Test Plan Yellow Book Outline

Based on <https://public.ccsds.org/Pubs/502x1y1.pdf>

# INTRODUCTION

## PURPOSE

The purpose of this document is to describe the prototype testing conducted on the CCSDS OAIS-IF, CCSDS 6XX.0-P-1.0 (reference [2]). An initial draft of this plan was prepared by the members of the CCSDS DAI Working Group at the CCSDS Fall 2022 meetings conducted in Toulouse, France. Work on the report continued at the CCSDS Spring 2023 meetings conducted in USA.

## SCOPE

## APPLICABILITY

## RATIONALE

The CCSDS Procedures Manual states that for a Recommendation to become a Blue Book, the standard must be tested in an operational manner. The following requirements for an implementation exercise were excerpted from reference [1].

“At least two independent and interoperable prototypes or implementations must have been developed and demonstrated in an operationally relevant environment, either real or simulated.”

## DOCUMENT STRUCTURE

## REFERENCES

1. Organization and Processes for the Consultative Committee for Space Data Systems. CCSDS A02.1-Y-4. Yellow Book. Issue 4. Washington, D.C.: CCSDS, April 2014
2. OAIS-IF Pink Book

# SUMMARY CONCLUSION/RECOMMENDATION

The test plan and test reports documented herein substantiate that the organizations participating in the CCSDS DAI Working Group have successfully conducted prototype testing of the OAIS-IF described in the OAIS-IF BB 6XX.0-P-1.0 document. During the testing, messages of the various types were produced by X different organizations, and the ability to read/process the messages was demonstrated in Y different organizations. Based on the diversity of agencies able to read/write the messages, and the positive test results, the DAI Working Group recommends that the OAIS-IF 6XX.0-P-1.0 document be promoted to a Blue Book CCSDS Recommended Standard

# TESTING GOALS

## OVERVIEW

# TEST PLAN OVERVIEW

e.g.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test # |  | Message/Request | Agencies, Direction | Action by recipient |
| 1 | REQUEST | Request Full AIP | NASA/PDS => ESA | Identify all the AIP required  Put together all components |
| RESPONSE | Send the full AIP | ESA -=>NASA/PDS | Import the AIP, identify all the components |
|  |  |  |  |  |

# TEST PLAN DETAILS

## TEST CASE #1:

### TEST DESCRIPTION

### EXPECTED RESULTS

## TEST CASE #2:

### TEST DESCRIPTION

### EXPECTED RESULTS

## TEST CASE #3

### TEST DESCRIPTION

### EXPECTED RESULTS

# TEST REPORT OVERVIEW

Engineers at ESA, UKSA and NASA/JPL will prepare test data sheets as applicable, and send them to the Navigation Working Group via email.

The Test Report Details will be consolidated in Section 8 of this document. A summarization of the test process and the recommendation of the DAI Working Group may be found in Section XX of the report. The report will be submitted to the CCSDS Engineering Steering Group (CESG) and CCSDS Management Council (CMC), along with results of the Agency Reviews. At that time, a formal request will be submitted to the CMC for progression of the OAIS-IF to CCSDS Blue Book status.

The next page contains a format for the test data sheets that will be used to report the results of individual tests. The form includes sections for the producer of the message and the consumer of the message (producing agency, producing test engineer, consuming agency, and consuming test engineer).

|  |  |  |
| --- | --- | --- |
| 1 | Report Date: |  |
| 2 | Program Under Test: | OAIS-IF information exchange |
| 3 | Test Case Number |  |
| 4 | Agencies participating in this Test Case |  |
| 5 | Agency Responsible for initiating the exchange |  |
| 6 | Initiating Test Engineer |  |
| 7 | Agency Responsible for replying |  |
| 8 | Reply Test Engineer |  |
| 9 | Source of information |  |
| 10 | Results (Pass, Partial pass, Fail) |  |
| 11 | Variances from Expected Result |  |
| 12 | Comments |  |
|  |  |  |
| Output Log (if appropriate) | | |
|  | | |

# TEST REPORT DETAILS

## TEST CASE #1:

## TEST CASE #2:

## TEST CASE #3

# ANNEX A ACRONYMS

CCSDS Consultative Committee for Space Data Systems

CESG CCSDS Engineering Steering Group

CMC CCSDS Management Council

CNES Centre National d’Études Spatiales

CSSI Center for Space Standards and Innovation

CWE Common Working Environment

DSN Deep Space Network

ESA European Space Agency

ESOC European Space Operations Center

GSFC Goddard Space Flight Center

JAXA Japan Aerospace Exploration Agency

JPL Jet Propulsion Laboratory

NASA National Aeronautics and Space Administration

RID Review Item Discrepancy