Capita Children's Services

**Statutory Return**

Spring 2015 Release

Test Approach

Version 0.2

Draft

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This document and subsequent updates will be published on TFS in the following location:

http://simsdocs/sites/SIMS7/SIMS7/Shared Documents/PRODUCT VIEW/Statutory Returns/Altair\_Polaris Test Approach\_Spring2015

# 1 Introduction

The purpose of this document is to define the Approach, Resource and Plan for system testing throughout the construction and hardening phases. This approach also defines the work methods and identifies the testing environments, assumptions, risks and the constraints for testing.

# Project Overview

## Project Methodology

STATs project will adapt the Agile methodology for the development in an incremental manner. The features will be prioritised (MoSCoW) and will form the product backlog. For the Polaris and Altair Team there is only capacity for ‘Must’ stories.

The current methodology starts with a series of foundation meetings, followed by Refinement. Refinement sessions will be conducted by the BA with the team to refine the description and acceptance criteria for the stories to be tested and to ensure all the team understand what is required.

The construction phase will be run across six sprints (five sprints lasting two weeks and a final sixth sprint lasting one week) with the intention of achieving working software which is ready to be shipped at the end of sixth Sprint.

Following the main construction phase a hardening sprint will be conducted. This sprint will focus on defined regression testing. Any outstanding P3 and P4 bugs that need to be fixed will be identified by BA and planned for development / test within this project phase.

## Test Approach for Manual Testing

**Refinement Session**: Post Foundation, Refinement session for each story will be conducted by BA.

**Session Plan**: Testing team will prepare session plan only after the Refinement Session. Session Plan will be reviewed by Developer or BA.

**Session Execution**: Session Plan must be reviewed and reworked before execution starts. Test execution task must be updated with documentation and evidence as test execution progresses (http://simsdocs/sites/SIMS7/SIMS7/Shared Documents/PROJECT VIEW/1 Statutory Returns/Spring 2015). Checklists, diagrams, metrics, test scenarios and mind maps are all evidence of testing coverage and must be linked to the tasks in TFS with any supporting screen shots and log files.

When defects are raised the following tasks are to be added to the bug in TFS

* Rework task (to be assigned to the developer)
* Retest Task – including re-test estimate

All P1/2 defects need to be closed before a story can move to Debrief.

All P3/4 defects need to be triaged by a Product Owner before/during Show & Tell. Where the Product Owner identifies the bug must be fixed but can wait until hardening the iteration path will be updated to the hardening sprint. Where the Product Owner agrees the bug / feature can be delayed to a later release the bug will be copied to the bug backlog for progression.

**Session Debrief**: Debriefs must be conducted at the end of Test Execution by Peer Tester/Test Lead.

**Show and Tell Session**: Once testers are happy that an acceptable level of confidence in the system has been achieved, a Show & Tell is scheduled with the product owner and other stakeholders. The stakeholder list can be obtained from the Project Manager. If all parties agree that quality and confidence in the software has been met, Product Owner can sign off / close the story.

## Test Approach for Automation:

For the current release two Polaris and Altair test resources will be included for Automation Testing. There will be 20% of Total Test Effort utilisation/resource for these tasks in this Release.

**Creation of New Script:** Automation script for new functionalities added will be created by Automation Team.

**Update of existing scripts:** Any change in the existing functionalities will be updated by Automation Team.

**Identification of scenarios and impacted areas:** Two Polaris and Altair team members will identify the scenarios as well as impacted areas which needs to be Automated for this release.

**Execution of Automation Scripts:** Automation Scripts will be run by the Polaris and Altair team with support from the Automation Team.

Two days per Sprint will be used for Automation Testing.

# Test Coverage

## In Scope

The main goal for the Spring Release 2015 is to deliver changes in line with UK DfE statutory requirements.

* Functional Testing:

Areas to be covered for Polaris:

* School Census Summer 2015 (England)
* Indy Admissions
* Statutory Assessment for England, Wales, NI 2015
* Assessment- Statutory AComp changes to CTF flexible Assessment Handling.

Personnel changes for use in SWC 2015 (England and Wales)

* ISB/CBDS Spring Release 2015 (England, Wales and NI)
* Updates to File sets for the Spring Censuses 2015

Areas to be covered for Altair:

* Course Management Spring Release 2015
* CTF 14 Spring Release 2015 (England, Wales and NI)
* Indy PPOD Ability to deal with Applications
* Attendance Collection 2015 (Wales)
* Update Personnel with the new national insurance tables
* Change of SIMS branding
* CTF Import - Specific CTF Issues
* CTF Import - Contact Matching (England, Wales and NI)
* Non Functional Testing: NFRs (Performance and Security) for Stories will be identified during refinement Sessions. There are currently no baseline to carry out this testing. Current approach is to inform Test Team Manager if any unexpected behaviour arises.
* Automation Testing:

Areas to be covered:

* School Census
* CTF
* DENI
* Retesting:

Areas to be covered

* Tests the bug fixes for the reported defects and verify that the fixes satisfy the specified requirements.

## Out of Scope

The project test team will not perform the following in the construction phase (including Hardening) **in this** release :-

* Consolidated Integration Testing : Integration Testing will be carried out in RVT.
* Load Testing: Load Testing is not part of the scope.

Statutory Returns is primarily driven by school regions and phases. Individual schools upload their data to the government website. It is however not possible to conduct extensive testing within the timescale available. As a result scope of datasets to be tested will be identified within refinement sessions. During refinement key school phases will be identified for testing while other school phase testing will be pushed back into the Hardening phase or out of scope.

Release Verification Testing (RVT), User Acceptance Testing (UAT), Change Requests (CR’s) and Barriers to Release (BTR’s) are not part of this Test Approach as they fall outside the remit of system testing.

## Datasets to be used

Masked Datasets will be utilised, where possible. If masked datasets are deemed inappropriate for testing, training dataset will be utilised. School Phases for different Regions will be decided during Refinement Sessions.

## Polaris

|  |  |  |
| --- | --- | --- |
| **Epic Story ID** | **Description** | **Dataset** |
| 60994 | EPIC: School Census Summer 2015 (England) | English |
| 61068 | EPIC: Indy Admissions Changes | English |
| 61107 | EPIC: Assessment- Statutory Assessment Returns England 2015 updates | English |
| 61108 | EPIC: Assessment- Statutory Assessment Returns Wales 2015 updates | Wales |
| 61110 | EPIC: Assessment- Statutory Assessment Returns NI 2015 updates | NI |
| 61111 | EPIC: Assessment - EYFS KSWizard Individual Reports | English |
| 61112 | EPIC: Assessment- Statutory AComp changes to CTF flexible Assessment handling | English |
| 61209 | EPIC: Personnel changes for use in SWC 2015 (England and Wales) | English and Wales |
| 61605 | EPIC: ISB/CBDS Spring Release 2015 (England, Wales and NI) | English, Wales and NI |
| 61606 | EPIC: Updates to Filesets for the Spring Censuses 2015 | English |

## Altair

|  |  |  |
| --- | --- | --- |
| **Epic Story ID** | **Description** | **Dataset** |
| 60295 | EPIC: Course Management Spring Release 2015 | English |
| 61038 | EPIC: CTF 14 Spring Release 2015 (England, Wales and NI) | English, Wales and NI |
| 61129 | EPIC: Indy PPOD Ability to deal with Applications | English |
| 61183 | EPIC: Attendance Collection 2015 (Wales) | Wales |
| 61607 | EPIC: Update Personnel with the new national insurance tables | English |
| 61608 | EPIC: Change of SIMS branding | English |
| 61609 | EPIC: CTF Import - Specific CTF Issues | English |
| 61610 | EPIC: CTF Import - Contact Matching (England, Wales and NI) | English, Wales and NI |

## Environments to be tested against

* The system testing will be carried out on a Windows 7 and SQL Server 2008 R2 for all the Regions.
* RVT testing will be carried out on VM 9 (Windows 8 and SQL 12).

|  |  |  |
| --- | --- | --- |
| **Dataset** | **Operating System** | **SQL Server** |
| English | Windows 7 | SQL Server 2008 R2 |
| Wales | Windows 7 | SQL Server 2008 R2 |
| NI | Windows 7 | SQL Server 2008 R2 |

# RAID

## Risks

Known risks to quality which were identified during Foundations, together with the mitigating action. There will also be a high level analysis of risks with regards to testing STATS core modules, this analysis will be based on past experiences from testers, business analyst, software architects and project managers. This will help guide how STATS tests will be prioritized.

| *Risk* | *Impact* | *Mitigation* | *Status* |
| --- | --- | --- | --- |
| New test members joining the team. | It may impact the overall quality of the product. | Organise Knowledge Transfer Sessions. | Close |
| Scope changes not controlled properly. | Scope creeps and affect the overall delivery schedule. | Proper adherence to project change procedures with the involvement of Project manager, Development Team, Testing Team and Product Owner. | Close |
| Late code delivery. | If code is delivered late this will impact the test schedule and the amount of test execution that can be achieved. | No mechanisms for testers to work from home. Only options are to have Overtimes. | Close |
| Dataset availability. | If not available on time, can throw testing out of gear. | Where there are gaps in the required data, work with BA to understand the changes in more detail to understand the individual risk of not completing specific testing.  Product Managers will endeavour to source required datasets as required. | Close |
| Unplanned Leave of Resources. | It will affect the overall delivery schedule. | Compensate by sitting late/ Inform Client if task can be re allocated. | Close |
| Limited Availability of BA/Product owner for Queries and Show and Tell Sessions. | It will affect the overall delivery schedule/ Slow resolution of queries. | Early schedule and bookings for BA time. | Close |
| Late changes from the DfE. | It will affect the overall delivery schedule. | Late Checking Waver. | Close |

## Assumptions

The following high-level assumptions have been made:

* The testing environment is established and available well in advance before starting testing.
* Impact Assessments relating the changes have been accurately assessed by the Business Analyst and Development teams.
* Testing resources will be allocated to test efforts as per the Sprint Plan only. In case of any external (additional) activities, the sprint plan needs to reflect this new activity after getting an agreement with Product Owner and Scrum Master.
* All issues/defects/bugs identified during the process will be addressed in timely manner by the team members as per the Product Owner's feedback.
* Any risks or issues likely to impact system testing will be managed using the Project Risk Log.
* Any potential changes in scope will be managed using the Change Control Log.
* All projects supporting documentation has been made available on TFS (via the sharepoint server).

## Testing Constraints

Although all efforts would be taken to ensure the committed testing tasks within the sprints. However, there might be failures due to following constraints -

1) **Dependency on DfE:** There should not be any major/complex last minute changes.

2) **Time:** The overall planning and estimation efforts need to be efficient in order to handle a challenging Sprint Cycle.

3) **Limited Knowledge of Resources in some areas:** As there are limited knowledge of resources in testing team, continuous support needs to be provided.

4) **Scope:** Since test planning and estimation is derived from the sprint scope, it becomes very important to manage the scope changes in controlled way.

# Test Objectives

There are several objectives for system testing:

* To ensure that the listed stories in Release Backlog are delivered without compromising other or existing functionality.
* To ensure that no high-risk functionality has been compromised.
* To ensure the features delivered are fit for purpose.
* To ensure the acceptance criteria are met and cannot be broken.
* To ensure sufficient test coverage of school types (not possible to test all) and identify gaps.

## Test Types

In order to achieve these objectives the following types of testing will be carried out:

### Manual Functional Testing

Tests of the individual functionality linked to each story, together with the identified impacts across the system.

### Automation Testing:

Polaris & Altair teams team will identify the scenarios and impacted areas for Automation testing and execution of the scripts.

### Retesting

Tests the bug fixes for the reported defects and verify that the fixes satisfy the specified requirements.

### Regression Testing

Tests the application functionality on previously tested portion of system after changes have been made. A manual regression test pack will be developed from the session execution. The scripts will be reviewed and will be run during Hardening Phase.

If there are time constraints imposed on the team to complete testing by a specific date, areas for regression testing will be identified using a risk based approach, with priority given to the testing of features and functions based on the risk of their failure - a function of their importance and likelihood or impact of failure.

# Test Improvements

Polaris & Altair teams documents which were prepared at the start of the Project should be updated as per changes implemented in previous Releases.

* Knowledge Transfer Sessions of Applications
* Clarity of User Stories before Testing Starts
* Clarity on Datasets during Refinement
* Assessing documents from support net whenever required
* Availability of key knowledge experts

# Entry and Exit Criteria

## Entry Criteria (for session plan)

The following entry criteria must be met in order to commence Session plan preparation:

The user story and any supporting documentation provide sufficient detail to allow the preparation of session plans.

Acceptance criteria are clear and comprehensive, covering the main and alternate scenarios that allow the story to deliver the identified business value.

Product Owner has provided sufficient impact analysis that the testing will cover the system and not just the localised change.

All story information has been groomed and story pointed.

## Entry Criteria (for session execution)

The following entry criteria must be met in order to commence test execution:

Session plan preparation has been done and reviewed by appropriate audience, at a minimum of the developer who has developed the story.

All changes to the module have been coded, reviewed and unit tested

Test environments are prepared and build applied.

Test data has been sourced and prepared as required.

System impacts have been identified by developer and communicated.

Story meets **development** definition of done.

## Exit Criteria (for session execution)

The following exit criteria must be met to exit test execution:

* Story meets definition of done.

## Exit Criteria (construction phase)

The following exit criteria must be met to exit the construction phase:

All committed stories have achieved their definition of done.

Construction audit has been successfully conducted

There is a plan for risks and gaps identified in the construction audit to be mitigated.

## Exit Criteria (hardening)

The following exit criteria must be met to exit the hardening phase:

100% of planned regression testing has been executed.

No outstanding P1 and P2 defects exist.

P3 and P4 defects are resolved, or deferred by Product Owner.

An action plan for dealing with any deferred defects has been agreed.

Test debrief has been conducted and documented.

Demo has been given to Product Owner.

The End of Test Report has been written and approved.

The test co-ordinator or lead believes the module is fit for purpose.

Any known issues have been reported to the RVT and UAT teams.

## Test Deliverables

The below mentioned deliverables are required from the test:

* Test Approach(this document)
* Session Plans
* Session Executions/Logs
* Defects List
* Session Debriefs
* Weekly Status Report
* End of Test Report
* Regression Test Pack

All the deliverable items will be subject to a review process either peer review or formal inspection.

All test documentation will be stored in TFS.

# Test Management

## Staffing Needs

Testing Resource should have

* Good analytical thinking and Problem Solving Skills
* Good knowledge of Testing Concepts, Defect Management & Defect Workflows
* Good Verbal & Written Communication
* Understand Agile Processes
* Identify risks, probes slippages proactively

## Training Needs

As new members are joining the team, knowledge transfer sessions should be organised. Ongoing support will be required from the Product Owner and development team as and when queries are raised during system testing. All the queries will be logged in a relevant query log, both test and development will log their queries in this centralised document available on TFS.

## Tool & Licensing Requirements

Telerik task board will be used as a Project Dash Board.

To enhance communication between the onshore and offshore team, we will be using Lync tool and WebEx to liaise and share information.

TFS will be used as the repository for all information on this project.

## Progress

Each tester is expected to monitor their own progress and achievement against the estimates and story points provided and to provide information regarding these according to the project methodology.

It is the responsibility of each and every tester to update the TFS at the end of each task OR at minimum at the end of each day

All updated TFS estimates must be accurate to allow correct reporting and monitoring

Testers on the project will update their assigned tasks in TFS; where necessary extra tasks will be created by the testers to quantify time spent on other work items that will impact their project tasks.

In case of any issues faced by test team regarding tasks creation or updating tasks in TFS, these need to be escalated to the Project Manager in a timely manner.

## Metrics

The Test Lead will maintain a Metrics to track progress of specific session logs and the status of defects in TFS. This will provide the number of defects raised with their priority. The Metrics will be made available on TFS.

# Defect Management

All defects identified during system testing will be logged in TFS under the relevant story.

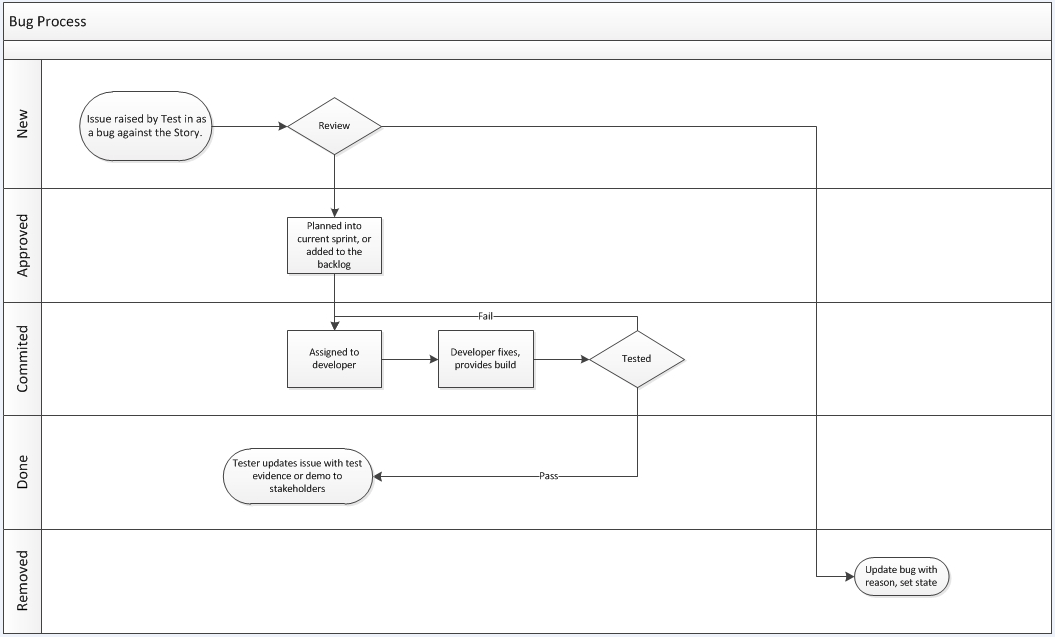
The classification of defects by Priority will be as follows:

|  |  |  |
| --- | --- | --- |
| Severity level/name) | | Definition |
| 1 | Critical | Fatal error/crash, data corruption, stopping testing. |
| 2 | High | Fatal errors in less critical areas, wrong answers to calculations, performance/resource problems, functionality not responding in specified manner etc. |
| 3 | Medium | Non-critical errors, difficult to use, screen/print corruption etc. |
| 4 | Low | Enhancement requests, non-critical UI issues etc. |

Any defects that are found will be reviewed, assessed and prioritised by Product Owner, BA with input from Development and Test team as and when required.

Defects will be managed in the following manner -

Any defect/bug found will undergo the below mentioned stages -



At the end of System Test, the status of all unresolved (i.e. deferred) defects will be reviewed by the Product Owner, BA, Development Lead and the Test Lead to determine what subsequent action should take place.

### A list of unresolved defect list will be made available to UAT before their phase of testing starts.

# Document Approval

|  |  |  |  |
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