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Validation of Metrics-Based Quality Control Refined Project Plan (2006-02-25)

Scope

This document defines a detailed project plan listing tasks, resources and dates for work packages 1 and 2 as described in the document “Validation of Metrics-Base Quality Control” of the project application. It prepares work packages 3 and 4. Furthermore, it gives an overview of the remaining work packages of the project. It is directed to all participants of the project.

Purpose

The purpose of this document is to initiate the work and simplify the planning by specifying planned actions, events and responsibilities.

Summary

ARiSA completes and publishes the “Compendium of Software Qualities and Metrics” (current version <http://www.arisa.se/compendium/>) and propose a Quality Model. We need to discuss this Quality Model and derive the requirements for its application in the different software development projects. After this discussion, we need to decide on the projects to monitor. Moreover, we need a contact person for each project providing build information and supporting the integration of the Quality Monitor in the development environment. According to the project plan this phase should be finished by the end of March 2006.

Once the Quality Monitors are installed, generated data is captured in a content management (CM) system. The requirements for the setup and configuration of this CM system need to be discussed as well. According to the project plan this phase should be finished by the end of April 2006.

Detailed Project Plan for WP 1 and WP2

WP 1 and WP 2 span a 4 month time until end of April 2005. 5 ½ person month (PM) are allocated and distributed as follows:

ARiSA (4 ½ PM)

- Rüdiger Lincke (3 PM)
- Welf Löwe (1 ½ PM)

Participating companies (1 PM)

- Alstrom Power Sweden (1/4 PM)
- AerotechTelub (1/4 PM)
- Windh (1/4 PM)
- Artisan Global Media (1/4 PM)

Explanation: 1 PM is counted as 20 PD (person days) resulting in 110 PDs to spend during this period.

Goals for this period

At the end of this period the following milestones ought to be ready:

- Quality Model is defined and published in the compendium,
- Quality Monitor and reporting infrastructure requirements are defined. The infrastructure for managing the quality information is set up. We are ready for selecting projects in the participating companies (1 project per company) and installing the Quality Monitors.

Work Package 1

Responsible: ARiSA

Workload: 3 ½ PM (ARiSA) = 72 PD

Milestone: Quality Model is defined and published in the compendium.

Start – Deadline: 1/1/06 – 3/31/06.

- **Compendium** – The Software Quality Compendium describing the used metrics and their interpretation shall be complete and published online.
Start: *Mon 1/23/06*, Finish: *Mon 2/13/06*, Budgeted spent: *12 PD*
- **Data Collection (Information Engineering)** – Data to evaluate quality / quality changes is defined for discussion with partner companies.
Start: *Mon 1/23/06*, Finish: *Tue 1/24/06*, Budgeted spent: *2 PD*
- **Front-End Recoder** – Extend the front-end to deliver more detail about the AST, so that the needs of some metrics can be satisfied.
Start: *Wed 1/25/06*, Finish: *Thu 2/9/06*, Budgeted spent: *10 PD*
- **Workshop/Individual Meetings** – Informing partners about project plan, progress, and their tasks.
Start: *Tue 2/14/06*, Finish: *Wed 2/15/06*, Budgeted spent: *4 PD*
- **Front-End Eclipse** – Create a new front-end based on Eclipse to have an alternative to the Recoder front-end, delivering more detailed information about the AST as the current Recoder front-end. Collect experience for the C/C++ AST extraction.
Start: *Thu 2/16/06*, Finish: *Wed 3/1/06*, Budgeted spent: *10 PD*
- **Front-End Update** – Introduce the modified Recoder front-end and the new Eclipse front-end to the VizzAnalyzer.
Start: *Thu 3/2/06*, Finish: *Wed 3/15/06*, Budgeted spent: *10 PD*
- **Metrics** – Complete implementation of our interpretation of the metrics defined in the compendium, ready for the measurement of Java source code.
Start: *Thu 3/2/06*, Finish: *Fri 3/17/06*, Budgeted spent: *12 PD*
- **Software Quality Model** – Ready implemented quality model, consisting out of evaluation engine and specification based on compendium.
Start: *Fri 3/17/06*, Finish: *Fri 3/31/06*, Budgeted spent: *10 PD*

Work Package 2

Responsible: ARiSA

Workload: 1 PM (ARiSA) + ¼ PM per company = 40 PD.

Milestone: Specification of software development project requirements and additional deliverables of the software development projects. Setup of Web content management system and Web questionnaire.

Start – Deadline: 4/1/06 – 4/30/06.

One project per company will be selected for quality monitoring (only in WP 3, see below). They will generate quality relevant information. Before this we need to perform:

- **Data Collection (Information Engineering)** – Information to evaluate quality and quality changes is structured, defined and agreed with partner companies.
Start: *Mon 4/3/06*, Finish: *Fri 4/7/06*, Budgeted spent: *10 PD*

- **Requirements of projects** –Requirements on the selected project as implication of the information engineering are discussed and to decided. Non-disclosure agreements are signed if required.
Start: *Mon 4/10/06*, Finish: *Fri 4/14/06*, Budged spent: *10 PD*
- **Data Collection (Content Management System)** – Installation of content management system at ARiSA's and partner companies' side for managing the collection of data. Definition collection process.
Start: *Mon 4/17/06*, Finish: *Wed 4/26/06*, Budged spent: *16 PD*

Further Work Packages according to Project application

Work Package 3

Responsible: participating companies, 4 PM (ARiSA) + ¼ PM per company.
Milestone: One software development project meeting the requirements is selected per partner; developers are instructed to document the process according to deliverables defined in WP 2.
Start – Deadline: 5/1/06 –8/31/06.

Work Package 4

Responsible: ARiSA, 4 PM (ARiSA) + 1 PM per company.
Milestone: Quality Monitor is installed and running in the selected software development projects, measurements can be documented electronically.
Start – Deadline: 9/1/06 –12/31/06.

Work Package 5

Responsible: participating companies, 9 PM (ARiSA) + 1 – 2 PM per company (accumulated). Continually, measurements are documented, propagated to ARiSA and discussed in meetings (one per quarter and project). Meeting protocols and conclusion are prepared and propagated back by ARiSA.
Start – Deadline: 1/1/07 – 8/31/08 (first measurements 3/31/07, final measurements 8/31/08).

Work Package 6

Responsible: ARiSA, accumulated 12 PM (ARiSA).
Confirmation/rejection of the hypothesis; adaptation of Quality Model and hypothesis, if necessary; feedback to companies.
Start – Deadline: 4/1/07 –9/30/08 (first feedback 4/30/07, final feedback 9/30/08).

Work Package 7

Responsible: ARiSA, 3 PM (ARiSA) + ½ PM per company.
Milestone: Results are reported in the compendium and in a second software quality workshop. If applicable a Quality Monitor consulting service is defined.
Start – Deadline: 10/1/08 –12/31/08.

Tasks overview

Goal	Task	Time spent (PD)		Start	Finish	Predecessors	Resource
		ARiSA	Partner				
Compendium		12	-	Mon 1/23/06	Mon 2/13/06	none	Rüdiger Lincke
Data Collection (Information Engineering)		2	-	Mon 1/23/06	Tue 1/24/06	none	Welf Löwe
Front-End Recorder		10	-	Wed 1/25/06	Thu 2/9/06	none	Welf Löwe
Workshop		2	2	Tue 2/14/06	Wed 2/15/06		ARiSA, partner



	Prepare Workshop	(1)	(-)	Thu 2/9/06	Thu 2/9/06	Compendium, alternative measures	ARiSA
	give Workshop	(1)	(2)	Thu 2/9/06	Fri 2/10/06	prepare workshop	all
Front-End Eclipse		10	-	Thu 2/16/06	Wed 3/1/06	Compendium	Rüdiger Lincke
Front-End Update		10	-	Thu 3/2/06	Wed 3/15/06	Front-ends	Welf Löwe
Metrics		12	-	Thu 3/2/06	Fri 3/17/06	Front-end Eclipse	Rüdiger Lincke
Quality Model		10	-	Fri 3/17/06	Fri 3/31/06	Metrics	Rüdiger Lincke
Data Collection (Information Engineering)		6	4	Mon 4/3/06	Fri 4/7/06	WP1	
	Prepare Data Collection	(2)	-	Mon 4/3/06	Mon 4/3/06		ARiSA
	Artisan Global Media	(1)	(1)	Tue 4/4/06	Tue 4/4/06		Artisan Global Media (1 PD), ARiSA (1 PD)
	AerotechTelub	(1)	(1)	Wed 4/5/06	Wed 4/5/06		AerotechTelub (1 PD), ARiSA (1 PD)
	Alstom Power Sweden	(1)	(1)	Thu 4/6/06	Thu 4/6/06		Alstom Power Sweden (1 PD), ARiSA (1 PD)
	Windh	(1)	(1)	Fri 4/7/06	Fri 4/7/06		Windh (1 PD), ARiSA (1 PD)
Requirements of projects		6	4	Mon 4/10/06	Fri 4/14/06	Project selection, CM, Quality model	
	Artisan Global Media	(1)	(1)	Mon 4/10/06	Mon 4/10/06		Artisan Global Media (1 PD), ARiSA (1 PD)
	AerotechTelub	(1)	(1)	Tue 4/11/06	Tue 4/11/06		AerotechTelub (1 PD), ARiSA (1 PD)
	Alstom Power Sweden	(1)	(1)	Wed 4/12/06	Wed 4/12/06		Alstom Power Sweden (1 PD), ARiSA (1 PD)
	Windh	(1)	(1)	Thu 4/13/06	Thu 4/13/06		Windh (1 PD), ARiSA (1 PD)
	Follow-up	(2)	-	Fri 4/14/06	Fri 4/14/06		ARiSA (2 PD)
Data Collection (Install CM System)		12	4	Mon 4/17/06	Mon 5/15/06	Project selection, CM, Quality model	ARiSA (12 PD), per partner (1PD)
	Define collection process	(2)	-				ARiSA
	ARiSA	(2)	-				ARiSA
	Artisan Global Media	(2)	(1)	Mon 4/17/06	Mon 4/24/06		Artisan Global Media (1pd), ARiSA (2 pd)
	AerotechTelub	(2)	(1)	Mon 4/24/06	Mon 5/1/06		AerotechTelub (1pd), ARiSA (2 pd)
	Alstom Power Sweden	(2)	(1)	Mon 5/1/06	Mon 5/8/06		Alstom Power Sweden (1pd), ARiSA (2 pd)
	Windh	(2)	(1)	Mon 5/8/06	Mon 5/15/06		Windh (1pd), ARiSA (2 pd)
		92	14				
Total:			106				

Resource overview

Rüdiger Lincke

Goal	Task	Time spent (PD)	Start	Finish	Other resource
Compendium		12	Mon 1/23/06	Mon 2/13/06	Rüdiger Lincke
Workshop	Prepare Workshop	0.5	Thu 2/9/06	Thu 2/9/06	ARiSA
Workshop	give Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Front-End Eclipse		10	Thu 2/16/06	Wed 3/1/06	Rüdiger Lincke
Metrics		12	Thu 3/2/06	Fri 3/17/06	Rüdiger Lincke
Quality Model		10	Fri 3/17/06	Fri 3/31/06	Rüdiger Lincke
Data Collection (Information Engineering)	Prepare Data Collection	1	Mon 4/3/06	Mon 4/3/06	ARiSA
	Artisan Global Media	0.5	Tue 4/4/06	Tue 4/4/06	Artisan Global Media (1 PD), AriSA (1 PD)
	AerotechTelub	0.5	Wed 4/5/06	Wed 4/5/06	AerotechTelub (1 PD), AriSA (1 PD)
	Alstom Power Sweden	0.5	Thu 4/6/06	Thu 4/6/06	Alstom Power Sweden (1 PD), AriSA (1 PD)
	Windh	0.5	Fri 4/7/06	Fri 4/7/06	Windh (1 PD), AriSA (1 PD)
Requirements of projects	Artisan Global Media	0.5	Mon 4/10/06	Mon 4/10/06	Artisan Global Media (1 PD), AriSA (1 PD)
	AerotechTelub	0.5	Tue 4/11/06	Tue 4/11/06	AerotechTelub (1 PD), AriSA (1 PD)
	Alstom Power Sweden	0.5	Wed 4/12/06	Wed 4/12/06	Alstom Power Sweden (1 PD), AriSA (1 PD)
	Windh	0.5	Thu 4/13/06	Thu 4/13/06	Windh (1 PD), AriSA (1 PD)
	Follow-up	1	Fri 4/14/06	Fri 4/14/06	AriSA (2 PD)
Data Collection (Install CM System)	Define collection process	1			AriSA
	AriSA	1			AriSA
	Artisan Global Media	1	Mon 4/17/06	Mon 4/24/06	Artisan Global Media (1pd), AriSA (2 pd)
	AerotechTelub	1	Mon 4/24/06	Mon 5/1/06	AerotechTelub (1pd), AriSA (2 pd)
	Alstom Power	1	Mon 5/1/06	Mon 5/8/06	Alstom Power Sweden (1pd), AriSA (2 pd)



	Sweden				
	Windh	1	Mon 5/8/06	Mon 5/15/06	Windh (1pd), ARiSA (2 pd)
Total:		57			

Welf Löwe

Goal	Task	Time spent (PD) ARiSA	Start	Finish	Other resource
Data Collection (Information Engineering)		2	Mon 1/23/06	Tue 1/24/06	Welf Löwe
Front-End Recorder		10	Wed 1/25/06	Thu 2/9/06	Welf Löwe
Workshop	Prepare Workshop	0.5	Thu 2/9/06	Thu 2/9/06	ARiSA
Workshop	give Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Front-End Update		10	Thu 3/2/06	Wed 3/15/06	Welf Löwe
Data Collection (Information Engineering)	Prepare Data Collection	1	Mon 4/3/06	Mon 4/3/06	ARiSA
	Artisan Global Media	0.5	Tue 4/4/06	Tue 4/4/06	Artisan Global Media (1 PD), ARiSA (1 PD)
	AerotechTelub	0.5	Wed 4/5/06	Wed 4/5/06	AerotechTelub (1 PD), ARiSA (1 PD)
	Alstom Power Sweden	0.5	Thu 4/6/06	Thu 4/6/06	Alstom Power Sweden (1 PD), ARiSA (1 PD)
	Windh	0.5	Fri 4/7/06	Fri 4/7/06	Windh (1 PD), ARiSA (1 PD)
Requirements of projects	Artisan Global Media	0.5	Mon 4/10/06	Mon 4/10/06	Artisan Global Media (1 PD), ARiSA (1 PD)
	AerotechTelub	0.5	Tue 4/11/06	Tue 4/11/06	AerotechTelub (1 PD), ARiSA (1 PD)
	Alstom Power Sweden	0.5	Wed 4/12/06	Wed 4/12/06	Alstom Power Sweden (1 PD), ARiSA (1 PD)
	Windh	0.5	Thu 4/13/06	Thu 4/13/06	Windh (1 PD), ARiSA (1 PD)
	Follow-up	1	Fri 4/14/06	Fri 4/14/06	ARiSA (2 PD)
Data Collection (Install CM System)	Define collection process	1			ARiSA
	ARiSA	1			ARiSA
	Artisan Global Media	1	Mon 4/17/06	Mon 4/24/06	Artisan Global Media (1pd), ARiSA (2 pd)
	AerotechTelub	1	Mon 4/24/06	Mon 5/1/06	AerotechTelub (1pd), ARiSA (2 pd)
	Alstom Power Sweden	1	Mon 5/1/06	Mon 5/8/06	Alstom Power Sweden (1pd), ARiSA (2 pd)
	Windh	1	Mon 5/8/06	Mon 5/15/06	Windh (1pd), ARiSA (2 pd)
Total:		35			

Artisan Global Media

Task	Time spent (PD)	Start	Finish	Other resource
Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Data Collection (Information Engineering)	1	Tue 4/4/06	Tue 4/4/06	Artisan Global Media (1 PD), ARiSA (1 PD)
Requirements of projects	1	Mon 4/10/06	Mon 4/10/06	Artisan Global Media (1 PD), ARiSA (1 PD)
Data Collection (Install CM System)	1	Mon 4/17/06	Mon 4/24/06	Artisan Global Media (1pd), ARiSA (2 pd)
Total:	3.5			

Alstom Power Sweden

Task	Time spent (PD)	Start	Finish	Other resource
Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Data Collection (Information Engineering)	1	Thu 4/6/06	Thu 4/6/06	Alstom Power Sweden (1 PD), ARiSA (1 PD)
Requirements of projects	1	Wed 4/12/06	Wed 4/12/06	Alstom Power Sweden (1 PD), ARiSA (1 PD)
Data Collection (Install CM System)	1	Mon 5/1/06	Mon 5/8/06	Alstom Power Sweden (1pd), ARiSA (2 pd)
Total:	3.5			

AerotechTelub

Task	Time spent (PD)	Start	Finish	Other resource
Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Data Collection (Information Engineering)	1	Wed 4/5/06	Wed 4/5/06	AerotechTelub (1 PD), ARiSA (1 PD)
Requirements of projects	1	Tue 4/11/06	Tue 4/11/06	AerotechTelub (1 PD), ARiSA (1 PD)
Data Collection (Install CM System)	1	Mon 4/24/06	Mon 5/1/06	AerotechTelub (1pd), ARiSA (2 pd)



Total:	3.5			
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Windh

Task	Time spent (PD)	Start	Finish	Other resources
Workshop	0.5	Thu 2/9/06	Fri 2/10/06	all
Data Collection (Information Engineering)	1	Fri 4/7/06	Fri 4/7/06	Windh (1 PD), ARiSA (1 PD)
Requirements of projects	1	Thu 4/13/06	Thu 4/13/06	Windh (1 PD), ARiSA (1 PD)
Data Collection (Install CM System)	1	Mon 5/8/06	Mon 5/15/06	Windh (1pd), ARiSA (2 pd)
Total:	3.5			

Appendix

Gant charts

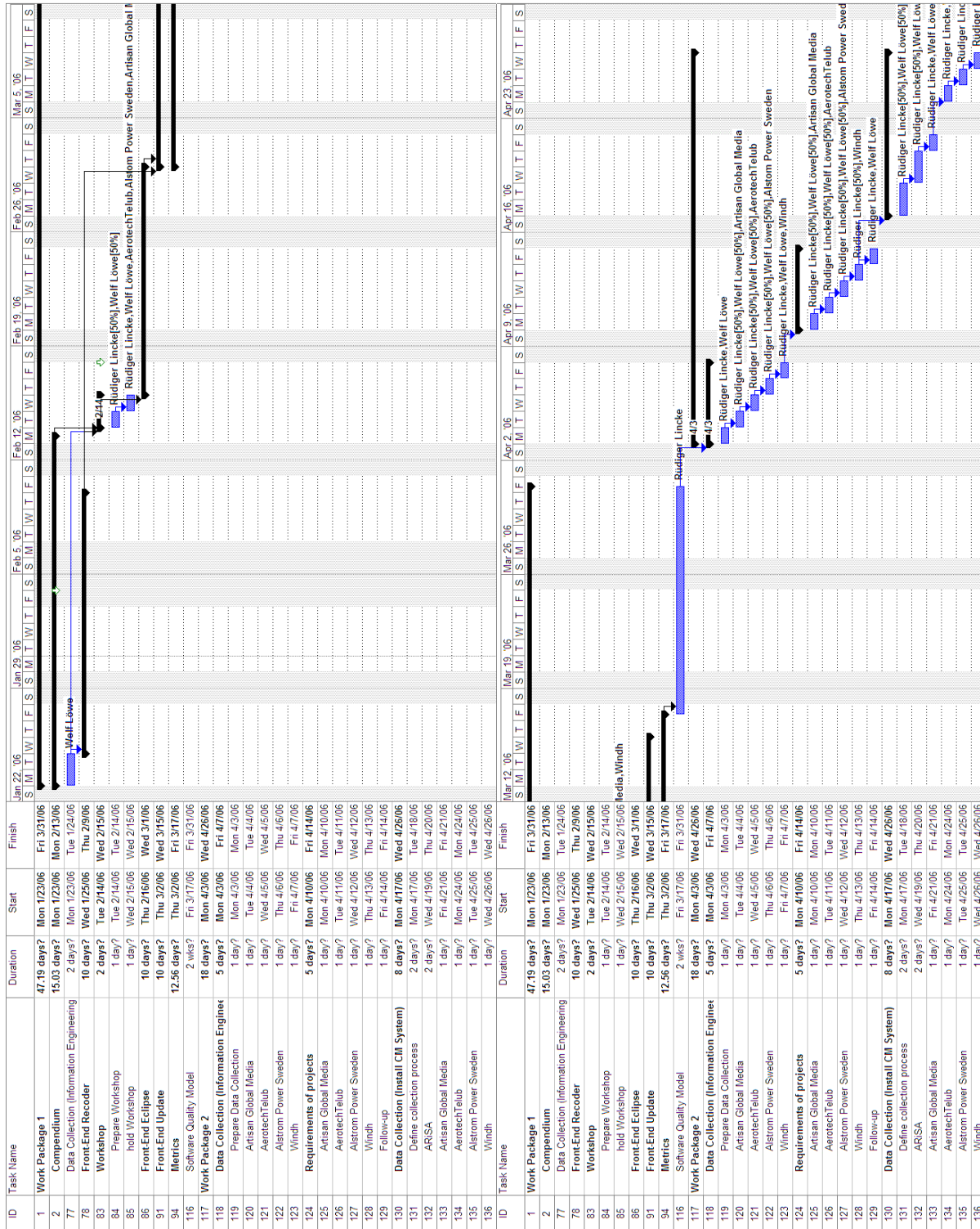


Figure 1: Work Package 1

Figure 2: Work Package 1 (cont'd) + Work Package 2