts (R. Brozkova as main contact for ALARO evolution + Network Coordinator for Transversal Aspects – Tomas Kral - + any other known contributors + the phasers)

Phasing roadmap of actions:

1. D-3weeks: initial preparation for phasing coordination (information, context, calendar issues …) => COOPE/C.F. and Coordination Team (C.T.[2])

2. D-2weeks : reception of CYxxRy from ECMWF (Deborah => GCO and C.F.+C.T.) ; date and action to be checked by C.F.

3. check for availability of all ECMWF Technical Memoranda and distribute them (C.F.)

4. D-2weeks: installation of CYxxRy on clearcase and production of associated pack (GCO); two actions in parallel => compilation of ECMWF cycle on NEC and PC (with full output files i.<name>.L (GCO on NEC, GMAP on PC[3]); evaluation of source code phasing on clearcase (GMAP) and merge with CYxxTz from MF (using the latter as cc basis, GCO). Expertise help from GMAP staff might be needed to address difficult porting or merging issues (these shall be coordinated by C.T.)

5. D-1week: preparation for the arrival of Aladin and Hirlam phasers => evaluate difficult items, distribute topics among phaser staff (C.F. + C.T. + GMAP experts if required)

6. prepare updated namelists for new cycle (after investigation of CYxxRy and results from the merged cc branch) ALGO/E.S.

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[1]By common libraries, we mean the IFS/AAAH source code ensemble, including auxiliary, obs operators ...
[2]Coordination Team, alias C.T., generally constituted by 2 GMAP staff members
[3] Should already be coordinated by Coordination Team, PC volunteers to be found …

7. D-day: ideally, compilation ok and porting problems solved locally in Toulouse; arrival of Aladin phasers => start of active LAM source code phasing (Aladin, Alaro, Arome, Hirald)
8. Weeks 1-3: first Arpège trials (ALGO/P.S.), insert LAM code phasing in merged pre-cycle (GCO). Open NEC's "test" queue for some Aladin phasers to ease debugging. Corrections of bugs (distributed tasks during phaser meetings by C.T.). As soon as a basic fullpos and forecast look fine, install pre-cycle on the IBM and test there (around week 3 ?). Careful status on ODB (bator, mandaodb).
9. Weeks 3-6: LAM corrections, data assimilation (3D-VAR, 4D-VAR), CANARI.
10. About week 4: compile libraries on NEC with Open-MP link ("-p omp") for a basic Open-MP sanity check and another compilation with flowtrace facility ("-f trace") (action: GCO & tests by GMAP or phaser staff)
11. with all input from phasers, update the Aladin Technical Book (ALGO/Y.S.) and the Aladin 3D-VAR Technical Documentation (B.C. and L.A.); update Arpège documentation (ALGO/K.Y.)
12. week 5-6: if debugging needs decrease, careful check on CPU and memory consumption of new cycle w/r to previous one. Designated GMAP staff and Aladin/Hirlam phasers shall write their validation reports (10 lines up to 2 pages) and send them to C.T. (in Word format) for inclusion into the "Phasing Account Doc"[4]
13. preparation for IFS compatibility and preparation of pre-cycle format to be sent to Reading: extract Aladin auto-generated interfaces and mpa/mse interfaces (these need to be sent to ECMWF in addition to the source code itself for compilation of the new code); perform an IFS-like test compilation on any platform (compilation of global + obs libraries, without ald/mpa/mse/uti but with their interfaces) => GCO on "ash" platform ?
14. soon after week 6: pre-cycle sent back to Reading (GCO), collection of phaser Reports and storage on Maintenance-dedicated website[5] (C.T.)
15. about week 8: get back declared Cycle from Reading; install on clearcase and make associated pack on NEC (GCO); possibly add first bugfixes (late corrections)

steps 2, 3, 4, 13 and 14 fall out in case of an internal phasing for a CYxxTz.

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[4] The « Phasing Account Doc » shall contain basic information on the validation status of the new cycle: header (name of C.T. Team, list of phasers) + a series of short reports on the validation process and results of validation for several main configurations (4D-VAR, 3D-VAR, Aladin, Alaro, Arome, Fullpos, CANARI, (e)923, ...). The results should give the « really useful » information on required namelist changes, spectral norms, cost function values, possibly one or two pictures, ... (depending on the pertinent information)

[5] to be installed by GMAP/COOPE, with a free access in wiki forum mode accessible from the Aladin page