

**ICL Pathway      Pathway EFTPOS Host Application -  
Invitation to Tender**

 Ref: EF/DOC/001  
 Version: 1.0  
 Date: 10/11/97

**Document Title:**                      **Pathway EFTPOS Host Application - Invitation to Tender**
**Document Type:**                      Commercial

**Abstract:**                                  This document is the Invitation to Tender to procure packaged EFTPOS Host software from an external supplier to be incorporated into ICL Pathway's overall EFTPOS solution for Post Office Counters Ltd.. The procurement includes both software and supporting services for development, testing and implementation of the EFTPOS solution and ongoing support of the packaged software.

**Status:**                                      Approved for Issue.

<b>Distribution:</b>	<u>Assessor</u>	<u>Perspective</u>
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	Ian Honnor	(YR2000)
	Jan Holmes	(Procurement Process)
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**ICL Pathway**

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**Comments to:** n/a

**Comments by:** n/a



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## 0 Document control

### 0.1 Document history

Version	Date	Reason
0.1	1/10/97	Draft for Comment
0.2	28/10/97	Draft for Authorisation
1.0	20/11/97	Final for Authorisation & Issue

### 0.2 Approval authorities

Name	Position	Signature	Date
Steve Reed	Commercial		
Dick Long	Systems Design		

### 0.3 Associated documents

Reference	Vers	Date	Title	Source
1 CR/FSP/0010			EFTPOS Statement of Requirement	ICL Pathway
2 TD/ARC/0014	1.0	17/09/97	EFTPOS Architecture	ICL Pathway

### 0.4 Enclosures

DISC PD2000-1			A Definition of Year 2000 Conformity Requirements	DISC (BSI)
PR10010	3	13/10/97	Vendor Evaluation (Quality Management System)	ICL Pathway

### 0.5 Terms & Abbreviations

ADE	Application Development Environment
ALPS	Automation in London Post Offices

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AP	Automated Payment
APACS	Association of Payment Clearing Services
API	Application Programming Interface
BMC	BMC Patrol (software package name)
BSI	British Standards Institute
CUG	Closed User Group
DSS	Department for Social Security
EFTPOS	Electronic Funds Transfer Point Of Sale
EMU	European Monetary Union
EPOS	Electronic Point of Sale
EPOSS	Electronic Point Of Sale Service
FDDI	Fibre-optic Distributed Data Interface
Horizon	The whole of the IT system provided by Pathway for Post Office Counters Ltd.'s use under the PFI contract.
IIN	I Identification Number
ISDN	Integrated Services Digital Network
ITT	Invitation To Tender
LAN	Local Area Network
MA	Merchant Acquirer
MIS	Horizon Application – Management Information System
MoP	Method of Payment
ODBC	Order Book Control System
OSM	Is a company name
PFI	Private Finance Initiative
POCL	Post Office Counters Ltd.
POS	Point Of Sale
RDMS	Relational Database Management System
SLA	Service Level Agreement
TIP	Post Office Counters Ltd. Application - Transaction Information Processing
TPS	Horizon Application – Transaction Processing System

**0.6 Changes in this version**

Incorporates minor changes required for authorisation.

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The version for issue to suppliers will have some sections 0.x removed as they include purely internal, Pathway information.

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## 1. Instructions to Suppliers

### 1.1 ICL Pathway Contact

Contact	Chris Plunkett
Address	ICL Pathway Forest Road Feltham Middx TW13 7EJ
Telephone	GRO
Mobile	GRO
Fax	GRO

### 1.2 Timetable

Task	Start	Complete
ITT issued		21/11/97
Responses received		05/12/97
Proposal Evaluation & Taking Up References	08/12/97	19/01/97
Christmas Break	22/12/97	02/01/98
Supplier Presentations	05/01/98	14/01/97
Shortlisting (to one supplier)	15/01/97	23/01/98
Package demonstration/evaluation	26/01/98	20/02/98
Agree contracts	26/01/98	20/02/98
Order placed		27/02/98

Completion of the design, development, test and integration, implementation and acceptance phases (including MA acceptance) is planned for the remainder of 1998.

### 1.3 List of Suppliers

The following suppliers have been asked to tender:



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- Checkline
- CommsXL
- Retail Logic

## **1.4 Submission Mechanism**

A virus checked 3.5" diskette containing this and 2 other associated documents in Microsoft Word 6.0/95 format is enclosed

Your response should be submitted on a virus-checked diskette using the same Microsoft Word 6.0/95 format.

In addition, a paper copy of your response should be provided in a loose-leaf binder, preferably in A4 format. You should supply 6 copies of any other documents supporting your proposal.

Printing should be on one side of paper to allow annotation by readers.

Responses should be marked Commercial In-Confidence on each page.

Suppliers should provide responses to all the requirements identified [REQUIREMENT] below.

Requirements are classed as Mandatory, Important or Desirable.

Please reference and follow the order of the ITT paragraph numbers in your response.

If suppliers feel there are omissions in the requirements they are encouraged to add further information in their proposal.

## **1.5 Supplier Presentations**

After tenders have been submitted, ICL Pathway will invite suppliers to Feltham to present their proposals.

## **1.6 Package Selection**

ICL Pathway will take up references provided.

ICL Pathway will short list one supplier based on the proposals and the response indicating the ability of the proposed package and supplier to meet the various requirements defined in the ITT.

ICL Pathway will ask the short listed supplier to demonstrate the ability of the package to meet evaluation criteria which will be based on the ITT requirements and the supplier's response. This will be a precursor to any contractual agreement.

## **1.7 Agreement**

ICL Pathway will enter into contractual negotiations with the shortlisted supplier.

Note: ICL Pathway is not obliged to enter into agreement with any supplier.



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## 1.8 Confidentiality

This ITT is Commercial In-Confidence and should not be disclosed to any third party without prior approval from ICL Pathway.

Suppliers have already signed an ICL Pathway Confidentiality Agreement.

## 1.9 Pathway Obligation

## 2. Background

January 1997 - Press Release

ICL Pathway a wholly owned subsidiary of ICL, is working with The Benefits Agency and Post Office Counters Limited to deliver a multi-million pound automation project which will transform post office shopping throughout the UK.

The new system will enable delivery of more services over post office counters and when fully implemented is expected to virtually eliminate fraudulent benefit encashment, resulting in significant fraud. Post Office Counters Ltd. will also benefit from counter automation bringing efficiencies to its non-benefits business e.g. product and license purchase, automated bill payments, etc..

This is one of the government's largest private finance initiative (PFI) projects and involves the automation of 20,000 post offices in the UK, the training of over 60,000 post office staff and the design and integration of a system for making benefit payments through post offices. ICL Pathway will deliver a card-based benefit payment system to replace girocheques and order books. The Payment Card will gradually replace order books and girocheques for all of the 19 million people who collect DSS benefits through post offices in the UK. Currently some 890 million order book and giro cheques are made through post offices each year.

The first phase of the Payment Card launch is already under way in ten post offices in the Stroud area of Gloucestershire and will involve more than 1,400 people receiving Child Benefit from the ten post offices.

ICL Pathway (now a wholly-owned subsidiary of ICL) was founded by ICL, Girobank, and De La Rue. Its chairman is Sir Michael Butler, a director of Hambros Bank which is financial advisor to ICL Pathway. Keith Todd, chief executive of ICL, is deputy chairman.

As well as a breadth of understanding of benefit systems and counter automation, each of ICL Pathway's founders has expertise in its particular field: complex systems integration projects (ICL), cash handling and payment processing (Girobank) and secure payment systems and card technology (De La Rue).

ICL Pathway's principal sub-contractors are:

- ICL, providing system integration, overall programme management, central systems operation, training and roll out
- Girobank, providing help desks and fraud risk management

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- De La Rue, providing benefit card production and distribution
- An Post (The Irish Post Office), providing post office consultancy and counter automation
- Escher group (USA) - counter automation and consultancy
- Oracle Corporation - software development
- Microsoft - the software platform
- McCann-Erickson - advertising and promotion

ICL Pathway's experience in counter payment systems includes the Republic of Ireland where An Post has installed over 600 offices. To date, this has brought a number of advantages to customers in terms of user-friendly cards and a speedy and enhanced range of services.

In addition, in the UK the ALPS project (Automation of London Post Offices) was awarded to ICL in late 1994. This involved installation of new systems at 4500 counter positions in 1500 post offices within the M25 area. Completed in August 1995, this has already led to a substantial reduction in benefit fraud.

ICL Pathway is responsible for the introduction of the benefit Payment Card and for bringing technology to post offices under the government's private finance initiative (PFI) scheme. It is supplying an integrated system and services which will improve the performance of customers' businesses.

The company bid successfully against several other businesses to win the contract which is one of the largest PFI contracts ever awarded. Employing over 100 people, it is a wholly owned subsidiary of ICL and is headquartered at Feltham in Middlesex.

ICL is a leading European information technology company, operating in over 80 countries, it supplies integrated systems and services.

### **3. Purpose**

To deliver an EFTPOS Service to Post Office Counters Ltd. as part of its Horizon solution, Pathway wishes to procure EFTPOS Host software to run as a centralised service, supporting EFTPOS authorisation, submission and reconciliation. Pathway will also procure associated professional services.

Post Office Counters Ltd. wishes to introduce EFTPOS into Post Offices to support a variety of Card Schemes. These will initially include debit cards but will in the future include credit cards.

Post Office Counters Ltd.'s requirements are that an EFTPOS facility should be provided supporting debit cards and credit cards as additional *Methods of Payment* (MoP) within the *Electronic Point of Sale Service* (EPOSS) and that standard APACS authorisation, submission and reconciliation methods should be supported. The expectation is that the service should support a variety of authorisation methods including Hot Card lists and on-line authorisation to one or more Merchant Acquirers.

## 4. Business Requirements

Suppliers are asked to show how their software supports the business requirements described in the remainder of this section.

In their responses, suppliers should state the availability of functionality being proposed.

### 4.1 Post Office Counters Ltd. Business Context

In general Post Office Counters Ltd. acts as an agent for its clients and outlets act as sub-agents to Post Office Counters Ltd.. Various agreements govern these relationships.

Among other things, the agreements define which client products and transactions Post Office Counters Ltd. will trade and the range of these products and transactions an outlet will trade.

EFTPOS will be available in all automated post offices.

Business rules are defined to govern product transactions.

A customer session may include one or more product transactions between the customer and the outlet.

The customer may use more than one Method of Payment (MoP) to settle individual product transactions or customer sessions.

EFTPOS introduces two new MoP - debit cards and credit cards.

Post Office Counters Ltd. will initially appoint one or more Merchant Acquirers to handle its EFTPOS business. Their agreement will identify a number of EFTPOS card schemes. There will be a number of different card issuers for each scheme. Each card has a unique issuer identification number. The number of issuers changes frequently, so it is usual to allocate a range of IINs for a card scheme to reduce the administrative load. Post Office Counters Ltd. and the MA will negotiate a number of business rules e.g. transaction ceiling for each card scheme. Post Office Counters Ltd. may add its own rules e.g. minimum EFTPOS transaction value.

As with other MoPs, individual product transaction business rules will specify whether debit card or credit card is an allowable MoP.

Customers will present an EFTPOS card to support an EFTPOS Payment Transaction. Cards are recognised using the magnetic card identification details associated with each EFTPOS card scheme.

All EFTPOS Payment Transactions are required to be authorised - the result is recorded. EFTPOS Payment Transactions may be committed or voided - details are recorded.

EFTPOS Refund Transactions are also supported.



## **4.2 Business Rules**

### **4.2.1 EFTPOS Business Rules**

To minimise transaction times and the number of ISDN calls from the post office to the centre, ICL Pathway's policy is to evaluate as many business rules as possible before making such calls. Suppliers' EFTPOS package application interfaces may require them to be evaluated at the centre.

ICL Pathway suggests the following breakdown between host and counter implementation:

#### Host

- Routing of authorisations and submissions for card schemes and card types between multiple MA's
- Hot Card Lists to identify cards which may not be used (initially none).
- Enforcement of Floor Limits below which Post Office Counters Ltd. can authorise transactions (initially £0 requiring 100% on-line authorisation)
- Enforcement of Cash Back Floor Limits below which Post Office Counters Ltd. can authorise transactions.
- Enforced on-line authorisation for particular card scheme.
- Whether the merchant can perform stand in authorisation if the Merchant Acquirer doesn't respond within a set time (initially Post Office Counters Ltd. want to DECLINE such transactions).
- Limit on the number of transactions a particular card is allowed to do each day.
- Enforced on-line authorisation every N transactions done in a post office.
- Enforced authorisation if a card is used consecutively in the same outlet.

#### Counter

- Card validation
- Card scheme/type accepted
- Card expired
- Card start date not yet reached
- Ceiling Limits limiting the maximum value of transactions.
- Cash Back Ceiling Limits limiting the maximum value of transactions (initially £0 to prevent cash back).
- Cash Back transactions must have a positive purchase element.
- Whether card details may be entered manually.
- Minimum EFTPOS transaction value for particular MoP defined by Post Office Counters Ltd..
- Refund allowed for particular card scheme.

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- Refunds allowed for the product.
- Restriction on which products can be paid for with debit cards.
- Restriction on which products can be paid for with credit cards.

**[REQUIREMENT 1 - MANDATORY]** Suppliers must:

- describe how the breakdown (host to counter) of requirements above is met or propose an alternative breakdown required by their package application interfaces.

## **4.3 Business Processes**

### **4.3.1 Card Recognition and Data Entry**

This is counter system functionality and is included here purely for completeness.

Magnetic card details are swiped in via the card reader. Individual cards, or ranges of magnetic cards, are recognised as EFTPOS cards.

If the card cannot be read, the EFTPOS method of payment may be selected and the card details input manually if allowed for the particular card.

There is a list of allowable methods of payment for each product.

Some initial verification is done here:

Additional data is entered e.g. payment value.

### **4.3.2 Authorisation**

Every EFTPOS transaction is required to be authorised either by Horizon or on-line by a Merchant Acquirer. Telephone authorisation is used as a fallback service.

A number of business rules must be checked against criteria for individual card schemes:

The business rules identified above may trigger Horizon or MA on-line authorisation. The EFTPOS Host software or Merchant Acquirer will either authorise or decline the request.

The system will record authorisation responses.

For authorised transactions, the counter system will print an EFTPOS Transaction slip for the customer to sign. The clerk checks the signature and commits or cancels the EFTPOS transaction as appropriate.

The clerk can also cancel a transaction at the customer's request. Cancelled transactions must be recorded for reconciliation against authorisations. If the authorisation was from a Merchant Acquirer, the Merchant Acquirer must be notified (the MA needs to amend the customer's available credit to reflect the cancellation).

**[REQUIREMENT 2 - MANDATORY]** Suppliers must describe how their software:

- enforces authorisation business rules
- supports on-line authorisation

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- supports stand-in authorisation (by the host software)
- records authorisations
- handles cancelled authorisations

**4.3.3 Submission**

EFTPOS payment transactions are batched into files which the Merchant Acquirer collects periodically (assumed to be several times per day).

The Merchant Acquirer will acknowledge the batch. The batch may need to be resent.

Merchant Acquirer may also request (later in the day) the batch be resent. An alternative strategy adding these transactions to a later batch must also be supportable.

Post Office Counters Ltd. has not specified which strategy is to be adopted.

**[REQUIREMENT 3 - MANDATORY]** Suppliers must describe how their software:

- accepts EFTPOS transactions from the counter system for submission
- supports multiple Merchant Acquirer submissions
- creates submissions
- enables the MA to collect submissions
- manages the submission interface with the MA
- handles re-submissions (both file and transaction modes)
- handles different types of EFTPOS transactions e.g. refunds
- handles manually authorised transactions
- handles multiple submissions (to a Merchant Acquirer) in one day

**4.3.4 Reconciliation**Pathway Reconciliation

Horizon should hold a record of EFTPOS authorisations (accept or decline) and subsequent EFTPOS payments and cancellations plus any manually authorised transactions.

Except for the manually authorised transactions, these should reconcile but not necessarily immediately e.g. payments relating to authorisations may not yet have been submitted to the MA.

Elsewhere, Pathway has used a rolling, daily reconciliation report, tabulating a N day window showing the state of reconciliation to date.

**[REQUIREMENT 4 - MANDATORY]** Suppliers must:

- describe how their software supports this reconciliation function
- comment on the provision of rolling reconciliation reports

MA Reconciliation

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At some point it will be necessary to reconcile Horizon's view of value of transactions with the MA's view after any amendments due to MA and customer queries.

**[REQUIREMENT 5 - IMPORTANT]** Suppliers must:

- propose, from their experience, a strategy for MA reconciliation.

### **4.3.5 Integration with Other Processes**

Payment transactions are also be submitted to other Pathway and Post Office Counters Ltd. systems but not by the MA submission sub-system being procured.

## **4.4 Volumes**

Post Office Counters Ltd. estimates are as follows :-

- Between 30 million and 50 million EFTPOS transactions a year across the Post Office's network of 19,500 post offices
- Assume 305 days per annum (Monday - Saturday operation) and 8 hour opening.
- Peak month (December) rates are estimated at 2 times the average.
- Peak hour (midday) rates are estimated at 3 time the average.
- 70% above floor limit (assumed at £15). This will be 100% initially, i.e. all transactions will require Merchant Acquirer authorisation.
- EFTPOS is expected to be used against the following transactions :
  - Motor Vehicle Licence renewals - 34%
  - Bill Payments - 38% (approx. half for BT)
  - TV licence -11%
  - Post Shop purchases - 5%

**[REQUIREMENT 6 - MANDATORY]** Suppliers must:

- substantiate that their software components can support the required volumes
- state any assumptions regarding the hardware and software configuration required to support the required volumes e.g. number and size of servers, network connections etc.

## **4.5 Other EFTPOS Host Software Usage**

Pathway's Development function will require 1 development system.

Pathway's Test and Integration function currently employs 9 separate test rigs, all of which may require EFTPOS Host functionality.

Pathway's Operations function currently employs 3 separate test rigs, all of which will require EFTPOS Host functionality.

The number of live operational licences (minimum 2 sites) is dependent on transaction volumes (see 4.4 above).



**[REQUIREMENT 7 - MANDATORY]** Suppliers must:

- Ensure provision of development and test licences are covered in their costings as well as those required for live systems.

## 4.6 Smart Card Capability

Whilst the current requirement is specifically for magnetic card based EFTPOS functionality, smart card technology will be required in the future.

**[REQUIREMENT 8 - IMPORTANT]** Suppliers must:

- indicate a forward path from their proposed magnetic card solution and provide any other information they feel is relevant regarding their competence in this area

## 5. TECHNICAL REQUIREMENTS

Suppliers are asked to show how their software meets the technical requirements described in the remainder of this section.

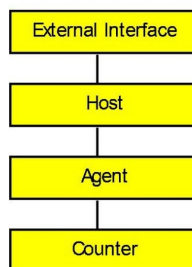
In their responses, suppliers must state the availability of functionality being proposed.

### 5.1 PROPOSED EFTPOS ARCHITECTURE

Horizon is ICL Pathway IT solution for Post Office Counters Ltd.

#### 5.1.1 Application Architectures

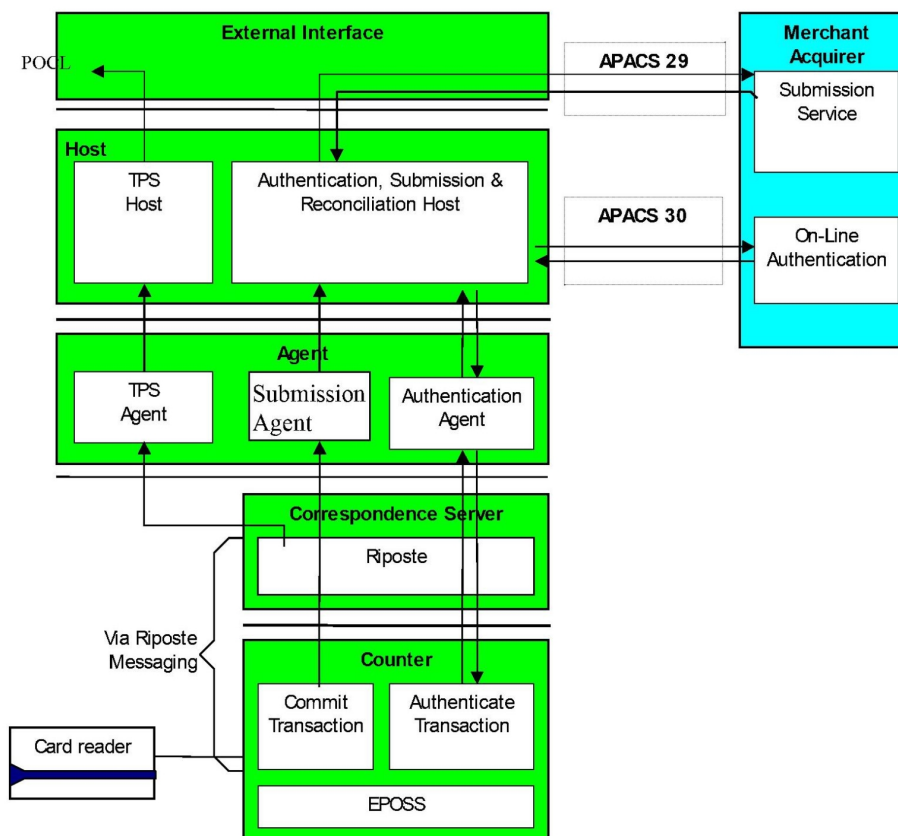
In line with Horizon standards, each application is to be implemented as a vertical stripe across a number of standard horizontal enabling layers, as shown in Figure 1.



**Figure 1 - Application Components**

Thus, within this architecture, the structure of an EFTPOS application is as shown in Figure 2.





**Figure 2 - EFTPOS Architecture**

Horizon employs Riposte, a 3<sup>rd</sup> party software package, to provide a resilient infrastructure to support post office counter applications (see Figure 2). This uses a replicated messaging strategy across multiple Correspondence Servers in 2 Area Computer Centres (known as Campuses) whereby messages are replicated between the 2 sites on several servers.

Post office to campus communications uses ISDN. An alternative satellite based communication service is proposed for some outlets.

Within the Counter and Correspondence Server environment, EFTPOS authorisation requests and responses and resulting EFTPOS transactions will be implemented using Riposte messages.

The Authentication Agent will pick up authentication request messages and pass them to the the EFTPOS Authorisation Host package's application interfaces. It will return the authorisation response to the counter system via Riposte.

Similarly, the Submission Agent will periodically 'harvest' EFTPOS transaction messages from Riposte and pass them to the EFTPOS Submission Subsystem.

The Riposte layer provides transaction integrity. How this is promulgated across the EFTPOS Host package boundary and subsequent MA boundary is to be proposed by suppliers. This requirement is specified in the later section on Availability.

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Horizon has a managed, 2 Campus operation which may be employed to provide EFTPOS Host resilience. It has high speed WAN links between the Campuses. EFTPOS Agent and Host subsystems and the necessary MA communication links will be available at both sites. A strategy for resilience and recovery will need to be devised post contract, however, suppliers must relate their experience of similar, dual campus solutions. This requirement is specified in the later section on Availability.

**Use of Third Party Applications**

Horizon's architecture does not allow 3<sup>rd</sup> party applications to co-exist with Riposte on the Counter or Correspondence Servers.

Agents are required to bridge between Riposte on the Correspondence Servers and Host applications.

3<sup>rd</sup> party packages may be used to deliver Host application functionality.

**[REQUIREMENT 9- MANDATORY]** Suppliers must:

- describe how their software fits the proposed application architecture

**5.1.2 Platforms****5.1.2.1 Agent Platforms**

EFTPOS Agents will run on Windows NT 4 Servers within each campus.

**5.1.2.2 Host Platform**

EFTPOS Hosts will run on Windows NT 4 Servers within each campus.

A Host-to-MA interface is required, supporting file transfer and used for passing transaction data to the MA on demand.

The Agent and Host functions should be hosted on the same server. A separate submission server may be required if the submission host incorporates an MA supplied, DOS based, MA interface function.

**[REQUIREMENT 10 - MANDATORY]** Suppliers must:

- confirm support for Windows NT 4 (with Service Pack 3) and experience in using it

Note: Pathway has configured Windows NT for Security purposes so some NT functions may not be available - Pathway will need to check supplier's package dependencies on NT functions during package evaluation.

- confirm experience of using different manufacturers NT systems
- propose a configuration (of one or more physical servers) to support the authorisation, submission and reconciliation functions.

**5.1.3 Networking Services**

Communication between Counter and Data Centre will use the standard features of Riposte and ISDN. Authentication messages will be sent as Priority Riposte messages, and hence will raise the ISDN line if it is closed. Subsequent EFTPOS transactions will be sent as Non-Priority messages.

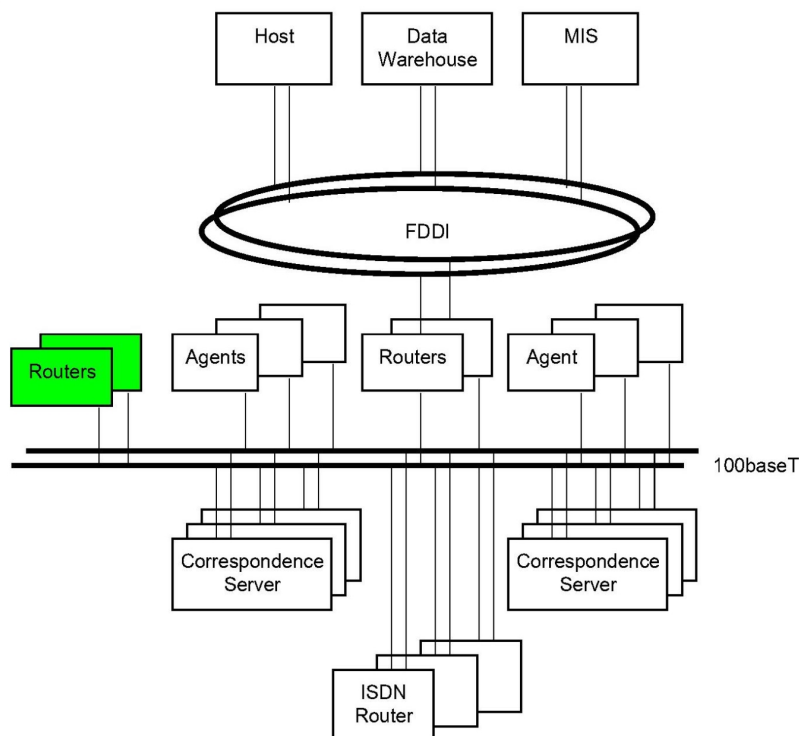
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An Agent Process in the Data Centres will wait on this class of message, using a real time message port, and on receipt of one will transmit it via the Authorisation Service to the Merchant Acquirer.

Data transfers to and from the Merchant Acquirer are usually via X.25, and hence an X.25 interface is required out of the Data Centres. This is most easily achieved by the use of a pair (for resilience) of small CISCO Routers dedicated to the interface to the MAs<sup>1</sup>. These will be configured to support an X.25 Closed User Group (CUG) containing only the ICL Pathway Routers and the Merchant Acquirer Routers. The Authorisation Server sends an IP Datagram with a destination address of  $X$ , where  $X$  is within the ICL Pathway address space.

The Routers advertise services to address  $X$  and perform Network Address translation to map  $X$  to  $XI$  where  $XI$  is in the IP address space of the Merchant Acquirer system. They only accept Datagrams from the Authorisation Service, and then validate these at level 3 and level 2. This gives a high degree of confidence that any successful penetration of the Pathway systems will not permit easy onward attempts to compromise the MA systems.

X.25 lines often restrict the number of concurrent connections, and hence we need to determine the expected peak message rate and calculate the number of lines required accordingly.



**Figure 3 - ICL Pathway Campus Communications**

**[REQUIREMENT 11 - MANDATORY]** Suppliers must:

<sup>1</sup> The existing WAN Routers could be used, but this approach is simpler.

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- propose how their software would fit this architecture

**5.1.4 Information Management**

ICL Pathway's strategy is to use Riposte's message replication functionality for securing data. The use of RDBMSs purely for this purpose should be unnecessary but they may be required for other purposes.

**5.1.4.1 Data Associated with EFTPOS****5.1.4.1.1 Card Scheme and Card Type Information**

Information pertaining to the Card Schemes supported, to their associated Card Types and their IIN, and to floor and ceiling limits, will be maintained in the Horizon Reference Data database. From here it is distributed to other host and counter subsystems.

Hot Card Lists will be supported by the EFTPOS Host Subsystem. Data will be provided electronically by the Merchant Acquirers.

All Hot Card Lists will be implemented centrally. There is no plan to distribute Local Hot Card Lists to outlets.

**5.1.4.1.2 Authentication Requests**

Authentication Requests to Merchant Acquirers follow the APACS 30 standard.

**5.1.4.1.3 Submission Data**

Transaction submission to the Merchant Acquirers follows the APACS 29 standard, which involves file transfer of flat files.

Horizon usually harvests transactions in batch mode on a per outlet basis and could pass these to the EFTPOS server application in batches or as individual records.

There is a working assumption that there will be several submissions to MAs per day.

An MA may indicate that a particular file transfer failed, in which case the designated file may be retransmitted.

The MA will provide electronic feedback on the outcome of it processing previous submissions.

The alternative resubmission strategy to include transactions from the failed file transfer in the next regular batch instead of re-transmitting the original file must be supported.

**5.1.4.1.4 Reconciliation Data**

A database of EFTPOS authorisations and transactions will need to be maintained for reconciliation purposes. Reconciliation reports will be produced - probably daily.

**[REQUIREMENT 12 - MANDATORY]** Suppliers must describe the databases provided and any database management services required to manage them and provide database sizing for:

- card details



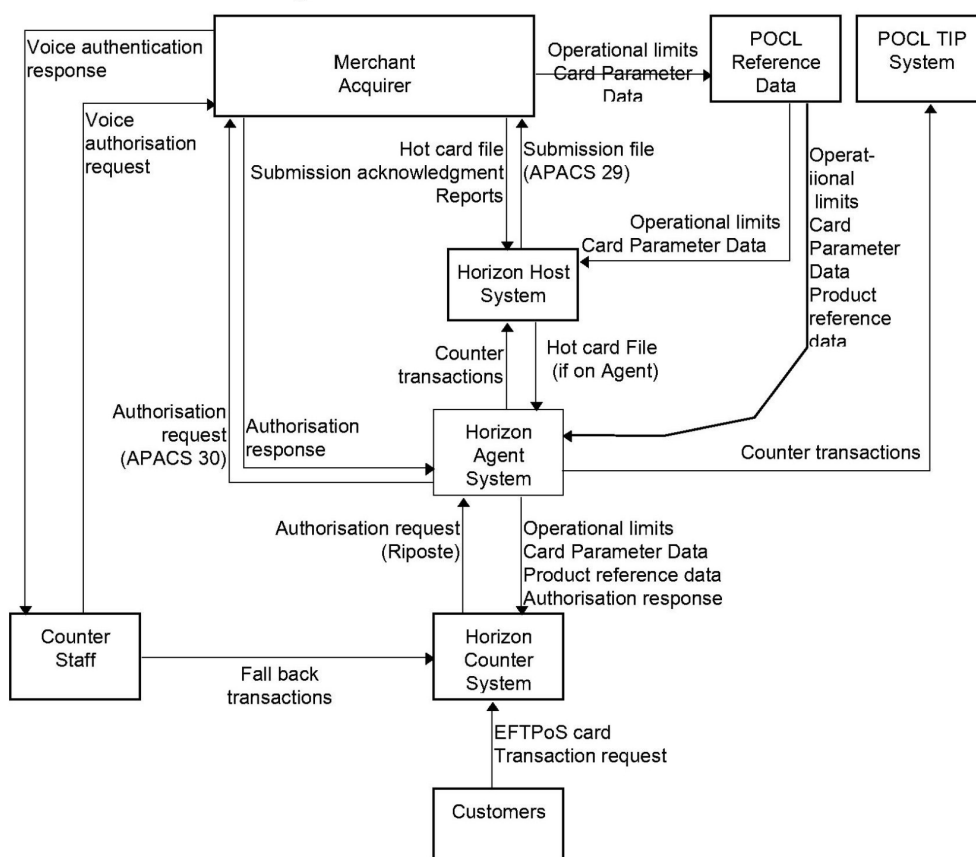
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- business rules
- hot card lists
- authorisations
- submissions and acknowledgements
- submission reports
- reconciliations
- any other databases e.g. for administration

### 5.1.4.2 Data Flows

These are shown in Figure 4.



**Figure 4 - Data Flows**

Provided for information.

### 5.1.5 Distributed Application Services

EFTPOS transactions use the Riposte middleware in the same way as other Counter transactions, and no changes are required.

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MA's often supply specific software to manage the EFTPOS Host - MA interface. This is often DOS based software and, because of this, the submission subsystem may run on a separate Windows-NT server if required.

**[REQUIREMENT 13 - MANDATORY]** Suppliers must:

- describe any MA interface technology employed
- describe any other middleware employed elsewhere

### **5.1.6 User Interface**

ICL Pathway's policy for system management prefers APIs for administration and control of packages, however, there is likely to be a User Interface for these functions as well.

In addition user interfaces may be required for product support purposes.

**[REQUIREMENT 14 - MANDATORY]** The supplier must:

- describe the interfaces provided for service administration
- describe the interfaces provided for service control
- describe the interfaces provided or required for product support

### **5.1.7 Application Development**

Riposte's application development toolkits will be used for Counter and Agent development.

**[REQUIREMENT 15 - MANDATORY]** Suppliers must:

- provide details of the application development environment required to use application programming interfaces provided

### **5.1.8 Systems Management**

Horizon uses Maestro (sourced from Unison Software/Sequent) to schedule NT workloads.

Horizon uses Tivoli (sourced from IBM) to manage software distribution and operational alerts on NT hosts.

Horizon uses PCMS for storing and managing system software components.

#### **5.1.8.1 Pathway System Mgt. Policy for NT Platform Based Applications**

##### **5.1.8.1.1 Software Distribution**

- packages should be well defined
- unattended installation should be possible
- software fixes should be able to be applied incrementally
- software should be storable and distributable from a configuration management system such as PCMS

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**5.1.8.1.2 Event Management**

- packages must use NT event log
- event messages must be documented with associated recovery actions

**5.1.8.1.3 Resource Monitoring**

- packages should be self managing i.e. do their own housekeeping
- if not, required housekeeping operations must be documented

**5.1.8.1.4 Diagnostics**

- must be documented
- should be controllable via API's
- results must be documented

**5.1.8.1.5 Management of the Configuration of the Application**

- must be documented
- should be controllable via API's

**5.1.8.1.6 Performance Monitoring**

- should use NT performance tools

**[REQUIREMENT 16 - MANDATORY]** Suppliers must:

- comment on their package's conformance with this policy

**5.1.8.2 SLAs**

MAs typically specify and agree SLAs for authentication response times and for the availability of reconciliation data from retailers. The design must include the use of time stamps at all parts of the authentication, submission and reconciliation processes so that the conformance to these SLAs can be calculated subsequently and statistics gathered.

**[REQUIREMENT 17 - MANDATORY]** Suppliers must:

- describe how service monitoring may be achieved e.g. of MA interfaces

**5.2 EFTPOS Service Qualities****5.2.1 Usability**

**[REQUIREMENT 18 - IMPORTANT]** There are no specific usability requirements for host services unless they mandate user interfaces for package administration and control, in which case, suppliers must:

- describe the usability attributes of the interfaces supplied

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**5.2.2 Performance**

The key constraints is the time taken to authenticate a transaction. This will be mainly influenced by the time taken to return the authorisation from the MA, and this can be very slow, particularly in December. Note: MAs may use stand-in authorisation if the particular bank does not respond quickly enough.

The merchant can also perform stand in authorisation if the MA response time exceeds limits. Post Office Counters Ltd do not want to do this at this time, however, the EFTPOS Host software should support it for the future.

The Horizon architecture will add its own delays to the MAs authentication process. These will be of the order of three seconds.

There is a nominal 8 seconds target for authorisation. Horizon is expected to consume 3 of these. The remaining 5 seconds is available to the EFTPOS Host and MA to process the authorisation.

**[REQUIREMENT 19 - MANDATORY]** Suppliers must:

- substantiate the performance of their software given the volumes of transactions expected

**5.2.2.1 Volumetrics**

Estimates from Post Office Counters Ltd. are given in Chapter 3. The impact of these on the Horizon architecture is estimated as follows.

**5.2.2.1.1 Transaction volumes**

The transaction authorisation volumes during peak times may require multiplexed interfaces with the MA's .

**[REQUIREMENT 20 - IMPORTANT]** Suppliers must:

- confirm their support for multiplexed interfaces

**5.2.2.1.2 Hot Card files**

- Post Office Counters Ltd. are unlikely to require the use of hot card files at first release. When they are supported, Horizon will support the capability to use them. Following the EFTPOS market trend, Pathway intends to implement all Hot Card Lists centrally.

When they are introduced it is likely that the standard sized files from the Merchant Acquirer will be used. There are 80,000 entries in the central file. A full replacement will be issued daily from the Merchant Acquirer.

**5.2.3 Potential for Change**

Much of the detail surrounding the implementation of EFTPOS will be driven by Reference Data, and hence will be easily changeable by use of the Horizon *Reference Data Management Service* (RDMS).

Issues likely to require more fundamental changes include:

- introduction of new Card Schemes (e.g. Solo) with their own rules of engagement



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- introduction and/or replacement of MAs
- implementation of credit cards
- implementation of cash back
- a move towards the use of Smart Cards for EFTPOS
- Packaged solutions may offer functionality enabling further business opportunities e.g. loyalty card schemes, stopped cheque or bank account checking, checking withdrawn licences, etc.)

**[REQUIREMENT 21 - MANDATORY]** Suppliers must assess the impact of:

- introducing new card schemes
- introducing new MAs or changing MAs
- introducing credit cards
- introducing cash back
- the future migration to smart cards

and show how their system will be able to incorporate the changes

**[REQUIREMENT 22 - DESIRABLE]** Suppliers are invited from their experience of the marketplace to:

- identify other opportunities for merchants using the proposed and associated software packages in their portfolio

## **5.2.4 Availability**

The EFTPOS system should provide mechanisms to cater for system failure.

### **5.2.4.1 Outlet Failure**

#### **5.2.4.1.1 Card Reader Failure**

If the card reader fails, and the card scheme allows, card details will be input manually and the transaction will continue as usual although the card details in the transaction will be marked as manual entry.

#### **5.2.4.1.2 Authorisation Failure**

If authorisation cannot be obtained (e.g. because communications to the centre are unavailable) the EFTPOS transaction will be continued manually and resulting details input via the keyboard. Telephone authorisation from the MA is required. The resulting EFTPOS transactions will be marked as having been input manually.

#### **5.2.4.1.3 Counter System Failure**

If the counter system is not functioning, the clerk will perform both EPOS and EFTPOS functions manually. The latter will require the clerk to obtain voice authorisation from the Merchant Acquirer. When the counter system is restored the system should be able to record the method of authorisation (i.e. voice and any authorisation code) as part of EPOS transaction recovery.

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This assumes that the Outlets have access to a conventional “zip-zap” card machine, and that the slips from this may be used to enter the transaction details later. The resulting EFTPOS transactions will be marked as having been input manually.

**5.2.4.2 Agent or Host Failure**

The Riposte layer provides resilience at the Correspondence Server boundary. All transaction messages are replicated to 2 Correspondence Servers on one Campus and 1 on the other Campus. Thus all EFTPOS transaction messages can be deemed to be secure at this point. Pathway’s policy is for this to be the primary point in the overall Horizon solution for transaction security.

For EFTPOS, the next point for securing transactions should be within the MA’s system. The Agent and Host layers may have secondary transaction security requirements to enable end to end transaction security, however, the use of RDBMS for transaction security reasons alone should be avoided if possible.

The threats to end-to-end integrity of the solution are:

- failure of any application or application interface in the route between the EFTPOS Agent and MA
- failure of any individual hardware component in the route between the EFTPOS Agent and MA
- failure of multiple hardware component in the route between the EFTPOS Agent and MA (particularly whole Campus catastrophe)

**[REQUIREMENT 23 - MANDATORY]** Suppliers must from their experience describe strategies for using their package regarding:

- end-to-end transaction integrity
- use of a dual campus strategy for resilience
- any backup facilities required for business data
- recovery from failure

**5.2.4.3 Merchant Acquirer EFTPOS Service Timeout**

If the time out period for authorisation to the Merchant Acquirer is exceeded then the authorisation should be DECLINED

It is possible that Post Office Counters Ltd. may wish to introduce stand in authorisation in the future.

**[REQUIREMENT 24 - DESIRABLE]** Suppliers must:

- confirm their support for stand-in authorisation

**5.2.5 Security****5.2.5.1 MA Interface Security**

It is expected that a secure interface will be required to each Merchant Acquirer.

**[REQUIREMENT 25 - MANDATORY]** Suppliers must:

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- describe the security features of this interface and any administration functions provided

**5.2.5.2 Identification and Authentication**

It is expected that only standard Windows NT user identification and authentication functions will be employed.

**[REQUIREMENT 26 - MANDATORY]** Suppliers must:

- describe any other identification and authorisation functions used by their solution
- convey any NT configuration recommendations

**5.2.5.3 Access Control**

It is expected that only standard Windows NT access control functions will be employed.

**[REQUIREMENT 27 - MANDATORY]** Suppliers must:

- describe any other access control functions used by their solution
- convey any NT configuration recommendations

**5.2.5.4 Audit**

The overall EFTPOS solution should include sufficient data to prevent the risk of ICL Pathway being held accountable for the value of a transaction which is subsequently queried by the MA or customer.

For example:

- the source (e.g. bank, MA, merchant) and type (e.g. normal, stand-in, telephone) of authorisations must be discernible.
- proof of timely instantiation of hot card list updates must be possible to be used as evidence to repudiate MA claims for rejected transactions.

**[REQUIREMENT 28 - MANDATORY]** Suppliers must:

- describe the audit features of their solution, including the storage and archiving of transactions as part of the audit trail

**5.2.5.5 Confidentiality and Integrity**

It must not be possible for card numbers and expiry dates to be obtained by the casual user. Usual retail practice should be followed here.

**[REQUIREMENT 29 - MANDATORY]** Suppliers must:

- describe any specific confidentiality and integrity features of their solution
- describe any specific functionality provided relating to the Data Protection Act

**5.3 Interfaces**

**[REQUIREMENT 30 - MANDATORY]** Suppliers are asked to:

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- describe all external interfaces of their software required by the solution. Both batch and on-line interfaces should be included as well as database access methods available to access data directly e.g. to enable card parameter data to be replicated in the counter systems.
- identify if there are any security requirements e.g. digital signing for transactions crossing their application interfaces
- provide published interface documentation with the tender response.

## 6. Standards

The supplier must confirm the conformance of their products in the following areas and, if not currently conformant, the date when conformance will be achieved.

### 6.1 APACS Compliance

**[REQUIREMENT 31 - MANDATORY]** Suppliers must

- provide a compliance statement (preferably independent) for those standards required by the solution viz. APACS 27/29, 29B, 30.

### 6.2 Year 2000 Compliance

The BSI definition of Year 2000 conformity is also attached. This defines that Year 2000 conformity shall mean that neither performance nor functionality is affected by dates prior to, during and after the year 2000.

In particular:

- *Rule 1.* No value for current date will cause any interruption in operation.
- *Rule 2.* Date-based functionality must behave consistently for dates prior to, during and after year 2000.
- *Rule 3.* In all interfaces and data storage, the century in any date must be specified either explicitly or by unambiguous algorithms or inferencing rules.
- *Rule 4.* Year 2000 must be recognised as a leap year.

It is ICL's policy to only purchase products which meet the ICL Year 2000 compliance criteria (based on the BSI conformity definition which is attached).

**[REQUIREMENT 32 - MANDATORY]** Suppliers must:

- complete the following ICL Year 2000 Questionnaire
- agree to certify compliance in due time
- comment on any other appropriate industry norms or standards relating to Year 2000 compliance



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## ICL Year 2000 Questionnaire

Company:	
Address:	

Product:	
Version:	

	Question	Response
1	Do you have a Year 2000 compliance policy and plan to achieve compliance?	
2	What is the latest date that customer support will be available?	
3	Is the above product/version currently Year 2000 compliant in terms of the ICL/BSI criteria?	YES/NO If Yes go to (3), if No go to (9)
4	How has this degree of compliance been validated?  (e.g. were tests conducted with the system clock set beyond 31.12.1999?)	
5	Are validation schedules and results available to ICL?	YES/NO
6	What is the furthest date supported in the product?	
7	Have any changes been made to any interfaces to accommodate Year 2000?	
8	If yes, is a statement available describing them?	
9	Is this statement provided with this response?	
10	Please explain why the product is not compliant in terms of the ICL/BSI criteria.	
11	Do you intend to make the product/version so compliant?	YES/NO If yes, go to (12)
12	If not, which product/version will be so compliant?	

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	Question	Response
14	Will you make your validation plans/results/interfaces available?	YES/NO
13	When will you make details of the compliant version available?	
15	When will the compliant version be available?	
16	Is the product protected by a date related licence algorithm in its code?	
18	Is the above product directly dependent upon another product for compliance? If so please identify.	
19	If you have a Year 2000 product status www page please provide address details.	

Name: ..... Date: .....  
Title: .....

### 6.3 EMU Compliance

At this time, there are no UK standards for EMU compliance. To allow ICL Pathway to assess the readiness of suppliers for this event we have produced the following questionnaire:

- Does the software handle more than one currency?
- What are the storage implications of doing so?
- What are the processing implications?
- What is the impact of the six digit conversion requirement?
- Do you have a position statement or a roadmap?
- When will you be compliant?
- How will the change be implemented?

**[REQUIREMENT 33 - DESIRABLE]** Suppliers must:

- provide responses to the above questionnaire

## 7. Supporting Services

ICL Pathway will require a variety of services during development, implementation and operation.

In their responses, suppliers must state the availability of services being proposed.

## 7.1 Documentation

**[REQUIREMENT 34 - MANDATORY]** Suppliers must:

- provide details of any documentation required (own or 3<sup>rd</sup> party)

## 7.2 Installation Services

**[REQUIREMENT 35 - MANDATORY]** Suppliers must:

- provide details of their installation services and experience in their delivery

## 7.3 Customisation Services

**[REQUIREMENT 36 - IMPORTANT]** Suppliers must:

- provide details of their customisation services and experience in their delivery
- describe the configuration management approach employed
- describe the release method used
- test strategy for customised versions
- identify how customised versions are kept up to date e.g. using common source code control
- identify the most common problems encountered and complaints received (plus corrective action taken)

## 7.4 Consultancy Services

**[REQUIREMENT 37 - MANDATORY]** Suppliers must:

- provide details of their consultancy services and experience in their delivery
- propose what services they feel are appropriate to support the development, integration and testing and Merchant Acquirer acceptance of the overall EFTPOS service
- identify any testing tools or facilities available

## 7.5 Training Services

**[REQUIREMENT 38 - MANDATORY]** Suppliers must:

- provide details of any software training required for developers and testers and experience in their delivery
- provide details of any software training required for operational staff and experience in their delivery

## 7.6 Upgrades

**[REQUIREMENT 39 - MANDATORY]** Suppliers must:

- give details of their software update and new release roadmap for the next 3 years
- declare their policy on the backwards compatibility of new releases with old versions of their product and old versions of NT and any other supporting software
- particularly, declare their strategy for keeping old releases compatible with new releases of Windows NT , and their strategy for making future releases compatible with old versions of Windows NT. The supplier must be willing to make contractual commitments to the strategies declared

## 7.7 Support Services

**[REQUIREMENT 40 - MANDATORY]** Suppliers must:

- provide details of their help desk and error correction service
- indicate what service levels are available and recommend an appropriate level (see later Warranty & Support section for required service levels)
- provide details of support guides provided
- describe the call management system employed
- confirm the availability of known error logs to customers
- state any policy on using customers' own call management systems enabling automatic call routing to the supplier

# 8. Implementation Plan

## 8.1 Business Priorities

Key Pathway implementation dates are identified in the timetable in Section 3.

## 8.2 Implementation Proposals

**[REQUIREMENT 41 - MANDATORY]** Suppliers must:

- describe how they propose to plan and control the implementation programme with a particular emphasis on quality management and the role of ICL Pathway staff. Any dependencies on ICL Pathway and other parties should be specifically defined
- propose plans for delivering and implementing their software

## 8.3 Sub-contracting

**[REQUIREMENT 42 - MANDATORY]** Suppliers must:



- provide details of any proposals to involve sub-contractors in the work.

## 9. Supplier Appraisal

### 9.1 Financial

**[REQUIREMENT 43 - MANDATORY]** Suppliers must:

- provide audited accounts for the last 2 years
- outline their strategic plans
- declare any legal actions outstanding
- declare any mergers, acquisitions pending

### 9.2 Implementation

**[REQUIREMENT 44 - MANDATORY]** Suppliers must:

- describe previous experience in providing similar software implementations
- demonstrate systems integration expertise
- provide a number of references of similar operational sites
- provide contact details for the responsible director (or equivalent) through whom ICL Pathway can take up one or more of the references provided

### 9.3 Support

**[REQUIREMENT 45 - MANDATORY]** Suppliers must:

- declare their strategy for supporting old releases
- declare their strategy for supporting customer modifications
- identify the most common problems encountered and complaints received (plus corrective action taken)

### 9.4 Package Stability

**[REQUIREMENT 46 - MANDATORY]** Suppliers must:

- state the number of installed sites for products being offered
- the number of historical releases and timetable for future releases
- give an indication of company policy and plans for the future maintenance and development of their software.

## 9.5 Service Assurance

In addition to the specific services identified above, we will be looking to build a long term relationship with a supplier who is committed to a high quality customer service. Accordingly ICL Pathway will favour those suppliers that hold BS EN ISO 9000 accreditation.

**[REQUIREMENT 47 - MANDATORY]** Suppliers must:

- complete the attached Vendor Evaluation (Quality Management System) questionnaire
- identify a senior supplier manager to hold overall responsibility for the relationship and to monitor progress and review performance on a regular basis
- state the level of BS EN ISO 9000 accreditation held

## 10. Commercial

### 10.1 Price Summary

**[REQUIREMENT 48 - MANDATORY]** Suppliers must:

- provide a one page summary showing all one off charges and annual recurring charges.

### 10.2 Once Only Costs

**[REQUIREMENT 49 - MANDATORY]** Suppliers must:

- provide full details of all once only charges. Please differentiate between costs for required items and any additional functionality or services proposed.

### 10.3 Recurring Costs

**[REQUIREMENT 50 - MANDATORY]** Suppliers must:

- provide full details of all recurring charges. Please differentiate between costs for required items and any additional functionality or services proposed. It is a mandatory requirement that support be available until 30/9/2005, and that any price increases be capped, at a maximum in line with inflation. Suppliers should propose a suitable price indexation formula.

### 10.4 Contract

**[REQUIREMENT 51 - MANDATORY]** Suppliers must:

- provide details of their terms and conditions for supply of software and services. Suppliers must be willing to use these as the basis of negotiation.

## 10.5 Intellectual Property Rights

ICL Pathway does not require the Supplier to transfer ownership of IPR in its software to ICL Pathway, however a conventional indemnity to cover potential breach of any third party's IPR must be given.

**[REQUIREMENT 52 - MANDATORY]** Suppliers must:

- Confirm their acceptance of this principle

## 10.6 Performance and Liability

Suppliers must be willing to accept financial penalties for late completion, measured against the milestones shown in the "Timetable" section of this ITT. Failure to achieve acceptance by the contractually agreed acceptance date shall render the Supplier liable to liquidated damages at the rate of 2.5% of the contracted price per week of delay. The maximum liability for breach of contract shall be the contract value or £250,000, whichever is the greater.

**[REQUIREMENT 53 - MANDATORY]** Suppliers must:

- Confirm their acceptance of this principle

## 10.7 Warranty and Support

Suppliers must warrant that their software will conform to its specification for a minimum of 12 months from the date of acceptance. Suppliers may offer a longer warranty period, which will count in their favour in ICL Pathway's evaluation.

**[REQUIREMENT 54 - MANDATORY]** Suppliers must:

- Confirm their acceptance of this principle, and declare any warranty duration beyond 12 months that they wish to contract to.

Correction of errors, both under warranty and under any support agreement, must be provided within defined timescales, depending on the seriousness of the fault. ICL Pathway's proposed matrix is as follows.

Action	Category of Error		
	(a)	(b)	(c)
Response	1 hour	1 hour	1 hour
Temporary Avoidance	4 hours (2 hours for category (a) (iii))	2 days	4 days
Full Solution	2 days	4 days	7 days

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Classification of Errors

Errors will be classified by ICL Pathway in one of the following categories:

(a)      Critical Errors (ICL Pathway Category A)

Errors which:

- (i)      prevent a service of or for ICL Pathway or an ICL Pathway customer being run so as to endanger the business of ICL Pathway or an ICL Pathway customer; and/or
- (ii)     prevent a time-critical task being undertaken by ICL Pathway or an ICL Pathway customer; and/or
- (iii)    cause, or have caused, the corruption of ICL Pathway's or an ICL Pathway customer's data; and/or
- (iv)    are not covered by (a)(i)-(iii) above but which in the reasonable opinion of ICL Pathway are critical.

(b)      Major Errors (ICL Pathway Category B)

Errors which:

- (i)      cause severe degradation to the Software; and/or
- (ii)     place risk on the operation of an important task by ICL Pathway or an ICL Pathway customer; and/or
- (iii)    cause any other situation or problem requiring urgent resolution; and/or
- (iv)    are not covered by (b)(i)-(iii) above but which in the reasonable opinion of ICL Pathway are major.

(c)      Minor Errors (ICL Pathway Category C)

Errors which:

- (i)      cause minor problems or inconvenience in the Software; and/or
- (ii)     prevent a non-time critical task being completed; and/or
- (iii)    arise as a result of the deficiency of the Software's documentation; and/or
- (iv)    are not covered by (a), (b) or (c)(i)-(iii) above.

If and until Pathway classifies any particular error, the Supplier shall use its own reasonable judgement in making the appropriate classification.

Classification of Actions

**ICL Pathway      Pathway EFTPOS Host Application -  
Invitation to Tender**Ref: EF/DOC/001  
Version: 1.0  
Date: 10/11/97

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“Response” means the time from initial receipt of an error in which the Supplier shall provide an initial response to ICL Pathway and report the path for resolution of the error.

“Temporary Avoidance” means the time from initial receipt of an error in which the Supplier will respond with an interim solution while working on a full solution.

“Full Solution” means the time from initial receipt of an error in which the Supplier shall provide the following as appropriate:

- source code clearance
- revised issue of source code
- machine readable object code copy of the source code clearance and revised source code;
- documentation changes;
- proof that the correction has been successfully tested and implemented into the source code.

**[REQUIREMENT 55 - MANDATORY]** Suppliers must:

- Confirm their acceptance of this principle, and their agreement to the matrix shown above; Suppliers may at their discretion propose alternative values for the matrix, which will be taken into consideration in ICL Pathway’s evaluation.

## **10.8 ESCROW**

ICL Pathway requires that the supplier must deposit a copy of the source code and related documentation in escrow, with the NCC, under the standard NCC escrow contract.

**[REQUIREMENT 56 - MANDATORY]** Suppliers must:

confirm their agreement to this