

IFS/Arpège Coordination Meeting Minutes

From: Claude Fischer (MF)

To: (ECMWF) HR, RD Division & Section Heads, Deborah Salmond, Anne Fouilloux

To: (Météo-France) Arpège diffusion list

To: (ALADIN) Filip Vaňa

To: (HIRLAM) Xiaohua Yang

File:

Subject: IFS/Arpège coordination meeting held in Toulouse - towards Cycle 38 - 24th June 2010.

Participants:

Météo-France: Alain Joly, Florence Rabier, Claude Fischer, Ryad El Khatib, Karim Yessad, François Bouyssel (morning), Eric Sevault (afternoon), Gérald Desroziers (aft.), Philippe Marguinaud (aft.), Stéphane Martinez

ECMWF: Jean-Noël Thépaut, Anne Fouilloux, Deborah Salmond

ALADIN: Filip Vaňa

HIRLAM: Xiaohua Yang

0. Adoption of the agenda

adopted

1. Approval of Minutes of last teleconf meeting and Action status

Minutes of last phone call (March) have been approved.

1. IPR for ECMWF software and IFS/Arpège source code agreement: action held on & awaiting further discussions between ECMWF and MF at management level. => this aspect is linked with ongoing discussions between ECMWF and its Partner Countries about model code policy. The action is on hold.
2. ECMWF will write a short note about how to properly add new fields in the GOM arrays => not yet done; action kept.
3. Changes in the ODB tables and descriptors in link with the archiving of ODB in MARS: MF shall check internally for comments and possible further questions or suggestions towards ECMWF => to be further checked between

- ECMWF and MF (Anne and Dominique Puech); action to be processed promptly => OK, communication was fine. Action closed.
4. ECMWF will send MF a test program for reading/writing grib files (for performance evaluation of GRIB_API on NEC/SX9). ECMWF shall send MF any further information about vector optimization for sbyte/gbyte. => action to be continued. ECMWF will prepare and send MF a test program using GRIB_API (see also item on GRIB_API in the agenda below)
 5. ECMWF shall send MF a new version of the OO toy program, so that MF staff can start getting familiar with this code, and possibly “play” with it. => done. Action closed.
 6. MF will prepare an updated version of the Fortran code coding guidelines (in preparation to OOPS) => action to be resumed in October. Olivier Rivière will then take over the coordination of the Fortran coding guidelines from Ryad.
 7. ECMWF will prepare C++ coding guidelines in preparation for OOPS => still to be done.
 8. MF also indicates that it would be interested by repeating in Toulouse the OOPS training session planned at the Centre. The proposal is that one or two ECMWF staff can come to Toulouse in order to give the tutorials for MF (and possibly some Aladin/Hirlam) staff. Claude and Jean-Noël shall check how to organize this (including the most suitable dates). => done. See also item on OOPS in the agenda.
 9. Jean-Noël and Claude shall liaise and further adjust the initial managerial OOPS documentation to the expected requirements (task description, GANTT chart), for the next coordination meeting in Toulouse. => action to be continued. See also item on OOPS in the agenda.
 10. ECMWF should send MF the code and any documentation on FDB => done. Action closed
 11. MF should check whether cheap video-conf solutions (of the type of Skype) can be compatible and accessible for its video-conf systems. Alternatively, MF should check whether it can install a cheap solution, symmetric to what would be tested by ECMWF. Keep contacts between MF and ECMWF on this issue. => done. ECMWF will perform a few further investigations, and expects to buy a video-conf system in the autumn. MF indicates that its own facility (& room) already is busily used. Thus, video-conferences might need to be booked quite in advance (about two months ahead ?). action closed.

2. Progress and Plans of ECMWF

Recent IFS Cycles:

CY36r1 (Jan 26 2010)

CY36r2 (June 22 2010)

Upcoming IFS Cycles:

CY36r2 (June 22 2010)

CY36r4 (Autumn 2010)

Outlook

CY37r1

CY37r2
CY38?

Resolution upgrade to forecast systems: implemented Jan 26 2010 as Cycle 36R1:

Configuration:

- Deterministic model: T1279L91 (~16km)
- Outer loop of 4D-Var T1279L91 and inner loops (T159/T255/T255)
- EPS resolution T639 (to 10 days) and T319 thereafter
- Wave model (25km and 36 directions)

Cycle 36R2 June 22 2010:

- Development of Ensemble Data Assimilation
- Operational running of the Ensemble Data assimilation system
- Use to improve the initial perturbations in the Ensemble Prediction

For future cycles:

- To estimate analysis uncertainty
- To calculate static and seasonal background error statistics
- To estimate flow-dependent background error in 4D-Var - “errors-of-the-day”
- To improve QC decisions and improve the use of observations in 4D-Var

The old EVO-SVINI and the new EDA-SVINI EPS:

- SV- and EDA-based perturbations have different characteristics:
 - EDA-based perturbations are less localized than SV-based perturbations and have a smaller scale. They have a larger amplitude over the tropics. EDA-perturbations are more barotropic than SV-based perturbations, and grow less rapidly.
 - At initial time, SV-based perturbations have a larger amplitude in potential than kinetic energy, while EDA-based perturbations have a similar amplitude in potential and kinetic energy.
- When used to simulate initial uncertainties in ensemble forecasting, the best results are obtained when EDA- and SV-based perturbations are combined. The new EDA-SVINI[0.9] EPS is more reliable, especially in the short forecast range and over the tropics, and performs better.
- Work has started to investigate the impact of EDA-based surface perturbations on the ensemble performance.

Ensemble Data Assimilation (EDA):

- Control + 10 ensemble members using 4D-Var assimilations
- T399 outer loop
- T95/T159 inner loop (reduced number of iterations)
- Model error
- Spectral backscatter (SPBS) method
- Stochastically Perturbed Parametrization Tendencies
- Randomly perturbed observations and SST fields
- E-suite testing in progress, operational 22 June 2010

IFS cycle 36R(3)4 (active changes):

Model:

- LAI monthly climatology
- VDF changes to reduce diurnal cycle of 2mT
- New 5-species prognostic microphysics scheme
- Retuning of convective entrainment/detrainment
- Retuning of orographic gravity wave drag
- Reducing shortwave bias over the ocean
- Snow active in radiation scheme, new parameterization for raining clouds, ice particle effective radius varying with latitude
- AD/TL of non orographic gravity wave drag
- Bare ground evaporation revision + fix to surface runoff overshoot in supersaturated conditions
- Change to the altimeter data assimilation in shallow waters and revised sub-grid parameterization in coastal areas
- Assimilation of scatterometer winds as neutral winds
- Modifications of the skin layer scheme and Stokes drift computation

Data Assimilation:

- Improvement of all-sky microwave radiance assimilation
- Cloud/precipitation overlap assumptions consistent across model and observation operator, revised snow screening, performance enhancements
- Use of SSIREM IR emissivity in RTTOV
- SEKF surface analysis implementation and use of soil moisture data from ASCAT
- Revision of snow analysis
- 2 updates of trajectory in early delivery, reduced cut-off (10mn)

EDA: use of variances in 4D-Var

EPS:

- revised amplitude for the singular vector perturbations,
- 3-scale version of the Stochastically Perturbed Parameterization Tendencies with vertically consistent supersaturation treatment
- Spectral stochastic kinetic energy BackScatter (SPBS).

Other developments:

- ODB (massive cleaning and major reorganisation)
- Preparation for Oceansat-2 scatterometer data, F18 SSMIS, SMOS, FY3A, ADM-AEOLUS, Windsat, ...
- EDA optimal perturb background
- Mode-based VARBC, VARBC for aircraft temperatures
- Optimization of observation error correlations
- New option for solar variation, treatment of specified volcanic aerosol (Seasonal forecast)
- Enables ocean mixed-layer model
- MACC improvements (new obs operators, better aerosol model, varbc for ozone/aerosols, etc.)
- ENKF mods

- Mods to single column model
- Various bugfixes, optimizations and diagnostics

CY37R1:

- Introduce new Jb statistics
- Reduced thinning of AMSU-A radiances
- Simplify Observation pre-processing (in view of real time screening)
- Cycling of model error in weak constraint 4D-Var
- Activation of IASI/AIRS ozone radiance channels assimilation
- Upgrading of the wave data assimilation system, possibly including ODB
- Wave model changes: effect of currents in european shelf model
- Further revision in SPPT and SPBS
- Increased usage of cloud-affected data
- Implement DCDA with 24h weak constraint 4D-VAR
- Representation of obs error correlations for radiances
- Implement ground based GPS including VarBC
- Improved assimilation for screen level observations

CY37R2:

- Increased number of vertical levels (~140 TBD)

3. Progress and Plans of Météo-France

“summer E-suite” (June/September 2010):

- CY36T1
- Assimilation (global 4D-VAR as reference):
 - Assimilation of SSMI/S from 2 satellites
 - radiosonde bias correction scheme imported from IFS (*not yet decided*)
 - assimilation of GRAS/METOP GPS occultation
 - assimilation of low-peaking AMSU channels over sea-ice, with corresponding surface emissivity extension
 - modified algorithm for handling ambiguous wind direction from METOP/ASCAT instrument
 - use Synop RH2m observations in daytime
 - upgraded OBSTAT code to take into account radar reflectivity and RH profile retrievals (would probably become part of an official CY36T2 release)
 - use of ensemble assimilation σ_b 's in the screening; use ensemble assimilation σ_b 's for specific humidity in Jb
 - TKE field is cycled (instead of restarting with default value 10^{-6})
- Arpège ensemble assimilation installed in the operational scripting environment (replaces OLIVE supervision)

- Arpège/Aladin-France upper-air physics:
 - Cloud sedimentation scheme: introduction of different fall velocities for cloud liquid and solid water
 - Changes in the microphysics scheme in order to prevent liquid water when a model column has negative temperatures at all levels (conversion to snow and ice)
 - Deep convection scheme: changes in order to increase the onset and effectiveness of the deep convection and thus, prevent small scale hyper-active systems
 - *Only in Arpège*: modifications in the specifications of the sub-grid variability of orography
 - Extra diagnostic outputs of cloudiness, Liquid water content, Ice content, Turbulent kinetic energy, hourly outputs for surface fields
 - Improved diagnostic scheme for computing the 0 deg. C. height
- Relaxation towards the OSTIA SST analysis (Met Office) in all models (NCEP analysis still used over lakes)
- Arome-France:
 - 80km thinning for IASI pixels; 25 km thinning for AIREP
 - revisit the blacklist for radar data; assimilation of more coastal radars (7 more radars, including 5 coastal locations)
 - some tunings for reflectivity retrievals
 - surface assimilation based on Surfex, with the 2m increments of T2m and RH2m computed using OI formulation
 - Extension of the size of the horizontal domain (750*720 leading to an increase of 1.76 of the domain size)
 - Use the Arome analysis file as 0h coupling data (instead of the Arpège-interpolated fields), as is done in Aladin with incremental DFI (but no DFI in Arome)
 - Code optimization for fitting the requested elapse time for Arome/large domain: inside the ETKF shallow convection code, inside the I/O and message passing communications (especially in link with SURFEX)
 - Diagnostic outputs: PBL height, surface radiation flux, modelled satellite imagery for SEVIRI channels 6.2 and 10.8 μm , removal of modelled reflectivity in the 0h output file

This E-suite should be launched by end of June, and may switch to operations by end of September.

Development cycles:

CY36T2:

- Assimilation:
 - Cleaning of Neural Network routines for AIRS (V. Guidard)
 - Adaptation of code to use the ECMWF bias correction for radiosonde and SYNOP at Météo-France (P. Moll)
 - code cleaning including upgrade of the use of Atmospheric Motion Vectors and Scatterometer data with respect to ECMWF use, which should be easily extended to the use of other types of satellite data (information of ODB columns: gen-centre, gen_subcentre and

- datastream in sathdr table,...), one bug fix playing a role in a Scatterometer diagnostic and in the a-priori choice of the 2 solutions among 4 when these are available (C. Payan)
- Aeolus bufr decoding for ODB (C. Payan)
 - Microwave radiances:
 - Addition of emissivity parameterization using a Lambertian approximation for refractivity (F. Karbou) and compare with the specular hypothesis,
 - Infrared radiances:
 - Computation of cloud top pressures for cloudy IASI radiances (performed once during screening with a different formulation than in the IFS, V. Guidard and N. Fourri ). Same development already is operational for AIRS.
 - Introduction of an alternative cloud detection method for AIRS and IASI (MMR code from Thomas Aulign ), unless similar work planned at ECMWF (V. Guidard or N. Fourri ) – to be confirmed
 - Snow analysis updated code in CANARI (F. Taillefer)
 - Catch-up of code for radar reflectivity if not already in the “_bf” branch of CY36T1 (E. Wattrelot)
 - Finalization of the Optimal Interpolation code within the SURFEX framework (so-called “OI_main” code); the core part of this code, which is to replace the old ISBA surface analysis code in CANARI, already is introduced in CY36T1 (F. Taillefer & J.-F. Mahfouf)
 - Arp ge/Aladin physics:
 - Adaptations for using 3MT (modular multi-scale microphysics/turbulence) – J.-M. Piriou
 - Arp ge simplified physics schemes (O. Rivier ):
 - Modified gravity wave drag scheme (by ignoring the perturbations of some terms)
 - New large scale precipitation scheme: adjustment Smith scheme ($Q_v \Rightarrow Q_v^*, Q_i^*, Q_r^*$, cloud fraction) followed by auto-conversion and precipitation of all condensed excess (Q_r^*)
 - Convection scheme based on a simplified Betts-Miller scheme
 - Arome:
 - Implementation of DrHook in mpa/mse/surfex/xrd (excluding the mpl part of xrd)
 - Alaro:
 - Significant update of the Alaro turbulence scheme (TOUCANS) by I. Bastak-Duran and F. Vana
 - Various optimization aspects:
 - 4D-VAR for NEC/SX9, based on the work in early 2010 (E. Sevault, R. El Khatib, P. Moll)
 - Arp ge/Arome overall optimisations (vectorization, overhead reductions) (R. El Khatib)
 - EDKF scheme on NEC/SX9 - if not already present in the “_bf” branch of CY36T1 (Y. Seity)
 - Corrected (the present code is hard-coded for IBM thus unusable for NEC) and upgraded automatic NPROMA optimization for LAM (considering minimization of memory conflicts, optimal distribution

with respect to given Open-MP threads, optimization with respect to vector lengths/size of the scalar cache,...) by F. Vana.

- Use of Ecoclimap-derived orography and land/sea mask in configuration 923 (via a PGD file written in FA format) (F. Taillefer, S. Riette, K. Essaouini)
- Use of SST/OSTIA in Arpège, Aladin and Arome (F. Taillefer)

CY37: next common cycle with the IFS (end-August / end-October)

CY37T1: first quarter of 2011 ?

4. Finalization of CY37

ECMWF has already sent MF the pre-CY36R4 for inspection. This version has been installed on clearcase at MF. MF still needs to complete its CY36T2. The validation of CY36T1 before the E-suite can be started also is quite difficult: after the initial period of phasing and technical validation (about 2 months), several long assimilation tests revealed remaining problems, only seen after a number of assimilation networks. One difficult problem was traced back to a compiler optimization problem (in RTINT and TL/AD).

ECMWF will start the preparations for the next computer (benchmark) in autumn 2011, and thus summer 2011 is a hard deadline for switching to the new vertical resolution in operations.

Calendar for cycling operations towards CY37:

- ECMWF will send a CY36R5 mid-August
- MF would send back pre-CY37 mid-October
- ECMWF will add some trailing developments to it (obs error correlations, VarBC for GPS, ODB changes for continuous screening, more ODB cleaning)
- ECMWF would send again pre-CY37 for a last check at MF, then declare CY37 early November

Hirlam raised the issue to investigate for a common repository tool for the source code (SCR). They mention that their logic of updating the code is more continuous and based on a dedicated team.

Concerning a network-accessible SCR, ECMWF is considering GIT for some code (OOPS toy). MF has no plans so far to move from clearcase, but it shall investigate what would be feasible (action on MF). The reason is that it would be of interest to be able to share views of current developments instead of waiting full code exchanges.

5. IFS cleaning status

Cleaning has been performed for CY37 both at MF and at ECMWF (finalized while Karim visited ECMWF in early June).

Karim has now a version V6c of his cleaning document. Some features will now receive a higher priority: right options for arguments (INTENT), LASCAW, new derived-type variables for packing some parameters or data of a same family together,

shorten the list of arguments in the call to MF's physics, code workarounds not to trigger false alarms of non-allocated arrays when running in bound checking mode (CPG and below).

Karim will produce a new version of his document V6d. There is a common agreement that these cleaning steps should go on as much as possible.

6. GRIB-API issues

One version of the GRIB_API library is installed on MF's NEC, but performances still are very poor (factor 30 on GRIB I/O performances) because of poor vectorization. In order to progress on this issue, Enrico Fucile (ECMWF) shall liaise directly with NEC support and test on MF's NEC (note: this work of optimization will also be beneficial to other partners having vector machines). Another action is on ECMWF to provide a simple test program for assessing performances (read and write a GRIB file a number of times with low truncation data + one T1279 data set).

7. Status and evolution of ODB

An important cleaning of the ODB databases has been performed by ECMWF. This is mostly for reducing the size of the databases. Anne presented this work the day before the coordination meeting to GMAP staff.

8. Overview of MF's Vortex project

Eric Sevault gave a presentation of the Vortex project ("Versatile Objects Rounded up in a Toolbox for environmental EXperiments"). Vortex aims at proposing common low level tools and conventions for implementation in distinct Research and Operations scripting systems. The project is composed of several steps:

- thorough discussions between all users on needs and specifications
- development of a low level toolbox (Python), from which bigger bricks of a scripting system can be built. This toolbox will replace the existing one in CNRM's OLIVE model interface. The toolbox will allow automatic script writing. From that point of view, Vortex sticks to the current OLIVE approach to scripts.
- presently, and for the whole of the main development phase, collaboration is strongly focussing on MF's Research and Operations Dpts; later, other partners may approach the project for information and possibly some interaction (Mercator, Aladin/Hirlam, ECMWF)

ECMWF has raised a few questions for information: duration of the project (estimated landmarks: first version ready by end 2010; porting to operations by end 2011), the User demonstration version can contain a version of the OOPS toy system, the SWAPP/OLIVE kernel is kept for Vortex.

ECMWF has expressed its interest, and is proposing that Eric can further discuss this project with ECMWF staff (action on ECMWF & MF: organize an extension of Eric's stay in Reading during the NEC User seminar beginning of November).

9. Status on IFS scalability and optimisation / EnKF developments

Deborah gave a talk on the scalability tests of 4D-VAR with IFS. She recalls earlier results by Mats on the IBM Power 6, about the existing inhibitors to more parallelism which are inherent to the VAR algorithm (change of variable, global minimization, ...). The evaluations of a T1279L91 4D-VAR also show the important part of time spent with communications, I/O, MPI barriers, and some unexplained parts.

ECMWF has performed recently several improvements for optimization: I/O, TL/AD physics which have entered CY36R4. Another gain was obtained by sorting BUFR tables by obs type, which improves load balancing (sensitive in the first trajectory + screening, when the biggest amount of obs is handled).

ECMWF will do new assessments of performances, and intends to continue to work on the efficiency improvements of 4D-VAR for the next generation of computers.

Ryad presented the recent results on performance and optimization of the Arome 3D-VAR. Gains have been obtained by grouping message passing in bigger (and fewer) chunks of data to be communicated (mostly before I/O), and also by efforts on vectorization.

Jean-Noël presented the development project for an experimental Ensemble Kalman Filter system, undertaken by Mats Hamrud. The project was started with the input expertise by Jeff Whitaker, and in collaboration with Massimo Bonavita. The system has two variants: EnSRF and LETKF. The code has been developed in Fortran 2003. It is at present technically working, re-using components from the existing IFS, especially the screening code to compute the obs-bg departures. The analysis is done via a localized Optimal Interpolation. Tests are being performed in order to assess the meteorological performance of the EnKF with respect to 4D-VAR, based on simplified assimilation experiments using only surface pressure data. The Ensemble Filter is run with 60 members at T159. Among the observed aspects: scalability of screening (on full observations) seems poor, digital filter initialization needs to be further checked.

This project is not stopping the continuous monitoring and optimization of 4D-VAR: with respect to the next computers' generation, ECMWF will continue to put efforts on the scalability (long-window 4D-VAR, ensDA, higher resolution, possibly investigation of parallel minimization with a good preconditioning).

Part of the aspects listed above also are of interest to MF, and collaboration on scalability issues should be further strengthened.

10. OOPS

Claude summarizes MF's views on the analysis of the toy model (April version) sent by ECMWF:

- Toy (April version):
 - Strategy of derivation: parallel for any object, with respect to model (geometry) => some of the choices for deriving objects have however changed in more recent versions of the toy
 - Need for good C++ knowledge (training issue)
 - Interoperability C++/F90 on NEC/SX9: still to be checked ...
- Broader thoughts:
 - In the most likely assimilation algorithms, what are the key aspects that require polymorphism and inheritance (3D/4D-VAR, long window

4D-VAR, EnKF, PSAS) ? => if only IFS/Arpège and LAM « States » were considered in OOPS, would the OO-level still be needed ?

- Key benefits of polymorphism and inheritance for observation operators & interface to ODB
- How far would we go if we « only » re-arrange and re-modularize the Fortran code into convenient entities ?
- Bottom-up approach:
 - Simply re-arrange the big bricks, or do also some low-level recoding ?
 - Some complex Fortran code could be re-written (the example of the trajectory handling has been cited by several GMAP staff)
 - Strategy of implementation of the re-arranged Fortran code: small steps over longer time or big steps

Furthermore, a number of issues were addressed during the visit by Yannick and Mike on June 17th, which showed the need for more liaison, a tighter collaboration and more common analysis and understanding. MF is expressing its interest on the principle of cleaning and re-arranging the existing code, especially if it is shown to ease code maintenance, scalability and the preparation for new R&D (for instance, for changing the dynamical kernel). However, MF is expressing concerns on the benefits versus risks of going towards a pure abstracted C++ control level, since it sees the implied need for training a significant part of staff to a second programming language. Another issue which is not clear to MF is the outcome result of the Fortran code cleaning associated with code abstraction and information hiding.

At present, MF cannot agree on the OO-layer and C++ coding for the restructuring of the IFS/Arpège/LAM system.

Various individual opinions were expressed during the discussion among attendants. Some of them are listed below:

- the importance to show the benefits of the OO-layer for instance for developing new assimilation algorithms, as opposed to adding new geometries in a given algorithm;
- the potential of being as generic as possible is seen as beneficial by system developers;
- Anne insists on the benefit of information hiding when it comes to clearly separate the ODB structure from the scientific specifications of any observation operator. This is part of the goal which ECMWF wants to achieve with OOPS for the obs operator code;

ECMWF is proposing a preliminary phase to OOPS, devoted to more analysis and proof of concept work:

- define a common team for the design of the future system, focussing on the analysis aspects (OO, which entities, which relationships between those entities). The toy model would remain a testbed code for implementing design features.
- as an illustration of what the future Fortran code would look like:
 - work out new versions of the obs operator code (at least, for one example) – would be done by ECMWF with a MF staff following the work -,
 - recode Jb both global and LAM versions – this could be done involving LAM-aware staff from the Partners (Aladin, Hirlam)

MF notes that some pre-OOPS activities especially on preparation steps for the Fortran code re-arrangements (classifying modules and namelists) could be continued (a first document has been written by Karim and discussed with ECMWF).

The task analysis and GANTT charts should be reviewed during the summer (coordination by Claude and Jean-Noël). List of actions:

- revise the task analysis and GANTT charts
- MF to find at least one contact for design questions and for following the toy model developments
- start the bottom-up work (1. classification of elements first, followed later by 2. re-arrangement of code then 3. modularization):
 - obs operators and GOM data structure => one contact person to be designated at MF
 - Jb including questions about geometry (spectral versus wavelets, global versus LAM) => one participating staff from the LAM community (to be checked with Aladin and Hirlam as well)

MF points out that the issue of manning the OOPS actions (or feasibility steps) will be difficult for them, and the exact level of manpower commitment will have to be checked internally during the summer. MF and ECMWF agree to re-discuss the OOPS calendar and actions in the second half of September.

ECMWF reminds that a specific training of some Hirlam staff to the toy model will take place early July.

11. Content and timing of CY38

CY38 presumably would be scheduled for September/October 2011 (to be confirmed in the next coordination discussions).

12. AOB

- enhanced coordination on specific R&D work (increased contacts): MF would like to promote the new facilities offered by video-conferencing for more and various short topical coordination meetings between MF and ECMWF staff
- ascending compatibility in the common code: MF has faced difficulties in validating recent cycles due to broken upward compatibility in some developments done at ECMWF (obs operators and obs parameters, radiation). More care should be given either to keep compatibility for one cycle, or at least for describing the numerical impact of a non-optional change when this impacts results of validation

13. Date and Place of Next Meeting

Physical coordination meeting in Reading, in 2011.

Next phone calls: Thursday November 4th, 1.30 pm (Reading) / 14h30 (Toulouse) or somewhat later depending on the program of the NEC User seminar (Eric Sevault shall attend the meeting while in Reading).

Next OOPS meeting: tentatively scheduled for Friday September 24th (1pm Rdg / 14h Tlse)

List of actions:

- ECMWF will write a short note about how to properly add new fields in the GOM arrays
- GRIB_API performance issue on vector machines (NEC/SX): Enrico Fucile (ECMWF) shall liaise directly with NEC support and test on MF's NEC (note: this work of optimization will also be beneficial to other partners having vector machines). Another action is on ECMWF to provide a simple test program for assessing performances (read and write a GRIB file a number of times with low truncation data + one T1279 data set).
- MF will prepare an updated version of the Fortran code coding guidelines (in preparation to OOPS) => action to be resumed in October. Olivier Rivière will then take over the coordination of the Fortran coding guidelines from Ryad.
- ECMWF will prepare C++ coding guidelines in preparation for OOPS
- Concerning a network-accessible SCR, ECMWF is considering GIT for some code (OOPS toy). MF has no plans so far to move from clearcase, but it shall investigate what would be feasible (action on MF).
- action on ECMWF & MF: organize a prolongation of Eric Sevault's stay in Reading during the NEC User seminar beginning of November, for further introducing Vortex to ECMWF system staff
- coordination for OOPS: The task analysis and GANTT charts should be reviewed during the summer (coordination by Claude and Jean-Noël).
Complete list of actions:
 - revise the task analysis and GANTT charts
 - MF to find at least one contact for design questions and for following the toy model developments
 - start the bottom-up work (1. classification of elements first, followed later by 2. re-arrangement of code then 3. modularization):
 - obs operators and GOM data structure => one contact person to be designated at MF
 - Jb including questions about geometry (spectral versus wavelets, global versus LAM) => one participating staff from the LAM community (to be checked with Aladin and Hirlam as well)