Enabling Grids for E-science in Europe

Information Society Technologies

EGEE

JRA4 EXECUTION PLAN

FOR THE 1ST YEAR

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Abstract: This document describes the execution plan for JRA4 Network Services Development for the first year of the EGEE project.

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1. INTRODUCTION

1.1. PURPOSE

This document describes the execution plan for JRA4.

1.2. APPLICATION AREA

The execution plan refines JRA4 activities defined in the technical annex. The work on the execution plan may lead to minor changes to the Technical Annex.

1.3. REFERENCES

[This subsection provides a complete list of all documents referenced elsewhere in the document.]

[R1] https://edms.cern.ch/document/400278	Technical Annex
[R2] https://edms.cern.ch/document/422807	Execution Plan Guidelines
[R3] https://edms.cern.ch/document/386039	DataGrid Quality and performance indicator

1.4. DOCUMENT EVOLUTION PROCEDURE

This document will be updated incrementally as the JRA4 Activity knowledge increases.

Comments should be sent to the author.

1.5. TERMINOLOGY

Glossary

EGEE	Enabling Grids for E-Science in Europe
ISO 9001	International Organization for Standardization: Quality assurance normalization
SA2	Network Resource Provision activity
PBE	Project Executive Board
TA	Technical Annex
PBS	Product breakdown structure
WBS	Work breakdown structure
FTE	Full Time Engineer
F/UF	Funded/Unfunded
JRA4	Joint Research Activity 4: Network Services Development
AAA	Authentication, Authorization and Accounting

Definitions

2. PROJECT OVERVIEW

2.1. SCOPE OF THE WORK

EGEE aims to provide a production-quality infrastructure integrating a large number of software components provided by different, geographically distributed organizations. The fifth framework Grid projects, notably DataGrid, have defined and deployed the latest generation of Grid software. Building on this work and the experience acquired, EGEE will provide to the Grid applications an environment based on production quality software and facilities available around the clock. The highest priority will be to deliver a system with high quality characteristics, and so a programme of quality assurance is a crucial part of EGEE.

To be completed later.

2.2. TABLE OF JRA4 MILESTONES AND EU DELIVERABLES

Three main Tasks are defined inside JRA4:

- Bandwidth allocation and reservation
- Network performance monitoring and diagnostic tools
- IPv6 uptake

2.2.1. Bandwidth allocation and reservation

Project Month	Deliverable or Milestone	Item	Lead Partner
M6	DJRA4.1	Specification of interfaces • to network control plane, • to global resource reservation middleware for bandwidth allocation and reservation.	UCL
M15	MJRA4.4	Prototype Implementation of bandwidth allocation and reservation service at specific network ingress points using static network configuration.	UCL
M15	MJRA4.5	Specification of end-to-end bandwidth reservation system.	UCL

2.2.2. Network performance monitoring and diagnostic tools

Project Month	Deliverable or Milestone	Item	Lead Partner
M3	MJRA4.1	Definition of initial network performance metrics and composite measurements required.	UCL
M6	MJRA4.2	Requirements and use cases for monitoring and diagnostics tools for users, middleware and operations.	UCL

M9	DJRA4.2	Definition of standardised network measurement query/response interfaces, with adequate authorization.	UCL
M12	MJRA4.3	Prototype tool to access network performance metrics from a limited set of measurement points.	UCL

2.2.3. IPv6 uptake

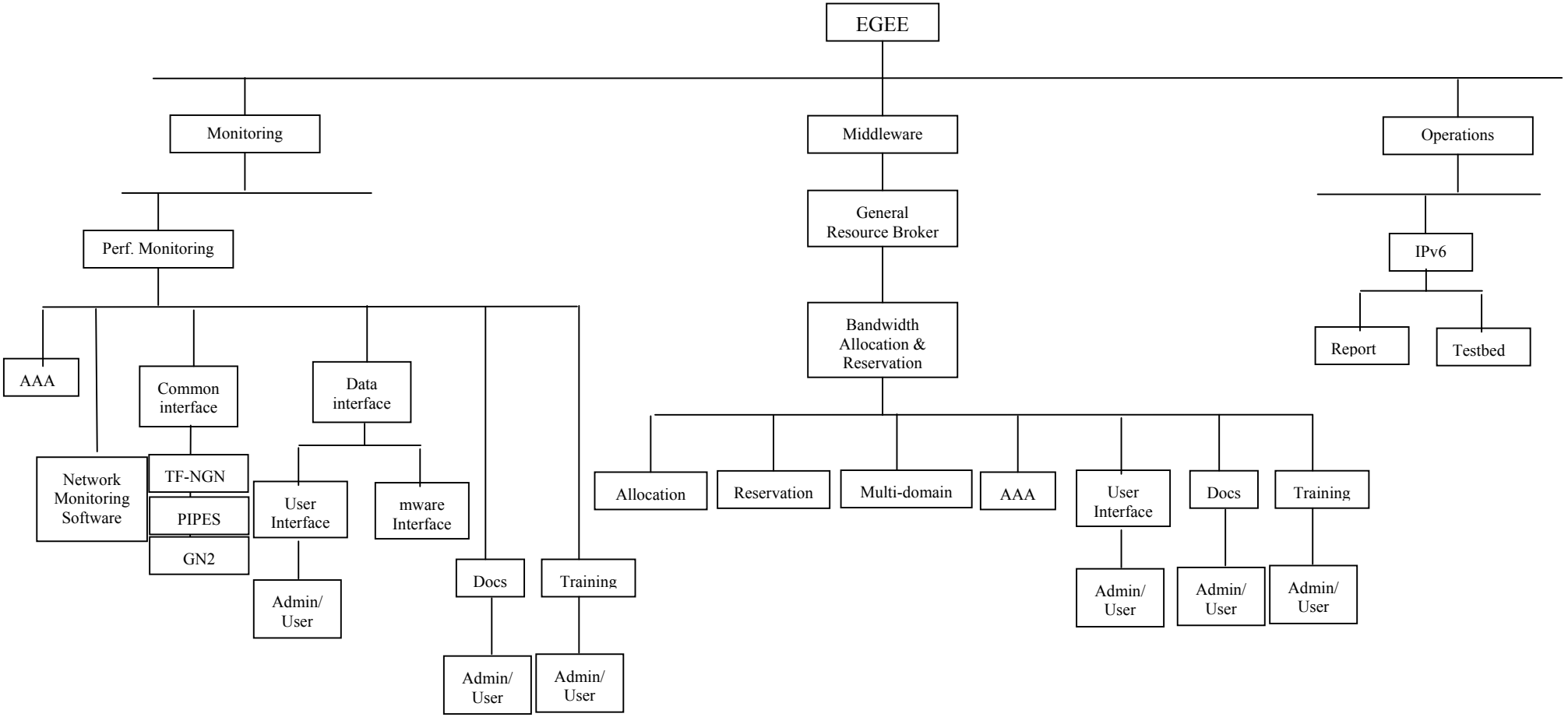
Project Month	Deliverable or Milestone	Item	Lead Partner
M18	DJRA4.3	Report on implications of IPv6 usage for the EGEE Grid.	UCL

3. ORGANISATION

To be completed later.

4. ACTIVITY MANAGEMENT MONITORING

4.1. PRODUCT BREAKDOWN STRUCTURE



4.2. WORK BREAKDOWN STRUCTURE

4.3. TA EFFORT ESTIMATE

This section extracted from the TA, recalls the TA JRA4 estimated efforts.

The effort expressed in FTE in the TA, are converted into Person month (PM). One FTE=24PM for the duration of the project. The distribution of the resources between the first and the second year of the project is added.

Activity JRA4	Total Effort (FTE)	Total Effort (PM)	1st Year Effort (PM)	2nd Year Effort (PM)
UCL	3	72	36	36
CNRS	2	48	24	24
DANTE	1	24	12	12
DFN	0.5	12	6	6
GARR	1	24	12	12
Total	7.5	180	90	90

Total effort=Funded+Unfunded, PM= efforts are expressed in Person month.

4.4. WORK BREAKDOWN STRUCTURE FOR THE FIRST YEAR

The Work Breakdown Structure (WBS) is constituted during the initial phase of the project and will be the basis for setting up the first project planning.

The following table will be updated deeper as JRA4 activities will be refined.

The main tasks are detailed at section 5.

The PM total effort corresponds to the TA effort expressed in PM for the first year (see §4.3).

Total effort=Funded+Unfunded; Efforts are expressed in Person month (PM).

Task	Task Title	Milestones or Deliverable	Month Start	Month End	Effort UCL	Effort CNRS	Effort DANTE	Effort DFN	Effort GARR	Total effort	Task explanation & comments
			m	m	pm	pm	pm	pm	pm	pm	
TJRA4.1	**Network Performance Monitoring**										
TJRA4.1.1	Achieve MJRA4.1		1	3						**5**	
TJRA4.1.1.1	Study of GGF NMWG schema	**MJRA4.1**	1	2						2	MJRA4.1: Definition of Perf. Metrics and Composite Measurements
TJRA4.1.1.2	Selection of the appropriate metrics		1	2						1	
TJRA4.1.1.3	Definition of potential composite metrics		2	3						2	
TJRA4.1.2	Achieve MJRA4.2		1	6						**10.0**	
TJRA4.1.2.1	Requirements and Use case for end users (Interaction with NA4)	**MJRA4.2**	1	5						3.0	MJRA4.2: User, mw & ops requirements
TJRA4.1.2.2	Proposition and Use case for mw (Interaction with JRA1)		1	5						4.0	
TJRA4.1.2.3	Requirements + Propositions and Use case for ops (Interaction with SA1/SA2)		1	5						3.0	
TJRA4.1.3	Deliver DJRA4.2		6	9						**10.0**	
TJRA4.1.3.1	Study of existing query/response method inside each project (PiPES, PERF, GN1...). Consider following OGSA/OGSI standard	**DJRA4.2**	6	8						2.0	DJRA4.2: Definition of Standard Network Measurement Interfaces
TJRA4.1.3.2	Addition of AAA in the study. Liaison with JRA3		7	8						3.0	
TJRA4.1.3.3	Modeling Interfaces using sequence and class diagrams		7	8						3.0	
TJRA4.1.3.4	Promotion of this interface among other project activities		8	9						2.0	
TJRA4.1.4	Achieve MJRA4.3		6	12						**10.0**	
TJRA4.1.4.1	Selection of potential architectures to use	**MJRA4.3**	6	7						2.0	MJRA4.3: Prototype tool to access performance metrics
TJRA4.1.4.2	Development and Integration of the query/response interface from TJRA4.1.3		9	11						3.0	
TJRA4.1.4.3	Prototype the Users Interface		9	11						3.0	
TJRA4.1.4.4	Testing		11	12						2.0	

Task	Task Title	Milestones or Deliverable	Month Start	Month End	Effort UCL	Effort CNRS	Effort DANTE	Effort DFN	Effort GARR	Total effort	Task explanation & comments
			m	m	pm	pm	pm	pm	pm	pm	
TJRA4.2	**Bandwidth Allocation and Reservation**										
TJRA4.2.1	Deliver DJRA4.1		1	6						**10**	
TJRA4.2.1.1	Study and Assessment of the Interfaces from existing projects	**DJRA4.1**	1	3						2	DJRA4.1: Specification of Interfaces to network control plane & global resource reserv. Mw
TJRA4.2.1.2	Definition of the Interface for global resource reservation with JRA1.Modelling with use cases or sequence diagrams.		1	3						3	
TJRA4.2.1.3	Survey of potential current sw (GARA and others). Comparing via Use cases. Recommendation either use one of them or build a new one.		2	5						3	
TJRA4.2.1.4	Study of the network equipment in use and access methods		3	5						2	
TJRA4.2.2	Start with the MJRA4.4		6	12						**15**	
TJRA4.2.2.1	Develop/Modify of a simple user interface	**MJRA4.4**	6	7						4	MJRA4.4: Prototype implementation of bandwidth Alloc. Reserv. Just in Ingress
TJRA4.2.2.2	Develop/Modify of the Network equipment Interface		6	8						4	
TJRA4.2.2.3	Develop/Modify of the Core sw. Bandwidth Manager		7	10						4	
TJRA4.2.2.4	Integration and tests		10	12						3	
TJRA4.2.3	Start MJRA4.5		6	12						**10**	
TJRA4.2.3.1	Survey of e2e solutions used in current sw (GARA and others)	**MJRA4.5**	6	7						2	MJRA4.5: Specification of e2e bandwidth reservation system
TJRA4.2.3.2	Study of generic signaling platforms. Scalability issues. Interaction with routing mechanism. Recommendation report for multi-domain scenario.		7	12						4	
TJRA4.2.3.3	Study of solutions for advance reservations in single and multi- domain scenario with variable bottleneck.		8	12						4	

Task	Task Title	Milestones or Deliverable	Month Start	Month End	Effort UCL	Effort CNRS	Effort DANTE	Effort DFN	Effort GARR	Total effort	Task explanation & comments
			m	m	pm	pm	pm	pm	pm	pm	
TJRA4.3	**IPv6**										
TJRA4.3.1	Start DJRA4.3		1	12						**8.0**	
TJRA4.3.1.1	Study of IPv6 implication	**DJRA4.3**	1	12						6.0	DJRA4.3: Report on Implications of IPv6 usage for EGEE Grid
TJRA4.3.1.2	Likely collaboration with 6NET		3	12						2.0	
	Recurrent Tasks										
TJRA4.4	**Research Activities Follow-up**										
TJRA4.4.1	Analysis of Data gathered by Monitoring		10	12						**1.0**	
TJRA4.4.2	Documenting Activities		2	12						**1.0**	
TJRA4.5	**Review Delivarables of other activities**	**Networking and Management**	1	12						**1.0**	
TJRA4.6	**Technical Collaboration with Internet2**		1	12						**1.0**	
TJRA4.7	**Technical Collaboration with other EU proje**		1	12						**2.0**	
TJRA4.8	**Collaboration with GGF (NM-WG/GHPN-WG)**		1	12						**1.5**	
TJRA4.9	**JRA4 Management**		1	12	4.5					**4.5**	
Total effort (PM)					**4.5**					**4.5**	
TA allocated effort					***36***	***24***	***12***	***6***	***12***	90	

4.5. STAFFING AND RESOURCE PLAN FOR THE FIRST YEAR

In order to follow the hiring of the resources needed, the following table will be updated from now and the deviation will be reported to the PEB meeting.

The PM total effort must correspond to the TA effort expressed in PM for the first year.

Collaborator name	Partner	Function	Previsional Date in Month 1 to 12	FTE (1=full time, 0,5 half time, ..)	F or UF	Total PM
Javier Orellana	UCL	JRA4 Mng	1	1	F	12
X	UCL	Band Alloc Res	1	1	?	12
X	UCL	Band Alloc Res	1	1	?	12
Jean Paul Gautier	CNRS	Net Perf Mon	1	0.4	UF	4.8
Bernard Tuy	CNRS	IPv6	1	0.1	UF	1.2
X	CNRS	?	1	0.5	UF	6
X	CNRS	?	1	1	F	12
Nicolas Simar	DANTE	Net Perf Mon	1	0.5	F	6
X	DANTE	?	1	0.5	UF	6
Robert Stoy	DFN	Net Perf Mon	1	0.5	UF	6
Gloria Vuagnin	GARR	?	1	0.5	F	6
X	GARR	?	1	0.5	UF	6
Total effort				7.5		90
Total from the TA				7.5		90
Deviation				0		0

(*) See the cost model for each partner in the table 3 of the TA.

4.6. TRAINING PLAN

This section will present the training planned for the members of JRA4

To be completed later.

4.7. INITIAL RISKS ASSESSMENT

This table list JRA4 initial risks assessment.

To be completed later.

Risk title	Class	Level	Description	Actions, responsibility, deadline
Hiring	M	2	Difficulties to hire people (latency + adequate profile)	
Glue	M	3	Activity resources dispersion, distributed team	Periodic Conf. Calls. Also regular F2F meetings
Requirements	T	1	Gathering of adequate application network requirements	
Software Compatibility	P	2	Possible software incompatibility between the current mware and JRA4 software available (GARA and others)	Understant to where mware will evolve. Option of porting applications or building a new prototype
Platform versions	P	1	Long project, platform versions can change, like the issues with Linux.	
Multiplatform issues	P	1	Need for JRA4 software to be multiplatform	For new prototypes, consider using JAVA
Java	P	1	if using Java then understanting in-house expertise	

Risk classification (M=Management/Organisation, P=Product, S= Service, T=technical)
Risk level (1 to 4: 1=low, 2=Medium, 3=high, 4=critical)

4.8. INITIAL QUALITY TARGET INDICATORS

To be completed later.

4.9. TIMELINE WITH GANTT CHART

To be completed later.

5. TECHNICAL PROCESSES

To be completed later.

5.1. PRODUCT TASKS

5.2. RECURENT TASKS

6. ISSUES

To be completed later.