



EGI-InSPIRE

UMD DATA CAPABILITIES QUALITY CRITERIA v1.1

Document identifier:	EGI-DATA-QC-V1.1.docx
Date:	09/02/2011
Document Link:	https://documents.egi.eu/document/240

Abstract

This document describes the Quality Criteria for the Functional Capabilities identified in the UMD Roadmap.



Copyright notice

Copyright © Members of the EGI-InSPIRE Collaboration, 2010. See 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 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
1.0	20/01/2011	Reorganisation of capabilities according to UMD Roadmap v2	Enol Fernández
1.1	07/02/2011	Added LFC	Enol Fernández



TABLE OF CONTENTS

1	Data Access	4
1.1	WS-DAI Interface	4
	DATAACCESS_API_1	4
	DATAACCESS_API_2	5
1.2	OGSA-DAI Criteria	6
	DATAACCESS_OGSADAI_1	6
	DATAACCESS_OGSADAI_2	8
	DATAACCESS_OGSADAI_3	9
	DATAACCESS_OGSADAI_4	10
2	Metadata Catalogue	11
2.1	LFC Implementation	11
2.1.1	LFC API	11
	METADATA_LFC_API_1	11
2.1.2	LFC Functionality	12
	METADATA_LFC_FUNC_1	12
	METADATA_LFC_FUNC_2	13
	METADATA_LFC_FUNC_3	14
	METADATA_LFC_FUNC_4	15
2.2	AMGA Implementation	17
2.2.1	AMGA Interface	17
	METADATA_AMGA_API_1	17
	METADATA_AMGA_API_2	18
2.2.2	AMGA Functionality	19
	METADATA_AMGA_FUNC_1	19
	METADATA_AMGA_FUNC_2	21
	METADATA_AMGA_FUNC_3	22
	METADATA_AMGA_FUNC_4	24
	METADATA_AMGA_FUNC_5	25
3	References	26

1 DATA ACCESS

Criteria for the Data Access Capability are based on OGSA-DAI and WS-DAI interface as reference.

1.1 WS-DAI Interface

WS-DAIR API	
ID	DATAACCESS_API_1
Mandatory	
Applicability	WS-DAIR Appliances.
Related Requirements	#665: Data availability

Description	
Data Access capabilities that implement the WS-DAIR [R 2] interface must support all the functionality included in the interface.	
Input from TP	
Complete Test suite for the WS-DAI API using the relational realization. It must include tests for all the documented functions in the WSDL. For all functions, check both correct and invalid input. Invalid output should throw an exception as documented. Test also with valid and invalid credentials. Invalid credentials should throw security related exceptions.	
Test Suite Description	
Pre-condition	Valid user credentials.
Test	Test all functionality of WS-DAI using the relational realization, with correct/incorrect input and with valid and invalid credentials.
Expected Outcome	Log of all the operations performed. All the documented functions work as documented.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

WS-DAIX API	
ID	DATAACCESS_API_2
Mandatory	
Applicability	WS-DAIX Appliances.
Related Requirements	#665: Data availability

Description	
Data Access capabilities that implement the WS-DAIX [R 2] interface must support all the functionality included in the interface.	
Input from TP	
Complete Test suite for the WS-DAI API using the XML realization. It must include tests for all the documented functions in the WSDL. For all functions, check both correct and invalid input. Invalid output should throw an exception as documented. Test also with valid and invalid credentials. Invalid credentials should throw security related exceptions.	
Test Suite Description	
Pre-condition	Valid user credentials.
Test	Test all functionality of WS-DAI using the XML realization, with correct/incorrect input and with valid and invalid credentials.
Expected Outcome	Log of all the operations performed. All the documented functions work as documented.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

1.2 OGSA-DAI Criteria

Deployment of data resources	
ID	DATAACCESS_OGSADAI_1
Mandatory	
Applicability	OGSA-DAI implementations.
Related Requirements	None

Description	
The OGSA-DAI implementation should allow the deployment of data resources with SQL, XML or files sources.	
Input from TP	
Test suite for deployment SQL, XML and file data resources.	
Test 1	
Pre-condition	Existing SQL data resource.
Test	Deploy SQL data resource. Test queries against deployed resource.
Expected Outcome	SQL data resources is available, queries are executed correctly.
Test 2	
Pre-condition	Existing XMLDB data resource.
Test	Deploy XMLDB data resource. Test queries against deployed resource.
Expected Outcome	XMLDB data resource is available, queries are executed correctly.
Test 3	
Pre-condition	Existing file data resource.
Test	Deploy file data resource. Test queries against deployed resource.
Expected Outcome	File data resource is available, queries are executed correctly.
Test 4	
Pre-condition	Existing remote resource.
Test	Deploy remote resource. Test queries against deployed resource.
Expected Outcome	Remote resource is available, queries are executed correctly.
Test 5	
Pre-condition	Deployed data resource.
Test	Undeploy resource. Test queries against resource.
Expected Outcome	Remote resource is no longer available; queries are not executed correctly.



Pass/Fail Criteria
Pass if the test is provided and passes.
Related Information
History

Management of data resources access.	
ID	DATAACCESS_OGSADAI_2
Mandatory	
Applicability	OGSA-DAI implementations.
Related Requirements	None
Description	
The OGSA-DAI implementation must allow the definition of which users are allowed to access the deployed resources.	
Input from TP	
Test suite for user management of data resources.	
Test 1	
Pre-condition	Existing data resource. Valid user credentials
Test	Allow access to user. Test the access.
Expected Outcome	User is allowed to access the data resource.
Test 2	
Pre-condition	Existing data resource. Valid user credentials
Test	Deny access to user. Test the access.
Expected Outcome	User is not allowed to access the data resource.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

Deployment of activities at resource.	
ID	DATAACCESS_OGSADAI_3
Mandatory	
Applicability	OGSA-DAI implementations.
Related Requirements	None
Description	
The OGSA-DAI implementation should allow the deployment of activities in server.	
Input from TP	
Test suite for deployment of activities.	
Test 1	
Pre-condition	OGSA-DAI server available; Activity classes available at server.
Test	Deploy activity at server. Add activity to resource. Test execution of activity.
Expected Outcome	Activity is available and executed correctly.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

Workflow creation and execution.	
ID	DATAACCESS_OGSADAI_4
Mandatory	
Applicability	OGSA-DAI implementations.
Related Requirements	None
Description	
The OGSA-DAI implementation should allow the creation of workflows with activities.	
Input from TP	
Test suite for the creation and execution of workflows.	
Test 1	
Pre-condition	Existing OGSA-DAI server.
Test	Create simple workflow, synchronous execution in server.
Expected Outcome	Workflow is executed. Status and data results of workflow can be retrieved.
Test 2	
Pre-condition	Existing OGSA-DAI server.
Test	Create simple workflow, asynchronous execution in server.
Expected Outcome	Workflow is executed. Status and data results of workflow can be retrieved.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

2 METADATA CATALOGUE

Criteria for the Metadata Catalogue Capability are based on gLite LFC and gLite AMGA.

2.1 LFC Implementation

2.1.1 LFC API

LFC API	
ID	METADATA_LFC_API_1
Mandatory	
Applicability	LFC implementations.
Related Requirements	None

Description LFC implementations of the Metadata Catalogue Capability must implement the complete LFC API.	
Input from TP Complete Test suite for the LFC API. It must include tests for all the documented functions. For all functions, check both correct and invalid input. Invalid output should throw an exception as documented. Test also with valid and invalid credentials. Invalid credentials should throw security related exceptions.	
Test Suite Description	
Pre-condition	Valid user credentials.
Test	Test all functionality of LFC API, with correct/incorrect input and with valid and invalid credentials.
Expected Outcome	Log of all the operations performed. All the documented functions work as documented.
Pass/Fail Criteria Pass if the test is provided and passes for all the available language bindings.	
Related Information	
History	

2.1.2 LFC Functionality

Directory Management	
ID	METADATA_LFC_FUNC_1
Mandatory	
Applicability	LFC implementations.
Related Requirements	None
Description	
LFC implementations of the Metadata Catalogue Capability must allow users to organize the files in directories.	
Input from TP	
Test suite for the directory management operations.	
Test 1	
Pre-condition	Valid user credentials. Available Catalogue server.
Test	Create new directory.
Expected Outcome	New directory is created at server.
Test 2	
Pre-condition	Valid user credentials. Available Catalogue server. Existing directory
Test	List contents of directory.
Expected Outcome	Contents of directory are returned.
Test 3	
Pre-condition	Valid user credentials. Available Catalogue server. Existing empty directory
Test	Remove directory.
Expected Outcome	Directory is removed.
Test 4	
Pre-condition	Valid user credentials. Available Catalogue server. Existing non-empty directory
Test	Remove directory.
Expected Outcome	Directory is not removed. Message is shown.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

ACL Operations	
ID	METADATA_LFC_FUNC_2
Mandatory	
Applicability	LFC implementations.
Related Requirements	None
Description	
LFC implementations of the Metadata Catalogue Capability must allow users to set permissions on the entries.	
Input from TP	
Test suite for ACL management of LFC.	
Test 1	
Pre-condition	Valid user credentials. Available LFC server. Existing entry
Test	Show entry owner and permission
Expected Outcome	Entry owner and permission are returned.
Test 2	
Pre-condition	Valid user credentials with administrator privileges. Available LFC server. Existing entry.
Test	Change owner of entry. Show entry owner.
Expected Outcome	Owner of entry is changed and returned.
Test 3	
Pre-condition	Valid user credentials with administrator privileges. Available LFC server. Existing entry.
Test	Change group of entry. Show entry group.
Expected Outcome	Group of entry is changed and returned.
Test 4	
Pre-condition	Valid user credentials. Available LFC server. Existing entry.
Test	Check the entry ACL is enforced.
Expected Outcome	The permissions of entry are correctly enforced.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

Entry Comments	
ID	METADATA_LFC_FUNC_3
Mandatory	
Applicability	LFC implementations.
Related Requirements	None
Description	
LFC implementations of the Metadata Catalogue Capability must allow users to set comments on the catalogue entries.	
Input from TP	
Test suite for the comment management of LFC.	
Test 1	
Pre-condition	Valid user credentials. Available LFC server. Existing entry
Test	Set comment of an entry. Show comment to entry.
Expected Outcome	The comment is correctly set and shown.
Test 2	
Pre-condition	Valid user credentials. Available LFC server. Existing entry with comment.
Test	Delete comment of an entry. Show comment to entry.
Expected Outcome	The comment is correctly removed and nothing is shown.
Pass/Fail Criteria	
Pass if the test is provided and passes.	
Related Information	
History	

User/Group Map Management	
ID	METADATA_LFC_FUNC_4
Mandatory	
Applicability	LFC implementations.
Related Requirements	None

Description	
LFC implementations of the Metadata Catalogue Capability must allow the definition and management of user and group maps.	
Input from TP	
Test suite for the user/group management of LFC.	
Test 1	
Pre-condition	Valid admin user credentials. Available LFC server.
Test	List all user/group mappings
Expected Outcome	List of all user/group mappings is shown.
Test 2	
Pre-condition	Valid admin user credentials. Available LFC server.
Test	List user mappings for specific user DN.
Expected Outcome	List of user mappings is shown.
Test 3	
Pre-condition	Valid admin user credentials. Available LFC server.
Test	List group mappings for specific group name.
Expected Outcome	List of group mapping is shown.
Test 4	
Pre-condition	Valid admin user credentials. Available LFC server. Non existing user/group mapping.
Test	Set new user/group mapping. List the user/group mapping.
Expected Outcome	New mapping is set and shown accordingly.
Test 5	
Pre-condition	Valid admin user credentials. Available LFC server. Existing user/group mapping.
Test	Set new user/group mapping for a user/group. List the user/group mapping.
Expected Outcome	New mapping is set and shown accordingly.
Test 6	
Pre-condition	Valid admin user credentials. Available LFC server. Existing user/group mapping.



Test	Remove user/group mapping for a user/group. List the user/group mapping.
Expected Outcome	Mapping is removed and not shown.
Pass/Fail Criteria	Pass if the test is provided and passes.
Related Information	
History	

2.2 AMGA Implementation

2.2.1 AMGA Interface

AMGA Soap Interface	
ID	METADATA_AMGA_API_1
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description AMGA implementations of the Metadata Catalogue Capability must implement the complete API specified at the AMGA WSDL [R 4]	
Input from TP Complete Test suite for the AMGA SOAP API. It must include tests for all the documented functions in the WSDL. For all functions, check both correct and invalid input. Invalid output should throw an exception as documented. Test also with valid and invalid credentials. Invalid credentials should throw security related exceptions.	
Test Suite Description Pre-condition Valid user credentials. Test Test all functionality of AMGA WSDL, with correct/incorrect input and with valid and invalid credentials. Expected Outcome Log of all the operations performed. All the documented functions work as documented.	
Pass/Fail Criteria Pass if the test is provided and passes.	
Related Information	
History	

AMGA Streaming Interface	
ID	METADATA_AMGA_API_2
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description	
AMGA implementations of the Metadata Catalogue Capability must implement the complete streaming API of AMGA server.	
Input from TP	
Complete Test suite for the AMGA streaming API. It must include tests for all the documented functions for all the available language bindings. For all functions, check both correct and invalid input. Invalid output should throw an exception as documented. Test also with valid and invalid credentials. Invalid credentials should throw security related exceptions.	
Test Suite Description	
Pre-condition	Valid user credentials.
Test	Test all functionality of AMGA Stream protocol, with correct/incorrect input and with valid and invalid credentials.
Expected Outcome	Log of all the operations performed. All the documented functions work as documented.
Pass/Fail Criteria	
Pass if the test is provided and passes for all the available language bindings (C++, Python & Java)	
Related Information	
History	

2.2.2 AMGA Functionality

Directory Management	
ID	METADATA_AMGA_FUNC_1
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None

Description	
AMGA implementations of the Metadata Catalogue Capability must allow users to organize the files in directories.	
Input from TP	
Test suite for the directory management operations of AMGA.	
Test 1	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Create new directory.
Expected Outcome	New directory is created at AMGA server.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server. Existing directory
Test	List contents of directory.
Expected Outcome	Contents of directory are returned.
Test 3	
Pre-condition	Valid user credentials. Available AMGA server. Existing empty directory
Test	Remove directory.
Expected Outcome	Directory is removed.
Test 4	
Pre-condition	Valid user credentials. Available AMGA server. Existing non-empty directory
Test	Remove directory.
Expected Outcome	Directory is not removed. Message is shown.
Test 5	
Pre-condition	Valid user credentials. Available AMGA server. Existing directory (different to current)
Test	Change current directory to existing directory. Check current directory.
Expected Outcome	Current directory has changed



Outcome
Pass/Fail Criteria Pass if the test is provided and passes for all the available language bindings.
Related Information
History

Entry Management	
ID	METADATA_AMGA_FUNC_2
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description	
AMGA implementations of the Metadata Catalogue Capability must allow users to manage the entries in the server.	
Input from TP	
Test suite for the entry management operations of AMGA.	
Test 1	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Create a new entry and assigns value to attributes. List entry's attributes
Expected Outcome	Entry is created. The attributes are listed correctly.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Create a new set of entries. List entries' attributes
Expected Outcome	Entries are created. The attributes are listed correctly.
Test 3	
Pre-condition	Valid user credentials. Available AMGA server. Existing entry.
Test	Remove existing entry. List entry's attributes
Expected Outcome	Entry is removed. The list command exits with an error.
Pass/Fail Criteria	
Pass if the test is provided and passes for all the available language bindings.	
Related Information	
History	

Attribute Management	
ID	METADATA_AMGA_FUNC_3
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description	
AMGA implementations of the Metadata Catalogue Capability must allow users to manage the attributes in the server.	
Input from TP	
Test suite for the attribute management operations of AMGA.	
Test 1	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Add new attribute to directory. List directory attributes
Expected Outcome	Attribute is added. List returns all attributes of directory.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server. Existing attributes for dir/entry
Test	Remove attribute to from dir/entry. List dir/entry attributes
Expected Outcome	Attribute is removed. List does not return removed attribute.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Create a new set of entries. List entries' attributes
Expected Outcome	Entries are created. The attributes are listed correctly.
Test 3	
Pre-condition	Valid user credentials. Available AMGA server. Existing attribute list for file
Test	Clear attribute list for a file. Get file's attributes.
Expected Outcome	All file's attributes are set to NULL. Attributes values are shown.
Test 4	
Pre-condition	Valid user credentials. Available AMGA server. Entry with attribute list.
Test	Clear attribute list for a file. List file's attributes
Expected Outcome	Attribute list file. They are listed correctly.
Pass/Fail Criteria	
Pass if the test is provided and passes for all the available language bindings.	



Related Information
History

Metadata Operations	
ID	METADATA_AMGA_FUNC_4
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description	
AMGA implementations of the Metadata Catalogue Capability must allow users to do operations with the metadata in the server.	
Input from TP	
Test suite for metadata operations of AMGA.	
Test 1	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Find files that fulfil a query.
Expected Outcome	List of matching files is returned.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Update attributes for entries. List entries' attributes.
Expected Outcome	The attributes are updated with new values and listed correctly.
Pass/Fail Criteria	
Pass if the test is provided and passes for all the available language bindings.	
Related Information	
History	

ACL Operations	
ID	METADATA_AMGA_FUNC_5
Mandatory	
Applicability	AMGA implementations.
Related Requirements	None
Description	
AMGA implementations of the Metadata Catalogue Capability must allow users to set permissions on the entries.	
Input from TP	
Test suite for ACL management of AMGA.	
Test 1	
Pre-condition	Valid user credentials. Available AMGA server.
Test	Get current user.
Expected Outcome	Current user is returned.
Test 2	
Pre-condition	Valid user credentials. Available AMGA server. Existing entry/dir
Test	Show entry/dir owner and permission
Expected Outcome	Entry/dir owner and permission are returned.
Test 3	
Pre-condition	Valid user credentials. Available AMGA server. Existing entry/dir
Test	Change owner of entry/dir. Show entry/dir owner.
Expected Outcome	Owner of entry/dir is changed and returned.
Test 4	
Pre-condition	Valid user credentials. Available AMGA server. Existing entry/dir
Test	Change entry/dir permissions. Check the permission is enforced.
Expected Outcome	The permissions of entry/dir are changed and correctly enforced.
Pass/Fail Criteria	
Pass if the test is provided and passes for all the available language bindings.	
Related Information	
History	



3 REFERENCES

R 1	UMD roadmap: https://documents.egi.eu/public/ShowDocument?docid=100
R 2	Web Services Data Access and Integration – The Relational Realisation (WS-DAIR) Specification, Version 1.0
R 3	Web Services Data Access and Integration – The XML Realization (WS-DAIX) Specification, Version 1.0
R 4	AMGA WSDL: http://amga.web.cern.ch/amga/downloads/Metadata.wsdl