

SDLC REPORT
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Abstract: Explanation of the Software Delivery Life Cycle used for Horizon Applications.

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Name	Role	
Fujitsu	Horizon Audit Team (POA)	See Dimensions for record



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0 Document Control

0.1 Document History

Version No.	Date	Summary of Changes and Reason for Issue	Associated Change CWO, CP, CCN or Peak Reference
1.0	29/01/2021	Approved for release	N/A

0.2 Review Details

Mandatory Review	
Role	Name
Horizon Audit Team	Fujitsu

0.3 Associated Documents (Internal & External)

Reference	Version	Date	Title	Source
COM/MGT/REP/4163	Latest	Latest	Expanded Table of Contents for the SDLC Report	Dimensions
COM/MGT/REP/4166	Latest	Latest	Testing & QA Report	Dimensions

0.4 Abbreviations

Abbreviation	Definition
ADBM	Applications Design and Build Method
AIS	Application Interface Specification
BAU	Business As Usual
BRA01	Fujitsu Office in Bracknell where the Fujitsu POA project team are based
BRS	Business Requirements Specification
CAB	Change Advisory Board
CCD	Contract Controlled Document
CIT	Component Integration Test (Development Pre-Integration Test Environment)
CMDB	Configuration Management Database
COTS	Commercial Off The Shelf software products e.g. MS Office
CP	Change Proposal (internal to Fujitsu)
CR	Change Request (See RTQ below) (External POL)
CSP	Customer Solution Proposal
CT	Component Test
CTP / CITP	Component (Integration) Test Plan
CTR / CITR	Component (Integration) Test Report
CWO	Change Work Order – Contractual agreement to implement a work package under BAU Change



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DLL	Dynamic Link Library
DPVB	Deployable Product Version Baseline
EBMS	European Business Management System
ECCB	Engineering Change Control Board
EDS	Enterprise Data Server – part of IBM Tivoli provisioning solution
EPM	Enterprise Provisioning Manager – part of IBM Tivoli provisioning solution
FSR	Feasibility Study Report
GDC Networks	Fujitsu Network Team in India
HBA	Fibre optic card that connects SAN storage to a server
HLD	High level Design
HNG-x	Horizon Next Generation 'Plan X'
HNGxDBM	HNG-x Design and Build Method
IDBM	Infrastructure Design and Build Method
IFS	System Interface Specification
IPR	Intellectual Property Rights
ISO	International Standards Organisation
KB	Knowledge Base (article)
LLD	Low Level Design
LST	Live System Test (Pre-Production Test Environment)
LUN	Disk. Logical Unit Number disk, units of which are used to create a SAN
NIC	Network Interface Card
OS	Operating System
PCI	Payment Card Industry
PCI DSS	Payment Card Industry Data Security Standard – proprietary information security standard
PHIL	Platform Hardware Instance List – spreadsheet showing Platforms on a Rig
POA	Post Office Account
POL	Post Office Limited
PPD	Physical Platform Design
PSD	Project Solution Design
PSPID	Platform Set Platform Instance Definition
PVB	Product Version Baseline
QC	Hewlett Packard Quality Centre (Test Management Tool)
Rig	Defined network and server environment i.e. Integration, Test, Live
RM	Release Management Team
ROM	Rough Order of Magnitude estimate
SAN Storage	Storage Area Network – configurable network storage
SCM	Software Configuration Management Team
SRR	Service Readiness Review
TEM	Tivoli Enterprise Manager



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TIS	Technical Interface Specification
TPM	Tivoli Provisioning Manager
UAT	User Acceptance Testing
UML	Unified Modelling Language
VLAN	Virtual Local Area Network
WWN	World Wide Number assigned to connection in HBA
XML	eXtensible Markup Language

0.5 Glossary

Term	Definition
Baseline	A distinct version of a software deliverable or configuration item – as recorded in Dimensions
Build Doc	Computer file containing list of DPVBs
Central CM control	Configuration Management controlled centrally using Dimensions
Cron job	Linux command used for scheduling tasks to be executed sometime in the future
Dimensions	Software and document database
Discrete Platform	Server built on a single piece of hardware
Hosted Platform	1 of many servers built on Bladeframe hardware
Integration Platform List	Document that contains the list of Servers on the Integration Rig
Interim Baseline	An Interim Baseline is a version of a document which is stable and complete enough to enable the use of it for a specific purpose – e.g. a design which is missing sections describing Service elements, may still be stable/complete to enable the first stage of implementation, or for Testing to derive Test Cases.
Local CM control	Configuration Management control exercised at the local level. May be via VSS or CVS
Peak	Fujitsu Incident and Release management system
PEN Testing	PENetration Testing
Platform	Server – there may be more than 1 instance of a server
Release	A set of software changes that are to be deployed
Requirements	Documented and agreed requirements that describe what is to be provided
Storage Definition	Spreadsheet that defines the Storage disks for each platform
Sysware	Record in Dimensions that references Fujitsu and/or COTS software lodged on a fileshare

0.6 Changes Expected

Changes

0.7 Accuracy

Fujitsu endeavours to ensure that the information contained in this report is accurate but, while 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 herein.



0.8 Information Classification

The author has assessed the information in this document for risk of disclosure and has assigned an information classification of FUJITSU CONFIDENTIAL. This report is also subject to the Information Distribution statements in Section 8.



1 Executive Summary

The purpose and scope of this report is to explain the current Fujitsu Software Delivery Life Cycle used for Horizon Applications. It provides POL with information to understand how Fujitsu delivers this element of the contracted services.

On 20 August 2020, POL requested an audit of Horizon by sending a letter to Fujitsu titled "Horizon Audit". Following a number of discussions between POL and Fujitsu, it was agreed by POL that Fujitsu would prepare a set of reports on key topic areas identified by POL.

The spirit of the discussions between POL and Fujitsu was to share content that would allow both organisations to confirm the efficiency of the current ways of working together, and to identify ways to make meaningful improvements. Fujitsu believe in collaboration and welcome constructive suggestions from POL.

This report explains the Software Delivery Life Cycle used for Horizon Applications ("SDLC Report"). It follows the "Expanded Table of Contents for the SDLC Report" (COM/MGT/REP/4163) which was shared with POL on 01 December 2020.

The SDLC Report covers the lifecycle from Requirements to Release excluding "Test" activities which are subject to a separate report entitled "Testing & QA Report" (COM/MGT/REP/4166).

Fujitsu's Software Delivery Life Cycle for the Horizon application is based on widely recognised industry standard approaches and has been refined to meet the needs of POL and the current Horizon Contract.

This Report explains how the SDLC is operated for POA and shows the many points of engagement with POL and the joint processes throughout.

Fujitsu has endeavoured to ensure that the content of this report is correct as at the date of issue. Fujitsu reserve the right to make changes to the way we work in the ordinary course of its operations and business without obligation to update this report. POL should verify the position with Fujitsu before relying upon any information or content from this report, as well as bearing in mind the requirements set out in "Information Distribution" at Section 8 below.

The author has assessed the information in this report for risk of disclosure and has assigned an information classification of FUJITSU CONFIDENTIAL. This report is also subject to further Information Distribution statements at Section 8 in this report.

POL is invited to comment on this report to seek any additional clarifications it needs. Fujitsu will endeavour to respond to any comments or clarifications requested and may, if it deems necessary, provide an updated version of this report.

Fujitsu welcome the opportunity to provide this report.



2 Purpose & Scope

The purpose and scope of this report is to explain the current Fujitsu Software Delivery Life Cycle used for Horizon Applications. It provides POL with information to understand how Fujitsu delivers this element of the contracted services.

POL is invited to comment on this report to seek any additional clarifications it needs. Fujitsu will endeavour to respond to any comments or clarifications requested and may, if it deems necessary, provide an updated version of this report.

Fujitsu welcome the opportunity to provide this report and looks forward to a constructive dialogue with POL.

3 Background & Introduction

On 20 August 2020, POL requested an audit of Horizon by sending a letter to Fujitsu titled "Horizon Audit". Following a number of discussions between POL and Fujitsu, it was agreed by POL that Fujitsu would prepare a set of reports on key topic areas identified by POL.

The spirit of the discussions between POL and Fujitsu was to share content that would allow both organisations to confirm the efficiency of the current ways of working together, and to identify ways to make meaningful improvements that would enhance the working relationships and hopefully ensure a better experience for the POL branches and their postmasters. Fujitsu believe in collaboration and welcome constructive suggestions from POL.

This report explains the Software Delivery Life Cycle used for Horizon Applications ("SDLC Report"). It follows the "Expanded Table of Contents for the SDLC Report" (COM/MGT/REP/4163) which was shared with POL on 01 December 2020.

The SDLC Report covers the lifecycle from Requirements to Release excluding "Test" activities which are subject to a separate "Testing & QA Report" (COM/MGT/REP/4166).

As a general comment, it is important to note that Fujitsu is only one supplier involved in the overall delivery of end-to-end services to POL in relation to Horizon. The Horizon application also relies on the working partnership between POL and its chosen partners – such as Verizon, Computacenter and Atos – as well as external service providers such as banks and affiliated organisations. This applies to both the IT systems and the operational processes in Horizon.

Although every effort has been made to avoid confusing jargon in this report, the very nature of this aspect of the service delivered to POL necessitates the use of many acronyms and phrases that may need expanding upon to ensure the correct understanding. Fujitsu accepts that further explanation may be necessary and encourages POL to seek these clarifications.

Fujitsu has endeavoured to ensure that the content of this report is correct as at the date of issue. This report has been prepared with the input of numerous Fujitsu individuals and attribution of any statements made in this report should be made to Fujitsu only. In preparing this report, the authors have collectively characterised and summarised many internal Fujitsu documents. They have also described processes and procedures which have been established over many years and may not be in written form. Many of the documents, processes and procedures described in this report are continuously updated and Fujitsu reserve the right to make changes to the way it works in the ordinary course of its operations and business without obligation to update this document. POL should verify the position with Fujitsu before relying upon any information or content from this document in the future as well as bearing in mind the requirements set out in "Information Distribution" at Section 8 below.



4 SDLC

4.1 Overview of Process

This section presents an overview of the **HNG-x** Project, including its engineering lifecycle, the roles of the Fujitsu team that operate within the lifecycle and the products generated by it through the BAU Change Process.

It is important to note that if a programme of work operates and is managed separately from HNG-x, it may do so under a different set of processes, and may have differing roles and products. For example, the current Belfast Exit (Pivot to Cloud) Programme, which is being directed by POL, has different roles and processes from the HNG-x Project.

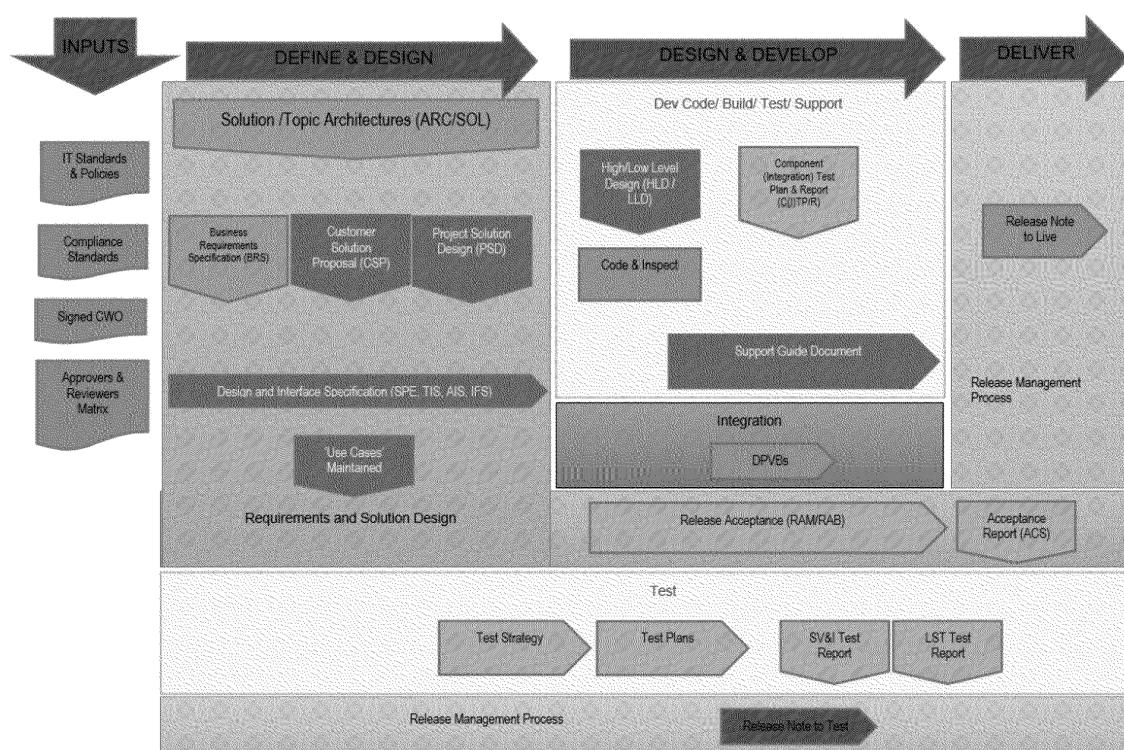
Previous versions of the HNG-x engineering lifecycle were historically based on the Fujitsu corporate processes which, at the inception of the HNG-x Project, pertained to: the Fujitsu corporate Applications Design and Build Method (ADBM), the Infrastructure (IDBM), the Test and Validation (T&V) equivalents, and the Fujitsu standards for engineering and testing. In agreement with the POL (then Royal Mail Group, now Post Office Ltd), the original HNG-x Development Strategy (now deprecated) expanded on this and identified that the nature of the HNG-x Project required elements of ADBM, IDBM and T&V to be combined to form a single new engineering lifecycle methodology (Design and Build Method): The **HNGxDBM**.

Fujitsu are required to operate a generic Development Lifecycle methodology designed to deliver the required Development Services as set out in Schedule B1.1 of the Horizon Contract, and specifically Clause 3 of Schedule B1.1. The generic Development Lifecycle methodology is **HNGxDBM**.

The processes have been refined over time to follow changes to general working practises, including to align with changes to Fujitsu's own processes where appropriate, as described in the Fujitsu Europe Business Management System (EBMS) (Fujitsu Internal).

This document also describes the key roles of the Fujitsu team referenced in the **HNGxDBM** processes. These roles are detailed in Appendix A – HNGxDBM Role Descriptions.

The diagram below shows key inputs and outputs to the lifecycle process.



The process diagram above is explained in the next sections of this document.

4.1.1 HNGxDBM Product Descriptions

Product Descriptions provide details of each artefact potentially generated by the **HNGxDBM** engineering lifecycle. Product Descriptions assist in giving the team member to whom the product is allocated a clear understanding of what is required. It also forms the criteria/benchmark that the completed product is evaluated against when it is submitted for review.

Where possible **HNGxDBM** Product Descriptions will conform to the overall structure and layout set out in the HNG-x document template.

Some artefacts may be supplied by POL or a third party for a particular BAU Change programme and as such, whilst being deposited in Dimensions, will not conform to the required HNG-x document templates.

In other instances, an artefact may be produced from a tool, in which case strict compliance with the HNG-x document template may not be possible. Where such an exception exists, it will be noted in the Composition element of the Product Description.

4.2 Define Solution

This section describes the initial phase of the SDLC: defining the solution.

4.2.1 Process Aims & Objectives

To clarify POL's and HNG-x Project staff's understanding of the Stakeholder Requirements and the scope of the agreed solution design.

Communication links will have been established with POL and other stakeholders for each group of changes that are to be delivered in a Release. Details of such links can be found in the associated Project Management documentation for that Release.

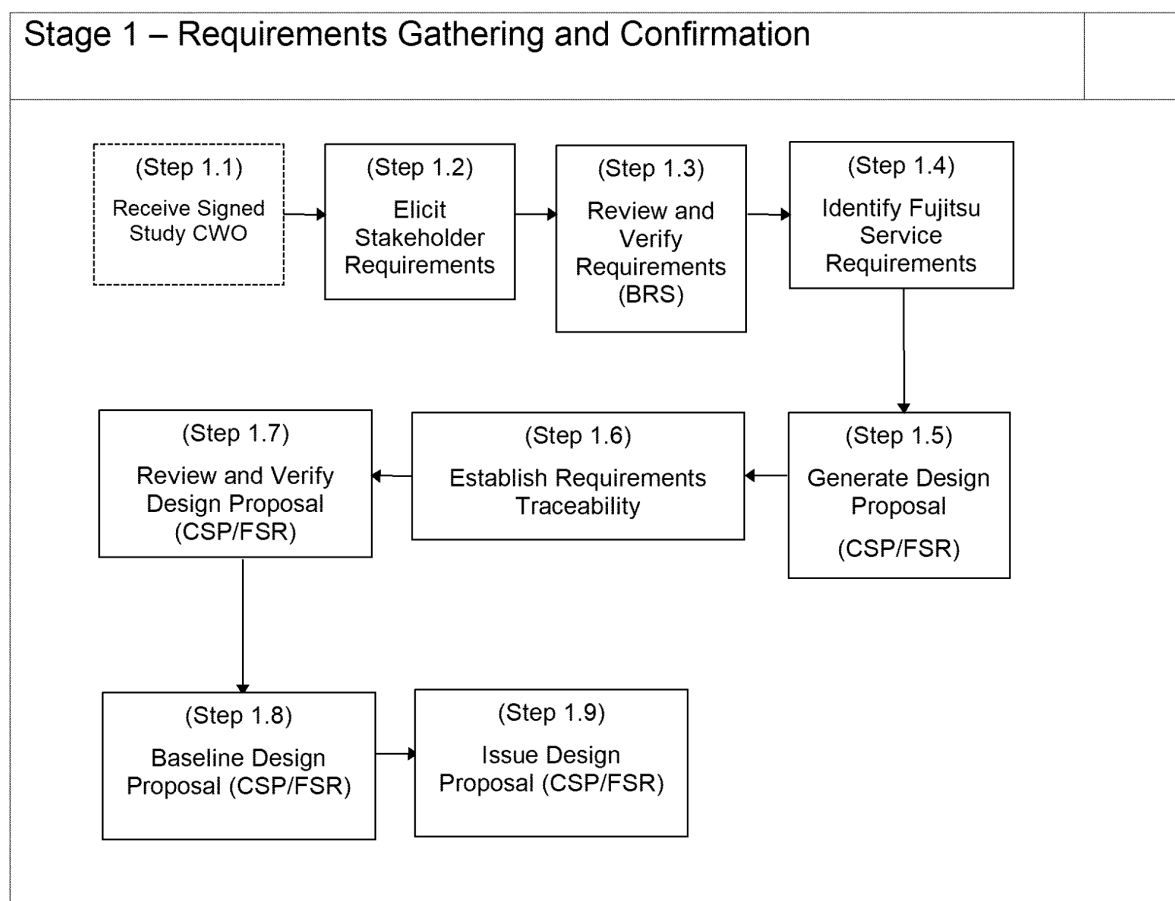
In other cases, details of POL or other stakeholders can be found in the associated Change Request (RTQ) or Change Work Order (CWO) documents.

4.2.2 Process Inputs

- Change Request (RTQ) from POL containing statements / artefacts defining the required or potential functionality or service change.
- Change Work Order (CWO) signed by POL containing statements / artefacts defining the agreed scope of functionality or service change.
- Current HNG-x system including architecture, design artefacts and code.
- Outline Project Plan for the relevant Release (Project Management)
- POL and contractual constraints and obligations (see Service Descriptions, Contract Controlled Documents, HNG-x Contract).
- Existing Business and System information – Use Cases, Solution and Technical Architectures, related High Level Designs.

4.2.3 Process Flow: Define

This is an optional stage that is followed when Fujitsu believes the POL Requirements require further clarification. An overview of the process is shown and each numbered box is explained in the table that follows.



Step	Current Situation / Input	Activities	Accountability	Next Step
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1.1	POL have identified a potential need for a Business Change. Stakeholder Requirements are not wholly clear or a definite preferred solution has not yet been identified or agreed. Internal POL governance has authorised spend and a Change Work Order (CWO) has been signed, issued and received by Fujitsu to commence Design or Feasibility Study work.	<u>Receive Signed Study CWO</u> The POL Change Request (RTQ) has previously been processed, and the signed associated CWO is now processed.	POL Fujitsu Change Management	1.2
1.2	Stakeholder Requirements are not wholly clear or a definite preferred solution has not yet been agreed.	<u>Elicit Stakeholder Requirements</u> The value of the CWO signed will contain sufficient time to workshop either Requirements or design options with stakeholders.	POL Fujitsu Solution Owner Fujitsu Business Analyst	1.3
1.3	Signed CWO and RTQ (optional) prior ROM Response / understood 3 rd Party involvement/ requirements/ obligations	<u>Review and Verify Stakeholder Requirements</u> The established Stakeholder Requirements are reviewed to verify that: <ul style="list-style-type: none"> • The Requirements are clear, unambiguous, well-formed and consistent • The scope of the change is clear taking account of any prior agreements (e.g. previous ROM process, third Party involvement/ requirements/ obligations) • The impact on existing HNG-x solution and service obligations and capabilities can be determined • Any requirement for PEN Testing is identified and recorded • Any revisions are agreed with POL and updates applied to the BRS • Optionally, and with POL's involvement and agreement, requirements can be recorded in a separate requirements catalogue (BRS) document if that is more appropriate. This is required to be reviewed by POL at least once, and a Baseline produced which addresses the output of that review. 	POL Fujitsu Solution Owner Fujitsu Business Analyst	1.4
1.4	Signed CWO and RTQ (optional) prior ROM Response / understood 3 rd Party involvement/ requirements/	<u>Identify Fujitsu Service Requirements</u> <ul style="list-style-type: none"> • Analyse the Business Requirements • Discuss with the Fujitsu Solution Owner • Fujitsu Service prepare any required Fujitsu Service Requirements 	Fujitsu Service Owner Fujitsu Solution Owner	1.5



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	obligations / BRS			
1.5	Signed CWO and RTQ (optional) prior ROM Response / understood 3 rd Party involvement/ requirements/ obligations / BRS / Service Requirements	<p><u>Generate Design Proposal (Customer Solution Proposal / Feasibility Study Report)</u></p> <p>Note that the format of the output can be either a Customer Solution Proposal (CSP) or, where there are either multiple design options or a potential design is evaluated, a Feasibility Study Report (FSR).</p> <p>Analyse the Business Requirements and prepare a Design Proposal using the appropriate Design Proposal Template:</p> <p>This will comprise a summarised description of the proposed solution which will:</p> <ul style="list-style-type: none"> • Support the Change Proposal impacting process • Identify to POL and CS Operations stakeholders how their Requirements will be met • Identify the primary areas of business change in the context of the existing HNG-x Solution and Services • Identify any impact on the existing HNG-x Architecture and core Solution Designs • Identify the primary functional and non-functional changes and the HNG-x Solution components that will be impacted • Identify the nature of any security solution changes • Identify the nature of any impact on existing contractual or standards compliance obligations or measures 	Fujitsu Solution Owner	1.6
1.6	CSP/FSR from 1.5	<p><u>Establish Requirements Traceability</u></p> <p>The generated Design Proposal seeks to address all previously identified Requirements and show traceability within the document to particular document sections, or to other documents/collateral where Requirements are addressed. If a formal and separate BRS is being produced this is also referenced.</p> <p>Note: 'Addressing' a requirement might include requesting a HNG-x Concession (as per the contract) where the requirement cannot be fulfilled, or can only be partially fulfilled.</p>	Fujitsu Solution Owner	1.7
1.7	CSP/FSR from 1.5 Optional BRS from 1.3	<p><u>Review and Verify Design Proposal (FSR or CSP) and (optional) BRS</u></p> <p>The proposed design output which will be for POL consumption, and which may be passed onto third parties must be as a minimum formally and internally peer reviewed. A Design walkthrough may be required either/or both internally and with POL to assist understanding of what will be issued.</p>	Fujitsu Solution Owner	1.8



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1.8	CSP/FSR from 1.5 Optional BRS from 1.3	<u>Baseline Design Proposal (FSR or CSP) and (optional) BRS</u> The proposed design output and (optional) formal requirements catalogue (BRS) once verified and reviewed is Baselined.	Fujitsu Solution Owner	1.9
1.9	CSP/FSR from 1.5 Optional BRS from 1.3	<u>Issue FSR/CSP and (optional) BRS</u> The verified and reviewed Design output (CSP/FSR and optional BRS) is delivered formally via Fujitsu Document Management to POL.	Fujitsu Solution Owner	End

4.2.4 Process Outputs and Product Descriptions

Some of the process outputs are shown below and described in the following sections:

- Business Requirements Specifications (BRS/CWO) (covering both functional and non-functional requirements) from POL
- Feasibility Study Report
- Customer Solution Proposal

4.2.4.1 Business Requirements Specification

Document Type	BRS (and/or CWO): Business Requirements Specification.
Status	Current: This product applies to BAU Change.
Purpose	The BRS is a requirements catalogue that defines the business functionality that the solution has to provide. The BRS may be produced by the Customer, or on behalf of the Customer by Fujitsu or another third party.
Composition	A catalogue or enumeration of Business Requirements and Acceptance Criteria to be delivered/managed for the BAU Project. This may be simply from the CWO document, or presented as a separate catalogue ideally referred to in the CWO.
Format and presentation	The Business Requirements Specification is owned by the Customer, and there is therefore no HNG-x document template. If the Requirements are few, they may be managed from the CWO documentation, and not documented separately.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Business Requirement Specification is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Group review as defined in HNG-x Document Management and Control Process (Fujitsu internal document). Approved and Baselined by the Customer.
Comments	Shared document. POL will have examples in their own document stores.

4.2.4.2 Feasibility Study Report

Document Type	FSR: Feasibility Study Report
Status	Current: This product applies to BAU Change.
Purpose	Provides a detailed overview of the feasibility of a potential solution or range of solutions to the Customer, as required designed to satisfy the Business Requirements (BRS), and may compare options, risks, design and considerations and (v)ROM costs for each
Composition	The Customer Solution Proposal is required to present to the customer how the stated Business Requirements will be addressed, and will cover: <ul style="list-style-type: none"> • Scope • Requirements • Security and Data Protection (GDPR) considerations



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Format and presentation	<ul style="list-style-type: none"> Solution Description and potential solution options Risks, technical or other considerations Potential (comparative) costs and timelines (Fujitsu internal document).
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Feasibility Study Report is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Group review as defined in HNG-x Document Management and Control Process (Fujitsu internal document). Approved by the Customer.
Comments	Details of implementation, especially where any Fujitsu Intellectual Property might be exposed or IPR compromised, will not be contained within the FSR (as a customer facing document) but rather documented later in the architecture and design phase in a PSD (Fujitsu internal document). Shared document. POL will have examples in their own document stores.

4.2.4.3 Customer Solution Proposal

Document Type	<i>CSP: Customer Solution Proposal</i>
Status	Current: This product applies to BAU Change.
Purpose	Provides a detailed overview of the proposed solution or solutions to the Customer, as required designed to satisfy the Business Requirements (BRS).
Composition	The Customer Solution Proposal is required to present to the Customer how the stated Business Requirements will be addressed, and will cover: <ul style="list-style-type: none"> Scope Requirements (and traceability within the document) Solution Description and potential solution options Security and Data Protection (GDPR) considerations Testing strategy Service Introduction strategy
Format and presentation	(Fujitsu internal document)
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Customer Solution Proposal is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Group review as defined in HNG-x Document Management and Control Process (Fujitsu internal document). Approved and Baseline'd by the Customer.
Comments	Details of implementation, especially where any Fujitsu Intellectual Property might be exposed or IPR compromised, will not be contained within the CSP (as a customer facing document) but rather documented in the PSD (as an internal document). Shared document. POL will have examples in their own document stores.

4.3 Design Solution

This section describes the process of designing the solution.

4.3.1 Process Aims & Objectives

- To clarify HNG-x Project staff's understanding of the Stakeholder Requirements and the scope of the agreed solution design.
- To balance re-use and creativity in approaching the solution and seek to ensure that the solution is technically sound, fulfils all Requirements, can be produced with minimum risk and within predictable time and budget constraints.



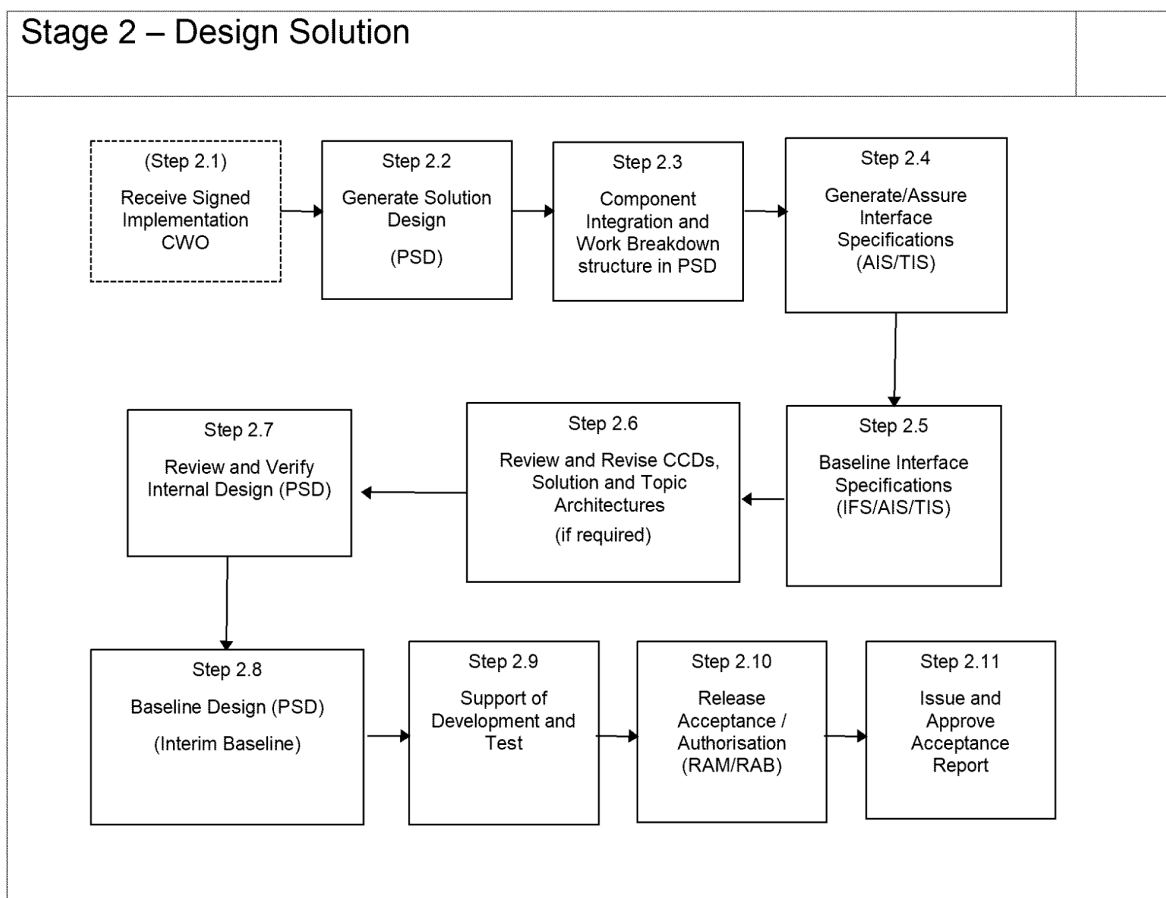
- To provide an approved audit trail for each stage progression through the Requirements and Design Phase.
- To document products as defined and agreed by all stakeholders.
- To provide the collateral required for Release acceptance and authorisation.

4.3.2 Process Inputs

- IT and Compliance standards and Policies
- Change Request (RTQ) from POL containing statements / artefacts defining the required or potential functionality or service change
- Change Work Order (CWO) signed by POL containing statements / artefacts defining the agreed scope of functionality or service change
- Business Requirements Specification
- (optional) FSR documentation
- Additional functional or service requirements contained within Fujitsu Design collateral associated with the change (CSP/PSD)
- Current HNG-x system including architecture, design artefacts and code
- Outline Project Plan for the relevant Release (Project Management)
- Customer and contractual constraints and obligations (See Service Descriptions, Contract Controlled Documents, HNG-x Contract)
- Existing Business and System information – Use Cases, Solution and Technical Architectures, related High Level Designs

4.3.3 Process Flow: Design

An overview of the process is shown and each numbered box is explained in the table that follows.





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Step	Current Situation / Input	Activities	Accountability	Next Step
2.1	POL have identified a definite need for a Business Change. Stakeholder Requirements are understood and defined, and a solution is defined or preferred. Internal POL governance has authorised spend and a Change Work Order (CWO) is signed, issued and received by Fujitsu to commence implementation work.	<p><u>Receive Signed Implementation CWO</u></p> <p>The POL Change Request (RTQ) has previously been processed, and the signed associated CWO is now ready for work to be planned and commenced.</p>	POL POL Change Management	2.2
2.2	POL have identified a definite need for a Business Change. Stakeholder Requirements are understood and defined, and a solution is defined or preferred. Internal POL governance has authorised spend and a Change Work Order (CWO) is signed, issued and received by Fujitsu to commence implementation work.	<p><u>Generate Project Solution Design (PSD)</u></p> <p>Analyse the Business Requirements (BRS) and prepare an internal facing Design, expanding upon any existing design proposal (CSP/FSR/CWO attachments) using the appropriate Design Proposal Template.</p> <p>This will comprise a summarised description of the proposed solution which will:</p> <ul style="list-style-type: none"> Describe the business and service outcomes that this solution must deliver Provide a high level description of the proposed technical and operational solution, sufficient to enable the production of High Level Design (HLD) by implementers Support dialogue with the Business and Service Requirements stakeholders in order to demonstrate compliance to their Requirements Identify the primary technologies that will be used to deliver the solution Elaborate on the areas of business change and their impact on the HNG-x Solution and Services Identify internal and external interface specifications which are expected/required to change Identify any impact on the existing HNG-x Architecture and core Solution Designs (liaise with Fujitsu Chief Technology Officer and Applications / Infrastructure Architects to agree impacts and / or dependencies arising from solution) Identify how the Functional and Non-Functional Requirements will be met Identify the nature of any Security solution changes Identify the nature of any impact on existing 	Fujitsu Solution Owner Infrastructure & Application Architect(s)	2.2



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		<ul style="list-style-type: none"> contractual obligations or measures Identify how the solution might be most efficiently and effectively tested, including interfacing with customer UAT, and third party testing Requirements. Identify how the solution will be delivered into live service and the manner by which on-going service operation will be achieved 		
2.3	PSD from 2.2	<p><u>Component Integration and work breakdown structure</u></p> <p>The PSD will describe and plan the solution changes required to realise Requirements to the software component level. The PSD will then describe packages of solution change functionally (work breakdown structure) across components, where applicable, to realise Requirements. This will enable:</p> <ul style="list-style-type: none"> Implementation and Project Planning based upon inter team or component dependencies Identify how the solution might be most efficiently and effectively tested, including interfacing with customer UAT, and third party testing Requirements The ability to understand the effect of emerging or additional Requirements The ability to separate individual Requirements if necessary from the overall solution, if the project is re-scoped, or individual Requirements are de-scoped 	Fujitsu Solution Owner Fujitsu Architecture	2.4
2.4	PSD from 2.3	<p><u>Generate / Verify Interface Specifications</u></p> <p>The PSD will have identified any application, technical or internal interface changes expected/required. Verify the status of any third party interface.</p>	Fujitsu Solution Owner Infrastructure & Application Architect(s)	2.5
2.5	Interface Specifications from 2.4	<p><u>Baseline Interface Specifications</u></p> <p>Once verified and reviewed all interface specifications are Baselined. Internal interfaces, if there is the potential for change, should be as a minimum given a status of <i>Interim Baseline</i> – which enables implementation to start.</p> <p>Officially, external interfaces or changes to them which are required to be met by the solution, are owned by a third party and brokered via the customer via their own documentation management. In practice, Fujitsu is often asked to author the third party interface documentation on behalf of POL.</p> <p>It is a distinct contractual requirement to meet these interfaces as part of the solution, and therefore such an interface must be clearly and correctly versioned, and APPROVED (fully Baselined) by all stakeholders prior to implementation.</p>	Fujitsu Solution Owner Infrastructure & Application Architect(s) POL	2.6
2.6	PSD from 2.3 Interface Specifications from 2.5	<p><u>Review and Revise CCDs, Solution and Topic Architectures (if required)</u></p> <p>Update Contract Controlled Documents (CCDs) or other Architecture documents as required, and</p>	Infrastructure & Application Architect(s)	2.7



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		as identified in the PSD.		
2.7	PSD from 2.3	<p><u>Review and Verify Internal Design (PSD)</u></p> <p>The design output which will be for Project execution, must be, as a minimum, formally reviewed by those Teams expected to implement the solution. A Design walkthrough may be required to assist with understanding and assurance of what has been designed.</p>	Fujitsu Solution Owner Fujitsu Architecture	2.8
2.8	PSD from 2.7	<p><u>Baseline Design (PSD) and other Architecture Design artefacts (Interim Baseline)</u></p> <p>Once verified and reviewed all Architecture Design artefacts, including the PSD are Baselined. The PSD is a document which acts as a specification and design roadmap for implementation, and will very probably change to reflect any design issues which arise throughout the component design and implementation stage. Additionally many project plans can make a start in areas where design is stable, but where it is obvious that other areas require further definition. The PSD, and any other Architecture Design artefacts which have the potential for change should be as a minimum given a status of <i>Interim Baseline</i> – which enables implementation to start.</p>		2.9
2.9	Architecture and Design are baselined for implementation to proceed.	<p><u>Support of Development and Test</u></p> <p>Support design queries that emanate from development, support teams or from Test.</p> <ul style="list-style-type: none"> Any significant design clarifications are written up in the PSD and/or relevant Architecture Design artefacts, verified and issued back to implementers. (Steps 2.2 / 2.4 / 2.7) Any change to Requirements must be managed through Fujitsu Change Management, and not accepted into the scope of the project until commercial and contractual considerations have been addressed Functional Test planning will require input from Architecture, and testable Requirements must be fed into appropriate Test tooling (e.g QC) Deployment / Migration Test planning will require input from Architecture Release Management planning will require input from Architecture 	Fujitsu Solution Owner Infrastructure & Application Architect(s)	2.10
2.10	Functional Test	<p><u>Release Acceptance / Authorisation (RAM/RAB)</u></p> <p>Towards the conclusion of Live System Testing (LST) the testable functional Requirements will hopefully have been proven, reported upon and any defects or inability to fulfil Requirements will be understood, communicated to the Customer and any resolution planning agreed. SRR, Release acceptance and authorisation can be prepared.</p>	Fujitsu Solution Owner POL & Fujitsu Infrastructure & Application Architect(s) POL & Fujitsu Business Analysts POL & Fujitsu Project Managers	2.11



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		<p>To deploy software change to a Live, production environment, Release authorisation is required. This may take the form, for simple change, of TFSNow/Change Management records only. Where change is more complex, multiple components and multiple requirements, Release authorisation will require a Fujitsu presentation to customer stakeholders.</p> <p>Where there are distinct customer owned requirements which must be proven and evidenced a formal Release acceptance process must precede Release authorisation.</p> <p>Both Fujitsu and POL require SRR to be assessed also prior to Release.</p> <p>Once Live System Test is complete the SRR, RAM and RAB meetings can take place to gain explicit customer acceptance and approval or the Release prior to migration of changes to Live.</p>	<p>POL & Fujitsu Service Managers</p> <p>POL & Fujitsu Requirements Managers</p>	
2.11	Output from 2.10	<p>Issue and Approve Acceptance Report (ACS)</p> <p>Where the RAM/RAB process has been followed formally, at the point where Release authorisation is given by the Customer, a summary of the presentations and Customer authorisations is captured in the Acceptance Report, then issued for Fujitsu and Customer stakeholder approval.</p>	<p>Fujitsu Business Analyst</p> <p>POL and Fujitsu Requirements Managers</p>	End

4.3.4 Process Outputs and Product Descriptions

Some of the process outputs are shown below and described in the following sections:

- Project Solution Design (PSD) Interim Baseline (to enable implementation) if required
- Project Solution Design (PSD) Final Baseline (to record implementation) if required
- Interface Specifications – Various interface specifications (which represent contractual obligations/requirements to implement) covering Technical (TIS), Applications (AIS) and Internal (IFS)

4.3.4.1 Project Solution Design

Document Type	PSD : Project Solution Design
Status	Current: This product applies to BAU Change.
Purpose	Provides a detailed design description of the Customer approved solution relating to a distinct BAU change, to the internal implementation teams, to enable implementation and to satisfy the Business Requirements (BRS)
Composition	<p>The Project Solution Design is required to present to internal implementers how the stated Business Requirements will be addressed, and will cover:</p> <ul style="list-style-type: none"> • Scope • Requirements (and traceability within the document) • Solution Description • Security and Data Protection (GDPR) considerations • Testing strategy • Service Introduction strategy • Communications development activities and their related applications
Format and presentation	(Fujitsu internal document)
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Project Solution Design is progressed as per the HNGxDBM Requirements and



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Quality method	Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it. Group review as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	Fujitsu internal document.

4.3.4.2 Application Interface Specification

Document Type	<i>AIS : Application Interface Specification</i>
Status	Current: This product applies to BAU Change.
Purpose	An Application Interface Specification is a document that defines an application interface in terms of data format and content. It defines an interface between HNG-x and an external application.
Composition	There will be an Application Interface Specification for each interface between HNG-x and an external application. Each Application Interface Specification will cover: <ul style="list-style-type: none"> • Scope • Application Processes • Message Types
Format and presentation	Most AIS documents are owned by POL or other third party so the format and presentation will vary.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Application Interface Specification is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	An AIS APPROVED prior to or under a related and signed CWO, is a contractual obligation to implement. Shared document. POL will have examples in their own document stores.

4.3.4.3 Technical Interface Specification

Document Type	<i>TIS : Technical Interface Specification</i>
Status	Current: This product applies to BAU Change.
Purpose	The Technical Interface Specification covers the physical connectivity between HNG-x and other parties from a host and network perspective
Composition	Typical topics include: <ul style="list-style-type: none"> • Environment • Medium of Transfer (Layers) • Operational Considerations • Security Considerations • Recovery / Resilience • Migration • Testing
Format and presentation	
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Technical Interface Specification is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process



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	(Fujitsu internal document).
Comments	Shared document. POL will have examples in their own document stores.

4.3.4.4 Internal Interface Specification

Document Type	<i>IFS : Internal Interface Specification</i>
Status	Current: This product applies to BAU Change.
Purpose	Internal or File Interface Specification: Usually specifies the interfaces between applications within the HNG-x domain, although some IFS documents are owned by the Customer and describe file formats deliverable to third-party systems. Details the nature of an interface and the data exchanged across it.
Composition	The composition of an IFS will vary according to whether it is describing a file format, an application interface, or a database specification. Commonly the document will prescribe data formats, (field names, lengths and types) acceptable to an interface.
Format and presentation	The IFS has no formal Template reference, and is not uniform in presentation.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Internal Interface Specification is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	Note that for some legacy interfaces the interface description may be present in the relevant HLD. Some of these are shared document. POL will have examples in their own document stores. Some are Fujitsu internal documents.

4.4 Code, Build and Component Test

This section describes the process to build the solution components.

4.4.1 Process Aims & Objectives

The Code, Build and Component Test process defines the activities required for POA to build solution components, based on an understanding of agreed Requirements, test them as individual components, and integrate those components with others developed internally or by third parties and then Conduct Component Integration Testing. The outputs from this process are placed under configuration management control for use in the later System Validation and Integration Test process.

4.4.2 Process Inputs

- Customer Solution Proposal/Project Solution Design
- Application and Technical Interface Specifications
- Coding Standards
- Configuration Management Databases and records
- Entry and Exit Criteria for CIT stages
- Requirement definitions functional/non-functional (Requirements / traceability from CSP/ HLD)

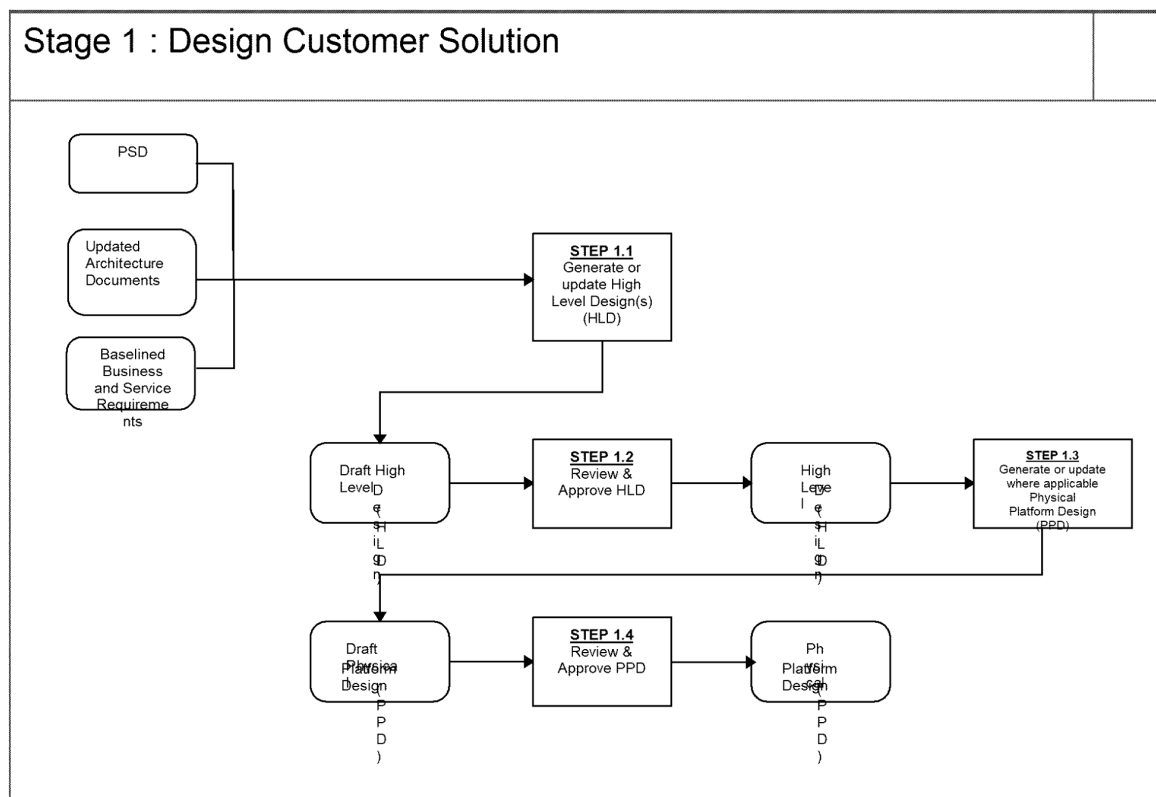


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An overview of the process is shown and each numbered box is explained in the table that follows.



Step	Current Situation / Input	Activities	Accountability	Next Step
1.1	Project Solution Design from HNGxDBM Requirements	<p>Specify High Level Design (HLD) specifications—these define the physical aspects of each subsystem as defined in the Solution Architecture.</p> <p>Good practice is to have an architect on the team who can manage the integration between the different subsystems.</p> <p>Ideally, the PSD will be at approved status. However, under exceptional circumstances work on the HLD may proceed against an interim (document) baseline PSD after explicit authorisation from the relevant Programme / Project Manager.</p> <p>Output – Draft High Level Design</p>	Lead Developer	1.2
1.2	Draft High Level Designs	<p>Review and Approve High Level Design</p> <p>The iterative nature of design-code-build-test may result in coding starting before a final approved version of the HLD is available. This is a risk position that must be assessed by the Lead Developer before coding starts.</p> <p>The review checks the HLD against criteria of correctness, completeness and consistency, to</p>	See Reviewer/Approver Role Matrix (Fujitsu internal document)	1.3



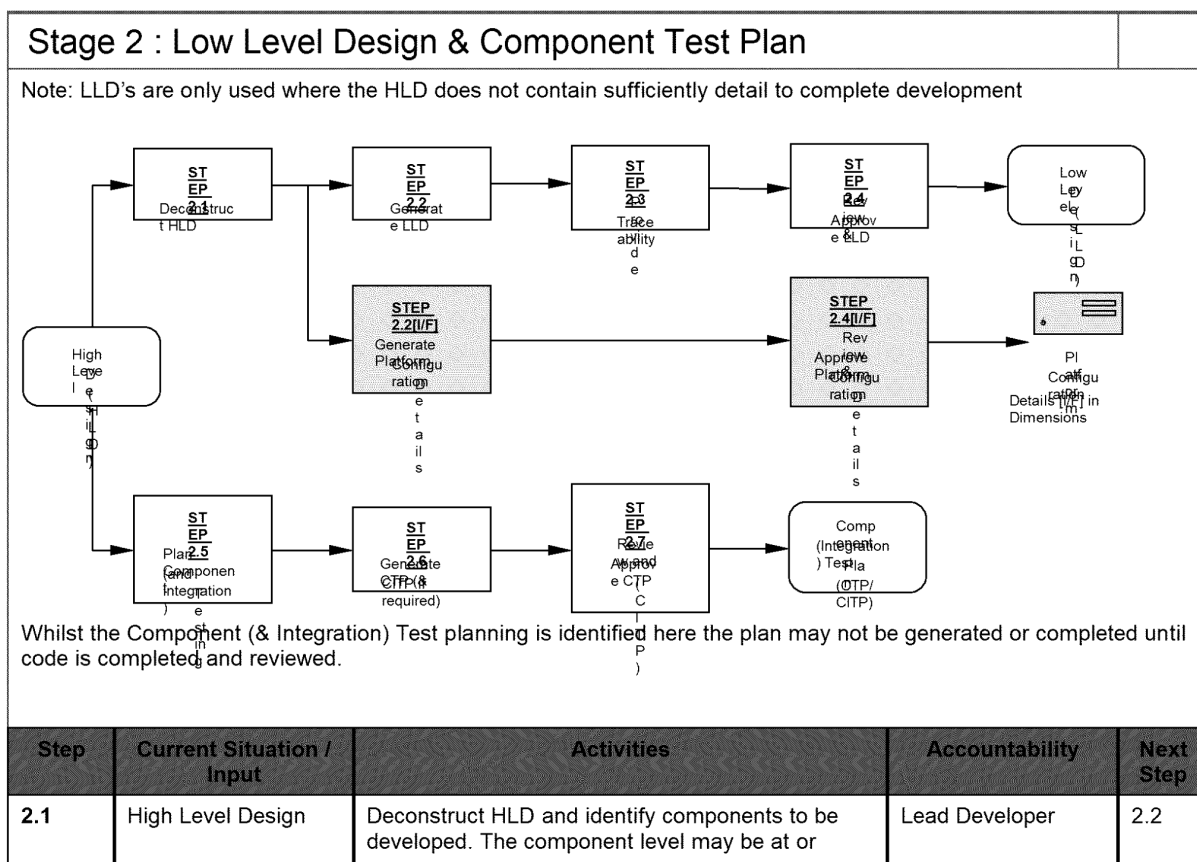
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		enable a sensible implementation. If, during this activity, errors are found in the associated PSD they are handled through the task management system and a software fault/issue raised for subsequent action. Changes to the solution need to be managed under change control. Output – Approved High Level Design		
1.3	High Level Designs	Physical Platform Designs (PPD) are developed or updated to describe the design details pertaining to all products existing on the specified type of platform including the list of products and the number of instances of the platform in the operational solution. The design details include the interfaces / characteristics that the products present / require with the storage; network; processor; operating system; security; resilience and sub-systems. Output – Draft Physical Platform Design	Designer	1.4
1.4	Draft Physical Platform Design	Review and Approve Physical Platform Design using Email Reviews Output – Approved Physical Platform Design	See Reviewer/Approver Role Matrix (Fujitsu internal document)	

An overview of the process is shown and each numbered box is explained in the table that follows.





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		above the code module level and will often be at the DLL or executable level. Identify where components must be integrated and tested as part of this phase.		2.5
2.2	Deconstructed High Level Design	Generate LLD for Applications and Infrastructure elements if applicable for the product application, otherwise continue to use HLD if sufficiently detailed.	Lead Developer Developer	2.3
2.2 [I/F]	Physical Platform Designs	Generate Platform Configuration Details	Platform Owner Architect / Lead Developer	2.3
2.3	Low Level Design - Traceability	Provide traceability by cross referencing LLDs to HLD and ensuring that the HLD refers to all constituent LLDs	Architect / Lead Developer	2.4
2.4	Low Level Design – Approval (LLD's are not applicable for all applications where the HLD is sufficiently detailed)	<p>Quality Review LLD.</p> <p>If the LLD can be brought to final approved status before coding begins then that option is taken. However, the iterative nature of design-code-build-test may result in coding starting before a final approved version of the LLD is available. This is a risk position that must be assessed by the Lead Developer before coding starts.</p> <p>The review checks the LLD against criteria of correctness, completeness and consistency, to enable a sensible implementation.</p> <p>If, during this activity, errors are found in the associated HLD(s) they are handled through the task management system and a software fault/issue raised for subsequent action. Changes to the HLD are made under the cover of the blanket CP raised for that purpose.</p> <p>Output – LLD Review Output Output - Signed off LLD</p>	Lead Developer Developer <u>Sign-off</u> : See Reviewer/Approver Role Matrix (Fujitsu internal document)	3.1
2.4 [I/F]	Platform Configuration details available in Dimensions (CMDB)	<p>Quality Review Platform Configuration details</p> <p>The objectives of this activity are much the same as the Quality review for the LLD</p>	Platform Owner Lead Developer <u>Sign-off</u> : See Reviewer/Approver Role Matrix (Fujitsu internal document)	
2.5	High Level Designs	<p>Plan component level testing and, if identified in Step 1.1 earlier, where components require integration for testing.</p> <p>This activity will often take place in parallel to the development of the LLD and a degree of iteration is to be expected.</p>	Lead Developer Developer <u>May also involve</u> : Test Design	2.6
2.6	Component Test Plans	<p>Generate Component/Unit Test Plan (CTP/UTP)</p> <p>Where identified generate Component Integration Test Plan (CITP)</p> <p><u>Note: The production of the physical Test Plan may not take place until during or even after the coding has taken place.</u></p>	Lead Developer Developer	2.7
2.7	CTP/CITP	Review CTP (and CITP)	See Reviewer/Approver	4.1 CTP



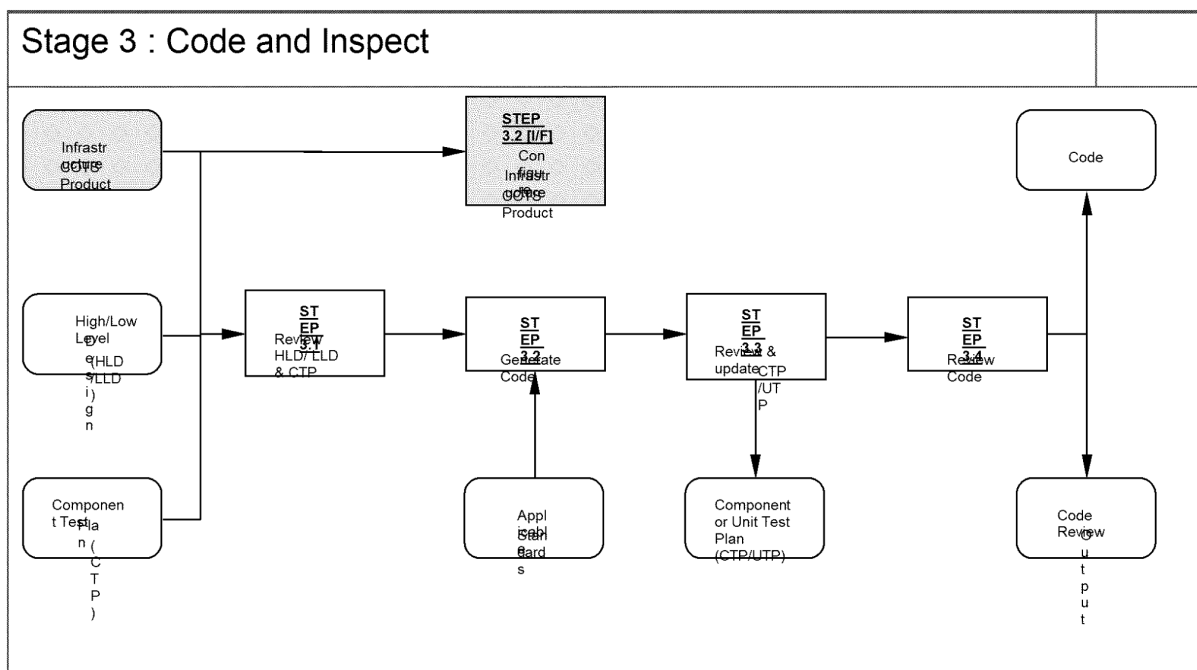
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		<p>The iterative nature of design-code-build-test may result in coding starting before a final approved version of the CTP is available. This is a risk position that must be assessed by the Lead Developer before coding starts.</p> <p>The review checks the plans against criteria of compliance to HLD/LLD, completeness of testing scope and consistency of testing across related components.</p> <p>The review of the CTP also considers the consistency of the integrated testing to be conducted with the testing already undertaken at individual component level.</p> <p>Output – CTP Review Output</p>	Role Matrix (Fujitsu internal document)	5.1 CIP
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An overview of the process is shown and each numbered box is explained in the table that follows.



Step	Current Situation / Input	Activities	Accountability	Next Step
3.1	HLD/LLD complete and signed off	<p>Review HLD/LLD and CTP/UTP prior to coding (see 2.6)</p> <p><u>Note: The production of CTP may not take place until during or even after the coding has taken place.</u></p>	Lead Developer Developer	3.2 3.2 [I/F]
3.2	Coding Standards available	Generate code, applying relevant and applicable standards and using tools identified for development activities (see examples in Appendix B)	Developer	3.3

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		During this activity the Lead Developer monitors progress at a level commensurate with the Developer's skill and experience		
3.2 [I/F]	COTS Product available	Configure Infrastructure COTS product	Developer	3.3
3.3	CTP/CITP	Review CTP/UTP during coding/configuration activity and discuss inconsistencies and potential changes with Lead Developer. Update CTP (and CITP) if required Output – Updated CTP (and CITP)	Developer Lead Developer	3.4
3.4		Undertake code review using Crucible (see screenshot below) or HNGx Generic Code Review Template (Fujitsu internal document) to generate comments / defects. Commit code to Source Code Control System. Currently using a variety of systems but standardising on Fujitsu approved COTS Subversion (SVN). Output – Code Review Output Output - Reviewed Code	Lead Developer Developer	4.1

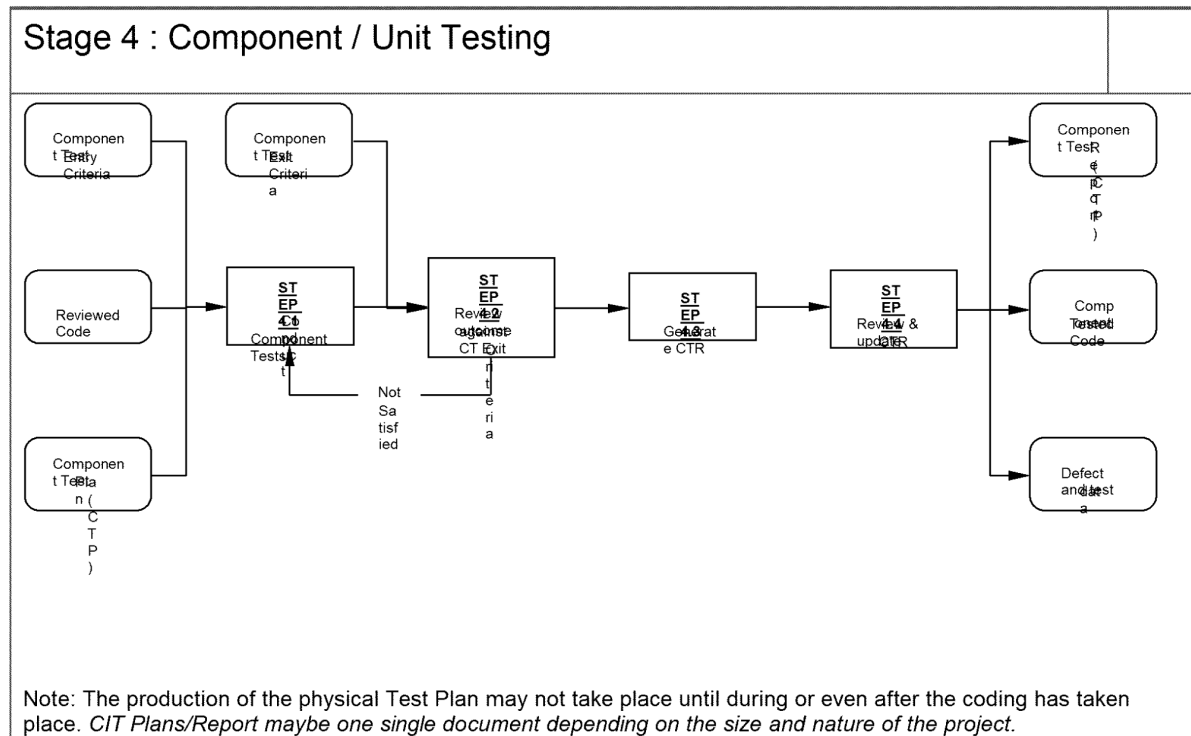
Sample Crucible code review screenshot (with redactions as necessary):

Participant	Role	Time Spent	Comments	Latest Comment
[Redacted]	Author & Moderator	1h 2m	7	Deleted the Message MSG00098
[Redacted]	Reviewer - Complete	36m	11	Don't mind if this is re-used, but in the meantime [Redacted]
[Redacted]	Reviewer - Complete	9m		
[Redacted]	Reviewer - Complete	1h 23m	7	'Yes you can re-use this message ID with different text, b...
Total		3h 11m	25	

Linked issues
CBB-4850: InstallPINPadBLO (migration)

Objectives
Review against checklist defined in the Code Review Template - [Redacted]. The secure coding guidelines document [Redacted] provides useful background detail.

An overview of the process is shown and each numbered box is explained in the table that follows.





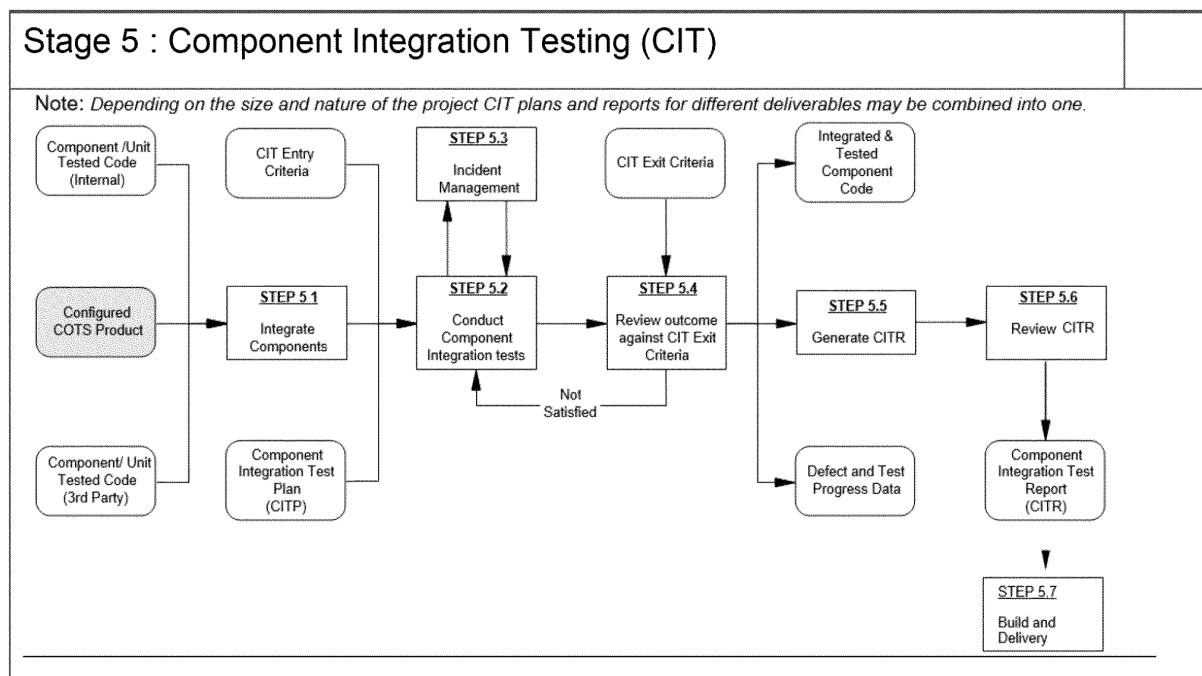
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Step	Current Situation / Input	Activities	Accountability	Next Step
4.1	CT Entry Criteria Reviewed Code CTP	Generate CT environment including any harnesses, emulators and tools (see examples in Appendix B) Conduct component tests using CTP/UTP. Correct code where found to be defective. Repeat this cycle until CTP/UTP tests have all been executed successfully Commit code for CIT to Local CM control. Output – Individual tested components	Developer	4.2
4.2	CT Exit Criteria	Review test outcomes against CT Exit Criteria and repeat/rework if not met Output – Have Exit Criteria been met?	Lead Developer	4.1 if N 4.3 if Y
4.3	Component Tested Code	Generate CTR. This may be a free-standing report or additional sections at the end of the CTP providing the results of the tests passed or failed. In this case the document should be identified as a combined Plan and Report	Developer	4.4
4.4	Component Test (Plan and) Report	Quality Review CTR The review checks the Report against criteria of completeness of planned tests and the correction of all defects identified. The HLD/LLD is also checked to make sure that it remains consistent with the resultant code.	See Reviewer/Approver Role Matrix (Fujitsu internal document)	5.1 if CIT to take place

An overview of the process is shown and each numbered box is explained in the table that follows.



Step	Current Situation / Input	Activities	Accountability	Next Step
5.1	Component Tested Code (internal) Component Tested Code (third party) Infrastructure COTS Product	Integrate components to become 'target of testing'. Output – Integrated components 'Target of Testing'	Build Technician Developer Lead Developer	5.2
5.2	CIT Entry Criteria 'Target of Testing' CITP	Generate CIT environment as required Conduct component integration tests using CITP. Repeat this cycle until CIT tests have all been executed successfully Commit CIT code to CCM control Output – Integrated and tested components	Developer Lead Developer	5.3
5.3	Testing complete	Incident Management. Upon discovery of defects the tester raises an issue using the POA Peak Defect database / Jira. The role of the Lead Developer is to verify the nature and severity of the incident before it is committed to Peak. Whether a component can be subjected to another type of testing will depend upon whether it satisfied the exit criteria or if any failure conditions were fatal.	Developer Lead Developer	5.4
5.4	CIT Exit Criteria	Review test outcomes against CIT Exit Criteria and repeat/rework if not met	Lead Developer	5.2 if N 5.5 if

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		Output – Have Exit Criteria been met?		
5.5	Component Integration Tested Code	Generate CITR. This may be a free-standing report or additional sections at the end of the CITP providing the results of the tests passed or failed. In this case the document should be identified as a combined Plan and Report	Developer Lead Developer	5.6
5.6	Component Integration Test (Plan and) Report	Review CITR The review checks the Report against criteria of completeness of planned tests and the correction of all defects identified. The HLD/LLD is also checked to make sure that it remains consistent with the resultant code. Output – CITR	Developer Lead Developer	5.7
5.7	Build and Delivery	Once the code components have been successfully tested and no more defects are raised out of CIT then the developer can take it out of the source control system and upload it to Dimensions (CMDB) in to the appropriate product area. The SCM Web tool is then used to produce and deliver the baselines (PVB) along with the handover note to the Integration Team who will then package it in to a (DPVB).	Build Engineer Developer	End

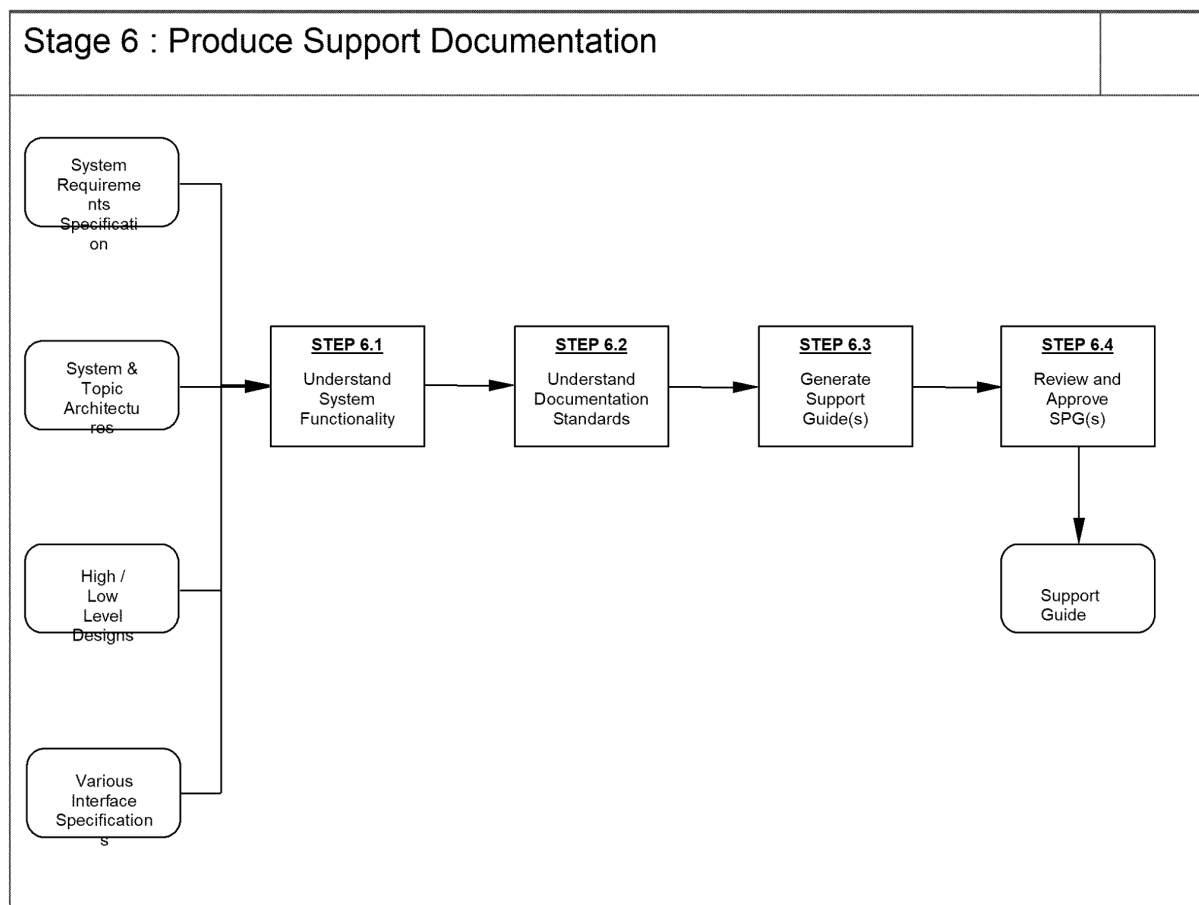


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An overview of the process is shown and each numbered box is explained in the table that follows.



Step	Current Situation / Input	Activities	Accountability	Next Step
6.1	Requirements, Architectures, Customer Solution Proposals, High / Low Level Designs and Interface Specifications at a formally reviewed draft as minimum.	Review the systems requirements specification, solution architecture, HLDs and various Interface Specifications to understand the system from a user's perspective. Understand the following: <ul style="list-style-type: none"> The system functionality How the users interface with it What interfaces there are to other systems 	Designer Developer	6.2
6.2	System Functionality understood	Investigate current examples of user documentation. Understand documentation standards to be followed.	Designer Developer	6.3
6.3	Documentation standards understood	Identify information to be included in the Support Guide (SPG). Subjects to include: <ul style="list-style-type: none"> Outline of the purpose of the product 	Architect Designer Developer	6.4



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		<ul style="list-style-type: none"> - function - the way in which it performs the function - outline of the code standards used, and the language used • Documentation <ul style="list-style-type: none"> - List all relevant product documents (titles and references) i.e. Requirements, HLD, LLD etc • Code Source Repository <ul style="list-style-type: none"> - Location of code within repository – required by SSC • Code paths <ul style="list-style-type: none"> - which procedures call which other procedures - what parameters are passed, and what the procedures do. - what is output from each procedure • Platforms <ul style="list-style-type: none"> - identify platforms (servers / workstations) that support will require access to, in order to support the product • Errors <ul style="list-style-type: none"> - what errors the software can produce - which procedures produce them - what events/activities cause them to be produced - what to do about them when they are produced. - list of known deficiencies in the product - expected clearance dates for known deficiencies - workarounds in place to overcome known deficiencies - identify location of all relevant log files • Events / KBs <ul style="list-style-type: none"> - where the application produces harvestable Events then those need to be enumerated / detailed for consumption through Netcool / SMC. - Associated KBs need to be used / detailed where; <ol style="list-style-type: none"> a) solutions to known errors have been deferred b) detail in the KB will significantly aid support. • Messages <ul style="list-style-type: none"> - where a product uses an internal message format then details of the message format and examples of decoding these • Public API - Either in the support guide or as a separate document (AIS) <ul style="list-style-type: none"> - details of all of the functions that can be called 		
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		<ul style="list-style-type: none"> - what they do - what parameters can be passed to them - what the parameters mean - what options/defaults for each parameter - what is output from these functions • Support route <ul style="list-style-type: none"> - How to contact support - what hours they work - what level of service is offered • Expected clearance timescales for problems of different severity <p>Document information in draft Support Guide (SPG)</p>		
6.4	Draft SPG(s) available	<p>Review Support Guide (SPG) with all internal authorities.</p> <p>Output – approved SPG(s)</p>	See HNG-x Approver / Reviewers Role Matrix (Fujitsu internal document)	End

4.4.4 Process Outputs and Product Descriptions

Some of the process outputs are shown below and described in the following sections:

- High Level Design (HLD) documents derived from the related Customer Solution Proposal (CSP) / PSD
- Physical Platform Design (PPD, where applicable)
- Low Level Design (LLD, where applicable) documents derived from the related High Level Design (HLD)
- Component Test / Unit Tests Plans (CTP)
- Component Integration Test Plans (CITP) for those components to be integrated and tested in this phase
- Component Test Reports (CTR) that may be addenda to the relevant CTP
- Component Integration Test Reports (CITR) for those components to be integrated and tested in this phase

4.4.4.1 High Level Design

Document Type	HLD : High Level Design
Status	Current: This product applies to BAU Change.
Purpose	A High Level Design is a document that describes the design for a new application, or for changes to an existing application.
Composition	<p>There may be one or more High Level Design documents for each new or changed capability.</p> <p>The High Level Design creation or update is derived from Project Solution Design (PSD) or equivalent design documentation, and will cover:</p> <ul style="list-style-type: none"> • Scope • Underlying system design • Work Package/Task/Requirements Traceability from BRS/PSD or other key design collateral as appropriate • Application development activities for applications • Infrastructure development activities and their related applications



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Format and presentation	<ul style="list-style-type: none"> Systems management, supportability or other non-functional Requirement development activities and their related applications <p>The High Level Design informs potential Low Level Design and Development activities</p> <p>See template for Applications (Fujitsu internal document) or both, or</p> <p>See template for Infrastructure (Fujitsu internal document).</p> <p>Where HLDs (such as historically in the Web Services and Counter areas) are substantially model based and may not conform fully to the identified templates.</p>
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The High Level Design is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Group review as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	(Fujitsu internal document)

4.4.4.2 Physical Platform Design

Document Type	<i>PPD : Physical Platform Design</i>
Status	Current: This product applies to BAU Change.
Purpose	To capture in a single artefact all relevant design details pertaining to all products existing on the specified type of platform including the list of products and interfaces/characteristics that the products present/require with the: storage; network; processor; operating system; security; resilience etc. sub-systems. This information is used in instantiating the solution.
Composition	<p>The PPD cover the following areas:</p> <ul style="list-style-type: none"> Existence of the platform in Live and Test environments Geographical Data Centre Locations Aspects of Hardware / memory specification etc. Software Product Stack Operating Systems Common software products HNG-x Baselines to be applied
Format and presentation	See Live PPD Template (Fujitsu internal document)
Responsibility	Platform Owner, i.e. a Solution Architect or Designer
Quality Criteria	The Platform Physical Description is progressed as per the HNGxDBM Requirements and Solution Design Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	(Fujitsu internal document).

4.4.4.3 Low Level Design (LLD's are not applicable for all applications where the HLD is sufficiently detailed)

Document Type	<i>LLD : Low Level Design</i>
Status	Current: This product applies to BAU Change.
Purpose	To capture the lowest level of design for a given component. This provides linkage between the High Level Design and the code produced which supports the requirements for the given component.
Composition	<p>There may be one or more Low Level Design documents for each new or changed capability.</p> <p>The Low Level Design is derived from the High Level Design and will cover:</p> <ul style="list-style-type: none"> Scope Underlying component design at function and class level



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Format and presentation	<ul style="list-style-type: none"> Error handling Logging and other non-functional requirements (Fujitsu internal document)
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Low Level Design is progressed as per the HNGxDBM Code, Build and Component Test Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	(Fujitsu internal document).

4.4.4.4 Component Test Plan

Document Type	<i>CTP : Component (Development Unit) Test Plan</i>
Status	Current: This product applies to BAU Change.
Purpose	This product details the requirements and actions needed to perform the set of tests required to confirm the successful implementation of a given component in accordance with the design. Completion of the CT Plan should prove that an attribute of the 'test object' satisfies the agreed requirements. Correct completion of each CT Plan contributes towards the delivery of a quality solution.
Composition	<p>For non-Java code the CTP will describe the tests required and run to demonstrate the satisfactory development of the component</p> <p>For Java code this may be a document or be made up of a Java program executing the tests.</p>
Format and presentation	Although uniform in presentation, the CTP currently has no formal Template reference.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Component Test Plan is progressed as per the HNGxDBM Code, Build and Component Test Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	Where the BAU change is relatively small the CTP will combine the CTR into an amalgamated documented – see CTR. (Fujitsu internal document).

4.4.4.5 Component Integration Test Plan

Document Type	<i>CITP: Component Integration Test Plan.</i>
Status	Current: This product applies to BAU Change.
Purpose	This product details the requirements and actions needed to perform the set of tests required to confirm the successful integration of a set of related components, or functional tests to be performed in an integrated Test environment, in accordance with the design. Correct completion of each CIT Plan contributes towards the delivery of a quality solution.
Composition	<p>For non-Java code the CITP will describe the tests required and run to demonstrate the satisfactory development of the component</p> <p>For Java code this may be a document or made up of a Java program executing the tests.</p>
Format and presentation	Although uniform in presentation, the CITP currently has no formal Template reference.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Component Integration Test Plan is progressed as per the HNGxDBM Code, Build and Component Test Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process



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	(Fujitsu internal document).
Comments	Where the BAU change is relatively small the CTP will combine the CTR into an amalgamated document – see CTR (Fujitsu internal document)

4.4.4.6 Component Test Report

Document Type	<i>CTR: Component Test Report.</i>
Status	Current: This product applies to BAU Change.
Purpose	This product is used to provide summarised information about the testing activity for the Component Test. It seeks to enable members of the management team to assess the progress of testing and highlight issues that require intervention. It also provides an audit trail for the Build & Test phase. Note that this document may manifest itself as an update to the Component Test Plan in which case the Plan and Report become a single document.
Composition	Tests conducted and success/failure status List of incidents (optional as can be produced from Peak) Test metrics The CTR may be generated as an addendum to the CTP in which case the section headings identified in the CTR template is copied over to the CTP for updating. CTRs may also be generated separately.
Format and presentation	Although uniform in presentation, the CTR currently has no formal Template reference.
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Component Test Report is progressed as per the HNGxDBM Code, Build and Component Test Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).
Comments	(Fujitsu internal document)

4.4.4.7 Component Integration Test Report

Document Type	<i>CITR : Component Integration Test Report</i>
Status	Current: This product applies to BAU Change.
Purpose	This product is used to provide summarised information about the testing activity for the Component Integration Test. It seeks to enable members of the management team to assess the progress of testing and highlight issues that require intervention. It also provides an audit trail for the Build & Test phase. Note that this document may manifest itself as an update to the Component Integration Test Plan in which case the Plan and Report become a single document.
Composition	Tests conducted and success/failure status List of incidents (optional as can be produced from Peak) Test metrics The CITR may be generated as an addendum to the CTP in which case the section headings identified in the CITR template is copied over to the CTP for updating. CITRs may also be generated separately.
Format and presentation	(Fujitsu internal document)
Responsibility	See HNG-x Reviewer & Approver Role Matrix (Fujitsu internal document).
Quality Criteria	The Component Integration Test Report is progressed as per the HNGxDBM Code, Build and Component Test Process (Fujitsu internal document), and as such will be subject to the standard quality controls and checkpoints defined for it.
Quality method	Review by Circulation as defined in HNG-x Document Management and Control Process (Fujitsu internal document).

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Comments	Where the BAU change is relatively small the CIP will combine features of the CIPR into an amalgamated documented. (Fujitsu internal document)
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4.5 Integration (Application Package)

This section describes the build and maintenance of the OS and application software.

4.5.1 Process Aims & Objectives

To collect and prepare system components that are to be released into the test or live environment.

Integration is the first place in the process where hardware and software that is representative of the Live Rig is built using the same deployment methods and tools



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1.1	CP requesting new platform/platforms	Determine if hardware available within Integration <ul style="list-style-type: none"> May depend if new platform is discrete or hosted on current BladeFrames Output – Request for new hardware if required	Integration Team	1.2
1.2	PPD(s) for new platform(s)	Review PPDs (See “sample PPD screenshot” below) Output – Approved PPDs	Integration Team Platform Owners	1.3
1.3	Relevant PPDs	Set up hardware <ul style="list-style-type: none"> Allocate physical space for Discrete Servers Create physical or virtual blades with required resources documented in PPDs Update internal Integration Platform List in PowerPoint. Output – Platforms/Processor Resource available Output – Updated Integration Platform List	Integration Team	1.4
1.4	Relevant PPDs Network Definition	Connect platforms to network <ul style="list-style-type: none"> On discrete platforms connect defined Network Interfaces to available switch ports Configure switch ports as required for correct VLANs etc. May need GDC networks Configure NICs in pserver definitions for platforms hosted on BladeFrames Output – Platforms network enabled	Integration Team GDC Networks	1.5
1.5	Relevant PPDs Storage Definition	Configure storage for platforms. For platforms on BladeFrames or discrete servers, requiring additional SAN storage, the storage must be configured in the Eternus Storage and in the SAN switches. <ul style="list-style-type: none"> For BladeFrame platforms add HBAs as appropriate to the pserver definition for the platform. In the Eternus Storage a LUN group must be created containing LUNs appropriate to the disks defined for the platform in the PPD. A host group is then created for the platform configuring the WWNs of the HBAs defined in the pserver for BladeFrame platforms or the WWNs of the physical HBAs for discrete platforms. Zoning must then be configured in the SAN switches to link the HBAs of the pservers to the appropriate ports on the SAN storage. Update the disk storage array, internal Storage_DX80 and Storage_DX200 spreadsheets in PowerPoint with the additional information. Output – Platforms configured with storage ready for provisioning with OS Output – Updated storage spreadsheets	Integration Team	

Sample PPD screenshot (with redactions as necessary)

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pt3b143.xls [Read-Only] [Compatibility Mode] - Excel									
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...									
Normal Page Break Custom Views Workbook Views Ruler Formula Bar Gridlines Headings Zoom 100% Zoom to Selection New Window Split Arrange All Hide Freeze Panes Unhide Switch Windows Macros									
A97 WIN_DC_AD_BUILD_AUTO (For ACD002 and above)									
1.6.2 Windows Drive letters			The Windows server platform foundations provide default drive letters for certain file systems. Please use this section if this platform does not use the standard drive letters.						
Mount Point or Drive e.g., E: or \\optnetcool			Default drive	Revised Drive letter	Comment / Justification				
OS Boot Disc			C:						
DVD drive			D:						
OS Page File			F:						
1.7 Product Stack									
1.7.1 Common Products			This section indicates which "Common Products" are to be installed on the specific platform type. Other "Shared Products" should be listed individually in section 1.7.2.						
Common Product Groups			Available on OS?	Required in this platform?	Comment				
The available Common Product Groups are listed below. Please note the following:									
(1) The precise set of products varies according to the platform foundation and not all common product groups are available on every platform foundation.									
(2) These Common Product Groups are not mandatory, the use of each Common Product Group should be considered individually for each platform type.									
Please indicate which common product groups are needed for this platform type in this section below.			Win Serv	Required in this platform?					
Remote Access			Available	Y					
Support Tools			Available	Y					
Software Distribution			Available	Y					
Event Monitoring & Filtering			Available	Y					
Enterprise Monitoring			Available	Y					
Time Synchronisation			Available	Y					
TWS Scheduling			Available	N					
Secure Logon			N/A	Y	Not available on this OS				
Anti Virus			Available	Y					
Performance Monitoring			Available	Y					
Backup			Available	Y					
1.7.2 Individual Products			This section indicates the specific "Products" that are to be installed on the specific platform type, in addition to the "Common Products" listed in section 1.7.1.						
Platform Type Specific Products*			Product Phase*	Product Sequence	COTS Package Name if applicable (or sysware)	COTS Version	COTS Supplier	Product Owner	
Windows 2003 R2 Enterprise Edition 32-bit (w2k3r2ee32)			1	1					
Windows Server 2003 SP2			1	2					
Version Control PPD ValidPlatformTypes ValidServersOS ...									



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Stage 2: Build Platforms (Including OS)

This stage describes the steps required to provision the platform instances on the hardware configured in Stage 1. The computer.xml containing the platform information and the PSPID (Platform Set Platform Instance Definition) that contains the software products and ordering is uploaded in to the deployment servers TEM and TPM. The software is then despatched (deployed) on to the Integration rig, which creates the Platforms, deploys the OSs and the software products. Checks are then performed to test that the platforms are running and visible to the network and that the software products have deployed.

Step	Current Situation / Input	Activities	Accountability	Next Step
2.1	Approved Platform Hardware Instance List (PHIL), Physical Platform Design (PPD) from Design/Architect with Platform attributes	Create computer.xml for import into TPM <ul style="list-style-type: none"> Computer.xml created on the TPM server and then imported into TPM through the TPM GUI to create server definition in TPM Output – Server definition created in TPM	Integration Team (BRA01 Builds)	2.2
2.2	Product Stack Spreadsheet in Dimensions (List of products required by platform based on PPD)	Generate Platform Set Platform Instance Definition <ul style="list-style-type: none"> Software stack generated in TPM/TEM which consists of an ordered list of DPVBs (packages which will be installed on the platform. Output – Software stack for platform generated in TPM/TEM	Integration Team	2.3
2.3	Server Definition on TPM Software stack Computer XML for deployment to (Tivoli Provisioning Manager) TPM Updated Product Tags used to define the Physical Platform Updated PSPID used to define the Physical Platform	Dispatch PSPIDs and Software <ul style="list-style-type: none"> Computer XML loaded into TPM to allow deployment and build of the Physical Platform PSPID loaded into TPM/TEM to allow deployment and build of the Physical Platform Output - Test TPM attributes of the Physical Platform match the Specification in the PHIL and PPD	Integration Team	2.4
2.4	TPM updated and ready to build Physical Platform	Provision Platform Instances <ul style="list-style-type: none"> Trigger O/S provisioning from TPM Software package installation triggered from TPM/TEM Output – Fully commissioned environment Output – Integration Environment Hardware Commissioned	Integration Team	2.5
2.5	Installed and Configured Platform	Execute Tests <ul style="list-style-type: none"> Platform provisioned with O/S and currently available Baselines. Platform is ready to receive subsequent deliveries of baselines from development/integration for installation and testing 	Integration Test Team	End



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Stage 3: Create Product Version Baselines and Deployable Product Version Baselines

PVBs are created by the Development teams and consist of the compiled code (executables and supporting components e.g. .exe, .DLL), run time scripts and installation instructions. Integration also act as the Development team for certain product deliveries, such as OS updates and OS security patches. These individual components are uploaded in to a PVB in Dimensions.

Integration extract the PVB (components) from Dimensions (see "Sample Dimensions screenshot Showing PVBs and DPVBs" below) and then create the installable scripts based on the instructions in the handover note. These scripts are tested to check the scripts work as expected. The components and scripts are then bundled in to an installable file and uploaded in to a DPVB in Dimensions.

Step	Current Situation / Input	Activities	Accountability	Next Step
3.1	Generate CP or Peak used to initiate a new PVB	Create a CP or Peak (see "Sample screenshot Showing Peak below") <ul style="list-style-type: none"> Integration check the status of all required document updates and use this data for the steps that follow Output – New CP or Peak	Platform Owner or Development Team	3.2
3.2	New CP or Peak	Review CP or Peak and create new PVB <ul style="list-style-type: none"> Assess the information provided in the CP or Peak and check that that the Platform Product Stacks are up to date and include the PVB Design part Create the files that comprise the new PVB, this must include a handover.doc and any other relevant files or references to Sysware items Output – Updated handover.doc and any supporting files or items	Platform Owner or Development Team	3.3
3.3	Updated handover.doc and any supporting files or items	Load PVB into Dimensions <ul style="list-style-type: none"> Using the SCM-Web tool create a new PVB item in Dimensions and set the PVB to READY_FOR_BUILD status Output – PVB available in Dimensions	Development Team	3.4
3.4	PVB set to READY_FOR_BUILD status in Dimensions	Process PVB <ul style="list-style-type: none"> Review the PVB Handover.doc and any associated files, use the handover instructions to prepare the DPVB Output – Set PVB to IN_BUILD status Output – Draft DPVB	Integration Team	3.5
3.5	PVB to IN_BUILD status and draft DPVB	Create DPVB <ul style="list-style-type: none"> The Draft DPVB is tested on a test platform to mitigate syntax errors and checks that the package is adhering to the instructions listed in the handover.doc Create DPVB script package, this package can be in any of the following formats (.SPB, .BFA, .RPM, .PKG and manual). 	Integration Team	3.6



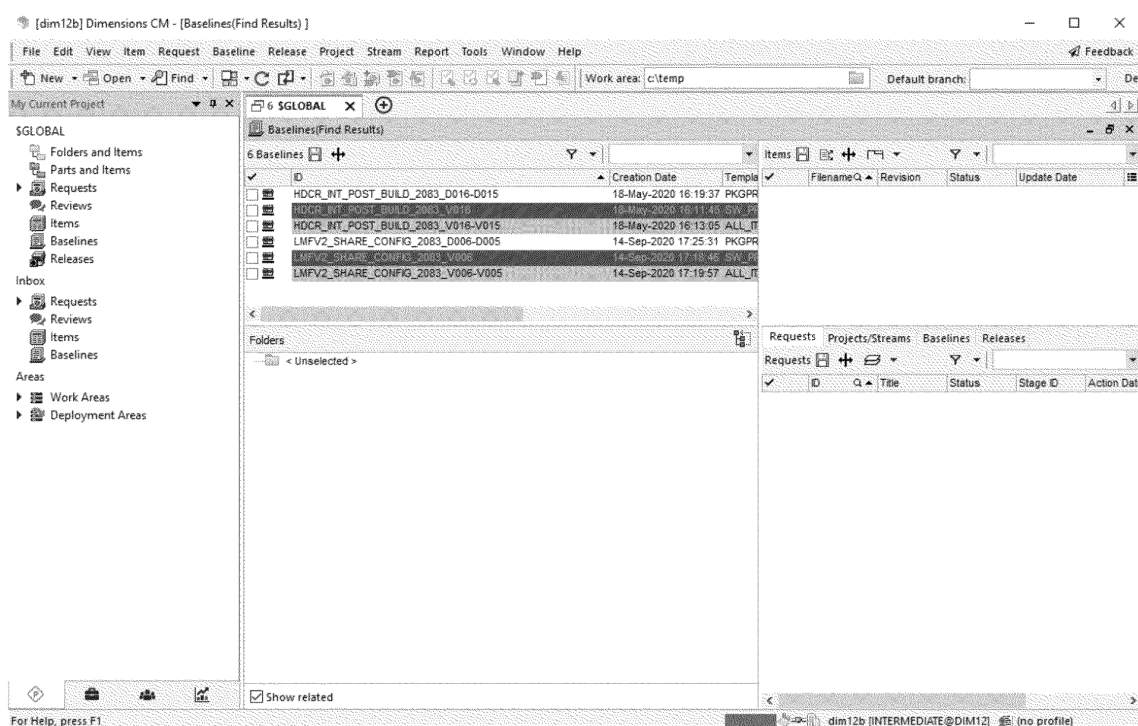
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		Output – DPVB package		
3.6	Tested DPVB package	Load DPVB into Dimensions <ul style="list-style-type: none"> Using the SCM-Web tool create a new DPVB item in Dimensions and set the DPVB to READY_FOR_BRA_SYSTEMTEST status 	Integration Team	End

Sample Dimensions screenshot Showing PVBs and DPVBs (with redactions as necessary)





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Sample screenshot Showing Peak (with redactions as necessary)

Peak Incident Management System - PC0291468

Details | File | Call | Options | Help

Peak | Search Peak | Search

DETAILS	REFERENCES	PRODUCTS	EVIDENCE	IMPACT	COLLECTIONS	TARGET RELEASE	RELEASE MGT
Call Reference	PC0291468	Call Logger	LiveSpTest-GDC				
Release	Reported In -- HNG-X 20.81	Top Ref	RHL_NCO_PROBESYSLOGNG_CFG_2081_D015-D002B				
Call Type	S -- System Testing Incidents/Defects	Priority	B -- Progress Stopped				
Contact		Status	Closed -- S-W Fix Available to Call Logger				Release Peaks
Impact						POA	JIRA
Summary	LST R20.81 Base line installation failed (HRU18400_LT) Save Summary						
<pre> 11tps201 SYSv2 Apply SYSv2-P0133_0000_0151-stack (SYSLOG_SERVER_CFG_2081_D012-D011 RHL_NCO_PROBESYSLOGNG_CFG_2081_D015-D002) 11tps201 root # cat SYSLOG_SERVER_CFG_2081_V012-V011.log Commencing installation of SYSLOG_SERVER_CFG_2081_V012-V011 at Mon Nov 9 11:28:27 GMT 2020 Generating Regression Instruction in /var/log/regress [End of Response] Response code to call System Testing Incidents/Defects(5) as Potential Problem Identified(38) Date:11-Nov-2020 18:10:01 User:Dimensions Automated User Reference Added: Product Baseline RHL_NCO_PROBESYSLOGNG_CFG_2081_D015-D002A Date:11-Nov-2020 18:35:00 User:Dimensions Automated User Reference Added: Product Baseline SYSLOG_SERVER_CFG_2081_D012-D011A Date:12-Nov-2020 11:55:01 User:Dimensions Automated User Reference Added: Product Baseline RHL_NCO_PROBESYSLOGNG_CFG_2081_D015-D002B Date:12-Nov-2020 15:01:14 User:PIT Automated User [Start of Response] Peak 0291468 handled by integration auto handler The following baselines attached to this peak have the targeting flags set: sh_wco_sncsysv2cfg_cfg_2081_D015-D002B FOR (/TUE-VFS_TEST-VFS_SMT-VFS) Integrator: </pre>							
Root Cause	34 -- Test - Environment						Add Response
Routing	LiveSpTest-GDC						Assign
Subject Product	HNG-X Platforms -- Syslog Server (SYS)						Expand
Assignee	LiveSpTest-GDC						Clone ReOpen
Last Progress	24-Nov-2020 08:47 --		Target: 12/11/2020		Cost: 0 Man Days		Graphs

Close

Stage 4: Maintain Platform Product Spreadsheets

This describes the steps required to maintain the spreadsheets that define the order of installation of the DPVBs. When a new software product is required, the Development team or Platform owner update the PPD with the new product. This will show where in the install order this product should be in relation to other products, after its dependencies and before anything that depends on it. For example, MySQL would need to be installed before the create table product is installed. The Integration team use the information in the PPD to insert the product name in to the ScmProductStack_*.xls (see "Sample screenshot Showing ScmProductStack_BALv2.xls" below). SCM is notified, so that they can update the product as a valid product in Dimensions.

Step	Current Situation / Input	Activities	Accountability	Next Step
4.1	Generate CP or Peak used to initiate a new PVB	Create a CP or Peak <ul style="list-style-type: none"> Integration check the status of all required document updates and use this data for the steps that follow Output – New CP or Peak	Platform Owner or Development Team	4.2
4.2	New CP or Peak	Update PPD to reflect new Product <ul style="list-style-type: none"> Update the relevant PPD to reflect the new Software Product Output – Updated PPD committed to Dimensions	Platform Owner or Development Team	4.3
4.3	Updated PPD	Review CP/Peak and PPD <ul style="list-style-type: none"> Assess the information provided in the CP/Peak and PPD to check that that the Platform Product 	Integration Team	4.4



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		<ul style="list-style-type: none"> ➤ Stacks are up to date and include the new Product • Check-out ScmProductStack_*.xls from Dimensions and update the document with the new Product Output – Updated ScmProductStack_*.xls		
4.4	Updated ScmProduct Stack_*.xls	Check ScmProductStack_*.xls into Dimensions <ul style="list-style-type: none"> • Check ScmProductStack_*.xls into Dimensions and check that the status is set to complete Output – ScmProductStack_*.xls in Dimensions marked as complete	Integration Team	4.5
4.5	ScmProduct Stack_*.xls set to Complete status in Dimensions	Notify SCM of ScmProductStack_*.xls update <ul style="list-style-type: none"> • Email sent to SCM team to inform them that a ScmProductStack_*.xls has been update Output – SCM team review update	Integration Team	4.6
4.6	ScmProduct Stack_*.xls review complete	SCM team create an updated valid products xml <ul style="list-style-type: none"> • SCM team run their script to create an updated valid products xml to check that the new Product can be deployed to the target Platform Output – Updated valid products xml	SCM Team	4.7
4.7	Updated valid products xml	Create PVBs and DPVBs <ul style="list-style-type: none"> • See process to “Create PVBs and DPVBs” Output – New PVB and DPVB	Integration Team	End



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Sample screenshot Showing ScmProductStack_BALv2.xls (with redactions as necessary)

Stage 5: Maintain Product Tags

Product Tags are a set of values maintained in a spreadsheet that are used by the installation scripts (DPVBs) depending on the context of where the script is run. The script will require a certain value on the LST (Live System Test) rig, but on the Live rig would require a different value.

Step	Current Situation / Input	Activities	Accountability	Next Step
5.1	Generate CP or Peak used to initiate a new PVB	Create a CP or Peak <ul style="list-style-type: none"> Integration check the status of all required document updates and use this data for the steps that follow Output – New CP or Peak	Platform Owner or Development Team	5.2
5.2	New Peak\CP	Review CP\Peak <ul style="list-style-type: none"> Assess the information provided in the CP\Peak to check that all the details have been provided to create or update a Product Tag Output – Reviewed Peak\CP	Integration Team	5.3
5.3	Reviewed Peak\CP	Update product tags Output – Updated Product tags and new PVB and DPVB created	Integration Team	5.4
5.4	New PVB and DPVB created in Dimensions	New Product tag PVB and DPVBs are created Output – Integration team review update	Integration Team	5.5

Stage 6: Maintain Integration Provisioning Environment

The software provisioning servers, TPM (see “Sample screenshot showing TPM deployment” below) and TEM (see “Sample screenshot showing TEM deployment” below) need to be uploaded with the software



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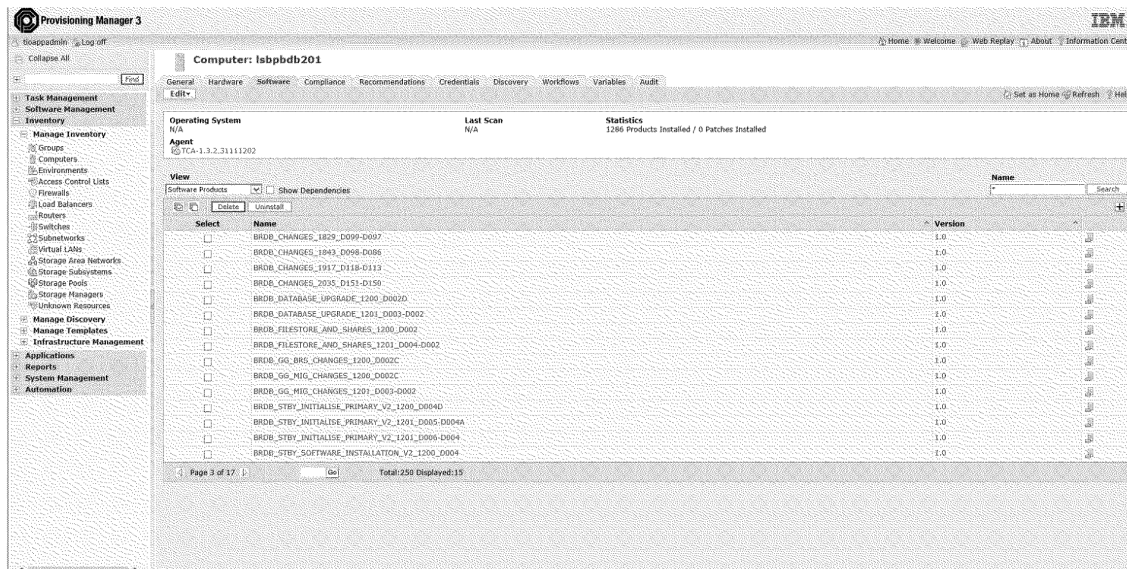
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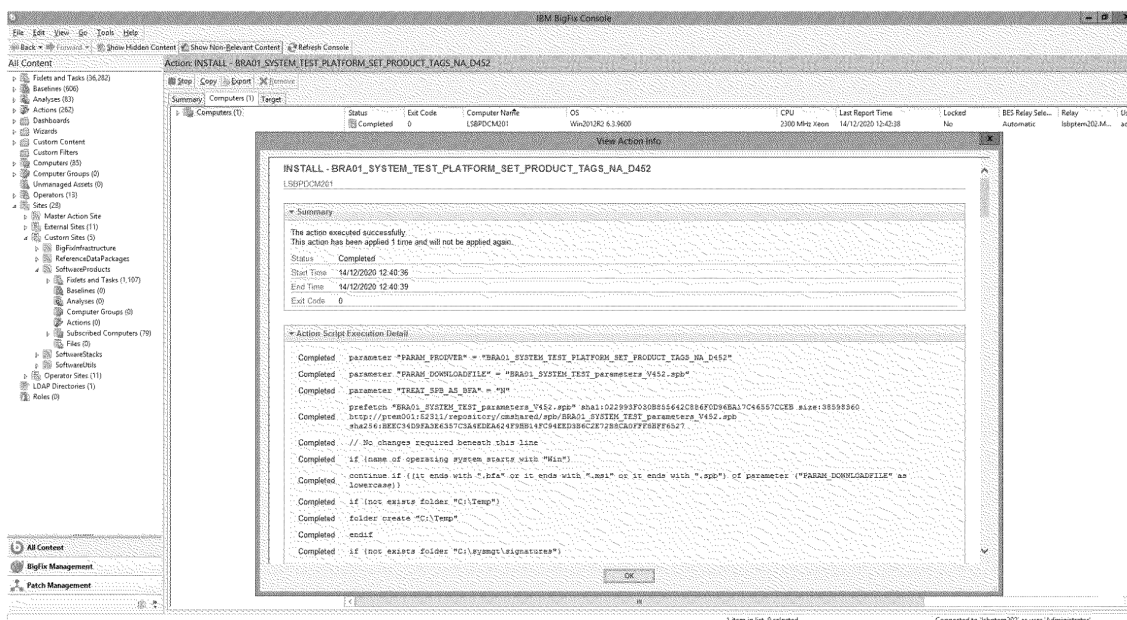
components extracted from Dimensions that make up the Integration rig. They are then used to provision new Platforms and update existing ones with new or updated software DPVBs.

Step	Current Situation / Input	Activities	Accountability	Next Step
6.1	Server Definition (PPD) Platform Set in Dimensions List of Authorised Packaged Software	Adding new Platform Instances <ul style="list-style-type: none"> Establish hardware/storage/network requirements. From PPD and assign in host environment (BladeFrame/ESXi/VM) Create Computer XML on TPM and provision OS Create Product and stack XML using auto PSPID scripts and upload to TPM or TEM. DPVBs are automatically copied to TPM/TEM. Upload XML into TEM (auto for TPM) Provision software onto platform using full product stack, plus any manual processes specified. Output – Product Stacks in TPM or TEM Output – Built instance in Integration Rig	Integration Team	n/a
6.2	Support request	Platform Troubleshooting <ul style="list-style-type: none"> Check Platform status, connection status, Tivoli Common Agent (for TPM managed), BigFix Agent status (for TEM managed). Check space or resource issues Check hosting issues, BladeFrame, ESXi, etc. 	Integration Team	n/a
6.3	Regular task	TPM and TEM Housekeeping <ul style="list-style-type: none"> Check space and any resource issues on EPM and EDS for TPM. Similar for TEM. Remove redundant tasks and items on TEM Backup TPM3 EPM & EDS on ESXi Output – None	Integration Team	n/a
6.4	Support request	TPM and TEM Troubleshooting <ul style="list-style-type: none"> Check cron jobs running, scripts and processes running. Check end-to-end PSPID process. Check space and any resource issues on EPM and EDS for TPM. Similar for TEM. Check hosting issues, BladeFrame, ESXi, etc. Check TPM accessible across network, GUI login works and TPM logs OK. Output –None	Integration Team	n/a

Sample screenshot showing TPM deployment

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Sample screenshot showing TEM deployment



Stage 7: Integration Test of Deployable Product Version Baselines

The DPVB is uploaded into the deployment server, TPM or TEM. The DPVB is then pushed from the deployment server to the target Platform or Platforms on the Integration rig. The install logs are checked for error and that the expected software components have been updated. The DPVB is then regressed from the Platform using the regress script or instructions, and the checks repeated to verify that the DPVB has been regressed correctly. The DPVB is then re-installed from the deployment server. The status of the DPVB is changed to indicate that it is ready for the Test teams and the Test teams notified that the DPVB works successfully on the Integration rig and the DPVB is available to be deployed to the Test rigs.

If at any stage the install or regress fails, the DPVB status is updated to show this, a ticket in respect of the



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fault (Peak) is raised and sent to the Integration packager to be repacked as a new DPVB.

Step	Current Situation / Input	Activities	Accountability	Next Step
7.1	DPVBs in Dimensions	Prepare Baseline for Integration Test <ul style="list-style-type: none"> Update Dimensions status of DPVB to "Approved for Bracknell System Test" Create Product and stack XML using auto PSPID scripts (also copies to TPM or TEM) Upload XML into TEM (automatic for TPM) Output – Baseline ready for Integration testing	Integration Team	7.2
7.2	Baseline available in Integration TPM or TEM	Test baseline on Integration rig <ul style="list-style-type: none"> Apply to a target Platform instance. Check logs, install items, etc. Un-install, check logs, regress of items, etc. Re-install, re-check logs, install items, etc. If successful, apply to other instances. Move DPVB to next Dimensions status. Send "Ready for Test" email. If unsuccessful, raise a Peak, set status to Withdrawn, pass back to Dev or Packager depending on error. Un-install on Integration rig. Output – Install-tested DPVB in Dimensions made ready for system test Output – "Ready for Test" email Output – Peak for failed baseline	Integration Team	7.3 on Success 7.4 on Fail
7.3	Successful Integration test	Move DPVB on to system test. <ul style="list-style-type: none"> Move DPVB to next Dimensions status. Send "Ready for Test" email. Apply DPVB to other platform instances. Output – Install-tested DPVB in Dimensions made ready for system test Output – "Ready for Test" email	Integration Team	
7.4	Failed Integration test	Return Baseline for fix. Pass back to Developer or Packager depending on error. <ul style="list-style-type: none"> Raise a Peak Set Dimensions status to Withdrawn Un-install on Integration rig. Output – Peak for failed baseline	Integration Team	

Stage 8: Create Build Lists for Platforms and Incremental Updates

This describes the steps to create a list of DPVBs required for a release to be uploaded in to the deployment servers, TPM and TEM. DPVBs can be deployed individually, but for a larger release or a full platform build, it is better to deploy DPVBs as a group.

Step	Current Situation / Input	Activities	Accountability	Next Step
------	---------------------------	------------	----------------	-----------



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8.1	Request from RM Design Part List for Platform List of DPVBs to be omitted (optional) Target Release and Rig	Create Build Lists for new Platforms <ul style="list-style-type: none"> On receipt of a request, Integration team generates the list of DPVBS using Dimensions reports Check for any anomalies such as inappropriate for target rig, and remove any requested exceptions. Create Dimensions Build Doc for Release. Output – Dimensions Build document containing the full list of DPVBs as related objects Output - Email to RM with Build Doc reference, Release number, comments and any Special Instructions.	Integration Team	n/a
8.2	Request from RM Requested Incremental Baselines List of DPVBs to be omitted (optional) Target Release and Rig	Create Incremental Build Lists for new Baselines across one or more platforms <ul style="list-style-type: none"> On receipt of a request, Integration team generates the list of DPVBS using Dimensions reports Check for any anomalies such as inappropriate for target rig, and remove any requested exceptions. Create Dimensions Build Doc for Release. Output – Dimensions Build document containing the full list of DPVBs as related objects Output - Email to RM with Build Doc reference, Release number, comments and any Special Instructions.	Integration Team	

Stage 9: Update Security Patches

This describes the steps required to maintain the monthly security patches. When the patches have been assessed and agreed the Integrator creates them in Dimensions as a new PVB and DPVB and they are deployed and tested using the same processes as other DPVBs.

This stage is part of the overall Integration process but not directly part of the SDLC.

Step	Current Situation / Input	Activities	Accountability	Next Step
9.1	Monthly Security Updates PCI Compliant Platforms Master Spreadsheet	Define Requirement <ul style="list-style-type: none"> Requirement based on information available from various Security enforcement agencies, Security Bulletin boards and Operating System vendors 	SecOps Integration Team	9.2
9.2	Security enforcement agencies Security Bulletin boards Operating System Vendors.	Update Master Spreadsheet <ul style="list-style-type: none"> Security patches are updated in a managed and controlled document with all information necessary to allow assessment of the obtained patches. Output – Master Spreadsheet	Integration Team Development	9.3



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9.3	Master control Spreadsheet	Stakeholder Panel Assessment <ul style="list-style-type: none"> Patch Assessment Board meet to consider relevance of assessed Patches and degree of criticality. A decision is made and security patches are selected based on impact criteria. Output – Peak call raised to deliver required components.	SecOps and Customer	9.4
9.4	Security Patches in the form of COTS products from various OS Vendors	Register Sysware <ul style="list-style-type: none"> Register Sysware in Dimensions Output – Software stored in package share repository	Integration Team	9.5
9.5	Patches / Hotfixes from OS Vendors	Create Product Version Baselines <ul style="list-style-type: none"> A Product Version Baseline is created and items placed in Dimensions. PVB is developed to check for automated delivery. Output – PVBs in Dimensions	Integration Team	9.6
9.6	PVBs in Dimensions	Create Deployable Product Version Baselines <ul style="list-style-type: none"> Package patches using appropriate methods and tools. Output - DPVBs in Dimensions	Integration Team	9.7
9.7	DPVBs in Dimensions	Test and Release DPVBs <ul style="list-style-type: none"> Packages are installed in integration test environment to check for no package errors. DPVBs propagated to next level for System test and LIVE environments. Output – Move Peak to LST	Integration Team	

4.6 Testing & QA

See Testing & QA Report COM/MGT/REP/4166.

4.7 Accept and Deploy

4.7.1 Process Overview

A release is a delivery of:

- Change to functionality; and/or
- Bug fixes; and/or
- Security updates.

Once the content is defined, Development complete the work and this will be followed by any Integration packaging required for the deployment tooling to the rigs.

Release Management work with the Delivery and Operational teams to write an agreed deployment plan. The focus is on how this release will be deployed into Live Service. Deployment into Test will follow/be a dry run for Live following the same ordering and post implementation checks. Change Control (TfSNow) will be used to deploy the release into Test and will record any changes/redeliveries due to findings during testing. Any changes made during Test Phases are fed back into the Live deployment plan. A walkthrough of the amended plan is held with the Delivery, Test and Operational teams to produce an agreed deployment plan ready for Live deployment.



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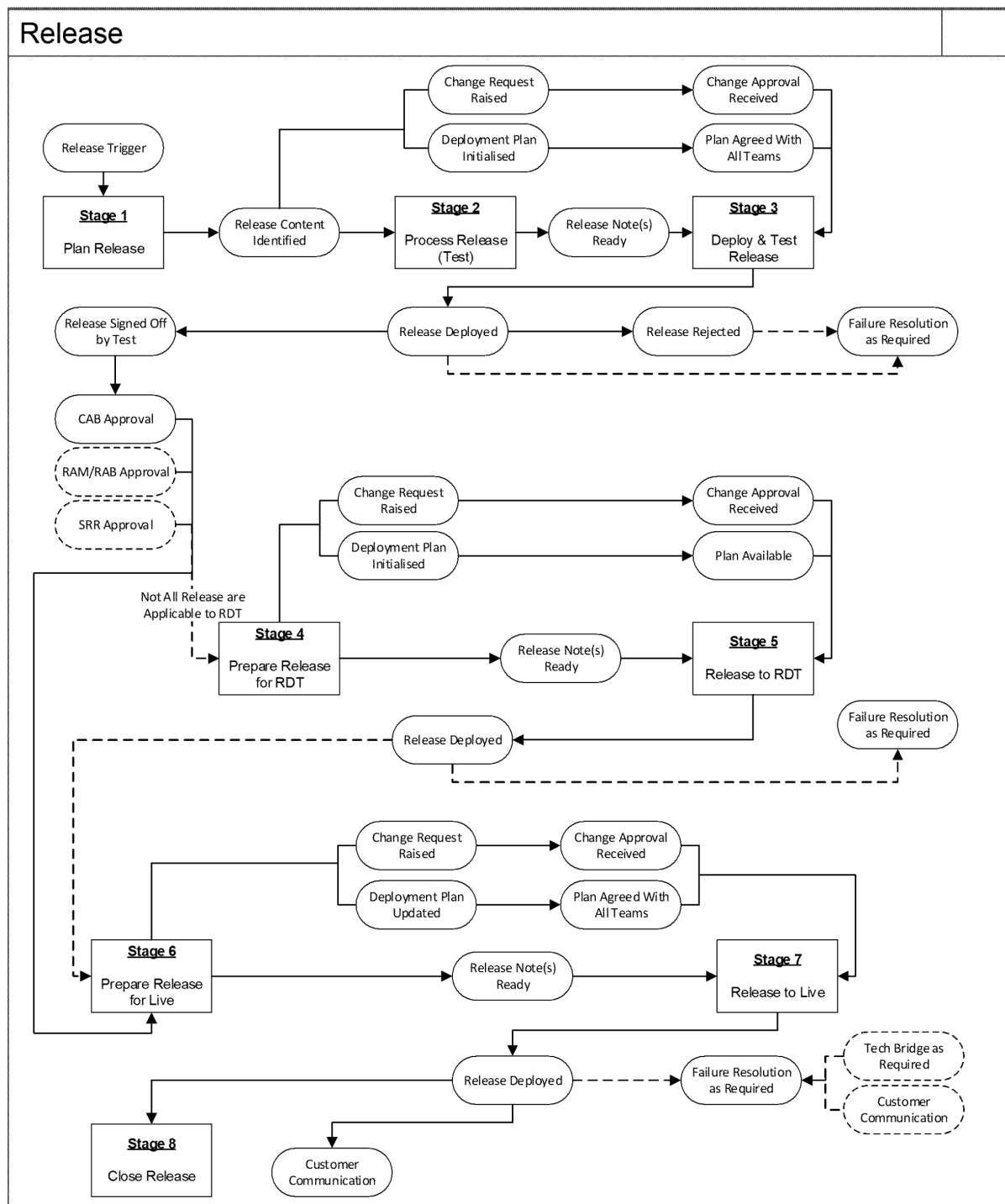
Change Control for Live (including RDT) follows the POL Change Management Process using TfSNow and any agreed checkpoints with POL. POL define which of the following checkpoints are applicable to each release:

- Service Readiness Review (SRR)
- Release Authorisation Meeting/Board (RAM/RAB)
- Change Advisory Board (CAB)

Post Implementation Reviews are held and if any issues are found then these follow the POL Change Management Process.

4.7.2 Process Flow

An overview of the process is shown and each numbered box is explained in the table that follows.





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4.7.3 Process Steps

Process	Sub Process	Description	Meetings	Systems Used	Output
	Release Trigger	<p>The Requirement for the Release:</p> <ul style="list-style-type: none"> CP (Change Proposal) raised to cover new internal or external functionality changes. Peak (Fault identified from Live or internally during test activities). 	<ul style="list-style-type: none"> BIF (Business Impacting Forum). Held weekly. PTF (Peak Targeting Forum). Held weekly but may be held at any time if emergency fix required. 	Dimensions Peak	<ul style="list-style-type: none"> Approved requirement. Release ID created.
Stage 1 Plan Release		<p>Activities to plan release:</p> <ul style="list-style-type: none"> Out of Development date Test window Projected Live date(s) 	RP (Release Planning) held weekly to define test window.	Excel SharePoint	<ul style="list-style-type: none"> FSC (Forward Schedule of Change updated with proposed date if Programme delivery. Development code produced.
	Release Content Identified	<p>Activities to define release content:</p> <ul style="list-style-type: none"> Baselines within Release identified. 		Dimensions Excel (plan)	Release Note(s) content (Baselines) defined.
	Change Request Raised	<ul style="list-style-type: none"> Test Change Request raised and distributed for internal assessment. 		TfsNow	Change Request Approval. (see "Sample screenshot showing TFSNow Change Request" below)
	Deployment Plan initialised	<ul style="list-style-type: none"> Draft plan created <p>NB: When Test plan created it is generated from a Live perspective and Test is then planned accordingly.</p>	Meeting(s) with Development and Deployment unit(s) held as required.	Excel	Draft Deployment Plan (see "Sample screenshot showing Deployment Plan" below)
Stage 2 Process Release (Test)		<ul style="list-style-type: none"> RM (Release Management) activity to create release note(s) to carry baseline(s). Release Note Peak related to Fault Peak. SCM (Software Configuration Management) package baseline(s) and delivery software to 	N/A	Peak Dimensions	Processed Release Note (see "Sample screenshot Showing Release Note" below)



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	Release Note(s) Ready	<ul style="list-style-type: none"> repository. Release Note(s) with RM. Individual Child Task(s) raised for each Release Note(s). (see "Sample screenshot showing TFSNow CTask" below) Plan updated with Release Note References. 	Meeting(s) with Development Deployment unit(s) and test held as required.	Excel	Approved Deployment Plan.
	Change Advisory Received	Confirmation checked prior to release deployment.		TfsNow	Approval to proceed to Test deployment.
	Plan Available	<ul style="list-style-type: none"> Approved plan attached to Change Request. Approved plan distributed to key stakeholders. Individual Child Task(s) assigned to Test (for onward assignment to deployment Unit(s). Release Note(s) assigned to Test. 		TfsNow Excel	Approval to proceed to Test deployment.
Stage 3 Deploy & Test Release		The activities that covers deployment and Testing.			<ul style="list-style-type: none"> RDT Deployment completed. Failure Resolution as Required
	Release Deployed	<ul style="list-style-type: none"> Individual Child Task(s) assigned to back to Test by Deployment Unit(s) with successful annotation. Individual Child Task(s) assigned to back to Test by Deployment Unit(s) with failure annotation. 		TfsNow Peak	<ul style="list-style-type: none"> Test Deployment completed. Release signed off by Test. Failure Resolution as Required.
	Release Rejected		Meeting(s) with Development Deployment unit(s), test and Release Management held as required to discuss resolution.	TfsNow Peak	Failure Resolution as Required.
	Failure Resolution as Required	Activities to cover failure.			<ul style="list-style-type: none"> Suspend Release. Fix Forward &



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					<ul style="list-style-type: none"> Re-test. Regress software from Test.
	Release Signed off by Test	<ul style="list-style-type: none"> Individual Child Task(s) assigned back to Release Management. Release Note(s) assigned back to Release Management. 			<ul style="list-style-type: none"> Test Sign Off and Caveats. Release Notes returned to RM.
Stage 4 Prepare Release for RDT		<ul style="list-style-type: none"> RM (Release Management) activity to clone release note(s) to carry baseline(s). SCM (Software Configuration Management) package baseline(s) and delivery software to repository. 	N/A	Peak Dimensions	Processed RDT Release Note(s) version(s).
	Release Note(s) Ready	<ul style="list-style-type: none"> Release Note(s) with RM. Release Note Peak related to Fault Peak. Individual Child Task(s) raised for each Release Note(s). Plan updated with Release Note References. 	Meeting(s) with Development Deployment unit(s) and test held as required.	Excel	Approved Deployment Plan.
	Change Request Raised	<ul style="list-style-type: none"> RDT Change Request raised and distributed for internal assessment. 		TfsNow	Change Request Approval.
	Deployment Plan Initialised	<ul style="list-style-type: none"> Draft plan created. 	Meeting(s) with Development and Deployment unit(s) held as required.	Excel	Draft Deployment Plan.
	Change Advisory Received	Confirmation checked prior to release deployment.		TfsNow	Approval to proceed to RDT deployment.
	Plan Available	<ul style="list-style-type: none"> Approved plan attached to Change Request. Approved plan distributed to key stakeholders. Individual Child Task(s) assigned to deployment Unit(s). 		TfsNow Excel	Approval to proceed to RDT deployment.
Stage 5		The activities that covers			



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Release to RDT		deployment to RDT.			
	Release Deployed	<ul style="list-style-type: none"> Individual Child Task(s) assigned to back to Release Management by Deployment Unit(s) with successful annotation. Individual Child Task(s) assigned to back to Release Management by Deployment Unit(s) with failure annotation. 		TfsNow Peak	<ul style="list-style-type: none"> RDT Deployment completed. Failure Resolution as Required.
	Failure Resolution as Required	Activities to cover failure.			<ul style="list-style-type: none"> Fix Forward & continue Regress software from RDT
Stage 6 Prepare Release for Live		Release Note(s) signed off by Test cloned for Live. NB: Results in same Release Note Peak.			
	Change Request Raised	<ul style="list-style-type: none"> Live Change Request raised and distributed for internal assessment. 	<ul style="list-style-type: none"> Technical CAB (Change Advisory Board). FSC (Forward Schedule of Change). 	TfsNow Excel SharePoint	<ul style="list-style-type: none"> Approval to go to Business CAB (Change Advisory Board). Customer request to re-time change.
	Deployment Plan Updated	<ul style="list-style-type: none"> Draft plan updated 	Meeting(s) with Development and Deployment unit(s) held as required.	Excel	Draft Deployment Plan.
	Release Note(s) Ready	<ul style="list-style-type: none"> Release Note(s) with RM. Individual Child Task(s) raised for each Release Note(s). Plan updated with Release Note References. 	Meeting(s) with Development Deployment unit(s) and test held as required.	Excel	Approved Deployment Plan.
	Change Approval Received	Confirmation checked prior to release deployment.		TfsNow	Approval to proceed to Live deployment.
	CAB Approval	<ul style="list-style-type: none"> Change presented to CAB (Change Advisory Board). 	CAB Business.		Change Request Approval.



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		NB: Changes selected for presentation depending on Business impact. Approval may be given directly in TfSNow.			
	RAM/RAB Approval	<ul style="list-style-type: none"> RAM (Release Authorisation Meeting). RAB (Release Authorisation Board). 	RAM/RAB meetings held as required and dependent on type of Release e.g. generally programme releases.		RAM/RAB Approval.
	SRR Approval	<ul style="list-style-type: none"> SRR (Service Readiness Review). 	RAM/RAB meetings held as required and dependent on type of Release e.g. generally programme releases.		SRR Approval.
	Plan Available	<ul style="list-style-type: none"> Approved plan attached to Change Request. Approved plan distributed to key stakeholders. Individual Child Task(s) assigned to deployment Unit(s). 		TfSNow Excel	Approval to proceed to Live deployment.
Stage 7 Release to Live		The activities that covers deployment to Live.			<ul style="list-style-type: none"> Live Deployment completed. Failure Resolution as Required.
	Failure Resolution as Required	Activities to cover failure.			<ul style="list-style-type: none"> Fix forward & continue. Regress software from Live.
	Release Deployed	<ul style="list-style-type: none"> Individual Child Task(s) assigned to back to Release Management by Deployment Unit(s) with successful annotation. Individual Child Task(s) assigned to back to Release Management by Deployment Unit(s) with failure annotation. 		TfSNow Peak	<ul style="list-style-type: none"> Live Deployment completed. Failure Resolution as Required.
	Tech Bridge as Required	Deployment Manger contacts Duty Manager to advise failure.			Agreed Resolution
	Customer Communication	Duty Manager contacts Customer Duty Manager			Agreed Resolution



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		as required			
Stage 8 Close Release	Stage 8 Close Release	<p>The activities that covers Release closure:</p> <ul style="list-style-type: none"> Individual Task(s) closed (all environments) Change Request Close (all environments) Close Release Notes (all environments). Peak returned to call logger for closure. 		TfsNow Peak SharePoint	Release Closed.
	Customer Communication	Customer notified via TfsNow closure process.		TfsNow	Release Closed.

Sample screenshot showing TFSNow Change Request (with redactions as necessary)

The screenshot displays the TFSNow Change Request interface for request CHG0206053. The interface includes a left-hand navigation menu with options like 'Self Service', 'Service Portal - Fujitsu ISP', 'Service Portal - My Company', 'Live Feed', 'Homepage', 'Dashboards', 'Service Catalog', 'Knowledge', 'My Task Boards', 'Incidents', 'Watched Incidents', 'My Requests', 'My Changes', 'Requested Items', 'Watched Requested Items', 'My Profile', 'My Tagged Documents', and 'My Tags'. The main content area shows the following details:

- Number:** CHG0206053
- Requested by:** [Redacted]
- Company:** POA
- Requested for Company:** POA
- Primary CI:** Data Centre Release
- Service CI:** Release
- Category:** Other
- Subcategory:** None
- Service offering:** [Redacted]
- Location:** [Redacted]
- Contract:** [Redacted]
- Cost centre:** [Redacted]
- Project Code:** [Redacted]
- Priority:** Normal
- Risk:** Low
- Impact:** 3 - Medium
- Approval:** Approved
- Type:** RFC
- State:** Closed Complete
- Created:** 19/11/2020 08:41:22
- Assignment group:** Change_Management
- Owner:** [Redacted]
- CAB date:** 03/12/2020
- Parent:** [Redacted]
- Chargeable:** [Redacted]
- Time worked:** 00:16:55 00 00 44
- Short description:** Live Security Patch Set for December 2020 part 1 weekend
- Description:** Non-technical overview and scope of the change. The purpose of this change is to deploy the latest required signed off Security Patch set. This will consist of manufacturers security patches supplied by Oracle, Microsoft, Red Hat and Solaris. These have been approved by the Fujitsu Post Office Account Patch Approval Board for Live service. They will follow the usual pattern of updating and planned as such to cause minimal impact. Clone backups of single instance servers may be carried out within this Change Window.

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Sample screenshot showing Deployment Plan

Line	A	B	C	D	E	F	G	H	I	J	K	L
	Env	ID	Platforms	Deper	Activity	RN	Date / Start	Date / Finish	Actionee	Comments		
16	B	2.00			ARC/MIG/STG/4084 - 0.4							
17	B	2.1.1.1			Pre-Requisite - 1.1.2 Network changes					Corrected ID @ V0.4		
17	B	2.1.1.1			Branch							
19	PR	2.02			Verizon firewall between the branch network and the internet				Verizon	FI driving with POL - already requested		
21	PR	2.04			Counter firewall between the counter and the branch network				CC			
22	BL											
23	B				Pre-Requisite - 1.1.4 Reference Data Changes					Added @ V0.4		
26	PR	7.02			Deploy Reference Data for Live - Initial Ref Data for CP2459 PBS Pilot Phase 1	DATA0452_PR	16/11/2020	16/11/2020	SSC	Moved position @ V0.4		
27	PR	7.02A			Deploy Reference Data for Live - Incremental to DATA0452_LT	DATA0453_PR	16/11/2020	16/11/2020	SSC	Completed @ V0.7		
28	BL									Completed @ V0.7		
29	B	3.00			Pre-Upgrade - Admin							
31	PR	3.02			Confirm CHG0200404 has been approved for deployment				RM	Completed @ V0.7		
32	PR	3.03			Confirm Release Notes formally signed off by LST				LST/RM	Completed @ V0.8		
33	PR	3.03A			Confirm Release Notes formally signed off by LST (PC0291626)				LST/RM	Added @ V0.8		
34	PR	3.04			Confirm Release deliverables present on DXC				Unix/NT/RM			
35	B	3.05			Send/Review the OCP files				Unix/NT/RM			
36	BL											
37	B	4.00			Release R20.92 Payment Pilot Phase 2 - Live Day Time Activities					Wording changed @ V0.5		
38	B	4.01			Upgrade Activities - Tags							
40	PR	4.03	All		Apply PSET-P0143_0000_0396-stack (LIVE_PLATFORM_SET_PRODUCT_TAGS_NA_D448)	BTH18298_PR	17/11/2020 14:00	17/11/2020 18:00	Unix/NT	Friday Afternoon?		
41	BL									Completed @ V0.7		
42	B	8.00			Release R20.92 Payment Pilot Phase 2 - Dependent Release R20.88							
43	B				Upgrade Activities - SSN							
44	PR	8.01			Open ILL with SMC and confirm current live system stable		17/11/2020 18:00	17/11/2020 18:15	SMC/RM	Added @ V0.3		
46	PR	8.03	Iprpssn001		Apply SSN-P0146_0000_0124-stack (RCA_CLIENT_APP_2088_D025 & HNGA_TEST_COUNTER_SETUP_2088_D007)	HBU18313_PR	17/11/2020 18:15	17/11/2020 19:15	NT	Completed @ V0.7		
47	PR	8.04	Iprpssn003		Apply SSN-P0146_0000_0124-stack	HBU18313_PR	17/11/2020 18:15	17/11/2020 19:15	NT	Added @ V0.3		
Deployment Plan												
BALV2 Regression Plan Grid Contacts 2092 SO_Caveats PC0291399 ... (+)												
Ready - Filter Mode												

Sample screenshot showing Release Note (with redactions as necessary)

Release Note	File	Call	Options	Help	Peak	Search Peak	Search
--------------	------	------	---------	------	------	-------------	--------

Peak Incident Management System

This Release Note is Completed

POST OFFICE ACCOUNT RELEASE NOTE	TEM18450_LT
Software identifier (PSPID.DPVB)	
Release	HNG-X 20.92
Change Ticket	CHG0206438
Reason (PEAK / CP number / TRIOLE number)	CP2371 PC0291679
Problem Description	TEM18450_LT - R20.92 - LST - DCMv2 - Manual Delivery of Auto Baseline
Platforms	Debit Card Management Server v2 (DCMv2)
Location	BRA01
Rig	LST
SCM Release Type	List
SCM BLD Change Document	None
SCM Include Software	Yes
Initial version of PSPID	Yes
Purpose of Release Note	TEM18450_LT - R20.92 - LST - DCMv2 - Manual Delivery of Auto Baseline
Date Raised	2020-11-24 07:27:11
Application Date	Applied 24/11/20 Action Complete

PSPID Reference

Non PSPID Baselines

AGT_DCS_H_MGT_V2_2092_D008

Comments

High level plan	WorkUnit	Contact	Date	Order
RM confirm ready for CM progressing		RM	2020-11-24 07:29:57	1
COMPLETION, by	on 2020-11-24 07:29:57	Action Complete		
Software released to pick up point, and RN updated with details		CM	2020-11-24 07:46:06	2
COMMENT, by	on 2020-11-24 07:37:35	In-Progress		
COMMENT, by	on 2020-11-24 07:45:58	Release Note: TEM18450_LT		

PLATFORM:
DEBIT_CARD_MANAGEMENT_SERVER_V2

Software and XML delivered to the DXT into /repository/winfiles/SCMIN/REL_TEM18450_LT

The XML Files are called Addsoftwareproduct.xml and Addsoftwarestack.xml
The stack name is DCMv2-P0143_0000_0364-stack

Baselines delivered to Ireland are:



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Sample screenshot showing TFSNow CTask (with redactions as necessary)

The screenshot displays the TFSNow CTask interface for CTASK1034109. The left sidebar contains navigation links such as 'Self-Service', 'Service Portal - Fujitsu ISP', 'Service Portal - My Company', 'Live Feed', 'Homepage', 'Dashboards', 'Service Catalog', 'Knowledge', 'My Task Boards', 'Incidents', 'Watched Incidents', 'My Requests', 'My Changes', 'Requested Items', 'Watched Requested Items', 'My Profile', 'My Tagged Documents', and 'My Tags'. The main content area shows the task details:

- Number:** CTASK1034109
- Company:** POA
- Location:** [Redacted]
- Configuration Item:** [Redacted]
- Priority:** 2 - High
- Due date:** [Redacted]
- Start Date:** [Redacted]
- Change request:** CHG0206053
- Short description:** Plan Authorisation
- Description:** Live Security Patch Set for December 2020 part 1 weekend
- State:** Approve to Implement
- Active:** [Redacted]
- Assignment group:** FJ-POA-Release Approval
- Assigned to:** [Redacted]
- Time worked:** 00:00:14
- Suspend code:** -- None --
- Planned Hours:** [Redacted]

Below the task details, there is a 'Notes' section with a 'Watch list' and a 'Work notes list'. The 'Activities' section shows a list of activities, including 'State: Approve to Implement was Open' and 'Email sent'.

5 Formal Audit Reports

POL has commissioned an ISAE3402 audit as well as quarterly PCI Prioritised Approach audits on POA. Both audits examined some of the topics discussed in this report. Furthermore, POA are periodically requested to contribute to internal Fujitsu corporate audits to support Fujitsu UK in attaining and maintaining a variety of certifications - such as ISO27001, ISO9001 and ISO22301.

6 Conclusions

Fujitsu's Software Delivery Life Cycle for the Horizon application is based on widely recognised industry standard approaches and has been refined to meet the needs of POL and the current Horizon Contract.

This Report explains how the SDLC is operated for POA and shows the many points of engagement with POL and the joint processes throughout.

7 Recommendations

None recorded in this version of the report.

8 Information Distribution

This report and any enclosed materials (the "Audit Materials") are being provided to Post Office Limited ("POL") pursuant to POL's request for an audit of Horizon (the "Audit"). The Audit Materials comprise work product prepared by Fujitsu pursuant to requests from POL. Fujitsu has confined this report to the

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Appendix A – HNGxDBM Role Descriptions

This document describes the key roles of the Fujitsu team referenced in the **HNGxDBM** processes.

These role descriptions are based on the underpinning ADBM roles supplemented where necessary with detail or new roles specific to **HNGxDBM**.

Note that these are roles, not people. One person may fulfil more than one role in a particular project.

A.1 – Management

Role	Description
Programme Manager	<p>The HNG-x BAU Programme Manager is responsible for the detailed, day-by-day conduct of the HNG-x Project, based on the planning of BAU Change projects. The plans constitute a notional contract, in that: The Project Board supplies the direction and resources</p> <p>In return, the Programme Manager:-</p> <ul style="list-style-type: none"> • Delivers the Products • Meets the Quality Criteria (for the products) • Verifies compliance with agreed Quality processes <ul style="list-style-type: none"> • within the Budget • by the Target Date for completion • within any defined Tolerances <p>The Programme Manager is also responsible for preparing the plans for approval by the Project Board.</p>
Head of Application Lifecycle	<p>Tasked with overall responsibility for the resourcing and engineering process across the development to release phases.</p>
Development Manager	<p>Tasked with overall responsibility for the success of the code, build and component test effort, providing Management oversight including :</p> <ul style="list-style-type: none"> • Quality and development best practice advocacy, resource planning and management, and resolution of issues that impede the development and test effort. • Reviewing and approving relevant documents • Reviewing effectiveness of development.
Business Requirements Manager	<p>Tasked with overall responsibility for the success of the requirements gathering, understanding and providing Management oversight. Including :</p> <ul style="list-style-type: none"> • Quality and requirements management best practice advocacy, resource planning and management, and resolution of issues that impede the requirement effort. • Release Acceptance and Authorisation (RAM/RAB) with Customer representatives • Reviewing and approving relevant documents • Reviewing effectiveness of requirements gathering and comprehension.
Test Manager	<p>Tasked with overall responsibility for the success of the independent test effort, providing Management oversight. Including :</p> <ul style="list-style-type: none"> • Quality and test best practice advocacy, resource planning and management, and resolution of issues that impede the test effort. • Reviewing and approving relevant documents • Reviewing effectiveness of testing.
Release and Integration Manager	<p>Tasked with overall responsibility for the success of the Integration and Release Management functions, providing Management oversight. Including :</p> <ul style="list-style-type: none"> • Resource planning and management, and resolution of issues that impede team effort. • Reviewing and approving relevant documents • Reviewing effectiveness of resources and processes. <p>Responsible for planning and overseeing the successful rollout of releases, with close liaison to Configuration and Change Management to agree the exact content and rollout/regression planning.</p> <p>Makes available all necessary evidence to the Release authorisation team.</p>



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Team Manager	<p>A Team Manager's responsibility is to achieve the completion of the Product(s) or Work Packages allocated to the team, using whichever quality processes have been agreed for the project and meeting the product's Quality Criteria.</p> <p>Within the context of HNGxDBM there are Solution Architecture, various Development Teams, SV&I and LST Test Team Managers.</p>
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A.2 – Requirements & Architecture

Role	Description
Business Analyst	<p>Business Analysts engage with the Customer (external and internal) to understand and define their real requirements, and contribute to solution definitions. The Business Analyst seeks to ensure that requirements are achievable, traceable and can be supported by test or other evidence to facilitate acceptance.</p> <p>The BA will prepare and deliver the materials required for Release acceptance and authorisation with the Customer.</p>
Solution Owner	<p>This is a technical role and a crucial project role. The Solution Owner is responsible for all aspects of the design, requirements realisation, integration, implementation and performance of the project solution. Additionally, Data Protection and Security implications are considered and acted upon by the Solution Owner. Clearly there may be many Architects involved in the project, covering several technical disciplines. There is only one Solution Owner; a senior person who works closely with the Project Manager seeks to ensure that all the technical aspects of the plans are secure.</p>
Platform Owner	<p>This is a custodial role, where a first point of contact for general queries on a 'platform'.</p> <p>A 'platform' is a functional sub-system component, composed of hardware specifications and application in software layers – starting from an Operating System base and software and applications to provide basic "functions" (e.g. printer functionality libraries), system management, network management, backup utilities, and solution specific applications/functions (e.g. transaction receipt generation).</p> <p>The Platform Owner is not required to have a detailed and intimate knowledge of the software on the system/Platform – but rather seeks to efficiently direct enquiries concerning the system/platform.</p> <p>The Platform Owner is the owner of the relevant PPD document which relates to the platform, and guides changes made to the PPD.</p>
Domain / Solution or Application Architect	<p>Domain / Solution or Application Architects are responsible for the delivery of those aspects of the Architecture allocated to them by the Solution Owner.</p>
Lead Infrastructure Architect	<p>The Lead Infrastructure Architect is responsible for all aspects of the design, integration, implementation and performance of the infrastructure aspects of the project.</p>
Infrastructure Architect	<p>Infrastructure Architects are responsible for the delivery of those aspects of the Infrastructure Architecture allocated to them by the Lead Infrastructure Architect.</p>



A.3 – Technical & Engineering, including Test

Role	Description
ECCB Lead	The Engineering Change Control Board Lead will facilitate the timely and thorough estimation of the impact of change and consolidate data gathered from ECCB contributors. Team Managers/Leads or Members may contribute to the assessment of the technical feasibility or cost of proposed BAU Change through the ECCB forum.
Team Leader	There will be a number of Team Leaders operating in different areas of the engineering lifecycle. They are responsible for aspects of the work allocated to their team, including best practice advocacy, resource management within their team and managing plan exceptions where these occur.
Team Member	<p>The Team Members within a project are responsible for delivering the 'technical' products.</p> <p>Teams may be cross-functional (i.e. composed of people from different parts of the participating organisation(s) and brought together temporarily for the specific purposes of the project) or functional (i.e. drawn from a specialist function which is acting as a supplier to the project).</p> <p>Within the context of HNGxDBM these are Business Analysts, Lead Developers, Developers and Testers.</p>
Lead Developer	Acts as a Developer (see below) – also Responsible for the high level design of specific elements of the solution, and may take responsibility for elements of quality control e.g. Code Review / liaison with Architecture, CIT/Test Teams etc.
Developer	Responsible for the detailed design, coding, component and component integration testing of software modules.
CIT Test Engineer	Responsible for identifying and detailing the required test scenarios, conditions (steps, data and expected results), hardware and software including required regression testing requirements; monitoring detailed testing progress and results in each test cycle; evaluating the overall coverage and quality as a result of testing activities; implementation of the tests; logging and evaluating the outcomes of that testing and reporting defects.

A.4 – Integration & Release

Role	Description
Integration Team Member	Dedicated full time Integration or team member or members of a development team performing the Integration function.
Release Team Member	Dedicated full time Release Management team member or members of a development team performing the Release Management function.



Appendix B – Tooling

A list of the main tools used in the SDLC process.

Tool	Used by	Description
Bamboo	Engineering	A Continuous Integration server providing build telemetry to help identify and highlight trends, patterns, and linkages across builds.
CBA Test Tool	Engineering	Test tool to test Counter Business Application.
Checkstyle	Engineering	A development tool to help programmers write Java code that adheres to a coding standard. It automates the process of checking Java code.
Clover	Engineering	A powerful and highly configurable code coverage analysis tool used for improving test quality, test productivity and seamless project integration.
Confluence	Collaboration	An enterprise wiki software for sharing and editing content, online collaboration, knowledge management, document management, file sharing, and more.
Crucible	Support	A peer code review tool to review code changes, make comments, and record outcomes in an efficient, distributed, and process-neutral way.
Crypto J Lib	Engineering	Crypto Library for Counter development.
Dimensions	Engineering	Software Baselines/Documents.
Eclipse	Engineering	An open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle.
Enterprise Architect	Engineering	Combines the power of the latest UML 2.1 specification with a high performance, intuitive interface, to bring advanced modelling to the desktop.
ESXi	Engineering	VMWare ESX for managing virtualised servers.
FishEye	Support	A source code repository insight tool that opens up your repository to help you better understand your changing source.
FSC	Management	Forward Schedule of Change – Calendar with project Live Deployment Dates.
Installshield	Engineering	Build and Install package Software.
JIRA	Management	A browser-based bug, issue, task and defect tracking system and project management software solution.
JUnit	Engineering	A unit testing framework for the Java programming language.



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Management Reporting	Management	Provides an enhanced set of reports within the Apt Task Management tool that help project managers to track the effort and schedule performance of their teams.
Maven	Engineering	Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information.
Microsoft Project	Management	Project management software program designed to assist project managers in developing plans, assigning resources to tasks, tracking progress, managing budgets and analyzing workload.
Mylyn	Engineering	A Task-Focused Interface for Eclipse that reduces information overload and makes multi-tasking easy.
Peak	Engineering	Bug and Release Note Database Tool.
PMD	Engineering	A solution that scans source code and looks for potential problems: possible bugs, unused and suboptimal code, over-complicated expressions and duplicate code.
Release Note Database	Management	Record in Peak of software deployment.
SCM Web Tool	Engineering	Used to create Product Version Baselines in Dimensions.
SharePoint	Management	Service library.
SoapUI	Engineering	Unit and CI Testing.
Subversion	Support	An open-source revision control system.
TEM	Engineering	Tivoli Endpoint Manager – deploy software products to servers.
TFSNow	Management	Change Request System.
TortoiseSVN	Support	An easy to use Subversion client for Microsoft Windows, implemented as a Windows shell extension, integrating seamlessly into the Windows explorer.
TPM	Engineering	Tivoli Provisioning Manager – deploy software OS and products to servers.
Visual Source Safe	Support	Source Repository.