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EMI SA2 - Quality Assurance

General WP Information

About EMI SA2

- Type of activity: OTHER
- Work package number: WP4
- Start month 1
- End month 36
- Lead beneficiary: CERN
- Work Package Leader: Alberto Aimar

Objectives

- Define and establish a common software quality assurance process and metrics for all engineering activities
- Allow the EMI middleware to consistently pass the customer acceptance criteria and continually improve the software quality and the process itself by monitoring the metrics value trends, reviewing quality control activities and related tests, providing support and consultancy in QA matters
- Enable a continuous integration and testing process by selecting and maintaining tools and resources for building and testing software either within the project of in collaboration with external resource providers

Description of Work and Role of Partners

EMI SA2.1 Work Package coordination (Task leader: CERN, all partners participate to the meetings and reviews) This task deals with the regular coordination of the Work Package, reporting and review of milestones and deliverables.

EMI SA2.2 Quality Assurance Process Definition and Monitoring (Task leader: CERN. Participants: CINECA, INFN, UPJS) This task deals with the definition of a standards-compliant software engineering process and the continual activity of monitoring its correct application within the activities of the EMI project. The success criteria of this task are the availability of an agreed, documented and regularly updated process and the minimization of deviation in its application by the project members.

EMI SA2.3 Metrics and KPIs Definition and Reporting (Task leader: TCD. Participants: CERN) This task deals with the definition and continual collection and reporting of software quality metrics according to the A-QCM model or other suitable models. This task provides information to the Project Executive Board and other project decisional bodies on the status of the software as an instrument to take corrective actions. The success criteria of this task are the regular production of reports and their use to identify improvement areas.

EMI SA2.4 Tools and Repositories Selection, Maintenance and Integration (Task leader: CERN. Participants: CINECA, GRNET, INFN, UPJS) This task deals with the definition and when necessary maintenance of the tools required to support the QA process. The task includes any supporting activity to software providers to integrate required information to and from other tools maintained outside the EMI
project. The task also include the setup and maintenance of repositories for storing the EMI software packages, tests, build and test reports and metrics generated during all software development activities within EMI.

EMI SA2.5 QA Implementation Review and Support (Task leader: UPJS. Participants: CERN, INFN, TCD) This task includes review activities of the QA, test and certification implementations done by the Product Teams, such as sample review of test plans and tests, compliance with packaging and porting guidelines, validation of documentation, etc. The task also includes supporting the Product Teams in effective design and implementation of tests to be used with testing tools such as ETICS. The success criterion for this task is the correct usage of tools and procedures by all project members to be measured by regular surveys and verifications.

EMI SA2.6 Testbeds Setup, Maintenance and Coordination (Task leader: INFN. Participants: CERN, CESNET, DESY, JUELICH, UPJS) This task consists in the setup and maintenance of distributed testbeds for the project continuous integration and testing operations and the coordination and provision of larger-scale testbeds from collaborating resource providers. The success criteria for this task are the availability and reliability metrics of the execution nodes.

**EMI SA2 Material for the EMI Project**

This section gives access to all material provided by the EMI SA2 Quality Assurance activity to the other EMI Members

Subscribe to the [SA2 RSS Feed](#).

**EMI Policy Documents**

<table>
<thead>
<tr>
<th>Policy</th>
<th>Description</th>
<th>Status</th>
<th>Latest Approved version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release Management</td>
<td>This policy describes how releases are managed in EMI</td>
<td>Approved</td>
<td>v2.1 approved on 21.07.2011.</td>
</tr>
<tr>
<td>Change Management</td>
<td>This policy describes how to introduce changes in the EMI release.</td>
<td>Approved</td>
<td>v4.0 approved on 23.01.2012.</td>
</tr>
<tr>
<td>Configuration and Integration</td>
<td>This policy describes how to build and integrate your software into the EMI release</td>
<td>Approved</td>
<td>v3.0 approved on 23.01.2012.</td>
</tr>
<tr>
<td>Packaging</td>
<td>This policy describes how to create software packages.</td>
<td>Approved</td>
<td>v2.1 approved on 23.01.2012.</td>
</tr>
<tr>
<td>Testing</td>
<td>This policy describes how to test your software components.</td>
<td>Approved</td>
<td>v3.1 approved on 23.01.2012.</td>
</tr>
<tr>
<td>Documentation</td>
<td>This policy describes how to prepare software documentation.</td>
<td>Approved</td>
<td>v3.0 approved on 21.07.2011.</td>
</tr>
<tr>
<td>Certification</td>
<td>This policy describes how to certify your software components.</td>
<td>Approved</td>
<td>v3.3 approved on 23.01.2012.</td>
</tr>
<tr>
<td>Requirements</td>
<td>Management of the EMI Requirements tracker by the TD</td>
<td>In Progress</td>
<td>v1.0</td>
</tr>
</tbody>
</table>

**Other Useful EMI Documents**

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
<th>Status</th>
<th>Latest Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Quality</td>
<td>The SQAP is a project deliverable that describes all the</td>
<td>Approved</td>
<td>v2.8</td>
</tr>
</tbody>
</table>

Description of Work and Role of Partners 2
Assurance Plan documentation, processes and roles that govern the EMI software lifecycle. Approved on 28.10.2011

EMI Release Check List Check list for PTs to know step by step what needs to be done to release a new version of a component in production. Approved v3.1 approved on 15.09.2011

EMI Production Release Criteria Criteria to be checked by QC to prepare their verification report for new component releases. Approved v2.1 approved on 23.01.2012

EPEL compliance Twiki page tracking the level of compliance of EMI packages to EPEL guidelines

IPV6 compliance Twiki page tracking the level of compliance of EMI packages to IPV6 guidelines

## EMI Trackers

The following trackers are used within EMI for software development purposes. Please, check the Release Management Policy to know more about each of them:

- EMI Requirements
- EMI Development
- EMI Releases

Note that access requires authentication (login) and authorization in Savannah.

## EMI Tools, Testbed and Metrics

- **Tools**
  - Build, Testing and Packaging: ETICS
    - EticsCurrentClients - Current available clients and how to call them
    - ETICS Portal - EMI central certification and integration build and testing service (rss)
    - EticsStatusLogbook - Status and log history of the ETICS services
    - ETICS Images - How to recreate and how to download the ETICS images
    - ETICS and Debian - How to work with ETICS to create Debian packages
  - Quality Control:
  - Release Management:
    - EMI RfC tracker dashboard - Dashboard offering a single entry point to track software defects and features of the different EMI software products.

- **Certification and Integration Testbed**
  - EMI Integration Testbed Documentation - How to access and ask for support for the EMI Test beds.
  - EMI Large Scale Acceptance Testbed Documentation - How to request or participate in a large scale EMI testbed.

- **Quality Assurance Metrics**
  - Weekly metrics reports - Metrics reports automatically generated by ETICS every week.
  - EMI Quality Model and Metrics Specification - Description of the quality model used in EMI and the metrics calculated in the project.
  - ETICS plugins - Information about the ETICS plugins used to generate the QA metrics.
Training material

Training Videos:

- Integration, Configuration and Packaging policies
- Release, Change, Testing, Certification and Documentation policies
- Using the EMI Certification and Integration testbed
- Update on the policies for EMI 2 (it's recommended to watch the previous training, because this training it's only an update)

EGI QA-Related Activities

- Review of the EGI Quality Criteria Documents EMiEgiQcDoc

EMI SA2 Deliverables and Milestones

- See the SA2 documents in the official EMI Deliverables and EMI Milestones pages.

More information

Internal activity pages

EMISa2RequirementsPolicy