

*CERN, 21-23 June 2004*

# “The first 30 days of the EGEE middleware”

<http://cern.ch/arda>

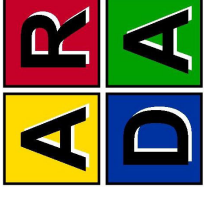
**Massimo Lamanna**



**EGEE**  
Enabling Grids for  
E-science in Europe  
[www.eu-egee.org](http://www.eu-egee.org)

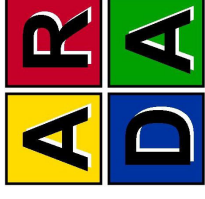
**LCG**  
[cern.ch/lcg](http://cern.ch/lcg)

# Summary



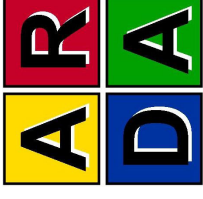
- Summary →
- ARDA workshop #3
  - When? *September/October?*
  - How long? *Couple of days*
  - Format? *Open to the whole community (but this closed event proved to be useful)*
- Other announcement
  - use **project-lcg-ardainfo** (contains the old arda workshop)
  - [atlas-sw-arda@cern.ch](mailto:atlas-sw-arda@cern.ch)
  - [cms-arda-developers@cern.ch](mailto:cms-arda-developers@cern.ch)
  - [cms-arda-web@cern.ch](mailto:cms-arda-web@cern.ch)
  - [cms-arda@cern.ch](mailto:cms-arda@cern.ch)
  - [project-arda-middleware-contributors@cern.ch](mailto:project-arda-middleware-contributors@cern.ch) ← Keep it? Merge it?
  - [project-lcg-arda@cern.ch](mailto:project-lcg-arda@cern.ch) ← ARDA + all experiments
  - [project-lcg-ardadev@cern.ch](mailto:project-lcg-ardadev@cern.ch) ← internal (CERN section)
  - [project-lcg-ardainfo@cern.ch](mailto:project-lcg-ardainfo@cern.ch) ← “new”
  - [workshop-arda@cern.ch](mailto:workshop-arda@cern.ch) ← remove!

# More workshop activity



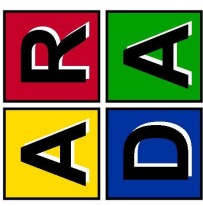
- 1<sup>st</sup> ARDA workshop (January 2004 at CERN; open)
- 2<sup>nd</sup> **ARDA workshop (June 21-23 at CERN; by invitation)**
  - “The first 30 days of EGEE middleware”
  - **Main focus on LHC experiments and EGEE JRA1 (Glite)**
- NA4 meeting mid July
  - NA4/JRA1 and NA4/SA1 sessions organised by M. Lamanna and F. Harris
  - EGEE/LCG operation new ingredient!
- 3<sup>rd</sup> **ARDA workshop (September 2004; open)**
  - “The ARDA end-to-end prototypes”

# Infrastructure/prototype issues



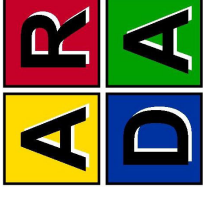
- First contact with Glite positive
- Prototype approach positive
  - Incremental changes, fast feedback cycle
  - Workshop useful to start iterating on priorities
  - See Derek's presentation
- Wish list on the current prototype installation:
  - More resources!
  - More sites!
  - Improve on infrastructure
    - Procedures should be improved
    - Service stability
    - *Move to a pre-production service as soon as possible*

# GAS and shell



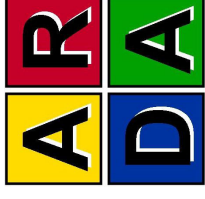
- Useful concepts/tools
- GAS as “Template” service for the experiments to provide their orchestration layer
  - Individual services accessible as such
  - They should expose “atomic” operations
  - Custom GAS can be provided by the experiment
    - API needed
- Shell extension preferred to dedicated shell emulation
  - Cfr. ALICE/ARDA demo presentation

# General/Architectural concerns



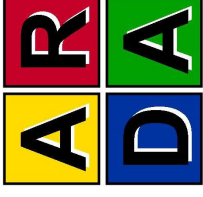
- Next month home work:
  - List of LHC experiments priorities put together by ARDA
- Connections with the architecture team
  - Strong need to see and interact at the architectural level
  - *At least agree on a mailing list...*
- Priority is on developing the new system functionality
  - Whenever possible backward compatibility is a nice feature
  - Investment on the experiment side
- Long standing issues:
  - Outbound connectivity
    - Functionality needed
    - Mechanism to provided needed (not necessarily direct connectivity)
- Identity of user jobs running in a remote site
  - “gridmapfile / setuid” is an implementation
  - What is really needed is traceability

# Database related



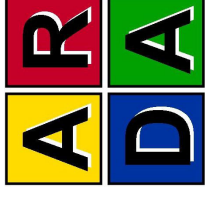
- Pervasive infrastructure and/or functionality
  - File catalogue →
  - Metadata catalogue →
  - Other catalogues (cfr. ATLAS talk)
- Plan for the infrastructure
  - Probably we are already late... hopefully not too late
- Different views on how to achieve
  - Load balance // remote access // replication
  - Disconnected operations
  - Level of consistency
  - Uniform “access”
    - GSI authentication
    - VO role mapping (authorisation)

# File catalog related



- Experimenting in ARDA has started
- Looks realistic that the File Catalog interface “validated” via independent experience
  - Cfr. Andrei Tsaregorodtsev’s LHCb talk
- LFN vs (GU)ID discussion
  - Not conclusive but interesting
  - Bulk of the experiment data store might be built with files with a GUID (and metadata) but without LFN
    - POOL/ROOT compatible (GUID used in navigation, not LFN)
    - Need further exploration!!
  - **Bulk of the experiment files: WORM**
    - Working decision
    - Other experiment-dependent mechanisms to cover modifiable files needed
    - N.B. modifiable file = same GUID but different content

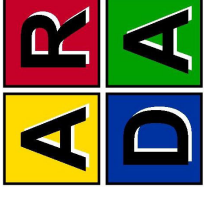




## Metadata database related

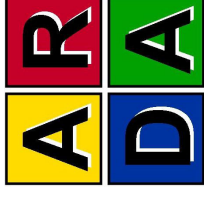
- **Very many parallel initiatives!**
  - in the LHC experiments
  - across the experiments (gridPP MDC)
  - in the MW providers community (LCG, OGSA-DAI, Glite, ...)
  - Experiments interested in having input on technology
  - No clear plan of convergence
- **Web services is the way to go?**
  - Or is it just a data base problem?
  - “any” GUID-Value pair system could do it
    - Maybe GUID-GUID pairs
- **Anatomy vs. physiology**
  - The client API does not map 1:1 onto WSDL
  - Access method != data transfer protocol
  - This could trigger requests for specific client bindings

# Data management related



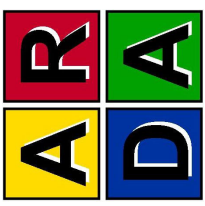
- Experimenting in ARDA has started
  - Not all components
- Data management services needed
  - Data management transfer services
    - Needed!
    - ML: Can Glite provide the TM(DB) service?
      - Reliable file transfer is a key ingredient
      - This functionality was implemented to fill a gap in DC04
      - CMS is entering a “continuous” production mode: room for constructive collaboration
      - Misuse protection (cfr. ALICE talk)

# Application software “installation” (package management)



- All experiments have/use one or more solutions
- Interest is high for a common solution, but the priority is not very clear
  - Service to manage local installation
- Some features:
  - Lazy installation
    - The job expresses what it needs, the missing part is installed
  - Triggered for all resources
    - Overwrite the default installation for one experiment
  - Installed software is a resource
    - To be advertised: could be used in the matchmaking process

# End of the workshop



- Look forward the next 30 days (and more) of useful work
  - With the Glite development
  - Within the experiments
  - With the service providers
- Next checkpoint in Fall
  - But EGEE-NA4 as an important intermediate step
  - Hopefully with a lot of direct users experience on the prototype!
- ... back to work! 😊