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# **Cycles, OOPS, technical stuff**

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Joint ALADIN / HIRLAM All Staff Meeting

Helsinki, 3-6 April 2017

# Outline

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- Latest R&D cycles released
- « new » mitrailleterie in one slide
- OOPS overview
- Content and timing of next IFS/Arpège/LAM cycles

# Latest R&D cycles released

- Common R&D cycles :
  - CY43 : 25/02/16
  - CY43T1 : 30/06/16
  - CY43T2 : 14/11/16
  - CY44 : 15/03/17
  - CY45 : end of April 2017
- Partner (Aladin) export versions :
  - CY40T1\_bf.05 : base export version released 4 Sept 2015
  - CY40T1\_bf.07 : upgraded export version (Alaro-1 changes, several fixes by Hirlam and Aladin) ; released xx April 2017
- MF code versions :
  - CY41T1\_op1 : switch to Operations on 8 December 2015
  - CY42\_op2 : MF e-suite including SURFEX and PCMT in Arpège, due to switch by end of May 2017
  - CY43T2 or CY44 : target base version of 2017/2018 e-suite ? also for export ?



# Content of last cycles : highlights ...

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- CY43 : re-factoring cycle, with many changes in the Observations code of IFS for OOPS
- CY43T1 : FP conf 903, GRIB1/GRIB2 support, EDA changes, PCMT and SURFEX for Arpège, ORORAD for Arome, ALARO-1, Hirlam (RACMO, ...), **etc.**
- CY43T2 : few fixes, wrap-up of CY42\_op1 (almost), Arpège and Arome forecast in raw single-precision mode
- CY44 : scientific merge of CY43T2 and CY43R3 + OOPS re-factoring (final version of super\_goms, ODB interfaces, FIELDS object, new TRAJ code for OOPS etc.)
- CY45 : OOPS re-factoring mostly for MODEL object (pass by arguments model variables, some reorganization into encapsulated derived types), extra OOPS stuff (multi-incremental IFS 4D-VAR, traj for simpl. Physics, VarBC ...)
- Note :
  - all FLUBs (technical memoranda) available at <http://www.umr-cnrm.fr/aladin/> (Partners only),
  - same for minutes of IFS/Arpège coordination meetings,
  - technical videoconferences minutes on <http://www.umr-cnrm.fr/aladin/> (OOPS pages)

# New mitraillette in one slide (K. Yessad, A. Mary)

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- Main ideas :
  - allow this technical benchmark framework to become more widely used (by users), and enable the implementation of more tests in a flexible manner (by users),
  - the share of mitraillette tests will become more spread ... but individual users will sometimes have to take care of their tests,
  - Users will have the possibility to implement modified versions of protojobs and namelists, via MF's GIT.
- Recent changes and soon to come :
  - scripts and namelists now in GIT (MF),
  - scripts adapted so that introducing new tests is easier,
  - more explicit naming convention,
  - tool to automatically update namelists,
  - tool to provide an overview of test results (later as scoreboard),
- CMCs in mitraillette : they will remain as defined by the Governance bodies.

## mitraillette in one slide (K. Yessad, A. Mary)



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# OOPS overview

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- Project management status (ECMWF data) :
  - Steve English new Project leader
  - Staff dedicated to OOPS progress : M. Chrust (C++), D. Salmond, M. Hamrud, others (IFS re-factoring and tests of OOPS-IFS)
  - Operational implementation at ECMWF expected for April 2019
- IFS Fortran code re-factoring status :
  - Have probably done good progress with OBS objects in CY43 & CY44 (y, H, but not R)
  - Basically completed GEOMETRY, STATE and FIELDS in CY44
  - MODEL object will have taken a quantum step with CY45, but IFS code will require further cleaning of USE MODULE statements in coming one/two years
  - Completion of CONTROL\_VECTOR in OOPS will require further progress with VARBC, TOVSCV, model error component ... probably for CY46
  - Full-POS in OOPS : good work in progress (Ryad)
- OOPS prototypes at MF :
  - Have recently ported Arpège 3D-VAR to CY43++ (rather tough technical phasing!)
  - Are now doing LAM 3D-VAR and trial to port EnVar prototypes to CY43++
- LAM Partners : Roel Stappers visiting scientist at EC ; prototypes installed on HMS computer (Maté Mile)



# Content and timing of next IFS/Arpège/LAM cycles

- CY45 (April 2017) : MODEL object re-factoring of IFS
- CY45T1 (mid-Sept / mid-Nov 2017 or so) :
  - Scientific content from MF :
  - Scientific content from LAM partners : to be discussed at this HMG-CSSI (Friday 7 April)
- ECMWF cycles : CY45R1, CY45R2
- CY46 (Dec 2017 / end of February 2018) :
  - Merge of scientific cycles CY45T1/CY45R2
  - IFS re-factoring for OOPS not already implemented in previous interim cycles (2 stage build strategy)
- Further look into 2018 : not yet dared to look that far





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**Yet some further outlook ... new  
dynamical cores / ATLAS / other  
impacts from ESCAPE / ...**



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