

Witness Name: **Jeremy Peter Folkes**

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POST OFFICE HORIZON IT INQUIRY
FIRST WITNESS STATEMENT OF JEREMY PETER FOLKES

I, Jeremy Peter Folkes, will say as follows:

1. This is my response to the Rule 9 Request Number 1 dated 26th July 2022 from the Post Office Horizon IT Inquiry, regarding Phase 2 of that Inquiry. It covers my involvement in the Procurement of the initial Horizon service from Pathway between 1994 and 2000. During this period, I was employed by the IT Department of The Post Office but effectively seconded to Post Office Counters Ltd (POCL).

Professional Background

2. I have been asked to set out a brief professional background. I have worked in information technology, and specifically software development, for my entire career, from 1978 to 2021. This included working pre-University for the R&D unit of British Gas, and then after graduating working for Logica (a then major UK software house) on software projects for major 'blue-chip' companies including Shell and IBM. In these jobs I had various technical roles as developer, designer and latterly team leader. I hold a BA Hons in Mathematics from University of Oxford.

3. I joined the Post Office in 1987 and worked primarily on projects in Post Office Counters throughout my 13 years there. Before BA/POCL (Horizon), these included ECCO+ (Electronic Cash Register at Counters – Plus) which was a cash account/balancing system specifically aimed at Crown (not Sub) offices, and the APT (Automated Payments Terminal) which was a payment-accepting terminal designed for use by Subpostmasters in otherwise non-automated offices, to process the emerging bill payment/meter top-up business which could not be done manually.
4. I was also involved when I first joined the PO on the Thames Valley Project in 1987, which was a pilot of full automation of counters in a specific geographical region (and which was never rolled out nationally); my role here was fairly junior but I mention this project as I believe it influenced POCL's future decisions on automation.
5. I joined the BA/POCL Programme in 1994 where I worked through its various guises until I left The Post Office in early 2000. I was dedicated to the Programme throughout this time apart from a brief period in late 1998 when I was involved back on the APT2000 project (advising on reactivating production of the APT to mitigate the delays in the Horizon rollout), plus some minor involvement in the PO's Y2K work.
6. On leaving The Post Office in 2000, I continued to work in postal counter automation internationally, joining a start-up company (Anshe Ltd) based in Dublin, which was then subsequently acquired by Escher Group Ltd. I worked for

Escher on counter automation projects worldwide, involved with around 20 Posts big and small over that period, until my retirement in 2021.

Background to Involvement in BA/POCL Programme

7. I have been asked to set out the background to my involvement in the Pathway Project/Horizon IT System. I joined the BA/POCL Programme, which morphed into the Horizon Programme, in 1994. I believe I was asked to join given my background as a technical person with counters experience from my time on ECCO+ and the APT projects, and although employed by the Post Office IT Department I was fairly well known around POCL having worked on their projects for around seven years.

8. Note that the BA/POCL Programme was run, in the Post Office, by POCL itself and not by the IT Department. A number of people from PO IT were seconded over the course of the Programme, but this was a POCL initiative and was not outsourced to or managed by PO IT. As we will see it was far bigger than just an IT system.

Background to the BA/POCL Programme

9. Before moving onto my involvement in the project it is worth outlining the environment in which the procurement was being performed. Firstly, this was a procurement not of a *system*, but of *services* to be provided on a PFI basis by the selected Service Provider (SP) for a period of time (5 or 7 years I think). The PFI required the Service Provider to fund the development of the constituent systems and services, provide and install hardware in offices, and to then run the systems

and services, and additionally to take on project risk, with payment only being received on a “per transaction” or “per customer” basis once deployed. There was also the concept of fraud risk transfer (specifically around benefits payments) to the Service Provider, so that they were expected to take on the risk if payment fraud occurred. This was a lot more complicated than simply procuring an IT system. [I will talk about the effect of PFI in detail later].

10. Secondly this was a joint procurement between the BA (Benefits Agency) and POCL as Contracting Authorities, for a complex set of services – for POCL, automation of the counter network, including a new automated benefit payment services for their client (the BA); for BA, automation of benefit payments, including payment in Post Offices (to be performed by POCL staff and agents, under a POCL-BA contract) but also including card issuance etc outside of POCL etc. The Programme also involved the SSANI (Social Security Agency) in Northern Ireland, who I believe were a separate agency, but were generally represented on the Programme by BA.
11. As a result of this some requirements (and therefore solutions) were for BA, some for POCL and some for BA and POCL jointly; there were to be three contracts with the Service Provider (one with BA, one with POCL and one overarching one with BA/POCL jointly). The overall landscape was subdivided into multiple “services” (e.g. EPOSS was the EPOS Service, APS was the Automated Payments Service, OPS was the Office Platform Service, and so on) with similar complexity on contractual ownership and interest between BA and POCL. There were also complexities around the three-way relationship regarding ownership of data and

for financial settlement between BA and POCL for benefits paid out at the counter through the proposed system.

12. The BA/POCL Programme was established in its own offices in Terminal House, near Victoria Station in London, and at peak I believe had around 100/150 staff – from BA and from POCL/PO, consultants from a variety of consultancy firms, and various contractors. I remember PA Consulting, French Thornton and later on Andersen Consulting (now Accenture) being involved, plus Kermon, a specialist procurement consultancy. I believe the Programme was initially headed by a representative from BA (Andrew Stott), but the hierarchy had representatives from both sides. Teams were established with members from both organisations (and at a working level relationships were good despite having quite different backgrounds).

13. The team in Terminal House was known as the PDA (Programme Delivery Authority). The PDA was effectively the group which sat between the Supplier(s) and the two Sponsors (BA and POCL).

Procurement of BA/POCL Service (“Horizon”)

14. I have been asked to describe and explain my involvement in the procurement of the Horizon IT System. My involvement in the BA/POCL Programme covered a number of phases over a period of over 5 years. At the point I joined there were five prospective service providers (BT, CardLink, EDS, IBM, and Pathway) who had responded to the original OJEC notice and been allowed to tender. The five original Service Providers had described their solutions in their responses to the

original tender. Each SP had provided extensive responses, with details of their overall solutions together with responses to individual requirements.

15. The first major event for me was the detailed evaluation of these five initial responses (primarily a paper review exercise from what I remember), performed at the Post Office Conference Centre at Rugby (and hence known as the “Rugby Evaluation”) over several days, which resulted in BT and EDS eventually being eliminated.

16. By July 1995, following the Rugby evaluation, the three candidate service providers were CardLink (a consortium including UNISYS and Andersen Consulting), IBM (as a single company) and Pathway (at that time a consortium) and they were invited to go forward to the next stage. Note that to reach this point all three had had to meet certain “Pre-ITT hurdles”, so that all of them were meant to be credible.

17. The Procurement moved into what was called the Demonstrator Stage. This took place during the second half of 1995, and was intended to allow the SPs to clarify their understanding of requirements, to allow us to explore the proposed solutions, and to identify and mitigate risks against each supplier, prior to them submitting their formal ITT responses. “Objectives of the Demonstrator Stream” (WITN0597_01/01, WITN05970101) contains an extract of the objectives.

18. A number of Demonstrator Streams were set up, and I was Group Leader responsible for the POCL Infrastructure; we gave each SP one day a week over a

number of weeks in late 1995. It was planned to give them equal time and be as fair as possible. This process generated input to and updates to the Service Provider Risk Register (SPRR), as well as queries back to the Requirements teams. In December 1995 a number of site visits were organised where necessary to gain information on the proposals, for each of the SPs.

19. A summary of the POCL Infrastructure Demo Stream is attached - "POCL Infrastructure Demo Strand – Summary of Demonstrator Activity" (WITN0597_01/02, WITN05970102). I discuss this in more detail in the context of Pathway later.

20. A formal ITT was issued in early 1996 to the three candidate SPs, and their paper responses were then evaluated in February/March 1996, in an exercise codenamed Amazon. This involved both a quantitative financial and risk transfer evaluation ("Contracts Stream") and a qualitative business/technical evaluation ("Demo Stream"), based on pre-defined "Value Factors", together with other streams looking at Partnerships etc.

21. This was a very formal exercise, with detailed scoring against pre-defined criteria, involving the teams working away offsite for a very intensive two-week session, and I even remember the suppliers being given codenames (Tom, Dick and Harry) so that outside experts could be used without fear of bias. The process is described in detail in "Supplier Score in Respect of Value Factors" (WITN0597_01/03, POL00031154). It is worth stressing that the Demo Stream and the technical evaluation was only one part of the overall process. The entire

process was very strictly managed for fairness and compliance with procurement law, overseen by observers from each Contracting Authority.

22. In addition to the Demo Stream and the Evaluation, I was involved at various times in assisting with the requirements (leading to the Statement of Service Requirements or SSR), assisting the Contracts team with requirements, and much liaison with POCL.
23. Requirements were meant to originate from the Sponsor organisations (with the PDA then tasked with delivery), but we in the PDA had to ensure that they were coherent and workable (and not conflicting) and be able explain them to the SPs.
24. I have been asked to outline my understanding of the objectives of POCL in procuring the Horizon IT System. My understanding of the objectives for POCL, at a high level, of the procurement of the BA/POCL Service were as follows. The first objective was to automate its network of 20,000 outlets/40,000 counters, noting that at that point only around 600 Crown offices performed automated accounting using ECCO+, and only around 7,000 offices could do Automated Payment transactions with the APT or ECCO+. All other transactions were performed manually, and paper cash accounts submitted weekly to Chesterfield, and without automation it could not take on new business. POCL wanted and needed a platform on which to build new business, much of which required automation (e.g. banking).

25. The second objective was to retain the business of the Benefits Agency in payments of benefits and pensions over the counter, which amounted to a significant amount of POCL's revenue and footfall. This required both a new automated Benefit Encashment Service (BES) for POCL at the counter, but also for there to exist an entire "back end" procured for BA under the Programme for handling card issuance, payment management, helpdesks, fraud risk management etc with which BES would interact. These BA parts included the CMS (Card Management Service), PAS (Payment Authorisation Service), and FRMS (Fraud Risk Management Service).
26. POCL were scared that the BA would take their business elsewhere (as they eventually did, into the banking system) which would dramatically reduce POCL's revenue stream, and that this would threaten the whole future of POCL (and in particular the role of POCL as the front office of government). So for POCL the success of the overall Benefits Payment Service was as important as the other, POCL-centric, services.
27. I have been asked to explain why POCL decided to procure the Horizon IT System under the Private Finance Initiative. The BA/POCL Programme was procured under PFI rules, and I believe PFI compliance was a requirement within the Evaluation process (as described in "Final Evaluation Report", WITN0597_01/04, POL00028152). By the time I joined the Programme PFI was a fundamental given, and I believe the decision to use PFI and for it to be a joint procurement from BA and POCL had been brokered at government level (presumably between the two sponsoring departments - DSS and the DTI - and the Treasury).

28. In the mid-1990 PFI was “*flavour of the month*” although I believe it was more commonly used for things like schools and hospitals, rather than complex bespoke IT projects such as this. PFI saved the organisations from up-front funding, and also was supposed to transfer the risk of a project to the private sector. In my view this was rather naïve for a project as “core” as this to an organisation, where failure would have such a massive effect on the businesses, but these were the rules.
29. My understanding was that PFI (and this arrangement with BA) was considered potentially the only way for POCL to afford automation and retain the BA business; the earlier Thames Valley Pilot project in the late 1980s had shown that full automation would be expensive, and the Post Office would not be able to afford to finance it conventionally. I know the government had set Negative External Financing Limits (Negative EFLs) on the Post Office in the 1990s, effectively taking a return from the PO each year, but I do not know how this affected the PO’s ability to invest itself and fund automation conventionally.
30. From a BA point of view, a key objective was fraud risk transfer for benefit payments, moving the risk for encashment fraud from BA (or POCL) to the service provider, in addition to any funding issues. They also had objectives around financial control and auditability of the payment of benefits in the UK which the Programme was designed to resolve.
31. A newspaper search around 1994 shows reports of “*government ... inviting formal tenders to build and run a new computerised method of payment*” and it being a

“privately run system”. This was announced by Peter Lilley in May 1994 at the Subpostmasters conference, and I think shows the government influence.

32. I believe that the other stated advantage of PFI, apart from funding and risk transfer, was that the private sector would bring innovation to the table, and suggest innovative solutions leveraging their experience elsewhere. Whilst a laudable aim, there were relatively few organisations in the private sector with this kind of experience, so any innovation had to be balanced by their lack of subject matter expertise. I do remember it being painful having to, at times, ‘teach’ potential SPs about Post Offices.
33. PFI brought a number of immediate challenges, before then causing major long-term detrimental effects on the Programme. Immediately, there was very little experience or understanding of PFI on the POCL side at least, so there was a steep learning curve for both the staff on the PDA and in the Sponsors (and in particular POCL).
34. One key effect of PFI was that requirements had to be presented as high level *“Output-Based Specifications”* so as to not constrain the Service Providers, that is stating the *“what”* but not the *“how”*, and at the level of the Service rather a system. This was contrary to most experience where specifications would be far more detailed and include some *‘how’*.
35. The other key aspect of PFI was that of Risk Transfer. Whilst there was an explicit and well-defined attempt at Risk Transfer for certain types of Benefit Payment

Fraud by BA, there were of course many Risks which could not be transferred to a Service Provider, as POCL has found to its cost over the years.

36. Outsourcing a major part of your core business (and the transaction processing/counter system for a Post Office is about as core as it gets) does not remove the risk to that business if the counter system (or service) does not perform. Paraphrasing somewhat, the ethos was that risk was transferred to the Service Provider, and so we *should not worry about it*. If they failed it was at their cost. I think this was a fundamental issue – whatever idea there was of Risk Transfer in specific areas, POCL still needed assurance in the quality and fitness of the service being developed and provided by the Service Provider, to manage the risk to their business.

37. As the Project progressed, it appeared that the effect of PFI was that we were expected (by the SP) to treat the underlying solution as a “black box”. The Service Provider’s job was to ensure it created the right outputs but the contents of the box were not available for scrutiny – either how it worked or how it was being built. As I will cover later, this had major effects on POCL’s ability to gain assurance on the solution and to inform later activities.

38. Put informally, the approach seemed to me a case of “*Trust Me, I’m a Doctor*” – having told them at a high level what we wanted the Service to do, we were meant to trust them as the experts to create and run the Service. We would have Acceptance at the very end, but we would have no visibility of what was “*in the*

box” or how it had been built, and only be able to perform Acceptance based on those output-based specifications.

39. I have been asked to describe how ICL Pathway demonstrated the suitability of its proposed technical solution. As introduced earlier, each of the three SPs took part in the so-called Demonstrator Stream, in the second part of 1995. This activity consisted of 6 groups – POCL Applications, POCL Infrastructure, Benefits Payment Service, Implementation/Management, End-to-End and Security, each with a group leader and team members.

40. We were starting at this point from solutions that they had each submitted as part of the original tender (and with which we were familiar from Rugby), so that the Demonstrator “drilled down” from there.

41. I was the Group Leader for the POCL Infrastructure strand, which covered the Technical Infrastructure (Office Platform, WAN (Network), TMS (Transaction Management Service) and System Management) and Support Services for POCL (Helpdesks etc). A suitable expert from POCL managed the Support Services side (Helpdesks not being my speciality), whilst I focussed on the Technical Infrastructure supported by a technical team member.

42. For the POCL Infrastructure strand, we had a series of meetings with each SP, which involved a “deep dive” into the relevant parts of their solution. We set an agenda for each session, specific to each SP’s proposed solution (based on our analysis of their proposals from Rugby), so that they could assemble the relevant

experts or set up demos, and then had a full day per session on their site. Each candidate SP was offered an equal amount of time I believe, so that the process was and could be seen to be fair.

43. It was of course up to the SP how effectively they used that time to their benefit, and whether this was treated as an opportunity or a chore; my internal meeting notes from the time (WITN0597_01/05-11) indicate that at times Pathway seemed defensive and keen to avoid scrutiny, whereas the other two SPs were more open and used the sessions to talk up their offering.

44. For Pathway, the POCL Infrastructure Strand had majored on the use and role of the Escher Riposte product as a core part of their infrastructure, as well as covering a range of other topics. Presentations and papers were produced on specific topics, further questions asked, demos seen and risks raised. We tried to make these sessions as interactive as possible to understand both the SP and their solution. The SPs could also raise questions of us, which we then took back to the Programme (and Sponsors if needed) for resolution. At least one of the Pathway sessions included representatives from Escher, to answer specific questions we might have there.

45. Internal notes from the individual Pathway sessions are attached in a series of seven "POCL Infrastructure Demo – Meeting Notes" (WITN0597_01/05-11), covering an introductory session together with six substantive meetings (WITN05970140, WITN05970106, WITN05970107, WITN05970108, WITN05970141, WITN05970109, and WITN05970139). These notes cover

topics, risks and questions raised, plus a commentary on the SP's behaviour and are therefore fairly "frank" in places.

46. In addition to the meetings with Pathway, we also visited An Post in Dublin (the Irish Post Office), where the Escher Riposte product was already in successful use for automation of their counter network (and still is), including the payment of benefits in Ireland, and saw their system in operation in two live Post Offices in addition to meeting An Post management.

47. I also visited Escher Group Ltd in Boston in December 1995, along with the group leader of the End-to-End Demo Stream (Naresh Mohindra), to get more details on the Riposte product, the organisation, their plans and their relationship with Pathway, as part of managing that risk. Notes from that session are attached in "POCL Infrastructure/End-to-End Demo – Meeting Report – Escher Site Visit" (WITN0597_01/12, WITN05970142).

48. For the avoidance of doubt, the same process was followed with the other two Service Providers, including Demo meetings and site visits where relevant, and risks were raised and discussed with those SPs too.

49. I have been asked to describe and explain the risks identified in ICL Pathway's proposed technical solution. Risks were raised against each of the three Service Providers during the Demonstrator Stream and continued once the formal ITT responses were received. I think Risks from earlier phases (including the Rugby

evaluation of the original responses) were also inherited into this phase for continuity.

50. Risks were shared with the respective SPs to give them a chance to mitigate or respond. A formal SPRR (Service Provider Risk Register) was managed by the PDA, to which individual teams could input, giving programme-wide visibility. The Risk Register could also be used to raise Questions which might then subsequently be cleared or converted to real Risks.

51. I do not have access to the full Risk Register but from the notes I have I know the risks we raised on Pathway during the Demonstrator phase (even if subsequently cleared) included:

a. Risks relating to the use of the Escher Riposte product – from what I remember there were several:

i. PWY002 - one “commercial” covering the size/stability of Escher (given the dependency that POCL/Fujitsu would have on them)

ii. PWY009 – that Riposte was unproven at this scale, covering the scalability/manageability of Riposte (including regarding changes that we were told would be needed or were planned)

iii. PWY057 - one covering Pathway’s ability to manage Escher and the contractual relationships

- iv. PWY059 – that Pathway may not be able to maintain a development path for Riposte in line with POCL’s needs

 - b. Risk on EPOS: *“The EPOS package appears to need significant development to meet the POCL requirements. The timescale of Q1 1996 may not be achievable”*. Note this was not strictly part of the POCL Infrastructure scope (EPOSS was Application) but I believe I raised it due to the relationship with Riposte (see “note on splitting Pathway Risk re EPOSS” (WITN0597_01/13, WITN05970110)).

 - c. PWY011 - Risk on use of touch screen and effect on transaction timings

 - d. PWY048 - Risk on software distribution solution

 - e. PWY064 – Robust Storage of Data in Single Counter Post Office

 - f. PWY066 – Potential use of Dongles on Counter PC
52. The document “Risk Register Analysis” (WITN0597_01/14, POL00028150) created by the Procurement Team in February 1996 provides the status of the uncleared risks against the three Service Providers as of the end of Stage 3 of the procurement (effectively after the Demonstrator). This includes risks from the Requirements/Solution team and CNT (Core Negotiating - Commercial) team as well as from the Demonstrator activity. For Pathway, this includes risks PWY002 (“Size of Escher”), PWY009 (“Riposte is Unproven”) and PWY066 (“Strong

Sequence Numbering” / “Dongles”) mentioned above, as well as a number of other risks from other strands.

53. Similar risks were raised against the other Service Providers, so the presence of these on Pathway was not, *per se*, surprising. This was a mechanism for formally recording concerns and giving the SPs the chance to provide more information or reconsider, before reaching the formal ITT. We received papers or presentations from the various SPs which enabled some risks to be downgraded or cleared. I remember that I thought this process was good in theory in that it incentivised the Service Providers to “*take us seriously*”, in that they knew that outstanding risks could count against them.
54. The Inquiry has provided two Pathway Risk Responses for which I was the BA/POCL Risk Owner, which are useful examples of the process and the use of the Risk Process to bring clarity/remove ambiguity from the solution.
55. Risk PWY064 sought to gain clarity on Pathway’s solution for robust storage of data in single position offices (where there would be no second PC to which Riposte would replicate data), and where data may be exposed should the link to the centre be down. Pathway had made a number of statements about options for the use of a removable second hard disk and a Mirror Service during the Demonstrator meeting but we used the Risk Process to have this formalised – we could not evaluate it purely based on verbal statements in a meeting on what they ‘*could do*’. Once Pathway produced this paper (“Pathway Risk Response –

PWY064”, WITN0597_01/15, FUJ00078025), I believe the risk was cleared (and this went forward into their solution).

56. Risk PWY066 related to a case where, in Demonstrator meetings, there appeared to be contradictions between Pathway and their subcontractor (Escher) over the proposal to use “dongles” (small plug-in secure storage devices) to mitigate a particular multiple failure scenario. In this case we raised a risk to get clarity as to what Pathway was proposing and actually going to implement, and therefore on what basis we should be evaluating the solution. Pathway’s response (“Pathway Risk Response – PWY066”, WITN0597_01/16, FUJ00078026) shows that they were proposing a solution which did not include the “dongle” solution, and gave their detailed reasoning.

57. Some risks were not cleared and therefore were fed forward into the Evaluation and Selection decision; those for Pathway were, once the contract was awarded, then carried forward into the next phase of the project for monitoring and mitigation. For the Escher/Riposte related risks, for instance, this continued to be tracked throughout the Programme. Document “Escher Dependency – An Analysis” (WITN0597_01/17, WITN05970117) shows the state of this Risk area in April 1998.

58. The Inquiry disclosed a “Top Ten Pathway Risks : Status 8.9.95” document, as part of FUJ00078000 (WITN0597_01/18), which appears to summarise Pathway’s internal view of the Risks (both those raised by BA/POCL and those by Pathway). I do not believe I would have seen this document at the time but it provides a useful

summary of risks across all areas from the Pathway viewpoint, during the pre-award stage.

59. I have been asked to describe and explain how ICL Pathway's bid for the project was evaluated against the technical, management and commercial criteria used during the procurement process. Once the Demonstrator Phase had been completed, a new ITT was issued and for functional/technical evaluation the SPs submitted their responses, still based on the requirements in the Statement of Service Requirements (SSR). The SSR has several hundred numbered requirements, spread across the various Services (e.g. OPS, APS, EPOSS, BES etc), and the SPs provided responses for each SSR question. I think the SSR was updated where needed prior to the ITT (based on clarifications from the SPs in the Demonstrator).
60. Once the three SPs submitted their response to the ITT, they were reviewed and evaluated by the Demonstrator Stream (from a functional/technical viewpoint), in parallel with other groups covering Contracts, Financial, and Partnership evaluation. I do not believe the Demo team had any involvement in those aspects outside of the functional/technical.
61. For the functional/technical review, the solutions were evaluated as part of a detailed two-week (I think) off-site workshop known as Amazon, scoring the responses against 44 Demonstrator topics across the 6 Demonstrator Steams (for instance, there were 8 topics in the POCL Infrastructure group). There were also inputs from other groups such as a "IT Strategic Concurrence" from the Strategy

Group in POCL, for instance see “Fax from Bob King” (WITN0597_01/19, POL00031277).

62. These 44 topics had been mapped in advance to 10 “Value Factors”, so that the scores could then be summarised up into 10 “Value Factors” per SP. This whole scheme was managed by the Procurement team, with the job of the individual Demonstration Stream evaluations to score the responses.
63. The process is described in detail in “Final Evaluation Report” (WITN0597_01/04, POL00028152) and “Supplier Scores in Respect of Value Factors” (WITN0597_01/03, POL00031154) created by the Procurement team.
64. For contractual reasons there was actually a second ITT which took place in 1996, although I do not remember this changing the technical solution at all – this was all related to risk transfer and commercials. The formal decision was, I believe, taken based on this second ITT, but this was all handled on the Contracts side.
65. I have been asked about my understanding of the reasons for ICL Pathway being selected as the chosen provider of the automated accounting system. Pathway was selected as the Service Provider as part of an overall evaluation and selection process which included not only Value Factors (coming out of technical evaluation of the solution by both parties) but also a Commercial, Risk Transfer and Partnership evaluation by both BA and POCL, covering both Benefits Payments and Post Office services. The overall process is described in the “Final Evaluation

Report” (WITN0597_01/04, POL00028152), and the decision was taken by an Evaluation Board with senior representatives from each Sponsor.

66. My understanding from reading document “Final Evaluation Report” (WITN0597_01/04) is that Pathway were the only one of the three SPs who were considered PFI-compliant regarding fraud risk transfer for BA; the other two SPs were not PFI-compliant. Ironically of course, BA then withdrew from the project in 1998/1999 rendering this factor in the decision rather irrelevant.
67. I think it is important to note that this process resulted in BA and POCL jointly selecting Pathway as the overall Service Provider for the entire set of BA and POCL services; it was not POCL selecting a supplier purely for its “automated accounting system” as has been suggested. The procurement was for a complex package of services for two Contracting Authorities, and what became the Horizon EPOSS system was only one constituent part. Put simply, there was no opportunity for “*pick and mix*”.
68. I think it would be fair to say that the majority of the technical evaluation focussed on the Technical Solutions being offered, rather than the Service Provider’s capabilities, although some of risks raised did show we did consider to some degree *soft* aspects of the SP and their relationships with suppliers.
69. Technically, the Pathway solution had some considerable advantages for POCL over those offered by IBM and CardLink. Specifically, the underlying Pathway solution allowed offline/disconnected operation with automated resynchronisation

should communications not be available, including off-line benefit payment, which in a network of 20,000 sites with the communications available in the late 1990's was very important. I believe it was also the only solution of the three based on software in use in another country's Post Office at the time (and of course later versions of the underlying Riposte have been used and are still in use in many Post Offices across the world to this date).

70. However, the underlying technology of the POCL components was only part of the offering, and the whole programme depended on the overall Service Provider. Looking back, if a bad decision was made on selection, I believe it may have more been about the Service Provider in a PFI environment, rather than the technology they were using. As I raise later, this is where I feel the contract was weak and let us down.

Development and Assurance

71. I have been asked to describe and explain my involvement in the development and assurance of the Horizon IT System. Once the contract had been awarded to Pathway, the Demonstration Team migrated to new roles to provide Technical or Product Assurance of the emerging Pathway solution. This was arranged in a similar manner to the Demonstrator, with teams for various areas, and I was allocated the "POCL Infrastructure" as before, so responsible for the OPS (Office Platform Service) and TMS (Transaction Management Service), whilst others covered POCL Applications (including EPOSS) and the various BA services.

72. As I remember it, our role in Assurance was to try to monitor the development of the service to gain increasing confidence in the emerging Pathway solution, to assure its performance/security, whilst also trying to support them by providing access to resources in BA or POCL where needed (admittedly that was more relevant for the Applications teams).
73. In addition to de-risking the project and facilitating the flow of information, we were also mindful of the fact that eventually there would need to be both a contractual acceptance of the solution/services and Release Authorisation decisions, and that gaining confidence and knowledge throughout the process should make this simpler – basically it was a means of avoiding surprises downstream.
74. We attempted to engage with Pathway in a number of ways at various times, and for me both as responsible for POCL Infrastructure and during a stint when I was on the (BA-led) Fraud and Security Group. In particular, to give structure to the activity we provided various papers over time to our Pathway contacts on what information we needed, we had meetings with Pathway, and even for Technical Assurance set up a “Technical Assurance Forum” with Pathway with regular meetings with pre-set Agendas.
75. The Terms of Reference for the Technical Assurance Forum explain our reasons to engage with this activity to inform Acceptance and Release Authorization. See draft version “Terms of Reference – Technical Assurance Forum” (WITN0597_01/20, WITN05970138) and an exemplar Agenda (for a session on Integrity in 1998) (WITN0597_01/21, WITN05970129).

76. A number of papers from across that period explain our approach to Assurance, including:

- a. "The Level of Information Needed for Technical Assurance", (WITN0597_01/22, WITN05970113), from 1997. I do not recall whether I was explicitly asked to produce this paper by management or whether this was at my own initiative as part of setting up the Technical Assurance function (which was a reincarnation of the Design Assurance group). [This paper would have certainly been shared within the Assurance Teams in the PDA and I expect PDA management but I do not have access to email records to show how much further it went.]
- b. "Assuring Integrity, Accuracy and Robustness of the Service" (WITN0597_01/23, WITN05970116) which was shared with Pathway in 1998, when trying to assure End-to-End operation. I believe it was produced at Pathway's request to justify/explain our call for information, and was intended to show that our request was not unreasonable or unduly onerous. It is likely that this document was shared at least with Dick Long of Pathway (who was my contact at this point) although I do not have access to the email records to confirm this.
- c. "Route to Acceptance through Assurance and Testing" (WITN0597_01/24, WITN05970115) (draft), from early 1998 which outlined why reliance purely on Testing would be insufficient, and proposed closer working between Testing and Assurance. This paper was produced following a request from the PMT (PDA Programme

Management Team) in December 1997. [Although I only have a draft and do not have access to email records, I presume a completed version would have been shared in some form with the PMT].

77. I have been asked to describe and explain the challenges that we faced in assuring the quality of the Horizon IT System. We hit problems early on in that Pathway refused to disclose certain documentation – especially design documentation - to the Assurance Team. They repeatedly claimed that this was because of the PFI rules – we were procuring services and had no rights of access to design or development documentation, and they were taking on the risk. This was the PFI “black box” problem mentioned earlier emerging.

78. A number of the technical staff, at least those I dealt with, were helpful and in some cases more than happy to share information informally and take comments (after all, we had common aims and were fellow IT professionals). However, Pathway management obstructed such access, refusing access to documentation and I believe even cancelling meetings in some cases.

79. I have been asked how we became aware of this obstruction by Pathway management. The problem hit us all the time but I remember in particular a meeting with Terry Austin (the Pathway Development Manager or similar) where he stated that he was prevented by the contract from sharing documentation. I also remember getting a call from Martin (or Martyn) Bennett, Pathway’s Security and Risk Manager, questioning (and I think cancelling) a meeting that his staff had set up with me to go through a particular technical security concern. However,

these are just a couple of examples of an ongoing problem throughout the development phase of the project.

80. Rather perversely, we did make some progress on the POCL Infrastructure side (I say perversely as you might expect that the deeper into the software stack, the furthest from the application, the more reticent they might be, but the opposite seemed true) with Pathway people providing 'informal' access to a document known as the TED (Technical Environment Description). This technical infrastructure area was making progress and did not expose major problems, which might explain why the people here were more open. We also had more success in the underlying Security areas, as we had a specific requirement which required Pathway to create a Security Functional Specification (SFS).

81. We also had some successes on the Infrastructure side through initiatives such as the Technical Assurance Forum, as mentioned earlier, although from what I remember some of these initiatives were sometimes rather short lived.

82. In other areas however, in particular in the POCL Applications side, there was explicit refusal to allow access to design documentation for much of the time. I suspect this was largely because such documentation did not exist at the time or that it was of such quality that opening it up to us would have exposed Pathway in this area.

83. It may also have been as the POCL Infrastructure side was strict technology (hardware, protocols, communications, etc) based on integration of products

(albeit niche ones like Riposte), and so easier to handle, whereas the POCL Applications were bespoke, effectively ground-up developments, and Pathway were maybe more exposed.

84. The result was that, except in areas where we had an explicit right in the Contract to a document (such as the SFS), we only had limited or partial visibility of the emerging Pathway systems, or of their design/development approach. This meant that we could not gain confidence of *what* Pathway were creating (or its suitability or fitness for purpose), or have confidence in *how* Pathway were developing (and therefore what Quality mechanisms were in place).
85. One specific gap was any access to Software Quality information or metrics, such as number of bugs found in testing or the amount of rework being done, both of which are good indicators as to the stability or maturity of a product. We also had no real visibility of what design documents existed or in what state, even if we were not able to access the documents; this mean that we could not assess whether Pathway actually had created solid design documentation or had gone through a design process before commencing coding, or whether standard artifacts (like Data Dictionary documents) even existed.
86. The POCL teams were involved in Joint Working with Pathway at various times (primarily in the Applications rather than Infrastructure area), to try to progress the project. Whilst this was beneficial overall, I remember flagging dangers there that Pathway could point to us having business representatives on-site to give false credibility to claims that Technical Assurance was being performed (when largely

what was happening was Issue Management). I remember raising this internally in a paper in 1998 "Product Assurance – A ReThink" (WITN0597_01/25, WITN05970118). This would have certainly been shared within the Assurance Team but I do not recall how much further this went within the Programme, and again do not have access to email records.

87. During 1997 there was a process by which Pathway issued draft Acceptance Specifications for the PDA's review. This allowed Pathway to state, for each area, how they were meeting each Requirement, and point to the evidence or proposed evidence (e.g. a planned future document or test). One of these specifications was for the "POCL Infrastructure", and although I do not have access to the actual document I reviewed, my comments to version 1.0 dated May 1997 are in exhibit WITN0597_01/26 ("PDA Quality Review Comment Sheet - POCL Infrastructure Acceptance Specification", FUJ00078984). These Acceptance Specifications continued to be updated and reviewed intermittently through to March 1999.

88. My review comments provide a useful example of the problems we had, even for Acceptance, in the low level of information detail by Pathway. As just one example, for Requirements regarding an audit trail, it seems Pathway tried to satisfy by pointing to how the audit trail was stored/protected, but not what information was stored or what events were audited (see comments 14 and 21 in that review).

89. I have been asked to what extent did POCL have adequate oversight of the design of the Horizon IT system. POCL had very limited oversight of the application

design of the system; formally we had access to a very few documents, informally to specific versions (not maintained) of a small number of other documents, and otherwise we had rather bitty information that we managed to obtain from specific activities or if we had raised specific risks in the evaluation (where maybe a paper might be provided).

90. The team did the best we could but were very much dependent on the goodwill of individual team members in Pathway; for instance having “corridor discussions” with people we knew when visiting Pathway’s offices, or by information passed on by team members involved in “joint working” on the Pathway site in Feltham.

91. However, it was obviously difficult to progress concerns which were based on information which came from these unofficial sources; it was very easy for information to be dismissed if we did not have evidence, with the ‘PFI card’ applied again by Pathway. I seem to remember feeling that some of the DSS/BA people had greater comfort with the Pathway PFI approach than those of us from POCL, perhaps reflecting the difference in impact of the Contract to the two organisations (BA were contracting a relatively well-defined service and could more easily walk away if Pathway failed, whereas POCL were staking their entire future and could not easily walk away). I remember the phrase “*The Absence of Evidence is not the Evidence of Absence*” being quoted when seeking help on this, I believe from someone on the BA side but I cannot recall who. However, what information we did get was reported within the PDA to try to build up a picture of the development, within the Assurance teams and to the PDA management.

92. There were at times opportunities for workshops to see the emerging product, and we made full use of these when we could, even if this tended to be “too late” compared with seeing upfront designs. Looking at my notes from early 1998 it seems I was involved in two workshops on EPOSS organised by Product Management (I believe by that point we had re-organised into a Technical Team – the old Infrastructure – and a Product Team – the old Applications), which included identifying non-compliances in the emerging EPOSS. My “Fortnightly Report - period to 19/01/98” (WITN0597_01/27, WITN05970143) refers. I cover EPOSS in more detail later. [The Fortnightly Reports in early 1998 were commissioned by and provided to John Meagher, who headed the Assurance Team at that point, and were most likely shared the rest of the Assurance team, with information then being fed up the management chain to the Programme Management Team (PMT).]

93. I have been asked what issues did the lack of oversight create in relation to assuring the quality of the end product. The challenges and blockers to our Assurance activity from Pathway’s interpretation of PFI had a major impact in our ability to formally either assess the design or the quality of the emerging system being created by Pathway. By blockers, I mean the ongoing refusal by Pathway to share or provide information that we needed to fully do our job.

94. It meant that the Pathway solution remained a “black box” in many respects (in particular in some of the applications), and I believe that had effects all the way through to Acceptance and beyond. It also forced an undue reliance on Testing to provide confidence in the system, and put a major, back-loaded, reliance on the

Acceptance Activity to demonstrate compliance. We raised our concerns in the paper "The Route to Acceptance Through Assurance and Testing (WITN0597_01/24, WITN05970115), as I felt strongly that Quality could not be assured purely through Testing, and Quality could not be retrofitted through Testing (a view I hold to this day after 40 years in IT). This document was written at the request of the PDA Programme Management Team (PMT), and, although I do not have access to the email records, I presume the completed version was provided to them. There is mention in my Fortnightly Report from 19th Jan 1998 (WITN0597_01/27, WITN05970143) that this document was about to be sent to other relevant groups for review/comment.

95. In some areas where we did manage to get access for Assurance, our confidence increased, to everyone's benefit. As an example, as noted earlier we had raised a number of risks regarding Escher/Riposte, and were able to use these to get access to Escher and information on the Riposte product, and understand their development plans, which boosted confidence in the state of that product (and enabled us to reduce those risks accordingly) in the areas we were allowed to probe.
96. One specific gap was that we had no visibility of quality or problems that occurred during Development, and therefore no formal means of managing POCL's risk from this – whether this be bugs, rework, or over-runs etc.
97. It is worth mentioning specifically EPOSS, given its importance to this Inquiry. EPOSS was far more than a simple "point of sale" system, in that it had to be

capable of performing and recording a large range of transactions (from a stamp sale to a car tax renewal), along with cash/stock management and both individual teller (stock unit) and office accounting, including producing the cash account report each week. Much of this is peculiar to Post Offices and the exact rules specifically POCL, rather than just being another flavour of retail POS.

98. Pathway's ability to complete EPOSS in time being a risk which we had flagged in the Procurement stage. During 1997 the PDA became aware that work on EPOSS had been moved from Pathway to Escher in Boston "for completion", suggesting that there were potential issues with the progress in Pathway (EPOSS had been listed as a Pathway, not Escher, creation). I am not sure how we found this out, but it is mentioned in an internal "Programme Review – Brainstorm on Suggestions" document dated October 1997 (WITN0597_01/25, WITN05970114).

99. As mentioned earlier, in early 1998 we had managed to get visibility of the emerging EPOSS and I assisted Product Management with reviewing via a series of workshops. I remember that we identified a number of issues, both around the application itself and Pathway's design approach, which did not appear suitable for something of this complexity and importance, and also their consideration of Failure Conditions.

100. I do not have access to documentation to show how these concerns were explicitly taken forward by Product Management, but my regular reports to my team leader (John Meagher) from the time covered this in some detail and I am confident that this information would have been reported upwards to Programme

Management. For instance, my "Fortnightly Report – Period to 19^h January 1998"

(WITN0597_01/27, WITN05970143), included mention as follows:

- a. *EPOSS - application*: Evidence emerging from the EPOSS workshops that the emerging product is likely to be non-conformant in a number of areas, and will miss the (possibly unwritten) business rules in a larger number of areas. The product does not appear to be at the stage one would expect given the closeness to its entry to a testing phase - Pathway admitted to several "holes" where they don't yet have a solution (eg Cash Account).
- b. *EPOSS - design approach*: Very concerned about Pathway's (apparent) design approach for EPOSS, which is totally inappropriate for an application of this complexity - appears to be based on reverse engineering a product which has been cobbled together first by someone who is no longer with Pathway (and left little documentation) and since by Escher. This a very dangerous approach for a product of this nature and importance, and I do not believe that the risk can be adequately mitigated through testing alone.
- c. *EPOSS - failure conditions*: Significant concerns re operation of EPOSS - and the office platform in general - during 'everyday' failure conditions, such as loss of a terminal or of LAN connectivity, but similar issues likely to emerge in non-failure conditions with shared stock units. Pathway's problem is basically that Riposte gives high integrity for data held on a "per terminal" basis - whereas the business requirement is for data to be accounted for on a "per SU" basis; they need to build the integrity for the latter using the facilities provided by the former. Trying to meet this need without a rigorous design method, and without proper failure analysis, is unlikely to succeed. Pathway appear not to understand the business impacts of failure of the accounting process (as opposed to failure of a transaction) and appear to want to rely on the "it's not going to happen" philosophy. [Same may be true of other applications, given Release 1c experience, but have less visibility].

101. I have been asked to expand on the last paragraph in that excerpt where I stated "Pathway appear not to understand the business impacts of failure of the accounting process (as opposed to failure of a

transaction) and appear to want to rely on the “*it’s not going to happen*” philosophy.”. I believe by this I meant that Pathway did not demonstrate an understanding the importance of the accounting role of EPOSS (including the balancing of cash/stock in each office) to POCL but were more focussed on what would happen to an individual customer transaction in times of failure. For example, if the system failed when performing a specific transaction it might affect the specific customer at the time but equally disastrous would be if that failure adversely affected the cash position at the end of the week. Rather than conducting a rigorous analysis of failure scenarios and showing that their design and solution would maintain integrity, they took the approach of undermining our suggested failure conditions (for instance, multiple concurrent failures in an office). With a target estate of 20,000 offices and 40,000 terminals such multiple failures were likely to be happen and, in my view, needed to be properly considered.

102. I mention other issues on Quality in the section on the “Bird & Bird” review later.

103. Finally on Assurance, I believe that Pathway viewed our desire for visibility and assurance as inappropriate and contrary to PFI. However, from our Assurance point of view, our experience was that Pathway’s approach to PFI had the effect of hiding deficiencies in their development approach from us. Given the delays and Quality problems which became visible in latter stages of the Programme, our attempts at Assurance seem fully justified.

104. Note that a number of documents referred to in the Rule 9 Request relate to the so-called Release 1c or Congo. This was very much a “vanity” release of certain benefits payment functionality in a small number of offices, using a very early version of the software, without much of the contracted POCL functionality (e.g. EPOSS, Security) and from Assurance point of view largely a distraction from the main event. However, I do remember that despite its heavily cut-down nature there were problems with Release 1c around duplicates, with Recall and Reissue of benefits etc.

Treasury Review

105. I have been asked to describe the nature of my involvement in the Treasury Review of the Horizon IT System. I have very little recollection of the “Treasury Review” as a major project event, or of its objectives. There were a number of reviews from different bodies and outfits over the project and I was interviewed by a number, and this may have included the “Treasury Review”.

106. However, I have found mention in a fortnightly report of mine from the time of assisting with discussions over Contract Realignment, specifically around the PAS/CMS boundary with POCL, in November 1998 related to the Treasury Review, and around the same time also looked at the PAS/BES boundary (that is, between the BA and the POCL side of benefit payments), but I cannot recall further details of the Review itself. From this it seems likely that I was called in to assist on some specific technical/system issues but did not have great visibility of the wider review.

107. I have been asked to what extent (if at all) the Treasury Review considered issues relating to the quality or fitness for purpose of the Horizon IT system. I was not aware of any consideration by the Treasury Review of the quality or assurance issues with Pathway, but as stated earlier I have little recollection of this review. However, if I had been interviewed, I am sure that I would have raised this vociferously, given what I had been flagging during 1998 in particular.

108. I have been asked whether the Treasury Review was effective in considering such issues. I do not remember any significant changes or improvements in Pathway's behaviour or attitude to Assurance or Quality emerging from the Treasury Review. I have checked my later fortnightly reports from end-1998 (at which point my function had been renamed from Technical Assurance to Service Characteristics, but was still attempting to gain assurance of the solution), and that in 19th December 1998 I reported: *"We are still finding that Pathway are unwilling or unable to provide any detailed documentation to support our work, although they seem happy to provide information verbally via the Forums. Although better than nothing, this is not particularly efficient and should not be seen as a replacement for a proper Design Assurance process"*.

Proposed Weakening of Acceptance

109. I have been asked what my understanding was of ICL Pathway's proposals around acceptance in autumn 1998. In 1998, there was a suggestion that Contractual Acceptance (which would have opened up revenue for Pathway – noting that at this stage they were running significantly late and presumably over-budget) be tied to the Release Authorisation for a major release known as "New

Release 2" or NR2, rather than doing through the formal acceptance process. I do not know where this suggestion originated, whether it was from Pathway or from the aforementioned Treasury Review.

110. I viewed this suggestion as quite dangerous and wrote a one-page paper with my reasons ("Acceptance at Release Authorisation", WITN0597_01/29, WITN05970119/POL00028503). I presume this paper was provided into the Contracts team or other Programme Management, and although I do not have access to the email records, I can be confident it was received by POCL management this was disclosed to the Inquiry by POL (and by the Inquiry back to me).

111. My primary objection was that I felt Pathway had largely obstructed our attempts on performing detailed Assurance during the course of the project, through "*playing the PFI card*", and even by then I felt that some aspects of the development had a somewhat chequered history. By "*playing the PFI card*" I mean they used the fact that this was a PFI contract to deny us access to timely technical information and documentation on the solution or development activity, and repeatedly refuted such requests as being incompatible with the PFI. As a result, the Acceptance process had become even more important as a backstop for issues with the Assurance process. Signing away any contractual ability to get Assurance by giving Acceptance on the basis of one software release (which by nature excluded a number of deliverables and gave no control over quality) would remove that last protection.

112. It would also have provided for Acceptance on the basis of a decision to authorise a release, before that release had been deployed and therefore trialed in the live environment.

113. I have been asked whether ICL Pathway's proposals were acceptable to POCL. I cannot remember exactly what, if anything, was done with my recommendation, but from reading "Acceptance Board Minutes" (WITN0597_01/30, POL00028367), Acceptance was tied to the Live Trial and a release known as "CSR" (Core System Release), with no subsequent Acceptance of future releases. Reading the "Briefing on the New Contract" (WITN0597_01/31, WITN05970136) it would appear that my recommendation was maybe not fully accepted. I would defer to the Contracts team for more info on this.

Bird & Bird / Project Mentors Review

114. There was a review performed of the Programme by Bird & Bird (POCL's legal firm) and a consultancy called "Project Mentors" in March 1998, for which I believe I was interviewed. The Bird & Bird report itself is exhibit WITN0597_01/32, POL00038828.

115. I cannot remember seeing the report at the time it was produced, but was invited to comment on it by POCL management in Jan 1999, and largely supported its findings. My notes from reviewing the report are present as "Notes from reading the Bird & Bird/Project Mentors Report" (WITN0597_01/33, WITN05970121). I cannot remember who in POCL invited me to review this, but I presume it was at Programme Director or Contracts team level.

116. The invitation to comment on the Bird & Bird report appeared to give me the opportunity in WITN0597_01/33 to (re-)flag and summarise many of the problems that we had seen from Pathway in the application design point of view, which had affected the Quality of the solution. Although there was nothing new in my document (we had been flagging this throughout) it is a fairly succinct summary which may be of use to the Inquiry. These observations included:

- a. Horizon (POCL) being denied visibility especially of application design, meaning we had no opportunity for independent “verification and validation” (V&V) or evidence that Pathway were doing any formal V&V
- b. Absence of high-level designs, and evidence of problems from a lack of design (even in Release 1c)
- c. Pathway adopting an “end of pipe” approach to quality, relying on “fix on fail” for the applications.
- d. Little evidence of consideration of exception conditions or failure
- e. Over simplification of requirements and lack of understanding of the complete requirement set

117. I have been asked to explain what I meant by “*exception conditions*” in point d. above. In software engineering, this term is used to describe any set of events which do not represent the “happy flow” or normal expected operation. In the case in question, I would have been expecting that “exception conditions” considered

might include power failure, local and wide area network failure, hardware failure of a terminal or device in an office, unexpected restarting of a terminal, a failed software update and the like, together with unplanned user activity.

Withdrawal of Benefits Agency

118. By 1998 it was obvious that the project was seriously behind schedule. There was some finger pointing between the parties – including between Pathway and BA regarding the readiness of a BA system CAPS. I do not remember all of the politics here with BA but it was clear that BA was losing patience with Pathway and it seemed the non-delivery by Pathway was seen as a reason for them to be able to withdraw from the Programme. There was of course also a change of government with Labour winning the 1997 General Election under Tony Blair (and the BA/POCL Programme was a creation of the previous regime).

119. BA had always been a slightly reluctant partner in the Programme (given the relatively high cost of paying benefits through POCL, compared with other options) and the delays gave them the opportunity to re-consider other options, in particular driving Automated Credit Transfer (ACT) bank payments as the primary route.

120. POCL, on the other hand, was still desperate for much needed automation at the counter, providing a platform to move forward their business, and even more so if a proportion of BA business was being lost, and some form of continuing with Pathway was the only option without returning to square one.

121. From what I understood there were discussions on whether to cancel the whole Programme (and this presumably led to work such as the Bird & Bird report mentioned earlier, to prepare a negotiating position), although in the end it was decided that POCL would go ahead with Pathway despite BA's withdrawal. [See next section on Project Emerald].

122. A deal was brokered, I believe by government, between BA, POCL and Pathway, and in 1999 a new, non-PFI contract was signed between Pathway and POCL, without BA, based on the slimmed down set of requirements having removed the BA-specific services (PAS, CMS, BES and FRMS I believe), and that this deal allowed BA to "walk away". I have since become aware of documentation from National Archives which suggest much senior government involvement in this deal, however I cannot remember having any visibility of this wider political involvement at the time and therefore will not comment further.

123. A useful briefing to POCL on the new Contract was issued by the Horizon's Commercial team ("Briefing on the New Horizon Contract", WITN0597_01/31, WITN05970136).

124. The new Contract was based on the same set of Requirements and sadly did not improve our ability to perform Assurance on the solution. By the time that the new Contract was finally signed in mid-1999, the system was already claimed to be fully developed, and in many ways therefore "*the damage was done*" regarding Assurance (and I fear Quality). The Contract was signed as Acceptance activities were taking place and the Contract had no facility for us to go back and revisit the

problems of the previous few years, nor, as far I can remember, did it give us any further access to detailed documentation.

125. The new Contract did not appear to be a particularly good deal for POCL, both commercially (largely taking back volume risk from Pathway and increasing POCL's costs), and I think contractually weakening of the thresholds for Acceptance, and with Acceptance now tied to the Live Trial (Core System Release). However, this did allow POCL to continue with automation rather than having to start all over again, which was I believe seen as an advantage.

126. In hindsight, POCL missed an opportunity to force an in-depth review of the emerging system, including examining all aspects of how the system had been created, to mitigate the gap caused by the earlier PFI approach, and to require Pathway to open up to POCL. As it happened, POCL were restricted to running the Acceptance activity with the same (BA-requirements removed) basis as existed in the original contract.

127. In June 1999 I did look at potential exposures from the removal of BA requirements and schedules from the contract, with my findings documented in "Potential Exposures from Removal of DSS Requirements and New Contract" (WITN0597_01/34, WITN05970127). I cannot recall who commissioned this work or received my note but I presume it was done for the Contracts team. This flagged a few places where POCL were dependent on BA requirements or services (which would no longer exist). One I noted was that POCL had not contracted to obtain fraud information directly from Pathway, but were apparently

intending to use BA's Fraud Risk Management Service (FRMS) if they needed such information, and that therefore POCL would need to either now raise a Change Request to get this information or to source it "in-house" from TIP. I do not know what action POCL took here but this may be relevant later in the Inquiry.

128. Whilst the withdrawal of BA did not affect the technical viability of the solution, this was fairly disruptive during 1999, just at a time when focus was needed on getting the project "*over the wire*". This included, of course, the transition to being a wholly POCL project and the handover from BA people.

129. POCL also kicked off early work on Network Banking, which was the proposal to add Banking functionality to the system to facilitate cash withdrawal at the counter, to try to "retain" the footfall for benefits recipients now paid by banking.

130. More importantly, it did mean that a very large amount of effort and focus had been spent during the preceding 4 years on functionality and requirements which were no longer relevant, all the way back to selection of Pathway partly based on BA's risk transfer requirements.

The Horizon IT System and Project Emerald

131. I remember also getting involved in 1999 in a number of "*what if?*" or feasibility exercises in POCL looking at options for going forward with or without Pathway. This included an exercise known in POCL as "Project Emerald", which I think was led by the Commercial team in POCL (rather than the Horizon team itself) but was drafted in for my Horizon knowledge. There were a number of 'Option B'

proposals which I think kept the Pathway Horizon system but had different ways of handling benefit payments (including an Electronic Money Box proposed by Pathway, various aspects on using a Banking partner, as well as what POCL finally signed).

132. However, I remember specifically looking at an Option C, if we terminated the contract with Pathway, exploring whether we could 'salvage' parts of the Pathway solution for a future automation initiative.

133. "Option C - Considerations Around Future Use of Aspects of ICL Pathway Solution" (WITN0597_01/35, WITN05970146) which I drafted in May 1999 looked at some of the issues associated with potential future use of what Pathway had created and defined 5 possible levels of re-use of Pathway's solution. In so doing it again raised concerns about the Pathway development approach, including around EPOSS, and the potential dangers should we look to take on aspects of their solution (including our lack of design knowledge and information on what we might be taking on). It also suggested some of the non-technical considerations (e.g. including "*- does POCL have sufficient faith in Pathway to deliver?*", and "*- are ICL Pathway 'fatally wounded'?*") which are perhaps indicative of the sentiment in mid-1999.

134. I cannot remember exactly what decision-making process happened with Project Emerald – this would have been above my level and may have included government - but in the end such esoteric options around cancellation were dismissed and POCL signed up the new 'non-PFI' contract with Pathway (and BA

were allowed to walk away), and as discussed as far as I remember earlier this contract did nothing to resolve the Assurance problems with Pathway.

Live Trial (1999)

135. I have been asked to describe and explain my involvement in the Live Trial of the Horizon IT System. For the Live Trial my role was in analysis and review of relevant Incidents that had been raised, as part of the overall Acceptance Process. I believe that the Live Trial was run by Business Service Management (BSM) in POCL, given it was “Live” and processing business transactions.

136. I have been asked whether I considered the acceptance timetable to be sufficient. The Live Trial was defined within the Contract, with a specific duration of 8 weeks from May-July 1999. I believe the Live Trial was intended as the main input to Acceptance; however of course not all Acceptance Criteria were relevant or could be tested via the Trial (for instance, adherence to specific standards, delivery of documents).

137. The Live Trial (and subsequent Acceptance process) would obviously have been of a major milestone to the Programme under normal circumstances, but for this PFI contract (based on a “*black box*” approach by the supplier) with the challenges we had had with ongoing Assurance with Pathway, it took on greater importance. I think it is fair to say we had significantly less confidence on entry to Live Trial than we might have done had we been allowed to perform effective iterative Assurance throughout the Programme.

138. Of course, monitoring of live operation in a relatively small set of offices for a small number of weeks did not make up for this lack of Assurance during development. However, this appeared to be the best that the contract could offer.

139. I think it was important to view the Live Trial not as a one-off activity but as one step in an incremental process of increasing office numbers, increasing functionality and moving to full “live” processes, with appropriate ongoing monitoring. So although the Live Trial informed Acceptance, I believe it was generally accepted that this was not the end of the process.

140. I do remember making writing a paper “Live Trial Stressing – A discussion paper” (WITN0597_01/36, WITN05970147) in January 1999 which proposed deliberately introducing certain failure scenarios into the Live Trial environment, in a controlled manner, to help prove the service in a more representative and lifelike environment. The intention of this was to get maximum benefit out of the short duration Live Trial and improve the quality of decision on which the National Rollout would be authorised. I only have a draft of this paper and as I do not have access to email records, I cannot be sure how widely it was circulated or what reception it was given, however I do not believe that this approach was ever followed. I am aware that the proposal might have been seen as radical and disruptive, however it was a genuine attempt to make up for the earlier deficiencies and lack of visibility we had suffered.

141. I have been asked to describe my understanding of the nature, cause and severity of the Acceptance Incidents identified during the Live Trial. I remember

the Live Trial exposed many issues with Horizon, as supported by POCL00028357, "Pack of AI Forms" (WITN0597_01/37). These become visible to us via Acceptance Incidents (AIs). These spanned a variety of areas, from training and helpdesk through accounting in EPOSS down to the underlying system stability, and included the interface to the POCL backend system TIP.

142. AIs were assigned out to owners in POCL or the Horizon Programme, and I remember specifically being involved (as owner or advisor) on AIs regarding System Stability (AI298) regarding lockups and screen freezes, Software Updates (AI372) and the Feed to TIP (AI378). I know that there were also AIs relating to EPOSS and the Cash Account in the POCL Applications area.

143. My view was that these incidents were of significant severity, especially those which rendered the system unstable and by nature 'encouraged' the user to reboot. I remember we argued that the number of such incidents reported by users would be likely to be only a subset of the actual happening as once users learn the "*turn it off and on again*" approach they will not "waste" 15 mins ringing helpdesk with an office full of customers. Internally in POCL, these arguments can be seen developing in the working document "AI 298 – System stability" ("AI 298 v06d j") (WITN0597_01/38, WITN05970120) which had multiple contributors from across the Acceptance Team and wider POCL. I believe these similar arguments were used in the Acceptance Workshops which took place with Pathway in 1999 when agreeing or disputing severity of incidents.

144. Pathway were required to either fix or otherwise mitigate each incident, and I believe there was significant activity by Pathway to try to fix the problems. There was also additional functionality (for instance on EPOSS-TMS-TIP reconciliation) proposed to mitigate the problems around AI378.

Acceptance

145. I have been asked to describe and explain the nature of my role in acceptance of the Core System Release (CSR). For the Acceptance Process, I was one of a number of 'Technical Experts' assigned individual Acceptance Incidents, responsible for analysis of incidents, examination of evidence and rectifications plans provided by Pathway, allocating severities and recommending the action. This was a fairly reactive role considering incidents as they came in and were allocated to the relevant 'expert'.

146. By August 1999 there were a number of AIs where adequate resolution had not been agreed and where they were "in dispute". For these AIs, there were a series of AI Dispute workshops. Between POCL and Pathway, and also attended by an independent expert, I believe a consultant from PA Consulting (Peter Copping), acting as a kind of adjudicator.

147. The AIs for which I was down as Technical Expert in POCL Infrastructure included:

- a. AI372 – System Management (software upgrade in the field had failed in some offices during the Live Trial)

- b. AI391 – Physical Security deficiencies at central sites (Bootle and Wigan), identified from an Acceptance site inspection

- c. AI298 – System Stability (Lockups/Freezes)

148. There were also AIs in the POCL Applications area including:

- a. AI376 (Cash Account problems)

- b. AI378 (EPOSS-TIP feed for Cash Account),

although I was not the “Technical Expert” on these. Further information on these incidents is contained in “Acceptance Incident Workshop 25 and 26 August” (WITN0597_01/39, POL00028478)

149. I have been asked for my assessment of ICL Pathway’s rectification plans and whether my assessment changed over time. I remember that it seemed Pathway were more interested in talking down severity of AIs, rather than actually trying to engage to resolve issues, in what it felt was a war of attrition. This may have been connected with the fact that there were thresholds set in the Contract on the number of AIs of each severity to allow Acceptance to be given.

150. However, once it became clear that POCL would refuse Acceptance, I believe they did attempt to address issues more seriously and created more credible

rectification plans. For instance, on AI378 they did propose (and I presume implemented) a new reconciliation process to detect errors.

151. I have been asked what concerns I had about the accounting integrity of Horizon at the point at which CSR was accepted. Once Acceptance had taken place, there were further monitoring and mitigation activities in place to continue to gain confidence in the system. My view at the time was that we had dealt satisfactorily with each of the issues which had been found, but the overall stability of the system and integrity in the full live operation had still to be proven. So my concern was generally about the “unproven” nature of the system rather than knowledge of specific faults (outside of those where we had rectification plans agreed) – in other words what we still did not know.

152. As discussed throughout this statement, the problems we had with Assurance during the Programme had restricted our ability to gain incremental confidence in the system, and the number of Acceptance Incidents in 1999 had further reduced our confidence, and indicated problems with Pathway’s approach to Development and Quality. We were also aware, at least informally, that Pathway had had problems with EPOSS and had sought help from Escher during development (as noted in “Programme Review – Brainstorm on Suggestions, (WITN0597_01/28, WITN05970114) and had concerns with the Quality of EPOSS (as described in “Fortnightly Report – period to 19/01/98” (WITN0597_01/27, WITN05970143) and elsewhere). But again, these concerns were of the unproven nature and of its chequered development history, rather than having knowledge of specific issues.

153. My expectation was that, as with any new system, there would be ongoing monitoring to build up confidence as the rollout progressed in 2000, and serious volumes of offices/transactions were achieved, and that if issues did appear then they would be investigated by Pathway and POCL. This process would hopefully allow confidence to be earned and the system to be proven at scale.

154. As I left the Post Office in very early 2000, I do not have visibility of whether this happened, and what monitoring was actually performed.

Suspension of the Roll Out

155. I have been asked to describe and explain my role in monitoring ICL Pathway's compliance with the conditions imposed on acceptance of CSR. I believe that POCL gave Contractual Acceptance in September 1999, however there was an agreement that certain "hangout" activities, linked to AIs, had to be completed by November 1999. From what I remember, it seemed likely that Pathway would not complete these activities by this time and therefore POCL prepared to apply pressure by suspending the rollout, an option allowed in the Contract.

156. There were two specific AIs where I was involved (AI298 System Stability and AI376 EPOSS-TIP Data Integrity) which fell into this category, together with an issue with Reference Data integrity which emerged during the trial. The Reference Data issue did not have an AI number as it was raised after Acceptance but was still considered by POCL to be a non-compliance with one of the formal requirements (although I am not sure Pathway agreed).

157. For AI298 on System Stability the information provided by the Horizon System Helpdesk (HSH) was insufficient to be able to facilitate the analysis of faults in this area, and we recommended additional monitoring and better recording, at Pathway's expense. We also looked at comparable systems to define a metric for acceptable level of reboots, so we had something which could be measured – I believe we settled on something like one reboot per 3-4 months per terminal.

158. There are a number of documents which provide more detail on what we did around AI298. I believe a similar approach would have been followed for the other AIs by other members of the team.

159. Document "Incident 298 (System Stability)" (WITN0597_01/40, WITN05970125) contained an analysis I performed, based on the concern that Pathway had not put forward a Resolution Plan at this point, but were rather relying on individual fixes to improve the figures.

160. Document "AI298 – System Stability" ("AI 298 v06d j") (WITN0597_01/38, WITN05970120) contains a markup with comments of a document created by the Acceptance Team regarding the status of A298 as of the 20th Aug 1999. This included defining the problem, the business impact and the business severity.

161. Document "AI 298 – comments on Pathway's 2-9-99 plan" (WITN0597_01/41, WITN05970145) contains the output of more detailed analysis of failure statistics for a 4-week monitoring period. This showed mixed results, with some issues not reducing in number of occurrences even after applying a fix.

162. Document “Acceptance Headlines (input to HMT 20/10/99)” (WITN0597_01/42, WITN05970130) provided an update on the activities from the Acceptance Resolution plan, including updates on the monitoring activity for AI298.
163. My document “AI298 - Approaches to Restoring Stability and Integrity” from September 1999 (WITN0597_01/43, WITN05970133) recommended that in addition to fixing the individual problems which had been identified, and then monitoring, that we needed to proactively re-visit the product (a kind of retrospective Assurance); it also recommended that we re-visit the development approach which had contributed to this problem in the first place, so that we avoided further problems.
164. The “ICL Pathway Action Record” dated 17/9/99 (WITN0597_01/44, FUJ00079174) records that (for AI298) Pathway had work underway to *“analyse... to establish what changes to the development and testing strategies might be appropriate to mitigate the risks of similar incidents occurring...”*. I cannot remember the details of what was eventually proposed but this appears a case where the leverage we had in Acceptance process forced Pathway to do more (or give us visibility of more) than just follow a “fix on fail” approach.
165. I have been asked what checks were put in place to monitor the data integrity issues and whether we considered them satisfactory. For AI376 on the Integrity of Data to EPOSS-TIP, Pathway were required to develop new integrity controls. Note that this AI related to integrity of the feed from EPOSS to TIP (that is,

exported from Horizon), rather than specifically around integrity within the EPOSS system within Horizon.

166. Document “Rollout Decision – Demand Position Paper” (WITN0597_01/45, POL00028551) contains details of what we required here in November 1999. Note that this paper shows we had clearly tried to learn from the problems of the PFI days by making very explicit what visibility we needed, not just a “fix”, including:

- a. “logical assurance of authorised design document”,
- b. “analysis of all previous root causes to determine that errors would be detected”
- c. “Testing to a jointly agreed strategy and high-level test plan”
- d. Dual running including under stress conditions, failure conditions etc.

167. As far I can remember we considered that these additional controls would be satisfactory, for the purpose of the integrity of the feed of EPOSS to TIP and to meet the needs of the specific AI. The inclusion of point b. above was intended to ensure that the new controls were satisfactory to pick up all known problems, rather than following the “*fix on fail*” approach we had seen in the past.

168. I have been asked to describe the problems which emerged relating to reference data, including effect on accounting integrity and their mitigation. There were problems identified with Reference Data processing, that is importation of data created by POCL which defined products and/or the cash account detail. Others were more closely involved in this but from what I remember this related to problems when POCL submitted changed reference data (something which might happen when new products are introduced, or the cash account lines to which products report change), and how the Pathway system reacted to this.

169. I remember a series of workshops were organised between various POCL groups (noting that the POCL central systems here were outside of the remit of Horizon) and Pathway to jointly work up solutions.

170. I believe that the Reference Data issue could, at times, produce problems on the EPOSS-TIP interface (similar to AI376), specifically during a change to reference data.

171. I cannot remember the detail of the resolution on the Reference Data issue but I believe although POCL cooperated in the solution this was viewed as a Pathway issue as the Contract required them to integrate with the POCL reference data feed.

172. It is probably worth mentioning that in early 1999, I remember being tasked with looking at what options might exist for going live without a working TIP interface, effectively having the Horizon offices produce a paper cash account and paper

feeds and these being processed as if the office was still manual. This was one of several attempts by POCL to decouple the rollout from known problem areas in Horizon, should Pathway fail to solve these in time. Clearly this was seen as a risk area at the start of 1999, some months before Acceptance. Document "Contingency Options for Non-Availability of EPOSS Feed to TIP" (WITN0597_01/46, WITN05970122) was my report from this exercise. I cannot recall who was sent this document, and do not have access to email records of the time, but I presume that it would have included the Programme Director and/or team, and together with colleagues in TIP who helped with the report. However, I do remember it was considered '*sensitive*' and may not have been widely circulated.

173. There was another incident related to Pathway processing of reference data updates of which I have no recollection from the time but for which it appears that I was asked by POCL management to review Pathway's explanation. In document "ICL Pathway Progress Summary for Input to Horizon/Pathway Delivery Meeting 27th October 1999" (WITN0597_01/47, FUJ00079184) (Page 15-18) it appears that a potentially serious bug had emerged in live running in October 1999 which had potential to affect the Accounting Integrity in live offices (at that point around 1000 offices I believe).

174. The bug was apparently caused by the application of incorrect reference data to the live estate, which revealed a design/code fault which meant that Internal Transfers (movement of cash/stock between Users in the office) were incorrectly processed, and specifically that invalid data was written by EPOSS.

175. This was a case where Pathway had to fix the operational impact of at the bug by injecting additional 'correction' messages (data) into this office to restore the accounting position, in addition to fixing the reference data/software to avoid a re-occurrence.

176. From the narrative in WITN0597_01/47 it appears that I had been asked to review this issue by someone from POCL who was present at the regular "Horizon/Pathway Delivery Meeting" (I do not believe that was a meeting series I attended). I cannot recall who asked me to review this issue, and how we had been informed of the issue, or even whether we had been proactively officially told of it and the resolution, or whether it only emerged through questioning at this meeting. [For the avoidance of doubt, the initials "JF" used in that document appear to refer to an attendee from Pathway and not me.].

177. As a result it seems I raised a number of questions/concerns with Pathway about how it had happened, what they have done to fix it and (specifically) around what controls were in place around applying a "fix" to live data.

178. I suspect this was the first time that the need for Pathway to make adjustments to live office data had been reported to POCL and the need for such intervention was clearly of concern to POCL. The notes record that POCL Audit were being asked to review, however I do not have visibility of any outcome of that review, or whether this such centrally inserted corrections became a regular event.

179. The answers from Pathway (which were copied into the meeting notes in WITN0597_01/47) suggest that Pathway had already applied the fix (the past tense was used in their response). The notes says that Authorization to insert correcting data was given in Pathway by their Customer Service Director, and does not mention any prior agreement from POCL. Note that the fix was applied centrally (not via explicit remote access to the counter terminal) but still obviously affected the data in offices, as was required to resolve the problem.

End of Involvement

180. I have been asked when my involvement in the Horizon IT System came to an end. I left the Post Office at the start of February 2000, as the Horizon Programme was wound down and moved to business as usual. At this point the responsibility for managing Pathway had migrated to the “Business as Usual” units which had been set up in POCL – for instance I believe there was the Business Service Management group managing and monitoring day-to-day operations. Work had started at that point on New Products, including Network Banking, but again in a “Business as Usual” manner, with new groups in POCL working on these.

181. In my last few weeks at The Post Office I wrote, at the invitation of the MD of the Post Office Network Unit (the owning business unit), a brain-dump paper which I called “*A Reflection on the Last 5 Years: Lessons, Issues and Key Points*”, and covered my outgoing view of Horizon (WITN0597_01/48, WITN05970123). This document is, I believe, useful as a contemporaneous view of the state of Horizon at that point, as well as trying to learn from the problems we had experienced in the previous five years.

182. For completeness, I should mention that during my subsequent time working for Escher Group Ltd (who acquired Anshe Ltd, the company I joined after leaving the Post Office), I did have occasional, rather superficial and intermittent, contact with Fujitsu mostly in support of certain attempts by Escher to sell further software to them for use in POCL/POL. I believe this included (unsuccessfully) attempting to sell an Escher accounting module (known as "Asset Manager") to Fujitsu, probably in around 2003, amongst others. At that time I believe that during meetings with Fujitsu the Horizon system was portrayed as being fairly successful.

Concerns when Rollout Restarted

183. I have been asked what concerns I had about the accounting integrity of Horizon when rollout recommenced in or around January 2000. I cannot remember any concerns specifically around Accounting Integrity itself when the rollout recommenced around January 2000, with the exception of the AIs which were already in progress on Data Integrity for EPOSS-TIP. I believe we followed due process on dealing with Acceptance Incidents and Rectifications, and everything that had been discovered had been progressed and fixed or had a plan to be fixed.

184. I did of course still have general concerns around the unproven nature of system, based around the challenges that we had had with attempting to gain Assurance throughout the previous few years, and which I have covered in detail earlier in this statement.

185. I believe that the feeling in POCL was that, despite all the problems and delays, we had finally, several years late, got to a system which could move to the next stage with rollout, and POCL could actually see *how it worked for real.* This did not mean that people felt the system was perfect, and certainly I had concerns about the lack of Assurance and how they had got to this point, but in the circumstances going cautiously to the next stage was maybe not unreasonable. The question to ask is maybe whether due caution was applied once rollout recommenced.

186. Personally, it felt unsatisfactory that due to the PFI contract and Pathway's interpretation, we had such a difficulty in providing assurance, with the problems with Acceptance proving the point and justifying our concerns. So my general feeling was that the system was not yet "proven" but that such proof would now have to come (or not) in live operation. To a degree, we had lost the previous battles and the only option was now trialling in live operation.

187. I have been asked what action I took to report concerns to others in POCL. My general concerns etc are documented in some detail the Horizon "brain-dump" document "*Lessons, Issues and Key Points*" (WITN0597_01/48, WITN05970123) mentioned earlier. The concerns about the lack of Assurance had been documented many times throughout the project and I am sure were well known in POCL.

188. However, that document had a Section C *“Future Risk Areas”*, and within that a topic *“C6. Some technical capability still to be proven”*. The introductory paragraphs to that section states:

a. *“This section outlines a number of technical areas which it would be wise to “watch”, although they are not the subject of any outstanding Acceptance Incidents. They should not be taken as predictions of things which are yet to go wrong, more as a list of possible areas of weakness which could “trip us up” in the future, especially as the number of offices increases at the planned rollout rate up to the target full population.”*

b. *“There is an argument, based on the same principles as used to justify, albeit not to great effect, the need for assurance during development, that states the need for ongoing assurance during the live operation of the service and associated system. We do not appear to have any contractual basis to seek such involvement, however we may wish to negotiate with Pathway at the relevant time to seek some confidence that these issues are indeed under control.”*

189. I think it is important to note that there should have been no surprises to anyone in POCL in that document – this was my attempt to bring together the big issues (as I saw them) in a single place for future use. I have no visibility of whether the information or suggestions in that document were taken forward by POCL.

Looking Back – POCL Scrutiny of Testing, Trial and Acceptance

190. I have been asked to look back and consider the effectiveness of POCL's testing, trial and acceptance of the Horizon IT System. Looking back, I feel that POCL performed as effective a scrutiny as was supported by the Contract, however that throughout the project we had been let down by the Contract, and in particular the influence of PFI. The replacement of the original Contract in mid-1999 with a non-PFI version, once the vast majority of the development had been completed without our scrutiny, could not cure those problems. As discussed earlier, the new Contract in 1999 did not open up any additional avenues for Assurance, and no opportunities for a pause for a full technical/design review were offered.

191. I believe that individual POCL staff generally did the best they could do given the nature of the contract(s) with Pathway and with Pathway's behaviour and attitude towards POCL, and towards Assurance in particular.

192. Looking at the documents for that time, it appears that POCL took a reasonably 'hard line' with Pathway during the Acceptance Process in 1999, at least as hard a line as the Contract allowed. I am sure at that point there was desire within POCL to get the project moving, and pressure being applied from Pathway, but POCL did hold out on the outstanding AIs to get a resolution.

193. I did not have any visibility of the final decision-making process which led to the rollout restarting.

194. The Acceptance Incident process, including the Dispute Process, was I believe followed rigorously by POCL, and Pathway did fix a large number of issues with Horizon during 1999. Sadly, Acceptance could only be withheld based on uncleared Acceptance Incidents or unmet Requirements, rather than unproven reliability characteristics.

195. In summary, I felt that the team did as well as could have been done given the Contract, but that the Contract was inadequate.

196. We had a Service Provider who largely blocked and dismissed our attempts at Assurance, and the nature of the contract prevented POCL from having adequate visibility of the problems it seems Pathway were having in Development. The Assurance Team members consistently flagged the problems with Assurance to the PDA and subsequently POCL Horizon management, and worked persistently and doggedly to get what they could from Pathway, but sadly it appeared that we were constrained by the Contract and no long-term solutions were found.

197. We know that in its submission to the DTI in 1999 Pathway continued to claim that the PDA had been "*managing ... in a manner inconsistent with the principles of PFI*", and claiming "*huge amount of senior management time being devoted to issues which were constantly raised by the PDA*" (WITN0597_01/49, WITN05970144). I believe that the problems with Horizon show that more, rather than less, Assurance activity by the PDA was needed.

198. Looking back I also find it somewhat surprising that despite the number of outside experts and reviews from various consulting firms, a “PFI-suitable” contract was not implemented – something which met the requirements of PFI but also allowed the PDA to effectively “police” the provider. Sadly, despite all the outside experts, I do not remember any such advice on how to manage Assurance in a PFI environment being given to us. In trying to manage our part of an IT procurement of this complexity under PFI rules it felt at times as if we were “*bleeding edge*”.

199. In particular, I believe we should have had further contract requirements around “*characteristics*” around reliability, integrity etc with measurable targets, and more onus on the Service Provider to actively prove compliance, as well as explicit requirements for the Service Provider to provide visibility of design documentation, fault logs, etc in a timely manner during development. The contract that we had gave Pathway every incentive to keep us shut out, treating our attempts at involvement for assurance as an unwelcome distraction, leaving us unsighted and Pathway free to make their own decisions on Quality.

200. I do remember, in 1999 perhaps, performing some research looking at industry standards for software characteristics, what we might call the “*-ities*”, and in particular looking at a standard ISO9126. This covered characteristics such as reliability, usability, efficiency, maintainability etc. If we had had some contractual support to evaluating Pathway against such characteristics, we might have had more success.

201. I also do remember raising a concern that there was not adequate “hostile testing” or stress testing visible to us, and wrote a paper proposing that we undertook a programme of “hostile testing”. The draft document “Hostile Testing” dated 6/10/1999 (WITN0597_01/50, WITN05970124) refers, although sadly I have not been able to locate a completed version.

Looking Back – Fitness for Purpose at Rollout

202. I have been asked to look back to consider whether the Horizon IT System was fit for purpose at the point it was rolled out, and if not, why it was accepted and rolled out. Looking back, given the somewhat chequered history of the development of Horizon, including the problems with Assurance, the withdrawal of BA, the number of Acceptance Incidents, the number of late changes to AIs, and the need for the Suspension of Rollout to get remediations completed, it would be hard to argue that the system or Pathway’s overall service would have magically become “*fit for purpose*” for a full national rollout and immediate switch to Business as Usual.

203. However, the expectation was, I believe, that there would be extensive monitoring/handholding during the rollout and first national running.

204. I do believe there was also a general view in POCL that they had to get this system into real live operation in a representative number of offices to really see how it operated, and therefore that it should commence rollout and then use the live operation for monitoring and to build up confidence in the system – and that they would not benefit from holding it back once known problems were fixed (even

if they could). I was not directly involved in the decision, which was taken at a far higher level, but that was my assumption. [I have been asked who I considered held this expectation; I cannot point to a specific individual or individuals, but I believe it was widely held that real experience of the system in live was needed to move the project forward.]

205. From a Contractual point of view, I am not sure whether POCL could have prevented rollout once Pathway had completed the AI remedial actions. I have seen that there was some opportunity for a “veto” from POCL on specific grounds but do not know what those grounds were.

206. Given the problems in 1999 from Acceptance, and throughout the project, I believe clearly that the system (and Pathway) had some significant way to go to gain confidence – to a degree in 1999 this was a classic “*don’t start from here*” situation. It is very difficult to retrofit quality to an IT system, and it would appear from our experience that Pathway had applied a “*fix on fail*” approach to some areas (e.g. EPOSS), with many fixes being applied in 1999 to get it through Acceptance.

207. This was not an ideal basis from which to move forward and it would have been appropriate to apply some healthy scepticism to the operation of the system over the first few years. I think a key question for the Inquiry to ask is what gave POCL such confidence in Horizon to start using it for prosecutions of Subpostmasters, especially after the rather chequered history of the system from 1996-2000 and in particular the experiences of 1999.

Other Matters to Assist the Chair

208. There are a number of other points which I would like to raise in this statement which I hope may assist the chair.

209. Firstly, much was made in the litigation and by Fraser J of the issue of “remote access” by Fujitsu to Horizon counters. I have no recollection of this being discussed by Pathway during the procurement or being documented by them in any of the documents such as the SADD (Service Architecture Definition Document), the SFS (Security Functional Specification) or the TED (Technical Environment Description) version of which we had sight during the procurement. I obviously do not have access to these documents but it would be illuminating to know whether this access was documented and how/when it was introduced in to Horizon – and whether any form of change control or impact assessment was performed. There was also a Penetration Testing exercise undertaken by, I believe, PA Consulting on behalf of the Programme around 1998, and it would be useful to know whether that feature was present at that time.

210. Secondly, I believe that significant changes were made to the accounting and reporting requirements on Horizon in the first few years of live running, including the removal of the Cash Account and replacement by a Branch Trading Statement in the early 2000s. I believe it would be beneficial for the Inquiry to investigate what changes were made and what, if any, improvements to working practices were introduced before these changes were implemented to avoid the quality problems that we had seen in 1998/9.

211. Thirdly, from my later experience with implementing counter automation systems for other Posts using the underlying Riposte product, I know the power of the “audit trail” provided by Riposte Message Server and what investigations can be performed by analysing the available data. Whilst I realize that Pathway’s EPOSS was a bespoke application, and I do not know in detail what data EPOSS stored in Riposte, I am surprised that more has not been made of the availability of this data in investigations regarding discrepancies in offices.

212. From what I recollect from the procurement, the Pathway solution was supposed to archive detailed message data to WORM (Write Once Read Many) disks for longer term retention, such that data would be available should it be needed for investigations or legal use. This should have made the provision of underlying office data for analysis relatively straightforward if required. This archive capability should have been described in the Pathway TED (Technical Environment Description) document, although I do not have access that document to check.

213. Fourthly, I would hope that the Inquiry will investigate why/how unexplained discrepancies and subsequent prosecutions occurred under two totally separate versions of Horizon – the original Horizon procured by the PDA as discussed in this statement, and the later Horizon HNG-X which had a totally different online architecture and was introduced around 2009. HNG-X was, I believe, a complete bottom-up redevelopment at the front end (counter) at least.

Statement of Truth

I believe the content of this statement to be true

Signed

GRO

Dated

7th September 2022

Index to First Witness Statement of Jeremy Peter Folkes

No	Exhibit Number	Document Description	URN
01	WITN0597_01/01	"Objectives of the Demonstrator Stream"	WITN05970101
02	WITN0597_01/02	"POCL Infrastructure Demo Strand – Summary of Demonstrator Activity"	WITN05970102
03	WITN0597_01/03	"Supplier Score in Respect of Value Factors"	POL00031154
04	WITN0597_01/04	"Final Evaluation & Selection: Final Team Report"	POL00028152
05	WITN0597_01/05	POCL Infrastructure Demo – Introductory Meeting	WITN05970140
06	WITN0597_01/06	"POCL Infrastructure Demo – Meeting Report #1"	WITN05970106
07	WITN0597_01/07	"POCL Infrastructure Demo – Meeting Report #2"	WITN05970107
08	WITN0597_01/08	"POCL Infrastructure Demo – Meeting Report #3"	WITN05970108
09	WITN0597_01/09	"POCL Infrastructure Demo – Meeting Report #4"	WITN05970141
10	WITN0597_01/10	"POCL Infrastructure Demo – Meeting Report #5"	WITN05970109
11	WITN0597_01/11	"POCL Infrastructure Demo – Meeting Report #7"	WITN05970139

12	WITN0597_01/12	"POCL Infrastructure/End-to-End Demo – Meeting Report - Escher Site Visit"	WITN05970142
13	WITN0597_01/13	"Note re splitting Pathway Risk re EPOSS"	WITN05970110
14	WITN0597_01/14	"Risk Register Analysis" – Alan Fowler	POL00028150
15	WITN0597_01/15	"Pathway Risk Response for PWY064"	FUJ00078025
16	WITN0597_01/16	"Pathway Risk Response for PWY066"	FUJ00078026
17	WITN0597_01/17	"Escher Dependency – An Analysis"	WITN05970117
18	WITN0597_01/18	"Pathway Risk Processes/Top Ten Risks : Status 8.9.95"	FUJ00078000
19	WITN0597_01/19	Fax from Bob King re Strategic Compliance and TIP interface	POL00031277
20	WITN0597_01/20	"Terms of Reference – Technical Assurance Forum (DRAFT)"	WITN05970138
21	WITN0597_01/21	"Technical Assurance Forum – Meeting 2 – Integrity (1)"	WITN05970129
22	WITN0597_01/22	"The Level of Information Needed for Technical Assurance"	WITN05970113

23	WITN0597_01/23	"Assuring Integrity, Accuracy and Robustness of the Service"	WITN05970116
24	WITN0597_01/24	"The Route to Acceptance Through Assurance and Testing"	WITN05970115
25	WITN0597_01/25	"Product Assurance – A Re-Think"	WITN05970118
26	WITN0597_01/26	"PDA Quality Review Comment Sheet for POCL Infrastructure Acceptance Specifications" – Jeremy Folkes comments 3/6/97.	FUJ00078984
27	WITN0597_01/27	"Fortnightly Report – period to 19/01/98"	WITN05970143
28	WITN0597_01/28	"Programme Review – Brainstorm on Suggestions"	WITN05970114
29	WITN0597_01/29	"Acceptance at Release Authorisation"	WITN05970119 Original copy of POL00028503
30	WITN0597_01/30	"Acceptance Board Minutes"	POL00028367
31	WITN0597_01/31	"Briefing on the New Horizon Contract"	WITN05970136
32	WITN0597_01/32	"Independent Consultant Review of BA/POCL Programme - Bird and Bird/Project Mentors Report"	POL00038828

33	WITN0597_01/33	"Notes from reading the Bird & Bird/Project Mentors Report"	WITN05970121
34	WITN0597_01/34	"Potential exposures from removal of DSS requirements/new contract"	WITN05970127
35	WITN0597_01/35	"Project Emerald - Option C - Considerations Around Future Use of Aspects of ICL Pathway Solution"	WITN05970146
36	WITN0597_01/36	"Live Trial Stressing – A Discussion Paper"	WITN05970147
37	WITN0597_01/37	Pack of AIs from 1999	POL00028357
38	WITN0597_01/38	"AI298 – System Stability"	WITN05970120
39	WITN0597_01/39	Acceptance Incident Workshop Pack 25 and 26 th August 1999	POL00028478
40	WITN0597_01/40	"Incident 298 (System Stability)"	WITN05970125
41	WITN0597_01/41	"Comments on 2/9/99 Rectification Plan for AI298"	WITN05970145
42	WITN0597_01/42	"Acceptance Headlines - input to HMT 20/10/99"	WITN05970130
43	WITN0597_01/43	"AI298 – Approaches to restoring stability and integrity"	WITN05970133

44	WITN0597_01/44	"Acceptance Workshop – ICL Pathway Action Record"	FUJ00079174
45	WITN0597_01/45	Rollout Decision Demand Position Paper	POL00028551
46	WITN0597_01/46	"Contingency Options for Non-Availability of EPOSS Feed to TIP"	WITN05970122
47	WITN0597_01/47	"ICL Pathway Progress Summary for Input to Horizon/Pathway Delivery Meeting 27 th October 1999"	FUJ00079184
48	WITN0597_01/48	"A Reflection on the Past Five Years: Lessons, Issues and Key Points"	WITN05970123
49	WITN0597_01/49	ICL Pathway Submission to Trade and Industry Select Committee, June 1999 (from parliament.uk website)	WITN05970144
50	WITN0597_01/50	"Hostile Testing – A Discussion Paper"	WITN05970124