

MANCHESTER
1824

The University
of Manchester

BFG2

Chris Armstrong
Rupert Ford
Graham Riley

Combining the strengths of UMIST and
The Victoria University of Manchester

PRISM Metadata Meeting 9th-12th May 2006



Overview

- What is BFG2?
- BFG2 metadata (and spatial grid metadata)
- Role and Scope of BFG2
- BFG2 Status
- Thanks ...

What is BFG2?

- Bespoke (Coupling) Framework Generator
- Code generation system (based on xml description and xslt transformation)
- Creates bespoke control and communications code (e.g. for Oasis4 or ESMF)
- Isolation of Science
- BFG2 c.f. BFG(1)
 - Put/get communications interface
 - Argument passing communications interface
 - Variable compliance

BFG2 metadata

- Define - Compose - Deploy
- Define a single model
- Compose models together (for science)
- Specify how the coupled model will be Deployed onto resources

- Currently no spatial metadata
- Plan to use agreed standard description(s)
- Appropriate “level” of description?
- Watching brief

Role and Scope of BFG2

- Developed from Met Office Flume requirements and discussions with the community
- Isolate science code from (coupling) support code - Target infrastructure can change with no change to science
 - Future proofing
 - Support multiple target fabrics/frameworks
- Mixed argument passing and in-place support
 - NWP high performance large memory jobs as well as ESM
 - Use most appropriate interface
- Multiple language support
- Prototype has found a role with “smaller scale” coupled simulations (Tyndall Centre, GENIE) and there is interest from other disciplines (Fluid-Structure interaction, Power Electronic Systems, Biological System Modelling, ...)

BFG2 Status

- BFG(1)
 - In use by Tyndall Centre
 - Can target seq,mpi,globus,tdt,webservices,Oasis3
- BFG2
 - Metadata being integrated with Flume metadata
 - GENIE examples demonstrate equivalent performance with their current system, working toward integration into GENIE system
 - Manual examples targetting Oasis4 and ESMF
- Advantage of using xml (with xslt): Graphml, Xforms, svg, documentation, ...

Thanks ...



Combining the strengths of UMIST and
The Victoria University of Manchester