

Minutes
WG on system aspects
held besides the 25th AHW; April 14, 2015

Agenda:

1. F2003 features
2. Benchmarks
3. OOPS refactoring
4. GRIB tables
5. BUFR
6. Common validations

1. F2003 features

- Indeed, more and more F2003 features are being proposed and accepted in the IFS code, either to improve portability or to use object oriented programming. The rule is that new enhanced features enter only new pieces of the code, in order not to spoil what is working.
- It was shown that gfortran compiler (that is free of charge) works well what concerns performance and portability, so people are encouraged to try it, e.g. in case they encounter problems with their compilers.
- F2008 features are currently under investigations.

2. Benchmarks

It was mentioned that benchmark preparation deserves cooperation. When preparing benchmark it is advised to use always the most recent version of the code, with relevant branches if needed (after they were sufficiently validated e.g. with mitraillette).

3. OOPS

- OOPS project is ongoing, work recently accelerated (new data structures, more generalized pointers...). New features are available in newest cycles => people working on the code should be aware of it (e.g. not to break data structures).
- The way of adding new variables will be different, but (hopefully) easier.
- There is a strong link with 4DVAR, since OOPS aims at implementing a completely new C++ code layer for defining the objects of data assimilation, and this also requires quite many changes in the whole system (Fortran code below is being re-factored).
- No implications on gmckpack are expected.

4. GRIB tables

- Pending issue from 2014 WG on system. Effort to unify (if possible) the GRIB code tables that are use within NMSs. Currently there is work in progress with GRIB2 tables for HARMONIE and SURFEX - coordination between SMHI and ECMWF. HARP project is to be contacted to coordinate as well (Ulf -> Alex). Task for ACNA and LACE ASC: involve ALADIN Partners.
- Similar work to be made (partly was made?) for GRIB1, but as the GRIB1 edition is not general enough to cover all the needs in SURFEX, it is envisaged not to spend too much effort on it.

5. BUFR

- The work executed at individual NMSs in order to adapt to TAC->BUFR migration was discussed. MF has informed that OULAN code will be frozen. BATOR code was adapted to use BUFR,

corresponding versions are available for CY38T1 and for CY40. OULAN used under HARMONIE is maintained and adapted for BUFR (by Eoin Whelan) but is still experimental. OULAN is still used for OPLACE. From there raw BUFR data will be soon available for individual Partner's tests.

- The observation operator question was raised as TEMPs are still treated as one vertical column despite the possibilities opened with high resolution BUFR format.
- The issue of thinning of TEMP HR BUFR data should be discussed with MF observation people.

6. Common validation

A long term topic with already two HARMONIE system Working Weeks realized (Ankara, Bratislava), but no consensus how to really work together on the code/system was reached up till now. HARMONIE system is recognized as a powerful tool, but it is based on "h" code versions, whereas ALADIN people are supposed to work on "T" versions. It is well understood that maintaining of the clean "T" code versions within HARMONIE requires dedicated manpower. However, with HARMONIE system ALADIN community can have access to new developments that are not yet available in "T" versions either because they are still in the development phase or the incremental bugfixes were not (yet) issued (ALARO1, ALARO1+SURFEX, SODA). It was proposed to start with the stepwise approach: to use externally linked "T"-based MASTER within HARMONIE to validate some configurations.