



Horizon Integrity

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Author & Dept: Gareth I Jenkins

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Approval Authorities:

Name	Role	Signature	Date
James Davidson	Delivery Executive - Post Office Account		

Note: See Post Office Account HNG-X Reviewers/Approvers Role Matrix (PGM/DCM/ION/0001) for guidance.



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None.

0.3 Document History

Version No.	Date	Summary of Changes and Reason for Issue	Associated Change - CP/PEAK/PPRR Reference
0.1a	02/10/2012	First Informal Draft.	

0.4 Review Details

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Mandatory Review	
Role	Name
James Davidson	Delivery Executive
Amit Apte	CTO
Optional Review	
Role	Name
Ed Philips	Senior Legal Counsel
Tim Healy	Commercial
Jarnail Singh	Post Office
Issued for Information – Please restrict this distribution list to a minimum	
Position/Role	Name

(*) = Reviewers that returned comments

(†) = Reviewers that returned no comments

0.5 Associated Documents (Internal & External)

Reference	Version	Date	Title	Source
PGM/DCM/TEM/0001 (DO NOT REMOVE)			Fujitsu Services Post Office Account HNG-X Document Template	Dimensions



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Reference	Version	Date	Title	Source
ARC/GEN/REP/0001			HNG-X Glossary	Dimensions
ARC/GEN/REP/0004			Horizon Data Integrity	Dimensions
HR Doc			Horizon Integrity – summary report	
HR Spread			Horizon spreadsheet HR.xls	
Horizon Online Data Integrity	0.1b	02/04/2012	Horizon Online Data Integrity for Post Office Ltd	
Misra Witness Statement	1.0	08/10/2010	Witness Statement	

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

0.6 Abbreviations

Abbreviation	Definition

0.7 Glossary

See also document ARC/GEN/REP/0001.

Term	Definition

0.8 Changes Expected

Changes
Review comments etc.

0.9 Accuracy

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

0.10 Copyright

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1 Purpose

This document provides a report about investigations into the Integrity of the Horizon System provided by Fujitsu to Post Office Ltd.

It has been produced at the request of Jarnail Singh of Post Office Ltd

Or is Jarnail Royal Mail his email address is

There are two separate reports that have been previously produced covering the integrity of Horizon [ARC/GEN/REP/0004] and Horizon Online [Horizon Online Data Integrity] respectively.

The purpose of this report is to provide some further background information and relate this to current cases.

1.1 Document Structure

Section 2 of the document describes the Horizon system at a high level, giving a time-line for its development, the Business scope and Architecture diagrams for both the original Horizon System and the current Horizon Online system.

Section 3 then summarises my views on the overall integrity of the Horizon system and my involvement in various related cases that Post Office Ltd have asked me to consider.



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2 The Horizon System

2.1 Timeline

Fujitsu were originally awarded a contract in 1996 to provide a Horizon System to Post Office Ltd. The following provides some key dates and functional changes:

- Horizon Pilot 1996
- Horizon Rollout 1999 – 2002
- Network Banking 2003
- EMV 2004
- Cash Account removed 2005
- Data Centre Migration 2009
- HNG-X Rollout 2010

Horizon Online (or HNG-X) was a major re-implementation of Horizon. It was a complete re-implementation of the business functionality at the counter and utilised a central Database to hold details of all transactions rather than the MessageStore used by the original Horizon system.

All Post Office Branches migrated from the original Horizon to Horizon Online between January and September 2010. Historical transactions were made visible in the new system as part of the migration process.

2.2 Business Scope

The Business scope of Horizon is:

- Point Of Sale Application
- Transaction Recording
 - All such transactions are Audited
- Posting Summary Transactions to POL SAP (Post Office Ltd's back end accounting system)
- Posting Detailed Transactions to Credence (Post Office Ltd's back end Management Information system)
- Posting Remuneration Data to HR-SAP (Royal Mail Group's back end Payroll system)
- Delivering Client Data to Post Office Ltd's Clients (ie 3rd parties that Post Office Ltd acts as an agent for such as Local Authorities and Utility companies etc)

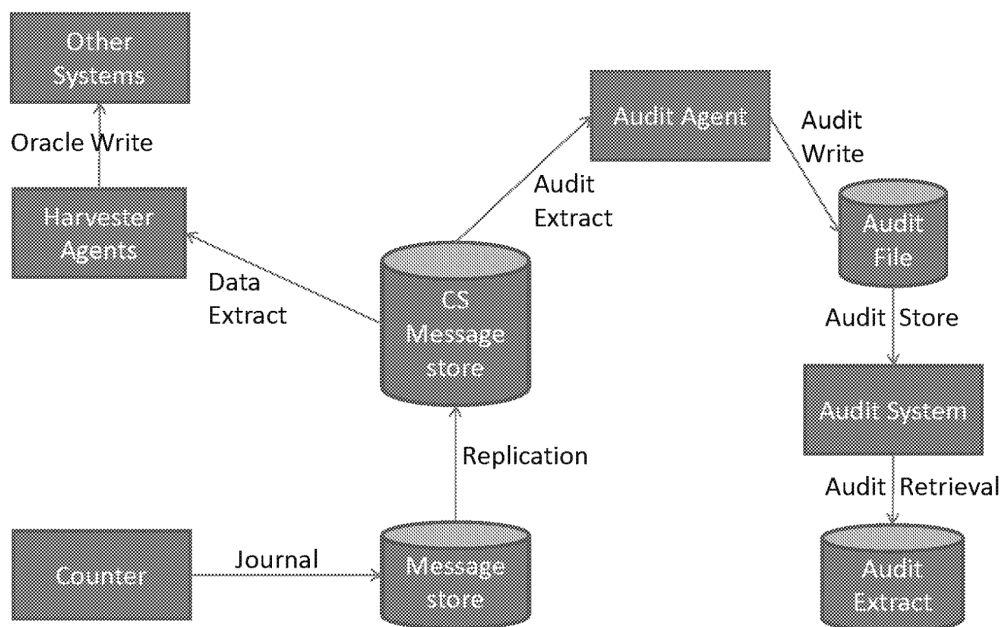
2.3 Architecture Diagrams

Do I need to add some words of description to these diagrams?



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Figure 1 – Horizon Data Flows



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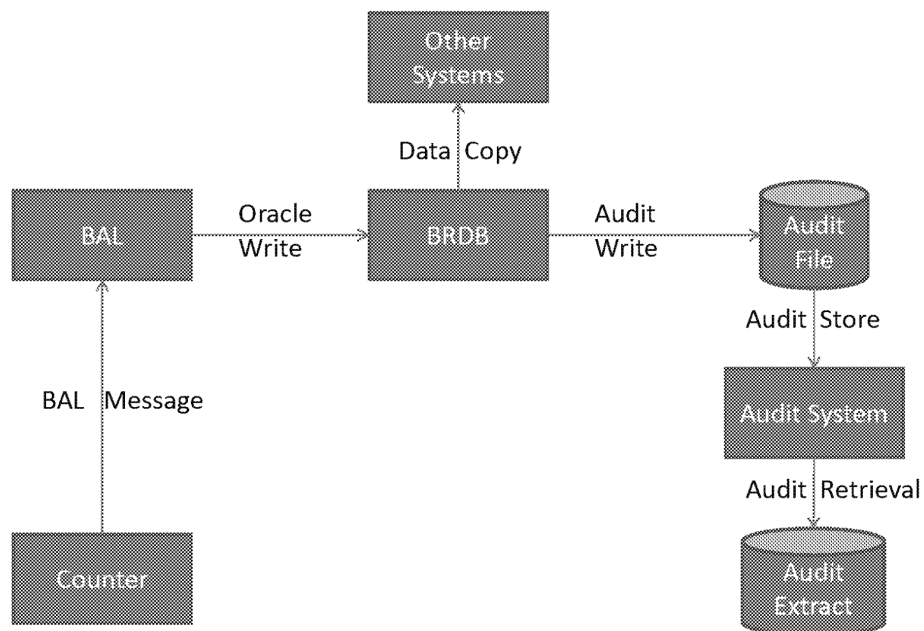


Figure 2 – Horizon Online Data Flows



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3 Horizon Integrity

This is described in the separate integrity documents [ARC/GEN/REP/0004] and [Horizon Online Data Integrity].

I have been involved personally in a number of challenges to the integrity of the original Horizon system and produced Witness Statements for a number of cases where the Integrity has been challenged. I am not aware of any cases where the Integrity of Horizon Online has yet been challenged in court.

I have been passed two documents by Mr Jarnail Singh of Post Office:

- [HR Spread]: This is a Spreadsheet prepared by Helen Rose of Post Office Ltd summarising 25 cases where the Integrity of Horizon or Horizon Online may have been called into question
- [HR Doc]: This is a report also produced by Helen Rose providing further information of 5 of the cases.

I have looked through the Spreadsheet and recognise the following cases as ones in which I have had some involvement:

1. Porters Avenue

I attended a case review for this in May 2010 and also provided some comments on the Defence Expert Witness's Report (produced by Mr Jeffrey E. C. Davidson), but did not appear in court at the trial

2. West Byfleet

I provided a Witness Statement for this case [Misra Witness Statement] which was a commentary on the Defence Expert Witness's Report (produced by Professor Charles McLachlan). I was also called as an Expert Witness at the trial and carried out significant analysis of the data produced as evidence.

In this case the Defendant was found Guilty of both False Accounting and Theft.

3. Rinkfield

I provided a Witness Statement for this case which was a commentary on the Defence Expert Witness's Report (produced by Professor Charles McLachlan). This report by Professor McLachlan was very similar to that which he had produced for West Byfleet case and repeated much of the same arguments which had been presented in the West Byfleet case. Again I carried out significant analysis of the data produced as evidence.

I went to court to appear as an Expert Witness, but at the last minute a deal was agreed and the case did not go to trial.

4. Bishops Hull

I was asked for my views on the Defence Expert Witness's Report (produced by Mr Mark Jenner). Having read the report I my view was that in general I agreed with the report. It did not question the integrity of Horizon, but more the way in which the branch had been managed and processes not been followed.

The time span of the data associated with this case covered both the Horizon and Horizon Online Operations. However I did not do any detailed analysis of the data.

I don't believe that this case has yet come to trial.

As I don't recall having any involvement with the other 21 cases I can make no further comment on those.

The main challenges in both the West Byfleet and Rinkfield cases were presented as "Hypothetical issues" and my Witness Statement in the West Byfleet case [Misra Witness Statement] goes through



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each of these hypotheses and shows that there is no specific evidence for any of them in the data presented.

In summary I would conclude by saying that I fully believe that Horizon will accurately record all data that is submitted to it and correctly account for it. However it cannot compensate for any data that is incorrectly input into it as a result of human error, lack of training or fraud (and nor can any other system).