

Witness Name: **Jeremy Peter Folkes**

Statement Number: **WITN05970300**

Dated: **11 January 2023**

**POST OFFICE HORIZON IT INQUIRY**  
**THIRD WITNESS STATEMENT OF JEREMY PETER FOLKES**

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I, Jeremy Peter Folkes, will say as follows:

**Introduction**

1. This is my third statement to the Post Office Horizon IT Inquiry (“**the Inquiry**”), which I am making at the Inquiry’s request to formalise a number of observations which I made informally in December 2022, having participated in Phase 2 and having reviewed the various Phase 2 Closing Submissions by the Core Participants.
  
2. Specifically, I make observations on the Submissions created on behalf of Fujitsu Services Ltd and Post Office Ltd, which both make reference to my own written and oral evidence from Phase 2.

**Closing Submission on behalf of Fujitsu Services Ltd**

3. In this section I refer to the “*Phase Two Closing Submissions on behalf of Fujitsu Services Ltd*” (SUBS0000020), and make comments under a number of separate headings.

### **Comments on Alan D'Alvarez's Statement re Information Sharing**

4. At §16(b) of SUBS0000020, reference is made to Alan D'Alvarez's Witness Statement stating that "*he personally encouraged the sharing of design information with Post Office among the ICL security team, who were 'quite open'*".
  
5. This largely concurs my own First Witness Statement (WITN05970100) where at §80 I highlighted that on the POCL Infrastructure side and the Security areas we had more success in obtaining information for Assurance than in other areas - and Alan D'Alvarez was indeed one of our contact points on Security.
  
6. However, the key point I feel needs to be made is that Alan D'Alvarez worked at this time (at least up to Acceptance in 1999) within the Technical Security area, in the ICL Security Team, and, to my knowledge, had no substantive involvement in the development of the EPOSS Application which is the primary subject of this much of this Inquiry.
  
7. As I stated in §82 of my First Witness Statement (WITN05970100), and reinforced by other witnesses, the situation with the Applications (and, in particular, EPOSS) was very different, where we had explicit refusals from Pathway Management to allow access to design documentation. If the EPOSS team had shown the level as openness as we had from Mr D'Alvarez's Security team it is likely that POCL would have had far greater success in our Assurance activities.

8. So, whilst not disagreeing with Mr D'Alvarez's statement, I do question the relevancy of this being quoted by Fujitsu in SUBS0000020 §16(b) in the same paragraph as talking about EPOSS.

#### **Comments on use of RAD (Rapid Application Development)**

9. At §15.2 of SUBS0000020, the suggestion is made that "*...the adoption of a RAD methodology is unlikely to have had a material impact on the final form of the Horizon IT System*".
10. Given that the use of RAD for EPOSS appeared to have led to the absence of a suitable ('up front') design documentation which could be shared with POCL, and therefore prevented an adequate level of technical assurance by POCL of the EPOSS application (including its exception handling and operation under fault conditions), I find it *inconceivable* that the use of RAD could not have had a material impact on the quality of EPOSS and therefore of Horizon. The absence of such timely design documentation would also surely have had detrimental effects on Pathway's own ability to assure its own product.
11. That Pathway were having problems with EPOSS in both 1998 (resulting the Task Force) and 1999 (with their internal discussions on the need for a re-write), and specifically the problems which emerged in mid-1999 with Acceptance (and specifically AI376 on Data Integrity), suggests fundamental issues with EPOSS which might have been avoided had a more appropriate design approach been followed for such a key area of the system.

## **Mention of Riposte Bug re Malformed Messages**

12. §14.1 of SUBS0000020 there is mention, pulled from other witnesses' statements, of "*malformed messages being generated within the message store*" and that this being "*a difficulty arising from the Riposte product*".
  
13. I believe this is a reference to the "*missing attribute*" problem which has been mentioned by various witnesses. My understanding is that this occurred when Applications (such as EPOSS) sent/wrote incorrect or incomplete data to Riposte for storage, akin to passing a record with certain empty fields to a database in a more conventional system.
  
14. As a result, other applications (including the central 'agents' which fed data to TIP) which selected data based on the content of such fields failed to perform the correct processing.
  
15. Whilst not disputing that such problems occurred (and may have been one of the root causes of AI376), I do not believe that it is correct to characterise this as a Riposte problem.
  
16. It would be, I believe, more correct to describe this as an EPOSS Application problem, and more specifically an Application Design problem as covered by David McDonnel in his written First Witness Statement (WITN00620100 at §19) and oral evidence ("Transcript from 16<sup>th</sup> November 2022", INQ00001019, p60-64), in that best practice would have been to have an intermediate API layer to validate message contents and completeness, rather than individual applications

writing directly and independently to Riposte in an apparently rather uncontrolled manner.

17. I suspect that it may have been known as a '*Riposte problem*' by those responsible for processing messages at the back end (as an attribute was missing when a message was returned from Riposte), whereas, this was a result of the application failing to add this data in the original message.
18. I know from my subsequent work with Riposte that there are a range of protection mechanisms in Riposte to prevent the contents of a message being changed without detection, providing a high level of confidence in the immutability of the content of individual messages once written.
19. I would suggest this is another example where the RAD approach, rather than a properly documented and reviewed up-front design approach, failed to enforce such best practice. A proper design approach would have ensured the presence of documented message formats (other witnesses have mentioned the lack of a Data Dictionary) to define what fields would be necessary.

### **Choice of and Dependency on Escher/Riposte**

20. At §14 of SUBS0000020 there is discussion of the use of third-party software, and in particular of Riposte from Escher. Whilst POCL was fully aware of the proposed use of Riposte by Pathway, it is important to note that the choice to base the BA/POCL solution on Riposte was purely a Pathway decision, and not

in any way suggested or mandated by BA/POCL in their requirements. It was therefore Pathway's role to manage Escher and their use of Riposte.

21. §14.1 quotes Terry Austin that "*ICL Pathway was not itself able to review the Riposte code, but would have to make a request for modification through Escher.*". I do not disagree with Mr Austin's comment but this would (or should) have been known by Pathway from the start, as it would be standard across almost all third-party software products – I doubt if Pathway would have access to the source code from Microsoft or Oracle, for their parts of the system, for example. This restriction should therefore not be a surprise to anyone.

22. I note that in Terry Austin's questioning ("Transcript from 27<sup>th</sup> October 2022", INQ00001008, p78-79) there was again reference to Pathway having "*to go to the Riposte system people*" for any problems with Riposte. Again, Mr Austin is perfectly correct here but this would be the case with almost any third-party product being integrated as part of an overall solution.

23. BA/POCL did indeed raise a number of formal risks around the use of Riposte and the relationship with Escher (as stated at §14.2 of SUBS0000020), and a number of these are listed in my First Witness Statement (WITN05970100) at §51. These were managed by the Programme going forward under the topic "Escher Dependency".

**State of EPOSS and EPOSS Rewrite**

24. One of the surprises (at least to me) which emerged in Phase 2, and which I was questioned on during my oral testimony (“Transcript from 2<sup>nd</sup> November 2022”, INQ00001016 p99 and p139), related to the view from key staff in Pathway in the second half of 1999 that EPOSS should be re-written – around the same time as Pathway pushing for Acceptance of the system by POCL.
25. At §18.4 of SUBS0000020, it states that “*ICL Pathway ultimately took the decision not to re-design or re-write the EPOSS product*”. I believe it is important to understand that this decision appears to have been taken after the contract ceased to be PFI and the risk transfer inherent in PFI had ceased, and when a more conventional contractual relationship should have been in place.
26. I do not believe that there was any discussion at this time (1999) with POCL regarding either the potential need for a re-write or the underlying root causes or concerns; indeed, at this point Pathway were pushing for Acceptance of the system including the very same EPOSS that some of their staff wanted to re-write.
27. Given that at §18.5 of SUBS0000020 it is stated that “*that Post Office were aware.... of significant concerns regarding quality of the EPOSS product*” it seems inappropriate that POCL were not consulted when, at least a year later, key players in Pathway were still recommending a re-write.

### **Service Review Books and Meetings**

28. At various points in SUBS0000020, including §17.3 and §18.5, there are mentions of “*service review books*” and “*service review meetings*” and their role in sharing information. My understanding is that these were periodic reviews of the live service and in particular of incidents (failure, issues etc) which occurred in live operation, and would only therefore cover incidents which occurred in software which had been released into the live estate and were in real use by branch staff and SPMs. I would therefore not expect the Service Review Books/Meetings to cover EPOSS (for instance) until EPOSS had actually been released into the live (and so not during the testing periods). From an EPOSS point of view, I believe the Service Review process would potentially only therefore have become relevant in 1999 once the live trial commenced.

### **Closing Submissions on Behalf of Post Office Ltd**

29. In this section I refer to the “*Phase End’ Closing Submissions: Phase 2 On Behalf Of Post Office Ltd*” (SUBS0000016).

### **Acceptance and Readiness for Live**

30. At §69 of SUBS0000016, my First Witness Statement is quoted where I had answered questions in the Rule 9 Request related to Acceptance, referencing my §151, §183 and §185 from WITN05970100. The POL submission states of me that “*he thought that going cautiously to the next stage was not unreasonable*”.



31. I think it is important to read this in the context of the following/final sentence in §185 where I question “*whether due caution was applied once rollout recommenced*” and alongside the statement at §186 where I said “*To a degree, we had lost the previous battles and the only option was now trialling in live operation*” (my emphasis).
32. I believe the crucial question is whether and what “*caution was applied*” and in particular whether the rollout and operation in (say) 2000-2001 was properly regarded and managed as a “*trial*”. For instance, in a trial I would expect close monitoring and thorough investigation of potential issues as problems are identified, together with more frequent fixes, until the system was fully proven. This would be particularly important for a system as we had here with the chequered development history and very limited up-front assurance.
33. This is an aspect which I do not feel was not covered in detail in Phase 2, and I presume that this will be explored in more detail in Phase 3.

**Statement of Truth**

I believe the content of this statement to be true

Signed

**GRO**

Dated

11<sup>th</sup> January 2023

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