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PWY/JFO/005**POCL Infrastructure Demo - Meeting Report****Supplier:** Pathway**Date:** 29 November 1995**Attendees:****BA/POCL**Jeremy Folkes
Bob Booth**Supplier**Martyn Bennett (Risks - part)
Dave Cooke
Tony Hayward (Network - part)
Martin Johnston
David Shepherd (BT communications
management, partnered onto
ICL)
Bernard St Louis (BT Sys Engineer)
Roger Jones (pm - Riposte)
Dave Hollingsworth (pm - Riposte)
Martin McAdam (An Post - part)**Purpose:**

Fifth "POCL Infrastructure" demonstrator meeting, concentrating on low volume Post Offices and peripherals, BT ISDN and Riposte.

Items of Note:**1. Actions from last meeting:**

- APPU loan - awaiting SP response to covering letter prior to its dispatch.
- Bar-codes, steer current requirement still 80mm 1-D. All comments on OCR and cost differentials have been flagged to the programme. Still require a cost indication of 110mm 1-D reader. SP is looking at Nippondenso that goes up to 100mm with CCD, SP asked if can sub-equip, steer that this becomes a pain for customers and only applicable for large offices - so small percentage saving - paper bills are not regionally bound, and sub-equipping gives other problems.
- Back office impact printing. Repeated steer no current requirement, and believe that such a requirement would be unlikely.
- Thermal printing - discussed, paper received (data from various manufacturers) - different paper type have different characteristics. Looking at two part carbon BPS slip for office printing, with pre-printed declarations (saving time and noise in the office); storage thereafter may be easier than tally roll cut-offs - may use an Axiohm thermal tally / impact slip - details passed over. Noted that tally roll for AP is used for receipts, with APT having carbon, and ECCO having different clerk copy to assist in re-keying.
- Dongles - still under design review. Question relates to how Pathway will maintain strong identity and sequence numbering in the terminal. *"No progress as Tony and John Dicks have been away for the week, even though Mike Murphy brought this up ... believe that terminal identity may be better to be distributed centrally."* - Tony. JF pointed out strong identity was the issue with monotonic sequencing and all we were going was asking how they were going to meet Mike Murphy's requirement - and that he was suggesting dongle or banding on smart card. In Mike's phrase "Pathway haven't got a clue" on this issue, and not only missed the point but started

RESTRICTED - COMMERCIAL

PWY/JFO/005

digging big holes and jumping in. They seem very sensitive to what Mike Murphy stated earlier, Martin Johnson was getting fairly aggressive by the end of this.

- Plug-in hard disk - decision extant, pricing decision versus risk. Current view is that costing will be too high, but market is changing as media costs are dropping and may become attractive. (£300-400 per PO for 10,000 PO's, looking at the overall cost, makes a high contribution). Single position office recovery to be addressed in a brief paper (useful if other recovery / failure scenarios were covered) by 13/12.
- Network Overview update due today - received.
- Power fail closure conditions. Query still with requirements.
- System management times etc. will be covered today.

2. Low volume Post Offices and peripherals:

- Explained the issue, that for a subset of outlets at the low end of transaction volumes, a PC with n peripherals was not likely to be so acceptable, however, the overall cost impact on the SP of providing a low end solution needs to be understood. The POCL desire is for a common technology, interpreted to mean an ability to perform the same functions throughout. As a minimum BA and AP (with smart card) are the mandatory minimum. The ability for full EPOS (with cash account etc.) *may* not be needed, especially for non-CA offices. Options sought. Stressed that still a programme issue. This had been all explained in earlier discussions but SP seemed only today to understand the drivers.
- SP investigated Fortronic easy-pay systems etc. but view of that diverging from universal solution was not thought viable. A reduced specification PC was preferred though the main concern held by the SP was coping for subsequent needs to upgrade this subset as requirements evolved, and being constrained by their low end choice.
- SP view that EPOS capture would not be a great overhead if BA and AP were being captured, though A4 printing of cash account would be.
- SP requested numbers of offices likely to be low-end. Steer that volume was largely dependant on the SP solution, but likely key factors were: transaction level, range of services offered, future-proof constraint the SP solution imposed.
- It was recognised that a critical mass was required to make a divergence from the universal solution viable in cost terms - absolute number may negate any options. Steer that will be less than 5000 terminals affected was given, but a rider that this would depend on SP solution, both function and cost. SP pointed out that notebook + extras in a photographers case may well be more expensive, though more acceptable in terms of space and clutter.
- If space is not an issue then cost cutting for lower volumes are SP has "*thought through*", possibly with same software but reduced function available.
- JF explained that space was the key issue here, as was ease of set up in community offices that would not have a permanent set up. In the past the Post Office produced a Small Office Terminal (APT), with smart, magnetic, QWERTY etc. as nothing was suitable in a single box with minimum wires. The market may now have sufficiently changed for a standard offering to be suitable.
- Paper to be produced taking the above on board 13/12. Pathway are employing a firm of Swedish design consultants as input to the ergonomics/counter housing, and this may be of use.

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PWY/JFO/005

- For a housing for the card peripherals, SP is looking to minimise keyboard use and therefore its presence on the desk, and would look to provide a separate magnetic/smart housing approach. Otherwise would incorporate on the keyboard an ICL retail unit have a swipe/smart housing, detail handed out - see query re: ISO 7816.
- Eventual aim is to have a single unit with one cable.

3. BT ISDN-B:

- BT personnel were not ISDN experts, but wanted get questions and then take up with relevant portions of BT.
- Closed User Group
 - Latest information on target for Spring 1997, and this is dictated by GPT software release. BT ISDN product line tried to advance this without success, largely down to the GPT commitments, and will be national available across all exchange types (apparently not a problem with AXE-10 etc.)
 - Inter-work with other licensed operators - e.g. Hull - is an issue as BT have no control over this, only OFTEL can push this. BT to respond.
 - Issue of CUG over an interconnect (between say BT and Mercury) is to be clarified.
 - Outline of how it will operate is required, e.g. is it by line or centrally controlled.
 - Given the available date, at the start of rollout it will not be available and plans for the migration to a CUG need to be covered, especially as it is a 24 hour operation.
 - How churn is handled (for CUG changes) also needs documentation.
 - Number portability may come into this, along with presentation CLI, and how further number changes will be handled.
- Presentation CLI
 - BT not aware of any cases of fraudulent CLI generation and logistics involved in this make it, in BST opinion, unlikely.
 - Across an interconnect, could a BT CLI be presented in place of the originators? Given the rise in the number of companies this may be an issue. BT to respond.
 - There is a international standard *User Provided Unscreened* CLI (in ISDN) that allows a user to generate a CLI, with a marker informing the called party that the CLI was user generated. BT has no plans to introduce User Provided Unscreened.
 - If Mercury offer this (presentation CLI different from real CLI), then BT would probably also have to offer it, irrespective of their current marketing stance. BT to respond.
 - OFTEL have a working group studying CLI, and one of their considerations is to prevent fraud. This working group has not yet reported back. From visibility of the Industry Presentation CLI working group, fraud is not high on their list of priorities (this is one of the areas JF has been flagging with his TMA hat elsewhere!).
- ISDN service in rural areas:

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PWY/JFO/005

- Currently BT ISDN is available to 98% UK businesses with ISDN. This is very low, especially as a lot of the community / rural Post Offices will not be business premises. ISDN-2 is normally within 5km of a service point, though trials are scheduled for March 1996 to extend the reach, and if successful will increase the standard limit to 10km of local exchange. Method by which this will be achieved is not known, BT to update.
- Moving from IMUX to embedded line cards for System-X, with the IMUX being re-deployed to other exchanges is believed to be one of the factors in increasing range of ISDN.
- BT have a modelling tool based on grid-references, and this may take the postal information of offices to determine coverage and "problem offices".
- There are believed to be intermediate workarounds using IMUX's, but BT keen on knowing 5, 8, 10km rings, and would wish to leave furthest away until last if possible to reduce their headaches and costs. Steer, liable to be other drivers than just BT range of exchange - though Pathway need to feed this information into the implementation strand. The drivers may be geographic demarcation based on roll out of cards and as such an interim solution may be required.
- IMUX/Line card change at exchange does not impact the office (the new style NTE-8 clamshell is *apparently* totally unrelated to the change to line cards). This is at odds with statements from elsewhere in BT which link the change of NTE to the change of exchange technology.
- Availability situation in Hull?
- LTE lock out
 - No lock out as such, however there are in-built conditions, e.g. short circuit, B-line to earth, so under local loop fault condition line is disconnected and will need to be re-set.
 - BT to check that faults are properly flagged. The scenario of a switched off PC containing a card does should no longer cause a problem as the NTE-8 is powered over the line and this is what the exchange talks to.
 - Can get line-lock out if there are around 5 faults in an hour. BT will check exact circumstances.
 - ISDN-2 does not have pro-active monitoring, in event of fault condition the customer will report the fault. Line lock-outs remain until customer reported. BT to check.
- Does ISDN have BABT black list akin to modems?
 - BT to check. And then how the host can contact it if tried several times without success and is thus black-listed will be addressed if needed?
- Logistics, how can BT gear up for 20,000 lines.
 - BT unclear exactly how roll out is intended, but is likely to base on National Lottery experience, with dedicated teams on a regional basis. Seem to view ALPS as the "how not to" experience.
- Do not anticipate a reduction in availability as move to line cards and longer lines, and as availability is a regulated service no figures are available, but do have successful call figures. JF to look up on his book case - recent BTEJ article.
- BT have figures for local loop for risk management but not to hand, and likely to be very sensitive and speculative. BT record faults in Green and Red books.

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PWY/JFO/005

- Pathway are developing a "Call Management System" to handle the set-up of ISDN calls - this seems to be a separate application, outwith Riposte. This is the subject of a separate paper (requested).

4. System Management paper:

- Visibility on distribution of new release.
 - Demonstration system is 6MB compressed, over ISDN is a 20 minute download.
 - A Riposte module, a typical compressed module 75K, 12 seconds
 - Reference data 100K, 16 seconds
- Would be downloading in advance with a flag acknowledging receipt and an activation date. Would need to know, with number of lines proposed how long it would take. If 720 ISDN lines, then the reference data example would be under an hour, however the management / viability of hitting all the offices is the real issue, uncompressing, disk space available ...
- Free standing response required for risk 48 by 8/12, fax for 9 am to Bob.

5. Riposte

- Roger Jones gave out some supplementary notes which were then walked through. The notes contained the caveat that these were based on his previous understanding, and that he had not been able to check with Escher since last meeting due to the Thanksgiving Holiday in the US. Demonstrates the reliance on Escher in US.
- Went over the failure in the walkthrough case in tedious detail (again) with Pathway tripping over themselves, and Martin Johnson trying (badly) to show he understood something. **Pathway seemed keener to rubbish the specific example we had come up with, rather than addressing the issue.** Seemed to miss the point that Mike Murphy had acknowledged it and did have an answer (using strong identity - see earlier) but Pathway were unable to explain.
- SP intimated that there may be an operational requirement for all PCs and the LAN etc. to be up prior to re-starting a failed office, hopefully this kind of information will be communicated rather than extracted.
- Roger Jones guess that sufficient period set so data is not lost (not tied to business events (see JM)). Need to remember that Riposte allows access to the correspondence server so data may still be accessible in the office. Speak to JM/Naresh about the application having access over the WAN to centrally held data, as the impression is everything is held in the local journal file (with ancillary index files) so how they bridge the WAN needs too be known.
- An Post archiving will not be the same for Pathway, as An Post distributes encrypted files containing payment data, whilst in BA/POCL Escher want to go back to using message replication. Archiving - actually retention - seems to be constrained to be longer than the life of the longest payment record (13 week life or 43 days, whatever) as all records are sequenced numbered and can't knock out messages in the middle of a sequence. But *"Mortality and inception are application specific"* (Roger Jones). All very confused.

RESTRICTED - COMMERCIAL

PWY/JFO/005

- Apparently An Post have a message *per file* in the log - we will have all payment records in the file. Another potentially significant change.
- If corruption is detected, then *may* just replace a corrupt record, but as only write to the journal it is unclear how this could be achieved ? The problem of determining which record is corrupt occurs as a journal has all the nodes data interspersed in node sequence, but with random interleave of nodes. *May* just throw everything away from just below the record and then re-synchronise, due to the perceived infrequency, this approach *may* be the one Escher are taking. But Pathway are not sure!
- An Post have two correspondence servers (constrained by number of X.25 cards that fit into a server rather than anything else) that partition the Post Offices between them and replicate between themselves. Backup is done by a traditional backup mechanism.
- Currently An Post only has one group available to the correspondence server (Grof 0) which gives membership to all groups. Within BA/POCL each Post Office will be a group, and at the correspondence server, the group will contain three correspondence servers and all the office nodes.
- Marker records have gone back to containing the tidemarks for all the nodes that a machine is aware of.
- Hierarchical indices and CRCs are new and for BA/POCL for performance based on the size of the programme - 40,000 nodes all being replicated at the correspondence server level.
- There is a proposed re-design for two level markers for exchanging details between the correspondence servers, and optimised to fit in a UDP packet. Between servers the exchange will be of high level markers (CRC of a set of low level markers), and as low level markers contribute to the high level markers if a change is detected, the low level markers are then asked for, and then records that have changed as indicated by the low level markers (these are at group level). As the high level markers are a summary, they can exchange more frequently as less data is now involved.
- When reference data changes, a Persistent Journal Object is written into each groups archive that it is to be distributed to at the correspondence layer, and these journal entries are replicated out from the server in the normal Riposte manner.
- Another BA/POCL enhancement under way is to have a higher level that can logically write to all groups.
- Had not thought of RDMS - have other SPs ? Steer that flat file will appear from "TIP" and a box at the campus level would inject into Riposte, need to consider regional portions as well.
- Another extremely frustrating, contradictory day. Pathway seem afraid to admit that they are changing Riposte. On one hand it is of concern as the changes reduce the value of reference sites / track record, on the other it is good at showing they recognise that the product is not perfect and may need changing for the higher volume environment that they are proposing it for. However, the secretive and ill-informed attitude is damaging credibility and amplifying our own doubts over the viability of the product.

6. Reviewed Risk Register:

- Risk 11 - Impact of keyboard/touch-screen on transaction times. Functional Specification has given to Application team, showing screen shots and design

RESTRICTED - COMMERCIAL

PWY/JFO/005

approach, this was to have been passed on but due to level of change, Pathway decided not to give us copy until version 2, due 5/12. Draft OPS menu strategy handed over. JF to talk to JM - JM says he doubt if this document would help. Copy of version 1 received by post from Pathway 1st Dec. anyway.

- Risk 9 - Scalability and manageability. Discussed last week; paper extant, SP happy that they can scale, we *may* downgrade from last weeks discussion to B1, and it is hoped that the visit to Escher coupled with the paper should be able to clear this. After the afternoon Riposte discussion any downgrade seems most unlikely.
- Risk 48 - Distribution of software. Paper received last week, reviewed as part of this meeting. Paper did not really address issues.
- Risk 19 - Low volume equipment. Discuss today with peripherals. Risk remains, though SP now has a better understanding of the background to the question.

Note: The risks were reviewed at the start of the meeting, however, due to time constraints, they were not reviewed at the end of the meeting.

7. Miscellaneous:

- Offer of ECCO+ demo at Terminal House was mentioned during discussion on print requirements at the counter. Dave Cooke seemed keen but Martin Johnson worried about whether they'd have time! Bob to see if the ECCO file formats can be made available in the demonstration room.
- Steer that there is an interest in ability to incorporate CRISP into the SP solution was now being expressed. This would require the control of a cash drawer by the SP's solution, and the standard EPOS stock ordering type information, which is currently polled by a HP 3000 system (daily/weekly) that CRISP offers would need to be available. There are a large number of primarily bar-coded items handled by CRISP, and currently the CRISP units are treated as a single stock unit within the office.
- SP queried relationship with Riva. Steer that Riva won the contract to provide the previous system and the Post Office is not believed to have ties to Riva for CRISP's replacement. Checked with Torstein afterwards, looks as if Riva may think they have automatically got the replacement but this is not firm.
- JF enquired if the OCR device that reads a standard font, and can read MICR (E13-B) on cheques using the OCR facility. SP would need to investigate this but believe their hardware will support this. SP to confirm.

RESTRICTED - COMMERCIAL

PWY/JFO/005**Papers Received:**

- "Riposte Architecture - supplementary notes" (Roger Jones, undated)
- "The OPS menu strategy " - Issue 0.1 dated 29/11/95 (draft)
- "Thermal Paper Archival Life" - dated 28/11/95
- "Network Overview" Version 2 dated 27/11/95
- "Axiohm 7156 Receipt & Slip Point-of-Sale Printer" flimsy
- "ICL Card Reader FCR20RS" flimsy (both magnetic and smart complying to 7816 /1, /2 and /3 with caveats).

Next meeting:

No meeting organised (site visits etc.), but outstanding issues are:

- Detailed changes inside Riposte 32 extant
- User administration
- Riposte Scalability Risk Response
- Call Management paper
- System Management/Downloading paper

Requirements Queries:

Query	Steer/Recommendation	Strand	Date Req'd
Is the 110mm big enough to cope with the variable length bar codes?	Steer, been looking at this, but is an evolving standard with the RECs. 110mm believed OK.	Infra	12/12
Receipt retention for AP (and others) within office and/or centrally. Period of retention and why?	Steer, will depend on SP solution as is currently used for recovery; to determine what transactions go to which client; possibly also for legal reasons.	Infra	12/12
The proposed smart card reader appears to offer only a fixed 5v programming voltage (Vp). Is this sufficient? Do we wish to force full compliance?	Believe the full ISO 7816-3 and -4 requires a programmable Vp (something like up to 25v in 0.1v steps). The existing GEMPLUS GCI200 used in the APT gives this. May be worth making requirement explicit.	Infra	12/12
Pathway have asked at various times for samples of paper types / print types that need to be printed. Still not received.	Get examples of current pre-printed forms to Pathway (with caveat that only examples).	Warren / Dave Thorne	Bob to chase
Worked example requested for Giro print outs?	From kit at TH	D Thorne	Bob to chase

Jeremy Folkes & Bob Booth 03/12/95