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FOR INTERNAL USE

BRANCH COUNTER REFRESH

TEST STRATEGY

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1 Introduction

The Branch Counter Refresh Project will update the existing Horizon counter application (HNG-X) so that it can run on a modern PC running Windows Embedded 8.1 Industry Edition. This update will be called Horizon Anywhere (HNG-A). Further details of the project can be found in section 2.

1.1 Document Purpose

The primary purpose of this document is to define the overall test approach and govern how testing will be managed for the Branch Counter Refresh Project. To ensure the primary purpose is achieved this Test Strategy will:

- Describe the test standards and principles that form the basis of the strategy
- Provide a high level view of the project scope.
- Outline what will be tested
- Identify the stages and types of testing to be undertaken
- Define the methods and processes of each test stage or type.
- Outline test governance, including definition of the roles and responsibilities required to undertake testing.
- Describe the test environments and any tools required to support testing.

This is a living document and will be updated/reissued should it be required as the project progresses.

1.2 Scope of the Document

The Test Strategy will influence supplier test plans and form the basis of the Atos-led test stages (i.e. Systems Integration and User Acceptance Testing).

1.3 Test Standards

Test documentation will adhere to the IEEE 829 Software Test Documentation Standard.

It is expected that supplier test documentation will adhere to the supplier's documentation standards.

1.3.1 The V Model

The testing approach being adopted is based on the industry-standard V model, in which:

- Each stage of the project delivery life-cycle has a corresponding test stage.
- Each test stage is split into
    - preparation
    - Designing and building tests and establishing the test environment
    - Execution (e.g. running tests, identifying and resolving incidents) activities.
- The preparation activities for a given test stage are dependent on the overall test design activity being complete rather than any specific preceding stage.
- The execution activities for a given test stage can start once the execution activities for the preceding test stage have been completed. E.g. Quality gates for exit and entry criteria of a test stage have been met.
- Entry and Exit criteria for all test stages will be documented and agreed.

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- The progression from one test stage to another is controlled by means of a gate review/sign-off. This is a formal review point which decides if the status of current stage is sufficient to allow the project to proceed to the next testing stage.
- Each test stage has its own test plan and test specification/scripts. Where appropriate test scenarios/scripts will be re-used from previous test stages.

The V model of testing is founded on the following principles:

- The earlier that faults are found, the cheaper they are to resolve, and so testing will focus on finding the most significant faults at the earliest opportunity.
- Each test stage should have a clear basis:
  - Unit tests are prepared from the detailed design/technical specification
  - Systems Integration and User Acceptance Testing will be based on project requirements
- Each test stage is controlled by a nominated person, the Test Manager.
- Risk-based decisions on the scope and depth of testing should be made by the Project Manager and the relevant stakeholders, based on the project's objectives and the trade-offs between timescale, cost and quality.

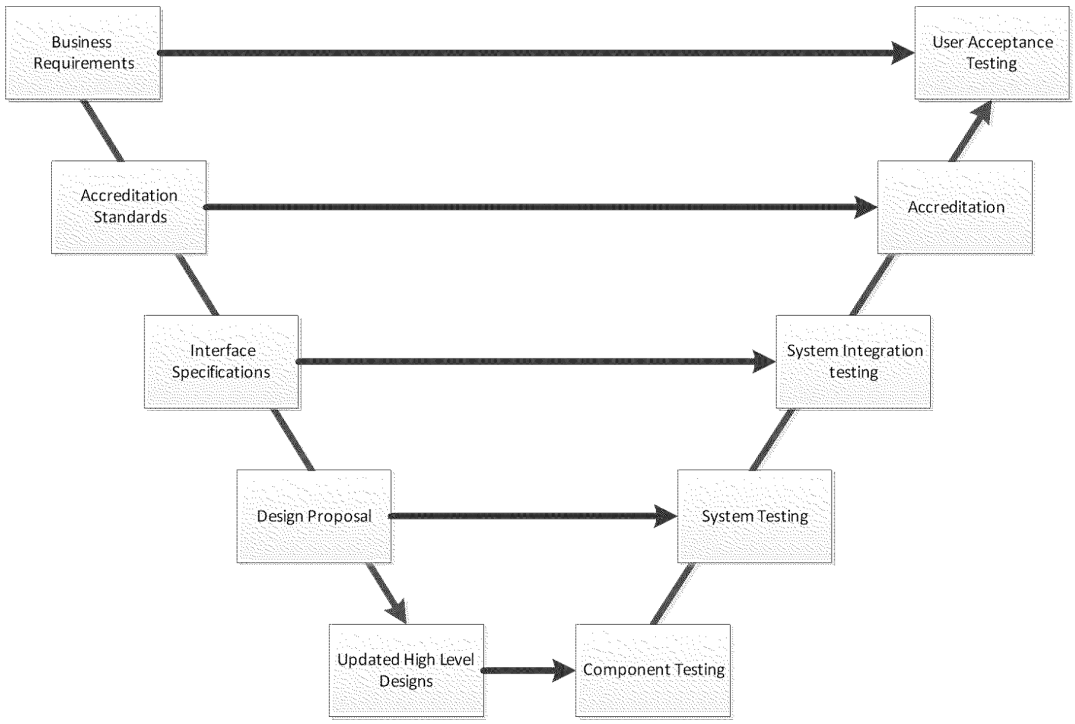

Figure 1 – Branch Counter Refresh Specific V Model

1.3.2 Test Principles

The following key principles will be adhered to throughout the testing stages:

- **Collaborative Working** – The Atos / POL / Fujitsu / Computacenter / Verizon project team will work collaboratively with all incumbent suppliers throughout the project lifecycle. During testing the project test team will work closely:
  - Planned test scope for non-POL led test stages to ensure coverage is sufficient

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- Validate supplier test results against pre-defined acceptance criteria

- **Drive out duplication between test stages** - This approach will ensure that all participants have a full understanding of the purpose and objective each of the stages and the test cases to be executed within them. This will also enable any gaps to be identified early. Through reviewing test results and performing witness testing this will reduce the risk of successfully completed tests from being repeated unnecessarily in later stages.
- **Risk-Based Prioritisation** - A risk based approach should be utilised to ensure all stakeholders understand the relative risk associated to each requirement/function. Testing will be prioritised on this basis. Areas which are deemed the greatest risk from a business and technical perspective will be given the highest priority.
- Test to verify requirements and test to mitigate risks as early as practicable
- Timely preparation for testing
- Capture and feedback lessons learned to benefit future testing

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2 Project Scope

The current Horizon architecture is a thick-client application supported by a large datacentre infrastructure. Over the last 15 years, several Point Of Sale systems have been integrated into branch estate, utilising common branch communications and shared interfaces into back-end systems. As a result the current branch estate is a complex network of infrastructure and systems provided by several suppliers, as described in the simplified scope diagram below:

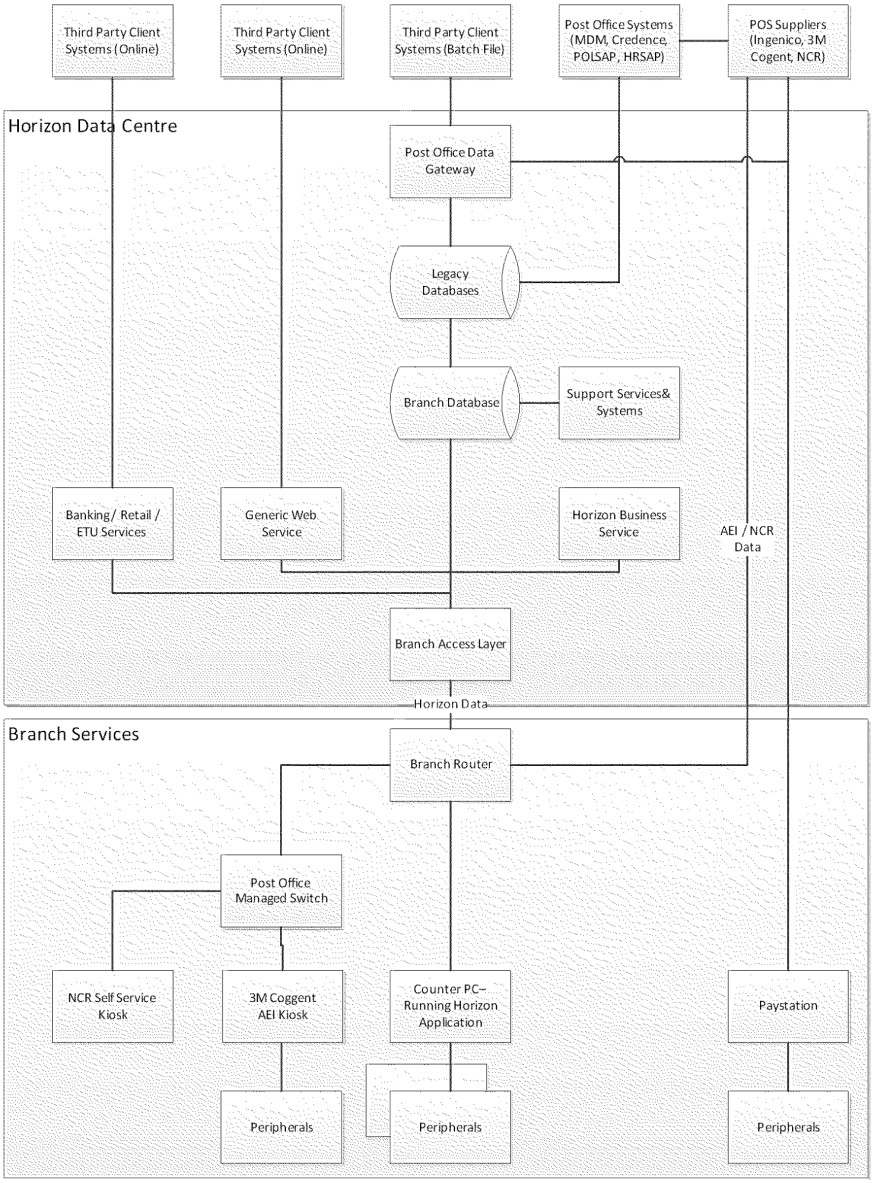

Figure 2- Current Horizon System

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The Horizon POS application and the Counter PC that supports the application are provided by Fujitsu Services. The Horizon application was refreshed in 2009 to the HNG-X variant. However, the Counter PC is a Pentium II PC that has been in use since the original Horizon application was rolled out in 1998. The Counter PC is approaching the end of its operational lifespan, and a marked decrease in the Mean Time Between Failure (MTBF) has been noted. The Counter PC also has a number of peripherals attached, including a PIN Pad, barcode scanner, tally roll printer and weighscales. Some of these peripherals will be refreshed as part of the overall Branch Counter Refresh whilst others will be retained, with attention being paid to the legacy RS232 connectors.

The Post Office is undertaking an IT transformation to a 'tower' based model of infrastructure, applications and network provision. As part of this transformation, any Counter PC replacement will be provided by the End User Computing (EUC) tower provider, Computacenter. To facilitate this transition, Fujitsu have been tasked to modify the HNG-X application to ensure that it runs on a modern PC and operating system, within a current and supportable run-time environment. The modified application has been labelled Horizon Anywhere (or HNG-A). The branch network facilities currently provided by Fujitsu will be transferred to a Network tower service provider, Verizon. Verizon will be providing Network services going forward and will replace the in-branch Sarian router with a Cisco router connecting to the Verizon central network, and then onwards into the Fujitsu data centre. Eventually, the data centre elements will be transitioned to the Front Office tower provider.

The Branch Counter Refresh Project is responsible for the development, testing and deployment of the revised Fujitsu HNG-A application onto modern counter PC's, provided by Computacenter, with networking provided by Verizon. Computacenter will also be responsible for replacing a number of the counter peripherals (e.g. barcode scanner and Keyboard/Magnetic card reader). Verizon will be responsible for replacing existing branch routers and switches.

The revised HNG-A application will share the same code base as HNG-X and the agents and data centre transactional elements remain unchanged. To ease rollout and establish a common baseline, HNG-X will be deployed at R13.05 across the estate so that HNG-A R13.05 can rollover a branch and the branch will remain consistent on R13.05 of HNG.

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3 Scope of Testing

3.1 In scope

The following items are considered within testing scope:

- Software
  - HNG-X Counter Business Application (for regression testing)
  - HNG-A Counter Business Application
  - Supporting Fujitsu applications (such as WSPOS and Counter Help webservices)
  - Supporting Fujitsu management tools (such as Cygwin, Netcool, CNIM-2)
  - Computacenter/Fujitsu terminal personalisation
  - Computacenter Systems Management Systems (such as 1E Nomad, Engineer application, SCCM, SEP, Unified Write Filter, Eracent and Synergy)
  - Self Service Kiosk transactions and management
  - Verizon Systems Management Systems
- Hardware
  - Fujitsu Branch PC, network equipment and associated peripherals (for regression testing)
  - Computacenter Branch PC with:
    - Retained peripherals
    - New peripherals
  - Highly Portable Devices – subject to Requirements / Computacenter solution clarification
  - Verizon provided branch routers and switches
  - NCR Self Serve Kiosk – to prove continued integration with the Horizon data centre
  - KVM Switch to allow standalone test of 3M Cogent screen/peripheral sharing
- Test environments
  - Atos test location at Winnersh for counter PC's, peripherals and other branch equipment
  - Fujitsu SV&I and LST Test environments, including data centre components housed in Belfast
  - Computacenter Release Test location replicating data centre capability
- Networks
  - Existing Post Office Branch VPN
  - PODG DMZ for personalisation
  - Bluecoat reverse proxies for HNG-A connectivity into the Fujitsu data centre
  - Local Area Network within the Branch, specifically to support network shared devices such as the A4 'back office printer.
  - Verizon Branch network, including various communication methods (including ADSL, GPRS, BFPO (i.e. internet-based comms) and VSAT)
- Data Centres
  - Fujitsu IRE19 Datacentre
  - Computacenter Datacentre (for device management)
  - Verizon Data centre
- Third Party infrastructure
  - Existing connections to Accreditation organisations as required
- Supporting Service Integration
  - Help Desk and Knowledge articles
  -

3.2 Out of scope

The following functionality is out of testing scope:

- Software

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- Other applications present on the Computacenter-provided PC – at transition, HNG-A is the only application present on the Computacenter provided PC.
- HNG-X support packages (such as Ethene and Europa) will not be used on HNG-A
- Data Centre related software updates – will be managed under existing Supply Chain Member processes

- Hardware
  - AEI Biometric Enrolment System kiosk – integration with 3M Cogent systems not currently in place, however a standalone exercise will be undertaken to ensure that the screen\peripheral sharing that exists between the 3M Cogent solution and Horizon will continue to be supported on the EUC Hardware. 3M Cogent will also be expected to prove connectivity via the Verizon network from their test site.
  - Ingenico **pay**station[tm] devices – testing currently performed in isolation by Ingenico and not impacted by the Branch Counter Refresh project.
- Networks
  - Kingston Communications
  - Migration and parallel running of Verizon solution in data centres
    - 3M Cogent
    - Computacenter
    - Fujitsu
    - NCR
- Data Centres
  - Fujitsu IRE11 Datacentre – this is the live datacentre
  - IBM Datacentres – within the Branch Technology Transformation Programme (Front Office) scope
- Scheduling and deployment
  - Selection of branches
  - Communication with branches
  - Ordering / selection and installation of equipment
  - Early Life Support
  - Network Transformation Programme deliverables

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4 Test Approach

With varying degrees of change occurring across multiple systems, each party will be responsible for testing their own components. The test approach will be to test each component in isolation followed by a stage of systems integration testing. Once integration of the HNG-A application onto the Computacenter provided PC has been fundamentally proven, further stages of testing will be undertaken to verify System Integration, perform external accreditation and conduct UAT.

Replacing the legacy counter PC with a modern PC running HNG-A software could be seen as a straightforward 'lift-and-shift' swapout. Component Integration testing between the Computacenter PC and the various counter peripherals will be required, as will testing of systems management and software deployment processes. However, the diagram in [Figure 2- Current Horizon System] shows that there is also a complex network of branch, data centre and client services that will also require regression testing to ensure that there is no degradation to the overall Post Office service.

It is proposed that a number of test workstreams are put in place to ensure the initial transition to HNG-A running on Computacenter-provided equipment, using both Fujitsu and Verizon for branch connectivity. The following table summarises these workstreams with more detail relating to each workstream provided in subsequent sections.

Note: The indicative Schedule is provided for illustrative purposes – the Atos maintained project plan takes precedence.

Test Stage	Purpose / Function	Indicative Schedule/Timeline
Fujitsu Component Integration Testing	Fujitsu development testing of the software components that constitute HNG-A.	To May 2015
Fujitsu System Testing	Fujitsu system testing covering Functional and Nonfunctional aspects of HNG-A and HNG-X operation. Full regression testing of HNG-X operation.	R13.00 = May to Oct 2015 R13.05 = Jan to Apr 2016
Computacenter System Test	Computacenter system testing covering: • Platform build • System / User access policy • Peripheral integration	June 2015 to Jan 2016
Verizon System Test	Verizon system testing of new network capability and in-branch routers and switches. Data centre solution to allow Computacenter, Fujitsu, NCR, 3M Cogent to communicate with the branch using the relevant network.	Sept to Dec 2015
Fujitsu/Computacenter/Verizon Systems integration Testing	Atos to coordinate testing with Fujitsu, Verizon and Computacenter to demonstrate: • Physical PC swap out procedures • POL business swap process • New router/switch deployment • In branch migration processes • EPOSS regression testing • Deployment of updates / patches • Systems management services	Jan to May 2016
Fujitsu/Computacenter E2E Testing	Atos to undertake testing with third parties that have a direct interface currently (but are not subject to accreditation), e.g. • Post office back end systems (POLSAP,	June 2016

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	• Credence, MDM, HRSAP) • Large clients (POCA, Santander, First Rate, NS&I)	
Fujitsu/Computacenter Accreditation	Atos to undertake testing with third parties that are subject to accreditation, e.g. • Vocalink – for ATM services • Globalpay – for Merchant Acquirer services • Epay – for Etopup services • Moneygram – for money transfer services • PCI accreditation – via external audit	June 2016
Fujitsu/Computacenter User Acceptance Testing	Atos to coordinate UAT with PO Branch staff completing business scenarios to cover: • Usability • Ergonomics • Equality / DDA – Equality Act conformance • Hardware fault/ replacement procedures • Rollover checks and balances	June 2016
Fujitsu/Computacenter/Verizon Preproduction Testing	Atos to review / facilitate / participate in HNG-A release deployment activities/	July 2016
NCR/Verizon Preproduction Testing	Atos to review / facilitate / participate in SSK release deployment activities/	July 2016
3M Cogent/Verizon Preproduction Testing	Atos to review / facilitate / participate in AEI release deployment activities/	July 2016
HNG-X Pilot / Live Proving	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage.	Aug 2016
Fujitsu/Computacenter/Verizon/ NCR/3M Cogent Pilot / Live Proving	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage. This is the migration of a small number of branches to demonstrate capability in the live environment. The Model Office in Post Office HQ is usually used for this purpose.	Aug 2016
Fujitsu/Computacenter/Verizon/ NCR/3M Cogent Post Go-Live Support	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage. All party support of live incident investigation, resolution and remediation.	From Aug 2016 on.
Fujitsu/Computacenter/Verizon/ NCR/3M Cogent Hot-fix Security Patch Testing	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage. This could include: • Updates to HNG-A and supporting counter packages • Updates to Antivirus definitions on Computacenter PC • Windows Updates on Computacenter PC • Peripheral firmware / device driver update	From Aug 2016 on.
Fujitsu/Computacenter/Verizon/ NCR/3M Cogent Minor Release Testing	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage. This could include: • Data Centre system updates • Small / urgent counter releases	Frequently, from Aug 2016 on.

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Fujitsu/Computacenter Major Release Testing	Out of scope of initial Branch Counter Refresh test strategy – For information only at this stage. Atos to review / facilitate / participate in HNG-A release 14.0 etc., on target Computacenter PC equipment, supported by Computacenter	2016, 2017…

The following sections provide more detail on each test stage.

4.1 HNG-A Component Integration Testing

4.1.1 Purpose

Fujitsu will develop the HNG-A application along with several supporting packages to be installed on the Computacenter-provided PC. Software developed for the HNG-A platform will be tested initially within CIT using automated regression test facilities. Development will be responsible for managing the packages that cover the core components required on the Horizon counter. Initially the following packages will be provided:

- CBA – the main Counter Business Application which will be updated to:
  - Support new peripherals
  - Relocate the install program and data to better match a typical windows program
  - Run as a co-resident application that can share system resources with other applications
  - Format the screen to support larger screen sizes, resolutions and different aspect ratios
  - Introduce a start "splash box display" whilst the application is loading (rather than a DOS script window)
- JRE – a dedicated Java Runtime Environment used exclusively to run the CBA
- WSPOS – a component on the counter which provides access to the pin pad. This will be updated to allow access to the HNG-A CBA.
- CNIM – a component on the counter that monitors network connectivity and provides status to the CBA. Will be updated to distinguish between HNG-A and HNG-X and will only provide QoS data to the HNG-X application.
- CHS – Help file web service running on the Horizon Business Service (HBS)
- Netcool – updated Tivoli agent package to continue to extract data from Windows logs to help support and populate audit system for prosecution support
- Cygwin – secure shell for command line support of the application

Fujitsu will undertake component testing to ensure each package functions as expected.

Atos to provide assurance of Fujitsu development testing via test plan/report review.

4.1.2 Inputs

- HNG-A Design Proposal
- Updated HNG-X High Level Design documents (e.g. common data centre elements of the Horizon solution)
- Updated/New HNG-A Low Level Design documents
- Joint Fujitsu/Computacenter documents where there are interdependencies
- Joint Fujitsu/Verizon documents where there are interdependencies
- Joint Computacenter/Verizon documents where there are interdependencies
- Joint Computacenter/Fujitsu/Verizon documents where there are interdependencies

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4.1.3 Process

Fujitsu development resources will undertake largely automated testing on HNG-A components installed on representative equipment that may be standalone and not integrated with Computacenter to functionally test HNG-A.

Tests will be documented in a series of Component Test Plans.

Any defects discovered will be raised in development defect tools such as Jira and / or Peak.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in a series of Component Test Reports.

Atos will provide assurance of Test Plans and Reports issued.

4.1.4 Outputs

- HNG-A Application deliverable, in an MSI package, with associated Release Notes describing installation and regression instructions.
- Proven hardware peripherals
- Underlying systems management services E.g. Alerting, eventing, auditing, archiving,
- Component Test Plans and Reports

4.1.5 Test Environment

The current CIT environment is a small scale replication of the live environment, with just enough data centre components to allow a development testing of the counter component. The counter and data centre elements of the CIT environment are located within Fujitsu Services site in Bracknell.

Counter testing will use Computacenter provided equipment, but it is recognised that the build may not be representative of live, e.g. not locked down into Kiosk mode. This is also referred to as a Type A build.

There is no requirement for Fujitsu to Computacenter connectivity to support HNG-A CIT.

4.1.6 Test Data

Specific test data requirements will be documented within the Component Test Plans.

4.1.7 Responsibilities

Fujitsu development resources will be responsible for completing component testing, and will produce Test Plans and Reports for each Component.

Atos will provide assurance of Test Plans and Reports issued.

4.1.8 Entry Criteria

- HNG-A Design documentation available.
- Representative (Type A) PC and Peripherals available
- HNG-A software deliverables available
- Development resources available

4.1.9 Exit Criteria

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- Component Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- Component Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the Component Test Stage
- Any other defects outstanding at the end of the Component Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages available for System testing, with supporting Release Notes / regression instructions
- Atos concurrence to proceed to HNG-A System Testing.

4.2 System Testing

4.2.1 HNG-A System Testing

- Purpose

Fujitsu are expected to conduct system testing of their solution, covering functional and non-functional aspects of HNG-A operation. Fujitsu have historically called this phase of testing Solution Validation and Integration (SV&I) Testing.

Following a series of discovery workshops held between Atos, Fujitsu and Computacenter, a number of gaps were identified between the HNG-A solution Fujitsu were committed to, and the full solution required to support cross tower operation. These gaps were documented within a Gap Analysis paper [4]. To address the gaps, Fujitsu split their development into two software releases:

- Release 13.00 – the base release of HNG-A, demonstrating application functionality on representative branch equipment, utilising the existing Fujitsu Branch Network
- Release 13.05 – modifications to the base release to allow HNG-A to be deployed onto target Computacenter terminals, and allow appropriate support for underlying Fujitsu and Computacenter systems management software. To also enable the transition of branch network from Fujitsu to Verizon

Release 13.00 System testing covered the following areas:

- Reference data download from the Horizon data centre:
  - via the BRDB delivery mechanism for the HNG-A Counter
  - MID /TID allocation for Merchant Acquirer services.
  - To the CHS service running on HBS for Help file data content
- CBA operation:
  - Validation of Engineer functions (i.e. Computacenter provided peripheral calibration via the HNG-A application)
  - User / Branch administration.
  - Font resizing to accommodate larger screen display.
  - Banking transactions (with no 'offline indicator' messages due to lack of CNIM2 service)
  - Retail transactions (using new MID/TIDs allocated for HNG-A)
  - Asylum Seekers Smart Card transactions (accessing the PIN Pad via an updated WSPOS component)
- Help pages accessed from new Help file web service (CHS) running on the HBS

Fujitsu also covered regression testing of HNG-X including:

- Retained use of Utimaco VPN Services
- Branch configuration via first install 'bootstrap' mechanism

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- Reference data download from the Horizon data centre via the BRDB and SYSMAN delivery mechanisms
- CBA operation:
    - Validation of Engineer functions (i.e. Fujitsu provided peripheral calibration)
    - Banking transactions (with CNIM2 provided 'offline indicator messages)
- Help pages accessed from local html files downloaded via reference data
- Support staff continued use of Cygwin access to HNG-X running on Windows NT.

Release 13.05 System testing is expected to cover the following areas:

- Update of Sarian Branch Router configuration to allow:
    - HNG-A IP subnet address ranges
    - Migration from Utimaco VPN to mutual SSL
- Introduction of Bluecoat proxy
- Removal of branch IP address validation within the BRDB
- Introduction of DHCP solution.
- Support staff use of Cygwin access to HNG-A running on Windows 8.

Atos will provide assurance of Test Plans and Reports issued.

- Inputs

- HNG-X/A Design documentation
- HNG-A gold build signed-off from development / CIT.
- Proven peripherals
- Systems Management services
- Representative (Type A build) Computacenter PC's from Computacenter (progressing from Type A for R13.00 to Type C for R13.05)
- Representative branch network facilities (provided by Fujitsu and Verizon).
- Updates to Horizon Automation Framework to support HNG-A (if required)

- Process

Fujitsu test resources will undertake testing of HNG-A software packages manually installed on Computacenter provided equipment, using a combination of manual and automated test execution techniques.

Tests covering R13.00 have been documented in a Horizon Release (R13.00) System Test Plan.

A full regression test of Horizon functionality against both HNG-A and HNG-X applications will be undertaken through execution of the existing automated regression test suite. A benchmark test of performance of each application will be completed to prove the assumption within the Design Proposal [2] that the performance of HNG-A on a new PC within an updated JRE will be considerably better than the existing HNG-X solution.

A Performance test of the new Help file web service (CHS) will be undertaken.

Any defects discovered will be raised in Fujitsu-hosted defect tools such as Quality Centre and / or Peak.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in a Horizon Release (R13.00) System Test Report.

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A similar approach will be followed for R13.05 – Fujitsu will document their testing via a Test Plan and Report.

Atos will provide assurance of any Test Plans and Reports issued.

- Outputs

- Proven and supported counter PC, operational via current Fujitsu and new Verizon network with target peripherals
- Proven connectivity / operation between counter PC running first HNG-X then concurrently HNG-A finally solely HNG-A and the Horizon data centre and Computacenter data centre as appropriate
- Underlying Fujitsu systems management services e.g. alerting, eventing, auditing, archiving,
- HNG-A System Test Plan and Report

- Test Environment

The existing Solution, Validation & Integration (SV&I) Test environment will be used to support HNG-A system testing. This environment is a close match to the production environment in terms of server availability. It currently has representative resilience provided by multiple instances of high volume servers and load balancing. The SV&I environment currently has connectivity to a number of third party systems. A live-like overnight schedule of file processing activities is run on a daily basis. From a system testing perspective, the counter elements of the SV&I environment is located within Fujitsu Services site in Bracknell.

It is anticipated that the counter testing will use Computacenter-sourced Windows 8 PC's and replaced peripherals, however installation of these components may be undertaken manually by Fujitsu rather than follow onsite engineer process.

At the introduction of R13.05, network connectivity to Computacenter and Verizon will be required to allow Fujitsu to effectively test their components.

A number of HNG-X counters will be retained to support regression testing and ongoing testing of HNG-X specific patches.

- Test Data

Specific test data requirements will be documented within the Fujitsu System Test Plan. As a general principle, no live customer data will be used in testing activities.

- Responsibilities

Computacenter will be responsible for providing component PCs and peripherals.

Fujitsu test support resources will be responsible for installing Computacenter PC's, peripherals and Fujitsu software packages, using manual mechanisms if appropriate on the Type A builds.

As testing progresses, Computacenter test support resources will be responsible for installing Computacenter PC's, peripherals and Fujitsu software packages, using target mechanisms on the Type C builds.

Fujitsu test resources will be responsible for completing system testing, and produce a Test Plan and Test Report for review.

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Atos will provide assurance of any Test Plans and Reports issued.

- Entry Criteria

- HNG-A Design documentation available.
- Computacenter provided PCs and Peripherals available
- HNG-A software deliverables available
- Computacenter AD and System Management available
- Representative branch network facilities (provided by Fujitsu and Verizon).
- Test resources available
- Test Readiness Review held and criteria met.

- Exit Criteria

- System Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- System Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the System Test Stage
- Any other defects outstanding at the end of the System Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages available for System Integration Testing, with supporting Release Notes / regression instructions
- Atos concurrence to proceed to HNG-A/Computacenter System Integration Testing.

4.2.2 Computacenter System Test

- Purpose

It is Computacenter's responsibility to demonstrate the agreed scope of their delivery:

- Management of computer and user accounts (this is within Active Directory, although Horizon users will continue to be maintained within the Horizon application.)
- Demonstrate a Gold Build using preinstalled HNG-A package
- Software distribution (including deconstruction of overly large packages if required) and regression
- Installation process, including booting into Kiosk mode and launching HNG-A in a non-windowed mode
- Peripheral integration
- Ongoing remote management of the counter, OS, peripherals and drivers,
- Anti Virus protection and maintenance
- Intrusion detection services.

Following a series of discovery workshops held between Atos, Fujitsu and Computacenter, a number of gaps were identified between Fujitsu HNG-A provision and thesolution Computacenter were committed to. These gaps were documented within a Gap Analysis paper [4]. To address the gaps, Computacenter have been requested to perform additional activity over and above their initial contract response. Subject to Post Office agreement to the additional activities and acceptance of the Computacenter High Level Design [5], the following specific changes will be required:

- Unlocked counter PC builds – Instead of providing a single 'locked-down' PC image, Computacenter will be required to provided several variants of PC build that allow access to the operating system for testing purposes. The following variants will be required:
    - Type A - Standalone, open PC build with full access to the operating system. Unmanaged by Computacenter system management

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  - Type C – Open PC build, with full access to the operating system. Managed by Computacenter system management. Test Keys applied.
  - Type D – Locked PC build, with no access to the operating system. Managed by Computacenter system management. Test Keys applied.
- Extend access to the Computacenter Pre-Production data centre to provide IP address allocation, Active Directory authentication, and managed support for Computacenter devices.

Computacenter will undertake testing of each counter build and the Computacenter test environment, producing test plans and summary reports throughout.

Atos will provide assurance of any Test Plans and Reports issued.

- Inputs

- Computacenter High Level and Low Level Design documentation
- HNG-A release candidate MSI build signed-off from Fujitsu development / CIT.
- Peripheral specifications
- Systems Management services
- Computacenter PC specifications
- Computacenter Test data centre running AD, SCCM etc.

- Process

Computacenter test resources will undertake largely manual testing of HNG-A software packages release process, delivered via Systems Management to the Computacenter provided equipment.

Tests will be documented in a Computacenter Branch System Master Test Plan (see refs 7 & 8), and subject to review by POL/Atos..

Any defects discovered will be raised in Computacenter-hosted defect tools.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in a Computacenter Test Completion report or Certificate of Conformity.

Atos will provide assurance of any Test Plans and Reports issued

- Outputs

- Proven and supported 'Gold-Build' counter PC, operational with new/existing peripherals
- Proven connectivity / operation between counter PC running HNG-A and Computacenter data centre
- Underlying systems management services e.g. alerting, eventing, auditing, archiving (subject to agreement of Computacenter HLD [5])
- Computacenter Master Test Plans, Test Completion Reports and /or Certificates of Conformity.

- Test Environment

The existing Computacenter Test environment in Hatfield will be used to support Computacenter system testing. This environment will allow connectivity between the Counter PC and the Computacenter test data centre (yet to be built, and subject to commercial agreement) required to support system management services. It is accepted that the network connectivity between the Counter and the Computacenter data centre may not be representative of the live solution.

It is anticipated that the counter testing will use a signed-off gold build version of the HNG-A application, provided following Fujitsu's Component Testing. The installation of the Fujitsu

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packages should be undertaken via automated processes rather than follow onsite engineer process.

- **Test Data**

Specific test data requirements will be documented within the Computacenter Branch System Master Test Plan.

- **Responsibilities**

Computacenter will be responsible for providing component PCs and peripherals.

Fujitsu will be responsible for providing a gold build version of the branch PC and associated installation packages, along with supporting Release Notes and regression instructions.

Computacenter test support resources will be responsible for installing Computacenter PC's, peripherals and Fujitsu software packages, using manual mechanisms if appropriate.

Computacenter test resources will be responsible for completing Computacenter Branch System testing, and the production of Master Test Plans and Reports. Note: no operation of the HNG-A application is expected.

Atos will provide assurance of any Test Plans and Reports issued.

- **Entry Criteria**

- PC / Peripheral documentation available.
- Computacenter provided PCs and Peripherals available
- HNG-A software deliverables available
- Test resources available

- **Exit Criteria**

- Branch System Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- Branch System Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the Branch System Test Stage
- Any other defects outstanding at the end of the Branch System Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages and hardware components available for System Integration Testing, with supporting Release Notes / regression instructions
- Atos concurrence to proceed to HNG-A/Computacenter System Integration Testing.

4.2.3 Network System Test

- **Purpose**

It is the Verizon's responsibility to demonstrate:

- Correct build and configuration of in-branch network devices (routers, switches, etc.)
- Provision of DNS / DHCP services to support all branch devices
- Provision of a common time source
- Successful transit through Verizon's domain
- Validation and routing within the Verizon data centre.
- Remote management of the in branch routers and switches.
- Intrusion detection services.

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Verizon are expected to produce a Network System Test Plan and Report documenting the network testing performed.

Atos will provide assurance of any Test Plans and Reports issued.

- Inputs

- Design documentation

- Process

Verizon test resources will undertake testing to confirm that their in-branch equipment is configured correctly and has the capability to support the Computacenter equipment and HNG-A application. Verizon will also demonstrate network routing and connectivity between branch and Verizon data centre.

Tests will be documented in a Network System Test Plan.

Any defects discovered will be raised in Verizon-hosted defect tools.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in a Network System Test Report.

Atos will provide assurance of any Test Plans and Reports issued

- Outputs

- Proven and supported in-branch network devices
- Proven connectivity / operation between in-branch network devices and Verizon data centre
- Underlying network management services e.g. alerting, eventing, auditing, archiving,
- Network Test Plans and Reports

- Test Environment

The Atos Test environment in Winnersh will be used to support Network system testing. To enable this, Verizon will install ADSL lines into Winnersh and make provision for a VSAT satellite dish installation. Verizon will also have to demonstrate the ability to novate existing lines into Winnersh currently provided by Fujitsu. This environment will allow connectivity between the in-branch network devices and the Verizon data centre required for authentication and onward traffic routing. In preparation for later System Integration Testing, connectivity between Verizon, Computacenter and Fujitsu test data centres will be required. It is accepted that the network connectivity between these test data centres may not be representative of the live solution.

- Test Data

Specific test data requirements will be documented within the Network System Test Plan.

- Responsibilities

Verizon will be responsible for providing:

- In-branch network devices
- ADSL Line installation into Winnersh
- 2G/3G/4G/GPRS mobile data connectivity at Winnersh
- Internet based connectivity at Winnersh
- VSAT connectivity at Winnersh
- Novation of existing lines into Winnersh currently provided by Fujitsu.

Fujitsu will be responsible for providing Fujitsu to Verizon test datacentre connectivity.

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Verizon test resources will be responsible for completing Network System testing, and the production of Network Test Plans and Reports.

Atos will provide assurance of any Test Plans and Reports issued.

- **Entry Criteria**

- In-branch network devices documentation available.
- Verizon provided in-branch network devices available
- Test resources available

- **Exit Criteria**

- Network System Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- Network System Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the Network System Test Stage
- Any other defects outstanding at the end of the Network System Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages and hardware components available for System Integration Testing, with supporting Release Notes / regression instructions
- Atos concurrence to proceed to HNG-A/Computacenter/Network System Integration Testing.

4.3 HNG-A/Computacenter/Network Systems integration Testing

4.3.1 Purpose

Atos to coordinate testing with Fujitsu, Computacenter and Verizon to demonstrate:

- Physical swap out procedures:
    a. Deployment of Computacenter PC pre-loaded with the HNG-A application
    b. Connectivity of Computacenter PC with new and legacy branch peripherals
    c. Removal of Fujitsu Sarian Router and POMS switch and installation of the Cisco Branch Router and optional Switches by a Computacenter engineer following Verizon documented guidance
    d. Installation of Ingenico IP350 PIN Pad following Fujitsu installation instructions and HNG-A engineer configuration.
    e. Installation of new branch A4 printer
- In branch migration processes from HNG-X to HNG-A – Branch personalisation, configuration (the branch and node ID will be retained of the replacement HNG-A PC) for a one position and multi position branch and ensuring the correct operation of replication software and USB stick updating
- In branch router/switch configuration.
- Initial download of reference data from the Horizon data centre to allow the HNG-A application to achieve a 'Trade' state.
- EPOSS regression testing – confirmation of successful Branch operation on new HNG-A running on Computacenter/Network equipment
- Deployment of updates / patches – using automated installation if possible.
- Systems management services (i.e. gathering of logs and transmission to the Horizon data centre)
- Estate Management data transfer from EMDB to Computacenter.

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- Regression testing of continued HNG-X operation.
- Continued integration of other in-branch devices, such as NCR Self Serve Kiosks

4.3.2 Inputs

- Signed-off candidate HNG-A MSI packages
- HNG-A Automation framework – for running automated regression comparison between HNG-A and HNG-X
- Signed-off Computacenter PC platform
- Signed-off Network routers and switches, including configuration parameters
- Initial Branch Migration Design/Process documentation
- Update/patch mechanism defined, including release notes.

4.3.3 Process

Atos test resources will undertake largely manual testing of HNG-A software packages installed on Computacenter provided equipment and Verizon network using as-live processes, e.g. onsite engineer installation or automated software inventory management\deployment.

Tests will be documented in a System Integration Test Plan.

Any defects discovered will be raised in an Atos overarching defect tool (HP Application Lifecycle Management). Defects relating to Computacenter equipment will be transferred to Computacenter test representatives for local logging and resolution. Defects relating to HNG-A operation will be transferred to Fujitsu for logging and resolution. Defects relating to network will be transferred to Verizon. Defect SLA's are detailed in Appendix A.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in a System Integration Test Report.

4.3.4 Outputs

- Agreed Migration Process
- Signed-off HNG-A / Computacenter PC / Verizon network build, suitable for external accreditation
- System Integration Test Plan and Report

4.3.5 Test Environment

The existing SV&I environment (as used for HNG-A System testing) will be used to connect to the Computacenter system test environment via Verizon routers connecting to the Verizon data centre. This connection will be used to:

- Deliver HNG-A packages from Fujitsu development to the Computacenter file repository
- Allow Computacenter to deploy the HNG-A packages to the test counters
- User Validation via Active Directory (this is within Active Directory, although Horizon users will continue to be maintained within the Horizon application.)
- System Management data transfer from Computacenter to Horizon
- Estate Management data transfer from EMDB to Computacenter.

In terms of counter configurations, 7 test branches, configured as HNG_X are installed in Atos's location at Winnersh. As part of Branch Counter Refresh SIT a selection of these test branches (5 out of 7) will be migrated to Computacenter and Verizon equipment following live engineer processes. The remaining 2 branches will be retained in HNG-X configuration to allow regression testing and ongoing HNG-X update testing. Additionally, the 8th Fujitsu line into Winnersh will be

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activated and novated to Verizon, to create a further branch configuration. There will also be a 9th branch configured to make use of a new ADSL line installed by Verizon.

The configurations to be used for SIT testing in Winnersh are as follows:

Counter FAD	Description	Migration Plan	Current Router	Current Switch	Verizon Router	Verizon Switch
197206	Two Counter Branch – to migrate to HNG-A and operate alongside a HNG-X counter for an extended period	Migrate to HNG-A	Sarian	None	4 Port	None
900021	Single Counter - Counter Training Office – to migrate to HNG-A and demonstrate training functions	Migrate to HNG-A	Sarian	None	4 Port	None
282349	Two Counter Branch – England. NOTE: Verizon Router to be retained and installed only once last live counter has been migrated to HNG-A / Verizon	Retain on HNG-X	Sarian	None	4 Port	None
195824	Single Counter Branch – Scotland NOTE: Verizon Router to be retained and installed only once last live counter has been migrated to HNG-A / Verizon	Retain on HNG-X	Sarian	None	4 Port	None
466614	Single Counter Branch – Wales. To migrate to HNG-A and demonstrate bilingual receipting. Also has a POMS switch and 2 SSK terminals attached.	Migrate to HNG-A	Sarian	48 Port Switch	4 Port	48 Port Switch
230704	Two Counter Branch – Northern Ireland. To migrate to HNG-A and demonstrate regional variations. Additional of Mobile Tablet and Docking station after single counter migration.	Migrate to HNG-A	Sarian	None	4 Port	None
999998	Global Office (used by Helpdesk to reset / manage branch users) – to migrate to HNG-A and demonstrate Global Office functions	Migrate to HNG-A	Sarian	None	4 Port	None
TBC	5 Counter Branch – New Build, straight to HNG-A from CC Gold Build. Mix of 2 fixed positions and 2 Mobile Tablets with docking station	N/A	None	None	8 Port	None
TBC	Single Counter Branch –	N/A	None	None	4 Port	None

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	New Build, straight to HNG-A from CC Gold Build. Single Mobile Tablet with docking station					

4.3.6 Test Data

Specific test data requirements will be documented within the System Integration Test Plan.

4.3.7 Responsibilities

Computacenter will be responsible for providing component PCs and peripherals, along with Active Directory and SCCM functionality of the Computacenter data centre.

Verizon will be responsible for providing in branch network devices, connectivity to the Verizon data centre and outward to Fujitsu and Computacenter functionality of the Verizon Network Operations Centre.

Fujitsu will be responsible for providing candidate versions of the HNG-A installation packages, along with supporting Release Notes and regression instructions and functionality of the Fujitsu data centre.

Computacenter live support resources will be responsible for installing Computacenter PC's and peripherals, Verizon network devices and Fujitsu software packages, using automated mechanisms or live processes wherever possible.

Post Office will be responsible for signing off the live installation process and providing in-branch migration support staff (if applicable).

Atos test resources will be responsible for completing System Integration Testing, and will produce the associated Test Plan and Report.

4.3.8 Entry Criteria

- HNG-A Design documentation available.
- Computacenter provided PCs and Peripherals available – exit criteria from CC System testing met.
- Verizon provided in-branch network devices available – exit criteria from Verizon System testing met.
- HNG-A software deliverables available - exit criteria from Fujitsu System testing met.
- Test resources available
- Test Readiness Review held and criteria met.

4.3.9 Exit Criteria

- System Integration Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- System Integration Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the System Integration Test Stage
- Any other defects outstanding at the end of the System Integration Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages and hardware components available for external accreditation

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- All party (Post Office, Atos, Fujitsu, Computacenter and Verizon) concurrence to proceed to accreditation and live deployment activities.

4.4 HNG-A/Computacenter E2E Testing

4.4.1 Purpose

In order to demonstrate continued system integrity, Atos will undertake testing with third parties that have a direct interface currently (but are not subject to accreditation), e.g.,

- Post office back end systems (POLSAP, Credence, MDM, HRSAP)
- Large clients (POCA, Santander, First Rate, NS&I)

As the interfaces to these clients and systems are not changing as a result of Computacenter / HNG-A / Verizon implementation, no issues are expected. The purpose of this stage is to provide the Post Office with assurance that the introduction of the new counter hardware and software will not adversely impact day to day operation.

4.4.2 Inputs

- Proven and supported counter PC, operational with new/existing peripherals
- Proven connectivity / operation between counter PC running HNG-A and existing Horizon data centre
- Proven connectivity between the Horizon data centre and the Post Office / Client systems

4.4.3 Process

A briefing on the changes required in support of Branch Counter Refresh has been circulated to key stakeholders from the Post Office and its larger clients. This briefing outlined the changes and sough confirmation from the stakeholders as to the level of assurance required, in order to obtain their sign-off of the Branch Counter Refresh implementation plan.

As a result the following organisations need limited involvement in the E2E testing in the following manner:

- Bank Of Ireland: confidence testing with transactions from HNG-X and HNG-A; they will be using their existing test system connected to SV&I for this

At time of writing the following organisations are yet to confirm their E2E test requirements;

- Royal Mail
- Parcelforce
- DVLA
- Post Office Telecoms

Tests will be documented in an E2E System Test Plan.

Any defects discovered will be raised in an Atos overarching defect tool (HP Application Lifecycle Management). Defects relating to Computacenter equipment will be transferred to Computacenter test representatives for local logging and resolution. Defects relating to HNG-A operation will be transferred to Fujitsu for logging and resolution. Defects relating to network will be transferred to Verizon.

The outcome of testing, along with any defects to be transferred to later test stages, will be documented in an E2E System Test Report.

4.4.4 Outputs

- Post Office back end system sign off

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- Third Party sign off
- E2E System Test Plan and Report

4.4.5 Test Environment

The existing SV&I environment (as used for HNG-A System Integration Testing) will be used to demonstrate E2E system integrity.

Where an existing interface to a client system already exists (e.g. from SV&I to the POCA test environment) this will be utilised as part of the E2E test.

Connectivity to Post Office systems such as POLSAP or Credence is not in place, therefore a disjointed E2E test will be conducted. I.e. transaction files will be generated by Horizon, but instead of an automated FTP file transfer, the files will be emailed to the back end test team, for manual loading on to the appropriate file-share and subsequent system processing.

4.4.6 Test Data

Specific test data requirements will be documented within the E2E System Test Plan.

4.4.7 Responsibilities

Computacenter will be responsible for providing support for component PCs and peripherals.

Verizon will be responsible for providing support for in-branch network devices and network related issues.

Fujitsu will be responsible for providing support for the HNG-A counter and supporting data centre infrastructure.

The Post Office will be responsible for maintaining the relationship with external third parties, and providing input from empowered users of internal interfacing systems.

Atos test resources will be responsible for completing System E2E Testing, and will produce the associated Test Plan and Report.

4.4.8 Entry Criteria

- Computacenter provided PCs and Peripherals available
- Verizon provided in-branch network devices and onward connectivity available.
- HNG-A software deliverables available
- Connectivity to client systems available (where appropriate)
- Test resources available

4.4.9 Exit Criteria

- E2E System Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- E2E System Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the System Integration Test Stage
- Any other defects outstanding at the end of the E2E System Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages and hardware components available for external accreditation
- Client / Post Office Backend System concurrence to proceed to live deployment activities.

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4.5 HNG-A/Computacenter Accreditation

4.5.1 Purpose

In order to confirm compliance to regulatory standards, Atos will undertake testing with third parties that are subject to accreditation, e.g.:

- Vocalink – for ATM services
- Globalpay – for Merchant Acquirer services
- Epay – for Etopup services
- Moneygram – for money transfer services
- PCI accreditation – via external audit

The desired outcome is to achieve accreditation for the HNG-A/Computacenter PC /Network solution.

4.5.2 Inputs

- Proven and supported counter PC, operational with new/existing peripherals
- Proven connectivity / operation between counter PC running HNG-A and existing Horizon data centre
- Proven connectivity between the Horizon data centre and the accrediting organisations.

4.5.3 Process

Similar to the E2E test assessment detailed in the previous section, a briefing has been sent to all of the accrediting organisations to gauge the requirement for reaccreditation. ~~Some~~ organisations may determine that existing accreditation covers the revised branch solution, in which case no testing is required, and continued accreditation will be confirmed in writing. However if an accrediting organisation deems that the changes introduced by Branch Counter Refresh invalidate any previous accreditation status, then a reaccreditation test exercise will be required.

At the time of writing, the following organisations have confirmed that accreditation is not required for the HNG-A/Computacenter hardware solution;

- Vocalink
- MoneyGram
- First Rate

The following accrediting organisations have yet to confirm their position on the HNG-A/Computacenter hardware solution;

- Post Office Card Account (provided by HP/JPM)
- Santander online banking
- GlobalPay merchant services
- Epay mobile top ups

Accreditation usually takes the form of a set of defined tests with associated expected results, data and physical media (e.g. Chip & PIN cards). Retailers are expected to undertake all tests appropriate to their solution, and submit evidence to the accrediting authority. This evidence may take the form of detailed system logs, or extracts from transaction reconciliation process.

PCI-compliance is assessed via system audit rather than transactional accreditation testing. Therefore the SV&I environment will be made available to support any PCI audit requests. This may include demonstration of PCI-compliant data storage and transmission. Specific PCI requirements are to be discussed and agreed with Post Office stakeholders.

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4.5.4 Outputs

- Third party accreditation confirmed or exemptions provided where appropriate.

4.5.5 Test Environment

The existing SV&I environment (as used for HNG-X/A System Integration Testing) will be used to demonstrate accreditation of the HNG-A / Computacenter counter solution.

Existing interfaces to all accrediting organisations already exist from the SV&I environment.

4.5.6 Test Data

Each accrediting organisation will specify the test data appropriate to each accreditation test.

4.5.7 Responsibilities

Computacenter will be responsible for providing support for component PCs and peripherals.

Verizon will be responsible for providing support for in-branch network devices and network related issues.

Fujitsu will be responsible for providing support for the HNG-A counter and supporting data centre infrastructure.

Post Office will be responsible for facilitating engagement with the accrediting organisations and defining PCI audit requirements.

Atos test resources will be responsible for completing Accreditation Testing.

The accrediting organization will be responsible for:

- Providing the accreditation test script
- Providing test data
- Providing physical media
- Validating test results
- Producing Test evaluation / sign-off reports.

4.5.8 Entry Criteria

- Computacenter provided PCs and Peripherals available
- Verizon provided in-branch network devices and onward connectivity available.
- HNG-A software deliverables available
- Connectivity to client systems available (where appropriate)
- Test resources available

4.5.9 Exit Criteria

- Third party accreditation confirmed or exemptions provided where appropriate.

4.6 HNG-A/Computacenter/Verizon User Acceptance Testing

4.6.1 Purpose

Atos to coordinate UAT with PO Branch staff completing business scenarios to cover:

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- Usability – of the HNG-A application running on the Computacenter PC running at a different resolution.
- Ergonomics – how branch staff will interact with the new branch equipment and peripherals
- DDA \ Equality Act conformance
- Hardware fault/ replacement procedures – ensuring the correct processes are in place to cover all failure scenarios
- Service Desk testing – to validate that the Service Desk can handle calls relating to branch migration correctly.
- Regression testing – A broad but shallow regression pack to ensure no degradation of service following migration to HNG-A

4.6.2 Inputs

- HNG-X/A Style Guide
- DDA/Equality Specifications
- User Operations Manuals
- Post Office Field Support manuals
- Migration check lists/cook books

4.6.3 Process

Assurance of system usability needs to come from frontline users. As the PIN Pad is not changing as a result of the Branch Counter Refresh project, the transition will be seamless to the branch customer. However the clerks in Branch will see a difference and could potentially be impacted. To measure this impact, the Post Office will be asked to nominate users to attend a demonstration of the new equipment within the Atos test environment, which will be set up to replicate branch conditions as closely as possible. Users are likely to be drawn from the following impacted user groups:

- Post Office 'Crown' network staff
- The Federation of Subpostmasters
- Retail partners (e.g. WH Smiths)
- Counter Training staff
- Post Office Network & Communications teams.

A session will be held to demonstrate the new system, and users will be interviewed to gain feedback on their views and opinions. The results from the interviews will be consolidated into a report which will provide recommendations should any corrective action be identified. It should be noted that corrective actions may need to be deferred to subsequent releases due to sequence of UAT within the development cycle.

It is anticipated that Ergonomic\Equality experts will attend a similar awareness session and will provide their own reports summarizing their findings – The User Acceptance Test stage will be used to validate the implementation against these reports.

Any supporting operations guides or branch training material will be checked against the system to validate the content and ensure that a robust support process is in place.

4.6.4 Outputs

- Usability Report
- Ergonomic Report
- Equality Act Conformance Report

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- Updated Operations Guides / Training Manuals

4.6.5 Test Environment

The existing SV&I environment (as used for HNG-A System Integration Testing) will be used to demonstrate User Acceptance of the HNG-A / Computacenter counter solution.

4.6.6 Test Data

Each strand of User testing may require specific test data, therefore it is anticipated that each will specify the test data required.

4.6.7 Responsibilities

Atos test resources will be responsible for coordinating each user test, and will produce a UAT Test Plan and Report if deemed necessary.

The Post Office will be responsible for providing representative branch users, and confirming acceptability of ergonomic/equality expertise. The Post Office are also responsible for signing off the UAT phase.

Atos will ensure documentary evidence for each User Acceptance strand is available for review.

4.6.8 Entry Criteria

- Computacenter provided PCs and Peripherals available
- Verizon provided in-branch network devices and onward connectivity available.
- HNG-A software deliverables available
- Test resources available

4.6.9 Exit Criteria

- Usability Test Report produced and content/recommendations agreed by all parties.

4.7 HNG-A Preproduction Testing

4.7.1 Purpose

Fujitsu current provide a Live System Test environment which is used to rehearse and demonstrate the deployment activities required for major, minor and patch releases. This environment currently focuses on both counter application updates and data centre component updates.

Going forward, LST will retain its role to demonstrate releases to data centre components as now. However, deployment of counter application updates will change as a result of the introduction of Computacenter as hardware provider:

a) Whilst a HNG-X estate remains in operation, Fujitsu staff within LST will demonstrate continued HNG-X gold build deployment. They will also demonstrate hot-fix/patch deployment against the HNG-X variant.

b) As part of the live deployment of HNG-A, Fujitsu staff will work with Computacenter to deploy the HNG-A gold build onto live-like (Type D) counter builds within the LST environment. Upon successful completion of this test, Fujitsu will issue a Release Note to

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confirm that HNG-A R13.05 is fit for live deployment. This release will then be transferred from Fujitsu to Computacenter as a series of MSI's, which will then be included in Computacenter's production process.

c) Patch updates to HNG-A are described in section 4.10

Regression/rollback of installed packages will be proven at this stage.

Demonstration of Fujitsu support teams ability to connect to each counter via a GUI or Command Line interface will be undertaken at this stage. Computacenter support team access to SCCM logs will also be covered, as will Verizon support of the Branch network.

4.7.2 Inputs

- HNG-A Design Documentation
- Signed Off System Test and System Integration Test reports
- Updated Support Guides
- Suitable installation guides

4.7.3 Process

Fujitsu will provide software packages to Computacenter who will be responsible for delivery to the Computacenter provided counter and installed using Computacenters automated SCCM processes. This will be demonstrated on the existing LST environment with new connections to the Computacenter data centre for delivery of the packages, and Active Directory user authentication

4.7.4 Outputs

- Data Centre component Release Notes
- HNG-ARelease Notes
- Fujitsu input into HNG-A/ Computacenter Release Notes

4.7.5 Test Environment

The Horizon Live System Test environment located in Bracknell will be used as a basis for preproduction testing. It will need to be extended to allow connectivity to the Computacenter data centre in order for Fujitsu to deliver software packages to Computacenter, and return routes from the Computacenter down to the test counters.

It is assumed that the 'as-live' hardened PC build will be exercised during this stage.

4.7.6 Test Data

The LST team will produce any required test data.

4.7.7 Responsibilities

Computacenter will be responsible for providing component PCs and peripherals.

Fujitsu development will be responsible for providing a gold build version of the HNG-A counter installation packages, along with supporting Release Notes and regression instructions.

Fujitsu test support resources will be responsible for installing Computacenter PC's, peripherals and Fujitsu software packages, using Computacenter automated deployment processes and suitable installation guides provided.

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Fujitsu test resources will be responsible for completing HNG-A Preproduction testing, producing test plans and test sign offs as appropriate..

Atos will provide assurance of any Test Plans, Reports and Release Sign-off issued.

4.7.8 Entry Criteria

- Successful completion of previous test stages
- Computacenter provided PCs and Peripherals available
- HNG-A software deliverables available
- Test resources available
- Test Readiness Review held and criteria met.

4.7.9 Exit Criteria

- Preproduction Test coverage meets stated threshold (assumed 90% of planned tests with acceptable rationale provided for any tests not run)
- Preproduction Test Pass Rate meets stated threshold (assumed 90% of attempted tests pass, with acceptable rationale provided for any tests not passed)
- No Critical or Major severity defects are outstanding at the end of the Preproduction Test Stage
- Any other defects outstanding at the end of the Preproduction Test Stage have acceptable mitigation or an agreed resolution plan in place.
- Proven software packages and hardware components available for live deployment
- Tripartite (Atos, Fujitsu and Computacenter) concurrence to proceed to live deployment activities.

4.8 HNG-A/Computacenter/Verizon Pilot / Live Proving

Unsurprisingly, live proving occurs in the live environment, and is therefore out of scope of this Branch Counter Refresh test strategy.

For completion, live proving is the migration of a small number of branches to demonstrate capability in the live environment. Typically, the Model Office branch in the Post Office HQ in central London is usually used as the first live office, as it allows for changes to be witnessed in a controlled environment (i.e. not accessible to the general public), however there are plans to introduce Model Office capability within the Atos test site in Winnersh. Other Model Offices currently existing in the NBSC helpdesk in Dearne and within the Fujitsu Development site in Bracknell.

The purpose of this stage is not to repeat previous test cycles, but instead to focus on elements that cannot be adequately proven within the test environment, such as:

- Live Active Directory changes
- Live network firewalls / routes
- Live file permissions
- Live security certificates

The Post Office have retained responsibility for Model Office and Live Proving activities, therefore Atos can only perform an advisory role, providing awareness of system changes and highlighting any possible mitigation of issues found based on knowledge discovered during testing.

It is recommended that any live proving exercise is closely monitored by all impacted parties. Any increases to the number of pilot branches should only occur once the live pilot has been operational without issue for a substantial period (normally a number of weeks).

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4.9 HNG-A/Computacenter/Verizon Post Go-Live Support

Once the Branch Counter Refresh Project commits to a wider rollout, issues may be discovered that had not previously been encountered during testing. Issues in the live environment will be monitored and resolution coordinated by the Atos service desk, so this stage is outside of the scope of this Test Strategy. However, it makes sense to draw upon the knowledge and experience gained through testing to help investigate and recreate live issues within the test environment. This could lead to the testing and deployment of urgent fixes via a patch release, which is described in the next section.

4.10 HNG-A/Computacenter/Verizon Hot-fix Security Patch Testing

The initial version of the Branch Counter Refresh test strategy covers the stages of testing up to the first release of the HNG-A application and the rollout of the Computacenter provided counter PC and associated peripherals. However it is recognised that urgent fixes may be required from any point once the HNG-A rollout has commenced. Examples of these 'fixes' could include:

- Updates to HNG-A and supporting counter packages – to resolve errors identified in live operation
- Updates to Antivirus definitions on Computacenter PC – to respond to new virus threats
- Windows Updates on Computacenter PC – to close security vulnerabilities.
- Peripheral firmware / device driver update – to improve performance or resolve issues.

To facilitate testing of urgent fixes, it is suggested that the following high level approach is adopted:

- Fujitsu Component & System Test Stages will not be required for HNG-A patch releases.
- Computacenter System Testing will be required to verify other changes in isolation, and provide documentary evidence to Atos in support
- Atos will maintain the SIT configuration detailed in section 4.3.5, and will use live deployment processes to maintain at least one test configuration in a 'live-plus-one' position
- E2E, Accreditation, and User Acceptance Testing, will not be required for patch testing.
- Fujitsu Pre-production Testing will only be required to prove updates to HNG-A and supporting packages. These will be delivered using as-live delivery mechanisms. Fujitsu pre-production will also cover urgent fix testing of changes made to Fujitsu datacentre components. Release Notes for each signed-off change will be provided to Atos in evidence of testing.

It is assumed that an ongoing release strategy will be defined to elaborate on this process.

4.11 HNG-A/Computacenter/Verizon Minor Release Testing

Based on HNG-X experience, a frequent churn of minor releases can be expected, covering:

- Data Centre system updates
- Small / urgent HNG-A counter releases
- Potential for change to legacy HNG-X counter releases – as HNG-X will share the same common R13.05 baseline, changes will be applied to both HNG-X and HNG-A variants

These minor releases are out of scope of this test strategy; however the following approach could be adopted:

- Fujitsu Component & System Test Stages will be required to prove updates to HNG-A and its supporting packages. It will also be required to prove and data centre system updates.

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These will be delivered locally from Fujitsu's Integration teams and will be installed manually by Fujitsu test support

- There may be minor release updates to the Computacenter platform, to maintain it in line with vendor support levels therefore Computacenter System Testing will be required.
- Atos will maintain the SIT configuration detailed in section 4.3.5, and will use live deployment processes to maintain at least one test configuration in a position to test a minor release to HNG-A and its supporting packages or the deployed Computacenter platform.
- The requirement for E2E, Accreditation, and User Acceptance Testing is dependent on the content of the minor release, however it is assumed that any such testing will not be required for minor release testing.
- Fujitsu Pre-production Testing will only be required to prove updates to HNG-A and supporting packages. These will be delivered using as-live delivery mechanisms. Fujitsu pre-production will also test changes made to Fujitsu datacentre components by way of a minor release.

It is assumed that an ongoing release strategy will be defined to elaborate on this process.

4.12 HNG-A/Computacenter/Verizon Major Release Testing

Based on HNG-X experience, at least one major release per year can be expected, covering:

- Data Centre system updates
- Large-scale HNG-A counter releases – delivery new components or new areas of functionality
- Deployment of new applications to the Computacenter platform

As the HNG-X an HNG-A code base is shared if there were a major release it would be made to the HNG counter application and update legacy HNG-X branches and the HNG-A branches during the counter rollout period; when rollout is complete it will only affect HNG-A.

Major releases are out of scope of this test strategy; however the following approach could be adopted:

- Fujitsu Component & System Test Stages will be required to prove updates to HNG-A and its supporting packages. It will also be required to prove and data centre system updates. These will be delivered locally from Fujitsu's Integration teams and will be installed manually by Fujitsu test support. Fujitsu testing of new applications on the Computacenter PC is not required
- Any new core applications to be installed on the Computacenter platform will be subjected to Computacenter System Testing to confirm the correct packaging and installation, with assurance provided by Atos. Deployment of tested applications onto specific Branch machines is a core deployment function and will not be tested.
- Atos will maintain the SIT configuration detailed in section 4.3.5, and will use live deployment processes to maintain multiples test configurations in a position to test a major release to HNG-A or the deployment of a new application on the counter.
- The requirement for E2E, Accreditation, and User Acceptance Testing is likely as a result of a major release. These will be subject to detailed planning as required.
- Fujitsu Pre-production Testing will only be required to prove major releases of HNG-A and supporting packages. These will be delivered using as-live delivery mechanisms. Fujitsu pre-production will also test changes made to Fujitsu datacentre components by way of a major release. Fujitsu Pre-production testing of new applications on the Computacenter PC is not required, however the Fujitsu preproduction counter environment will be updated at regular intervals to ensure the test environment adequately represents the live baseline of applications.

It is assumed that an ongoing release strategy will be defined to elaborate on this process.

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5 Non-Functional Testing

5.1 Performance Testing

In terms of the Horizon environment and HNG-A application, the Fujitsu Design Proposal [2] assumes that a combination of new counter hardware and an updated JRE will result in significant performance improvements but there are no requirements or metrics around this. Therefore no performance testing of the HNG-A counter application will be required. However, a comparison benchmark exercise will be undertaken during Fujitsu System Test using a defined set of regression tests and the Horizon automation framework to validate this assumption.

In terms of Computacenter data centre performance, this will be covered within the Computacenter Test strategy and evidence will be provided to Atos for assurance.

5.2 Volume Testing

The Design Proposal [2] states there will no changes in the message interactions between the counter application and the data centre in respect of the introduction of the HNG-A counter application. Therefore existing database capabilities already proven for HNG-X should still be appropriate. As a result, volume testing of the Branch database or any other database within the data centre is not required.

However, the CHS help page service is new and should undergo volume testing to ensure it can handle peak load traffic as defined in an updated version of the Fujitsu performance specification [PA/PER/033]. This test should be completed within the Fujitsu System Test Stage detailed in section 4.2.1.

The new Bluecoat proxies and the personalisation will need to be monitored to confirm they will scale, and metrics from the Self Service Kiosk which also uses these technologies will assist this.

In terms of Computacenter data centre volume capability, this will be covered within the Computacenter Test strategy and evidence will be provided to Atos for assurance.

5.3 Application Concurrency

At the introduction of the Computacenter PC, HNG-A will be the only application running on the PC. Therefore no compatibility testing will be undertaken to prove that the operation of the HNG-A counter application is not compromised when run alongside other applications. Should a new application be released, application concurrency will be proven during testing of the new application as per section 4.12. I.e. concurrency will be proven at the introduction of each application.

In terms of general Computacenter PC compatibility, this will be covered within the Computacenter Test strategy and evidence will be provided to Atos for assurance.

5.4 Disaster Recovery Testing & Business Continuity

The HNG-X solution is subjected to an annual DR / BC test, whereby the production datacentre is failed over to the standby site and regressed back after a period of Business Continuity operation. The introduction of the HNG-A counter application running on the Computacenter PC is assumed to not impact this failover process, and that no specific failover testing will be required prior to Branch Counter Refresh go live – instead the next planned DR/BC event will reflect a mixed estate of HNG-X and HNG-A counters.

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In terms of Computacenter data centre DR/BC capabilities, this will be covered within the Computacenter Test strategy and evidence will be provided to Atos for assurance.

5.5 Security / Penetration Testing

From a Fujitsu perspective the Horizon data centre is largely unchanged as a result of the introduction of HNG-A. A new CHS application will be added to the existing Horizon Business Service, which is already protected by Bluecoat reverse proxy. It is assumed that this protection is sufficient and further penetration tests or security audit are not required.

In terms of general Computacenter PC security, this will be covered within the Computacenter Test strategy and evidence will be provided to Atos for assurance. If the Computacenter PC is provided in a hardened state; override mechanisms will be provided to gain access to the operating system for test analysis and defect investigation purposes and installation of tools as required.

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6 Test Governance

6.1 Roles and Responsibilities

The key testing roles and responsibilities within the project are as follows:

Role	Responsibility
POL Project Sponsor	Clarification of requirements Assessment of suitability of proposed defect resolutions
POL Project Manager	Sign Off Test Strategy / Test Plan Sign off test exit report Provide evidence into the Gating forum for authorisation of progression from test to live
Atos Project Manager	Overall responsibility for PO project coordination Overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling, and closure of the project Agree test resource requirements Sign Off Test Strategy / Test Plan Escalation point for testing issues Sign off Test Exit Reports
Atos Principal Test Manager	Review and sign off Atos Test Strategy, Test Plans and Test Exit Reports Authorise progression from test to go live
Atos Test Manager	Prepare Test Strategy Prepare SIT Test Plan Detailed SIT and support UAT planning Creation and management of SIT and support UAT test deliverables Approve SIT and support UAT preparation Day to day management of SIT Oversee SIT and support UAT defect management Ensuring defect fixes are resolved in required timescales Produce weekly test reports during project lifecycle Provide Atos test sign off for Component and System Test stages
Computacenter / Verizon / Fujitsu Test Managers	Manage Component / System Testing Produce Component / System Test Plans / Reports as required Review and sign off overall System Integration Test Plan Coordinate Support for SIT / E2E / Accreditation / UAT Input to defect review forums Co-ordinate fix releases during SIT / E2E / Accreditation / UAT
UAT / SIT Test Team (Atos)	Prepare SIT test scenarios/scripts Execute SIT test scenarios/scripts Prepare UAT scripts Attend defect review meetings
POL Business Analyst	Provide business expertise into the testing stage Participate in User Acceptance Testing activities
Atos Solution Architect	Review Test Strategy and Test Plans Review Test Completion report

6.2 Reporting / Metrics and Communications

6.2.1 Reporting

During the Branch Counter Refresh project lifecycle, the Atos Test Manager will produce a weekly test progress report, contents as defined below. During critical periods (such as System

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integration Test execution), these weekly reports may be augmented by daily status updates as defined below.

- **Daily Reports**

The Atos Test Manager will produce these reports and share with internal stakeholders as required. This report will include the following:

- Results Summary
- Defects Summary
- Detailed planned v's actual test execution statistics
- Test status statistics – passed, failed, blocked, no run
- Details of any deviations from plan, cause of deviation and planned activity to mitigate deviation
- Any highlights, risks or other issues raised

- **Weekly Reports**

The Atos Test Manager will produce these reports and share with internal stakeholders as required. This report will include the following:

- RAG status – including point reached in virtual timeline (early / on / time / late)
- Results Summary
- Risks and Issues Summary and assessment
- Test coverage analysis
- % coverage achieved to date
- % tests executed
- Totals for the stage
- Test status statistics – passed, failed, blocked, no run
- Defect trends
- Total number of defects found
- Total number of defects outstanding
- List Critical / High defects outstanding
- Details of any deviations from plan, cause of deviation and planned activity to mitigate deviation

6.2.2 Communications

As well as the production of the reports, to support the collaborative working approach between Atos, POL regular contact between the teams will be vital. This will be through a series of periodic meetings (potentially bi-weekly in prep and daily in execution, if appropriate) to monitor progress against plan. The following regular meetings will be held as a minimum, alongside ad-hoc sessions as required for specific issues and escalations:

- Twice weekly defect meetings will be held during SIT to:
    - Triage new defects – ensure that they are valid defects and determine the resolution team
    - Review status of open defects – focusing on the Critical defects
    - Assign priorities for resolution of defects with the same Severity / Priority
    - Provide estimated fix times for outstanding incidents
    - Confirm when incidents will be re-tested by the testing team

- Weekly progress meetings will be held to:
    - Track progress against plan

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6.3 Risks, Issues and Assumptions

Testing related Risks, Issues, Assumptions and Dependencies will be recorded in the Project risks and issues log that will be maintained by the Project Manager. Anything that will have a significant impact upon testing and the overall project delivery will be escalated to the Project Manager.

The following sections identify risks, issues and assumptions identified during the creation of this test strategy.

6.3.1 Risks

Risk	Description	Mitigation
R1	FAD 466614 is attached to 2 NCR Self Serve Kiosks. Once it is migrated to HNG-A, it will not be possible to provide ongoing assurance of kiosk operation against HNG-X	HNG-X and HNG-A are functionally identical in terms of Kiosk integration so low risk for the period of HNG-X legacy presence only.
R2	There are significant interdependencies between Fujitsu, Computacenter and Verizon during branch migration. Each component system has a High Level Design, however there is no overarching, agreed migration design, which could lead omissions that prevent migration from completing. In this scenario testing is likely to be impacted whilst design solutions are identified in flight.	Establish a cross-party working group to document agreed migration process. Baseline design prior to commencing System Integration Testing.
R3	Connectivity between Computacenter, Verizon, NCR, 3M Cogent and Fujitsu's data centres are key to enable a representative E2E test.	Work underway to install MPLS links between data centres.

6.3.2 Issues

None noted at time of writing.

6.3.3 Assumptions

Assumption	Description
A1	Computacenter will provide a mechanism to allow test PC's to be 'broken out' of kiosk mode to allow defect investigation and evidence retrieval.
A2	It is assumed that the Computacenter provided PCs for testing purposes must be left on 24-7.
A3	It is assumed that the introduction of HNG-A does not warrant an exceptional DR/BC test, over and above the annual planned test.
A4	It is assumed that the CHS application running on the HBS will be protected by existing mechanisms and a further penetration test or security audit is not required.
A5	It is assumed that a Release Strategy will identify the ongoing release mechanisms and controls for changes made after the first Branch Counter Refresh release.

6.4 Defect Incident Management

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A defect shall be raised when the actual result does not match the expected result. Each defect will be assigned a Severity and Priority. Please refer to Appendix A for Defect Classification Criteria. For Component and System Test stages, Fujitsu, Computacenter and Verizon are expected to maintain their own defect management tools, with any defects outstanding at the completion of these stages to be transferred to Post Offices HP ALM tool. From SIT onwards, all defects will be logged in the HP ALM tool. The illustration below provides a high level overview of the defect management process:

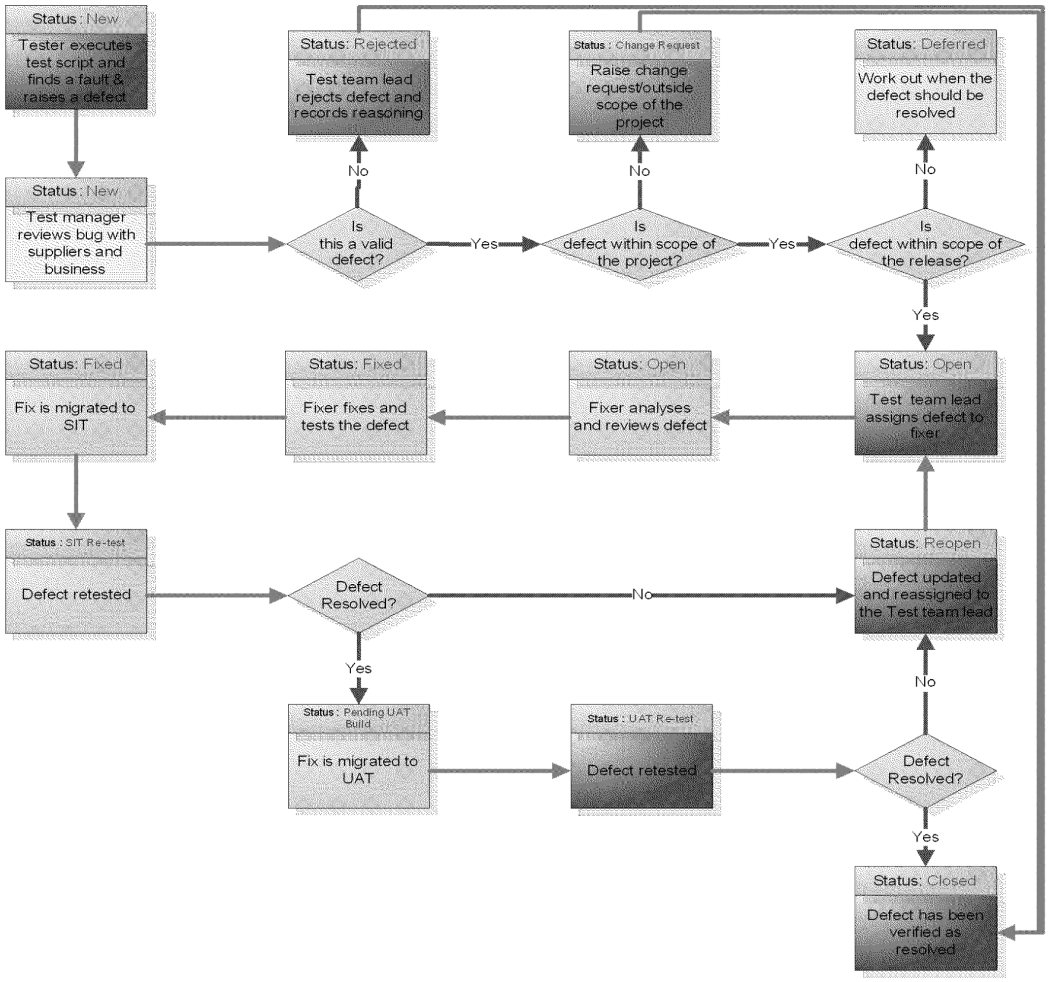

Figure 3 – Defect / Incident Management Process

6.5 Suspension and Resumption Criteria

6.5.1 Suspension Criteria

Testing may be suspended if unacceptable risks result from one or more of the following causes:

- If the stability of the test environment is threatened and/or unacceptable risks are being posed to other project co-resident in the same environment

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- If there is an exceptional concentration of defects in one area and it is believed that the shorter defect turnaround time resulting from revision to an earlier test stage will reduce execution timescales
- If the overall defect rate is such that it is unlikely that any new information will be gained by proceeding.

Suspending a test stage implies a process failure, in either definition or execution. Should it be invoked, the Business Sponsor shall be informed via the Project Manager. An investigation shall be undertaken to identify the process related causes for the suspension and modify, or re-affirm the applicable entry criteria to ensure that suspension will not be required again.

6.5.2 Resumption Criteria

Testing will be resumed when the criteria causing any suspension has significantly improved, however this will be on the basis of any modified or re-affirmed entry criteria.

6.6 Readiness Reviews

Test readiness reviews will be held for System Test, System Integration Test and Preproduction Testing. These will be joint meetings held between POL, Atos and the relevant suppliers.

6.7 Requirements Acceptance

The Branch Counter Refresh Project requirements detailed in the requirements catalogue [1] will form the basis of Fujitsu solution acceptance. Each requirement within the catalogue has been allocated a verification method:

- DR – Document Review
- DW – Design Walkthrough
- SOF – Statement Of Fact
- SOO – Statement Of Obligation
- TST - Testable
- MO – Monitoring [in live operation]

It is assumed that a similar requirements traceability matrix will be employed for requirements assigned to Computacenter and Verizon.

The existing Horizon Requirements Acceptance process will be used as a basis to demonstrate acceptance. The following activities will be required:

a) The requirements within the catalogue will be imported into the requirements module of the Atos instance of Quality Centre (HP Application Lifecycle Management)
b) Any DR or DW requirements will be linked to test artefacts that represent documents or design workshops. The test artefacts will be 'passed' when the document is produced or the walkthrough held. The status of the associated requirements will be automatically updated as a result.
c) SOF and SOO when met will not require any further traceability
d) TST requirements will be linked to appropriate tests until full coverage is achieved
e) Assessment of MO requirements is deferred until post go live.
f) Towards the completion of testing. Each Supply Chain Member will present a slide presentation that summarises the requirements status and document via a formal acceptance report. The slide pack and report will provide a view on summary status and will provide further detail / mitigation for any requirements not met.
g) A Requirements Acceptance Board will be held between stakeholders from Post Office, Atos and the Supply Chain Member to review the slide pack and report and decide if acceptable requirements coverage has been achieved.

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h) If suitable coverage has been achieved the acceptance of the Requirements Board could be used to trigger stage payments to the Supply Chain Members.
i) If coverage is not suitable or requirements are deemed to have not been met, further development, testing and Requirements Acceptance exercises will be held until coverage is deemed acceptable, or the consequences of failed or missed requirements are accepted.

The above approach has been used successfully in a single supplier acceptance model, it is assumed that it can be applied to a multi-supplier model following the same principles

6.8 Release Authorisation

Successful completion of each test stage detailed in section 4 will enable an overarching Branch Counter Refresh Project Test Summary Report to be issued by the Atos Test Manager. This report will be used as evidence at the Post Office Gating forum in order to obtain approval to deploy the Computacenter base configuration, associated peripherals and drivers, HNG-A application and supporting software to live.

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7 Environmental Considerations

7.1 Test Environment

The individual test stage environment requirements are documented in Section 4 of this document.

The following *logical* diagram depicts the End to End test environment needed to prove the Branch Counter Refresh activities. The area within the red dotted line indicates the established test environment provided predominantly by Fujitsu. Elements outside of the red line are to be provided, and are currently subject to agreement by Post Office.

Note; It is recognised that HNG-A counters can operate via the existing Sarian branch router during migration; this scenario is depicted by the HNG-X element of the diagram below.

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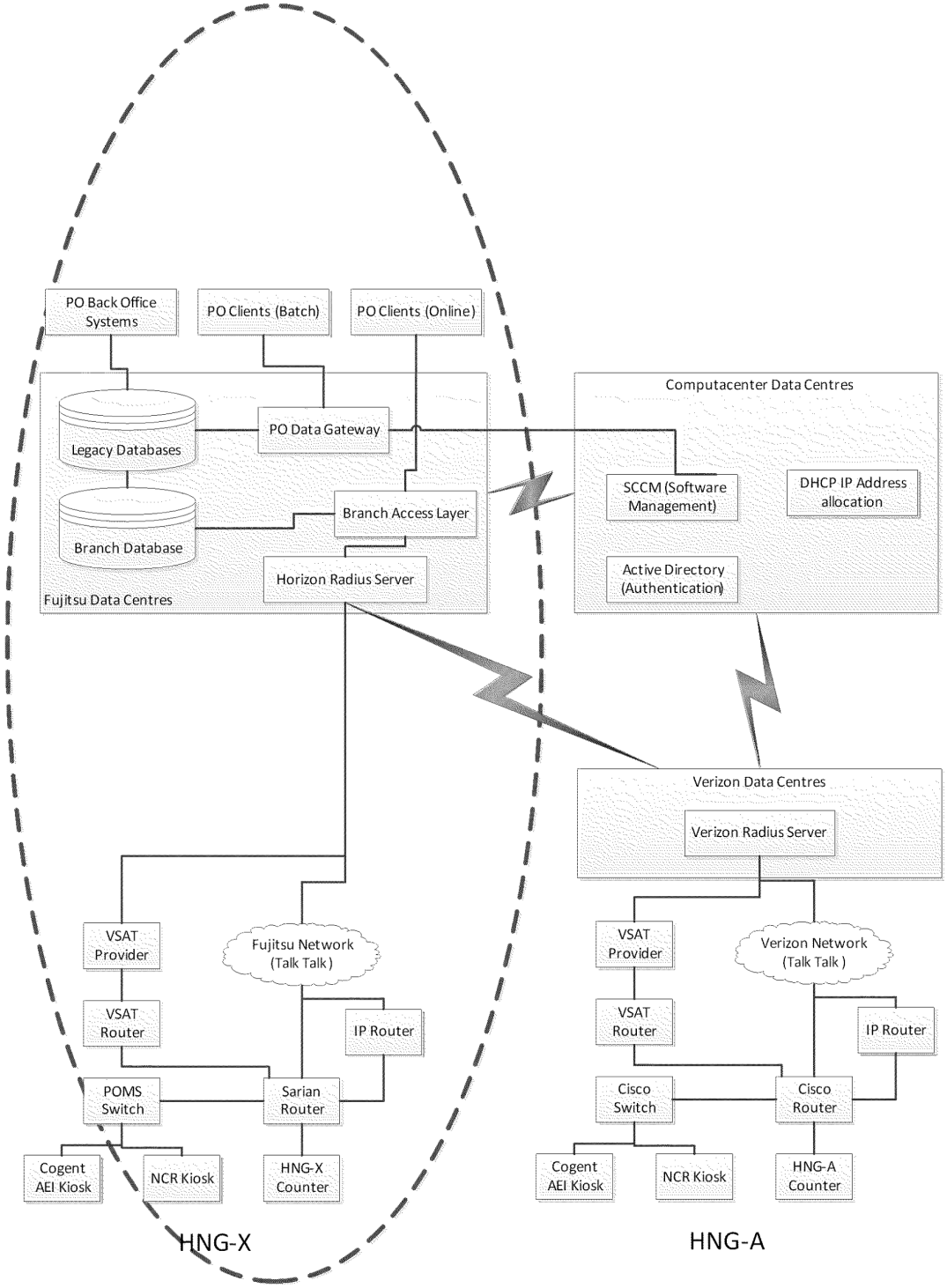

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7.2 Test Tools

Computacenter and Fujitsu will use their own separate instance of HP ALM to manage their System Testing stages. It is assumed that Verizon, NCR and 3M Cogent have similar test repositories.

Atos will use the Post Office instance of the HP ALM tool to manage SIT and UAT including:

- Requirements
- All test scripts
- Traceability to requirements
- Testing Logs
- All defects raised, including any raised as a result of any formal static testing undertaken

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8 Document Control

8.1 List of changes

Version	Date	Description	Author(s)
0.1	25/11/14	Initial Draft	James Brett
0.2	03/12/14	Updates following internal review	James Brett
1.0c	30/11/15	Major update following inclusion of network tower and culmination of gap analysis stage	James Brett
1.0d	29/12/15	Update following external review	James Brett
1.0e	12/02/16	Issued for Approval	James Brett
1.0f	29/02/16	Clean version with previous review comments/changes accepted	James Brett

8.2 Associated Documents

Ref	Reference	Version	Title
1	Not referenced	1998	Std. 829 - IEEE Standard for Software Test Documentation
2	RDD BCR HNGA	V1.20	Branch Counter Refresh Horizon Anywhere (HNGA) – Requirements, Dependencies and Assumptions
3	DES/APP/DPR/2547	V0.5	Horizon Anywhere Design Proposal
4	BCR Gaps	V2.00	HNG-A / CC Gap Analysis paper.
5	POL-EUC–BCR-HLD	V5.0	Computacenter Branch Counter Refresh High Level Design
6	Not referenced	V1c	BCR HNG-A Test & Release (Draft)
7	EUC MTP003		Computacenter Branch Test Plan
8	EUC MTP006		Computacenter Branch Test Plan

8.3 Glossary

Term	Meaning
ADSL	Asymmetric Digital Subscriber Line
AEI	Application Enrolment & Identity [terminal]
ALM	[HP] Application Lifecycle Management [Test Tool]
APP	Application
ATM	Automated Teller Machine
BC	Business Continuity
BCR	Branch Counter Refresh
BFPO	British Forces Post Office
BRDB	Branch Database
CBA	Counter Business Application
CC	ComputaCenter
CHS	Counter Help Service – a new HBS application to serve Counter Help web pages from the data centre.
CIT	Component Integration Test
CNIM	Counter Node Information Manager – an application that monitors the counter

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	application and network status
DCHP	Dynamic Host Configuration Protocol
DDA	Disability Discrimination Act
DES	Data Encryption Standard
DOS	Disk Operating System
DPR	Design Proposal
DR	Disaster Recovery or Document Review
DW	Design Walkthrough
E2E	End-to-end
EMDB	Estate Management Database
EPOSS	Electronic Point Of Sale System
EUC	End User Computing [Tower]
FAD	Financial Accounting Denominator
FTP	File Transfer Protocol
GPRS	General packet radio service
GUI	Graphical User Interface
HBS	Horizon Business Service
HLD	High Level Design
HNG	Horizon Next Generation
HNGA	Horizon Next Generation – variant A, the software release to accommodate EUC branch hardware
HP ALM	Hewlett Packard Application Lifecycle Management
HQ	Headquarters
HR	Human Resources
HRSAP	HR application running on SAP providing Postmaster payment and remuneration
ID	Identifier
IEEE	Institute of Electrical and Electronics Engineers
II	2 (i.e. Pentium 2)
IP	Internet Protocol
IS	Information Services
IT	Information Technology
JRE	Java Runtime Environment
LST	Live System Test [stage / environment]
MDM	Master Data Management
MI	Management Information
MID	Merchant Identifier
MO	Monitoring [Acceptance Method] or Model Office
MPLS	Multiprotocol Label Switching
MSI	MSI is an installer package file format used by Windows
MTBF	Mean Time Between Failure
NCR	National Cash Registers
NS&I	National Savings & Investments
NT	[Windows] New Technology – major Windows release
OS	Operating System
PC	Personal Computer
PCI	Payment Card Indsutry [Standard]

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PIN	Personal Identification Number
PO	Post Office
POCA	Post Office Care Account
PODG	Post Office Data Gateway
POL	Post Office Limited
POLSAP	Post Office Limited System Analysis Program
POMS	Post Office Managed Switch
POS	Point Of Sale
RAG	Red Amber Green
RAID	Risks Assumptions Issues and Dependencies
RDD	Reference Data Distribution
RDT	Reference Data Test
SAP	System Analysis Program
SIT	System Integration Testing
SLA	Service Level Agreement
SOF	Statement Of Fact
SOO	Statement Of Obligation
SSK	Self Service Kiosk
SSL	Secure Sockets Layer
SV	System Validation
SV&I	System Verification and Integration
SYSMAN	Fujitsu tool for deployment of code or reference data to branches
TBC	To Be Confirmed
TID	Terminal Identifier
TO	Time Out
TST	Test
UAT	User Acceptance Testing
UK	United Kingdon
VPN	Virtual Private Network
VSAT	A very small aperture terminal (VSAT) is a two-way satellite ground station
WSPOS	Web Service for Point Of Sale - a component on the counter which provides access to the pin pad.

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9 Appendix A – Incident Classification Criteria

The Severity assigned to a defect will define the effect the defect can have on the business and the impact if the defect occurred in production. The below standard severity criteria needs to be applied to all test stages.

Severity	Impact of the Defect
1 – Critical	The Defect causes a system crash or unrecoverable data loss. No workaround is possible. The Defect results in the failure of the complete system.
2 – Major	The Defect causes loss of critical system functions and no workaround solution exists. E.g. the Solution's functions do not work and no workaround is available. A Defect that causes other critical system functionality to fail to meet the requirements. E.g. Interface failure stops next step of process from being completed.
3 – Minor	The Defect causes impairment of crucial system functions. The Defect does not result in failure but causes the system to produce incorrect, incomplete or inconsistent results. E.g. the forecast upload does not work however a manual workaround exists, but a workaround solution exists to achieve functionality objectives.
4 - Cosmetic	The failure causes inconvenience or annoyance. Defects do not affect the system functionality.

The Priority assigned to a defect will define the impact on the ability to continue testing or the impact on the testing team schedule. The below standard criteria needs to be applied to all test stages.

Priority	Impact of the defect	Timescale for Vendor's initial assessment of the defect
1 - Urgent	On Testing: Incident stops all or a significant amount of further Acceptance Testing. On Business: Can/will cause financial penalties. E.g. Legal text wrong,	Immediate Assessment required.
2 - High	On Testing: Incident impacts one area of Acceptance Testing, other areas can continue unaffected. On Business: Accessibility issues – users not being able to access the system or critical areas of functionality within the system	Assessment required within 24hrs
3 – Medium	On Testing: Incident has minimal impact on Acceptance Testing progress On Business: Accessibility issues – users not being able to access areas of functionality within the system	Assessment required within 48hrs
4 - Low	On Testing: Incident has no impact on Acceptance Testing progress. Business: Minor Visual Issues Accessibility issues – users not being able to access minor functionality within the system	Assessment required within 72hrs