



Expert Team on System Aspects

Review Talk

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Past Plans and Actions



- Over the timescale for 2008/2009 the System Aspects Expert Team focused solely on the Interoperability Programme
- A meeting was held in December 2008 along with the Interoperability Kick-Off Meeting at ECMWF
- Change of the Chairperson: In July 2009 I took over the role as chairperson for the Expert Team from Rachel North
- The ET did not really discuss other issues of „System Aspects“



Interoperability



What is the Interoperability Programme?

The following slides are courtesy of Glenn Greed, UKMO, temporary Project Manager.





Met Office

Interoperability

Responsible Member: UK Met Office.

Glenn Greed (Temp ProgM) Rachel North (ProgM) Sept 2009



Progress Report

- Background
- Progress: Key Deliverables / Milestones
- Issues



Interoperability:

3 year programme Sept 08→Aug 11

- To support future collaborative effort in European Limited Area Modelling by:
 1. **Defining a standard output format**
 2. **Providing software tools (adaptors) to convert LAM output to the standard format**
 3. Enabling European LAMs to run from appropriate alternative model fields
- **To display or use in NMHS post-processing system**
- To provide operational backup



Year 1 Plan: Deliverables and Milestones

- **D1: A report documenting the standard output format and including a list of parameters for which the output format is to be applied. (Jun 09)**
- M1: Complete an inventory of existing consortia model output formats, conversion tools and contact points.
- M2: Definition of a set of common output parameters which are to be exchanged for verification and/or post-processing purposes.
- M3: Definition of the standard output format.
- M4: Plan for maintenance of the standard format.

D1 dictates what standard output needs to be created





Year 1 Progress: Deliverables and Milestones

- **D1: A report documenting the standard output format and including a list of parameters for which the output format is to be applied. (Jun 09)**

A provisional 'standard output' had been discussed/drafted and is described in a draft D1 report.

This report defines 3 provisional parameter lists, for:

1. Forecaster visualisation, verification and post processing
2. Initial conditions for a forecast run and corresponding LBCs
3. Consideration of the parameters required to define the model surface.

The agreed underlying format will be GRIB2. Although this may be reviewed in future.

Data will be exchanged on the native grid of the driving model.
(With the exception of 1. where Arakawa A-grid is used in the horizontal.)



Issues related to D1

- The set agreed for the standard output should concentrate upon being a 'minimal' set of parameters that each model can supply. It is most likely to 'evolve' as we create/build/test the LAM adaptors, rather than remain the set described in the draft D1.
- Adequate documentation describing both the vertical and horizontal algorithms (grids) is required by all consortia as the standard output is on the 'native' grid and will need to be understood if read in by another consortia model.
- Surface parameters are very much model dependent. The complexity of any conversion from one model to another must be recognized and possibly excluded from the initial phase of the programme. A request about these issues has been sent to the Expert Team on Surface and Soil Processes.



Year 1 Plan: Deliverables and Milestones

- **D2: Documentation describing the requirements and specification for the adaptor software. (Aug 09)**
- M5: Identification of methods to implement adaptors.
- M6: Agree adaptor software maintenance method.

D2 dictates how the standard output will be created and processed by each consortia





Year 1 Progress: Deliverables and Milestones

- **D2: Documentation describing the requirements and specification for the adaptor software. (Aug 09)**

Participating consortia have uploaded sample model output GRIB2 data to ECMWF ftp site.

The sample data sets aim to support the development of adaptors; 'can they read the data and does it look as expected?'

Each consortia shall use the ECMWF GRIB API to produce GRIB2 for the standard output:

- Code is centrally maintained
- Easier to debug any problems using a common API.



Year 1 Progress: Deliverables and Milestones

- **D2: Documentation describing the requirements and specification for the adaptor software. (Aug 09)**

Initial plans:

COSMO: are planning to extend their current software, INT2LM and Fieldextra to work as the required adaptor.

ALADIN: are also planning to extend current software. For example, adapting '901' to handle GRIB2 data and use FULL-POS post processing software.

UK Met Office: is planning to create a new stand-alone adaptor for conversions/interpolations outside of their current UM interpolation software, albeit using where appropriate existing UM code. (Fieldsfile \leftrightarrow GRIB2)

Work needs to be progressed on D2.



Issues related to D2

- D2 is running behind schedule, although should not significantly impact upon adaptor delivery, D3/M7.
It is the responsible members role to ensure D2 is progressing.
- A software maintenance method has not yet been agreed, although it should be the responsibility of each consortia to maintain their own adaptor.
- Implementation of GRIB2 is a non-trivial issue, which would be a project of its own.



Year 2 Key Deliverables

- **D3: Four 2-way adaptors that transform the output from every LAM to the standard output format and vice versa. (Aug 10)**
- M7: Provision of an adaptor that transforms relevant model parameters from each LAM to the standard output format. (May 2010)
- Each consortium will be responsible for the provision of the 2-way adaptor to convert between the output format of its LAM and the standard output format.
- Much work to be done! Every Model has to read several external grids

D3 is the work to build the required adaptors





Addressing the Issues

- The Interoperability programme is planning to hold another Interoperability meeting to:
 - Discuss and resolve the issues related to D1 and D2
 - Plan the way forward to ensure the delivery of Year 2 deliverable, D3.

End of



contribution



Outlook



- The Expert Team on System Aspects will continue to guide the work in the Interoperability Programme
- But: Is this all?



What is „The System“



- A fascinating crime story about Artificial Intelligence
- A Software Engineer implements an application that enables „The System“ to think and build up consciousness
- In this Thriller it is pretty clear that „The System“ is „The Internet“
- But what about the „System Aspects“?



Thank you very much for your attention!

Questions?

