



ATLAS TDAQ/DCS Online Software

Test Manager Requirements

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Abstract

This document contains the requirements for the Test Manager component of the TDAQ/DCS Online Software.

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Table 1 Document Change Record

Title: ATLAS TDAQ/DCS Online Software Test Manager Requirements			
ID: ATLAS-TDAQ-2002-XXX			
Version	Issue	Date	Comment
1	1	15/02/02	Birth
1	2	27/02/02	Lot of improvements by Andrei
1	3	02/03/02	Almost ready for the Online group
1	4	06/03/02	Ready for the Online group

1 Introduction

The purpose of the Test Manager (TM) is to provide a means of organising tests of hardware and software components within the ATLAS TDAQ system. A *test* is considered to consist of one or more processes running on one or more local or remote machines.

It is the responsibility of the TM to ensure the execution of tests and verification of their output. The TM is not responsible for the tests themselves, nor is it aware of the ATLAS TDAQ/DCS *partition* policy. It runs in a partition independent scope. Tests are intended to verify the functionality of a component. However, a test can only be run when the tested component is not taking part in data taking or otherwise is in use. The outcome of a test complies to POSIX 1003.3 [1].

1.1 Purpose of the document

This document presents the Requirements for the Test Manager of the ATLAS TDAQ/DCS Online Software. They shall be the basis for the design and implementation of the Test Manager in the context of the ATLAS Trigger DAQ/DCS system.

1.2 Glossary, Acronyms and Abbreviations

Reference [3] contains a comprehensive glossary and set of acronyms and abbreviations.

1.3 References

- 1 Rob Savoye, **The DejaGnu Testing Framework** for DejaGnu Version 1.3, Nov. 1998. (URL: <http://www.gnu.org/manual/dejagnu-1.3/dejagnu.html>)
- 2 **Global ATLAS TDAQ Online Software Requirements Document - 2002**
- 3 **ATLAS TDAQ Online Software Glossary - 2002**
- 4 **Configuration Database Requirements (ConfDB) - 2002**
- 5 **Process Manager Requirements (PMG) - 2002**
- 6 **Resource Manager Requirements (RM) - 2002**
- 7 **Diagnostics Package Requirements (DVS) - 2002**
- 8 A.Kazarov, **Test Repository and Data Access Library: Design, Implementation and Tutorial**, Technical Note 170, V1.0, Aug. 30 2001 (URL: <http://atddoc.cern.ch/Atlas/Notes/170/Note170-1.html>)



2 Context of the Test Manager

The TM is dependant and used by the following components of the ATLAS TDAQ Online Software [2]:

- **Configuration Database** [4] and its **Test-DAL** [8]: repository for the tests and retrieval facility
- **Process Manager** [5]: used to execute the processes belonging to the tests
- **Resource Manager** [6]: used to get authorisation
- **Diagnostic Package** [7]: main user of the TM

3 Requirements

3.1 Constraints

- CO001** The TM shall run on all platforms supported by the Online Software.
Priority High
- CO002** Output from the individual tests shall comply to POSIX standard 1003.3.
Priority High
- CO003** Apart from POSIX conforming output, the TM shall not impose any other constraints on the individual tests.
Priority High
- CO004** The TM shall only be used on those parts of the DAQ system which are not taking data or are otherwise in use.
Priority High

3.2 Functional Requirements

- UR001** The TM shall have the ability to execute individual tests, both synchronously or asynchronously.
Priority High

UR002 The TM shall be able to execute tests in parallel.

Priority High

Note The tests may run concurrently on both the local machine or on remote machines.

UR003 The TM shall use the Resource Manager [6] to get authorization to execute a particular test.

Priority High

UR004 The TM shall use the Test-DAL [8], based on the Test Repository configuration schema, to retrieve the necessary information of a particular test.

Priority High

Note The Test Repository configuration schema and Test-DAL provide the necessary functionality to fulfil the relevant requirements.

UR005 The TM shall produce a log of the results of all tests executed.

Priority High

UR006 The TM guarantees that each test finishes.

Priority High

Note Each test has to finish within a certain time out, otherwise the TM terminates the test and will return an appropriate result. This precaution is necessary in case the test crashes or enters an infinite loop.

UR007 The performance of a machine shall not be decreased significantly by the TM.

Priority High

Note The TM should not overload any particular machine with too many tests.

3.3 Non-Functional Requirements

UR008 The TM package shall provide tools and facilities to create tests in a uniform way and to add them to the set of tests.

Priority Medium