



Publication Year	2007
Acceptance in OA	2023-02-08T13:40:08Z
Title	LFI Acceptance Test Report for IDIS
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Handle	http://hdl.handle.net/20.500.12386/33284
Volume	PL-LFI-OAT-RP-018



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TITLE: LFI Acceptance Test Report for
IDIS

DOC. TYPE: Report

PROJECT REF.: PL-LFI-OAT-RP-018

PAGE: I of IV,

ISSUE/REV.: 1.0

DATE: May 23th, 2007

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CHANGE RECORD

Issue	Date	Sheet	Description of Change	Release
1.0	My 2007		First release of the acceptance test report	IDIS 2.3.2



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1 INTRODUCTION

This document follows the LFI Acceptance Test Plan for IDIS [AD-1] and its purpose is to provide the results of the execution of each test case implemented according to the definition given in the plan. The versions of the IDIS tools covered by these document and the test environment are defined respectively in sections 2.2 and 2.7 of [AD-1]. Each test report follows the template given in Appendix A of [AD-1] and the PASS/FAIL criteria are defined in section 2.6 of [AD-1]. In the conclusions of this document (section 3) we analyze the results obtained and summarize the status of the acceptance.

1.1 APPLICABLE DOCUMENTS

- [AD-1] LFI Acceptance Test Plan for IDIS
M.Frailis, S.Galeotta, D.Maino, F.Perrotta
PL-LFI-OAT-PL-010
- [AD-2] Plack IDIS Data Management Component URD
G. Giardino
PL-COM-SD-UR-0030
- [AD-3] Plance IDIS Process Coordinator URD
W. Hovest
PL-LFI-MPA-UR-001
- [AD-4] Planck IDIS Federation Layer User Requirements Document
M. Bremer
PL-COM-SSD-UR-0034

1.2 REFERENCE DOCUMENTS

- [RD-1] ESA Software Engineering Standards
PSS-05-0
- [RD-2] Guide to applying the ESA software engineering standards to small software projects
BSSC-96-2
- [RD-3] Planck IDIS System Test Plan
J. Sternberg, A. Hazell
PL-COM-SSD-TP-0040
- [RD-4] Planck IDIS System Test Specification
J. Sternberg et al.
PL-COM-SSD-TP-0043
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[RD-5] IDIS System Test Reports

M. Bremer, K. Phipps, K. Phipps, M. Reinecke

IDIS_04 (for Planck SGS Implementation Delta-Review)

[RD-6] Planck IDIS Use Cases Document

A. Hazell, F. Pasian et al.

PL-COM-SSD-TN-0041

[RD-7] Planck LFI - Science Operations Implementation Plan

F. Pasian et al.

PL-LFI-OAT-PL-001

[RD-8] Planck IDIS DMC Exchange Format Design Document

J. Sternberg, A. Zacchei, C. Mercier

PL-COM-SSD-IF-47

1.3 ACRONYMS LIST

AC	Acquisition Chain
DAE	Digital Acquisition Electronic
DMC	Data Management Component
DMCI	DMC Interface
DPC	Data Processing Centre
DQR	Data Quality Report
FL	Federation Layer
HK	House-Keeping
LFI	Low Frequency Instrument
OD	Operational Day
ProC	Process Coordinator
REBA	Radiometer Electronic Box Assembly
SCI	Scientific
SGS	Science Ground Segment
TMH	Telemetry Handler
TOI	Time Ordered Information
URD	User Requirement Document



2 TEST REPORT

2.1 DMC TEST CASES

2.1.1 DMC-AT-TR01

Test report ID	DMC-AT-TR01
Test case ID	DMC-AT-TC01
Start date / hour	03/01/2007
End date / hour	04/30/2007
Tester name / Organization	Marco Frailis – OAT, Samuele Galeotta – OAT
Test program name (if applicable)	
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID (if applicable)	dmc_ddl_01.zip
Execution status	PASSED – OK
Comments/notes	The unsigned int type is supported by the DMC but not by ProC (for compatibility with Fortran data types).
SPRs/SCRs raised	

2.1.2 DMC-AT-TR02

Test report ID	DMC-AT-TR02
Test case ID	DMC-AT-TC02
Start date / hour	05/17/2007 14.21
End date / hour	05/17/2007 15.00
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	
Input dataset ID (if applicable)	dmc_ddl_01.zip

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Output dataset ID (if applicable)	
Log location / ID (if applicable)	
Execution status	PASSED – with limitations
Comments/notes	The DMC-UR-3.1-14 requests the possibility to view which templates contain a particular meta-data definition. But the DMCI API provides only a set of functions to retrieve the meta-data of each object stored in the database (and not a single index of all meta-data definitions). In MyIDIS, the DDL browser provides a single index of templates. Therefore, there is no direct method to have a list of templates containing a certain meta-data definition.
SPRs/SCRs raised	

2.1.3 DMC-AT-TR03

Test report ID	DMC-AT-TR03
Test case ID	DMC-AT-TC03
Start date / hour	05/17/2007 9.00
End date / hour	05/17/2007 13.00
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	dmc_insert, Pegaso
Input dataset ID (if applicable)	/IDIS/AT/Input/LFI-FM-Test/ST1_0001
Output dataset ID (if applicable)	(same as input)
Log location / ID (if applicable)	/IDIS/AT/log/05172007/dmc_insert.log.zip
Execution status	PASSED – OK
Comments/notes	The data ingested into the DMC during this test are also used as input in all ProC test procedures.
SPRs/SCRs raised	

2.1.4 DMC-AT-TR04

Test report ID	DMC-AT-TR04
Test case ID	DMC-AT-TC04

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Start date / hour	05/17/2007 15.03
End date / hour	05/17/2007 15.44
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	dmc_test_04
Input dataset ID (if applicable)	- DMC objects corresponding to the dataset ST1_0001 - Updates performed with synthetic values generated by the program
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/05172007/dmc_test_04.log.zip
Execution status	PASSED – with limitations
Comments/notes	The deletion of any object in the DMC is not prevented if the object is referred by another object (see requirement DMC-UR-3.1-24), but the reference is correctly updated.
SPRs/SCRs raised	

2.1.5 DMC-AT-TR05

Test report ID	DMC-AT-TR05
Test case ID	DMC-AT-TC05
Start date / hour	05/17/2007 15.50
End date / hour	05/17/2007 16.10
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	dmc_test_05
Input dataset ID (if applicable)	- DMC objects corresponding to the dataset ST1_0001 - Updates performed with synthetic values generated by the program
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/05172007/dmc_test_05.log.zip
Execution status	PASSED – OK



Comments/notes	
SPRs/SCRs raised	

2.1.6 DMC-AT-TR06

Test report ID	DMC-AT-TR06
Test case ID	DMC-AT-TC06
Start date / hour	05/18/2007 10.00
End date / hour	05/18/2007 11.30
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	dmc_test_06
Input dataset ID (if applicable)	• DMC objects corresponding to the dataset ST1_0001 • Updates performed with synthetic values generated by the program
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/05182007/dmc_test_06.log.zip
Execution status	PASSED – with limitations
Comments/notes	During a session, for saving the modified objects an explicit commit is always needed. If a session is closed without an explicit commit (or rollback) an exception is raised by the DMC. This behavior does not agree with requirement DMC-UR-3.1-28.
SPRs/SCRs raised	

2.1.7 DMC-AT-TR07

Test report ID	DMC-AT-TR07
Test case ID	DMC-AT-TC07
Start date / hour	05/18/2007 11.30
End date / hour	05/18/2007 13.00
Tester name / Organization	Samuele Galeotta – OAT
Test program name	Pegaso

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(if applicable)	
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID (if applicable)	
Execution status	PASSED – with limitations
Comments/notes	With the MPA DMC 2.3.2 the creation date format of an object is not clearly defined. Moreover, there is no modification table associated to an object, preventing the possibility to retrieve the history of the modifications.
SPRs/SCRs raised	

2.1.8 DMC-AT-TR08

Test report ID	DMC-AT-TR08
Test case ID	DMC-AT-TC08
Start date / hour	12/11/06
End date / hour	12/15/06
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	dmc_test_08
Input dataset ID (if applicable)	The input is generated by the program
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/11122006/dmc_test_08.log.zip
Execution status	PASSED – OK
Comments/notes	
SPRs/SCRs raised	



2.2 PROC TEST CASES

2.2.1 PROC-AT-TR01

Test report ID	PROC-AT-TR01
Test case ID	PROC-AT-TC01
Start date / hour	05/15/2007 14.40
End date / hour	05/15/2007 14.54
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	Pipeline: r_param
Input dataset ID (if applicable)	DB Object of LFI_Data type, inserted using data coming from ST_0001 LFI FM Test.
Output dataset ID (if applicable)	DB Objects of R_Param and DiffData types.
Log location / ID (if applicable)	/IDIS/AT/log/05152007/proc_test_01.log.zip
Execution status	PASSED – with limitations
Comments/notes	With this version of ProC it is possible to link subpipelines only if they are completely configured.
SPRs/SCRs raised	

2.2.2 PROC-AT-TR02

Test report ID	PROC-AT-TR02
Test case ID	PROC-AT-TC02
Start date / hour	05/18/2007 15.00
End date / hour	05/18/2007 15.30
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	Pipeline: mycycle
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID	/IDIS/AT/log/05182007/proc_test_02.log.zip



(if applicable)	
Execution status	PASSED – OK
Comments/notes	
SPRs/SCRs raised	

2.2.3 PROC-AT-TR03

Test report ID	PROC-AT-TR03
Test case ID	PROC-AT-TC03
Start date / hour	05/15/2007 15.00
End date / hour	05/15/2007 15.15
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	Pipeline: r_param
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/05152007/proc_test_03.log..zip
Execution status	PASSED – OK
Comments/notes	
SPRs/SCRs raised	

2.2.4 PROC-AT-TR04

Test report ID	PROC-AT-TR04
Test case ID	PROC-AT-TC04
Start date / hour	05/17/2007 9:30
End date / hour	05/17/2007 10:00
Tester name / Organization	Samuele Galeotta – OAT

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Test program name (if applicable)	Pipeline: r_param
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID (if applicable)	/IDIS/AT/log/05172007/proc_test_04.log.zip
Execution status	PASSED – OK
Comments/notes	
SPRs/SCRs raised	

2.2.5 PROC-AT-TR05

Test report ID	PROC-AT-TR05
Test case ID	PROC-AT-TC05
Start date / hour	05/15/2007 15.15
End date / hour	05/15/2007 15.30
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	Pipeline: r_param
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	DB Object of Pdef type
Log location / ID (if applicable)	/IDIS/AT/log/05152007/proc_test_05.zip
Execution status	PASSED – OK
Comments/notes	
SPRs/SCRs raised	



2.3 FEDERATION LAYER TEST CASES

2.3.1 FEDL-AT-TR01

Test report ID	FL-AT-TR01
Test case ID	FL-AT-TC01
Start date / hour	05/21/2007
End date / hour	05/21/2007
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID (if applicable)	
Execution status	BLOCKED
Comments/notes	The MPA-DMC version 2.3.2 does not seem to correctly retrieve the database account credentials through the Federation Layer. The Federation Layer is implemented and the test software provided within its package works correctly, so the user can login and the Federation Layer correctly retrieves the queues, the pipeline session keys and the database accounts.
SPRs/SCRs raised	

2.3.2 FEDL-AT-TR02

Test report ID	FL-AT-TR02
Test case ID	FL-AT-TC02
Start date / hour	05/21/2007
End date / hour	05/21/2007
Tester name / Organization	Samuele Galeotta – OAT
Test program name (if applicable)	
Input dataset ID (if applicable)	
Output dataset ID (if applicable)	
Log location / ID	

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(if applicable)	
Execution status	BLOCKED
Comments/notes	The MPA-DMC version 2.3.2 does not seem to correctly retrieve the database account credentials through the Federation Layer. The Federation Layer is implemented and the test software provided within its package works correctly, so the user can login and the Federation Layer correctly retrieves the queues, the pipeline session keys and the database accounts.
SPRs/SCRs raised	



3 CONCLUSIONS

In the current version of the acceptance test report we have tested the main IDIS tools functionalities which are considered critical from the LFI DPC standpoint. A particular emphasis has been put on the MPA-DMC since during flight operations the nominal procedure of the Level 1 pipeline will be to archive the HK and SCI TOI through the DMC. The DMC interface used by the Level 1 pipeline is part of the SGS1 for the LFI DPC. Also the trend analysis software producing the DQR, named Pegaso, will nominally retrieve the TOIs through the DMC. The usage of the Level 1 data in form of FITS files is considered as a back-up procedure.

Concerning the MPA-DMC, the tests results have shown that the DDL is suitable to correctly represent the data structures needed by each Level of the DPC (and in particular the Level 1) and their physical mapping into the DMC is characterized by a space and computational complexity which fits the LFI DPC constraints. The main operations on the DMC objects are performed correctly through the DMCI: creation, update, simultaneous retrieval, simultaneous writing, queries on meta-data and data sub-ranges. Few differences with respect to the requirements have been detected on the deletion of an object and the session closure, but this differences are not considered critical. The history of the modification of an object is not yet available, but again it is not considered critical for the provisional acceptance. On the whole, the DMC functionalities tested in local mode (without authentication to the FL server) are sufficient for the Level 1 to be fully operational. A critical problem, from a provisional acceptance standpoint, has been observed in the integration with the Federation Layer (see below).

Even if simple pipelines have been used, all the main ProC features have been tested. We expect to use more complex pipelines for the final acceptance. The current results show that the functionalities provided by ProC are suitable for the LFI DPC needs. The main operations are performed correctly: list of available pipelines, editing of pipelines, execution and stop of a pipeline, status of the pipeline processing and logging capabilities, running pipelines in batch mode. At present, the linking of two pipelines has some limitations, but it is not considered critical for the provisional acceptance.

The Federation Layer is only used through ProC and the DMC, hence we are testing the FL indirectly through the other components. The features that we consider critical (for the provisional acceptance) are the authentication and the session management. The FL tests show that the basic authentication (to the IDIS server) and session management are correctly used by ProC and DMC. However, with the current version of the MPA DMC (2.3.2) we were unable to access the DMC database when retrieving the access information through the FL. This seems to be a problem of integration between the DMC and the FL. This is the reason why the FL tests have a **BLOCKED** execution status.

The LFI DPC can assess that with the current version of the IDIS tools it is able to properly perform all the Level 1 tasks and also the Phase 1 of the ESA end-to-end SGS2 tests (which are ongoing).



Since we consider the integration between the DMC and the FL critical for the acceptance (at least for the aforementioned functionalities) we suspend the provisional acceptance of the IDIS tools until this problem will be solved. We suppose that this problem is due to a simple bug or a possible misconfiguration and that it will be solved in the next IDIS release (2.4). Once solved, we consider the IDIS tools as provisionally accepted.