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RESTRICTED - COMMERCIAL

PWY/JFO/007

POCL Infrastructure Demo - Meeting Report

Supplier: Pathway **Date**: 11 January 1996

Attendees:

BA/POCL	**Supplier**
Jeremy Folkes	Martyn Bennett (Risks - part)
Bob Booth	Dave Cooke
Steve Grayston	Tony Hayward
	Martin Johnston (morning and close)
	Mark Jarosz (until 15:55)
	Dave Hollingsworth

Purpose:

Seventh "POCL Infrastructure" demonstrator meeting - concentrating on closing down the demonstration strand, ensuring that both the Programme and Service Provider have a clear understanding of the state of topics, with agreed with delivery dates for outstanding actions.

Items of Note:

1. Communications

- Correspondence server, System Management Server or CMS/PMS machine(s) physically connected to the Campus LAN. TIP/MIS on one campus, CMS/PMS on the other using fast ethernet (FDDI option). Skewed loading will therefore be seen. Will load share normally but each campus can sustain full load.
- 2 types of gateway
    - IP to ISDN - number is determined by the number of ISDN channels, and gateways will be accessed by one phone number on a hunt group. Predicted load can be serviced by 540 B channels, and as may loose 1 campus gives 6 gateways on each campus (based on 3 PRIs in a hunt group - talking to 3-COM and Cisco - bespoke RISC and integrated circuits with high speed backbone ...). (At least one gateway per site). So if 6 gateways per campus, then will have 12 phone numbers. (Hunt group can only exist within a single exchange group).

      These gateways can connect in high speed serial lines, and these would then rive a rack of modems (sufficient for call concurrence), and multiplex - somehow - into the gateway.
        - Over ISDN use CLI and then PPP to use CHAP for password verification.
        - Over PSTN/GSM use RAS with call back and CHAP - would see the line being up all the time.
        - So order is ISDN then PSTN then GSM.
    - Inter campus gateway, one on each site. In fall back CAPS line may be used for TMS. Gateways will talk to each other to determine best cost routing, and fault detection / recovery.
- Most Post Offices have a single ISDN B. Very large offices may have 2 diversely routed (design does not preclude and as far as paper service levels that are given and their understanding of availability do not feel it is required, but "just in case", as the design allows serving to continue without communications, however re-engineering may put a higher communication availability and thus the option is

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there), remote and mobile may not have ISDN. Mobile will use GSM, and if neither ISDN or GSM then PSTN.

- IP addressing
  - The host on the site decides the routing by using the class A to select the relevant gateway. This helps point to a gateway at the same campus.
  - Servers in the office have an address within the office, and one for each of the correspondence servers; others within the office have one address only.
  - A given IP/ISDN gateway is a primary gateway for a given class A.
  - If an office calls the TMS and is engaged, it will use the secondary or down the list until gets to the TMS. TMS will respond back through its favourite gateway and establish a call through the other ISDN channel.
  - NT will get RIP in next release - where they are informed of what gateway is dealing with what to track
  - Gateways are programmed with masks. The gateways memory is used for both look ups and datagram buffering.

Class group	A	B	C	D	E	F
Primary Router / Gateway	RA1	RA2	RA3	RB1	RB2	RB3
Secondary (at same site)	RA4	RA5	RA6			
Tertiary at other site	RB4	RB5	RB6			

  - May have more than just the 6 class A segments, with the secondary and tertiary gateways also primary and secondary etc.
  - So changing a gateway that the post office calls is quite complex.
  - GSM not considered in detail.
  - Looking at ISDN Riposte only
  - Office initiates:
    - When an office send a correspondence server datagram, the choosing of which to use is not yet decided, (one address on LAN A at TMS and other on LAN B for the other CS at TMS).
    - Winsock -> UDP -> IP as IP is not local talks to NDIS driver, the NDIS driver establishes if a call is up or not. If no call then establishes call, and once enabled at PPP level, flags to IP level that it is available and Winsock is then unblocked. The Diva adapter (Eicon) establishes the call, and the TMS gateway routes the IP packet containing the datagram to the CS. If it has not sent a marker within the marker exchange period one is sent, and replication may then occur.
    - As there is a high priority message, then if start sending and get no errors, assumes the link is up and does the marker exchange. Flow control is by the UDP packet being blocked at IP/NDIS level.
    - Link is then closed:
      - when line goes idle both ends have an idle detection and can close the line down (not the normal manner).
      - Riposte will bring the call down itself, talking to the NDIS driver, Riposte is aware if machines are expecting a response, and will be augmented by how long the call has been up. This processing only occurs within the Post Office Riposte.
    - Riposte has a set off rules on replication, and depends on whether node it is replicating to is connected or high priority. Independent there is a

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marker exchange time period and/or volume to replicate. Include in tidy up paper.

- TMS initiation:
  - packet arrives at gateway at TMS, if no call is in progress from the primary gateway at which the packet arrives, a call is established and then sent to the workstation.
  - Same rules for TMS triggering calls as for the office, but only idle time at TMS end to bring line down, idle time at office and no message waiting in the office.

- High priority messages usually require a reply and this is atomic, so if this fails - e.g. discard at CS - will be resent.

2. Reviewed Risk Register:

- Risk 11 - Impact of keyboard/touch-screen on transaction times. Selection of products not clear and is main issue as can not fit as many products on a screen as a keyboard, as select, read screen, select etc., need confidence that this does not draw out transaction times. Fallback is keyboard, most used will be top level, next screen, others can be via PLU. Risk will be reviewed in light of paper received. Risk since closed - to be handled though over HCI work.
- Risk 9 - Scalability and manageability. Recommend to reduce to B1, discuss later.
- Risk 48 - Distribution of software. Will be cleared.
- Risk 19 - Low volume equipment. Risk remains, though SP now has a better understanding of the background to the question.
- Risk 64 - will have a removable disk in single position offices, in a 5.25 bay and will be a standard item. Expect to clear.
- Risk 65 - Security of data between OP and TMS. Will be covered by CHAP etc. Paper. Stressed our need was for authentication, we do not seen any widespread need for encryption.
- Risk 66 - Strong sequence numbering within Riposte. Pathway approach is that the failure scenarios where these problems may occur are insignificant and do not warrant cost given correct operational procedures. Background to this is that Escher still do not seem to accept this and views this as necessary, especially as Escher are the Riposte experts, and prime contractors may be seen to be gating it from an accountants viewpoint. Stressed we need confidence that Escher accept dongles are not required.
- Risk 67 - Effect of PMS/CMS traffic on existing TMS modelling. Paper to be supplied.
- Risk 68 - Computer sites within 15 miles of each other. Trade off of costs as Girobank / Alliance and Leicester believe they can get staffing reductions and fits within the Bank Of England requirements. Paper to document the workings behind these statements.
- Risk 70 - Use of RPC between UNIX and NT. Pathway attempting to verify at the moment.
- Martyn seemed very keen to kill the risk register and stop the Demonstrator - or anyone else - adding to it!!

3. Failure within the office

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- If peripherals fail, simple replacement. General principle is whole unit replacement, and is true of all processor elements. Minimum engineering and user time, and will use ICL Sorbus engineers.
- Single position office - intend to have a hard disk exchange facility. PCMCIA is too expensive, and looking at a 5.25 bay disk which can be easily removed and replaced to protect against non-replicated data.
    - Whilst system is down, revert to manual, BES, APS, EPOS, zip-zap and turn down smart.
    - On a dead hard disk replicates from the CS. Unclear if the session is bound or transaction by transaction and impact of discards, can detect incomplete sessions ... with John Meagher.
    - On a dead PSU the hard disk is swapped.
    - In addition a RAM drive holding data that has not been flushed will flush this to the TMS on failure of the hard disk. Not thought through ? Sounded like a clever idea which would be fragile and difficult to manage.
- Multi-position - as single but with surety given by Riposte that data is quite up to date.

4. Miscellaneous:

- SP noted the 10,500 Schlumberger requirement and queried this. Steer that currently zero live Schlumberger, but business will not move from the 10,500 target and business would not want to be constrained from reaching that penetration. The APPU technical specification is not yet available due to the technology partner issues.
- Routers have own management software but as a flat network may not be needed.
- Getting Microsoft to feed in how their SMS is best configured for usage and security.
- Formal response that ISO 7816-3 with full programming voltage range is required.
- Steer that non-standard memory cards are not currently explicit in the requiements but would be good to be implicit and that the bar code standards will be re-issued to cover the other standard bar codes.
- Power / telecommunication failure. The formal position is that the office will not be forced to close as long as it is safe and practical to continue serving.
- EPOS and OSS Functional Specification version 2 - see John Meagher.

Papers Received:

- Pathway Desktop Menu Structure Version 1.0 Dated 11/01/96
- Pathway risk response 9a. version 1 dated 05/01/96

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Papers Due from Pathway:

- Information on 3-COM and Cisco IP / ISDN routers and summary of the SP requirements. Due 17-Jan-96. Cisco information received.
- 466 response has a query on impact printer, this will be re-issued.
- Paper "Call management and Network Design" how IP on ISDN and IP on GSM/PSTN works based on this meetings discussion - including addressing schema, and fallback / failure. How is marker exchange initiated once a high priority message has been sent. The issue of passing user identities and passwords and CHAP (Challenge Handshake Authentication Protocol). To include whole the system management facilities ties together. Advise of date by 16-Jan-96 10-15 pages, provisionally for w/c 22-Jan-96. This will be raised as a Q risk to track it. JF. At time of write up, paper received, but very drafty will be re-submitted.
- Need to confirm whether Riposte discards as well as IP discarding. Further information on "new" Riposte file store, partitioning by nodes for large population and the current flat file structure was not deemed suitable. Pathway are awaiting details from Escher. Topology supervisor - concept and visibility need expansion. Due 22-Jan-96.
- What is the physical kit within the office and how much is it utilised, memory / disk etc.. Due 18-Jan-96.
- How does the system recognise incomplete sessions on restore. How does the clerk determine what requires to be re-keyed ? Are there particular events that can force marker exchange - logoff / cut-offs may be significant. - with John Meagher.
- Security document states "*All terminals will be monitored and an unauthorised disconnect will be recorded at CS level*". How is this done ?. Due 22-Jan-96
- Response to requirement 467 to be confirmed. Due 22-Jan-96.
- Risk response 64. Due 16-Jan-96. At time of write up paper received.
- Risk response 65. Due 22-Jan-96. At time of write up paper received.
- Risk response 66. Due 22-Jan-96. At time of write up paper received.
- Risk response 67. Due 22-Jan-96. At time of write up paper received.
- Risk response 68. Due 22-Jan-96. At time of write up paper received on dual sites but still requires more work.
- Risk response 70. Due 16-Jan-96. At time of write up paper received.
- Papers for Steve Grayston due 19-Jan-96: At time of write up papers received.
  - Amplify on suitably qualified personnel for fixing things within the office;
  - on response times, call duration - procedural vs. faults;
  - call volumes - thinking behind the figures;
  - staffing, and move from trial to steady state - thinking behind the figures.
  - engineer/parts banks - geographic location;
  - customer satisfaction - understanding of ICL reply cards;
  - preventative maintenance, why is PUMA no longer part of the solution, and maintenance activities expected of the users;
  - new business introduction - regards to the SIS help desk, for significant new products, and implication for change in call volume pattern;
  - structure of the SIS Helpdesk;
  - Automatic Call Distribution set up that will be used;
  - Confirm position of call response within 10 second 98% and 100% in 20 seconds.

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Actions Due from Programme:

- Respond on suitability of risk 11 by 16-Jan-96 to Dave Cooke - Bob.
- W/c 16-Jan-96, sanitised APPU specification - Bob to chase.
- Comments on response to risk 9a.
- Raise risk 72 to hang the "Call management and network design". At time of write up paper received.

Next meeting:

- None. This was the last strand meeting.

Jeremy Folkes & Bob Booth 311/96