Witness Name: John Graeme Simpkins

Statement No.: WITN04110200

Dated: 30 August 2023

POST OFFICE HORIZON IT INQUIRY

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SECOND WITNESS STATEMENT OF JOHN GRAEME SIMPKINS

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I, *MR JOHN GRAEME SIMPKINS*, will say as follows:

INTRODUCTION

1.   As noted in my first witness statement dated 4 August 2022, I am currently employed by Fujitsu Services Limited ("**Fujitsu**") as a Team Leader within the Software Support Centre for the Horizon IT System (the "**SSC**"), a position I have held since 2010.

2.   This second witness statement is made to assist the Post Office Horizon IT Inquiry (the "**Inquiry**") with the matters put to Fujitsu in Rule 9 Requests dated 16 June 2023 and 31 July 2023 (the "**First Request**" and "**Second Request**", respectively, and together the "**Requests**"), to the extent I have or had direct knowledge of such matters. Where I have referred to documents to assist my preparation of responses to the Requests, the URNs of the relevant documents are set out in this statement.

3.   I was assisted in preparing this statement by Morrison Foerster, the recognised legal representatives for Fujitsu in the Inquiry.

ARQ DATA

4.   As part of the First Request, the Inquiry has provided Fujitsu with an ARQ Spreadsheet for the Marine Drive branch (Financial Accounts Division or "FAD" Code 213337) showing certain transactions and events dating from 2 February 2004 (the "**ARQ Spreadsheet**", LCAS0001383 pages 17 and 18 only). I have now been made aware that the ARQ Spreadsheet forms part of a larger document. However, for the avoidance of doubt, in preparing this statement, I understand that the Inquiry requires me to consider pages 17 and 18 of LCAS0001383 only, and does not require me to consider the remaining pages of the document.

5.   By way of background for the Inquiry, the SSC does not use and has never generally used ARQ data in the course of its investigations. Instead, for example in the context of Legacy Horizon, the SSC referred to copies of the original Riposte messagestore for the relevant branch when investigating and diagnosing potential issues with the system. In this regard, the raw messagestore contained information additional to that in the filtered ARQ spreadsheets, and provided a much more comprehensive account of the data held in the audit archive.

6.   The messagestores used by the SSC were in an ascii format and consisted of long strings of text, which the SSC could then search and filter as necessary. Each string represented a Riposte Message in Riposte Attribute Grammar ("RAG") (as described further below) which is quite similar to the more modern JSON format. These extracted files were derived from binary files held on the correspondence servers or on the counters.

7. For security reasons, the SSC was (and continues to be) segregated from the audit function. The SSC therefore has no direct access to, (i) the audit data held in the data centres, (ii) the audit tools, or (iii) which files, logs, messagestore information etc. are collected for audit. Neither has the SSC ever supported the audit platform. It is for these reasons that I am not in a position to respond to the Inquiry's questions surrounding the reliability of the audit archive or of the ARQ data provided to Post Office Limited ("**POL**") over time.

8. That being said, the headings set out in the ARQ Spreadsheet were familiar to me, as they appear to reflect sections of the messages recorded in the Riposte messagestore (albeit altered slightly in some instances). The ARQ Spreadsheet provided by the Inquiry appears to be in two parts, page 1 is a filtered extract containing the EPOSS event messages from the messagestore, and page 2 is a filtered list containing the transactions, also from the messagestore.

9. The messagestore itself is made up of Riposte messages. The style of the messages is called Riposte Attribute Grammar (also referred to as "RAG"). This is essentially a list of attribute names and their values. For example, "<Id:1>" is an attribute named "Id" with the value "1". However, these attributes could be nested, for example, <TxnData:<SessionId:44-186311-1-5858-1>>. In this instance, in order to refer to the SessionId, you would use the notation "TxnData.SessionId".

10. In relation to HNG-X, the nearest analogy to the Riposte messagestore is the Branch database.

11. In the Second Request, the Inquiry has asked me to confirm whether, in my view, the ARQ data provided to POL in respect of proceedings against postmasters was sufficient to enable a postmaster to understand whether the system was operating correctly. As noted above, I have not generally referred to ARQ data as part of my role within the SSC and have no direct knowledge of what data was provided to POL for proceedings against postmasters. Neither do I have any understanding as to whether the ARQ Spreadsheet provided by the Inquiry contains information typical of ARQ data provided to POL.

12. That being said, if I refer to the ARQ Spreadsheet by way of an example, my view is that the data provided in the ARQ Spreadsheet does not contain sufficient information for a postmaster to assess the health of the Horizon system at their branch. The ARQ Spreadsheet shows only those transactions recorded by the system. It shows that there were no receipts and payments mismatch within those transactions and that there were no system failures that required recovery. However, it does not demonstrate the health of the system beyond those parameters.

13. The Inquiry has also asked whether the "sources" from which ARQ data was obtained would have been sufficient for a postmaster to understand whether the system was operating correctly. Due to my limited knowledge as to the files, data and events that feed into the audit system, both at the time of the ARQ Spreadsheet and to date, I am unable to comment.

14. Beyond the data described above, it would also have been useful for the postmaster to have visibility of (i) the opening figures from the last rollover, (ii) a running total of the sales, and (iii) the daily cash and stamp declarations made

by the postmaster. Access to these records would have allowed the postmaster to compare the Horizon generated figures against the declarations made by the postmaster from the point of the last rollover. A comparison of these figures would show the point at which the two figures diverged, allowing the postmaster to then check what was happening at the branch at that point in time.

ARQ SPREADSHEET HEADINGS

15.   The Inquiry has asked Fujitsu to explain the various headings in the ARQ Spreadsheet, including a breakdown of the structure of the SessionID and TxnID fields. Notwithstanding the limitations set out at paragraph 5 above, an explanation of each of the headings of the ARQ Spreadsheet is set out below. These explanations have been assisted in part by reference to the document entitled "TPS Object Model" and dated 19 August 1999 ("**TD/DES/013**", FUJ00171947). These explanations start first with page 2 of the ARQ Spreadsheet (namely, the list of transactions).

16.   **Column A – "ID":** See TD/DES/013, section 3.3: Id, "*Counter position number*". The numbers for these counter positions are as follows:

Value	Meaning
1	Gateway Counter (i.e. the counter which communicates with the datacentres on behalf of the branch)
2 to 30	The counter range of node IDs
31	The mirror messagestore. This is only used when a branch has a single counter position. It acts as a Riposte neighbour to create a duplicate copy of the messagestore on counter 1. Without this if the hard disk on counter 1 failed, any messages that had not been replicated to the datacentre would have been lost.
32-58	Correspondence servers in Bootle (even numbers, as below): MBOCOR01 - 32 MBOCOR02 - 34

Value	Meaning
	MBOCOR03 - 36 MBOCOR04 - 38 MBOCOR11 - 52 MBOCOR12 - 54 MBOCOR13 - 56 MBOCOR14 - 58
33-59	Correspondence servers in Wigan (odd numbers, as below) MWICOR01 - 33 MWICOR02 - 35 MWICOR03 - 37 MWICOR04 - 39 MWICOR11 - 53 MWICOR12 - 55 MWICOR13 - 57 MWICOR14 - 59

17. **Column B – User:** See TD/DES/013, section 3.3: User, "*Clerk/employee as Riposte user*".

18. **Column C – SU:** See TD/DES/013, section 3.4: Container, "*Stock unit name*". By way of background, there are two types of stock unit, (i) individual, which is attributable to a single user at any one time, and (ii) shared, where more than one user can use the stock unit at the same time. The way in which stock units in Legacy Horizon were configured was determined by each postmaster on a branch-by-branch basis.

19. **Column D – Date:**

19.1 The explanation of this field could be drawn from several sources, as noted below.

19.1.1 See TD/DES/013, section 3.3: Date, "*The date the message is written to the journal, format (DD-Mon-YYYY)*"; or

19.1.2 See TD/DES/013, section 3.4: Start Date, "*Date the transaction commenced*" (note that the attribute hierarchy, as explained at paragraph 9 above, is TxnData.Start.Date); or

19.1.3 See TD/DES/013, section 3.4: End Date, "*Date the transaction completed*" (note that the attribute hierarchy, as explained at paragraph 9 above, is TxnData.End.Date).

19.2 Initially, I thought that this field would have been the first option in this list (i.e. the "Date" field). However, due to the confusing timeline for the transferred session (see SessionID 44-213337-1-899855-1), it now appears that this field is probably the transaction "Start Date". Given that all the transactions provided in the ARQ Spreadsheet are for the same date, the choice of "Date" field attribute should not affect the interpretation of the ARQ Spreadsheet. It is, however, important for the time element below. A member of the Fujitsu audit team should be able to confirm the position.

20. **Column E – Time:**

20.1 As with the "Date" field above, the explanation of this field could be drawn from several sources, as noted below.

20.1.1 See TD/DES/013, section 3.3: Time, "*The time the message is written to the journal, format (HH:MM:SS)*". Unless specified, I believe that this was in UTC.

20.1.2 See TD/DES/013, section 3.4: Start Time, "*Time the transaction commenced*" (note the attribute hierarchy, as explained at paragraph 9 above, is TxnData.Start.Time)

20.1.3 See TD/DES/013, section 3.4: End Time, "*Time the transaction completed*" (note the attribute hierarchy, as explained at paragraph 9 above, is TxnData.Start.Time)

20.2 In line with the "Date" field above, it appears that the "Time" field in the ARQ Spreadsheet is likely to be the transaction "Start Time". This makes most sense when looking at the ARQ Spreadsheet as, using the "Start Time" field, the time allocated to the transactions would be the time they were added to the basket, as opposed to the time they were settled and committed to the messagestore (someone from Fujitsu's audit team should be able to confirm the position). By way of explanation, "settled" is a term used when the transactions in a basket are settled to a payment type e.g. cash, card or cheque. This is normally the last thing to happen when a basket is completed and journalised (i.e. recorded in the messagestore).

20.3 The use of the "Start Time" field (if my interpretation is correct) means that the transactions appear to jump back and forth between the counters, when in fact I believe the user only moved once. This may initially give the impression that there were concurrent logins by the user, when in fact it appears that there was no concurrent login in this instance (see further explanation below).

21.   **Column F – SessionId:** See TD/DES/013, section 3.4: Session Id, "*Unique session identifier for all transactions within a customer session. Contains GroupId, Id and Num separated by hyphens of the messages (normally the first) within the session*"

   21.1   By way of background, a session is generated by Riposte when a new basket is opened and closes when the basket is settled. Cancelled sessions would not generally appear in the messagestore.

   21.2   In order to assist the Inquiry, set out on the next page is an example session from the ARQ spreadsheet. An explanation of the example is then provided on the following page.

Id	User	SU	Date	Time	SessionId	TxnId	Mode	Product No	Qty	Sale Value	Entry Method	State	IOP_ Ident	Result	Foreign Indicator
2	LCA002	AA	02-Feb-04	14:21:12	44-213337-1-899855-1	44-213337-1-899855-2	SC	184	-1	-43.15	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:15	44-213337-1-899855-1	44-213337-1-899855-3	SC	184	-1	-70.57	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:21	44-213337-1-899855-1	44-213337-1-899855-4	SC	184	-1	-73.58	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:24	44-213337-1-899855-1	44-213337-1-899855-5	SC	184	-1	-77.45	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:27	44-213337-1-899855-1	44-213337-1-899855-6	SC	184	-1	-77.84	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:32	44-213337-1-899855-1	44-213337-1-899855-7	SC	184	-1	-78.81	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:36	44-213337-1-899855-1	44-213337-1-899855-8	SC	184	-2	-158.52	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:46	44-213337-1-899855-1	44-213337-1-899855-9	SC	184	-1	-80.72	1	5		1	0
2	LCA002	AA	02-Feb-04	14:21:51	44-213337-1-899855-1	44-213337-1-899855-10	SC	184	-1	-83.83	1	5		1	0
2	LCA003	AA	02-Feb-04	14:21:57	44-213337-1-899855-1	44-213337-1-899855-11	SC	184	-1	-85.49	1	5		1	0
2	LCA004	AA	02-Feb-04	14:22:00	44-213337-1-899855-1	44-213337-1-899855-12	SC	184	-1	-85.53	1	5		1	0
2	LCA005	AA	02-Feb-04	14:22:03	44-213337-1-899855-1	44-213337-1-899855-13	SC	184	-3	-256.59	1	5		1	0
2	LCA006	AA	02-Feb-04	14:22:11	44-213337-1-899855-1	44-213337-1-899855-14	SC	184	-1	-88.97	1	5		1	0
2	LCA007	AA	02-Feb-04	14:22:14	44-213337-1-899855-1	44-213337-1-899855-15	SC	184	-1	-89.7	1	5		1	0
2	LCA008	AA	02-Feb-04	14:28:17	44-213337-1-899855-1	44-213337-2-1183928-1	SC	1	1	1350.75					

21.3   Using Session "44-213337-1-899855-1" as an example, this has 15 transactions in the session; 14 transactions that are coming into the branch, these were all product 184 (Grp13 Retirement Pension), and one transaction is going out of the branch. This was the settlement to product 1 (Cash). All these transactions can be seen to belong to the same session, as they all have the same session number. The session can be seen to total to zero value as expected. Further detail in relation to the Product field is provided below.

21.4   In this example, the session number is created by:

21.4.1   44: I believe this stands for the UK.

21.4.2   213337: The numeric version of the FAD (Financial Accounts Division) code (excluding the check digit).

21.4.3   1: The counter position ("Id") that the session was created on.

21.4.4   899855: A current messagestore "Num" to ensure that the Session number is unique. This appears to be the "Num" of when the previous Session completed, but that is just from observation. By way of background, "Num" is a consecutive number to ensure that each message is uniquely identifiable.

21.4.5   1: I am unsure what this is generated by. The value for this field is usually one but may be more. However, once generated the value stays the same for the Session.

22. **Column G – TxnId:** From TD/DES/013 section 3.4: Txn Id, "*Unique transaction identifier for all messages within a customer transaction. Contains GroupId, Id and Num separated by hyphens of the messages (normally the first) within the transaction*".

22.1 Using the same example above, the first transaction has a TxnId of "44-213337-1-899855-2". This is very similar to the SessionId. The construction is:

22.1.1 <u>44</u>: I believe this stands for the UK.

22.1.2 <u>213337</u>: As above, this is the numeric version of the FAD code (excluding the check digit).

22.1.3 <u>1</u>: The counter position ("Id") where the transaction was added to the basket.

22.1.4 <u>899855</u>: This is normally the same as the SessionId (but not always, as can be seen by the settlement transaction).

22.1.5 <u>2</u>: This usually starts at 1 and increases by increments of 1 for each transaction added to the Session. There may be gaps in the numbering (as in this case), for example, where transactions are added and removed. There may also be duplicates where products are linked (see for example TxnId 44-213337-1-899920-3 which was for Products 260 "Transcash Giro" and 121 "Giro Transcash Fee").

23. **Column H – Mode:** See TD/DES/013, section 3.4: Mode, *"Contains the mode of the system when the transaction is written..."* The meanings of the various values for this attribute, as set out in TD/DES/013, are listed below for ease of reference:

Value	Meaning
SC	Serve customer
ER	Linked reversal
RV	Unlinked reversal
RISD	Remit in from Supplies
ROSD	remit out to Supplies
RU	Revaluation Uprating
RD	Revaluation Downrating
TI	Transfer in
RIOP	Remit in from other PO
ROOP	Remit out to other PO
RICL	Remit in Client
ROCL	Remit out Client
RODC	Remit out DPC
TO	Transfer out
REC	Recovery (bulk input)
HK	Housekeeping
SAP	Stock adjustment positive
DDP	Declaration discrepancy positive
SAN	Stock adjustment negative
DDN	Declaration discrepancy negative
RIAD	Remit in from ADC
ROAD	Remit out to ADC

24. **Column I – ProductNo:** See TD/DES/013, section 3.4: Product No, *"Product to which this transaction relates"*. This information was often drawn from reference data provided by POL. The long names for these products are below. I understand from Morrison Foerster and the legal team at Fujitsu that the messagestore from which the ARQ Spreadsheet was derived is no longer available. Accordingly, in order to obtain these definitions, I considered other messagestore extracts that were attached as evidence to various Peaks. Within those extracts, I searched for the "EPOSSProduct" collections for the relevant

products. The list below is not a comprehensive list of all product numbers, rather it focuses on the products contained in the ARQ Spreadsheet:

Product Number (RData.Data.PN)	Long Name (RData.Data.LN)
1	Cash
19	First Class Stamp
21	Other Stamps Ordinary
107	NS & I Ord Acct Dep
121	Giro Transcash Fee
134	BT Payment card
184	Grp13 Retirement Pension
185	Grp14 Invalidity Benefit
260	Transcash Giro
398	BBC TVL Easy Entry Card
412	Yorkshire Water Pay Card
704	British Gas Bill Payment
2275	YE Bill Payment
2287	Yorks Elec Payt Card
2867	Second Class Stamp
2870	Powergen
3865	Self Ad Stp Bks 1st x 12
3866	Self Ad Stp Bks 2nd x 12
4339	Postage Label 1st Class
4341	Postage Label 2nd Class
4342	Postage Label Air
4926	CARD ACCOUNT BALANCE ENQ
4927	CARD ACCOUNT WD LIMIT
5501	T-Mobile eTop Up £10

25. **Column J – Qty:** See TD/DES/013, section 3.4: Qty, "*Quantity of product transacted, may be negative*". By way of background, as I understand to be standard practice for trading, stock held at the branch was treated as a liability and was therefore reflected as a negative value. To that extent, stock being

sold by the branch appears in the messagestore as a positive value and stock being returned to the branch appears in the messagestore as a negative value.

26. **Column K – SaleValue:** See TD/DES/013, section 3.4: Sale Value, "*Actual sale value, may be negative, or zero in the case of milk tokens*".

27. **Column L – EntryMethod:** See TD/DES/013, section 3.4: Entry Method, "*Method of data capture*". The meanings of the values for this attribute are set out in the table below. As is clear from the table, this attribute was not completed for every type of transaction.

Value	Meaning
0	Barcode
1	Keyboard (manual)
2	Magnetic card
3	Smart card
4	Smart key
5	Scales

28. **Column M – State:** See TD/DES/013, section 3.7: State, "*[t]he OBCS transaction state*". The valid types are as follows:

Value	Meaning
1	Receipt
2	Redirect
3	Issue
4	Encashment
5	No Barcode

29. **Column N – IOP_ident:** See TD/DES/013, section 3.7: IOP Ident, "*[t]he IOP Identifier consists of Customer Reference Number, Additional Book Indicator, OB Serial Number and CPP System Indicator*". This was essentially a reference (often in the format of a barcode) used for the payment of benefits. The first part

of which was the customer's national insurance number, followed by details of the relevant book and benefits for payment.

30. **Column O – Result:** See TD/DES/013, section 3.7: Result, "*[t]he result of the OBCS transaction*". The meanings of the values for this attribute are set out below:

Value	Meaning
1	OK
2	Impound
3	Unreadable
4	Invalid

31. **Column P – ForeignIndicator:** Foreign encashment related to the payment of benefits, particularly child benefits. In this regard, each benefits claimant had a "nominated" branch, which was the default branch where they would go to collect their benefit payments. If a benefits claimant attended a different branch to collect a payment, the system would go online to look up the relevant details. This was classified as a "foreign" encashment and took slightly longer than a payment at the claimant's nominated branch.

31.1 TD/DES/013 does not discuss this message attribute directly but does discuss its usage in the Oracle database (section 4.12 and 4.13) as the database field "not foreign". This has somewhat reversed the logic, but my understanding would be that this attribute value in the messagestore and any derived ARQ data would be "0" when the transaction is at the nominated branch and "1" when it is a foreign encashment.

31.2 For completeness, the messagestore field this is derived from is: EPOSSTransaction.BlackBoxData.ForeignIndicator.

32.   In relation to the additional attributes in the event log page of the ARQ Spreadsheet:

32.1   EPOSSTransaction.Ti is a high-level descriptor of the event (e.g. that a report was printed); and

32.2   EPOSSTransaction.T provides further details of the event (e.g. the type of report that was printed).

SIMULTANEOUS LOG-INS

33.   The Inquiry has asked Fujitsu to explain, both in the context of Legacy Horizon and HNG-X, whether it is possible for a postmaster to be logged on to more than one node (or "counter") simultaneously, using the same User ID. The Inquiry has asked for the ARQ Spreadsheet to be used as an example in this regard.

34.   Although there have been various issues with concurrent logins over time (some of which are discussed in this statement), an initial observation is that the ARQ Spreadsheet for this particular instance does not appear to contain evidence that a user was logged onto two counters simultaneously. Instead, the data contained in this ARQ Spreadsheet appears to show that the user made use of the "Session Transfer" and "Suspend Session" functions that were available in Legacy Horizon (as explained in more detail below). In order to determine more conclusively what happened at the branch, access to the raw messagestore would be required.

35.   However, in response to the Inquiry's First Request, I set out below my understanding of simultaneous logins in both Legacy Horizon and HNG-X.

Legacy Horizon:

36.   The "Session Transfer" facility allowed the current user session to be transferred from one counter to a second counter. For example, if whilst logged into Counter 1, the same user logs into Counter 2, the application would send all transactional information for current active and/or suspended sessions from Counter 1 to Counter 2 and then log the user out of the original counter (the document entitled 'EPOSS Transaction Service - High Level Design' (EP/DES/022) dated 27 July 2000 (FUJ00171948), may be of interest to the Inquiry in this regard). This is the facility that appears to have been used by the user in this ARQ Spreadsheet, as illustrated in my analysis of the transactions in Appendix 1 to this statement.

37.   Early in the life of Legacy Horizon (pre-rollout), a user could have a concurrent login by performing a Session Transfer whilst the originating counter was very busy, for example generating a large report. However, from PinICL PC0011992 raised on 12 June 1998 (FUJ00112120), I can see that the "StopDeskTransfer" module was introduced in around January 1999 as a more robust way of notifying the system when not to transfer a session. The StopDeskTransfer service is described in more detail in section 2.4 of the document entitled 'High Level Design of Common Agents' (AD/DES/042) and dated 27 May 2003 (FUJ00171949). However, Peak PC0065075 raised on 18 April 2001 (FUJ00171950) indicates that providers of the Riposte software, Escher, fixed the issues that the StopDeskTransfer module was intended to address and, from April 2001, the module was no longer required.

38. That being said, if the counters were not communicating with one another inside the branch (not to be confused with communication to the data centre), then there was still the potential for a user to be logged on to two counters. This is expressed in PinICL PC0061801 raised on 30 January 2001 (FUJ00171951) which notes that "*[h]aving looked at the problem it seems that, due to excess network activity, the two counters were not in communication with each other and were therefore seemingly disconnected. In this circumstance, the desktop will time out and allow the login so that users can log in after a counter crash.*"

39. Although I do not recall being aware at the relevant time, during the course of the Bates & Ors v POL Group Litigation (the "**Group Litigation**"), I became aware of defects in the system that allowed concurrent logon. This work identified the following two Peaks:

   39.1 PC0027581 (raised on 9 July 1999, FUJ00075563): This Peak showed that a user could logon to two counters simultaneously, but this was not regarded as a defect by Esher. In fact, it had been discussed before in PinICL PC0013495 (FUJ00109810), where it was viewed as a breach of the Access Control Policy, as to log into more than one counter simultaneously would require the user to share their logon details.

   39.2 PC0051327 (raised on 28 July 2000, FUJ00072297): A session transfer occurred whilst the user was rolling the stock unit. The transfer failed but the user was still logged on to the second counter. This was during the introduction of the StopDeskTransfer and the EPOSS code was not yet using the newer functionality. This was fixed when the next version of EPOSS was released that used the StopDeskTransfer functionality.

HNG-X:

40. Initially, concurrent log ins were not possible in HNG-X. The user would get a warning about a concurrent logon noting that, if they continued the original session, they would be disconnected. However, that changed with the introduction of EUM, part of "Enhanced User Management".

41. Now, following the introduction of EUM, there is one internal Post Office ID ("**POID**") for each user across the entire estate. Each user is then able to have multiple Horizon User IDs ("**HUID**"). These HUIDs allow the user to work on multiple counters in the same branch at any one time. That being said, ifa user does log into a second counter, the first counter would have to be locked whilst the session on the second counter is taking place. The user can then return to the first counter to complete their original session.

42. I refer in this regard to the document entitled 'HNG-X Counter Application High Level Design' (DES/APP/HLD/0047) and dated 8 June 2023 (FUJ00171952), which states at 7.15 (Lock Counter), "*[a]s part of changes for CP2144 (EUM Concurrent Login), the existing 'Lock' button is separated from Suspend/Resume button and included as new Button (shortcut – T3) on the right hand command bar. CP2144 provides the ability to logon to multiple Counters with a single POID and one or more HUIDs. The major restriction on this concurrent logon ability is that only one Counter may be active at any one point in time while the other Counters must be locked…*"

TIMESTAMPS IN THE AUDIT DATA

43.   The Inquiry has asked Fujitsu to explain, both in the context of Legacy Horizon

and HNG-X, how timestamps are recorded and synchronised. These are

addressed in turn below:

Legacy Horizon:

44.   The timestamps recorded in Legacy Horizon were from the local counter time.

However, there was a time service ("**NTP**") running at the correspondence

layer, and the counters would synchronise their local time to these servers via

the Riposte Service. A Windows event would be generated when this

happened. I exhibit Peaks PC0070702 (raised on 15 October 2001,

FUJ00171953) and PC0074043 (raised on 20 February 2002, FUJ00171954)

to this statement in this regard.

45.   From PC0053384 raised on 1 September 2000 (FUJ00075159), it appears that

the initial rollout of Legacy Horizon allowed a maximum of one second drift

before a Windows event was generated, which was increased to five seconds

due to an issue with ISDN delay. This Peak also mentions that this change

would be captured in version 0.5 of the document entitled 'Riposte 6 Message

Server Configuration for Counters' (TD/SPE/010) which is dated 8 August 2000

(FUJ00171955). I do not believe there to have been any real practical impact

from this change. It just meant that there were no continuous time corrections

happening anymore.

HNG-X:

46.   There are multiple date / time elements in the transaction tables in the Branch

Database, some of these elements are completed by the counter, some are

completed by the BAL and others are completed by the Branch Database. I defer to the subject matter experts in this regard, most likely to be Architects with specialist knowledge.

47. In relation to this aspect of the Inquiry's First Request, I note that Fujitsu no longer controls the counter hardware or operation including the NTP service, which are now managed by DXC.

OFFLINE TRANSACTIONS

48. The Inquiry has asked, both in the context of Legacy Horizon and HNG-X, what the expected reporting would be in the "log files" when transactions have taken place offline (i.e., when the counter is not connected to the datacentre). For Legacy Horizon, I have interpreted the term "log files" to mean the Riposte messagestore discussed above. Although network connectivity issues do not generally fall within the remit of the SSC, I set out below my understanding of the position based on knowledge I have gained during my time on the Post Office Account at Fujitsu.

Legacy Horizon:

49. Legacy Horizon was designed to function predominantly offline. Transactions conducted offline in Legacy Horizon would therefore appear exactly the same as those conducted online. Any transactions that had online requirements would fail if a user attempted to conduct them offline.

50. In terms of the user's view when conducting transactions offline, I understand that, after the introduction of Network Banking, a banner appeared on the bottom of the screen when a counter was offline and any buttons to online-related services were disabled.

51. In relation to network connectivity issues, the Counter Network Infrastructure Manager ("**CNIM**") would send frequent pings from the gateway counter to the datacentre. See the document entitled 'CNIM Low Level Design' (RS/LLD/004) and dated 8 May 2006 (FUJ00171956). CNIM would manage fail-over between the different network methods available to the branch and also record quality of service logs that were then sent from CNIM to the Tivoli SYSMAN database so that the Tivoli team could see which branches had poor connection.

52. A network management suite also pinged the branches from the datacentre frequently so that it was quickly apparent if a large number of branches were offline / disconnected from the network. As noted above, network issues did not generally fall within the remit of the SSC, but the SSC could retrieve quality of service logs if necessary for our diagnostic activities.

HNG-X:

53. HNG-X does not function offline. If the counter were to disconnect, it would probably do a forced logout which would abandon anything in the basket which was not recoverable and print a disconnection report.

54. If a transaction is attempted offline in HNG-X, there would be a record in the application logs on the counter. There would also be Windows events for any network issues.

INTERPRETING THE ARQ SPREADSHEET

55. The timeline in the ARQ Spreadsheet may appear confusing and out of order because, as user LCA001 transfers between counter positions (IDs) 1 and 2, they also suspend a Session before settling it. If the Riposte "Num" attribute was provided in the ARQ Spreadsheet, that would provide further detail in

relation to the actual order of the activities. As noted in section 3.3 of TD/DES/013, "Num" is the Riposte message number. This is a consecutively incrementing number that is allocated by Riposte to a message as it is written to the messagestore. This would be more than just transactions.

56.   Although the only way to be completely confident of the reason behind the order of the transactions in the ARQ Spreadsheet would be to analyse the underlying messagestore, I believe the most likely explanation regarding the timing of the various transactions up to 14:34:20 is set out in Appendix 1 to this statement.

57.   In summary, the confusion seems to relate to the "Time" field provided in the ARQ Spreadsheet. As noted above, it seems that this field contains the transaction Start Time, as opposed to the Riposte Message Time therefore the ordering by this time does not provide the sequence of when actions completed but rather when they were started. This is an important distinction, as there may be a long gap between the transaction being added to the basket and the transaction being settled and written to the messagestore.

Statement of Truth

I believe the content of this statement to be true.

Signed: **GRO** _____

Dated: 30 August 2023

APPENDIX 1

Time	SessionID	Explanation
User LCA001 (counter positions 1 and 2)		
14:20:12 to 14:20:20	SessionId 44-213337-1-899846-1	These transactions are entered on counter position 1 and settled on counter position 1
14:21:12 to 14:22:14	SessionId **44-213337-1-899855-1**	These transactions are entered on counter position 1 <u>but not settled</u>
<Session **44-213337-1-899855-1** is Suspended to allow other sessions to be entered>		
14:22:34 to 14:23:34	SessionId 44-213337-1-899857-2	These transactions are entered on counter position 1 and settled on counter position 1
14:23:46 to 14:24:43	SessionId 44-213337-1-899866-1	These transactions are entered on counter position 1 and settled on counter position 1
<Session Transfer to counter position 2 including the suspended Session **44-213337-1-899855-1**> This can be seen by the Logon event at 14:24:56		
14:26:11 to 14:27:35	SessionId 44-213337-2-1183921-1	These transactions are entered on counter position 2 and settled on counter position 2
<Suspended Session **44-213337-1-899855-1** is un-suspended>		
14:28:17	SessionId **44-213337-1-899855-1**	Is settled to cash on counter 2, **note that this settlement has a node 2 Txnld**. All the other transactions in this session have node 1 txnid's as that is where they were entered, the settlement to cash has a node 2 txnid as that is where it was entered.
User CTR002 (counter position 1) This can be seen by the logon event at 14:25:15		

Time	SessionID	Explanation
14:25:20 to 14:25:35	SessionId 44-213337-1-899898-1	These transactions are entered on counter position 1 and settled on counter position 1
14:25:52 to 14:27:05	SessionId 44-213337-1-899901-1	These transactions are entered on counter position 1 and settled on counter position 1
14:27:15 to 14:28:16	SessionId 44-213337-1-899910-1	These transactions are entered on counter position 1 and settled on counter position 1
14:28:22 to 14:29:03	SessionId 44-213337-1-899918-1	These transactions are entered on counter position 1 and settled on counter position 1
14:31:26 to 14:34:20	SessionId 44-213337-1-899920-1	These transactions are entered on counter position 1 and settled on counter position 1
User CTR001 (counter position 2)		
14:29:40 to 14:29:50	SessionId 44-213337-2-1183969-1	These transactions are entered on counter position 2 and settled on counter position 2
14:32:54 to 14:33:06	SessionId 44-213337-2-1183976-1	These transactions are entered on counter position 2 and settled on counter position 2

INDEX TO SECOND WITNESS STATEMENT OF JOHN GRAEME SIMPKINS

Exhibit No.	Description	Control Number	URN
1.	ARQ Spreadsheet of Marine Drive transactions and events from 2 February 2004	VIS00011623, pages 17 and 18 only	LCAS0001383, pages 17 and 18 only
2.	"TPS Object Model" dated 19 August 1999 (TD/DES/013).	POINQ0178128F	FUJ00171947
3.	EPOSS Transaction Service - High Level Design' (EP/DES/022)	POINQ0178129F	FUJ00171948
4.	PinICL PC0011992	POINQ0118291F	FUJ00112120
5.	High Level Design of Common Agents (AD/DES/042)	POINQ0178130F	FUJ00171949
6.	PC0065075	POINQ0178131F	FUJ00171950
7.	PC0061801	POINQ0178132F	FUJ00171951
8.	PC0027581	POINQ0085155F	FUJ00075563
9.	PinICL PC0013495	POINQ0115981F	FUJ00109810
10.	PC0051327	POINQ0081116F	FUJ00072297
11.	HNG-X Counter Application High Level Design' (DES/APP/HLD/0047)	POINQ0178133F	FUJ00171952
12.	PC0070702	POINQ0178134F	FUJ00171953
13.	PC0074043	POINQ0178135F	FUJ00171954
14.	PC0053384	POINQ0084744F	FUJ00075159
15.	Riposte 6 Message Server Configuration for Counters' (TD/SPE/010)	POINQ0178136F	FUJ00171955
16.	CNIM Low Level Design (RS/LLD/004)	POINQ0178137F	FUJ00171956