**Community Care Systems Enhancements (CCSE)**

**Claims Processing and Eligibility (CP&E)**

**Build 6 Test Plan**

Version 0.1



Department of Veterans Affairs

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# Introduction

The Claims Processing and Eligibility (CP&E) project addresses improved functionality to include the following: initial claims processing, vendor selection and travel claims point of pickup suspense queues, claim review and clearing, modifications to document identification software automatic system imaging and storing of template letters requesting additional information. The overall objective for this project centers on increased productivity, reduction of improper payments, and improved customer service. The CP&E Project includes Workstreams for Electronic Data Interchange (EDI) Claims Reopen.

The EDI Claims Reopen process will allow the Health Claims Reimbursement group to reopen EDI claims in the Cache system and then process those reopened claims. The Office of Community Care (OCC) has requested a modification to system functionality and business processes active in the CP&E system. This modification will allow for a Voucher Examiner (VE) to reopen claims and allow the VE to re-adjudicate claims for which the service provider has requested reconsideration, without requiring a print and scan of the claim as a work around.

## Purpose

The purpose of the Build Test Plan for the CP&E Project deliverables is to describe the overall approach, i.e., to define the test levels and types of tests planned throughout the life cycle, including testing activities, resources to perform those activities, schedule of test activities, assigned responsibilities, provide definition of “done”, and identify resources required to determine readiness of the Build.

## Test Objectives

This Build Test Plan supports the following objectives:

* Identify scope for the Build (test activities)
* Identify the test environment(s) for the Build
  + - Validate status and stability of test environment
* Support User Functional Testing (UFT/UAT) with Subject Matter Experts (SMEs)
* Provide defect reporting and resolution process for the Build

## Key Roles and Responsibilities

The following table lists the key roles that support the execution of the Build Test Plan.

Table : Key Roles and Descriptions

| Role | Description |
| --- | --- |
| Development Lead | Person who creates or updates the Business Policy or Business Rules |
| Product Lead | Person who is overall responsible for the successful planning and execution of a project; responsible for creating the Build Test Plan in collaboration with the Development Lead. |
| Stakeholders | Persons who hold a stake in a situation in which they may affect or be affected by the outcome. |
| Test Team/Testers | Persons who execute and ensures the test environment will adequately support planned activities. Persons responsible for ensuring full execution of the test process to include the verification of technical requirements and the validation of business requirements. Leads and coordinates activities related to aspects of testing based on an approved Build Test Plan and schedule |
| Configuration Management | Person who establishes, maintains, and controls test environments. |
| Business Analyst | Person who analyzes the business process and its integration with technology. Acts as a liaison among stakeholders to understand the structure, policies, and operations of an organization, and recommend solutions that enable the organization to achieve its goals. |

## Processes and References

The processes that guide the implementation of this Build Test Plan are:

* Test Preparation
* Product Build
* Independent Test and Evaluation

The references that support the implementation of this Build Test Plan are:

* Veteran Focused Integration Process (VIP)
* [Performance Work Statement (PWS)](http://DNS.URL/Privacy_Impact_Assessment.asp)
* Build Plan
* Sprint Plan
* Business Requirements Document (BSM\_CPEE\_BRD\_V02.00.00\_Draft\_Oct 2016)

# Items to Be Tested

## Overview of Test Inclusions

CP&E Project testing is developed based on the product backlog from the Business Requirements Document (BRD), direction from the customer, as well as change requests submitted by the Central Business Office Community Care (CBOCC) users over the course of months and years are reviewed and prioritized as part of the ongoing operations and maintenance of the backlog for the CP&E system.

**CP&E EPIC 005 EDI Claims Reopen (CR ENC005415):**

“As the Health Claims Reimbursement group, I want to reopen EDI claims in the Cache system so I can process reopened EDI claims in the Cache system.”

## Overview of Test Exclusions

The following components and features, and combinations of components and features, will not be tested:

* No known exclusions at this time. Items are identified during testing and will be captured accordingly.

# Test Strategy

This section details tests that the CP&E Project development team and stakeholders plan to cover for this Build. The test approach includes the following steps:

1. Develop test cases based on the User Stories created
2. Collaborate with VA Business SMEs
3. Perform all testing, in the CP&E DEV Environment
4. Perform Test Readiness Review (TRR)
5. Execute test cases and document test results
6. Log and report test defects for tracking and resolution

Upon delivery of the code to the Denver OCC Quality Assurance (QA) Department, testing performed by the QA team will have support from Favor Tech Contractors FTC. UFT/UAT testing will be performed after QA is complete. Both QA and UFT/UAT anticipate the need for approximately 30 to 45 business days each to finalize testing efforts.

**UNION Approval**

* Notify Union Representative(s) of any changes in working conditions
  + The Union Representative(s) to respond within 14 days
    - Dependency is IT QA completion which will generate the Standard Operating Procedure (SOP) needed to begin UAT and union notification
    - Union Representative(s) will send proposed changes to Union members and ask for feedback and/or acceptance
    - FTC will respond to any union issues or concerns during the 14 days
* Training Plan, if needed, will be provided to Union representative in conjunction with the union notification, near the end of UAT
* Obtain Union acceptance
* FTC expects improvements to current productivity and does not anticipate any negative impacts to productivity with minimal training

## Testing Types

This section describes the potential types of test activities to be performed in this project.

Table : Test Types

| Test Types | Party Responsible |
| --- | --- |
| Unit/Product/Component Testing | Developers/FTC SQA |
| Functional Testing | FTC SQA |
| Installation Testing | OIT/OCC |
| Integration/System Testing | Developers/FTC SQA |
| Backend Testing | Developers/FTC SQA |
| Regression and Negative Testing | FTC SQA |
| Section 508 Compliance Testing | FTC SQA |
| OCC QA and User Functional Testing (UFT/UAT) | OIT/OCC |

## Productivity and Support Tools

This section describes the tools that will be employed to support this Build Test Plan.

Table : Tool Category or Types

| Tool Category or Type | Tool Brand Name |
| --- | --- |
| Defect Tracking | Rational Quality Manager (RQM) |
| Project Management | Rational DOORS Next Generation Requirements Management (RDNG) |
| Unit Testing | J-Unit/M-Unit, RQM |
| Configuration Management | Rational Team Concert (RTC) Configuration and Change Management |
| DBMS tools | Fileman |
| Functional Testing | RQM, Visual Basic for Applications (VBA), Notepad |
| Terminal Emulation Software | Attachmate Reflection |
| Continuous Integration (CI) | Jenkins |
| 508 Compliance | JAWS |

# Test Criteria

## Process Reviews

The CP&E Project Build Test Plan undergoes the following reviews:

* Peer Review – Project Team peer review upon completion of the draft Build Test Plan
* Formal Review – The Test Leads, Product Lead and VA Stakeholders collectively review and approve the Build Test Plan

## Pass/Fail Criteria

An item or test case will be considered to pass if it meets the business requirements, as defined in the User Stories, in an acceptable manner and/or has an acceptable work-around, which has been approved by all project stakeholders. An item or test case will fail if it does not meet the business requirements, as defined in the User Stories, in an acceptable manner and/or does not have an acceptable work-around approved by all project stakeholders.

## Suspension and Resumption Criteria

The suspension of testing occurs when testers encounter a critical or high defect. The error may apply to a particular area of the product and often causes all testing to be suspended. When a critical or high defect occurs, the FTC Technical Leads and the Office of Information & Technology (OIT) Program Management Office (PMO) Technical Leads will discuss the impact of the defect and determine whether to suspend testing and, if so, which product areas are affected. The test suspension causes testing to be suspended or blocked until the FTC developers and testers can install and unit test a fix or work-around.

**Suspension conditions include:**

* A blocking defect is discovered during test execution such that no further progress is possible until the defect is resolved
* The test environment is corrupted or rendered unusable
* Project management determines the need to suspend testing based on some other criteria
  + Resumption criteria are:
    - The condition that caused the suspension is addressed
    - The changes are unit/component tested
    - The changes are applied to the test environment
    - The initial entry criteria of the test phase are met

## Definition of Done

All required testing deliverables will be completed, approved by the customer and posted to Rational.

The following criteria will be met for each User Story included in this Build:

* Unit and SQA testing completion
* Acceptance criteria achievement for each User Story tested
* All testing phases completed, passed and accepted by the customer
* All known defects resolved or documented for resolution in a future Build

## Acceptance Criteria

Testing completed for the CP&E Project must meet the criteria listed below, to be accepted. These items represent combined acceptance criteria for FTC testing efforts and existing quality objectives identified in Rational QM.

* The testable, functional requirements for the Build must be tested and verified
* All defects with a level of critical, high and medium are resolved, retested and closed
  + Number of Open Sev1 and Sev2 Defects = 0
* All defects with a level of low are resolved or placed in backlog for future Build
  + Percentage of Sev3 or lower Defects Open < 10
* All the test cases are executed without defects at a medium or higher level
  + Number of Blocked Execution Records = 0, Percentage of Blocked Execution Records = 0%
  + Number of Failed Execution Records = 0, Percentage of Failed Execution Records = 0%
* Any outstanding test cases from a previous test run have successfully passed

The following list represents severity levels, as defined in Rational:

|  |  |
| --- | --- |
| Severity 1 | Critical Impact/System Down |
| Severity 2 | Significant business impact |
| Severity 3 | Some business impact |
| Severity 4 | Minimal business impact |

# Test Deliverables

Table 4 lists the test deliverables for the CP&E Project.

Table : Test Deliverables

| Test Deliverables | Frequency |
| --- | --- |
| Build Test Plan | Per Build |
| Test Results and Execution Report | Per Sprint/Daily in Rational |
| Test Cases/Test Scripts | Per Build in Rational |
| Defect Status and Resolution | Daily/As Needed |
| Section 508 Compliance Test Results | Per Build |
| Traceability Report or Matrix | Per Build/As Needed |

# Sprint Schedule

This section lists the schedule for CP&E Project. Note: This is an Agile development project and goes by each Sprint.

Table : Sprint Schedule

|  |  |  |
| --- | --- | --- |
| Sprint # | Start Date | Finish Date |
| Sprint 9 | 12/20/17 | 1/2/18 |
| Sprint 10 | 1/3/18 | 1/16/18 |
| Sprint 11 | 1/17/18 | 1/30/18 |

# Test Environments

A test environment contains hardware, instrumentation, simulators, software tools, and other support elements needed to conduct a test. All planned development and testing will occur in the DEV environment at the Office of Community Care (OCC). The Denver OCC will be responsible for configuring and maintaining the test environments.

The OCC products/systems planned to be modified in this Build are:

* CP&E

## System Hardware

N/A

## System Software in the Test Environments

Table 6 describes the base software elements that are required in the test environment for this Build Test Plan.

Table 6: Software Elements

| Software Element Name | Version | Type and Other Notes |
| --- | --- | --- |
| CP&E DEV namespace |  |  |

# Dependencies

The following dependencies and constraints must be considered to successfully execute this Build:

* The Enterprise Program Management Office (EPMO) IT development resources are required to answer specific technical questions
* OCC business resources are required to answer specific business process and procedure questions
* Coordination of code deployment with the Denver OCC
* HAC resource will be required to answer specific technical questions regarding development, testing and implementation issues.
* QA and UFT/UAT testing is dependent upon HAC QA resource availability and required prior to deployment into production

# Risks and Constraints

The test preparation process requires the performance of a risk assessment for test execution. Risks associated with the testing project are potential problems/events that may cause damage to the software, systems, patient, personnel, operating systems, schedule, scope, budget or resources. The risks outlined here may impact scope and schedule, necessitating a deviation from this Build Test Plan.

| Risk Description | Potential Impact of Risk Realization | Strategy - avoid, accept or mitigate |
| --- | --- | --- |
| Integrated environment and/or component, including the associated network connectivity, are unavailable | Impacts the SQA Team’s ability to complete their scheduled testing within the timeframe allocated. | Mitigate:  Adjust test/work schedules; work with external groups to avoid outages |
| If the external systems experience an outage, or perform any un-planned refreshes | Impacts the SQA schedule | Mitigate:  Work closely with external systems to ensure these refreshes or outages are coordinated within the schedule |
| Requirements delivery late | Risk to the schedule due to late start by development | Mitigate:  Adjust test schedule; compress testing activities; request schedule variance |
| Stakeholder non-compliance (delays in sign-off) | Risk to the final delivery date due to delays in Field Test completion or approval to release | Mitigate:  Maintain close contact with all stakeholders, keeping them apprised of deadlines |
| Working with Integrated teams | New system version can impact testing and schedule | Mitigate:  Coordinate; communicate with integrated teams and plan ahead so that schedule will be impacted at a minimum |
| Potential issues during deployment of Build | Risk to the schedule, potential delay in Builds available for testing | Mitigate or Accept  Accept delay  Adjust test schedule; compress testing activities; request schedule variance |

In addition, to helping ensure the success of the Build, it is important to proactively monitor internal and external events that affect a product objective with respect to cost, schedule, or technology.

This section lists identified risks that will likely impact Build 6. During this Build, risks and issues will be tracked on the PMO Risk Register until Rational is fully set up and configured for use.

* Build activities may be negatively impacted due to a HAC system refresh, currently planned for September 11th through November 22nd, 2017. Planning for future Builds may also be effected during this time.
* Unplanned leaves of absence will be mitigated by both the project and development teams. (Teams should have vacation schedules.)
* Project risks will be reported and tracked on the Risk Register in the Weekly Risk meeting facilitated by the OI&T PM until Rational is configured to manage risks. This file is on the CP&E SharePoint site.
* If availability of test data and test files is restricted, then it will reduce the capability of complete test cases.

The risks identified in this Build Test Plan may be recorded and tracked in the Business Systems Management (BSM) tool in SharePoint.

# Test Metrics

Metrics are a system of parameters or methods for quantitative and periodic assessment of a process that is to be measured.

Test metrics may include, but are not limited to:

* Number of test cases (pass/fail)
* Percentage of test cases executed
* Number of requirements and percentage tested
* Percentage of test cases resulting in defect detection
* Number of defects attributed to test case/test script creation
* Percentage of defects identified; listed by cause and severity

# Glossary

| **Acronym** | **Definition** |
| --- | --- |
| BRD | Business Requirements Document |
| BSM | Business Systems Management |
| CCSE | Community Care System Enhancements |
| CP&E | Claims Processing and Eligibility |
| CBOCC | Central Business Office Community Care |
| CHAMPVA | Civilian Health and Medical Program of the Department of Veterans Affairs |
| CDR | Clinical Data Repository |
| DEV | Development |
| EDI | Electronic Data Interchange |
| EPMO | Enterprise Program Management Office |
| ERA | Electronic Remittance Advice |
| HAC | Health Administration Center |
| IP | Image Processing |
| OIT | Office of Information Technology |
| OCC | Office of Community Care |
| PMO | Program Management Office |
| PWS | Performance Work Statement |
| RT | Remit-To |
| SME | Subject Matter Expert |
| SQA | Software Quality Assurance |
| TRR | Test Readiness Review |
| UFT/UAT | User Functional Testing / User Acceptance Test |
| US | Ultrasound |
| VBA | Visual Basic for Applications |
| VA | Department of Veterans Affairs |
| VE | Voucher Examiner |
| VistA | Veterans Health Information Systems and Technology Architecture |

# Appendix A - Testing Definitions

|  |  |  |
| --- | --- | --- |
| **Test Type** | **Definition** | |
| Backend Testing | | Example: Data and Database Integrity Testing is a type of testing that verifies that data is being stored by the system in a manner where the data is not compromised by the initial storage, updating, restoration, or retrieval processing. This type of testing is intended to uncover design flaws that may result in data corruption, unauthorized data access, lack of data integrity across multiple tables, and lack of adequate transaction performance. The databases, data files, and the database or data file processes should be tested as a subsystem within the application. |
| Functional Testing | | A type of [black-box testing](https://en.m.wikipedia.org/wiki/Black-box_testing) that bases its test cases on the specifications of the software component under test. Functions are tested by feeding them input and examining the output, and internal program structure is rarely considered (unlike [white-box testing](https://en.m.wikipedia.org/wiki/White-box_testing)). Functional testing usually describes what the system does. Functional testing has many types, including, but not limited to: unit, integration, smoke, regression, usability, system, etc. |
| Installation Testing | | A type of testing that verifies that the application or system installs as intended on different hardware and software configurations, and under different conditions (e.g., a new installation, an upgrade, and a complete or custom installation). Installation testing may also measure the ease with which an application or system can be successfully installed, typically measured in terms of the average amount of person-hours required for a trained operator or hardware engineer to perform the installation. Part of this installation test is to perform an uninstall. Because of this uninstall, the system, application and database should return to the state prior to the install. |
| Integration Testing | | An incremental series of tests of combinations or subassemblies 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). |
| Load Testing | | A performance test that subjects the system to varying workloads to measure and evaluate the performance behaviors and abilities of the system to continue to function properly under these different workloads. Load testing determines and ensures that the system functions properly beyond the expected maximum workload. Additionally, load testing evaluates the performance characteristics (e.g., response times, transaction rates, and other time-sensitive issues). |
| Performance Testing | | Performance Testing assesses how a system is spending its time and consuming resources. Performance testing optimizes 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. Performance testing may be further refined using specific types of performance tests, such as, benchmark test, load test, stress test, performance monitoring test, and contention test. |
| Regression Testing | A type of testing that validates existing functionality still performs as expected when new functionality is introduced into the system under test. | |
| Section 508 Compliance Testing | A type of test that (1) ensures that persons with disabilities have access to and can interact with GUIs and (2) verifies that the application or system meets the specified Section 508 Compliance standards. | |
| Security Testing | A type of test that validates the security requirements and to ensure readiness for the independent testing performed by the Security Assessment Team as used by the Assessment and Authorization Process. | |
| Smoke Testing | A type of testing that ensures that an application or system is stable enough to enter testing in the currently active test phase. It is usually a subset of the overall set of tests, preferably automated, that touches parts of the system in at least a cursory way. | |
| System Testing | System testing is the testing of 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. End to end testing with all interfacing systems is the ultimate version. | |
| Unit/Product Component Testing | Product Component Testing (aka Unit Testing) is the internal technical and functional testing of a module/component of code. Product Component Testing verifies that the requirements defined in the detail design specification have been successfully applied to the module/component under test. | |
| User Functional Testing | UFT is a type of Acceptance Test that involves end-users testing the functionality of the application using test data in a controlled test environment. | |