

System WG summary

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- Presentations
 - OOPS
 - Scalability of model and bator
 - 36h1.3 evaluation

TOY OOPS

- The toy model reflects the solution in IFS. This is where we can be proactive and try out LAM concepts
- Available from ECMWF on request (contact Deborah)
- Very few (~5) have worked with the toy model
- Idea to add e.g. a shallow water model, hard to get started. ECMWF asked to add a “IFS” type model state example.
- Comments on the level of objectification.

IFS OOPS

- CY38 will be the first OOPSified cycle. Also available in CY37r3.
- OOPSification of IFS is yet still very much cleaning, reorganizing and preparation.
- The rewriting has made the code cleaner (ECMWF statement)
- Very much will remain the same (e.g how to add new GFL variables) as long as the time step is not reorganized.
- C++ or fortran2003 still debatable.

IFS OOPS

Concerns/questions

- Will the C++ layer remain thin?
- What does encapsulation means?
- Handling of geometries
- Training asked for but not planned. ECMWF expects feedback (and contributions).
- HIRLAM should join the MF-ECMWF discussions.
- In general no big worries expressed (lack of knowledge?)

Scalability

- Scalability of AROME (SURFEX) main issue
- Why does AROME scale worse than ALADIN/ALARO?
- SURFEX OpenMP solution not yet settled.
- Issues with solutions for vector vs scalar machines. Example: radiation in ALARO on scalar machines.
- Investigate the impact of no calculations in the extension zone and generalize it for different kinds of input.

Scalability GPGPU

- No general/portable GPGPU methods available.
- RTTOV coded for GPGPU in Canada.
- ICHEC (Ireland) has a HARMONIE GPGPU project. Asked to keep ALADIN/HIRLAM updated.
- ECMWF has not started with any GPGPU related work.

Scalability I/O

- Idea's to write SURFEX files in FA format. To be introduced in surfex v7.x
- The new (prototype) IO server presented by Ryad will be available in cy37t1. Distribute document.
- (not discussed) HIRLAM aim for GRIB I/O. Problem with divergence?

Scalability

- Lack of staff...
- Profiling on all platforms.
 - Monitor the performance in cy37t1. Create easy to use environment in HARMONIE.
- Maintain the RAPS benchmark. Make clear where to find data.
- (not discussed) bator vs bufr2odb