



NED SED Service

Project Test Plan

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1 Goal

This document describes the details of how the Spectral Energy Distribution (SED) service will be tested through its life cycle for requirements to be implemented in Year 1 of the project.

2 References

- [SED Service Derived Requirements](#)
- [IVOA Spectrum Data Model v.1.03](#)
- [IVOA Simple Spectral Access Protocol \(SSAP\) Version 1.04](#)
- [SED PDD](#)
- [Main SED testing page](#). Contains links to other SED project test plans.

3 Project Description

The SED service is a component of the SED project. It is a service based on the IVOA SSAP v1.04 service interface and is oriented towards the development and validation of VAO SED remote access. This service is not designed to be directly utilized by end-user astronomers directly, but rather by tools which serve as a layer over the service and mediates the interaction between the SED service and the end-user.

4 Test Environment, Tools and Execution Considerations

The service is implemented as part of the existing NED service at IPAC. As such, testing will be limited to functional testing of the test service (in this test plan). System testing whereby queries of the service are done via user software shall be performed in a separate test plan (IRIS test plan).

Functional tests of this service shall be tested on Max OS 10.6 and Fedora Core 14 platforms using a mock application (or script) designed to exercise all declared functionality and to declared performance characteristics.



5 Additional Information

To facilitate testing, a test system will have to be specified and configured, including registering the test SED service with the test VAO registry.

To facilitate reporting of tests, test cases are to be implemented in files which are clearly labelled as that test case, ex. "TestCase3.java" and aggregate all of the unit tests for that test case within them. Alternatively, in the test cases listed below, the individual files which execute the (automated) tests for each test case may be indicated.

The following SED Service requirements are referred to in the test cases below:

Req.#	Sup. Proj.	Requirement statement	Verif. Method
Prj.1	NED	The SED access service provided by NED shall be compliant with an existing IVOA standard, an emerging IVOA standard, or is otherwise a prototype for an IVOA standard.	A
Prj.2	NED	The SED access service shall consist of 3 components: 1) NED SED Info Discovery, 2) NED SED Info Availability, 3) NED SED Data Retrieval.	T, D
Prj.3	NED	The SED access service NED SED Info Discovery shall be written to IVOA Simple Spectral Access Protocol (SSAP) Version 1.04.	T, D
Prj.4	NED	The SED access service NED SED Info Availability shall be written to IVOA Simple Spectral Access Protocol (SSAP) Version 1.04.	T, D
Prj.5	NED	The SED access service NED SED Data Retrieval shall be written to IVOA Spectrum Data Model Version 1.03.	T, D
Prj.6	NED	The user can expect SEDs from NED to contain between 1 and 500 photometric points with an average of 5 photometric points.	A
Prj.10	All	The NED Service, SEDLib, and SEDtool performance requirements for year 1 are a best effort. Every effort will be made to provide efficient NED Services, SED library and tool.	A

6 Test Cases

Functional tests

- **TestCase1 : Service interface compliance**

Requirement Identifier: 5.2. Prj.1 Prj.2, Prj.3, Prj.4, Prj.5.

Procedure: Test service query using curl script

The test platform shall be queried by in all aspects of the declared service interface so that compliance to indicated SSAP standard is demonstrated. Response data shall be passed through a validator for the SED data model to ensure that it complies with the declared standard. Sub-test cases are as follows.

- **TestCase1.1 : Service Info Discovery compliance**

Requirement Identifier: 5.2. Prj.1, Prj.3

Procedure: Test service query using curl script

The SED Service shall be queried for information discovery compliance per the SSAP standard. Expected error conditions such as mal-formed queries, bad and missing parameters, shall be exercised and tested for correct behavior (The service should fail in appropriate manner as indicated by SSAP standard). A cache of serialized queries and responses for this test shall be referred to validate for compliance to the appropriate standard.

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- **TestCase1.2** : Service Info Availability compliance

Requirement Identifier: 5.2. Prj.1, Prj.4

Procedure: Test service query using curl script

The SED Service shall be queried for information availability compliance per the SSAP standard. Expected error conditions (per standard) shall be exercised and tested for correct behavior. A cache of serialized queries and responses for this test shall be referred to validate for compliance to the appropriate standard.

- **TestCase1.3** : Service Data Retrieval compliance

Requirement Identifier: 5.2. Prj.1, Prj.5., Prj.6.

Procedure: Test service query using curl script

The SED Service shall be queried for information availability compliance per the SSAP and Spectrum Data Model standards. Expected error conditions per these standards shall be exercised and tested for correct behavior. A cache of serialized queries and responses for this test shall be referred to validate for compliance to the appropriate standard.

Queries shall encompass the full range of expected response sizes, and shall include queries which include responses which have the minimum (1), maximum (500) as well as average number of points (10).

- **TestCase2 : Service Performance**

Requirement Identifier: 5.1., Prj.10

Procedure: Test service query using curl script

The test service will be tested for performance of the service with regards to the number of concurrent queries; maximum latency in response or supported query rate, **SED PD TEAM: maximum responses/files to return, will it throttle???, etc. (Please fill in current expected performance here)**

7 Schedule

Activity	Task	Dependencies	Responsible party	Start Date	End Date	Comments
Functional Tests	setup test service		SED Service PD Team	April 2011	April 2011	
Functional Tests	provide test scripts		SED Service PD Team	April 2011	Jul 2011	
Functional Tests	execute and review scripts		QA&T Team	Jul 2011	Jul 2011	Verify deliverables during beta test 1,2 and at delivery