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Document Title:	HNG-X Performance/Stress High Level Test Plan
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Document Type:	High Level Test Plan
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Abstract:	This document is the High Level Test Plan for HNG-X Performance, Stress and Volume testing.
Document Status:	APPROVED~~DRAFT~~
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Note: See Royal Mail Group Account HNG-X Reviewers/Approvers Role Matrix (PGM/DCM/ION/0001) for guidance.

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0 Document Control

0.1 Table of Contents

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0.2 Document History

Version No.	Date	Summary of Changes and Reason for Issue	Associated Change - CP/PEAK/PPRR Reference
0.1	06/09/2007	Initial document	
0.2	06/12/2007	High Level tests are scoped out in more detail. Sections updated and clarified in light of the development of tests and how to test them. Also, the configuration of the VI rig in IRE11 is better know and is reflected in the document. A high level test schedule for the test cycles is included The responsibilities across stakeholders during testing are included. Changed the reviewers list. Added a section on migration. Included a table of requirements from Quality Center. Included the timescales for the testing on the VOL rig post pilot.	
0.3	06/05/2008	The main changes in this version are: Clarification of scope: Identifiying which groups of tests will be run in which phase and which will not be run at all. Clarification of requirement descriptions in section 2.1 Updated list of tests in Appendix B Association of tests to requirements. Updated schedule of planned tests.	
1.0	~~09/06/08~~12/09/2008	Final version issued for approval. Includes updates to the following sections after review of previous version 0.3: 2.1.2.1 Counter Transaction Response Times 2.2.1 Out of Scope 2.2.2 Migration 5.2 Outline Timescales 6.1.1 EDS Test Rig 6.2.2 HNG-X Counters 9 Schedule	

0.3 Review Details

Review Comments by :	~~2008-05-20~~2008-06-2329-09-2008
Review Comments to :	Raj Kumar & RMGADocumentManagement GRO

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(*) = Reviewers that returned comments

0.4 Associated Documents (Internal & External)

X-Ref	Reference	Version	Date	Title	Source
[1]	PGM/DCM/TEM/0001	2.0	16-Apr-07	HNG-X Generic Document Template	Dimensions
[2]	TST/GEN/PRO/0003			HNG-X HLTP Definition Report	Dimensions
[3]	TST/GEN/STG/0001			HNG-X Testing Strategy	Dimensions
[4]	PGM/PAS/PRO/0004			Test Planning and Preparation	Dimensions
[5]	TST/GEN/HTP/0002			HNG-X DR & BCP Testing - HLTP (Part 1)	Dimensions

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X-Ref	Reference	Version	Date	Title	Source
[6]	PA/PER/033			Horizon Capacity Management and Business Volumes	PVCS
[7]	TST/GEN/STD/0003			HNG-X Performance Model for Testing	Dimensions
[8]	TST/GEN/WPD/0005	1.0	15/09/2006	HNG-X Work Package for Non-Functional Testing	Dimensions
[9]	TST/GEN/PRO/0001			HNG-X Testing Process – Entry and Exit Criteria	Dimensions
[10]	TST/GEN/PRO/0006			Process for Creating Data for Inclusion in HNG-X High Level Test Plan Reports	Dimensions
[11]	TST/GEN/PRO/0010			HNG-X Defect Management Process	Dimensions
[12]	CS/SER/010	2.0		Transaction Benchmark Service: Service Description	PVCS
[13]	TBA			Counter Bencharking HLTP	Dimensions
				Annotate the reference / details for any HLD used in the production of this document here	

Unless a specific version is referred to above, reference should be made to the current approved versions of the documents.

0.5 Abbreviations

Abbreviation	Definition
APOP	Automated Payments Out Payments
APS	Automated Payment Service
BCP	Business Continuity Planning
CAPO	Card Account at Post Office
CIT	Component Integration Test
DR	Disaster Recovery
DVLA	Driver Vehicle Licensing Authority
EPOSS	Electronic Point of Sale Service
FJS	Fujitsu Services
HLD	High Level Design
HLTP	High Level Test Plan
HNG-X	Horizon Next Generation (plan X)
LLTS	Low Level Test Script
MGRM	Moneygram
PAF	Postal Address File
PAT	Product Acceptance Test

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Abbreviation	Definition
PO Ltd	Post Office Ltd
SORN	Statutory Off-Road Notice
ST	System Test
SV&I	Solution Validation & Integration
TDN	Test Design Note
TESQA	Transaction Enquiry Service Query Analyser
TPOC	Testing Proof Of Concept

0.6 Glossary

Term	Definition
LoadRunner	An industry standard performance test tool used to get an accurate picture of en-to-end system performance, to identify bottlenecks and whether applications meet specified performance requirements.
Performance Testing or Load Testing	A series of tests to measure the performance characteristics and behaviour of specific components of the solution under load to demonstrate their ability to achieve defined performance requirements. For example, to test that a particular web service is capable of supporting the relevant contrac tual peak rate of transactions per second (the defined load).
Stress Testing	A series of tests to measure the maximum performance capabilities of specific components of the solution by increasing the load placed on a component until it is no longer able to satisfactorily support the load i.e. it becomes 'stressed'. Such tests should demonstrate that a component is at least able to achieve its design limits and will also give an indication of headroom capacity.
Test stage or Testing stage	The specific phase (stage) within the Software Development Life Cycle. For instance Component Test, Component Integration test, System Test, Solution Validation and Integration or Release Validation
Volume Testing	A series of tests to demonstrate that the whole solution is able to support a typical daily workload. For example, to test that a peak weekday transaction profile can be successfully harvested and that all scheduled batch processing can be completed within expected timescales.
WinRunner	An industry standard functional test automation tool.

0.7 Changes Expected

Changes
~~This document is the High Level Test Plan (HLTP) that represents the independent testing that will take place for a specific delivery. The production of the HLTP is expected to be a two stage process. The first stage will include the Scope and Objectives of the testing (all sections up to the Appendix). The second part to be listings / reports of the Planned testing that is to take place and will include extracts from Quality Center (where appropriate) in the appendix of this HLTP.~~ ~~There are also a number of areas which require further consideration before the final version of this document can be issued. Material that is missing / expected to be changed etc is shaded in yellow and prefixed with "TDN" meaning Test Design Note~~None

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0.8 Accuracy

Fujitsu Services endeavours to ensure that the information contained in this document is correct but, whilst every effort is made to ensure the accuracy of such information, it accepts no liability for any loss (however caused) sustained as a result of any error or omission in the same.

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1 Introduction

This document is the High Level Test Plan (HLTP) that represents the independent testing that will take place for the Performance Testing stage. In accordance with the HNG-X Testing Strategy [3], Performance Testing (Load, Volume and Stress) will be conducted separately from SV&I as a discrete testing stage.

The production of the HLTP will be a two phase process. The first phase will include the Scope and Objectives of the testing (all sections up to the Appendix). The second part to be listings / reports of the planned testing that is to take place and will include extracts from Quality Center (where appropriate) in the appendix of this HLTP.

This paper defines the approach and method to be followed, and identifies some of the issues to be resolved, to ensure that Load, Volume and Stress tests are carried out at appropriate stages during the deployment of HNG-X. The testing of Load, Volume and Stress scenarios is part of Non-Functional Testing Work Package 5 and will be conducted against HNG-X Releases for Final Counter Drop (FCD) and Batch 3 CPs.

1.1 Objectives

The overall objectives of the Performance testing stage is to ensure that FJS hand over to PO Ltd a tested integrated solution that is capable of supporting contractual volumes. The Performance objectives for the HNG-X/Hydra system can be categorized in three areas; user satisfaction, system productivity and system cost

In particular these should include:

- Conformance to performance related requirements held in DOORS.
- Tested performance of solution components to Design Limits defined in relevant HLDs
- Demonstrated ability to support the level of business volumes and conformance to contractual Service Level Targets defined in the Horizon Capacity Management and Business Volumes [6]
- Conformance to contracted transaction response times at both the counter and online system level for key scenarios defined in HNG-X Performance Model for Testing [7]
- Current Horizon volumes can be supported on the Hydra configuration with no degradation of performance.
- Tested performance limitations (stress test) of solution components to identify 'breakpoints' and maximum headroom capacity.
- End-to-End test including interfaces to External systems to demonstrate the support of a peak rate of CAPO Network Banking transactions

System cost in HNG-X is not comparable to Horizon, due to infrastructure changes but the following components are all expected not to be 100% utilized whatever the transaction type or transactional mix or volume:

- BAL Application Servers
- Branch Database Servers
- Branch to Data Centre Network Bandwidth
- Data Centre LAN Segment Bandwidth

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- Data Centre LAN Switch Bandwidth

Tests should be identified within the HLTP which allow each of the above objectives to be proven to PO Ltd's satisfaction. There are a number of PO Ltd stakeholders who need to be assured of completion of this testing including:

- PO Ltd Live Service Manager
- PO Ltd Head of Systems
- PO Ltd Design Authority
- Banking and other specific Third Parties
- HNG-X Acceptance Manager
- HNG-X Release Authorisation Board

2 Scope

This document is concerned solely with performance related aspects of the solution and does not cover other non-functional requirements. Specifically, Business Continuity and Disaster Recovery testing, sometimes referred to as Integrity (Resilience & Recovery) testing, will be a separate discrete testing stage and subject to its own HLTP [5]. However, it is likely that there will be some cross-over between testing stages that will need to be co-ordinated during test execution planning. For example, it may be necessary for some Business Continuity tests to be performed under full load and therefore appropriate for these to be conducted during the Performance Testing stage.

The scope of testing covered by this HLTP gives particular focus to:

- the new Counter system,
- the Branch Access Layer, and
- the Branch Database
- the online services

All of the above figure prominently in the overall performance of the new HNG-X solution.

The Counter system (or more specifically, an agreed selection of transaction types on the counter system) will be re-benchmarked to ensure acceptable performance at the point of sale. The Branch Access Layer will require careful configuration and tuning to avoid bottlenecks and adverse housekeeping, and the new Branch Database is performance critical, needing to achieve the requisite transaction throughput, and to be demonstrably scaleable.

The retention of the Host and External Interfaces largely intact (unchanged) mitigates external performance impacts. Providing the internal performance of the solution is proven, and the volume/throughput rate across the external interfaces remains as is, then there will be no need to repeat full end-to-end performance tests involving the external systems. One exception to this, however, is the external interface for CAPO banking transactions, for which the external client has requested full end-to-end performance tests to be conducted

The types of testing within the scope of this document can be categorised into three main areas; Volume testing, Load testing and Stress testing, which are defined in the following section. The following key stages will need to be tested on the migrated Hydra configuration;

- Post Data Centre migration, all outlets still Horizon
- A mixture of 50% Horizon and 50% HNG-X outlets
- All outlets fully migrated to HNG-X

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The following diagram scopes out the high level areas to be tested, their priority and whether the tests are to be run during phase 1 in the V&I test environment (and in which cycle), run during phase 2 in the VOL test environment, or not run at all..

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Test Group	Description	No. Tests	Pty	Itns by Cycle C21	C32	C43	C54	Notes
C01	Counter performance tests	40	H	1	2		3	To be run against background HNG-X load
H01	Hzn Volume – Monday	1	H	1	2		3	
H02	Hzn Volume – Saturday							Do not run, subsumed in M02
H03	Hzn Volume – Sunday							Do not run, subsumed in M03
H04	Hzn Volume - 2 day Harvest	1	H			1		
H05	Hzn DCS up to contractual rates	2	H		1, 2	3		
H06	Hzn CAPO up to contractual rates	2	H	1, 2	3			
H07	Hzn Link up to contractual rates	2	L					Run if get time, subsumed in HCB anyway
H08	Hzn A&L up to contractual rates	2	L					Run if get time, subsumed in HCB anyway
H09	Hzn ETU up to contractual rates	2	H		1, 2	3		
H10	Hzn T&T up to contractual rates	2	H		1, 2	3		
H11	APOP contractual and Design Limits	2	M		1	2	3	
H12	DVLA contractual and Design Limits	4	L					Phase 2
H12b	DVLA stress test	1	L					Phase 2
H13	PAF contractual and Design Limits	4	L					Phase 2
H13b	PAF stress test	1	L					Phase 2
HCB	Hzn Combined banking up to contractual rates	2	H		1, 2	3		
M01	Hydra Mixed Volume - Monday (& TES rec tests)	6	H		1	2	3	
M02	Hydra Mixed Volume - Saturday	1	H		1		2	
M03	Hydra Mixed Volume - Sunday	1	H		1		2	
M04	Hydra Mixed Volume - 2 day Harvest							Do not run, n/a for HNG-X
M05	Hydra Mixed DCS contractual and Design Limits	4	H			1	2	
M06	Hydra Mixed CAPO up to contractual rates							Do not run, subsumed in MCB
M07	Hydra Mixed Link up to contractual rates							Do not run, subsumed in MCB
M08	Hydra mixed A&L up to contractual rates							Do not run, subsumed in MCB

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Test Group	Description	No. Tests	Pty	Itns by Cycle C21	C32	C43	C54	Notes
M09	Hydra Mixed ETU contractual and Design Limits	4	M				1	Only time for 1 iteration
M10	Hydra Mixed T&T contractual and Design Limits	4	M				1	Only time for 1 iteration
MCB	Hydra Mixed Combined banking contractual and Design Limits	4	H			1	2	
R01	Branch Router Tests	4	H		1	2	3	Sub-set of counter tests for 1, 5, 10 & 20 counters
X01	HNG-X Volume - Monday (& TES rec tests)	6	H	1	2, 3	4	5, 6	
X02	HNG-X Volume - Saturday							Do not run, subsumed in M02
X03	HNG_X Volume Sunday							Do not run, subsumed in M03
X04	HNG-X Volume - 2 day Harvest							Do not run, n/a for HNG-X
X05	HNG-X DCS contractual and Design Limits	4	M				1	Only time for 1 iteration
X05b	HNG-X DCS stress test	1	L					Phase 2 (hist. vols < design)
X06	HNG-X CAPO contractual and Design Limits	4	M					Run if get time, subsumed in XCB anyway
X06b	HNG-X CAPO stress test	1	L					Phase 2 (hist. vols < design)
X07	HNG-X Link contractual and Design Limits	4	L					Run if get time, subsumed in HCB anyway
X07b	HNG-X Link stress test	1	L					Phase 2 (hist. vols < design)
X08	HNG-X A&L contractual and Design Limits	4	L					Run if get time, subsumed in HCB anyway
X08b	HNG-X A&L stress test	1	L					Phase 2 (hist. vols < design)
X09	HNG-X ETU contractual and Design Limits	4	M				1	Only time for 1 iteration
X09b	HNG-X ETU stress test	1	L					Phase 2 (hist. vols < design)
X10	HNG-X T&T contractual and Design Limits	4	M				1	Only time for 1 iteration
X10b	HNG-X T&T stress test	1	L					Phase 2 (hist. vols < design)
X11	BAL and BRDB contractual and Design Limits	2	H		1, 2	3, 4	5, 6	
X12	BAL and BRDB stress test	2	H			1, 2	3	
X13	Logon / logoff contractual and Design Limits	2	L					Could cover in X11 with right mix of txns

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Test Group	Description	No. Tests	Pty	Itns by Cycle C21	C32	C43	C54	Notes
X13b	Logon / logoff stress test	1	L					Phase 2
X13c	Logon - maximum concurrent sessions	1	L					Phase 2 - consider how to do this
X14	Online Help contractual and Design Limits	2	L					Could cover in X11 with right mix of txns
X14b	Online Help stress test	1	L					Phase 2
X15	Reports contractual and Design Limits	2	M				1	Could cover in X11 with right mix of txns
X15b	Reports stress test	1	L					Phase 2
XCB	HNG-X Combined banking contractual and Design Limits	4	M				1	Only time for 1 iteration
XCBb	HNG-X Combined Banking stress test	1	L					Phase 2 (hist. vols < design)

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2.1 Features to Be Tested

Our tests are defined from a combination of the requirements from Quality Centre listed below and areas which have been sufficiently changed architecturally and warrants testing.

Req ID	Requirement Name	Description
5379	Design Targets specified in the Capacity & Performance document ("HNG-X Capacity Management and Business Volumes") shall be measured during testing: they are not required to be subject to continuous monitoring (e.g. measured over Service Re Req5379	Design Targets specified in the Capacity & Performance document ("HNG-X Capacity Management and Business Volumes") shall be measured during testing: they are not required to be subject to continuous monitoring (e.g. measured over Service Reporting Period) nor are they required to be differentiated between particular Service Periods unless explicitly stated in the Design Target
5431	The System's ability to achieve the MHTR shall be confirmed by a combination of Volume Testing and Modelling as described in the "HNG-X Test Strategy - HX/STR/001". Req5431	The System's ability to achieve the MHTR shall be confirmed by a combination of Volume Testing and Modelling as described in the "HNG-X Test Strategy - HX/STR/001".
5435	The System shall support the volume of Business Transactions defined in the "HNG-X Capacity Management and Business Volumes" document at the Peak Rates identified. Req5435	The System shall support the volume of Business Transactions defined in the "HNG-X Capacity Management and Business Volumes" document at the Peak Rates identified.
5438	The System shall support the volume of Administrative and Back Office Transactions defined in the "HNG-X Capacity Management and Business Volumes" document at the peak rates identified. Req5438	The System shall support the volume of Administrative and Back Office Transactions defined in the "HNG-X Capacity Management and Business Volumes" document at the peak rates identified.

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5441	The System shall support the range of values in the list of parameters (for example number of Counters per Branch, Number of Stock units per Branch, Number of failed Logon events before lock-out) specified in the "HNG-X Capacity Management Req5441	The System shall support the range of values in the list of parameters (for example number of Counters per Branch, Number of Stock units per Branch, Number of failed Logon events before lock-out) specified in the "HNG-X Capacity Management and Business Volumes" document. Note: This requirement is not relevant to system qualities performance – see section 15 of Systems Qualities Architecture (ARC/PER/ARC/0001)
5444	The System shall support the display, storage and manipulation of a set of agreed data items (for example Currency Amounts, Languages, Messages, Number of Products) with a size or value range identified in the "HNG-X Capacity Management and Req5444	The System shall support the display, storage and manipulation of a set of agreed data items (for example Currency Amounts, Languages, Messages, Number of Products) with a size or value range identified in the "HNG-X Capacity Management and Business Volumes" document. Note: This requirement is not relevant to system qualities performance – see section 15 of Systems Qualities Architecture (ARC/PER/ARC/0001)
5460	During testing New Video Benchmarks shall be conducted on Baseline Horizon and equivalent Video Benchmarks shall be conducted on the System, in accordance with the process described in "HNG-X Test Strategy - HX/STR/001 and assessment made Req5460	During testing New Video Benchmarks shall be conducted on Baseline Horizon and equivalent Video Benchmarks shall be conducted on the System, in accordance with the process described in "HNG-X Test Strategy - HX/STR/001 and assessment made according to the Video Benchmarking Tolerances agreed therein.
5462	It shall be possible for the System Measurement of the Counter to be switched on in the Live Estate, but central collection and analysis of such data shall only be performed for diagnostic purposes. Req5462	It shall be possible for the System Measurement of the Counter to be switched on in the Live Estate, but central collection and analysis of such data shall only be performed for diagnostic purposes.

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5465	The System shall measure the Duration and record the Response for each Third Party Transaction Request from the time the request leave the Fujitsu Domain for routing to the external party (e.g. Financial Institution, DVLA) to the time the r Req5465	The System shall measure the Duration and record the Response for each Third Party Transaction Request from the time the request leave the Fujitsu Domain for routing to the external party (e.g. Financial Institution, DVLA) to the time the response is received back from the Third Party.
5468	The response and duration measurement for all Third Party Transmission Requests shall be made available in the response to the initiating Online Transaction request from the Counter in order that the end-to-end timings and the System Time Req5468	The response and duration measurement for all Third Party Transmission Requests shall be made available in the response to the initiating Online Transaction request from the Counter in order that the end-to-end timings and the System Time component can be calculated and recorded by the Counter and reported in system testing and subsequently for diagnostic purposes.
5470	The end-to-end performance of Banking and related Transactions shall be no worse than that set out in the Service Level Target described in the Data Centre Operations Service document. Req5470	The end-to-end performance of Banking and related Transactions shall be no worse than that set out in the Service Level Target described in the Data Centre Operations Service document. See section 3.1.3.1 of System Qualities Architecture (ARC/PER/ARC/0001). This requirement translates to the following response time target (SLT): "- Network Banking transactions will take on average 2.5 seconds or less within the total of the HNG-X systems and infrastructure. This is the total time to and from the counter, excluding the time in the banks' infrastructure and systems."
5471	The end-to-end performance of the Basket Settlement transaction shall be no worse than that set out in the Service Level Target described in the Data Centre Operations Service document. Req5471	The end-to-end performance of the Basket Settlement transaction shall be no worse than that set out in the Service Level Target described in the Data Centre Operations Service document. See section 3.1.3.1 of System Qualities Architecture (ARC/PER/ARC/0001). This requirement translates to the following response time targets (SLTs): "- Settlements will take on average 2 seconds or less. - No Settlement within the 95th Percentile will take 7 seconds or more."

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5474	The Time taken to complete Branch Administrative or Back Office Transactions shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Req5474	The Time taken to complete Branch Administrative or Back Office Transactions shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Note: See Section 3.1.3.2 of the System Qualities Architecture (ARC/PER/ARC/0001) which states the following. "No targets have been set for these new services in the current version of the HNG-X version of the Horizon Capacity Management and Business Volumes document [PA/PER/033], so these requirements are not currently measurable."
5475	The time taken for Stock Unit and Branch Reports shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Req5475	The time taken for Stock Unit and Branch Reports shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Note: See Section 3.1.3.2 of the System Qualities Architecture (ARC/PER/ARC/0001) which states the following. "No targets have been set for these new services in the current version of the HNG-X version of the Horizon Capacity Management and Business Volumes document [PA/PER/033], so these requirements are not currently measurable."
5476	The time taken to retrieve Help pages shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Req5476	The time taken to retrieve Help pages shall meet Design Targets (if specified) in "HNG-X Capacity Management and Business Volumes" Note: See Section 3.1.3.2 of the System Qualities Architecture (ARC/PER/ARC/0001) which states the following. "No targets have been set for these new services in the current version of the HNG-X version of the Horizon Capacity Management and Business Volumes document [PA/PER/033], so these requirements are not currently measurable."

2.1.1 Volume Testing

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Volume testing can be described as:

- A series of tests to demonstrate that the whole solution is able to support a typical daily workload. For example, to test that a peak weekday transaction profile can be successfully harvested and that all scheduled batch processing can be completed within expected timescales.

Typically, due to differing batch scheduling, volume tests will be conducted for a peak weekday transaction profile, a Saturday transaction profile and a Sunday transaction profile.

During the volume tests, particular attention will be paid to monitoring the following aspects:

- Performance characteristics of the Host
- Performance characteristics of Generic Agent platforms during harvesting
- Completion times of all batch scheduling, including Backups
- Capability of supporting a 2 day harvest
- Client file transfer (where these have changed)
- Performance characteristics of virtualised Horizon platforms

Due to critical changes to the harvesting agents to be able to support both Horizon and HNG-X transactions, and the likely virtualisation of Horizon components, volume tests will be conducted at each of the three key stages identified above.

2.1.2 Load Testing

Load testing can be described as:

- A series of tests to measure the performance characteristics and behaviour of specific components of the solution under load to demonstrate their ability to achieve defined performance requirements. For example, to test that a particular web service is capable of supporting the relevant contractual peak rate of transactions per second (the defined load).

Specific performance tests will be conducted for:

- All new / changed online service platforms
    1. Debit Card System
    2. Network Banking System
    3. Electronic Top-up System
    4. Track and Trace
    5. APOP
    6. DVLA
    7. PAF
- Branch Database, including load balancing and maximum session logons via the Branch Access Layer
- End-to-end performance to external client for CAPO banking transactions
- Counter transaction response times (see section 2.1.2.1 below)

Whereas volume testing will need to be conducted at each of the three key stages described previously, the performance tests are specific to HNG-X aspects and so will only need to be conducted for one phase. For test scheduling purposes, they could be conducted during any of the three phases subject to the relevant components of the test environment being in place.

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2.1.2.1 Counter Transaction Response Times

Performance testing will ~~also~~ encompass re-benchmarking ~~re-benchmarking~~ of counter transaction response times for both a Horizon and a HNG-X counter on NT. Tests will be conducted for key scenarios that have specific performance expectations or requirements or pose most risks to the performance objectives.

Horizon tests will include repeating video benchmarking scenarios outlined in (CS/SER/010) using the same performance targets.

HNG-X scenarios are intended to include those conducted for Video Benchmarking on Horizon (CS/SER/010) with additional scenarios identified by POL Ltd.

Tests will initially be performed using the Winrunner tool to simulate mouse movements and key strokes and record the time each actions takes. Each transaction element will be recorded and evaluated against the targets outlined in the HNG-X Performance Model for Testing [7].

At the end of HNG-X Counter testing new video benchmarks will be recorded for HNG-X using the methods outlined in CS/SER/010

A detailed plan of counter benchmarking activities is documented in [13].

There are six services that currently require specific Online Service Routing or interactions with the Data Centre (under Horizon these were known as Online Transactions as they are the only online services in Horizon):

1. Network Banking
2. Debit/Credit Card
3. Electronic Top Up
4. DVLA Online
5. PAF
6. APOP

The scenarios for these transaction types include the counter response times together with the system response time for the online transaction (response time of counter to external network and back to the counter).

The architecture for other types of transactions has changed. In Horizon, these transactions were considered offline; however in HNG-X these transactions are considered online which include interaction with the branch database.

7. EPOSS
8. Mails
9. APS
10. AP-ADC
11. Bureau
12. Back Office
13. Reports
14. User Management

As the above transactions in Horizon are all offline the current measurements are based on counter response times only. HNG-X Measurements will be both counter and online system response times.

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Full details of the performance objectives for counter transactions are specified in the HNG-X Performance Model for Testing [7], but a summary of the transactions to be included for testing is repeated here for completeness.

Debit/Credit Card	Electronic Top-up	DVLA Online	PAF	APOP	APS	Settlements
Payment by Debit/Credit	Purchase 02 E-Top Up for £15	Tax a Vehicle for 12 months with no VAT	Address Lookup	Purchase £20 postal order	Pay 1 transaction bill (plus fee)	Basket settlement
	Purchase £10 Virgin Phone Card	SORN with changes to the address of the vehicle		Encash £30 postal order		

Mails	Bureau de Change	Back Office	Reports	User Management	AP - ADC	EPOSS
Post 1 Special delivery small letter	Purchase 200 US Dollars	Accept a remittance	Stock Unit Reports	Logon/Logoff	Moneygram	Purchase £5 saving stamp
Post 1 large letter	Purchase 500 US Dollars in travellers cheques	Reject a remittance	Office Reports	Help Service	Freedom Passes	Purchase 4 x 1stclass stamps
Post 1 letter to USA weighting	Purchase 200 US Dollars in pre-order currency	Transaction Correction for cash remittance shortage			Travel Insurance	Purchase Pure Air Sure Europe Stationary
Post 1 packet (280g)	Bureau Buy Back	Spoiled postal orders				Purchase 2 x £2.00 scratchcard
Mail 6 items using bulk post facility						Purchase £10 electricity tokens
						Purchase £5000 Premium Bonds
						Purchase 1 Day fishing license

~~After counter performance tests have been~~

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2.1.3 Stress Testing

Stress testing can be described as:

- A series of tests to measure the maximum performance capabilities of specific components of the solution by increasing the load placed on a component until it is no longer able to satisfactorily support the load i.e. it becomes 'stressed'. Such tests should demonstrate that a component is at least able to achieve its design limits and will also give an indication of headroom capacity.

Specific stress tests will be conducted for:

- All new / changed online service platforms
    1. Debit Card System
    2. Network Banking System
    3. Electronic Top-up System
    4. Track and Trace
    5. APOP
    6. DVLA
    7. PAF
- Branch Database
- Branch Access Layer

2.2 Features Not To Be Tested

2.2.1 Out of Scope Tests

The following aspects will not be tested under the scope of this document.

- Existing online services if unchanged, as performance capabilities for these platforms are already proven or volumes are low. Also, they were never tested as a release under Horizon.
    - MGRM
    - Broadband
- End-to-end performance testing to external interfaces (except CAPO)
- Other non-functional attributes e.g. resilience, recoverability, system management, security
- TESQA (assumed there are no changes)
- VPN. The nature in which transaction load is generated for V&I testing is such that the VPN layer must be by-passed. Therefore, performance testing of VPN servers is out of scope. There is a separate workstream dedicated to performance testing of the VPN layer, for which a separate test plan and subsequent test report will be produced.

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2.2.2 Migration

The target end state of the HNG-X project is that all POL Counters will run HNG-X (rather than Horizon) software and those counters will be served by the data centre IRE11 with the data centre IRE19 as standby. Supporting Horizon and HNG-X counters out of IRE11/19 will be achieved overnight through transitioning multiple stages. (i.e. Weekends A, B, C etc)

To assure the confidence in capability *for each and every* migration (Hydra) state one might consider the following testing tasks appropriate:

1. Validate and Verify the processes required to effect the Migration step
2. Verify and Validate the processes required to assure a completion of migration step
3. Test for any regression on the Functional Requirements of the Solution
4. Test for any regression on the Non-Functional requirements including
    - Performance (Volume, Load, Stress)
    - Integrity (Resilience, Recovery, Error Reporting)

Tasks 1, 2 and 3 will be carried out by RV (Release Validation) test stream. These assertions however beg the question of how assured will POL be regarding the various Hydra configurations' capabilities to satisfy the Non-functional requirements.

Without the availability of a fully specified test rig to undertake the Non-Functional testing for each Migration (Hydra) State it will not be possible to give the highest level of assurance of System Capability before it goes live.

Until Migration Weekends A, B, C and D are complete in the production/business domain, POL business workflow requires both the Bootle/Wigan pair and the IRE11/IRE19 pair to be running; with full resilience provisions. Whereas the current test plan provides for testing the new and replacement hardware/software at the (IRE11/19) data centres using the IRE11/19 kit configured as test rigs, the plan makes no provision for the use of test rigs (of similar specification to Bootle/Wigan) for non-functional testing of the dual (i.e. England/Ireland) data centre migrations. The (IRE11) VI test rig *will never be taken through the planned migration steps*. The conclusion therefore is that the VI test team will have no opportunity to test the IRE11/19 migration configurations.

In summary, the current plan is that no physical, E2E performance testing of the various, migration states (other than the final state that will go into Pilot) will be possible on the VI test rig.

An entry has been placed in the Risk Register as follows:

"No programme plan exists for performance and integrity testing of major migration states. The programme plan has to address at least: 1) theoretical performance models, 2) PoC on simulated performance environments, 3) risk analysis of using ITU test environments to validate predictions from phases 1 and 2, 4) migration step resilience test cost benefit analysis"

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However, one aspect of migration that IS included in V&I testing is the overnight batch feed between TPS and BRDB whilst Horizon outlets enter the pre-migration state. The number of outlets in such status will be ramped up to measure the performance of this critical batch process and assess the level of processing that can be achieved within the alloted time window during the overnight scheduling.

Furthermore, consideration is currently be given to the use of an ANUE emulator that would enable additional latency to be factored into the network to reflect the impact of data flow between Bootle/Wigan and IRE11/19. Certain high volume tests could then be re-run with the additional latency in place to measure the affect against the baseline performance statistics gathered for the tests in a fully post-migrated data centre. The HLTP will be updated to include this as and when consideration of the possibilities of this approach have been fully explored, and when the necessary data has been obtained from monitoring latency on the actual link once it has been implemented.

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3 Risks

From experience of performance testing past releases of the Horizon and information garnered from various design documents the following risks have been identified that can impact the successful completion of the performance tests for the HNG-X solution (including the Hydra configuration). Issues are included in the table below (they will be added to as and when identified).

ID	Cat.	Date Raised	Risk Summary Description	Risk Impact	Mitigation Action
R001	D	08/10/07	BTC2 data applied to live images may present unknown issues.	Unknown issues = unknown impact. Best case: Some minor configuration changes required Worst case: BTC2 data unusable	Planned activity to 'clean up' BTC2 data (with development support) Complete
R002	D	08/10/07	Not all platforms are delivered and built prior to start of test execution	Unable to achieve all planned tests to schedule.	Prioritise tests according to business and technical risk Complete
R003	B	08/10/07	May not be possible to hold / control time on V&I environment in IRE11	Unable to freeze rig whilst awaiting critical fixes - could cause significant issues with batch scheduling and data. Test planning difficulties.	Identify all critical platforms for which time control is essential. Agree acceptable method of time control on all required platforms. Complete: Now agreed that V&I will run in 'real' time.
R004	C	08/10/07	In-house tools used for managing test environment may not work on new platforms. Such tools include: - triggercopy (control platforms from single source) - event log analysis	Increased overhead in managing platforms, gathering and analysing data, causing delay to test execution Some tools may need to be re-written	Identify all tools used and test against new OS. Re-write tools for new OS where appropriate Complete
R005	B	08/10/07	Not all counter applications will be available to capture transactions for Loadrunner scripting prior to start of test execution Ongoing changes to	Scripts may not work in actual environment without some re-work	Identify which transactions will become available earliest and create baskets made up of those where possible. Record scripts from another rig as transactions become

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			transactions XML as development and testing progresses		available
R006	C	08/10/07	Pin Pad will not be delivered until INT5	Potential issues for script development (unknown)	Closed?
R007	D	08/10/07	Dynamic Bulking tool is unable to handle new or changed messages introduced since S90	Significant re-work of dynamic bulker to handle such messages	Run transaction profile for bulking after BTC2 has been topped up to latest position Complete
R009	D	16/11/07	LRECgen.exe drops certain transaction types, needs amending.	Insufficient transactions will be generated in the LREC file to facilitate a valid performance test,	Program amended and tested by V&I Complete

4 Quality

The Test Cases and the design requirements from which they were derived will be recorded in Quality Centre. Within Quality Centre the requirement will include a reference to the document (Reference Number, Version and Section Number) from which it was derived. If a document, from which a design requirement was derived is changed the requirement, Test Case and Test Case reference to the requirement will need to be reviewed and possibly changed.

5 Approach

5.1 General

The structure and contents of a HLTP are defined in document HNG-X HLTP Definition Report [3]

The generic System Test Entry and Exit Criteria are defined in document HNG-X Testing Process – Entry and Exit Criteria [9].

Defect management is defined in document HNG-X Defect Management Process [11].

The extraction of Test Case definitions from Quality Centre for input to a HLTP is defined in document Process for Creating Data for Inclusion in HNG-X High Level Test Plan Reports [10].

5.2 Outline Timescales

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The POA Level 3 plan will contain the up to date timescales for planned activities for Performance Testing. The testing will take place in two distinct phases on two different rigs:

- Phase 1 on the VI (Live rig) in IRE11 prior to pilot.
- Phase 2 on the Vol rig in IRE19 post pilot.

Current plan (based on V0.60.A4200 revised 290 Mar Aug 08) shows the following distinct test cycles: -

PHASE 1

Activity	Start	End	Notes
VI Blitz/Rig provisioning	11/0802/10/2008	22/0810/10/2008	A cycle of environment suitability testing will commence prior to cycle 1 and is referenced as VI Blitz. This will check that the rig and all the tools needed for test execution and reporting, work as required. Amendments to the rig and tools will be made as required before commencement of the VI C1.
VI C24	08/0917/10/2008	26/0925/10/2008	Cycle 2. NB: This cycle will primarily be used for Business Continuity / Disaster Recovery tests and there will be limited availability for conducting performance tests in this cycle.1.
VI C32	06/1003/11/2008	24/1021/11/2008	Cycle 32
VI C43	03/1101/12/2008	21/1119/12/2008	Cycle 43
VI C54	01/29/12/2008	19/12/200816/01/2009	Cycle 54
Peaks	29/12/2008	16/01/2009	The current plan does not provision for a Peaks Cycle for rRe-test of defects for which fixes have been delivered.

PHASE 2

Activity	Start	End	Notes
VI Blitz/Rig provisioning	09/03/2009	20/03/2009	A cycle of environment suitability testing will commence prior to cycle 64 and is referenced as VI Blitz.
VI C65	23/03/2009	09/04/2009	Cycle 65

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VI C~~76~~	20/04/2009	08/05/2009	Cycle ~~76~~
VI C~~87~~	18/05/2009	05/06/2009	Cycle ~~87~~
Peak Clearance	15/06/2009	26/06/2009	Re-test of defects for which fixes have been delivered.

Detailed information of the types of testing for each cycle is shown in greater detail in the 'Section 9, Schedule' section (as much as can be) of this document.

Note: If changes are made to the VI Rig prior to the start of testing on any particular cycle, a period of VI Blitz may be required.

5.3 Test Case Analysis

The appropriate document will be analysed by a members of the VI Test Team, to identify the performance requirements that should be met by the defined design or development. From these performance requirements the analyst will derive Test Cases that can be executed to demonstrate conformance to that performance requirement.

All identified performance requirements and Test Cases will be recorded in Quality Centre.

5.4 Test Case Execution

The test cases will be executed by VI Team members in BRA01, using a WAN connection to the data centre in IRE11.

This information will be recorded against the Test Case within Quality Centre.

As per the HNG-X Testing Strategy [3], test prioritization will be driven by requirements and the risk analysis of those requirements.

5.5 Test Case Results and Evidence

The VI team member that executes the Test Case is responsible for updating the Test Case in Quality Centre with the result (Pass or Fail) of the attempt to execute that Test Case.

Failed Test Cases will require evidence to be added to the defect that is raised.

5.6 Call Logging Process

A basic overview of the HNG-X incident handling procedures is defined in [ISN001486].

This procedure covers the routing of the following: -

- Any issue that the POA test team require Development or another POA team to investigate
- Any Backup / Restore requests from the POA test team to IS
- Any issue that IS require POA to investigate

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- Any issue that IS identify that needs further investigation within IS

The process for managing defects raised during the independent testing phases of HNG-X is defined in HNG-X Defect Management Process [11].

Note: for any failed test there must be an associated defect stored in Quality Center.

5.7 Escalation Process

An escalation process for use by the HNG-X Test Manager and IS Support Teams is defined in [ISN001487].

5.8 Approach to Testing

Testing will be organized into three streams so that 100% Horizon transactions, a mixture of 50% Horizon & 50% HNG-X transactions and 100% HNG-X transactions will be conducted on the migrated Hydra configuration; i.e. the starting state for pilot.

In each of these streams, some or all of the Volume, Performance and Stress Testing (as described in Section 2) will be carried out.

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6 Environmental Needs

This section describes what component is required in which location. The full list can be viewed in the following embedded file.

However, below are some notable components that perhaps require a special mention.

6.1 Data Centre

In order to achieve 100% test coverage of the Hydra configuration the VI rig needs to reflect a full Hydra (Active) environment. However those Horizon components that is in an active/active configuration will obviously only have one half of those components (i.e. the Bootle components) in IRE11. The Hydra (Active) data centre components of the VI rig will be as Live and reside in IRE11 but there will be a 'VOL' rig in IRE19 to continue testing once the VI rig is live. The perception is that the majority of the Windows platforms will be virtualised to run on blade frames.

6.1.1 EDS Test Rig

As part of the CAPO E2E performance tests there will be a requirement for EDS to provide a test system. This testing will be carried out on the Release Validation rig based in IRE 19 and Fujitsu Services (Core Services) is to provide a test network link from IRE19 to EDS. Our assumption is that this test link will be secured in the same manner as for RV Accreditation testing.

6.1.2 Counter Simulators

The counter simulators used during past Horizon releases will be virtualised and hosted in IRE19. This will enable the continued production of Horizon transactions on the Hydra VI rig.

6.1.3 FTMS Remote Platforms

It is assumed that the FTMS Local Gateways will reside in the Data Centre. The Test Remote Gateways will also reside in the Data Centre. They include:-

- FTMS EDG Remote Gateway
- TIP Remote Gateway

6.1.4 Time Control

The ability to hold the time on all rig platforms from a central point is required for testing. This is an essential requirement for the VI rig and will be controlled from the data centre.

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6.2 Environmental needs required in Test Location

The location of the performance test team will be at BRA01. Therefore, in order for testing to take place access to the VI rig in IRE11/19 will be required in a secure manner and the equipment listed below will also be required in BRA01.

6.2.1 Horizon Counters

There will be five offices reflecting 10 counter positions. The riposte messages will 'bulked' up to create a work load of approximately 9600 counter positions into clusters one & two of the correspondence servers in the same way as it was done during the Horizon releases.

6.2.2 HNG-X Counters

There will be two 1 counter outlet and one 20 counter outlet. The 20 counter outlet will be used for branch router testing.

Performance testing of Branch Router in respect the impact upon individual transaction processing times within an outlet is included in the scope of V&I testing. With regard to Requirement 'Router 053B' which states:

"The branch router must be capable of handling up to 30 counters or other services via the primary comms service type i.e. ADSL or ISDN"

This will actually be tested up to a maximum of 20 physical counter positions and results then extrapolated.

Testing of WWAN is not included as Requirement 'Router 053A' which states:

"A breakdown must be provided, prior to the Branch Router pilot, showing how many counters can operate across the various WWAN services i.e. GPRS, EDGE & 3G. The solution design for the Branch Router will drive the WWAN service to maximum counter volume ratio and it is expected that this will be defined in the Branch Router architecture."

Has a verification method of DR (Document Review) only.

6.2.3 Testing Tools

6.2.3.1 LoadRunner

This tool is required to perform the injection of data into the branch access layer to simulate a specified workload scenario. LoadRunner can be used to analyse response times and resource usage of the system under test. A 1000 VUser licence has been requested. The LoadRunner controller will be located in Bracknell but note that the LoadRunner generators will be located in IRE11.

6.2.3.2 WinRunner License Server

This tool is required to enable the continuance of the Horizon automated counter testing. The licences have effectively expired from beyond a date of March 2006. New licences will need to be purchased.

6.2.3.3 Access to Data Centre from Bracknell

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Test teams need to be able to access all VI rig platforms that reside in the data centre in order to perform rig commissioning tasks, tests, problem investigation and resolution, and general day to day activities. This will be achieved in a secure way via the SSC workstations.

6.2.3.4 Workstations

There is a current belief that for test, any platforms that would not normally reside in the Live data centre in the Live system, will reside at a remote site, i.e. Bracknell:

- RDMC
- APS (Hosted on the same server as the RDMC)
- KMA (including the KMA admin workstation)
- SSC

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6.2.3.5 FTMS Remote Platforms

The FTMS Local Gateways will reside in the Data Centre. The Test Remote will also reside in the data centre. The platforms include:-

- FTMS EDG Remote Gateway
- TIP Remote Gateway

6.2.3.6 CAPSYS

This is the performance version of Lexcel Emulator for Network Banking transactions. There are has two Windows 2000 platforms running CAPSYS for Link, A&L and CAPO. This will be sufficient for testing.

6.2.3.7 Emulators

The following emulators will be hosted in Bracknell on 3 servers:

- DVLA
- Track &Trace
- DCS
- ETU

7 Responsibilities

To undertake performance testing successfully on a remote site in Ireland there will be certain responsibilities on different groups of people and not just the V&I team members. These responsibilities are documented in the following embedded document.

\\dusupport\tools\
Management\Docume

8 Dependencies

Before any performance testing can be initiated the following, ideally, will need to be in place:

- The High Level test plan has been approved.
- The Low Level test scripts have been written.
- The rig design has been approved.
- The complete VI rig has been built in IRE11.
- Cycle 1 of SV&I has been successfully completed.
- Testing Proof of Concept of LoadRunner (or other tool) has been undertaken and any development of scripts and tools to underpin performance testing has been completed.

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9 Schedule

The POA Level 3 plan will contain the up to date definition of the planned timescales for the VI activities.

Based on the current plan (V0.60.A00 A42 revised 20 Mar29 Aug 08) the following embedded document shows the planned test execution by cycle for phase 1 on the V&I rig in IRE11. In addition to the 4 main cycles during this phase, there will also beThe current plan no longer includes a 'Peak clearance' cycle for the re-test of any fixes delivered for defects identified during the main cycles.

Any tests remaining will be performed during Phase 2 on the VOL rig in IRE19. A detailed plan for phase 2 will be prepared nearer the time when a clearer picture of tests still to be performed is known.

10 Resources

The following resource needs have been identified to effectively undertake performance testing:

- LoadRunner experience. Some member of the performance team will require training in this test product.
- There is a requirement for WinRunner support for the current Horizon scripts which may require changes for testing in the Hydra configuration.
- There is a requirement for support from Core Services to resolve any issues with platforms located in the Data Centres which require physical access.
- There may be a requirement for development support for any changes required to our existing tools.
- Development support for any new tools that may be required especially around the area of the Branch Database. (see CP4565 HNG-X CP 0110 - Horizon Data Requirements)
- Development support for data cleaning of the databases on the BTC2 rig in readiness for migrating to the new VI rig.

11 Entry Criteria

Whilst Performance Testing (Load, Volume and Stress) will be conducted separately from SV&I as a discrete testing stage, the entry criteria is governed by the relevant section of the HNG-X Testing Process Entry and Exit Criteria document [9] pertaining to Solution Validation and Integration.

11.1 Relevant Factors to Be Considered At Handover

The following factors are to be considered at a 'Handover Review Meeting':

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- On the assumption that delivery of a tested product from one Test Stream to the next Test Stream may be Modular in form (i.e. parts of the system will be delivered as and when they have completed testing), any requirements for a specific delivery sequence (of modules) to the Performance Test Stage must have been discussed, understood and agreed as part of the Entry Criteria.
- At the time of writing, a 'Critical Defect' is deemed to be a Level 1 or 2 defect. Although it is possible that lower level defects may also prevent a specific deliverable from being passed into the next Testing Stream. This decision will be made by the Testing Stream Manager(s) at the time of a Handover Review.
- Although it is possible to move a deliverable from one test stage / stream to the next with some testing (Test Cases) outstanding (e.g. from CIT to System Test), no deliverable should be allowed to move into a subsequent stage with testing still outstanding from 2 stages previous (e.g. Testing outstanding in CIT will allow a module to move into System Test, but (if still outstanding) will prevent it moving into Performance Test from System Test).

11.2 General Considerations for Entry

11.2.1 Dependency on earlier testing

- Are delivery plans in place to clear all necessary defects in time for the subsequent tests that may be dependent on them?
- Remaining tests in earlier stage(s) planned and on track to keep pace with (stay ahead of) plans for this stage.

11.2.2 Dependency on other pre-requisites

- Test Environment ready and available
  - If part ready but not complete, or if complete but not yet proven/stable, then assess likely disruption and weigh against benefits to be gained from starting before stable.
  - Would this activity assist or hinder stabilising the environments.
  - Is the necessary environment support on hand to mitigate issues.
  - If multiple environments needed, should start be made with just one first to fully prove the configuration prior to replication?
- Test Scripts/Data ready
  - Sufficient completed and available to support initial planned tests, and planned work for completion on track to keep pace with (stay ahead of) planned test execution.
  - If Scripts/Data produced, but not reviewed/approved, then assess likely rework which may result and weigh against benefits to be gained from starting without approval.

11.2.3 Other relevant factors

- External bodies/third parties (where involved) ready and available (including any equipment/systems concerned).
- Project priorities/imperatives understood – cost vs. elapsed time vs. quality.

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11.3 Specific Criteria for Entry to Performance Test Stage

- There Is an agreed low level plan available for Performance Test Stage.
- HLTP (this document) has been approved.
- LLTS's have been finalised and reviewed. I.e. A set of re-useable test cases have been prepared in Quality Centre and related to pertinent test Objectives (Objective Driven Testing) and Requirements.
- Details of versions of all deliverables must be available.
- All the critical defects for the module being delivered, from previous test stage (CIT and / or PAT) have been cleared.
- There are no defects outstanding (of any Priority) that will affect the initial (high risk) testing that will take place in this test stream.
- All testing for contents of the module have been completed in System Test (if not, is it viable for the module to begin Performance Testing?).
- Resources are available.
- All training has been identified and delivered.
- TPOC for any test tooling and methods has been satisfactorily completed.
- Test Tools and licences for those tools have been obtained, installed and configured for use.
- In house tooling is ready and installed?
- Redelivery of components and modules – Evidence must be available for regression testing that has been carried out for defect fixes applied to re-delivered software.
- Suitable Reference Data is available.
- The exit criteria values for this test stage are known and agreed.

12 Exit Criteria

Whilst Performance Testing (Load, Volume and Stress) will be conducted separately from SV&I as a discrete testing stage, the exit criteria is governed by the relevant section of the HNG-X Testing Process Entry and Exit Criteria document [9] pertaining to Solution Validation and Integration.

- All the Requirements and testing objectives (Objective Driven Testing) have been met in full or non compliance has been agreed and signed off.
- All the Objectives (Objective Driven Testing) designated for the Performance Test Stage have been covered within the testing cycles.
- All the System Acceptance Criteria have been met in full or non conformances has been agreed and signed off.
- ~~All testing for contents of the system has been completed in the previous System Test stage (if not, the module cannot move into the next stage)?~~
- All critical defects have been resolved*.
- All non-critical defects have been resolved*.
- Test Reports have been produced.

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*Note that in some cases there is scope to hand over testing with outstanding defects (both critical and non-critical). This can only occur where the impact has been assessed and full agreement is achieved between stakeholders.

13 Test Pass / Fail criteria

13.1 Test 'Pass' Status

A test will be deemed to have been 'passed' if the 'Actual Result' matches the 'Expected Result' in the Test Plan steps - either individually or all depending on the type of test being undertaken. In some tests, it may be possible to continue past a defect and satisfy the remaining steps within the test.

A test will also be deemed to have 'passed' if the actual result does not equal the expected result, but it is subsequently found that the expected result (as per the test plan) has been specified incorrectly (as sometimes happens). In which case, this must be annotated in the test plan / set and any defects that were raised for it, annotated similarly and closed. Any test modified in this way will require a review against the HLTP and HLD. It must also adhere to version control rules

13.2 Test 'Fail' Status

A test will be deemed to have failed if the actual results deviate from the expected results. In all instances a defect will be raised. The cause of the deviation, the test failure, must then be assessed.

Fixing of a defect (or other agreement to close) will allow a retest of the test plan and pass, if no further defects are raised.

13.3 Test 'No Run' Status

It may not be possible to run a test if there is an unresolved defect against the area under test. In this case the test will remain as 'No Run' in Quality Centre until the defect has been cleared.

Where it is not possible to run a test in its original form (due to outstanding defects), it may be necessary or possible to reform the test in order to approach from a different perspective. This must be done only by agreement with all parties concerned in which case, the original test may be abandoned and discarded.

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A Appendix – Manual Testing

There are no manual tests define. All tests will be automated.

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B Appendix – Automated Testing

The following list constitutes the planned tests to be carried out. (Not finalised and also the tests will need to be mapped back to the requirements).

Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M01_HNG-X CAPO Balance Enquiry & Withdrawal	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468 5470
C01	NFUN_SVC_M02_HNG-X A&L Business Deposit	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468 5470
C01	NFUN_SVC_M03_HNG-X NS&I Cash Withdrawal	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468 5470

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M04_HNG-X Purchase E-Top Up	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M05_HNG-X Purchase Phone Card	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M06_HNG-X Tax a vehicle for 12 months no VAT	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M07_HNG-X SORN with vehicle address changes	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M08_HNG-X Purchase postal order	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M09_HNG-X Encash postal order	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M10_HNG-X Payment by Debit-Credit card	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M11_HNG-X Address Lookup	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M12_HNG-X Purchase Saving Stamp	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M13_HNG-X Purchase 1st Class Stamps	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M14_HNG-X Purchase Pure Air Sure Europe Stationary	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M15_HNG-X Purchase Scratchcard	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M16_HNG-X Purchase Electricity Tokens	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M17_HNG-X Purchase Premium Bonds	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M18_HNG-X Purchase 1 Day Fishing License	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M19_HNG-X Post Special Delivery Small Letter	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M20_HNG-X Post Large Letter	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M21_HNG-X Post Letter USA Weighting	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M22_HNG-X Packet	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M23_HNG-X Bulk Post	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M24_HNG-X Pay Bill	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M25_HNG-X Freedom Passes	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M26_HNG-X Moneygram	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462 5465 5468
C01	NFUN_SVC_M27_HNG-X Travel Insurance	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M28_HNG-X Purchase Foreign Currency	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M29_HNG-X Purchase Foreign Currency in Travellers Cheques	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M30_HNG-X Purchase Pre-Order Foreign Currency	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M31_HNG-X Foreign Currency Buy Back	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M32_HNG-X Remittance Acceptance	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M33_HNG-X Remittance Rejection	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M34_HNG-X Transaction Correction for a Remittance Shortage	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M35_HNG-X Spolied Postal Orders	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M36_HNG-X Stock Unit Reports	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M37_HNG-X Office Reports	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M38_HNG-X Logon	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
C01	NFUN_SVC_M39_HNG-X Logoff	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462

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Test Group	Test Name	Description	H/ML	Req ID
C01	NFUN_SVC_M40_HNG-X Help	<OBJECTIVE> To demonstrate that the End-to-End Transaction time for the Scenario is no greater than the equivalent Horizon transaction timings. <PREREQ> <NOTES>	H	5460 5462
R01	NFUN_SVC_M01_Branch Router Performance 1 counter	<OBJECTIVE> **Transaction Performance via Branch Router with 1 Counter** To demonstrate that there is no degradation in the End-to-End Transaction time for the following scenarios conducted on 1 counter via a branch router. The following transactions will be performed: <PREREQ> <NOTES> *****Transaction Yet To Be Defined*** 22/01/2008 PL TDN: Reuse of Counter Performance Tests	H	5460
R01	NFUN_SVC_M02_Branch Router Performance 5 counter	<OBJECTIVE> **Transaction Performance via Branch Router with 5 Counters** To demonstrate that there is no degradation in the End-to-End Transaction time for the following scenarios conducted on 1 counter of a trading 20 counter branch via a branch router. e.g The branch router is not affecting transactions running on one counter by transactions running on the other 4 The following transactions will be performed: <PREREQ> <NOTES> *****Transaction Yet To Be Defined*** 22/01/2008 PL TDN: Reuse of Counter Performance Tests	H	5460

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Test Group	Test Name	Description	H/ML	Req ID
R01	NFUN_SVC_M03_Branch Router Performance 10 counter	<OBJECTIVE> **Transaction Performance via Branch Router with 10 Counters** To demonstrate that there is no degradation in the End-to-End Transaction time for the following scenarios conducted on 1 counter of a trading 20 counter branch via a branch router. e.g The branch router is not affecting transactions running on one counter by transactions running on the other 9 The following transactions will be performed: <PREREQ> <NOTES> *****Transaction Yet To Be Defined*** 22/01/2008 PL TDN: Reuse of Counter Performance Tests	H	5460
R01	NFUN_SVC_M03_Branch Router Performance 20 counter	<OBJECTIVE> **Transaction Performance via Branch Router with 20 Counters** To demonstrate that there is no degradation in the End-to-End Transaction time for the following scenarios conducted on 1 counter of a trading 20 counter branch via a branch router. e.g The branch router is not affecting transactions running on one counter by transactions running on the other 19 The following transactions will be performed: <PREREQ> <NOTES> *****Transaction Yet To Be Defined*** 22/01/2008 PL TDN: Reuse of Counter Performance Tests	H	5460
H01	NFUN_SVC_A002_Horizon Volume Monday Schedule	<OBJECTIVE> To exercise data centre processing for a peak day volume of representative transactions <PREREQ> <NOTES>	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
H04	NFUN_SVC_A003_Horizon Volume Two-Day Harvest	<OBJECTIVE> To exercise data centre processing for a peak day volume of representative transactions together with a previous peak day volume that had not been harvested. <PREREQ> <NOTES>	H	5435
H05	NFUN_SVC_A006_Horizon DCS Contracted Peak Hour	<OBJECTIVE> The DC Service must achieve 79,368 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5431
H05	NFUN_SVC_A007_Horizon DCS Design Limit Peak Hour	<OBJECTIVE> The DC Service must achieve 95,242 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run to Design Limit - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H05	NFUN_SVC_A008_Horizon DCS Contracted Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 22 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5435
H05	NFUN_SVC_A009_Horizon DCS Design Limit Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 26 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run to Design Limit - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H05	NFUN_SVC_A010_Horizon DCS Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
H06	NFUN_SVC_A001_Horizon CAPO Contracted Peak Hour	<OBJECTIVE> The CAPO Service must achieve 484,174 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5431
H06	NFUN_SVC_A002_Horizon CAPO Design Limit Peak Hour	<OBJECTIVE> The CAPO Service must achieve 581,009 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H06	NFUN_SVC_A003_Horizon CAPO Contracted Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 160 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
H06	NFUN_SVC_A004_Horizon CAPO Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 192 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H06	NFUN_SVC_A005_Horizon CAPO Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
H08/07/06	NFUN_SVC_A016_Horizon Combined Banking Contracted Peak Hour	<OBJECTIVE>The combined Network Banking Service (CAPO, LINK and A&L) must achieve 618,240 business transactions in a peak hour with acceptable response times (to be defined).The limits of the individual Financial Institutions should not exceeded as part of this combination which are:484,174 CAPO transaction97,750 LINK transactions36,316 A&L transactions<PREREQ><NOTES>	H	5431
H08/07/06	NFUN_SVC_A017_Horizon Combined Banking Design Limit Peak Hour	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 741,888 business transactions in a peak hour with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 581,009 CAPO transaction 117,300 LINK transactions 43,579 A&L transactions <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H08/07/06	NFUN_SVC_A018_Horizon Combined Banking Contracted Peak 5 Minutes	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 204 business transactions per second with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 160 CAPO transactions per second 32 LINK transactions per second 12 A&L transactions per second <PREREQ> <NOTES>	H	5435
H08/07/06	NFUN_SVC_A019_Horizon Combined Banking Design Limit Peak 5 Minutes	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 245 business transactions per second with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 192 CAPO transactions per second 39 LINK transactions per second 14 A&L transactions per second <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H08/07/06	NFUN_SVC_A020_Horizon Combined Banking Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. The individual rates of the Financial Institutions (CAPO, LINK and A&L) should be in proportion of the expected volumes. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
H07	NFUN_SVC_A006_Horizon LINK Contracted Peak Hour	<OBJECTIVE>The LINK Service must achieve 97,750 business transactions in a peak hour with acceptable response times (to be defined).<PREREQ><NOTES>	L	5431
H07	NFUN_SVC_A007_Horizon LINK Design Limit Peak Hour	<OBJECTIVE> The LINK Service must achieve 117,300 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H07	NFUN_SVC_A008_Horizon LINK Contracted Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 32 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435
H07	NFUN_SVC_A009_Horizon LINK Design Limit Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 39 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H07	NFUN_SVC_A010_Horizon LINK Stress Test	<OBJECTIVE> The LINK Service must achieve 39 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
H08	NFUN_SVC_A011_Horizon A&L Contracted Peak Hour	<OBJECTIVE> The A&L Service must achieve 36,316 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5431
H08	NFUN_SVC_A012_Horizon A&L Design Limit Peak Hour	<OBJECTIVE> The A&L Service must achieve 43,579 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H08	NFUN_SVC_A013_Horizon A&L Contracted Peak 5 Minutes	<OBJECTIVE> The A&L Service must achieve 12 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435

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Test Group	Test Name	Description	H/ML	Req ID
H08	NFUN_SVC_A014_Horizon A&L Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 14 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H08	NFUN_SVC_A015_Horizon A&L Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
H09	NFUN_SVC_A006_Horizon ETU Contracted Peak Hour	<OBJECTIVE> The ETU Service must achieve 17,254 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5431

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Test Group	Test Name	Description	H/ML	Req ID
H09	NFUN_SVC_A007_Horizon ETU Design Limit Peak Hour	<OBJECTIVE> The ETU Service must achieve 20,705 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H09	NFUN_SVC_A008_Horizon ETU Contracted Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 5 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5435
H09	NFUN_SVC_A009_Horizon ETU Design Limit Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 6 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H09	NFUN_SVC_A010_Horizon ETU Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
H10	NFUN_SVC_A006_Horizon T&T Contracted Peak Hour	<OBJECTIVE> The T&T Service must achieve 42,500 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5431
H10	NFUN_SVC_A007_Horizon T&T Design Peak Hour	<OBJECTIVE> The T&T Service must achieve 51,000 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
H10	NFUN_SVC_A008_Horizon T&T Contracted Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 11.66 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	H	5435
H10	NFUN_SVC_A009_Horizon T&T Design Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 16 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> Test not to be run: Do not run Design Limit tests - only now relevant for HNG-X as Horizon volumes will diminish.	-	5379
H10	NFUN_SVC_A010_Horizon T&T Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
H11	NFUN_SVC_A001_APOP Peak Hour	<OBJECTIVE> The APOP service must achieve 120,000 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES> For APOP, the design limit is the same as the contracted rate	M	5379 5431
H11	NFUN_SVC_A002_APOP Peak 5 Minutes	<OBJECTIVE> 'The APOP Service must achieve 39 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> For APOP, the design limit is the same as the contracted rate.	M	5379 5435
H12	NFUN_SVC_A001_DVLA Contracted Peak Hour	<OBJECTIVE> The DVLA Service must achieve 101,996 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5431

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Test Group	Test Name	Description	H/ML	Req ID
H12	NFUN_SVC_A002_DVLA Design Limit Peak Hour	<OBJECTIVE> The DVLA Service must achieve 122,396 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5379
H12	NFUN_SVC_A003_DVLA Contracted Peak 5 Minutes	<OBJECTIVE> The DVLA Service must achieve 30 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435
H12	NFUN_SVC_A004_DVLA Design Limit Peak 5 Minutes	<OBJECTIVE> The DVLA Service must achieve 36 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 47 tps must be achieved. <PREREQ> <NOTES>	L	5379

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Test Group	Test Name	Description	H/ML	Req ID
H12	NFUN_SVC_A005_DVLA Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Low priority - candidate for phase 2	L	
H13	NFUN_SVC_A001_PAF Contracted Peak Hour	<OBJECTIVE>The PAF Service must achieve 162,246 business transactions in a peak hour with acceptable response times (to be defined).<PREREQ><NOTES>	L	5431
H13	NFUN_SVC_A002_PAF Design Limit Peak Hour	<OBJECTIVE> The PAF Service must achieve 194,695 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5379

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Test Group	Test Name	Description	H/ML	Req ID
H13	NFUN_SVC_A003_PAF Contracted Peak 5 Minutes	<OBJECTIVE> The PAF Service must achieve 46 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435
H13	NFUN_SVC_A004_PAF Design Limit Peak 5 Minutes	<OBJECTIVE> The PAF Service must achieve 55 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 72 tps must be achieved. <PREREQ> <NOTES>	L	5379
H13	NFUN_SVC_A005_PAF Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Low priority - candidate for phase 2	L	

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Test Group	Test Name	Description	H/ML	Req ID
M01	NFUN_SVC_A004_Hydra Volume Monday Schedule	<OBJECTIVE> To exercise data centre processing for a peak day volume of representative transactions, where 50% generated by Horizon and 50% generated by HNG-X <PREREQ> <NOTES>	H	5435
M02	NFUN_SVC_A005_Hydra Volume Saturday Schedule	<OBJECTIVE> To exercise data centre processing (Saturday schedules) for a representative Saturday volume of transactions, where 50% generated by Horizon and 50% generated by HNG-X. <PREREQ> <NOTES> Some specific batch processing only takes place on a Saturday	H	5435
M03	NFUN_SVC_A006_Hydra Volume Sunday Schedule	<OBJECTIVE> To exercise data centre processing (Sunday schedules) for a representative Sunday volume of transactions, where 50% generated by Horizon and 50% generated by HNG-X. <PREREQ> <NOTES> Some specific batch processing only takes place on a Sunday	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
M04	NFUN_SVC_A007_Hydra Volume Two-Day Harvest	<OBJECTIVE> To exercise data centre processing for a peak day volume of representative transactions together with a previous peak day volume that had not been harvested. 50% generated by Horizon, 50% generated by HNG-X <PREREQ> <NOTES>	L	5435
M05	NFUN_SVC_A011_Hydra DCS Contracted Peak Hour	<OBJECTIVE> The DC Service must achieve 79,368 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5431
M05	NFUN_SVC_A012_Hydra DCS Design Limit Peak Hour	<OBJECTIVE> The DC Service must achieve 95,242 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5379

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Test Group	Test Name	Description	H/ML	Req ID
M05	NFUN_SVC_A013_Hydra DCS Contracted Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 22 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5435
M05	NFUN_SVC_A014_Hydra DCS Design Limit Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 26 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 34 tps must be achieved. The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5379

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Test Group	Test Name	Description	H/ML	Req ID
M05	NFUN_SVC_A015_Hydra DCS Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
M06	NFUN_SVC_A041_Hydra CAPO Contracted Peak Hour	<OBJECTIVE> The CAPO Service must achieve 484,174 business transactions in a peak hour with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5431

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Test Group	Test Name	Description	H/ML	Req ID
M06	NFUN_SVC_A042_Hydra CAPO Design Limit Peak Hour	<OBJECTIVE> The CAPO Service must achieve 581,009 business transactions in a peak hour with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379
M06	NFUN_SVC_A043_Hydra CAPO Contracted Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 160 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5435

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Test Group	Test Name	Description	H/ML	Req ID
M06	NFUN_SVC_A044_Hydra CAPO Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 192 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379
M06	NFUN_SVC_A045_Hydra CAPO Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
M08/07/06	NFUN_SVC_A056_Hydra Combined Banking Contracted Peak Hour	<OBJECTIVE>'The combined Network Banking Service (CAPO, LINK and A&L) must achieve 618,240 business transactions in a peak hour with acceptable response times (to be defined).The limits of the individual Financial Institutions should not exceeded as part of this combination which are:484,174 CAPO transaction97,750 LINK transactions36,316 A&L transactionsThe transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X.<PREREQ><NOTES>	H	5431
M08/07/06	NFUN_SVC_A057_Hydra Combined Banking Design Limit Peak Hour	<OBJECTIVE> 'The combined Network Banking Service (CAPO, LINK and A&L) must achieve 741,888 business transactions in a peak hour with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 581,009 CAPO transaction 117,300 LINK transactions 43,579 A&L transactions The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5379

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Test Group	Test Name	Description	H/ML	Req ID
M08/07/06	NFUN_SVC_A058_Hydra Combined Banking Contracted Peak 5 Minutes	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 204 business transactions per second with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 160 CAPO transactions per second 32 LINK transactions per second 12 A&L transactions per second The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5435
M08/07/06	NFUN_SVC_A059_Hydra Combined Banking Design Limit Peak 5 Minutes	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 245 business transactions per second with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 320 tps must be achieved. The limits of the individual Financial Institutions should not be exceeded as part of this combination which are: 250 CAPO transactions per second 51 LINK transactions per second 19 A&L transactions per second The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	H	5379

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Test Group	Test Name	Description	H/ML	Req ID
M08/07/06	NFUN_SVC_A060_Hydra Combined Banking Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. The individual rates of the Financial Institutions (CAPO, LINK and A&L) should be in proportion of the expected volumes. 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
M07	NFUN_SVC_A046_Hydra LINK Contracted Peak Hour	<OBJECTIVE> The LINK Service must achieve 97,750 business transactions in a peak hour with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5431

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Test Group	Test Name	Description	H/ML	Req ID
M07	NFUN_SVC_A047_Hydra LINK Design Limit Peak Hour	<OBJECTIVE> The LINK Service must achieve 117,300 business transactions in a peak hour with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379
M07	NFUN_SVC_A048_Hydra LINK Contracted Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 32 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5435

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Test Group	Test Name	Description	H/ML	Req ID
M07	NFUN_SVC_A049_Hydra LINK Design Limit Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 39 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379
M07	NFUN_SVC_A050_Hydra LINK Stress Test	<OBJECTIVE> The LINK Service must achieve 39 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
M08	NFUN_SVC_A051_Hydra A&L Contracted Peak Hour	<OBJECTIVE>The A&L Service must achieve 36,316 business transactions in a peak hour with acceptable response times (to be defined).50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route.<PREREQ><NOTES>Test not to be run:Covered by test for Hydra Combined run	-	5431
M08	NFUN_SVC_A052_Hydra A&L Design Limit Peak Hour	<OBJECTIVE> The A&L Service must achieve 43,579 business transactions in a peak hour with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
M08	NFUN_SVC_A053_Hydra A&L Contracted Peak 5 Minutes	<OBJECTIVE> The A&L Service must achieve 12 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5435
M08	NFUN_SVC_A054_Hydra A&L Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 14 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Covered by test for Hydra Combined run	-	5379

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Test Group	Test Name	Description	H/ML	Req ID
M08	NFUN_SVC_A055_Hydra A&L Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. 50% of the transactions should generated via the Horizon route and the remaining 50% should be generated via the HNG-X route. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
M09	NFUN_SVC_A011_Hydra ETU Contracted Peak Hour	<OBJECTIVE> The ETU Service must achieve 17,254 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5431

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Test Group	Test Name	Description	H/ML	Req ID
M09	NFUN_SVC_A012_Hydra ETU Design Limit Peak Hour	<OBJECTIVE> The ETU Service must achieve 20,705 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5379
M09	NFUN_SVC_A013_Hydra ETU Contracted Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 5 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5435
M09	NFUN_SVC_A014_Hydra ETU Design Limit Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 6 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 8 tps must be achieved. The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5379

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Test Group	Test Name	Description	H/ML	Req ID
M09	NFUN_SVC_A015_Hydra ETU Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	
M10	NFUN_SVC_A011_Hydra T&T Contracted Peak Hour	<OBJECTIVE> The T&T Service must achieve 42,500 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5431
M10	NFUN_SVC_A012_Hydra T&T Design Peak Hour	<OBJECTIVE> The T&T Service must achieve 51,000 business transactions in a peak hour with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5379

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Test Group	Test Name	Description	H/ML	Req ID
M10	NFUN_SVC_A013_Hydra T&T Contracted Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 11.66 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5435
M10	NFUN_SVC_A014_Hydra T&T Design Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 16 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 21 tps must be achieved. The transaction rates should be at a mix of 95% Horizon / 5% HNG-X and also at a mix of 50% Horizon / 50% HNG-X. <PREREQ> <NOTES>	M	5379
M10	NFUN_SVC_A015_Hydra T&T Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Test not to be run: Only now relevant for HNG-X as Horizon volumes will diminish.	-	

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Test Group	Test Name	Description	H/ML	Req ID
M01	NFUN_SVC_A001_HYDRA A&L TES Rec	<OBJECTIVE> The file generation process on the TES system - TES_AL_REC_RUN, TESC332, for a peak day, completes within an acceptable time frame, well within the target delivery time to the FI of 00:10. Document DES/APP/HLD/0052 states that file generation time is estimated to take:- Peak Day Volume(Design Limit) = 123386 transactions File generation time - 3 minutes <PREREQ> a) Sufficient relevant transactions have been generated in a peak days test load to generate the required no. of TES A&L transactions. (PA/PER/033 - Peak Day Baseline:- 90992 transactions). <NOTES> Will be run as part of M1 (Hydra volume Monday schedule)	H	5435
M01	NFUN_SVC_A002_HYDRA A&L TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_rec' to process the A&L Rec file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery to the FI target deadline of 00.10. <PREREQ> a). That there are a peak days no. of transactions present in the A&L Rec file on the Connect Direct Gateway. (90992 transactions). <NOTES> Will be run as part of M1 (Hydra volume Monday schedule) DES/APP/HLD/0052 states that "Test runs have provided estimates so that for 2 million rows using 4 threads a decryption time of about 50 minutes is possible".	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
M01	NFUN_SVC_A003_HYDRA CAPO TES Rec	<OBJECTIVE> The file generation process on the TES system - TES_CAPO_REC_RUN, TESC332, for a peak day, completes within an acceptable time frame, well within the target delivery time to the FI of 00:10. Document DES/APP/HLD/0052 states that file generation time is estimated to take:- Peak Day Volume(Design limit) = 3331423 transactions File generation time - 60 minutes <PREREQ> a) Sufficient transactions have been generated in a peak days test load to generate the required no. of TES CAPO transactions. (PA/PER/033 - Peak Day Baseline:- 1529839 transactions). <NOTES> Will be run as part of M1 (Hydra volume Monday schedule)	H	5435
M01	NFUN_SVC_A004_HYDRA CAPO TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_rec' to process the CAPO Rec file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery to the FI target deadline of 00.10. <PREREQ> a). That there are a peak days no. of transactions present in the CAPO Rec file on the Connect Direct Gateway. (1529839 transactions). <NOTES> Will be run as part of M1 (Hydra volume Monday schedule) DES/APP/HLD/0052 states that "Test runs have provided estimates so that for 2 million rows using 4 threads a decryption time of about 50 minutes is possible".	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
M01	NFUN_SVC_A005_HYDRA LINK TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_lrec' to process the Link LREC file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery toTES target deadline of 02.02am. <PREREQ> a). That there are a peak days no. of relevant transactions present in the Link LREC file on the Connect Direct Gateway. (202849 transactions). b). For transactions to be included in an LREC file, they must be of the correct transaction type:- 63 for instance. A type 64 will not be included. c) The curent mechanism for creating the LREC file is based on extracting C1 messages from the bulker sig files and then filtering out the required records. For HNG-X, records will need to be extracted from the branch database and amalgamated with the files from Horizon to produce a Hydra file. <NOTES> Will be run as part of M1 (Hydra volume Monday schedule) DES/APP/HLD/0052 states that "The CDG conversion process is insignificant since the hash process has been estimated to process 200,000 values in 0.5 seconds on a test run".	H	5435
X01	NFUN_SVC_A001_HNG-X Volume Monday Schedule	<OBJECTIVE> To exercise data centre processing for a peak day volume of representative transactions <PREREQ> <NOTES>	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
X05	NFUN_SVC_A001_HNG-X DCS Contracted Peak Hour	<OBJECTIVE> The DC Service must achieve 79,368 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5431
X05	NFUN_SVC_A002_HNG-X DCS Design Limit Peak Hour	<OBJECTIVE> The DC Service must achieve 95,242 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5379
X05	NFUN_SVC_A003_HNG-X DCS Contracted Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 22 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5435

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Test Group	Test Name	Description	H/ML	Req ID
X05	NFUN_SVC_A004_HNG-X DCS Design Limit Peak 5 Minutes	<OBJECTIVE> The DC Service must achieve 26 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 34 tps must be achieved. <PREREQ> <NOTES>	M	5379
X05	NFUN_SVC_A005_HNG-X DCS Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	
X06	NFUN_SVC_A021_HNG-X CAPO Contracted Peak Hour	<OBJECTIVE> The CAPO Service must achieve 484,174 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5431

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Test Group	Test Name	Description	H/ML	Req ID
X06	NFUN_SVC_A022_HNG-X CAPO Design Limit Peak Hour	<OBJECTIVE> The CAPO Service must achieve 581,009 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5379
X06	NFUN_SVC_A023_HNG-X CAPO Contracted Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 160 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5435
X06	NFUN_SVC_A024_HNG-X CAPO Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 192 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 250 tps must be achieved. <PREREQ> <NOTES>	M	5379

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Test Group	Test Name	Description	H/ML	Req ID
X06	NFUN_SVC_A025_HNG-X CAPO Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	
X08/07/06	NFUN_SVC_A036_HNG-X Combined Banking Contracted Peak Hour	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 618,240 business transactions in a peak hour with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 484,174 CAPO transaction 97,750 LINK transactions 36,316 A&L transactions <PREREQ> <NOTES>	M	5431

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Test Group	Test Name	Description	H/ML	Req ID
X08/07/06	NFUN_SVC_A037_HNG-X Combined Banking Design Limit Peak Hour	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 741,888 business transactions in a peak hour with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 581,009 CAPO transaction 117,300 LINK transactions 43,579 A&L transactions <PREREQ> <NOTES>	M	5379
X08/07/06	NFUN_SVC_A038_HNG-X Combined Banking Contracted Peak 5 Minutes	<OBJECTIVE> The combined Network Banking Service (CAPO, LINK and A&L) must achieve 204 business transactions per second with acceptable response times (to be defined). The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 160 CAPO transactions per second 32 LINK transactions per second 12 A&L transactions per second <PREREQ> <NOTES>	M	5435

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Test Group	Test Name	Description	H/ML	Req ID
X08/07/06	NFUN_SVC_A039_HNG-X Combined Banking Design Limit Peak 5 Minutes	<OBJECTIVE> 'The combined Network Banking Service (CAPO, LINK and A&L) must achieve 245 business transactions per second with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 320 tps must be achieved. The limits of the individual Financial Institutions should not exceeded as part of this combination which are: 250 CAPO transactions per second 51 LINK transactions per second 19 A&L transactions per second <PREREQ> <NOTES>	M	5379
X08/07/06	NFUN_SVC_A040_HNG-X Combined Banking Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. The individual rates of the Financial Institutions (CAPO, LINK and A&L) should be in proportion of the expected volumes. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	

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Test Group	Test Name	Description	H/ML	Req ID
X07	NFUN_SVC_A026_HNG-X LINK Contracted Peak Hour	<OBJECTIVE> The LINK Service must achieve 97,750 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5431
X07	NFUN_SVC_A027_HNG-X LINK Design Limit Peak Hour	<OBJECTIVE> The LINK Service must achieve 117,300 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5379
X07	NFUN_SVC_A028_HNG-X LINK Contracted Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 32 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435

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Test Group	Test Name	Description	H/ML	Req ID
X07	NFUN_SVC_A029_HNG-X LINK Design Limit Peak 5 Minutes	<OBJECTIVE> The LINK Service must achieve 39 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 51 tps must be achieved. <PREREQ> <NOTES>	L	5379
X07	NFUN_SVC_A030_HNG-X LINK Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	
X08	NFUN_SVC_A031_HNG-X A&L Contracted Peak Hour	<OBJECTIVE> The A&L Service must achieve 36,316 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5431

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Test Group	Test Name	Description	H/ML	Req ID
X08	NFUN_SVC_A032_HNG-X A&L Design Limit Peak Hour	<OBJECTIVE> The A&L Service must achieve 43,579 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5379
X08	NFUN_SVC_A033_HNG-X A&L Contracted Peak 5 Minutes	<OBJECTIVE> The A&L Service must achieve 12 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	L	5435
X08	NFUN_SVC_A034_HNG-X A&L Design Limit Peak 5 Minutes	<OBJECTIVE> The CAPO Service must achieve 14 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 19 tps must be achieved. <PREREQ> <NOTES>	L	5379

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Test Group	Test Name	Description	H/ML	Req ID
X08	NFUN_SVC_A035_HNG-X A&L Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	
X09	NFUN_SVC_A001_HNG-X ETU Contracted Peak Hour	<OBJECTIVE> The ETU Service must achieve 17,254 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5431
X09	NFUN_SVC_A002_HNG-X ETU Design Limit Peak Hour	<OBJECTIVE> The ETU Service must achieve 20,705 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5379

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Test Group	Test Name	Description	H/ML	Req ID
X09	NFUN_SVC_A003_HNG-X ETU Contracted Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 5 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5435
X09	NFUN_SVC_A004_HNG-X ETU Design Limit Peak 5 Minutes	<OBJECTIVE> The ETU Service must achieve 6 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 8 tps must be achieved. <PREREQ> <NOTES>	M	5379
X09	NFUN_SVC_A005_HNG-X ETU Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	

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Test Group	Test Name	Description	H/ML	Req ID
X10	NFUN_SVC_A001_HNG-X T&T Contracted Peak Hour	<OBJECTIVE> The T&T Service must achieve 42,500 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5431
X10	NFUN_SVC_A002_HNG-X T&T Design Peak Hour	<OBJECTIVE> The T&T Service must achieve 51,000 business transactions in a peak hour with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5379
X10	NFUN_SVC_A003_HNG-X T&T Contracted Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 11.66 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES>	M	5435

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Test Group	Test Name	Description	H/ML	Req ID
X10	NFUN_SVC_A004_HNG-X T&T Design Peak 5 minutes	<OBJECTIVE> The T&T Service must achieve 16 business transactions per second in a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 21 tps must be achieved. <PREREQ> <NOTES>	M	5379
X10	NFUN_SVC_A005_HNG-X T&T Stress Test	<OBJECTIVE> 'The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Candidate for Phase 2 as historical peak volumes are well below design limit	L	
X11	NFUN_SVC_A001_BAL Design Limit Performance	<OBJECTIVE> The BAL must support 4028386 online service calls in a peak hour (1119 tps), and 1128 online service calls per second in a peak 5 minute period. Allowing for actual per second peak, a rate of 1466 tps must be achieved. Within the overall online service call limits, the BAL must support 3520717 (978 tps) transaction volumes in a peak hour and 1068 transaction volumes per second in a peak 5 minute period. Allowing for actual per second peak, a rate of 1388 tps must be achieved. <PREREQ> <NOTES> The term "Transactional volumes" defines all Service calls that are written within a basket as a result of branch trading (i.e.. no reports, help, user management etc). Using the correct mix of service calls / transactions will simultaneously test the BAL and BRDB	H	5379 5431 5471

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Test Group	Test Name	Description	H/ML	Req ID
X12	NFUN_SVC_A001_BRDB Design Limit Performance	<OBJECTIVE> The BRDB must support 1068 business transactions per second in a peak 5 minute period with acceptable response times (between 50ms and 100ms for a typical transaction). Allowing for actual per second peak, a rate of 1388 tps must be achieved. <PREREQ> <NOTES> Using the correct mix of service calls / transactions will simultaneously test the BAL and BRDB	H	5379
X11	NFUN_SVC_A002_BAL Stress Test	<OBJECTIVE> The online service call rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES>	H	
X12	NFUN_SVC_A002_BRDB Stress Test Performance	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES>	H	

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Test Group	Test Name	Description	H/ML	Req ID
X13	NFUN_SVC_A001_Logon-Logoff Contracted Peak 5 minutes	<OBJECTIVE> A peak 5 minute peak of 100 logon/logoffs per second must be achievable. <PREREQ> <NOTES>	L	5435 5438 5474
X13	NFUN_SVC_A002_Logon-Logoff Design Limit Peak 5 minutes	<OBJECTIVE> A peak 5 minute peak of 120 logon/logoffs per second must be achievable. Allowing for actual per second peak, a rate of 200 session establishments must be achieved. <PREREQ> <NOTES>	L	5379 5438 5474
X13	NFUN_SVC_A003_Logon-Logoff Stress Test	<OBJECTIVE> The logon/logoff rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES>	L	
X13	NFUN_SVC_A004_Logon-Logoff Maximun Concurrent sessions	<OBJECTIVE> The Branch Access Network must support a design limit of 34,954 concurrent connections <PREREQ> <NOTES>	L	5435

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Test Group	Test Name	Description	H/ML	Req ID
X14	NFUN_SVC_A001_HNG-X Help Service Contracted Peak 5 Minutes	<OBJECTIVE> The Help Service must achieve 50 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> By using the right mix of service calls / transactions, these tests can be covered by the BAL testing (X11)	L	5435 5438 5475 5476
X14	NFUN_SVC_A002_HNG-X Help Service Design Limit Peak 5 Minutes	<OBJECTIVE> The Help Service must achieve 60 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 78 tps must be achieved. <PREREQ> <NOTES> By using the right mix of service calls / transactions, these tests can be covered by the BAL testing (X11)	L	5379 5438 5475 5476
X14	NFUN_SVC_A003_HNG-X Help Service Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Phase 2	L	

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Test Group	Test Name	Description	H/ML	Req ID
X01	NFUN_SVC_A001_HNG_X A&L TES Rec	<OBJECTIVE> The file generation process on the TES system - TES_AL_REC_RUN, TESC332, for a peak day, completes within an acceptable time frame, well within the target delivery time to the FI of 00:10. Document DES/APP/HLD/0052 states that file generation time is estimated to take:- Peak Day Volume(Design Limit) = 123386 transactions File generation time - 3 minutes <PREREQ> a) Sufficient transactions have been generated in a peak days test load to generate the required no. of TES A&L transactions. (PA/PER/033 - Peak Day Baseline:- 90992 transactions). <NOTES> Will be run as part of X1 HNG-X volume Monday schedule)	H	5435
X*n*	NFUN_SVC_A001_HNG-X Reports Contracted Peak 5 Minutes	<OBJECTIVE> Reports must achieve 125 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). <PREREQ> <NOTES> By using the right mix of service calls / transactions, these tests can be covered by the BAL testing (X11)	M	5435 5438 5474 5475
X*n*	NFUN_SVC_A002_HNG-X Reports Design Limit Peak 5 Minutes	<OBJECTIVE> Reports must achieve 150 business transactions per second during a peak 5 minute period with acceptable response times (to be defined). Allowing for actual per second peak, a rate of 250 tps must be achieved. <PREREQ> <NOTES> By using the right mix of service calls / transactions, these tests can be covered by the BAL testing (X11)	M	5379 5438 5474 5475

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Test Group	Test Name	Description	H/ML	Req ID
X*n*	NFUN_SVC_A003_HNG-X Reports Service Stress Test	<OBJECTIVE> The business transaction rate is uniformally increased until the service can no longer be sustained at acceptable response times (to be defined) or complete failure of service. <PREREQ> <NOTES> Phase 2	L	
X01	NFUN_SVC_A002_HNG_X A&L TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_rec' to process the A&L Rec file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery to the FI target deadline of 00.10. <PREREQ> a). That there are a peak days no. of transactions present in the A&L Rec file on the Connect Direct Gateway. (90992 transactions). <NOTES> Will be run as part of X1 HNG-X volume Monday schedule) DES/APP/HLD/0052 states that "Test runs have provided estimates so that for 2 million rows using 4 threads a decryption time of about 50 minutes is possible".	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
X01	NFUN_SVC_A003_HNG_X CAPO TES Rec	<OBJECTIVE> The file generation process on the TES system - TES_CAPO_REC_RUN, TESC332, for a peak day, completes within an acceptable time frame, well within the target delivery time to the FI of 00:10. Document DES/APP/HLD/0052 states that file generation time is estimated to take:- Peak Day Volume(Design limit) = 3331423 transactions File generation time - 60 minutes <PREREQ> a) Sufficient transactions have been generated in a peak days test load to generate the required no. of TES CAPO transactions. (PA/PER/033 - Peak Day Baseline:- 1529839 transactions). <NOTES> Will be run as part of X1 HNG-X volume Monday schedule)	H	5435
X01	NFUN_SVC_A004_HNG_X CAPO TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_rec' to process the CAPO Rec file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery to the FI target deadline of 00.10. <PREREQ> a). That there are a peak days no. of transactions present in the CAPO Rec file on the Connect Direct Gateway. (1529839 transactions). <NOTES> Will be run as part of X1 HNG-X volume Monday schedule) DES/APP/HLD/0052 states that "Test runs have provided estimates so that for 2 million rows using 4 threads a decryption time of about 50 minutes is possible".	H	5435

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Test Group	Test Name	Description	H/ML	Req ID
X01	NFUN_SVC_A005_HNG_X LINK TES Rec CDG	<OBJECTIVE> The time taken for agent process 'agent_nbs_lrec' to process the Link LREC file on the Connect Direct gateway, for a peak days transactions, is within acceptable limits, and completes well within the delivery toTES target deadline of 02.02am. <PREREQ> a). That there are a peak days no. of relevant transactions present in the Link LREC file on the Connect Direct Gateway. (202849 transactions). b). For transactions to be included in an LREC file, they must be of the correct transaction type:- 63 for instance. A type 64 will not be included. c) A mechanism needs to be developed to extract C1 records from the Branch database in a similar fashion to the way C1 messages are extracted from the Riposte bulkers. <NOTES> Will be run as part of X1 HNG-X volume Monday schedule) DES/APP/HLD/0052 states that "The CDG conversion process is insignificant since the hash process has been estimated to process 200,000 values in 0.5 seconds on a test run".	H	5435

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