System Aspects Review

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SRNWP System Aspects Expert Team

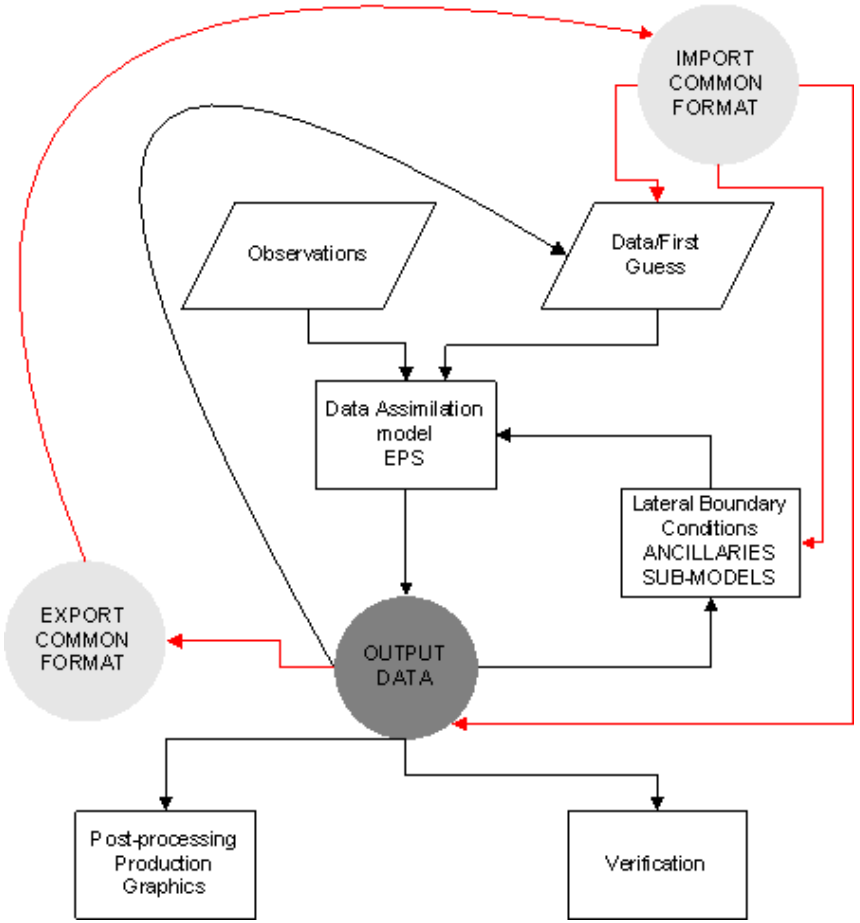
EWGLAM/SRNWP, Madrid, 2008

System Aspects Expert Team

- created to focus on:
  - Data pre- and post-processing, code aspects
  - Interoperability Programme submitted to the EUMETNET Council, May 2008

SRNWP Interoperability

- 3 year programme
  - 22 participating members
- 5 deliverables
  - 1. Define a standard output format
  - 2. Document the ‘adaptor’ software specification
  - 3. Provide 2-way adaptors from each consortium
  - 4. Enable LAMs to use boundary and initial conditions from another model
  - 5. Provide a sustainability plan for the outputs



SRNWP Interoperability

- **NOT IN SCOPE**
  - To provide a central data server for data exchange
  - To make necessary changes to each NMHS operational system to allow ‘real-time’ use
- Additional benefit?
  - Facilitate collaboration with academic community

SRNWP Interoperability

- Deliverables are:
  - D1: A **report** documenting the **standard output format** and including a **list of parameters** for which the output format is to be applied. An **initial plan** for ongoing maintenance of the standard will be provided.

SRNWP Interoperability

- This requires consideration of:
  - Preferred output level type
  - Underlying data format to use
  - Horizontal grid details
  - Vertical grid details
  - To agree a list(/lists) of necessary parameters
- Meeting soon to discuss these issues

SRNWP Interoperability

- Deliverables are:
  - D2: **Documentation describing** the requirements and **specification for the adaptor software**. This document will include identification of the **methods** that can be used **for implementing the adaptors** and **for maintenance of the software** in connection with the consortia. The UK Met Office will coordinate the work in consultation with the global model providers.

SRNWP Interoperability

- Deliverables are:
  - D3: **Four 2-way adaptors** that transform the **output from every LAM to the standard output format and vice versa**. **Documentation** will also be provided.

SRNWP Interoperability

- Deliverables are:
  - D4: **Enhancements to existing software** tools that **enable all LAMs to process data from the four Global Model providers**. This **includes** the **documentation** as well as the software.

SRNWP Interoperability

- Deliverables are:
  - D5: Provide a **plan** for the **long-term sustainability** **of** the project **outputs**

SRNWP Interoperability

- Adaptor software to exist as *freeware*
- Standard output format maintenance

Existing Software in the Consortia

- ALADIN:
  - 'Configuration 901' of Arpege/Aladin : to convert IFS Grib file to Arpege file
  - FullPos: internal Arpege/Aladin post-processing software used as well for :
    - (Arpege or Aladin) to (Aladin) file transformation (various geometries)
    - 'traditionnal' back-end post-processing (various levels & geometries)
- HIRLAM:
  - traditional tools for IFS $\Rightarrow$ HIRLAM
  - INTVER: developed by Juan Simarro and colleagues for the spanish SREPS project
  - GL: comprehensive HIRLAM / ALADIN Grib handling tool with possibility of interpolate / project / rotate between several projections on different grids

Existing Software in the Consortias

- COSMO:
  - INT2LM: reads data from various models (GME, IFS, COSMO) and interpolates to a rotated lat-lon COSMO grid. Can handle Grib and NetCDF.
  - FIELDEXTRA: a toolbox to manipulate COSMO-Model data and gridded observations, including a generalized horizontal interpolation algorithm
- UK Met Office:
  - RECONFIGURATION module: read data in either ECMWF GRIB1 format or ‘dump’ format output from UM model runs. Can interpolate to any lat-lon (or rotated) grid. Can interpolate vertically. Configures file to contain only those fields needed for model run.
  - MakeBC: produces lateral boundary condition files for use with the UM.
  - UM Utilities: contain functions which can manipulate fields/files in UM model output.
    - *e.g.* perform simple mathematical functions on a field
    - Add specific fields to a file (assuming correct format)
    - Summarise file contents

Progress

- Programme started on 1st September
  - subject to conditions imposed by EUMETNET council
  - Decision document is on the agenda of the 34th Council meeting next week
- Workshop to discuss D1 planned for next month

System Aspects Expert Team Work Plan 2008-09

- Accepted that we will Focus on SRNWP Interoperability
  - Year 1: To define a ‘standard output format’ for limited area model output
  - Year 1: To define a list of required meteorological parameters for this format

Conclusions

- System Aspects Expert Team to focus immediately on delivering the SRNWP Interoperability project