

# EGEE Middleware Activities Overview

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# Middleware Re-engineering Goals and Objectives

- Provide robust, supportable middleware components
  - Select, re-engineer, integrate identified Grid Services
  - Evolve towards Services Oriented Architecture
  - Adopt emerging OGSI standards
  - Multiple platforms
- Selection of Middleware based on requirements of
  - The applications (Bio & HEP)
    - In particular requirements are expected from LCG's ARDA & HepCAL
  - The Operations (i.e. LCG)
    - E.g. deployment, updates, packaging, etc..
- Support and evolve of the middleware components
  - Evolve towards OGSI
  - Define a re-engineering process
  - Address multiplatform, multiple implementations and interoperability issues
  - Define defect handling processes and responsibilities

# EGEE Middleware Activity

- Activity concentrated in few major centers
- Key services:
  - Information Collection and Accounting (UK)
  - Resource Brokering (Italy)
  - Data Management (CERN)
  - Quality Assurance (France)
  - Security (Northern Europe)
  - Middleware Integration (CERN)
  - Middleware Testing (CERN)



- Middleware Integration and Testing Centre
- Middleware Re-engineering Centre
- Quality and Security Centres

# Overall Approach

- Support the components from PM 0
  - Start with LCG-2 code base as used in April'04
  - Evolve towards OGSi
  - Allow for component per component deployment
- Aim at continuous Integration and Testing
  - Avoid big-bang releases
  - Allow for selected components to be deployed and used
- Leverage on [SPI](#) Tools
  - Common Tools with LCG
  - Nightly Builds
  - Nightly Tests
- The two major software release deliverables are snapshots
  - Defined base for reviews
- Quality Assurance
  - Use Q&A processes and methods as defined by the Quality Assurance Joint Research Activity

# Some issues to be addressed

- Reliability and resilience
  - Allow for failure free operations for long periods
  - Avoiding manual interventions
- Robustness
  - Be able to handle abnormal situations
  - Ensure some level of fault tolerance
- Security
  - Restricted access to resources including data
  - Comply to security infrastructure
- Scalability
  - Scale up to requirements defined by Operations (i.e. LCG)
- Maintainability, usability, supportability
  - Configuration Management
  - Documentation, packaging, defect handling processes,....
- Standardization and service orientation
  - Comply to OGSA/OGSI
  - Ensure interoperability with other implementations

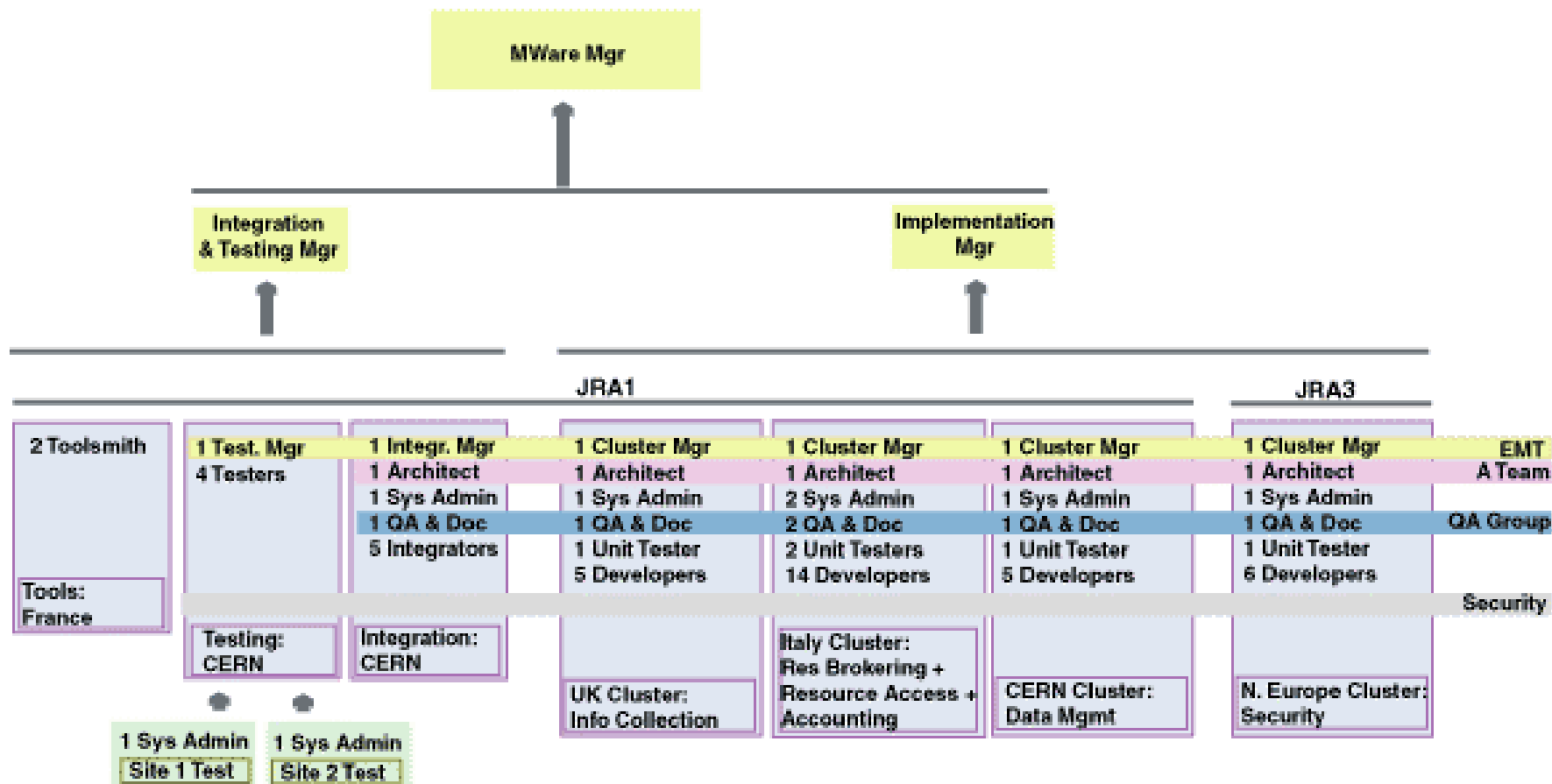
# Milestones

Milestone	Month		Description
MJRA1.1	M3	06-2004	Tools for middleware engineering and integration deployed
MJRA1.2	M3	06-2004	Software cluster development and testing infrastructure available
MJRA1.3	M5	08-2004	Integration and testing infrastructure in place including test plans (Rel 1)
MJRA1.4	M9	12-2004	Software for the Release Candidate 1
MJRA1.5	M10	01-2005	Integrated Release Candidate 1 enters testing and validation period (Rel 1)
MJRA1.6	M18	09-2005	Test plan for core Grid components and overall Integration (Rel 2)
MJRA1.7	M19	10-2005	Software for the second release candidate available
MJRA1.8	M20	11-2005	Release Candidate 2 enters testing and validation period (Rel 2)

# Deliverables

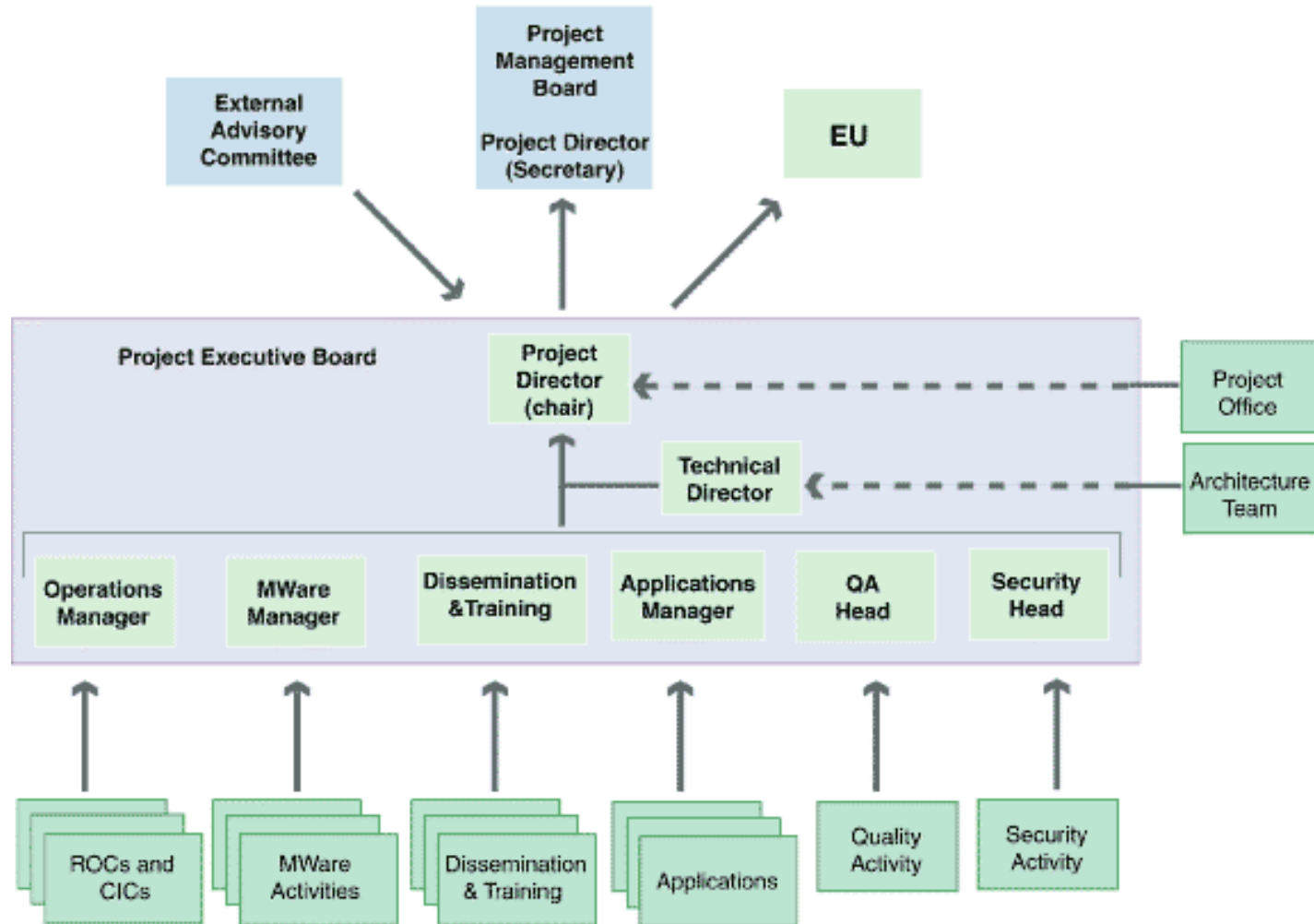
Deliverable	Month		Nature	Description
DJRA1.1	M3	06-2004	(Document)	Architecture and Planning (Release 1)
DJRA1.2	M5	08-2004	(Document)	Design of grid services (Release 1)
				<b>PM9 12-2004 First EU Review</b>
DJRA1.3	M12	03-2005	(Software)	Software and associated documentation (Release 1)
DJRA1.4	M14	05-2005	(Document)	Architecture and Planning (Release 2)
DJRA1.5	M15	06-2005	(Document)	Design of grid services (Release 2)
				<b>PM18 09-2005 Second EU Review</b>
DJRA1.6	M21	01-2006	(Software)	Software and associated documentation (Release 2)
DJRA1.7	M24	03-2006	(Document)	Final report

# EGEE Middleware: Management Structure





# Overall EGEE Project Management



# Partners & efforts requested

Middleware		
Participant	Middleware Task/Activity	Professional FTE (EU funded + unfunded)
<b>CERN</b>		
CERN	Data Management, testing and integration, overall coordination	16+16
<b>Italy/Czech Republic</b>		
INFN	Resource Access, Resource Brokering, Accounting	6+6
Datamat S.p.A.	Resource Brokering, Accounting	6+0
CESNET	Logging and Bookkeeping	2+2
<b>UK-Ireland</b>		
CCLRC	Information Collection & Retrieval	4+4
<b>USA</b>		
UChicago, USC,UWMadison	VDT Support	0+N/A
<b>France</b>		
CNRS	Test tools support group	0+2
<b>Security</b>		
<b>Northern</b>		
KTH/PDC	Security Coordinator	1 + 2
UvA	Security group for the National VL and Grid project	2 + 2
UH.HIP	Security Group	1 + 1
UiB Parallab	Secure software center (Selmer Center). HPC center.	1 + 1
<b>Total</b>		<b>39+36</b>

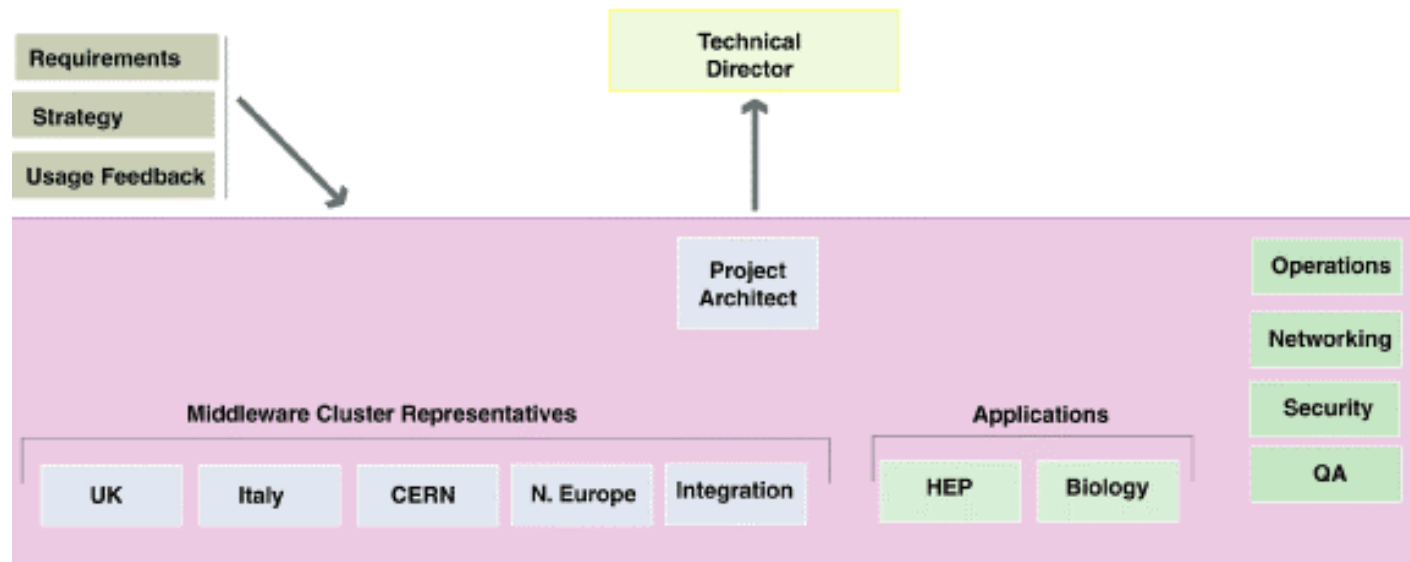
# Summary



- The EGEE middleware activity will provide a middleware package
  - satisfying requirements agreed with LCG (HEPCAL, ARDA, etc.)
  - and equivalent requirements from other sciences
- Very tight timescales
  - Hiring should happen soon to ensure project fully staffed from start-up in April 2004
  - Essential to have processes in place before project start up
- Essential to ensure close LCG-EGEE collaboration
  - Management structure have been adapted
  - LCG-2 as a base for EGEE Middleware as of April 2004

# Architecture Team

- Defines architecture and planning
- A draft of System Requirements, Architecture, short list of middleware components should be available shortly after project start
- Takes input from Applications and Operations
- Define the list of components to be re-engineered
- Documents established agreements with providers
- Each software cluster has an architect



- **Middleware Engineering Process Management**
  - Ensure Software clusters follow Architecture & Design rules
  - Ensure adherence to Software Engineering Process
  - Composed of
    - Middleware Manager
    - Chief Architect
    - Implementation group Manager
    - Implementation clusters Managers
    - Integration & Testing Manager
    - Quality & Documentation person

# Quality Assurance

