

Minutes of the 16 March 2017 technical video-conference

Participants:

EC: Deborah, Olivier, Mats, Sylvie

MF: Claude, Etienne, Karim, Alexandre, Ryad

Hirlam: Daniel

Aladin: Daan

Note: a few specific suggested actions had been highlighted in the previous meeting.

1. Actions from last tech videoconf

- access to the partner centre GIT repository.

Both EC and MF to check whether these accesses can be technically implemented (easily) => OPEN. Olivier to check with Tomas and ECMWF support.

- Full-POS object in OOPS.

EC will check when they would like to start testing the PP-object and liaise with MF. CLOSED. See item 4 below.

- MODEL object and obs operators. Problematic USEs of model info via USE MODULEs.

At EC, there will be some further discussion between Olivier and Alan Geer, in order to decide of an appropriate recoding for the IFS case.

Code examples will then be sent to MF for evaluation, followed probably by an exchange of questions/comments at the upcoming technical meeting. CLOSED for the time being. Olivier will send MF examples of adapted IFS obs operators when ready. The goal is to complete the pruning of all MODEL USE statements for CY46. Also Olivier would provide a python script to detect 'undesirable' MODEL USE's.

- Preparation for SPAMing the model variables for CY45.

Olivier expects to have an applicable SPAM script in February or early March.

He will make an IFS/ARPEGE SPAMed code version available to all participants, so that they can have a look into this code and make comments (Karim, Yves, Alexandre, Daan etc.). CLOSED. See also item 3 below.

2. Final debrief about CY44; decision of declaration (?)

CY44 has been declared on 15 March. MF had tested all the basic model configurations (Arpège, Arome, Alaro, Aladin), as well as Full-POS and TL/AD tests. An important numerical result was that models using the IFS radiation code cannot be bit-reproducible w/r to CY43 (Arpège, Arome), but all models are bit-reproducible when IFS radiation is switched off and the constant solar input is set back to its default value from CY43.

MF also mentioned that they are still busily validating the assimilation codes in CY43, more specifically the CANARI OI code. A single step screening and minimization was validated both for Arpège and Arome.

EC had tested successfully IFS 4D-VAR just before declaring CY44.

The participants believed that the build of CY44 eventually was very successful, given its complexity, with a fairly minor delay with respect to the expected calendar.

3. Preparation of CY45; reassess timing if necessary

The main aspect for CY45 is the Script-based Passing by Arguments of Model variables (SPAMing). In addition, EC suggested to implement several additional branches useful for OOPS-IFS :

- adapted trajectory codes for simplified physics
- first bits and pieces for VarBC (not yet working in OOPS though)
- fixes and updates to enable multi-incremental IFS 4D-VAR from OOPS-IFS
- adapted codes to redirect code printouts from std.out to listing (NULOUT)
- the present state of Full-POS changes towards OOPS and conf 903

MF insisted that these extra contributions should not delay the start of the SPAMing work and the possibility for MF and Aladin/Hirlam to check the impact on the LAM codes. These impacts should be studied next week to leave enough time for phasing and potential debugging. Olivier could indeed liaise with Alexandre for applying the SPAMing step, in parallel to the tests and implementation of the above listed extra recodings.

The decision was to let the additional list of changes 'in' in CY45, provided that they can be tested and accepted early next week. MF and EC will liaise by end of next week in order to confirm the list of contributions (so by Friday 24 March).

4. Follow-on works

- **Further Full-POS re-factoring towards OOPS** (Ryad) : Ryad presented the status of re-factoring FP for OOPS, and the mid-term suggested evolution of the FP software until full OOPS compatibility is achieved. The goal is to enable FP as PostProcessor object from OOPS for back-end post-processing, but also to enable using FP for the high-to-low (H2L) and low-to-high (L2H) resolution changes in Arpège 4D-VAR. Mats pointed out that there might be a design aspect to check in OOPS, since the H2L change was coded now as a PostProcessor in OOPS, while the L2H step is based on a the « addIncrement » method belonging to the FIELDS object. Further OOPS design can be discussed between MF and EC (Etienne, Olivier, Ryad). Slides are available from Ryad or Claude.

5. AOB

Mats mentioned that he would like to wrap-up the IFS write-out statements using the logger tool from OOPS. This change could be for CY46. He will send some code examples when ready. Claude reminded that MF had found problems with the key LSPRT in the assimilation systems for

Arpège and Arome, and that they will provide a note about these findings to EC.

Next meeting: technical video-conference planned for XX 2017, 14h30 CET / 1.30pm UK. => no firm date was decided. To be discussed at the forthcoming IFS/Arpège coordination videoconference (20 April).

Provisional agenda: feedback from CY45 achievement ?, VarBC, Model variables in Obs Operators ?, continued pruning of USEs in model routines ?, FP in OOPS ?

List of Actions for next technical meeting:

- Both EC and MF to check whether GIT accesses can be technically implemented (easily) => Olivier to check with Tomas and ECMWF support.
- The decision was to let the additional list of changes 'in' in CY45, provided that they can be tested and accepted early next week. MF and EC will liaise by end of next week in order to confirm the list of contributions for CY45 (so by Friday 24 March).

Claude.