**Telepathology - Innovation 873**

**Telepathology Worklist**

**Test Plan**



March 2015

Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Revision | Iteration | Description | Author |
| 3/15/15 | 1.0 |  | Initial Draft | Kalpana Reddy |
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# Introduction

The purpose of the Innovation 873 is to provide a Telepathology solution that includes the VistA Imaging Telepathology Applications (VITA) and will interface with Whole Slide Imaging Vendors Systems and Robotics Streaming systems and will develop a method to launch third party vendor viewer. The VistA Imaging Telepathology Applications (VITA) includes the VistA Imaging Telepathology Worklist, VistA Imaging Telepathology Configurator, Report Editor, and Consultative services.

## Scope

The scope of this document is limited to describing the testing planned for Innovation 873 and test results at the Test-version level.

This testing of Innovation 873 includes:

* Provide the enhancements to the VIX and CVIX that enable the support of VITA and provide interfaces (APIs) that are made available for third party applications to access image data from VistA Imaging
* Provide the ability for the pathologists to view to view daily workload at their sites for Surgical Pathology (SP), Cytopathology (CY) and Electron Microscopy cases (EM).
* Provide the ability for the site administrators to set some configuration parameters for the VistA Imaging Telepathology Worklist and to view the VITA and the system logs.
* Provide the ability to enter data for a report for Surgical Pathology (SP), Cytopathology (CY) and Electron Microscopy cases (EM).
* Provide the user the mechanism to enter System Nomenclature of Medicine Clinical Terms (SNOMED) and Clinical Procedure Terminology (CPT) codes directly from the Telepathology Report Editor on the Coding Tab.
* Provide the support the need for consultative services within pathology.

## Testing Objectives

This Test Plan for Vista Imaging Innovation 873 patch supports the following objectives:

1. Verify that the Telepathology Application will interface with Whole Slide Imaging Vendors systems and Robotics Streaming systems
2. Verify that the Telepathology Worklist will develop a method to launch the third party vendor viewer automatically.
3. Verify that the Authorized users will be able to assign priority at the Telepathology Worklist level when using the consultation functionality.
4. Verify that the Telepathology Application will allow for “Method” and “Priority” to be selected as means of sort, filter and implement as dynamic fields.
5. Verify that the Telepathology Application will allow for a 5 digit site identifier to be implemented as a prefix in the accession number.
6. Verify that the Telepathology Application will provide a method that will allow consultations to be requested from pathologists to pathologist.
7. Verify that Telepathology Application will allow users to be able to search for CPT codes.
8. Verify that the Telepathology Worklist will automatically refresh when a new case is accessioned or when a change to the case occurs.
9. Verify that the Telepathology Report Editor shall support the use of dictation/transcription technology.

**VITA will provide a centralized Telepathology Worklist for all anatomic pathology cases. (TPWL)**

1. Verify that the Telepathology Worklist will include unread cases from other sites for which they are configured to perform primary interpretations.
2. Verify that the Telepathology Worklist will include unread cases from site for which it is providing consultations.
3. Verify that the Telepathology Worklist will provide a mechanism to request consultations on a completed case.
4. Verify that the Telepathology Worklist will provide a user the ability to edit a report.
5. Verify that the Telepathology Worklist will provide a list of anatomic pathology cases for a selected patient.

* Will display all unread cases for a selected patient.
* Will provide a user the ability to edit a report.
* Will display all verified/released cases for a selected patient

1. Verify that the Telepathology Worklist will display a list of verified/released cases from other sites for which they are configured to perform primary interpretations.
2. Verify that on the Telepathology Worklist will display a list of verified/released cases from site in which it is supporting for consultation requests.
3. Verify that users will be able to edit a note on a case.
4. Verify that users will be able to remove a note from a case.

**VITA will provide a Telepathology Report Editor for completing pathology reports. (TPR)**

1. Verify that the users of the Telepathology Report Editor will be able to enter data for a report for Surgical Pathology (SP), Cytopathology (CY), and Electron Microscopy (EM) Anatomic Pathology cases.
2. Verify that the Telepathology Report Editor window shall display these fields:
   * Patient Name
   * Patient ID
   * Date Specimen was received
   * Date Completed
   * Submitted By
   * Pathologist
   * Resident/Technician
   * Accession Number
   * Practitioner
3. Verify that the Telepathology Report Editor will allow for updates to the Pathologist, Resident/Technician and Practitioner fields.
4. Verify that the users will be able to view verified/released report data for a selected case.
5. Verify that the Default report templates will be provided for Surgical Pathology (SP), Electron Microscopy, and Cytopathology (CY).
6. Verify that the user be able to save the main report for a selected case
   * Users will be able to complete the main report
   * Users will be able to edit the main report data
   * Users will be able to remove report data from the main report
7. Verify that the Main Report Data will be stored on the acquisition site’s VistA database.
8. Verify that the all required report fields will be identified with an asterisk within the main screen of the Telepathology Report Editor
9. Verify that the field Gross Description will be required for all reports
10. Verify that the authorized users will be able to verify and release reports directly from the Telepathology Report Editor
11. Verify that the Telepathology Report Editor will allow for electronic signatures
12. Verify that the for sites that do not utilize electronic signatures a user may verify and release a report with the proper credentials
13. Verify that the all verified/released report data will be viewable as read only
14. Verify that when the main report has been verified and released the Telepathology Report Editor will provide the user an option to send an email message to additional parties
15. Verify that the email message will be generated after the report has been verified released.
16. Verify that the email message will display the accession number in the subject line.
17. Verify that the Telepathology Report Editor will allow for a user to create and verify a supplementary report for a selected case.
    * The supplementary report will be attached to the main report.
    * The user will be able to create a supplementary report for any case.
    * The user will be able to edit a supplementary report

**The Telepathology Configurator will allow for site configuration. (TPC)**

1. Verify that the Telepathology Configurator will provide a mechanism that allows a site to manage remote sites for which they read
   * A user will be able to select a site from a list of all available sites to add to the list of remote sites for which they read.
   * The Telepathology Configurator will allow for a user to modify the active/inactive status of a remote site for which they read.
   * The Telepathology Configurator will allow for a user to delete a site from the list of remote sites for which they read
2. Verify that the Telepathology Configurator will provide a mechanism that allows a site to manage remote sites that read for them
   * The Telepathology Configurator shall allow a user to select a site from a list of all available sites to add to the list of remote sites that read for them.
   * The Telepathology Configurator shall allow for a user to modify the active/inactive status of remote sites that read for them.
   * The Telepathology Configurator shall allow for a user to identify the type of service (interpretation/consultation) that the remote site is providing.
   * The Telepathology Configurator shall allow for a user to delete a site from the list of remote sites that reads for them
3. Verify that the Telepathology Configurator will provide a mechanism that allows a site to configure its report templates
   * The Telepathology Configurator shall allow for a site to configure an SP template.
   * The Telepathology Configurator shall allow for a site to configure an EM template.
   * The Telepathology Configurator shall allow for a site to configure a CY template.
   * The Telepathology Configurator shall allow users to identify fields that will be included on the report from a list of available fields.
   * The Telepathology Configurator shall allow users to identify fields that are required.
   * The Telepathology Configurator shall prevent the Gross Description field from being removed from the list of required fields.
   * The Telepathology Configurator shall allow for the user to change the order in which the fields appear on the report.
   * The Telepathology Configurator shall allow for the user to save the template
4. Verify that the user will be able to edit the Report editor lock duration.
5. Verify that the Telepathology Configurator will allow for the site specific changes to be saved.

**VITA will support the ability to enter necessary coding that is completed by pathologists. (CODE)**

1. Verify that the Telepathology will provide a user the mechanism to enter System Nomenclature of Medicine Clinical Terms (SNOMED) and Clinical Procedure Terminology (CPT) codes directly from the Telepathology Report Editor on the Coding Tab.
2. Verify that the users will be able to associate SNOMED codes to a report.
   * The user will be able to add SNOMED codes.
   * The user will be able to search for SNOMED codes.
   * The user will be able to delete SNOMED codes from a report
3. Verify that the users will have the ability to assign CPT codes for a case.
   * The user will have the ability to add CPT codes.
   * The user will have the ability to enter a CPT code and apply a multiplying factor
4. Verify that the Telepathology Report Editor will provide a confirmation message stating the status of each code entry when the CPT coding is completed.
5. Verify that all CPT and SNOMED codes will be saved to the VistA database where the case being worked on is located
6. Verify that the user will be required to enter a facility location when assigning CPT codes.

**The VITA will support the need for consultative services within pathology. (CONSULTS)**

1. Verify that the Telepathology Worklist will provide a method for requesting consultations for a case.
2. Verify that the Telepathology Worklist will provide the ability for a user to request a consultation from one or more sites
3. Verify that the user will be able to recall a consultation after it has been requested.
4. Verify that the user will be able to complete a consultation.
5. Verify that the user will be able to decline a consultation.
6. Verify that the Telepathology Worklist will display the consultation status
7. Verify that the consultation status field will be set to pending if the request has not completed
8. Verify that the consultation status field will be set to completed when the consulting site completes the report
9. Verify that the consultation status field will be set to decline when a site has declined the consultation
   * For a consultation, the user will only be able to enter data within the supplementary report.
   * The consulting site will be able to view the main report data as read only.
   * A user will be able to create a supplementary report.
   * A user will be able to edit a supplementary report.
   * An authorized user will be able to complete the supplementary report.
   * The completed supplementary report will include the user’s name, site and date of completion.
   * The supplementary report information will be stored into the acquisition site’s VistA database.
   * Upon completion of a consultation, the Telepathology Report Editor will generate a new report.
   * The reference report will be saved to the local database.
   * The reference report will be verified and released.
   * The reference report will reference back to the main report at the acquisition site.
   * The status of the consultation status will be updated to complete.
   * When a consultation is requested for a patient that is not registered in the consultation site’s VistA system, VITA will send a message requesting the patient be registered at the consulting site.

## References

The following documents were used as sources of information for this Test Plan:

* Innovation 873 Requirements Specification Document (RSD) version 1.3 dated 13th October, 2014
* Innovation 873 Software Design Document (SDD) version 3.1 dated 13th October, 2014.

These documents can be found in the Team Foundation Server (TFS) under the Innovation 873 folder.

# Test Items

The Innovation 873 installation on VistA and the application exe installations on the test machines will be tested.

## Remedy Calls

None

## Service Requests

None

# Features to Be Tested

All Imaging requirements documented in the RSD for this patch are planned for testing.

# Features Not To Be Tested

None

# Test Strategy

The Test Strategy describes the overall approach to testing. The Test Strategy specifies Stages of Testing, Test Types, tools that are used for testing, entrance criteria, completion criteria or user acceptance criteria, techniques to ensure traceability, and constraints of testing. The references that support the implementation of this Test Plan are: [Process Management Web Page](http://vaww.oed.oit.va.gov/process/propath/) and [Section 508 Office Web Page](http://vaww.vista.med.va.gov/508workgroup).

## Stages of Testing

Please refer to the VI Master Test Plan v1.1 section3.

## Test Types

Please refer to the VI Master Test Plan v1.1 section 4.3.

## Test Tools

The tools used for testing are:

| Tool | Use | Stage of Testing |
| --- | --- | --- |
| Primavera | Manage the test process; schedule and coordinate activities | Design |
| Test Complete | Automated test execution and reporting of test results | Unit and System Level Testing |
| ClearQuest/TFS | Recording, tracking and closing defects | Field Testing |
| ESS/Remedy | Track defects from field | Production |
| MS Word | Creation and execution of manual test scripts | Unit and System level tests |

## Completion or Acceptance Criteria

Innovation 873 will satisfy the acceptance criteria when all of the tests in the Innovation 873 Test Script are run successfully.

The Project Management Team will designate an acceptable time frame for the resolution of the Critical, High, Medium, and Low Severity Defects.

## Pass/Fail Criteria

Please refer to the VI Master Test Plan v1.1 Section 5.1.

## Traceability

No automated software will be used for requirements traceability. The Traceability Matrix will list each requirement and designate which test in the script matches that requirement.

## Constraints

| # | Constraint | Impact | Stage of Testing |
| --- | --- | --- | --- |
| 1 | None |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |

## Testing Deliverables

The test deliverables for Innovation 873 are:

| Test Deliverables | Responsible Party |
| --- | --- |
| Test Plan | Kalpana Reddy |
| Test Cases/Test Scripts | Kalpana Reddy |
| Traceability Matrix | TBD |
| Test Environment | Dee Csipo |
| Test Execution Log | Kalpana Reddy |
| Test Status Report | Kalpana Reddy |
| Final Defect Report | Kalpana Reddy |

## Test Environment Configuration

Successful testing requires control of the test environment. Unplanned changes to the test environment may introduce new defects, alter the expected test results, and thus invalidate the test cases. Successful testing requires controlled access to the test environment, an environment that replicates the field environment as closely as possible.

The party or parties responsible for configuring and maintaining the test environments are:

|  |  |
| --- | --- |
| Configuration Person | Testing Team |
| Hardware required | Desktop with Windows 7 |
| Location of hardware | Test Lab |
| Expected Test Date | TBD |

## Test Environment Maintenance

|  |  |
| --- | --- |
| Configuration | Testing Team |
| Hardware | Desktop with Windows 7 |
| Location of hardware | Test Lab |
| Expected Test Date | TBD |

## Test Data

A copy of the GOLD database, with all released VistA and VistA Imaging patches installed, is available to start all testing. Innovation 873 requires that the GOLD database include:

The Developer will provide any additional test data needed for running the script.

Testing will be using a desktop, and Clinical Display logged into a VistA database.

## Security

Test systems and the systems containing the GOLD and test databases are kept in secured areas to limit access to the hardware. Software access to those systems is given only to those who require it.

## Privacy

The GOLD database has been sanitized to eliminate patient identifiable information.

## Section 508 Compliance

The software Patch contains tailored Graphical User Interface (GUI), and modifies the current (508 compliant) interface.

# Responsibilities

|  |  |
| --- | --- |
| **Ensure that the Test Plan is executed** | John Kane, PM  Kalpana Reddy |
| **Report the status and final test results from Field Testing to the Development Team** | John Kane, PM |
| **Review any defects identified during Field Testing** | John Kane, PM  Dee Csipo, Lead Developer  Kalpana Reddy |

# Staffing and Training Needs

The following personnel resources needed to plan, prepare, and execute this Test Plan are:

|  |  |  |  |
| --- | --- | --- | --- |
| Testing Task | Quantity of Personnel Needed | Stage of Testing | Duration/ Days |
| Prepare the Test Strategy | 1 | System Level | 2 days |
| Create the Test Plan | 1 | System Level | 2 days |
| Write test cases/scripts | 2 | System Level | 15 days |
| Set up test environment | 1 | System Level | 2 day |
| Create, acquire and populate test data | 1 | System Level | 2 day |
| Execute tests | 1 | System Level | 20 days |
| Record and track defects | 1 | System Level | 1 day |
| Report test results | 1 | System Level | 2 days |
| Prepare and present Final Defect Report | 1 | System Level | 1 day |

An overview of the patch functionality will be provided by the Lead Developer to the following testing team members:

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Training Need | Training Option | Estimated Training Hours |
| Kalpana Reddy | Innovation 873 Setup | Presentation | 2 hours |

# Test Schedule

|  | Task | Responsibility | Duration/ Days |
| --- | --- | --- | --- |
| 1 | Prepare the Test Strategy | John Kane/Dee Csipo | 2 |
| 2 | Create the Test Plan | Kalpana Reddy | 2 |
| 3 | Write test cases/scripts | Kalpana Reddy | 15 |
| 4 | Conduct Test Script work product review | John Kane, PM  Stuart Frank, Lead Developer  Dee Csipo, Lead Developer | 3 |
| 5 | Set up test environment | Dee Csipo | 2 |
| 6 | Create, acquire and populate test data | Dee Csipo, Developer | 2 |
| 7 | Execute tests | Kalpana Reddy | 20 |
| 8 | Record and track defects | Kalpana Reddy | 1 |
| 9 | Report test results | Kalpana Reddy | 2 |
| 10 | Prepare and present Final Defect Report | Kalpana Reddy | 1 |

# Risks and Contingencies

**Risk #1:**

| Description | Do not have access to the XP environment |
| --- | --- |
| Potential impact | Not satisfying all requirements |
| Response |  |
| Contingency | Planning to test only on Windows 7 |

# Test Execution Metrics

|  |  |  |  |
| --- | --- | --- | --- |
| **T-version** | **Date Tested** | **Results** | **Test By** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |
| --- | --- |
| Total Number of test cases/modules executed |  |
| Total number of test cases/modules passed |  |
| Total number of test cases/modules failed |  |
| Total number of defects |  |
| Total number of defects returned for rework |  |

# Glossary

## Acronyms

|  |  |
| --- | --- |
| PM | Project Manager |
| TM | Task Manager |
| QA | Quality Assurance |
| RSD | Requirements Specification Document |
| SDD | Software Design Document |
| SQA | Software Quality Assurance |
| TP | Test Plan |
| Scout line | A perpendicular line that can be displayed on a sagittal (head to toe) image wherever there is also a corresponding axial image (front to back) of the same part of the body. |

## Definitions

|  |  |
| --- | --- |
| Field Test | User Acceptance Test (UAT) is a type of test that involves end-users testing the functionality of the application using test data in a controlled test environment. |
| Integration Test | Integration testing is an incremental series of tests of combinations or sub-assemblies of selected components in an overall system. Integration testing is incremental in a successively larger and more complex combinations of components tested in sequence, proceeding from the unit level (0% integration) to eventually the full system test (100% integration). Typically, Integration Test (Internal) focuses upon the interaction of multiple internal modules. |
| Performance Testing | Performance Testing assesses how a system is spending its time and consuming resources. This type of performance testing optimizes the performance of a system by measuring how much time and resources the system is spending in each function. These tests identify performance limitations in the code and specify which sections of the code would benefit most from optimization work. The goal of performance profiling is to optimize the feature and application performance. |
| Regression Test | A type of testing that validates existing functionality still performs as expected when new functionality is introduced into the system under test. |
| System Test | System Test exercises all parts of an integrated system, including interfaces to external systems. Both functional and structural types of testing are performed to verify that the system performance, operation and functionality are sound. System Test performs end-to-end testing with all interfacing systems. |
| Unit Test | Unit Test is dynamic testing performed for a new / changed module or object. Unit Test verifies that the requirements defined in the design model or software design document (SDD) have been successfully applied to the module or object under test. |
| Usability Testing | Usability testing identifies problems in the ease-of-use and ease-of-learning of a product. Usability tests may focus upon, and are not limited to: human factors, aesthetics, consistency in the user interface, online and context-sensitive help, wizards and agents, user documentation. |
| User Interface Testing | User-interface (UI) testing exercises the user interfaces to ensure that the interfaces follow accepted standards and meet requirements. User-interface testing is often referred to as Graphical User Interface (GUI) testing. UI testing provides tools and services for driving the user interface of an application from a test. |