Witness Name: Terence Paul Austin

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Dated: 13 September 2022

POST OFFICE HORIZON IT INQUIRY

FIRST WITNESS STATEMENT OF TERENCE PAUL AUSTIN

THIS STATEMENT IS PROVIDED IN RESPONSE TO THE RULE 9 REQUEST

NUMBER 1 DATED 7 JUNE 2022 FOR INFORMATION PURSUANT TO PHASE 2

OF INQUIRY: HORIZON IT SYSTEM: PROCUREMENT, DESIGN, PILOT, ROLL

OUT AND MODIFICATIONS.

I, Mr Terence Paul Austin, will say as follows:

INTRODUCTION

1. I have over 40 years' experience in the Information Technology sector leading large complex government and commercial programmes from the business requirements definition stage through to system implementation. In addition to ICL Pathway, projects included the UK Customer Billing system for Severn Trent Water, Branch Network System for Eurodollar/TSB, Corporation Tax and

the Self-Assessment system for the Inland Revenue and a complete technology refresh programme for the National Trust.

BACKGROUND

2. I joined the Fujitsu ICL bid team as Programme Director in 1995 to help formulate the proposal to deliver an automated benefit card system and electronic point of sale system for DSS/POCL. Following successful selection, I became responsible for delivering the IT Pathway Solution. As the system grew in size and complexity, I was appointed Systems Director as part of an organisational restructure. I left the programme in October 2000 shortly after rollout had commenced, because my experience and knowledge were no longer required following formal POCL acceptance of the system. The programme moved naturally from what was primarily a development organisational structure into a structure focusing on service management and operational support which required different managerial and technical expertise.

3. The aims and objectives of the £1b programme were two-fold, for the DSS they were to replace the paper-based methods of paying social security benefits fraud free with a magnetic stripe payment card and for POCL they were to automate the national network of post offices and introduce an electronic point of sale system (EPOSS). For ICL Pathway, the objective was to be awarded the DSS/POCL PFI contract and to deliver it successfully. In parallel, the company would also explore all opportunities to sell the solution to other post offices worldwide.

PROCUREMENT

4.   My involvement in the procurement process was to evaluate the system requirements specified in the Invitation to Tender document (ITT) and determine the ICL resources necessary and third parties needed to deliver the solution in the timescales defined.

5.   The delivery schedule for the solution was extremely ambitious and, in my opinion, could only be achieved by implementing what was known in the industry as a 'turn-key' or 'off the shelf' system. The time available from award of contract in May 1996 to the first implementation was only 18 weeks and only 10 months to carry out a fully functional live trial. This was only possible by integrating several existing products and interfacing with existing DSS and POCL systems. There was limited scope for any bespoke software development. With the benefit of hindsight, DSS/POCL seemed blissfully unaware that this was a consequence of the timescales set and gave the impression that they expected to specify their detailed requirements during the months running up to the live trial in March 1997.

6.   It was essential for ICL Pathway to have a baseline functional specification of their solution which had been demonstrated during the latter stages of the procurement activity. This was produced and a clause in the contract stated that this document must be signed off by DSS/POCL within 30 days of the award of contract. In addition, ICL Pathway assumed that the 289 'agreements to agree' would be resolved within 3 months as these included many essential non-functional requirements such as system security.

However, neither of these critical milestones were achieved placing the project at significant risk of failure.

7. A comprehensive and detailed history of the procurement process is described in the report on 'The Cancellation of the Benefits Payment Card project' produced by the National Audit Office published 18 August 2000 **RLIT0000001** [WITN0419_01/1]. All the relevant people in ICL Pathway, the DSS and POCL contributed to this report which in my opinion was accurate and well researched although it didn't address the obvious tensions between the DSS and POCL regarding the continuing use of the post office network to pay benefits. The DSS were trying to reduce the costs associated with benefit payments whereas POCL, an expensive option, needed the benefit business to sustain their network. The NAO concluded that there were various complex factors which contributed to the card project's failure and that Government should heed the lessons to be learnt.

INITIAL GO LIVE (IGL)

8. It is important to understand that the first two versions of the solution to be made available i.e. IGL & IGL2 were predominantly releases for the Benefit Payment Card aspects of the system and involved 10 Post Offices in Stroud paying Child Benefit only, this was subsequently increased to 205 offices in the north and south of the country. I do recall that during this time, very few software defects were identified, and we were surprised that the project was subsequently cancelled. There was very little functionality introduced for POCL consequently it has limited relevance to 'The Post Office Horizon IT Inquiry'. In fact, when the DSS made the decision to cancel the project in May 1999, all the relevant card

software was removed from the ICL Pathway solution. The POCL Horizon project only came into existence in the spring of 1998 and a new agreement with Post Office Counters Ltd signed in July 1999. Essentially, the first half of the development focused on the DSS requirement and the second half on the POCL functionality.

9. It became clear during the weeks following award of contract that the DSS/POCL required significant additional functionality which had not been previously specified. This meant that in many instances manual 'workarounds' were introduced rather than enhance the software because there was insufficient time available. It also became clear that the DSS CAPS interface was immature and poorly defined and subject to constant change. A CAPS Interface definition document should have made available shortly after award of contract, but this did not happen. There was no doubt that the DSS were the dominant partner, and the benefit payment functionality took precedence over the POCL EPOSS functionality which would be developed in parallel over a longer period using an iterative development approach. On the plus side, the initial go live system was delivered on time, and it worked well, containing very few software defects. In addition, the installation processes and the training for post masters was well received albeit it was on a much smaller scale than the forthcoming national rollout.

10. The lessons learnt from IGL from an ICL Pathway perspective are described in document **FUJ00058278** [WITN0419_01/2]. Other issues which came to light were that there was no single DSS/POCL business requirements authority, agreed change control process or effective management of system interfaces.

The Programme Delivery Authority (PDA) set up by DSS/POCL was unwieldy, ineffective and communication was haphazard and inconsistent. It was also crucial that the working relationship and transparency between the parties improved, particularly with the DSS. Their attitude was guarded, secretive and confrontational at times, this made developing a successful solution much more difficult, but I cannot shed any light on the reasons behind this behaviour. This conduct continued until DSS withdrew from the programme following 'cancellation'. As time progressed in the early days it became apparent that neither DSS or POCL were ready managerially or technically and their systems were not prepared for the solution they had procured, in particular the DSS CAPS system.

SUBSEQUENT RELEASES AND SYSTEM DEVELOPMENT

11.   Following on from IGL, I believe that two more releases were planned known as NR1, NR2 but after the DSS cancellation and the birth of Horizon these were renamed CSR and CSR+. There may have been other interim releases, but I would need to inspect the high level plans to be certain.

12.   The process for developing the ICL pathway element of the Horizon system was described in the Software Engineering Process document supported by various stage process documents such as design, development and testing which have not been made available to me. However, in my opinion these represented the very best in the industry and conformed to international standards at the time. It should also be noted that POCL approved all the software functional specifications and test plans and in many instances also witnessed the actual tests and the results achieved. The POCL personal

involved in the approval process would depend on the knowledge and skills required and the individual nominated would be listed in the relevant section of each document. Once approved a document would be maintained under formal change control. Tracking the original customer requirements through the design, development, testing and acceptance stages, was the most thorough and detailed process of its kind I had ever seen.

13. A comprehensive and sophisticated process for managing change to the solution was agreed by all parties whether the change was to the contract, approved documentation, software or baseline delivery plans. This was a critically important process because it enabled the programme to quantify the impact that change was having on the solution and the delivery schedule. A change could be instigated by the DSS, POCL or ICL Pathway (CCN, CR and/or CP) and would only be implemented if the implications were fully understood, costed and approved by the appropriate Change Control Board. ICL Pathway would assess the request in detail and estimate the costs and timescales involved. This would then be passed back to DSS/POCL who would decide whether to authorise the work. If approved, ICL Pathway would amend the various specifications and other supporting documents, amend and test the code and make it available in a future release. In some cases, the cost in manpower would be considerable. There was a fast-track procedure for urgent and critical change but even taking the time to evaluate a change could divert valuable resources. Coping with the number of essential software changes requested became a major issue for the programme in the latter stages but I was not party to how change was managed within the POCL domain.

DELAY

14. There were many technical challenges encountered during the development of the solution, but this was not unexpected with a system of this magnitude. These issues would be discussed, and resolutions agreed at the numerous architectural, design, performance, scalability and development forums and/or meetings created for this purpose. I cannot be specific without reviewing the various progress reports and issues log available at the time. What I can be certain of is that that the solution grew in size and complexity exponentially from that defined in the Invitation to Tender (ITT) and this presented a major challenge for ICL Pathway and its ability to maintain the delivery schedule.

15. System interfaces were well known in the industry for creating difficulties especially across ownership boundaries and Horizon was no exception e.g. Pathway to DSS systems and Pathway to POCL systems were certainly problematic. There is a view that the problems encountered with the ICL Pathway to CAPS interface were the main reason why the card project was cancelled.

16. The ICL Pathway Architecture comprised of four layers and the middleware which linked the front-end Microsoft based systems with the back-end Oracle based systems proved troublesome due to their differing architectural principles. This was a bit like trying to interface between Apple's iOS and an Android device in today's world. Additionally, providing acceptable desktop response times, managing the huge transaction volumes predicted, delivering state of the art back up & recovery capabilities, satisfying ground-breaking security requirements, and building the numerous hardware configurations to

handle the variety of testing requirements were all formidable challenges which had to be overcome. Other difficulties included the large number of post office staff required to be trained, the incredible speed of rollout and developing the ability to remotely install new software updates on the tills in the post offices overnight. Although the latter is commonplace nowadays, it was cutting edge technology at the time.

17. Inevitably, slippages and delays did occur, and it was not always evident who was responsible. There were lots of interdependencies and opportunities to misunderstand a requirement which would require rework or certain software functions would be underestimated. The ICL Pathway plan comprised of thousands of activities linked via many levels of detail, so slippage on one task wouldn't necessarily mean slippage to the overall schedule unless it was on the critical path. Whatever the case, actions would be taken to recover the situation, or to utilise the contingency built in at various points within the plan.

18. Having said that, I do not believe that ICL Pathway management was made aware of the extent of the problems that DSS and POCL were experiencing with their obligations and their IT systems throughout the development process.

19. I cannot remember whether the key milestones (e.g.start of live trial) for CSR or CSR+ were delayed, to determine that I would have to review the progress reports and delivery plan updates. The documents made available to the Inquiry are only a snapshot in time and it is necessary to follow an issue through to its closure to reach any meaningful conclusion.

20. There was a 'Risk Management Plan' **FUJ00077883** [WITN0419_01/3] which was reviewed and updated on a regular basis. This was an attempt to predict what events could happen during the course of development, estimate the cost, probability of it occurring and identify the mitigation actions. I do recall one such event which was caused by the Intel Corporation updating its chip technology (firmware) before all the desktop tills had been manufactured and delivered by Fujitsu. If this had not been addressed successfully, it would have resulted in a complete retest of the ICL Pathway solution and significant delays would have resulted. Fujitsu managed to obtain enough of the original chips worldwide and kept their production lines open until the required number of desktops had been delivered, a remarkable achievement.

21. The impact of any delay would depend on the party involved. For DSS it may undermine their Business Case as described in 'The Cancellation of the Benefits Payment Card project' produced by the National Audit Office, referred to earlier in this statement: **RLIT0000001** [WITN0419_01/1]. For ICL Pathway it would be increased cost in terms of additional resources either manpower or hardware equipment resulting in a worsening of their business case. For POCL, it would increase the time taken to automate their post office network.

ROLL OUT AND DEFECTS/SYSTEM ROBUSTNESS

22. As Systems Director I was aware of all the bugs, errors and defects within the ICL solution but only to the extent of ensuring that they were identified and documented at the earliest opportunity and that the highest priority issues were analysed and fixed as quickly as possible. Through this process, I did become aware of a quality issue with the early versions of the EPOSS product which

was created using a Rapid Application Development technique (RAD). This agile methodology was in its early stages of development in the 90's and was adopted when there was no detailed business requirement specification and the application had to be delivered quickly via a series of iterations with the end user. Due to its immaturity, it was rarely used for large systems where the requirement and design specifications had to be signed off before any work commenced, otherwise known as the 'waterfall approach'. The supporting documentation would instead be produced as the application developed. The absence of a detailed business requirement specification for EPOSS meant that this was the only way this functionality could be produced. A consequence of the RAD approach was that the design specifications had to be 'reverse engineered' from the code. Not ideal, but if done properly there should be no lasting implications.

23. In July 1997 the ICL Pathway Chief Architect and senior members of Escher, one of our partners who were experts in Microsoft messaging technology, concluded that the EPOSS application was not sufficiently robust and should be re-engineered by Escher to utilise the features offered by the Riposte software. Following the return of the product in November 1997, more functional changes were implemented, and a large number of fixes applied, but certain aspects of the software still appeared to be unstable. Consequently, in the autumn 1998 I asked for a Task Force to be created to establish the nature and cause of the outstanding defects and to fix them..

24. The Task Force comprised of seasoned IT professionals in multiple disciplines and some members of the team were concerned that the code may have

decayed due to the scale of the changes that had been applied since the product had returned from Escher, but others did not believe this to be the case. The Task Force did not achieve its primary objective to reduce the errors to near zero for a variety of reasons, but it did provide an invaluable insight into the root causes of the issues we were experiencing which were not all code related.

25. A correction action plan was then devised which adopted the recommendations which emerged from the Task Force report **FUJ00080690** [WITN0419_01/4, introduced more intensive testing at all levels and changes in personnel to improve the skill and competence of those involved in the corrective action activities

26. An internal audit report published in September 1999 recommended that we consider a re-design and re-write of EPOSS and this was reiterated in a Development Audit published in October 1999 **FUJ00079782** [WITN0419_01/5], the reasons given was the level of outstanding issues was still too high. This option was debated at length by senior members of the ICL Pathway management and technical teams and the outcome was that we should embark upon a major exercise to target the specific areas known to be source of most (circa 80%) of the issues identified which were error handling and printing. If this approach was unsuccessful, then a rewrite would be the only option available. However, the product did become stable, and the number of outstanding defects did fall within the levels defined in the acceptance criteria.

27. I cannot be certain whether the internal quality concerns were communicated to POCL but they were aware of the number of software errors (PinICL's) being detected, fixed and those still outstanding at particular point in time. In fact, they did raise an acceptance incident 298 to reflect this issue but this was formally closed by POCL late 1999. They were also aware of the functional shortcomings noted midway through the development and helped to address them.

28. Subsequently, the functional and design specifications, the test plans and results of the testing were subsequently signed off by POCL and formal acceptance was achieved following successful completion of the operational live trial in the spring 2000.

29. All the errors and defects identified in the ICL Pathway solution, their severity and their status were documented at every stage of the testing and release processes. It was accepted in the industry that the number of system defects would be commensurate with number of lines of code and their complexity. To that end, ICL Pathway conducted program specification and code reviews followed by rigorous and comprehensive testing. This comprised of unit and link testing, system testing, technical and non-functional testing, integration and end to end testing (E2E), model office testing (MOT) and rehearsals and finally live trials, all these were designed to progressively sift out errors and defects and confirm that the solution was robust and satisfied the customer requirements. Any areas of concern raised within the ICL Pathway solution would be evaluated by the technical teams, discussed at the appropriate management levels and addressed accordingly.

30. Occasionally, the number/type of outstanding incidents would be a serious cause for concern. One such view is documented in **POL00028429** [WITN0419_01/6] and is related to the interface with the POCL TIP system, but this simply reflects an uneasiness shown by those present that they may not all be satisfactorily resolved in the timescales required. If that had been the outcome, the system would not have achieved 'acceptance' and resulted in the inevitable delay to the start of rollout.

31. A decision to 'workaround' an issue would be made if a defect could not be fixed in time for the next scheduled software release. However, if it was not possible or acceptable to develop a manual workaround then the release would be delayed until the software could be fixed and the outcome verified. All 'workarounds' were agreed with POCL and fully documented at each release.

32. I was not aware of the bugs, errors and defects in the POCL systems, or the processes adopted to manage them unless it was an interface issue with a ICL Pathway module. On the other hand, POCL were made aware of every defect in the ICL Pathway solution and its progress through to resolution.

33. Turning to rollout phase, Mike Coombs was responsible for the ICL/Fujitsu elements of the actual rollout, I was responsible for developing the software to support the process and I left many months before rollout was completed. However, the rollout was technically and logistically extremely challenging, over 19,000 locations were involved and over 30,000 desktop terminals (Tills) to be installed at a rate of approx. 300 post offices per week. It demanded meticulous planning and preparation, rapid escalation of incidents and their resolution and

purpose-built software to satisfy this requirement. The timing and pace of rollout was defined in the contract and as far as I can remember this never changed. I was not privy to the factors which influenced the speed of deployment, but I understand from the NAO report **RLIT0000001** [WITN0419_01/1] that it was driven by the DSS Business case for card payments.

34. The rollout of Horizon commenced once formal acceptance of the ICL Pathway system had been achieved. To do this it was necessary to provide evidence that every functional requirement had been met, that all the necessary system documentation had been produced, that every priority defect had been resolved or an acceptable 'workaround' was available and that all the system engineering processes were documented and had achieved ISO 9001 standards confirmed by independent verification and certification. POCL's success/acceptance criteria was defined in **POL00029137** [WITN0419_01/4] plus later revisions, and had these not been met at the time, rollout would not have commenced.

35. POCL were certainly aware of all the outstanding issues in the ICL Pathway solution, but I cannot confirm that they were aware of all the issues within the Horizon system. Any concerns raise by POCL would have been addressed and resolved, had this not been the case, rollout would have been delayed until they were. A Release Notice and Known Problem Register (KPR) would have been published for the ICL Pathway software version used for the rollout.

36. I was not aware of any political pressure to commence roll-out when it did, this was determined simply by the readiness and robustness of the software. As far as I can recall, that during the period before I left the programme, it was

considered a huge success. That is not to say that it was without incident, but these were dealt with promptly and effectively to enable rollout to continue at the required pace.

37. This was one of the largest IT systems in the world and ICL Pathway was set up by Fujitsu/ICL to specifically manage, develop, integrate and rollout their solution. In addition to using their own resources they recruited specialist expertise where necessary.

38. Throughout the programme ICL and Fujitsu senior management were appraised of progress, risks and issues on a regular basis. In addition, all the partners met monthly at the Suppliers Forum to review progress, dependencies and issues, each company represented by their Managing Director or Chief Executive. Any areas of concern would be evaluated by the various technical teams, discussed at the appropriate management levels and addressed by devising a detailed corrective action plan followed by close monitoring of the outcome.

39. In the months prior to rollout, Fujitsu personnel came over from Japan to help with testing and defect management and reported daily back to senior Fujitsu personnel.

40. Resourcing for ICL Pathway was a constant issue due to the large staffing numbers and skills required but where shortfalls did arise every effort was made, including long hours and weekends, to ensure that the critical milestones were still achieved. In addition, the manpower was a mixture of permanent and contract staff which enabled the team to respond quickly to demands. However, there were occasions where specific activities were

adversely impacted by unexpected resignations and shortages in the marketplace causing the lower-level tasks to be replanned.

41. The talent and expertise in most disciplines in the very large ICL Pathway team was exceptional and, in some instances, the best available in the IT industry. Where specific knowledge and skill was required, ICL Pathway joined forces with companies (partners) who were experts in their field. Oracle UK for database systems, Microsoft for Windows based expertise, Energis for network communications, CISCO, Fujitsu, EMC, Sequent/IBM for Hardware, Tivoli/IBM for systems management and WTplc for post office surveys and preparations.

42. The company adopted best IT practice, processes, products and tools for reporting, planning and progress monitoring, to manage risk, to control change, for configuration management, to assist testing and introduced a transparent internal audit process to enhance the quality control and assurance procedures. I have worked with other major IT integrators such as EDS, BT, IBM and CSC and in my opinion, they were no more equipped to take on a programme of this magnitude.

43. I am not able to say whether the oversight from Government or senior POCL management was sufficient for a system of this enormity and significance, but I can say that the level of POCL intervention and assurance activities in the ICL Pathway processes and deliverables was considerable in the second half of the programme as shown in an early version of the Horizon Plan for Acceptance **POL00029137** [WITN0419_01/4].

GENERAL

44. Over 20 years have elapsed since I left the programme, so it is difficult to recall aspects that Fujitsu/ ICL may have done differently. In hindsight, taking on a project without an agreed functional requirement, with such a large number of 'agreements to agree' and with so many customer contractual obligations to fulfil (CARs – Contracting Authorities Responsibilities), was high risk. The level of 'requirements creep' was substantial, causing ICL Pathway to be reactive, constantly recruiting more resources and continually evolving. The final solution which achieved customer acceptance bore little resemblance to the original requirement defined in the Invitation to Tender (ITT).

45. I do believe that there was an overriding sense of achievement and pride amongst the majority of those who were involved in the ICL Pathway solution. It required great deal of technical expertise, commitment, determination and sheer hard work to overcome all the obstacles and challenges that were faced by the team but at no stage did I feel that we would deliver a poor quality product. All the known defects were listed at the start of rollout and these were scheduled to be fixed in later releases. The system architecture and complex functionality was impressive and would bear scrutiny by any external organisation at the time. The acceptance process was both comprehensive and demanding and the quantity and quality of the system documentation produced was exceptional.

Statement of Truth

I believe the content of this statement to be true.

Signed: GRO

Dated: 13/9/2022

Statement of Truth

Index to First Witness Statement of Terence Paul Austin

No.	Exhibit Number	Document Description	Control Number	URN	
1	WITN0419_01/1	National Audit Office Report - The Cancellation of the Benefits Card Project	RLIT0000001	RLIT0000001	
2	WITN0419_01/2	Initial Go Live - Lessons Learnt report	POINQ0064449F	FUJ00058278	
3	WITN0419_01/3	Risk Register (May 1998 - April 2000)	POINQ0067471F	FUJ00077883	
4	WITN0419_01/4	Report on the EPOSS PinICL Task Force	POINQ0086861F	FUJ00080690	
5	WITN0419_01/5	ICL Pathway CSR+ Development Audit v1	POINQ0085953F	FUJ00079782	
6	WITN0419_01/6	Memo from Andrew Simpkins, Horizon Release Management re Horizon Testing & Programme Plan - Current Status	POL-0024911	POL00028429	
7	WITN0419_01/7	Horizon Plan for Acceptance During the ICL Pathway Operational Trial (Version 2)	POL-0025619	POL00029137	