



# EGI-InSPIRE

## UMD QUALITY CRITERIA v5

---

Document identifier:	EGI-QC-V5-MDS.doc
Date:	<b>26/04/2013</b>
Document Link:	<a href="https://documents.egi.eu/document/1153">https://documents.egi.eu/document/1153</a>

---

### Abstract

This document describes the Quality Criteria that all software of the UMD distribution must meet.



### Copyright notice

Copyright © Members of the EGI-InSPIRE Collaboration, 2010. See [www.egi.eu](http://www.egi.eu) for details of the EGI-InSPIRE project and the collaboration. EGI-InSPIRE (“European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe”) is a project co-funded by the European Commission as an Integrated Infrastructure Initiative within the 7th Framework Programme. EGI-InSPIRE began in May 2010 and will run for 4 years. This work is licensed under the Creative Commons Attribution-Noncommercial 3.0 License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/3.0/> or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, and USA. The work must be attributed by attaching the following reference to the copied elements: “Copyright © Members of the EGI-InSPIRE Collaboration, 2010. See [www.egi.eu](http://www.egi.eu) for details of the EGI-InSPIRE project and the collaboration”. Using this document in a way and/or for purposes not foreseen in the license, requires the prior written permission of the copyright holders. The information contained in this document represents the views of the copyright holders as of the date such views are published.

### Document Log

Issue	Date	Comment	Author/Partner
v0.1	02/11/2010	First draft	Enol Fernández
v1.0	03/11/2010	Changed Management, Traceability and Monitoring section	Enol Fernández
v1.1	03/11/2010	Added Probe description in GEN_MON_1	Enol Fernández
v1.2	11/11/2010	Some formatting update	Enol Fernández
v1.3	31/01/2011	Better test specification	Enol Fernández
1.4	09/02/2011	Review of criteria	Enol Fernández
2 DRAFT 1	24/06/2011	Preparation of new release	Enol Fernández
2	02/08/2011	Reorganisation, added new criteria.	Enol Fernández
3 DRAFT 1	13/10/2011	First draft of release 3	Enol Fernández
3 DRAFT 2	24/01/2012	Second draft of release 3	Enol Fernández
4 DRAFT 1	21/05/2012	First public draft of release 4	Enol Fernández
4 DRAFT 2	23/07/2012	Second public draft of release 4	Enol Fernández
5	10/20/2013	Release 5	Enol Fernández



## TABLE OF CONTENTS

<b>1</b>	<b>Documentation.....</b>	<b>5</b>
	GENERIC_DOC_1.....	5
	GENERIC_DOC_2.....	6
	GENERIC_DOC_3.....	7
	GENERIC_DOC_4.....	8
	GENERIC_DOC_5.....	9
	GENERIC_DOC_6.....	10
	GENERIC_DOC_7.....	11
	GENERIC_DOC_8.....	12
	GENERIC_DOC_9.....	13
<b>2</b>	<b>Software Distribution .....</b>	<b>15</b>
	GENERIC_DIST_1.....	15
	GENERIC_DIST_3.....	16
<b>3</b>	<b>Software Features .....</b>	<b>17</b>
	GENERIC_SOFT_1.....	17
	GENERIC_SOFT_2.....	18
<b>4</b>	<b>Service Criteria .....</b>	<b>19</b>
<b>4.1</b>	<b>Service Management.....</b>	<b>19</b>
	GENERIC_SERVICE_1.....	19
<b>4.2</b>	<b>Service logs.....</b>	<b>21</b>
	GENERIC_SERVICE_2.....	21
<b>4.3</b>	<b>Service Monitoring .....</b>	<b>21</b>
<b>4.4</b>	<b>Service Accounting .....</b>	<b>21</b>
<b>4.5</b>	<b>Availability, Reliability and Scalability.....</b>	<b>22</b>
	GENERIC_SERVICE_3.....	22
	GENERIC_SERVICE_4.....	23
	GENERIC_SERVICE_6.....	24
	GENERIC_SERVICE_7.....	25
<b>5</b>	<b>Security.....</b>	<b>26</b>
	GENERIC_SEC_1.....	26
	GENERIC_SEC_3.....	27
<b>6</b>	<b>Miscellaneous .....</b>	<b>28</b>
	GENERIC_MISC_1.....	28
<b>7</b>	<b>Information Model.....</b>	<b>29</b>
<b>7.1</b>	<b>Information Model Schema.....</b>	<b>29</b>
	INFOMODEL_SCHEMA_1.....	29
	INFOMODEL_SCHEMA_2.....	30
	INFOMODEL_SCHEMA_3.....	31
<b>8</b>	<b>Information Discovery .....</b>	<b>32</b>
<b>8.1</b>	<b>Information Discovery Interface .....</b>	<b>32</b>
	INFODISC_IFACE_1.....	32
<b>8.2</b>	<b>Information Discovery Functionality.....</b>	<b>33</b>
<b>8.2.1</b>	<b>Information Aggregation.....</b>	<b>33</b>
	INFODISC_AGG_1.....	33
	INFODISC_AGG_2.....	34
	INFODISC_AGG_3.....	35



8.2.2 Availability/Scalability.....	36
INFODISC_AVAIL_1 .....	36
<b>9 Monitoring Probes .....</b>	<b>37</b>
<b>9.1 Service Probes.....</b>	<b>37</b>
MON_PROBE_GENERIC_2 .....	37
<b>10 References .....</b>	<b>38</b>

## 1 DOCUMENTATION

Services in UMD must include a comprehensive documentation written in a uniform and clear style. All Quality Criteria described below may be met by a single document that contains all the requested sections.

<b>Functional Description</b>	
<b>ID</b>	<b>GENERIC_DOC_1</b>
<b>Description</b>	All products must provide a document with a brief functional description of the product.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products
<b>Input from Technology Provider</b>	Document (or link) with a general description of the product that includes: <ul style="list-style-type: none"><li>• Purpose of the product</li><li>• Capabilities meet by the product</li></ul>
<b>Pass/Fail Criteria</b>	The document should exist and contain the requested information.
<b>Related Information</b>	
<b>Revision Log</b>	V2: clarified the required documentation

<b>Release Notes</b>	
<b>ID</b>	<b>GENERIC_DOC_2</b>
<b>Description</b>	All products must provide a document with the release notes.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products
<b>Input from Technology Provider</b>	Document (or link) with release notes of the product. They must include major the changes in the product: bug fixes, new features.
<b>Pass/Fail Criteria</b>	The document should exist and contain the requested information.
<b>Related Information</b>	
<b>Revision Log</b>	

<b>User Documentation</b>	
<b>ID</b>	<b>GENERIC_DOC_3</b>
<b>Description</b>	All products must provide a document describing how to use it.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products with end-user tools and services.
<b>Input from Technology Provider</b>	Document (or link) with user guide describing the functionality of the software and how to use it.
<b>Pass/Fail Criteria</b>	The document should exist and contain the requested information.
<b>Related Information</b>	
<b>Revision Log</b>	

<b>Online help (man pages)</b>	
<b>ID</b>	<b>GENERIC_DOC_4</b>
<b>Description</b>	All products with end user command line tools must include man pages or online help.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products with command line tools.
<b>Input from Technology Provider</b>	Man pages with information about the usage of commands. If man pages are not available, comprehensive help options must be included with the command with information about the usage (i.e. -h/--help option)
<b>Pass/Fail Criteria</b>	Online help should be available (man pages or command line help). Command line help should give meaningful cues (i.e., only a list of single-letter options is not sufficient) If both command line help (-h option) and man pages are provided they <b>must</b> be mutually consistent (describe the same set of options and their meaning).
<b>Related Information</b>	GGUS ticket # 73214
<b>Revision Log</b>	V3: Tighten wording to avoid situations as described in GGUS #73214



<b>API Documentation</b>	
<b>ID</b>	<b>GENERIC_DOC_5</b>
<b>Description</b>	Public API of product/appliances must be documented.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products with public API.
<b>Input from Technology Provider</b>	Documentation (or link) of the API of the product. The documentation <i>should</i> cover all the existing public functionality of the API.
<b>Pass/Fail Criteria</b>	The document should exist and contain the API documentation. If the product implements a well-known or standard API, any missing functionality must be documented.
<b>Related Information</b>	
<b>Revision Log</b>	V2: review of the description

<b>Administrator Documentation</b>	
<b>ID</b>	<b>GENERIC_DOC_6</b>
<b>Description</b>	Products must provide an administrator guide describing installation, configuration and operation of the system.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products managed by an administrator.
<b>Input from Technology Provider</b>	Documentation (or link) with requested documentation.
<b>Pass/Fail Criteria</b>	The document should exist and contain the requested information.
<b>Related Information</b>	
<b>Revision Log</b>	

<b>Service Reference Card</b>																			
<b>ID</b>	<b>GENERIC_DOC_7</b>																		
<b>Description</b>	For each of the services that a product runs, document its characteristics with a reference card.																		
<b>Mandatory</b>	NO																		
<b>Applicability</b>	All products that need services for operation.																		
<b>Input from Technology Provider</b>	Documentation (or link) with requested documentation.																		
<b>Pass/Fail Criteria</b>	<p>The document must exist and contain the following information for each service:</p> <table border="1"> <thead> <tr> <th colspan="2"><b>ServiceName</b></th> </tr> </thead> <tbody> <tr> <td>Description</td> <td>Description of the service</td> </tr> <tr> <td>Init scripts</td> <td>List of init scripts for the service, expected run levels</td> </tr> <tr> <td>Daemons</td> <td>List of daemons needed for the service</td> </tr> <tr> <td>Configuration</td> <td>List of configuration files used by the service</td> </tr> <tr> <td>Logs</td> <td>List of log files used by the service</td> </tr> <tr> <td>Open ports</td> <td>List of ports the service uses</td> </tr> <tr> <td>Cron</td> <td>List of crons used by the service</td> </tr> <tr> <td>Other information</td> <td>Any other relevant information about the service.</td> </tr> </tbody> </table>	<b>ServiceName</b>		Description	Description of the service	Init scripts	List of init scripts for the service, expected run levels	Daemons	List of daemons needed for the service	Configuration	List of configuration files used by the service	Logs	List of log files used by the service	Open ports	List of ports the service uses	Cron	List of crons used by the service	Other information	Any other relevant information about the service.
<b>ServiceName</b>																			
Description	Description of the service																		
Init scripts	List of init scripts for the service, expected run levels																		
Daemons	List of daemons needed for the service																		
Configuration	List of configuration files used by the service																		
Logs	List of log files used by the service																		
Open ports	List of ports the service uses																		
Cron	List of crons used by the service																		
Other information	Any other relevant information about the service.																		
<b>Related Information</b>																			
<b>Revision Log</b>																			

<b>Software License</b>	
<b>ID</b>	<b>GENERIC_DOC_8</b>
<b>Description</b>	Products must have a compatible license for using them in the EGI Infrastructure
<b>Mandatory</b>	YES
<b>Applicability</b>	All products.
<b>Input from Technology Provider</b>	Product License (link or document).
<b>Pass/Fail Criteria</b>	<p>Pass: if the license is available and is compatible with the EGI infrastructure.</p> <p>For Open Source products, compatible licenses are those accepted by the Open Source Initiative and categorized as “Popular and widely used or with strong communities”:</p> <ul style="list-style-type: none"> <li>- Apache License, 2.0 (Apache-2.0)</li> <li>- BSD 3-Clause "New" or "Revised" license (BSD-3-Clause)</li> <li>- BSD 3-Clause "Simplified" or "FreeBSD" license (BSD-2-Clause)</li> <li>- GNU General Public License (GPL)</li> <li>- GNU Library or "Lesser" General Public License (LGPL)</li> <li>- MIT license (MIT)</li> <li>- Mozilla Public License 1.1 (MPL-1.1)</li> <li>- Common Development and Distribution License (CDDL-1.0)</li> <li>- Eclipse Public License (EPL-1.0)</li> </ul> <p>Other licenses accepted by the Open Source Initiative and listed as “Special Purpose” are compatible with the infrastructure (when applicable):</p> <ul style="list-style-type: none"> <li>- Educational Community License</li> <li>- IPA Font License (IPA)</li> <li>- NASA Open Source Agreement 1.3 (NASA-1.3)</li> <li>- Open Font License 1.1 (OFL-1.1)</li> </ul> <p>Any other license, and non Open Source products will be evaluated by the verification team in coordination with the Operations Community.</p>
<b>Related Information</b>	Open Source Initiative Licenses by Category: <a href="http://www.opensource.org/licenses/category">http://www.opensource.org/licenses/category</a>
<b>Revision Log</b>	V2: Moved from Software Release to documentation.

<b>Release changes testing</b>	
<b>ID</b>	<b>GENERIC_DOC_9</b>
<b>Description</b>	Changes in a release of a product must be tested.
<b>Mandatory</b>	NO
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Tests (or documentation for the test results) for relevant changes described in the product release notes, including bug fixes and any new features.
<b>Pass/Fail Criteria</b>	<p>Pass if the TP provides documentation of the tests performed to certify the release quality. The documentation <i>should</i> describe tests (and tests results) for all the changes included, especially bug fixes.</p> <p>The granularity of the testing documentation will be determined per release basis. In the case of missing tests, the verifier will decide if the provided information is enough to trust quality of the changes introduced in the software.</p>
<b>Related Information</b>	MS503: Software Provisioning Process
<b>Revision Log</b>	<p>V2: Better specification of the pass/fail criteria. Moved to documentation criteria</p> <p>V3: improvement of the pass/fail criteria.</p> <p>V4: better wording after IGE review, turned into NOT mandatory.</p>



## 2 SOFTWARE DISTRIBUTION

Source Code Availability	
<b>ID</b>	<b>GENERIC_DIST_1</b>
<b>Description</b>	Open Source Products should provide their source code.
<b>Mandatory</b>	NO
<b>Applicability</b>	All Open Source Products.
<b>Input from Technology Provider</b>	Source code repository or source distribution of product with building documentation.
<b>Pass/Fail Criteria</b>	Open source products <b>must</b> publicly offer their source code and the license with the binaries. Build documentation (or link to it) should be available. Ideally, automatic or continuous build procedures exist.
<b>Related Information</b>	
<b>Revision Log</b>	V2: Changed ID (previously GENERIC_REL_2) V4: Merged GENERIC_DIST_1 and GENERIC_DIST_2 & Turned into not mandatory

<b>Binary Distribution</b>	
<b>ID</b>	<b>GENERIC_DIST_3</b>
<b>Description</b>	Products must be available in the native packaging format of the supported platform.
<b>Mandatory</b>	YES
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Binary distribution of product in the native packaging format of the supported platform (RPM, DEB, ...)
<b>Pass/Fail Criteria</b>	<ul style="list-style-type: none"> <li>- Binary packages using the standard packaging format of the OS (i.e. RPM, DEB...) must be provided for all the supported OS and/or architectures.</li> <li>- Packages <b>must</b> be signed by the TP</li> <li>- Packages <i>should</i> follow OS packaging policies (e.g. names of packages, <u>use of filesystem hierarchy</u>, init scripts). Any deviance from the policies must be documented.</li> <li>- Second level dependencies (i.e. software not provided by the TP in their repository) <b>must</b> be provided by the OS distribution or standard OS repositories (EPEL in SL5 &amp; SL6). In the case of needing a different version for a specific package or packages from other repositories, the verifier will decide whether to accept or not the packages depending on the reason given for such dependencies on external packages.</li> </ul>
<b>Related Information</b>	Verification reports from EMI release 1. #1357: Middleware use standard file locations GGUS #82417: <a href="https://ggus.eu/ws/ticket_info.php?ticket=82417">https://ggus.eu/ws/ticket_info.php?ticket=82417</a>
<b>Revision Log</b>	V2: Turn to mandatory, better description to avoid problems found in verification. Changed ID (previously GENERIC_REL_5) V4: Added requirement for signed packages.



### 3 SOFTWARE FEATURES

Backwards Compatibility	
<b>ID</b>	<b>GENERIC_SOFT_1</b>
<b>Description</b>	Minor/Revision releases of a product must be backwards compatible.
<b>Mandatory</b>	YES
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Products must maintain backwards compatibility between releases of the same major version. Ideally, TP provides tests to assure the backwards compatibility of the product.
<b>Pass/Fail Criteria</b>	All the changes in a minor or revision release <i>must</i> be backward compatible (test should be done with previous releases of clients within the same major version). Any new features should not introduce changes in the previous features.
<b>Related Information</b>	MS503: Software Provisioning Process IGE QC
<b>Revision Log</b>	

<b>New features testing</b>	
<b>ID</b>	<b>GENERIC_SOFT_2</b>
<b>Description</b>	Verification should cover testing of new features and bug fixes.
<b>Mandatory</b>	YES
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Release notes with changes in the software. The verifier will review each of the changes and check its correctness (whenever possible)
<b>Pass/Fail Criteria</b>	New features and bug fixes specified in the release notes work as documented. Some new features may not be tested if they are not relevant to the main capability of the product.
<b>Related Information</b>	MS503: Software Provisioning Process IGE QC
<b>Revision Log</b>	

## 4 SERVICE CRITERIA

### 4.1 Service Management

UMD products should have mechanisms for managing them, monitoring their status and tracing actions they perform on the system. Ideally, these should be also available remotely, allowing operators to react timely to problems in the infrastructure. This generic criteria for services is the minimum set of service related

Service control and status	
<b>ID</b>	<b>GENERIC_SERVICE_1</b>
<b>Description</b>	Services run by the product must provide a mechanism for starting, stopping and querying the status of the services.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products that use services for operations.

<b>Input from Technology Provider</b>	Start/stop mechanism for each of the services following OS conventions. Ideally, provide a test suite for the mechanism as described below.
<b>Test Description</b>	<b>Pre-condition</b> Service is started <b>Test</b> Start service <b>Expected Outcome</b> No action taken, show a message stating the service is already started.
	<b>Pre-condition</b> Service is stopped <b>Test</b> Start service <b>Expected Outcome</b> Service is started, show a message when it is started.
	<b>Pre-condition</b> Service is started <b>Test</b> Stop service <b>Expected Outcome</b> Service is stopped, show a message stating the service is stopped.
	<b>Pre-condition</b> Service is stopped <b>Test</b> Stop service <b>Expected Outcome</b> No action taken, show a message stating the service is already stopped.
	<b>Pre-condition</b> Service is stopped <b>Test</b> Check service status <b>Expected Outcome</b> Show a message stating the service is stopped.

<b>Test Description</b>	<b>Pre-condition</b> Service is started <b>Test</b> Check service status <b>Expected Outcome</b> Show a message stating the service is started.
<b>Pass/Fail Criteria</b>	Services run by the product must provide a mechanism for starting, stopping and querying the status of the services following the OS init scripts conventions (e.g. for Linux Distributions, check <a href="http://refspecs.freestandards.org/LSB_3.1.0/LSB-Core-generic/LSB-Core-generic/inisrptact.html">http://refspecs.freestandards.org/LSB_3.1.0/LSB-Core-generic/LSB-Core-generic/inisrptact.html</a> ). They must work properly in <b>all</b> the cases described above. If the OS provides tools for configuring the services (chkconfig in RH based distros), these <i>should</i> work out of the box with the init scripts of the services
<b>Related Information</b>	#2274: Service under RH following SystemV init system #1201: Homogeneity in service control.
<b>Revision Log</b>	V3: Added related information, fix test conditions.

## 4.2 Service logs

Log Files	
<b>ID</b>	<b>GENERIC_SERVICE_2</b>
<b>Description</b>	All services should create log files where the service administrator can trace most relevant actions taken.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products that use services for operations.
<b>Input from Technology Provider</b>	List of logs generated by the service (the reference card of service should already include them)
<b>Pass/Fail Criteria</b>	List of logs is provided. They should follow the OS conventions for location and format so they can be treated with the standard tools of the OS (log rotation, collection with syslog, ...)
<b>Related Information</b>	This criterion may be further specialized in the specific criteria for each product/capability determining which information must be logged or number/types of logs. #1357: Middleware use standard file locations
<b>Revision Log</b>	V2: Review of the criteria. V4: Added related information

## 4.3 Service Monitoring

All services in the EGI Infrastructure should provide monitoring probes that can be executed automatically by the EGI monitoring framework (based in Nagios). The probes should check the service responsiveness and correctness (good replies for typical requests).

Particular monitoring probes are defined at the Specific Quality Criteria document for Operations tools. The probes that apply to all capabilities (generic probes) are identified as MON\_PROBE\_GENERIC\_xx. For specific capabilities there might exist other probes that are described in the same document.

## 4.4 Service Accounting

All services in the EGI Infrastructure should provide ways of recording the use of resources within the infrastructure. The Accounting Capability described in the Operations Capabilities Criteria document specifies the criteria for the different appliances.

#### 4.5 Availability, Reliability and Scalability.

The EGI Infrastructure depends on the uninterrupted performance of the installed software. All products should provide a reliable operation and should be able to handle growing amounts of work in a graceful manner. Specific criteria for the availability, reliability or scalability of appliances may be also defined in the criteria documents for each of the capabilities.

<b>Service Reliability</b>	
<b>ID</b>	<b>GENERIC_SERVICE_3</b>
<b>Description</b>	Services must maintain a good performance and reliability over long periods of time with normal operation.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products that use services for operations.
<b>Input from Technology Provider</b>	Long running unattended operation test measuring performance of the product.
<b>Test Description</b>	<p><b>Pre-condition</b> Product is properly configured.</p> <p><b>Test</b> Start service and measure performance during operations.</p> <p><b>Expected Outcome</b> No significant performance degradation is observed in the system.</p>
<b>Pass/Fail Criteria</b>	<p>Service must not show performance degradation during a 3-day period. The most important parameters to check are:</p> <ul style="list-style-type: none"> <li>• stable memory usage</li> <li>• throughput and/or response times remain stable during the period of activity (they should be as good or better than at the beginning of the test for similar requests)</li> </ul>
<b>Related Information</b>	
<b>Revision Log</b>	V2: detailed pass/fail criteria

<b>Service Robustness</b>	
<b>ID</b>	<b>GENERIC_SERVICE_4</b>
<b>Description</b>	Services should not produce unexpected results or become uncontrollable when taxed beyond normal capacity.
<b>Mandatory</b>	NO
<b>Applicability</b>	All products that use services for operations.
<b>Input from Technology Provider</b>	Assure that the services taxed beyond normal capacity do not produce unexpected results or become uncontrollable.
<b>Pass/Fail Criteria</b>	Services taxed beyond normal capacity: <ul style="list-style-type: none"> <li>• should not become unresponsive to normal start/stop operations</li> <li>• must be able to start after a forceful stop</li> <li>• must not expose (potentially sensitive) memory contents to other processes</li> <li>• must not leave sensitive data in world-readable files</li> <li>• must not accept connections that would be refused under normal operating conditions</li> </ul>
<b>Related Information</b>	TST_2 from IGE Quality Assurance.
<b>Revision Log</b>	

<b>Default Password Configuration</b>	
<b>ID</b>	<b>GENERIC_SERVICE_6</b>
<b>Description</b>	Products should not use default passwords. If the service needs a password, it must be generated randomly or force the admin to introduce one.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products with passwords.
<b>Input from Technology Provider</b>	Configuration should never have default passwords. If there is an automated configuration generator (e.g. yaim) it must request the user to set one or generate a random one.
<b>Pass/Fail Criteria</b>	No default passwords are used for configuration of services.
<b>Related Information</b>	SVG Advisory 1414: <a href="https://wiki.egi.eu/wiki/SVG:Advisory-SVG-2011-1414">https://wiki.egi.eu/wiki/SVG:Advisory-SVG-2011-1414</a>
<b>Revision Log</b>	



<b>Default Configuration</b>	
<b>ID</b>	<b>GENERIC_SERVICE_7</b>
<b>Description</b>	Default configuration of the service should be <i>usable</i> .
<b>Mandatory</b>	YES
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Documentation on the default values of any optional configuration parameters. Default values for those values reasonable for the normal operation of the service in a standard installation.
<b>Pass/Fail Criteria</b>	Pass if the documentation of the default values of the optional configuration parameters is available and the service runs with those default values (in a standard installation).
<b>Related Information</b>	VOMS mass user suspension (RT #3585)
<b>Revision Log</b>	

## 5 SECURITY

World Writable Files	
<b>ID</b>	<b>GENERIC_SEC_1</b>
<b>Description</b>	Products must not create world-writable files or directories.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products.
<b>Input from Technology Provider</b>	World-writable files and directories are dangerous since they allows anyone to modify them, several vulnerabilities in recent years have been due to world writable files and directories being present when they should not be. Technology Provider must assure that they software do not produce world writable files in order to prevent new vulnerabilities being introduced in the future. Ideally a test that checks that those files do not exist should be provided.
<b>Test Description</b>	<p><b>Pre-condition</b> Service correctly configured and started</p> <p><b>Test</b> Check the existence of world writable or unowned files in the system.</p> <p><b>Expected Outcome</b> No world writable or unowned files exist.</p>
<b>Pass/Fail Criteria</b>	The product should not create world-writable files or directories. If any world-writable files are needed for the normal operation of the service, these should be documented. Logs and config files <b>must</b> not be world-writable.
<b>Related Information</b>	Proposed by the EGI SVG RAT to prevent new vulnerabilities in the future.
<b>Revision Log</b>	V1.3 Changed test description. V4: improved pass/fail criteria.

<b>Passwords in world readable files</b>	
<b>ID</b>	<b>GENERIC_SEC_3</b>
<b>Description</b>	Service password must not be stored in world readable files.
<b>Mandatory</b>	YES
<b>Applicability</b>	All products with passwords.
<b>Input from Technology Provider</b>	If the product uses passwords stored in files, those files must not be world readable.
<b>Pass/Fail Criteria</b>	No passwords are stored in world readable files.
<b>Related Information</b>	SVG Advisory 1414: <a href="https://wiki.egi.eu/wiki/SVG:Advisory-SVG-2011-1414">https://wiki.egi.eu/wiki/SVG:Advisory-SVG-2011-1414</a>
<b>Revision Log</b>	

## 6 MISCELLANEOUS

<b>Bug Tracking System</b>	
<b>ID</b>	<b>GENERIC_MISC_1</b>
<b>Description</b>	TP must enrol as 3 <sup>rd</sup> level support in the EGI Helpdesk.
<b>Mandatory</b>	YES
<b>Applicability</b>	All Products.
<b>Input from Technology Provider</b>	Technology Providers must enrol in GGUS as 3 <sup>rd</sup> level support for the products verified by the Quality Assurance team of EGI. Any further integration with TP-specific bug tracking software is entirely up to the Technology Provider.
<b>Pass/Fail Criteria</b>	Pass if Technology Provider enlisted as 3 <sup>rd</sup> level support in GGUS.
<b>Related Information</b>	IGE QC
<b>Revision Log</b>	

## 7 INFORMATION MODEL

### 7.1 Information Model Schema

GlueSchema Support	
<b>ID</b>	<b>INFOMODEL_SCHEMA_1</b>
<b>Description</b>	Resource information exchanged in the EGI Infrastructure must conform to GlueSchema.
<b>Mandatory</b>	YES
<b>Applicability</b>	Information Model Appliances
<b>Input from Technology Provider</b>	Resource information published by Information Discovery Appliances must conform to the GlueSchema v1.3.
<b>Test Description</b>	<p><b>Pre-condition</b> None.</p> <p><b>Test</b> Check that information published conforms to GlueSchema 1.3. The suggested tool for testing the conformance is the GlueValidator [R 26]</p> <p><b>Expected Outcome</b> Information conforms to GlueSchema.</p>
<b>Pass/Fail Criteria</b>	Information published must be available in GlueSchema v1.3 Ideally the Technology Provider should assure this by a test suite of the appliances.
<b>Related Information</b>	UMD Roadmap [R 1] GlueSchema v1.3 [R 24] GlueValidator [R 26]
<b>Revision Log</b>	V2: Merged INFOMODEL_SCHEMA_* into this criterion. Rephrasing. V4: Added reference to Glue Validator

<b>Middleware Version Information</b>	
<b>ID</b>	<b>INFOMODEL_SCHEMA_2</b>
<b>Description</b>	The middleware version must be published in the resource information.
<b>Mandatory</b>	NO
<b>Applicability</b>	Information Model Appliances
<b>Input from Technology Provider</b>	Resource information published by Information Discovery Appliances must include the version of the middleware.
<b>Pass/Fail Criteria</b>	Middleware version of service is published correctly by the service.
<b>Related Information</b>	Requirement #1378
<b>Revision Log</b>	

<b>GlueSchema 2.0 Support</b>	
<b>ID</b>	<b>INFOMODEL_SCHEMA_3</b>
<b>Description</b>	Resource information exchanged in the EGI Infrastructure must conform to GlueSchema.
<b>Mandatory</b>	NO
<b>Applicability</b>	Information Model Appliances
<b>Input from Technology Provider</b>	Resource information published by Information Discovery Appliances should conform to the GlueSchema v2.0
<b>Test Description</b>	<p><b>Pre-condition</b> None.</p> <p><b>Test</b> Check that information published conforms to GlueSchema 2.0. The suggested tool for testing the conformance is the GlueValidator [R 26]</p> <p><b>Expected Outcome</b> Information conforms to GlueSchema.</p>
<b>Pass/Fail Criteria</b>	Information published must be available in GlueSchema v2.0 Ideally the Technology Provider should assure this by a test suite of the appliances.
<b>Related Information</b>	UMD Roadmap [R 1] GlueSchema v2.0 [R 25] GlueValidator [R 26]
<b>Revision Log</b>	

## 8 INFORMATION DISCOVERY

### 8.1 Information Discovery Interface

Information Discovery Interface	
<b>ID</b>	INFODISC_IFACE_1
<b>Description</b>	Information published by the appliance must be available through LDAPv3 protocol
<b>Mandatory</b>	YES
<b>Applicability</b>	Information Discovery Appliances
<b>Input from Technology Provider</b>	LDAP interface for getting the available information.
<b>Test Description</b>	<p><b>Pre-condition</b> Information Discovery Appliance is running</p> <p><b>Test</b> Fetch information from Discovery Appliance using LDAPv3.</p> <p><b>Expected Outcome</b> Information is retrieved correctly from server.</p>
<b>Pass/Fail Criteria</b>	Information published must be available through LDAPv3 protocol.
<b>Related Information</b>	UMD Roadmap [R 1]
<b>Revision Log</b>	



## 8.2 Information Discovery Functionality

### 8.2.1 Information Aggregation

The Information Discovery services aggregate information from lower level sources of information in a hierarchical way. Appliances providing the Information Discovery Capability must be able to aggregate lower level sources of information and apply filter to that information

Information Filtering	
<b>ID</b>	<b>INFODISC_AGG_1</b>
<b>Description</b>	The information discovery service must be able to filter some of the data coming from information sources (e.g. do not publish information of a compute capability for a given VO)
<b>Mandatory</b>	NO
<b>Applicability</b>	Information Discovery Appliances
<b>Input from Technology Provider</b>	The Appliances must allow the definition of information filters (e.g. do not publish information of a CE for a given VO).
<b>Test Description</b>	<b>Pre-condition</b> Valid sources of information are available. Valid filter. <b>Test</b> Filter sources according to filter. <b>Expected Outcome</b> Output filtered information
	<b>Pre-condition</b> Valid sources of information are available. Invalid filter. <b>Test</b> Filter sources according to filter. <b>Expected Outcome</b> Error message stating that the information cannot be filtered. Output unfiltered information.
<b>Pass/Fail Criteria</b>	The administrator must be able to define filters for the information that gets published by the appliance. The appliance defines the format and syntax for the filters.
<b>Related Information</b>	UMD Roadmap [R 1]
<b>Revision Log</b>	V2: Rephrase, turned to non-mandatory.

<b>Information Aggregation</b>	
<b>ID</b>	<b>INFODISC_AGG_2</b>
<b>Description</b>	The information discovery service must be able to collect data from different sources and aggregate them in a single source of information.
<b>Mandatory</b>	YES
<b>Applicability</b>	Information Discovery Appliances
<b>Input from Technology Provider</b>	Support for the aggregation of different sources of information into the appliance (e.g. aggregation of several site-BDII in the top-BDII)
<b>Test Description</b>	<b>Pre-condition</b> Set of valid information service sources available and correct. <b>Test</b> Aggregate information from sources <b>Expected Outcome</b> Output aggregated information
	<b>Pre-condition</b> Set of valid information service sources available, at least one incorrect (e.g. not GlueSchema compliant) <b>Test</b> Aggregate information from sources <b>Expected Outcome</b> Output aggregated information without incorrect source. Show a warning message.
	<b>Pre-condition</b> Set of valid information service sources, at least one unreachable <b>Test</b> Aggregate information from sources <b>Expected Outcome</b> Output aggregated information without unreachable source. Show a warning message.
<b>Pass/Fail Criteria</b>	The appliance must aggregate several sources of information. When one of them presents errors or is unreachable, others still must be published. Update interval for sources must be configurable.
<b>Related Information</b>	UMD Roadmap [R 1]
<b>Revision Log</b>	

<b>Dynamic Information publication</b>	
<b>ID</b>	<b>INFODISC_AGG_3</b>
<b>Description</b>	The information discovery service must be able to publish dynamic information at resource level.
<b>Mandatory</b>	YES
<b>Applicability</b>	Information Discovery Appliances
<b>Input from Technology Provider</b>	Support for the collection of dynamic information defined as mandatory in the GlueSchema. The update interval should be configurable.
<b>Pass/Fail Criteria</b>	The appliance must publish dynamic information defined in the GlueSchema (at least the mandatory attributes). The update interval must be configurable
<b>Related Information</b>	UMD Roadmap [R 1]
<b>Revision Log</b>	V4: general improvement of criterion.

## 8.2.2 Availability/Scalability

Top Information System Size	
<b>ID</b>	INFODISC_AVAIL_1
<b>Description</b>	Central Information Discovery appliances must be able to handle information about the whole EGI.eu infrastructure (which may contain several hundred sites)
<b>Mandatory</b>	YES
<b>Applicability</b>	Information Discovery Appliances
<b>Input from Technology Provider</b>	Limit of size of the data handled by the service should be enough to cover the whole EGI.eu Infrastructure. Documentation on how to tune the service in order support large data sizes.
<b>Test Description</b>	<p><b>Pre-condition</b> Correctly configured service.</p> <p><b>Test</b> Add information from all EGI.eu Infrastructure.</p> <p><b>Expected Outcome</b> Appliance is able to aggregate all the information and responds to clients.</p>
<b>Pass/Fail Criteria</b>	Pass if the appliance is able to handle the global EGI.eu Infrastructure information.
<b>Related Information</b>	UMD Roadmap [R 1]
<b>Revision Log</b>	V2: major rephrasing V3: better wording

## 9 MONITORING PROBES

The Monitoring Capability executes a set of probes defined by the operations community. These probes *should* be provided by the TP for each product.

### 9.1 Service Probes

Service Probe	
<b>ID</b>	<b>MON_PROBE_GENERIC_2</b>
<b>Description</b>	Provide monitoring probes that test the functionality of the service
<b>Mandatory</b>	NO
<b>Applicability</b>	All Services
<b>Input from Technology Provider</b>	Monitoring probe that tests that the service provides the expected functionality. The probe should only use the public interface of the service and run integrated in the monitoring infrastructure of EGI. The exact tests to perform for each service are determined by the operations community. For the current probes specification check the SAM documentation [R 32]
<b>Pass/Fail Criteria</b>	Probes must exist, they must be integrated with the EMI monitoring infrastructure and provide the expected functionality.
<b>Related Information</b>	SAM documentation [R 32]
<b>Revision Log</b>	

## 10 REFERENCES

<b>R 1</b>	UMD roadmap: <a href="https://documents.egi.eu/public/ShowDocument?docid=100">https://documents.egi.eu/public/ShowDocument?docid=100</a>
<b>R 2</b>	QC Test Notes: <a href="https://wiki.egi.eu/w/index.php?title=EGI_Quality_Criteria_Testing">https://wiki.egi.eu/w/index.php?title=EGI_Quality_Criteria_Testing</a>
<b>R 3</b>	Web Services Data Access and Integration – The Relational Realisation (WS-DAIR) Specification, Version 1.0
<b>R 4</b>	Web Services Data Access and Integration – The XML Realization (WS-DAIX) Specification, Version 1.0
<b>R 5</b>	OGSA-DAI: <a href="http://www.ogsadai.org.uk/">http://www.ogsadai.org.uk/</a>
<b>R 6</b>	gLite LFC: <a href="https://twiki.cern.ch/twiki/bin/view/EGEE/GliteLFC">https://twiki.cern.ch/twiki/bin/view/EGEE/GliteLFC</a>
<b>R 7</b>	AMGA: <a href="http://amga.web.cern.ch/amga/">http://amga.web.cern.ch/amga/</a>
<b>R 8</b>	AMGA WSDL: <a href="http://amga.web.cern.ch/amga/soap_wsdaire.html">http://amga.web.cern.ch/amga/soap_wsdaire.html</a>
<b>R 9</b>	AMGA streaming API: <a href="http://amga.web.cern.ch/amga/protocol.html">http://amga.web.cern.ch/amga/protocol.html</a>
<b>R 10</b>	AMGA Metadata Queries: <a href="http://amga.web.cern.ch/amga/queries.html">http://amga.web.cern.ch/amga/queries.html</a>
<b>R 11</b>	A. Konstantinov, ARC Computational Job Management Component – A-REX, NORDUGRID-TECH-14
<b>R 12</b>	CREAM: <a href="http://grid.pd.infn.it/cream/">http://grid.pd.infn.it/cream/</a>
<b>R 13</b>	EMI-ES: <a href="https://twiki.cern.ch/twiki/bin/view/EMI/EmiExecutionService">https://twiki.cern.ch/twiki/bin/view/EMI/EmiExecutionService</a>
<b>R 14</b>	GRAM5: <a href="http://www.globus.org/toolkit/docs/latest-stable/execution/gram5/">http://www.globus.org/toolkit/docs/latest-stable/execution/gram5/</a>
<b>R 15</b>	OGF DRMAA: <a href="http://www.drmaa.org/">http://www.drmaa.org/</a>
<b>R 16</b>	OGSA Basic Execution Service v1.0: <a href="http://www.ogf.org/documents/GFD.108.pdf">http://www.ogf.org/documents/GFD.108.pdf</a>
<b>R 17</b>	QCG-Broker: <a href="http://www.qoscosgrid.org/trac/qcg-broker">http://www.qoscosgrid.org/trac/qcg-broker</a>
<b>R 18</b>	UNICORE UAS: <a href="http://www.unicore.eu/unicore/architecture/service-layer.php#anchor_uas">http://www.unicore.eu/unicore/architecture/service-layer.php#anchor_uas</a>
<b>R 19</b>	gLite WMS: <a href="http://web.infn.it/gLiteWMS/">http://web.infn.it/gLiteWMS/</a>
<b>R 20</b>	SAGA-CORE-WG: A Simple API for Grid Applications (SAGA) v1.0 (GFD.90)
<b>R 21</b>	SAGA (A Simple API for Grid Applications): <a href="http://saga.cct.lsu.edu/">http://saga.cct.lsu.edu/</a>
<b>R 22</b>	Instrument Element: <a href="http://www.dorii.eu/resources/adaptation:middleware:IE">http://www.dorii.eu/resources/adaptation:middleware:IE</a>

<b>R 23</b>	DORII (Deployment of Remote Instrumentation Infrastructure) Project: <a href="http://www.dorii.eu/">http://www.dorii.eu/</a>
<b>R 24</b>	GlueSchema Specification v1.3: <a href="http://glueschema.forge.cnaf.infn.it/Spec/V13">http://glueschema.forge.cnaf.infn.it/Spec/V13</a>
<b>R 25</b>	GlueSchema Specification v2.0: <a href="http://www.ogf.org/documents/GFD.147.pdf">http://www.ogf.org/documents/GFD.147.pdf</a>
<b>R 26</b>	Glue Validator: <a href="https://tomtools.cern.ch/confluence/display/IS/GLUEValidator">https://tomtools.cern.ch/confluence/display/IS/GLUEValidator</a>
<b>R 27</b>	JMS (Java Message Service Specification) 1.1: <a href="http://www.oracle.com/technetwork/java/jms/index.html">http://www.oracle.com/technetwork/java/jms/index.html</a>
<b>R 28</b>	AMQP (Advanced Message Queuing Protocol): <a href="http://www.amqp.org/confluence/display/AMQP/Advanced+Message+Queuing+Protocol">http://www.amqp.org/confluence/display/AMQP/Advanced+Message+Queuing+Protocol</a>
<b>R 29</b>	OASIS WS-Notification: <a href="https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsn">https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsn</a>
<b>R 30</b>	Nagios Config Generator: <a href="https://tomtools.cern.ch/confluence/display/SAM/NCG">https://tomtools.cern.ch/confluence/display/SAM/NCG</a>
<b>R 31</b>	My EGI portal: <a href="https://tomtools.cern.ch/confluence/display/SAM/MyEGI">https://tomtools.cern.ch/confluence/display/SAM/MyEGI</a>
<b>R 32</b>	SAM Probes Documentation: <a href="https://tomtools.cern.ch/confluence/display/SAM/Probes">https://tomtools.cern.ch/confluence/display/SAM/Probes</a>
<b>R 33</b>	Accounting Portal: <a href="http://accounting.egi.eu/">http://accounting.egi.eu/</a>
<b>R 34</b>	GridSite Delegation Protocol: <a href="http://www.gridsite.org/wiki/Delegation_protocol">http://www.gridsite.org/wiki/Delegation_protocol</a>
<b>R 35</b>	Globus Delegation Service: <a href="http://www.globus.org/toolkit/docs/4.0/security/delegation/">http://www.globus.org/toolkit/docs/4.0/security/delegation/</a>
<b>R 36</b>	European Policy Management Authority for Grid Authentication (EuGridPMA): <a href="http://www.eugridpma.org/">http://www.eugridpma.org/</a>
<b>R 37</b>	ARGUS Authorization Service: <a href="https://twiki.cern.ch/twiki/bin/view/EGEE/AuthorizationFramework">https://twiki.cern.ch/twiki/bin/view/EGEE/AuthorizationFramework</a>
<b>R 38</b>	XACML: <a href="http://docs.oasis-open.org/xacml/2.0/access_control-xacml-2.0-core-spec-os.pdf">http://docs.oasis-open.org/xacml/2.0/access_control-xacml-2.0-core-spec-os.pdf</a>
<b>R 39</b>	Hydra encrypted file storage: <a href="https://twiki.cern.ch/twiki/bin/view/EGEE/DMEDS">https://twiki.cern.ch/twiki/bin/view/EGEE/DMEDS</a>
<b>R 40</b>	gLite FTS: <a href="https://twiki.cern.ch/twiki/bin/view/EGEE/GLiteFTS">https://twiki.cern.ch/twiki/bin/view/EGEE/GLiteFTS</a>
<b>R 41</b>	SRM v2.2: <a href="http://www.ggf.org/documents/GFD.129.pdf">http://www.ggf.org/documents/GFD.129.pdf</a>
<b>R 42</b>	S2 Test: <a href="http://s-2.sourceforge.net/">http://s-2.sourceforge.net/</a>
<b>R 43</b>	SRM-Tester: <a href="https://sdm.lbl.gov/twiki/bin/view/Software/SRMTester/WebHome">https://sdm.lbl.gov/twiki/bin/view/Software/SRMTester/WebHome</a>
<b>R 44</b>	Lcg-utils: <a href="http://grid-deployment.web.cern.ch/grid-deployment/documentation/LFC_DPM/lcg_util/">http://grid-deployment.web.cern.ch/grid-deployment/documentation/LFC_DPM/lcg_util/</a>
<b>R 45</b>	Lcg-utils test suite: <a href="http://glite.cvs.cern.ch/cgi-">http://glite.cvs.cern.ch/cgi-</a>



	<a href="http://bin/glite.cgi/org.glite.testsuites.ctb/UI/tests/test-lcg-utils.sh?view=markup">bin/glite.cgi/org.glite.testsuites.ctb/UI/tests/test-lcg-utils.sh?view=markup</a>
<b>R 46</b>	Open Cloud Computing Interface WG, OGF, <a href="http://www.ggf.org/gf/group_info/view.php?group=occi-wg">http://www.ggf.org/gf/group_info/view.php?group=occi-wg</a>
<b>R 47</b>	Virtualization Management (VMAN), DMTF <a href="http://www.dmtf.org/standards/vman">http://www.dmtf.org/standards/vman</a>
<b>R 48</b>	StratusLab <a href="http://stratuslab.eu/">http://stratuslab.eu/</a>
<b>R 49</b>	StratusLab MarketPlace Technical Note TN-Marketplace (V3.0)