About cycling … oops !

C. Fischer

Content

- Cycling activities
- News from OOPS
- Miscellaneous

Cycling at present

- **CY38T1:**
  - CY38T1_op2: operational on MF's BULL
  - CY38T1_bf.03: export version for Aladin partners
- **CY39: declared on Nov 29, 2012**
- **CY39T1: declared March 26, 2013**
- **CY40: declared July 3, 2013**
  - CY40_op1: base for MF's high resolution E-suite (June 2014 – 1st quarter 2015)
- **CY40T1: declared March 11, 2014**
  - Removal of command line options, I/O server re-written, parallel FESTAT, …
  - AROME: sub-grid precipitations, flow-dependent SL, …
  - ALADIN/ALARO: VFE-NH, CPTEND_FLEX, new ACRANEB2, adjustments in TOUCANS
  - HIRLAM: portability & code normalization, VarBC/GPS (first stage), …
  - SURFEX V7.3+
  - *Variational assimilation still remains to be validated !*

Cycling in near future

- **CY41: in preparation right now; expected mid-June**
  - OOPS/Fortran: finalize encapsulation of Geometry and State; encapsulate Model object variables in Fortran (*uses the ASSOCIATE F2003 feature*); Trajectory handling adapted to OOPS requirements; …
  - First cycle where F2003 features are being implemented (7 items agreed)
  - ECMWF's porting to CRAY
  - RTTOV-11
  - Phaser team in Toulouse: Bogdan, Mohamed, Olda, Boryana, Andrey, Toon
- **CY41T1: start pre-phasing in Nov 2014 ?**
- **CY42: March to June 2015 ?**
  - More OOPS/Fortran features inside, as this cycle should host the last major "oopsification" steps of the IFS
- **Scientific changes expected in future cycles (from partners):**
  - Spectral coupling in link with E' zone & GP model only over C+I
  - New physics/dynamics interface (continuation)
  - Surfex call adapted to ALARO requirements
  - Further refinements in VarBC/GPS code (2nd predictor): coordination with GMAP

Part 2

news from OOPS

Events in 2013 / 2014

- OOPS Steering Committee meetings: 21 May, 27 November 2013, next on 3 June 2014
- Plan at ECMWF is to switch IFS 4D-Var to OOPS after CY42, in 2015
- Technical (video-conf) discussions: 11 July, 22 August, 19 September, 20 November 2013, 27 January, 20 February
- Progress: reported on next slides …
  - Minutes of coordination and technical meetings with ECMWF: at disposal on the Aladin website (http://www.cnrm.meteo.fr/aladin/spip.php?rubrique14)

IFS Fortran re-factoring

- **assimilation:** Jb, Control Vector and Obs Operators codes have now been significantly re-factored. Those efforts will now diminish.
- **break-up of Setup towards OOPS constructors/destructors:**
  - define Geometry & State objects: done.
  - disentangle Geometry/Domain/MPI aspects from the rest of Setup: performed with one important compromise, namely that only horizontal geometry will be multi-instantiable (*vertical grid is fixed for all objects in a same execution*)
  - Geometry, state and model variables are being encapsulated (in the Fortran part of the code) in order to properly build their object counterparts from C++
  - first impact seen in CY40; much more significant impact on code in CY41
- **Trajectory code re-written for CY41 => side-effects on LAM TL/AD ?**
- **progressive removal of CDCONF & command line options**

Object-oriented C++ layer & LAM

- **Arpège 3D-Var prototype:**
  - **Works from the C++ layer on CY40+add-ons, for all "conv" observation types (problems still with humidity control)**
  - **Ported on BULL and PC/Linux**
- **Arpège forecast prototype:**
  - **Works from the Fortran layer with L_OOPS=.TRUE.; crashes still from the C++ layer**
- **OOPS/LAM: milestones proposed at the last SC**
  - **C++ program for testing multiple instantiation**
  - **QG-LAM code: implement a large scale constraint and an LBC control in 4D-Var**
  - **Build LAM 3D-Var prototype**
  - **Build LAM forecast prototype**

Part 3

miscellaneous about dev activities within Aladin (and with Hirlam !)

Some of the major code/software dev's

- Full-POS:
  - **Full-POS2**: fully active in CY39T1 and CY40/CY40T1 for operational-type of FP and e927 applications. Available in parallel to FP1 (in the code)
  - Full-POS old version (« 1 »): disappears with CY41 !
- Development of an I/O server (Philippe M.)
- Various optimization & porting aspects addressed while porting to BULL (MF, June-September 2013)
- Harmonie System working week, Ankara 21-25 October 2013
  - Joint effort for installing CY38T1 on a local machine (TSMS)
  - Evaluation of Harmonie tools for installation and validation
  - Next joint System WW: planned in autumn 2014 in Bratislava

Mersi pentru atenţie