Document Title: Logical Design for EPOSS/TIP Reconciliation Controls

Document Type: Design Specification

Abstract: This document describes the processes which will be put in place to reconcile that the EPOSS transactions processed at the Counter are passed through to POCL TIP; and that they are accounted for in the weekly cash account statements prepared at the Outlets and in the Cash Account details passed through to POCL TIP

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0 Document Control

0.1 Document History

Version	Date	Reason
0.1	-	First Draft in WORD 95 format (with lost section numbers)
0.2	-	First Draft WORD 97 format as presented to POCL 03/09/99
0.3	10/09/99	Application of feedback from version 0.2 Absolute values change to Actuals in Daily Cash Account Control Totals Inclusion of brought forward totals in Reconciliation Addition of transaction errors detected by Counters
0.4	14/09/99	Same as version 0.3
0.5	16/09/99	Scope Section added Handling of failure scenarios added Specification of Changes to Counters in the Detailed Design Corrections / Changes arising from V0.3 feedback Data item Transaction Date removed from report of Host Detected Transaction Control Errors CA Table “”XX” for error totals
0.6	17/09/99	Data Flow diagrams added
0.7	20/09/99	Comments added following review by TDA and Acceptance Workshop at Gavrelle House on 17/09/99
0.8	**22/12/99**	**Host Generated Cash Account Line Comparisons Report** added

0.2 Associated/ Documents

	Reference	Version	Date	Title	Source
1	TI/IFS/001 PCSTIPIS	5.7	05/07/99	Pathway to TIP AIS	POCL
2	TD/DES/016	0.7	11/10/99	EPOSS End of Day Service High Level Design	Pathway

0.3 Abbreviations

CA	Cash Account
CAP	Cash Account Period
EPOSS	Electronic Point of Sale System
OPS	Outlet Processing System
POCL	Post Office Counters Limited
TIP	Transaction Information Processing
TPS	Transaction Processing Service

0.4 Standard Terms

CA Table Number	The number of the table as it appears on the Cash Account: e.g. table 00 contains Receipts, table 10 contains Payments
Trading Date	Trading Date is the period of time between consecutive public end of day markers in message store. Normal end of day is Outlet closing time (as specified in Reference Data) plus half an hour or 19:00 hours whichever is the earlier. Where an outlet has end of day at 19:00 then a Trading Date of 07/12/99 covers the period of time between 19:00 hours 06/12/99 to 19:00 hours 07/12/99. It should be noted that where an outlet has differing closing times on consecutive days, the 'Trading Day' may represent more or less than a 24-hour period.

0.5 Changes Forecast

Report Layouts to be modified in line with Low Level Design.

Other corrections and comments as necessary.

0.6 Approval authorities

To be defined

0.7 Table of content

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1 Scope

This document describes the processes to be introduced to the POCL Infrastructure products to reconcile the transaction details and cash account details passed to POCL TIP against the details captured at the counters.

The level of detail given is adequate to enable POCL to ascertain that the solution will deliver the business requirement, which is to report all incidents in which either transactions recorded at the counter are not both sent to TIP and brought to account in the outlet Cash Account, or that the outlet cash account is not correctly transmitted to TIP.

This document is the principle vehicle for communicating the reconciliation design to POCL and will be re-issued as necessary.

2 Introduction

This document describes the processes that will be put in place to ensure that:

- The accounting transaction data recorded by the EPOSS system on the OPS can be reconciled with the accounting transaction data returned to the POCL TIP system across the TIP interface
- The accounting transaction data written each day at the OPS can be reconciled with the Cash Account data written at the OPS when the Cash Account is produced
- The Outlet Stock Holdings generated at the end of a Cash Account Period at the OPS can be reconciled with the Outlet Stock Holdings transferred to TIP across the TIP Interface
- The Cash Account Line records generated at the OPS can be reconciled with the Cash Account Line records returned to TIP across the TIP Interface

The processes to be put in place will be delivered through the implementation of new software functionality at both the OPS and TPS Host systems. Where a new OPS function is delivered to generate control totals, the function will be designed to calculate the totals by a means different to that used in the current OPS functionality which generates balancing and Cash Account data. This approach is being taken to ensure that if the same total is calculated by two separate logical processes then there can be a high level of assurance in the integrity of the data.

3 Overview

The reconciliation processes will be split into two separate sets of activity, Daily reconciliation tasks and Weekly (or more accurately at the end of each CAP) reconciliation tasks.

The daily tasks will ensure that the base transaction data recorded at the counter matches the base transaction data transferred to TIP for that day. At the same time, the transactions will be used to generate control totals for the Cash Account tables to which the transaction will report at the end of the CAP.

At the end of the CAP, the daily control totals generated for each Cash Account table will be accumulated and the resulting value calculated for the Payments and Receipt tables will be compared with the Cash Account line records generated by the Cash Account production process. If there is a discrepancy in this comparison then the system will validate each of the accumulated daily control totals with the corresponding Cash Account line records to identify the table which does not reconcile and record an error message in the Riposte message store.

The existing functions in the system which create the outlet stock holding records and the Cash Account Line records will also be amended to accumulate a control total for each set of records which will be written into the message store at the end of each set. These control total records will be harvested and inserted into the TPS Host database. The TPS Host system will compare the Stock Holding records (‘STX’ records) and the Cash Account Line records (‘CAC’ records) output to the TIP Cash Account sub-file with the control totals received from the OPS system. In the event that the TPS harvester fails to locate either the Stock Holding records (‘STX’ records) or the Cash Account Line records (‘CAC’ records) or the control totals calculated by the TPS Host system differ from the control totals received from the OPS, then a reconciliation error report will be produced.

3.1 Daily Transaction Control Totals

At the end of each logical day (Trading Day) an End of Day process runs to insert a marker into the Riposte Message store. This marker records the precise point in the message store (for each node in the group) at which the End Of Day process ran. The marker is used by the TPS Harvester process to delineate the transactions which will be extracted from the message store and sent, via the TPS Host System, to the POCL TIP system across the TIP Interface.

The End of Day process will be extended to include an additional set of functions to:

- Calculate control totals of all accounting transactions recorded since the last End of Day marker. The control total will be made up of just those transactions which get passed through to TIP: (thus “transfers” and “remittance settlements” will not be included since they are not passed to TIP. The full list of transaction types not passed to TIP are listed in section 4.2.1). The control total will include the following fields/attributes:
    1. Trading Date (Date of current EOD Marker)
    2. Total number of transactions
    3. Total of absolute value of transaction ‘Quantity’ field
    4. Total of absolute value of transaction ‘SaleValue’ field

The control totals written by the OPS system will be harvested by the TPS

Harvester (or another specific Harvester process) and will be inserted into a new table within the TPS Host Database. When the TPS Host system creates the TIP sub-file for an outlet a new process will be added that independently calculates the control totals from the records being generated in the sub-file and then compares them with the control totals harvested from the OPS. If there is a discrepancy between the TPS and OPS generated control totals, the following information will be written to an Exception Report:

1. Outlet FAD code
2. The values calculated by the OPS
3. The values calculated by the TPS Host

3.2 Daily Cash Account Control Totals

At the same time that accounting transactions are read for the creation of the daily transaction control totals (see 3.1 above), a further new function within the End of Day process will cause the value of the transaction to be accumulated in an appropriate control total(s) to facilitate reconciliation of the Cash Account at the end of the Cash Account Period. This process will determine, for each transaction processed, which Cash Account period is appropriate to the transaction (there may be transactions for more than one CAP on any given day) and to which Cash Account Table(s) control total the transaction is relevant. The determination of which Cash Account Table control total is relevant will be based on the ‘Transaction Mode’ and ‘Product Number’ contained in the transaction message that will then be used to access the appropriate Cash Account Mapping reference data to determine the table number to which the transaction relates. The control total record will include:

1. CAP Number
2. CA Table Number
3. Total number of transactions
4. Total of signed value of transaction ‘Qty’ or ‘SaleValue’ field (only one of these attributes is present in each CA Line message).

Use of the Transaction Mode, Product Number and Cash Account Mapping data to determine the appropriate CA Table control total will ensure that the total is derived by a separate logical process from that used during the production of the Cash Account itself. Cash Account production relies on the use of product ‘Primary Mappings’ and ‘Secondary Mappings’ to aggregate transactions at the stock unit and office levels before the Cash Account mappings are used to generate the final Cash Account values.

If any transactions are found which are not possible to map to a CA Table, their details are added together and included in a Control Total for CA Table Number “XX”. These are exceptions. The corresponding error transactions will be flagged in message store from where they will be harvested as Counter detected errors. Harvested errors will be written to an Exception Report for action via the normal RED processes. The report will contain:

1. Outlet FAD code

2. The unique message number of the failed transaction
3. The Mode in which the transaction took place
4. The stock unit in which the transaction took place
5. The product number of the failed transaction
6. The Sale Value of the failed transaction
7. The reason that the transaction failed to be mapped

3.3 Weekly Cash Account Control Totals

At the time that the Cash Account 'Trial Report' is produced the OPS system creates a set of 'Cash Account Line' records (which reflect the line by line content of the hard-copy print of the Cash Account).

For each set of records produced, an additional message will be written which contains control totals. The control totals will include the following fields:

1. CAP Number
2. Total absolute number of transactions
3. Total of absolute value of transaction 'Qty' or 'SaleValue' field (only one of these is present in each message, separate totals will be maintained for 'Qty' and 'SaleValue')

At the time that the Office is 'rolled over' in to the next CAP, the 'Final Cash Account Report' is produced and the OPS system creates a set of 'Office Stock Holding' records (which reflect the accumulation of the stock unit holdings at the end of the CAP).

For each set of records produced, an additional message will be written which contains control totals. The control totals will include the following fields:

1. CAP Number
2. Total absolute number of transactions
3. Total absolute value of transaction 'Quantity' field
4. Total of absolute value of transaction 'SaleValue' field

The Stock Holding and Cash Account Line Control Total records will be harvested at the same time as the Stock Holding and Cash Account transactions are harvested and will be written to a new table in the TPS Host System database. When the TPS Host system creates the TIP Cash Account sub-file for an outlet a new process will be added that independently calculates the control totals from the records being generated in the sub-file and then compares them with the control totals harvested from the OPS. If there is a discrepancy between the TPS and OPS generated control totals, the following information will be written to an Exception Report:

1. Outlet FAD code
2. CAP Number

2. The values calculated by the OPS
3. The values calculated by the TPS Host

3.4 Weekly Cash Account Control Total Reconciliation

The end of day procedure which follows the Cash Account Period Rollover will retrieve the Daily Cash Account Reconciliation Control Totals (see 3.2 above) for the current Office CAP (including any that took place on the day of the CAP rollover). These totals will be accumulated to derive a single total for each Cash Account Table and totals of appropriate tables (such as the Remittance tables and the balance brought forward for the Receipts table) will be added to the Stock, Payments and Receipt table control totals. The values generated for the control total of each of the tables will then be compared with the values generated for the lines recorded for the table during the production of the Cash Account. Any difference will be identified in a message written to the message store.

Any error messages will be subsequently harvested and inserted into a new table in the TPS Host Database. Errors will be output to an error report.

NOTES

1. The reconciliation process will work for normal and extended cash accounts. Extended CAPs are the same as a normal CAP except that CAP Number increases by more than 1 and the period covered is more than 7 days
2. The reconciliation process will be unaffected by days when the Outlet is not trading because processing is covered by resilience already built into the end of day process.

4 Detailed Design Proposal

4.1 Changes to Message Store

The following new messages will be written by the Counters to support the Reconciliation process:

- Daily Transaction Control Totals
- Daily Cash Account Control Totals
- Transaction Errors Detected by Counters
- Weekly Cash Account and Stock Holding Control Totals
- Cash Account Reconciliation Errors

4.1.1 Daily Transaction Control Totals

This message will be written by the normal end of day procedure and will contain control totals that will be harvested and used in the TPS Host to check that the transactions passed through to TIP reconcile against the totals generated at the outlet. The message will contain the following attributes:

<GroupId:*ffffff*>		FAD Code
<Id:*nn*>		Node
<Num:*mmmmmmmmm*>		Message number
<Date:*dd-mmm-ccyy*>		Date of message
<Time:*hh:mm:ss*>		Time of message
<Expiry:*nnn*>		Retention period in days
<EPOSSTransaction:		Group attribute for EPOSS Transactions
	<TranType:DailyTxnCT>	Transaction Type for Daily Control Totals
	<TradingDate:*dd-mmm-ccyy*>	Date of EOD Marker
	<MessageCount:*nnnnnnnn*>	Number of transaction messages
	<QtyCount:*nnnnnnnn*>	Total of absolute value of Transaction Quantity field
	<ValueCount:*nnnnnnnn.nn*>	Total of absolute value of Transaction 'SaleValue' field

>

4.1.2 Daily Cash Account Control Totals

This message will be written by the normal end of day procedure and will contain control totals for each Cash Account Table. The totals will be added together at the end of the Cash Account Period and used to reconcile against the details on the Cash Account. The message will contain the following attributes:

<GroupId:*ffffff*>	FAD Code	
<Id:*nn*>	Node	
<Num:*mmmmmmmm*>	Message number	
<Date:*dd-mmm-ccyy*>	Date of message	
<Time:*hh:mm:ss*>	Time of message	
<Expiry:*nnn*>	Retention period in days	
<EPOSSTransaction:	Group attribute for EPOSS Transactions	
	<TranType:DailyCACT >	Transaction Type for Daily Cash Account Control Totals
	<CAP:*cc*>	Cash Account Period
	<CATable:*tt*>	Cash Account Table No
	<MessageCount:*nnnnnnnn*>	Number of transaction messages
	<QtyCount:*nnnnnnnn*>	Total of absolute value of Transaction Quantity field
	<ValueCount:*nnnnnnnn.nn*>	Total of absolute value of Transaction 'SaleValue' field

>

Note: 1. Where a product reports to both a quantity and a value table on the cash account the quantity and value in the transaction record will be accumulated separately into the respective Cash Account Table.

2. Although the above structure contains both quantity and value counts the majority of Cash Account Tables have only one or the other value (the exception being Table 12). On Quantity-only tables the control total for value will be zero. On Value-only tables the control total for quantity will be zero.

CATable "XX" will be a special table set up to hold control totals for exception transactions that do no map against a valid CA Table entry.

4.1.3 Transaction Errors Detected by Counters

This message will be output where the counter is unable to analyse the transaction in message store. A new message is output containing the following attributes:

<GroupId:*ffffff*>	FAD Code
<Id:*nn*>	Node
<Num:*mmmmmmmmm*>	Message number
<Date:*dd-mmm-ccyy*>	Date of message
<Time:*hh:mm:ss*>	Time of message
<Expiry:*nnn*>	Retention period in days
<EPOSSTransaction:	Group attribute for EPOSS Transactions
<TranType:DailyCAErr >	Transaction Type for Daily Cash Account Control Total Errors
<TxnId:	Transaction in error - formatted as GroupId / Id / Num
<Group:*ffffff*>	Group Id (FAD Code)
<Id:*nn*>	Node Id
<Num:*mmmmmmmmm*>	Message Number
>	
<Reason:*ttttttt*>	Reason for rejection (e.g. <Reason:No CA Mapping>)
>	

4.1.4 Weekly Cash Account Control Totals

This message will be written when the Cash Account is produced and will contain control totals that will be harvested and used in the TPS Host to check that the cash account details and stock details passed through to TIP reconcile against the totals generated at the outlet. The message will contain the following attributes:

<GroupId:*ffffff*>	FAD Code
<Id:*nn*>	Node
<Num:*mmmmmmmmm*>	Message number
<Date:*dd-mmm-ccyy*>	Date of message
<Time:*hh:mm:ss*>	Time of message
<Expiry:*nnn*>	Retention period in days
<EPOSSTransaction:	Group attribute for EPOSS Transactions

<TranType:Weekly*tt*CT >	Transaction Type for Weekly Cash Account (tt=CA)/Stock Holding (tt=SH) Control Totals
<CAP:*cc*>	Cash Account Period
<MessageCount:*nnnnnnnn*>	Number of CA Line/Stock Holding messages
<QtyCount:*nnnnnnnn*>	Total of absolute value of Transaction Quantity field
<ValueCount:*nnnnnnnn.nn*>	Total of absolute value of Transaction 'SaleValue' field

>

4.1.5 Cash Account Reconciliation Errors

This message is output where the end of day procedure following the Cash Account finds that the sum of the Daily Cash Account Control Totals (see section 4.1.2) captured during the Cash Account Period does not agree with the totals on the Cash Account. A message will be written where there is an error in the totals for a CA table.

The message will contain the following attributes:

<GroupId:*ffffff*>	FAD Code
<Id:*nn*>	Node
<Num:*mmmmmmmmm*>	Message number
<Date:*dd-mmm-ccyy*>	Date of message
<Time:*hh:mm:ss*>	Time of message
<Expiry:*nnn*>	Retention period in days
<EPOSSTransaction:	Group attribute for EPOSS Transactions

<TranType:WeeklyCAErr >	Transaction Type for Weekly Cash Account Errors
<CAP:*cc*>	Cash Account Period
<CATable:*tt*>	Cash Account Table No
<CAQtyTot:*nnnnnn*>	Total of signed values of the Quantity field accumulated from the Cash Account Line records
<CAValueTot:*nnnnnn.nn*>	Total of signed values of the Sale Value field accumulated from the Cash Account Line records
<ControlQtyTot:*nnnnnn*>	Total of signed values of the Quantity field accumulated from the Daily Cash Account Control Total records

<ControlValueTot:*nnnnnn.nn*>	Total of signed values of the Sale Value field accumulated from the Daily Cash Account Control Total records

>

CATab "XX" will be a special table set up to hold control totals for exception transactions that do no map against a valid CA Table entry. If a message is written for <CATable:XX>, <CAQtyTot:> and <CAValueTot:> will be null, but <ControlQtyTot:> and <ControlValueTot:> will contain values.

4.2 Changes to Counters

4.2.1 End of Day Architecture

In order to ensure that the record set on which the Daily Control Totals are calculated is fixed at a point in time, the processes for calculating the totals will need to run AFTER the EOD Marker has been inserted into the message store (since this delineates the messages for the day). The calculation of the totals will therefore be carried out within the EOD process using the architecture developed for CSR+ for the creation and management of 'Harvest Trailers' (see Ref. 2). This will result in the Control Total messages being written after the EOD Marker but before the EOD Harvest Trailer message. The resilience of the process remains unchanged since the EOD process itself will continue to ensure that if the process is interrupted for any reason, then the generation of the Control Totals and the Harvest Trailer will be carried out when the system is re-started.

4.2.2 Normal End of Day Processing

The end of day procedure will be extended to scan message store to calculate control totals and write messages for:

- Daily Transaction Control Totals (see section 4.1.1), making sure that absolute values and quantities are used. These totals will be subsequently harvested and used by TPS Host to reconcile against the number transactions passed through to TIP. Some transactions are not passed through to TIP so these will not be included in the control totals: the following transactions will not be included:
    - Transfers
    - Transfer settlements
    - Remittance settlements
    - Non accounting data settlements
    - Parcel traffic settlements

The identification of the products to be excluded in this way will be controlled by the use of a piece of reference data (persistent object) in the message store.

- Daily Cash Account Control Totals (see section 4.1.2), making sure that signed values and quantities are used. These totals will subsequently be used by the counter software to reconcile the Cash Account. Totals will be written for the following CA Tables
  - 00 Receipts (Values)
  - 10 Payments (Values)
  - 07 Discrepancies (Values)
  - 20 Cash Stock and Vouchers in Hand (Table 5) (Values)
  - 30 Receipts (Quantities)
  - 40 Payments (Quantities)
  - 50 Stock in Hand Breakdown (Table 5b) and Suspense Account Tables (Values)
  - 60 Remittances from other Offices (Values)
  - 61 Receipt of stock from SSO (Values)
  - 70 Stock Returns to SSO (Values)
  - 80 Remittances to other Offices (Values)
  - 90 Girobank Transaction Breakdown (Table 10f) and Parcel Traffic (Table 12) (Values and Quantities)
  - 91 Number of Transactions (Table 10g) (Quantities)

A new message will be written to message store (before the EOD Harvest Trailer) for any transaction that is found to be in error (see section 4.1.3).

Totals for error transactions are added together and included in a special Daily Cash Account Control total for CA Table “XX”.

4.2.3 Cash Account Processing

When the Cash Account ‘Trial Report’ is produced the processing will be extended to calculate control totals and write a message for:

- Weekly Cash Account Control Total (see section 4.1.4), making sure that signed values and quantities are used. This total will be subsequently harvested and used by TPS Host to reconcile against the number of cash account lines passed through to TIP.

When the Cash Account ‘Roll-Over’ is executed the processing will be extended to calculate control totals for the outlet stock holdings and write a message for:

- Weekly Outlet Stock Holding Control Total (see section 4.1.4), making sure that signed values and quantities are used. This total will be subsequently harvested and used by TPS Host to reconcile against the number of stock holding records passed through to TIP.

4.2.4 End of Day Processing Following Cash Account

The end of day procedure will be extended as described in Section 3.4 to retrieve the Daily Cash Account Reconciliation Control Totals (see section 4.1.2). The total for each table on each day will be accumulated to give a single total for each table for the Cash Account Period. The system will then perform the following additional calculations:

1. The totals of Table 5(b), 2 and 2(a) will be added to the control total for Table 5;
2. The total of Table 3 will be deducted from the control total for Table 5;
3. The Table 5 Control Total from 1&2 above will be added to the Control Total of the Payments Table (Table 10);
4. The Control Total of the Discrepancy Table (Table 07) will be added to the Control Total of the Payments Table (Table 10);
5. The Control Total for Tables 6 and 6(a) will be added to the Control Total of the Receipts Table (Table 00);
6. The Balance Brought Forward value for the Current CAP will be added to the control total of the Receipts Table (Table 00);
7. The Control Total of Tables 8 and 9 will be added to the Control Total of the Payments Table (Table 10).

These values will then be compared against each Cash Account Table total accumulated from the Cash Account line records written during the production of the Cash Account.

An error messsage will be written (see 4.1.5) when the total for any table does not match the Control Total against which it is being compared.

4.3 Changes to the Oracle Database

The following tables will be added to the database which is populated by the Harvester and processed by TPS Host:

- Daily Transaction Totals
- Cash Account Total Lines
- Stock Detail Total Lines
- Exception Transaction
- Control Exceptions

4.3.1 Daily Transaction Totals

This is a table of control totals which will be populated nightly by the harvester from the Transaction Stream Control Total message. It will contain the following data items:

- FAD Code
- Trading Date
- Total Number of Transactions
- Total of absolute value of transaction “Quantity” field

- Total of absolute value of transaction “Sale Value” field

4.3.2 Cash Account Total Lines

This is a table of control totals which will be populated by the harvester from the weekly CA Stream Control Total message. It will contain the following data items:

- FAD Code
- CAP Number
- Total Number of lines
- Total of absolute value of transaction “Qty” field
- Total of absolute value of transaction “Sale Value” field

4.3.3 Stock Detail Total Lines

This is a table of control totals which will be populated by the harvester from the weekly Office Stock Holding Control Total message. It will contain the following data items:

- FAD Code
- CAP Number
- Total Number of messages
- Total of absolute value of transaction “Quantity” field
- Total of absolute value of transaction “Sale Value” field

4.3.4 Exception Messages

This table will be used to hold details of messages where exception conditions have been detected by the Counters and/or the Harvester. For example:

- End of Day process may not be able to map a particular transaction into one of the CA tables (see section 4.1.3)
- The Harvester is unable to convert a particular data item because the content in Message Store is not compatible with its definition in the Oracle database

The table will contain the following data items:

- FAD Code
- Transaction Date
- Transaction Time
- Transaction Identifier
- Reason for rejection

4.3.5 Control Exceptions

This table will be used to hold details where the Cash Account Totals calculated by the Counters do not correspond to the Control Totals captured by the Counters from the transactions processed during the Cash Account Period. It will contain the following data items:

- FAD Code
- CAP Number
- CA Table Number
- Accumulated signed total of 'Qty' values from Cash Account Line Records
- Accumulated signed total of 'Sale Value' values from Cash Account Line Records
- Accumulated signed total of 'Qty' values from Daily Cash Account Control Totals
- Accumulated signed total of 'Sale Value' values from Daily Cash Account Control Totals

CA Table Number "XX" will be a special table set up to hold control totals for exception transactions that do no map against a valid CA Table entry: Cash Account attribute entries will be null, but Control Total entries will contain values.

4.4 Changes to TPS Agent

The Harvester will populate the new tables in the Oracle database: there may be several entries for each FAD code.

4.4.1 Daily Processing

For each outlet that is harvested TPS Agent will process the Transaction Stream Control Totals from message store and will populate the Daily Transactions Totals table in the Oracle database.

Any transaction which it cannot harvest (because of invalid data) will be written to the Exception Messages table (see section 4.3.4).

Any Transaction Error detected by the counter (see section 4.1.3) will also be written to the Exception Messages table (see section 4.3.4).

4.4.2 Processing of Cash Account Data

For each outlet that is harvested TPS Agent will:

- process Weekly Cash Account Stream Control Total(s) from message store to populate the Cash Account Total Lines table in the Oracle database
- process Office Stock Holding Control Total(s) from message store to populate the Stock Detail Total Lines table in the Oracle database

Any line which it cannot harvest (because of invalid data) will be written to the Exception Messages table (see section 4.3.4).

Any reconciliation error detected by the Counters (see 3.4 above) will be written to the Control Exceptions table.

4.5 Changes to TPS Host

4.5.1 Daily Processing

For each outlet, TPS Host will

- Add up number of EPOSS transactions which have been harvested
- Add up absolute value of transaction quantity field in the harvested transactions
- Add up absolute value of transaction sale value field in the harvested transactions
- Compare calculated totals against the control totals in the Daily Transaction Totals total
- Output an exception report for those outlets which don't balance containing both sets of totals for each outlet (see 4.6.1 below)
- Output an exception report of exception transactions reported by the Harvester (see 4.6.2 below)

NOTES:

1. For control purposes a reversal will be treated in the same way as the transaction being reversed. E.g. if the original transaction was for quantity 6 at a sales value of £1.20, then the combination of the reversed and reversal transactions would increment the number of transactions by 2, transaction quantity by 12, and sales value by £2.40.
2. "Event" transactions will be ignored from the totals

4.5.2 Processing of CAP Stream Control Totals

For each outlet, TPS Host will

- Add up number cash account lines which have been harvested
- Add up absolute value of cash account line
- Compare calculated totals against Weekly CAP Stream Control Totals
- Output an exception report for those outlets which the Host detects as not balancing (see 4.6.3 below)
- Output an exception report for those outlets which Counter has reported as not balancing (see 4.6.4 below)
- Output an exception report of exception cash account lines reported by the Harvester (see 4.6.2)
- **Output an exception report of outlets where payment and receipt totals are not equal (see 4.6.5).**

4.5.3 Processing of Office Stock Holding Control Totals

For each outlet, TPS Host will

- Add up number of stock detail lines
- Add up absolute quantity of stock detail lines

- Add up absolute value of stock detail lines
- Compare calculated totals against Weekly Office Stock Holding Control Totals
- Output an exception report for those outlets which the Host detects as not balancing (see 4.6.3 below)
- Output an exception report of exception stock detail lines reported by the Harvester (see 4.6.2)

4.6 Exception Reports

The following reports will be produced by the TPS Host:

- Host Detected Transaction Control Errors
- Harvester Detected Errors
- Host Detected Cash Account Control Errors
- Counter Detected Reconciliation Errors
- **Host Generated Cash Account Line Comparisons Report**

All these reports will be routed to the Business Support Unit within ICL Pathway who will investigate each error. Any lost / missing transactions will be communicated to POCL.

4.6.1 Host Detected Transaction Control Errors

This report is produced daily showing details for any outlet where the control totals for the transactions output by the Host to POCL TIP do not match the Daily Transaction Totals calculated by the Counters. The following data is reported for each exception:

- FAD Code
- Trading Date
- Control Totals calculated by Host
- Control Totals calculated by Counter

An “END OF REPORT” message will appear at end of the report even if there are no errors reported.

4.6.2 Message Store Errors

This report is produced to list exception conditions detected by the Harvester and/or Counter when failing to process one of the messages in message store. The following data is reported for each exception:

- FAD Code
- Trading Date
- Transaction Time
- Content of message
- Reason for Rejection

An “END OF REPORT” message will appear at end of the report even if there are no errors reported.

4.6.3 Host Detected Cash Account Control Errors

This report is produced daily showing details for any outlet where the Control totals for the number of entries on the Cash Account output by the Host to POCL TIP do not match the Control Totals calculated by the Counters.

The following data is reported for each exception:

- FAD Code
- Trading Date
- Cash Account Period
- Absolute Control Totals for Cash Account Lines calculated by Host
- Absolute Control Totals for Cash Account Lines calculated by Counter
- Absolute Control Totals for Stock Detail Lines calculated by Host
- Absolute Control Totals for Stock Detail Lines calculated by Counter

An “END OF REPORT” message will appear at end of the report even if there are no errors reported.

4.6.4 Counter Detected Reconciliation Errors

This report is produced daily showing details for any outlet where the accumulated Daily Transaction Control totals for the cash account period do not match the totals on the Cash Account produced by the Counters.

The following data is reported for each exception:

- FAD Code
- Trading Date
- Cash Account Period
- Cash Account Table Number
- Cash Account Details calculated by Counter
- Control Totals for Cash Account calculated by Counter

CA Table Number "XX" will be used to report control totals for exception transactions that do no map against a valid CA Table entry.

An "END OF REPORT" message will appear at end of the report even if there are no errors reported.

4.6.5 Host Generated Cash Account Line Comparisons Report

This report is produced daily showing details for any outlet which has produced a Cash Account where the totals for payments (CA line 1700) and receipts (CA line 700) are not equal, or when either is not present.

The following data is reported for each exception:

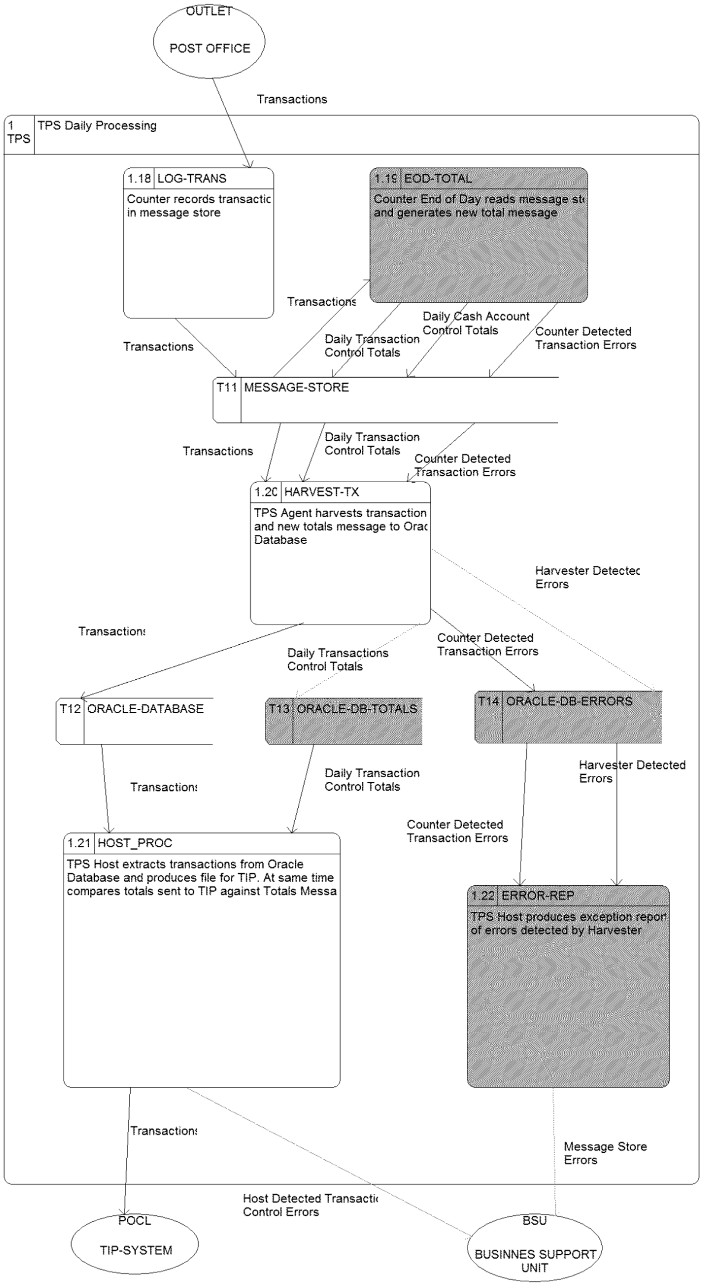
- **FAD Code**
- **Trading Date**
- **Cash Account Period**
- **Cash Account Line Number**
- **Amount**

5 Data Flow Diagrams

5.1 Daily Processing

The following diagram illustrates the data flow of the daily reconciliation processing:

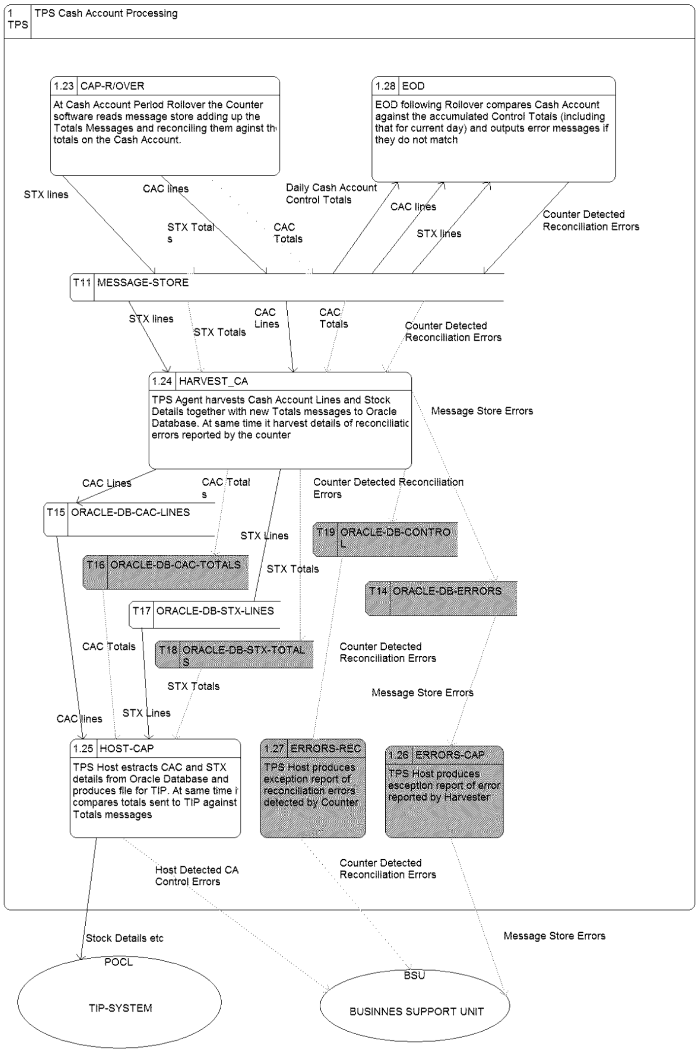
- Counter End of Day will process the transactions in Message Store and generate additional messages for Daily Transaction Control Totals and Daily Cash Account Control Totals
- A message will also be written to Message Store for any transaction which cannot be mapped into one of the cash account tables in the Daily Cash Account Control Totals
- The Daily Transaction Control Totals will be harvested and passed through to TPS Host where they will be compared against the transactions output to TIP. Any discrepancy will be reported as Host Detected Transaction Control Errors
- Any transactions which cannot be extracted by the Harvester will be posted to an error table in the host database. This will also contain Counter Detected Transaction Errors. This table will be processed by the host and they be reported as Message Store errors.


OUTLET
POST OFFICE
Transactions
1 TPS
TPS Daily Processing
1.18 LOG-TRANS
Counter records transactic in message store
1.1‌9 EOD-TOTAL
Counter End of Day reads message st and generates new total message
Transactions
Transactions
Daily Transaction Control Totals
Daily Cash Account Control Totals
Counter Detected Transaction Errors
T11 MESSAGE-STORE
Transactions
Daily Transaction Control Totals
Counter Detected Transaction Errors
1.2 HARVEST-TX
TPS Agent harvests transaction and new totals message to Orac Database
Harvester Detectec Errors
Transaction
Daily Transactions Control Totals
Counter Detected Transaction Errors
T12 ORACLE-DATABASE
T13 ORACLE-DB-TOTALS
T14 ORACLE-DB-ERRORS
Transaction
Daily Transaction Control Totals
Harvester Detected Errors
Counter Detected Transaction Errors
1.21 HOST_PROC
TPS Host extracts transactions from Oracle Database and produces file for TIP. At same time compares totals sent to TIP against Totals Messa
1.22 ERROR-REP
TPS Host produces exception repor of errors detected by Harvester
Transaction
Message Store Errors
Host Detected Transacti Control Errors
POCL
TIP-SYSTEM
BSU
BUSINNES SUPPORT UNIT

5.2 Cash Account Processing

The following diagram illustrates the data flow at the time of Cash Account Period rollover

- The Counters will generate additional control messages representing the Cash Account Lines and Stock Details
- Counter End of Day will compare the Cash Account against the accumulated totals for the Daily Cash Account Control Totals. Any reconciliation errors are reported to Message Store
- Counter Detected Reconciliation Errors will be harvested and passed through to the TPS Host where they will reported
- The Control Messages for the Cash Account Lines and Stock Details will be harvested and passed through to TPS Host where they will be compared against the Cash Account Details output to TIP. Any discrepancy will be reported as Host Detected Cash Account Control Errors
- Any Cash Account Line or Stock Details Line which cannot be extracted by the Harvester will also posted to an error table in the host database. This table will be processed by the host and they be reported as Message Store errors.


1 TPS
TPS Cash Account Processing
1.23 CAP-R/OVER
1.28 EOD
STX lines
CAC lines
STX Total s
CAC Totals
Daily Cash Account Control Totals
CAC lines
STX lines
Counter Detected Reconciliation Errors
T11 MESSAGE-STORE
STX lines
STX Totals
CAC Lines
CAC Totals
Counter Detected Reconciliation Errors
1.24 HARVEST_CA
Message Store Errors
CAC Lines
CAC Total s
Counter Detected Reconciliation Errors
T15 ORACLE-DB-CAC-LINES
STX Lines
T19 ORACLE-DB-CONTRO L
T16 ORACLE-DB-CAC-TOTALS
STX Totals
T14 ORACLE-DB-ERRORS
T17 ORACLE-DB-STX-LINES
CAC Totals
T18 ORACLE-DB-STX-TOTAL S
Counter Detected Reconciliation Errors
STX Totals
Message Store Errors
CAC lines
STX Lines
1.25 HOST-CAP
1.27 ERRORS-REC
1.26 ERRORS-CAP
Host Detected CA Control Errors
Counter Detected Reconciliation Errors
Stock Details etc
Message Store Errors
POCL
TIP-SYSTEM
BSU
BUSINNES SUPPORT UNIT

1.23 CAP-R/OVER: At Cash Account Period Rollover the Counter software reads message store adding up the Totals Messages and reconciling them aginst th totals on the Cash Account.

1.28 EOD: EOD following Rollover compares Cash Account against the accumulated Control Totals (including that for current day) and outputs error messages if they do not match

1.24 HARVEST_CA: TPS Agent harvests Cash Account Lines and Stock Details together with new Totals messages to Oracle Database. At same time it harvest details of reconciliatic errors reported by the counter

1.25 HOST-CAP: TPS Host estracts CAC and STX details from Oracle Database and produces file for TIP. At same time i compares totals sent to TIP against Totals messages

1.27 ERRORS-REC: TPS Host produces exception report of reconciliation errors detected by Counter

1.26 ERRORS-CAP: TPS Host produces esception report of error reported by Harvester

6 REPORT LAYOUTS

6.1 Host Detected Transaction Control Errors

```
         0         0         0         0         0         0         0         0         0         1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012

                                  TPS RECONCILIATION REPORTS                   RUN DATE / TIME: dd/mm/yyyy hh:mm:ss PAGE NO:  ZZZZ9
                                                                                                                      PROGRAM: NNNN
                                                        Host Detected Transaction Control Errors

Outlet        Trading Date                                  Number     Absolute Quantity   Absolute Value
xxxxxx         dd/mm/yyyy             TPS Total            xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx
                                      Counter Total        xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx

xxxxxx         dd/mm/yyyy             TPS Total            xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx
                                      Counter Total        xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx

*** END OF REPORT ***
```

Notes

The report details lines will be in the following sort sequence:-

Ascending Outlet / Trading date / Transaction Date

6.2 Message Store Errors

```
         0         0         0         0         0         0         0         0         0         1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012

                                  TPS RECONCILIATION REPORTS                   RUN DATE / TIME: dd/mm/yyyy hh:mm:ss PAGE NO:  ZZZZ9
                                                                                                                      PROGRAM: NNNN
                                                                  Message Store Errors

Outlet   Trading     Transaction    Transaction  Reject              Message
         Date        Date           Time         Reason


xxxxxx   dd/mm/yyyy  dd/mm/yyyy     hh:mm:ss     xxxxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

xxxxxx   dd/mm/yyyy  dd/mm/yyyy     hh:mm:ss     xxxxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                                                                     xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx


*** END OF REPORT ***
```

Notes

The report details lines will be in the following sort sequence:-

Ascending Outlet / Trading date / Transaction Date / Transaction Time

6.3 Host Detected Cash Account Control Errors

```
         0         0         0         0         0         0         0         0         0         1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012

                                  TPS RECONCILIATION REPORTS                   RUN DATE / TIME: dd/mm/yyyy hh:mm:ss PAGE NO:  ZZZZ9
                                                                                                                      PROGRAM: NNNN
                                                       Host Detected Cash Account Control Errors

Outlet        Trading Date   CAP Number                                      Number     Absolute Quantity   Absolute Value

xxxxxx         dd/mm/yyyy    xx             CAC Lines - TPS Total          xxxxxxxx                             xxxxxxxxxx
                                            CAC Lines - Counter Total      xxxxxxxx                             xxxxxxxxxx
                                            STX Lines - TPS Total          xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx
                                            STX Lines - Counter Total      xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx

xxxxxx         dd/mm/yyyy    xx             CAC Lines - TPS Total          xxxxxxxx                             xxxxxxxxxx
                                            CAC Lines - Counter Total      xxxxxxxx                             xxxxxxxxxx
                                            STX Lines - TPS Total          xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx
                                            STX Lines - Counter Total      xxxxxxxx         xxxxxxxxxx          xxxxxxxxxx



*** END OF REPORT ***
```

Notes

The report details lines will be in the following sort sequence:-

Ascending Outlet / Trading date / Transaction Date

6.4 Counter Detected Reconciliation Errors

```
         0         0         0         0         0         0         0         0         0         1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012

                                  TPS RECONCILIATION REPORTS                   RUN DATE / TIME: dd/mm/yyyy hh:mm:ss PAGE NO:  ZZZZ9
                                                                                                                      PROGRAM: NNNN
                                                         Counter Detected Reconciliation Errors

Outlet        Trading Date   CAP Number     CAP Table                       Number        Signed Value Total


xxxxxx         dd/mm/yyyy    xx             xx          Cash Account       xxxxxxxx         xxxxxxxxxx
                                                        Control            xxxxxxxx         xxxxxxxxxx

xxxxxx         dd/mm/yyyy    xx             xx          Cash Account       xxxxxxxx         xxxxxxxxxx
                                                        Control            xxxxxxxx         xxxxxxxxxx



*** END OF REPORT ***
```

Notes

The report details lines will be in the following sort sequence:-

Ascending Outlet / Trading date / Transaction Date

6.5 Host Generated Cash Account Line Comparisons Report

```
TPS RECONCILIATION REPORTS                 RUN DATE/TIME: 17/12/1999 16:29:50    Page No:    1
                                                                               PROGRAM:TPSC256

              HOST GENERATED CASH ACCOUNT LINE COMPARISONS REPORT


 Org Unit Id Group Id  Trading Date  CAP  Line No  Line Name                            Amount


       15950   501680    29/12/1999   40      700  Receipts Total                        93.59
                               NULL          1700  Payments Total                        92.59

       17924     7261    29/12/1999   40      700  Receipts Total                    442496.98
                                             1700  Payments Total                 Not Received

Total Number of records = 2

*** End of Report ***
```

7. Failure Scenarios

This section describes how the Reconciliation Process will function under various failure scenarios.

Failure Condition	Scenario when failure occurs prior to Initiation of Process	Scenario when failure occurs during the Execution of Process	Scenario when failure occurs for protracted period
1. End of Day - Non gateway node failure Note that the most common scenario for this is the Postmaster turning off the power to an unused counter PC.	End of Day will run in the nodes which are running:: ♦ Private end of day markers will be written for each live node ♦ No public end of day markers are written ♦ No Daily Transaction Control Totals written ♦ No Daily Cash Account Control Totals written ♦ No CA Reconciliation is carried out if it is a Cash Account day ♦ No transactions are harvested ♦ No transaction details are output to TIP. If the node is restored before midnight (local time) EOD will run as normal for that day. It may be that such “late EODs” will not be harvested until the next day since the EODs may miss the 20:30 TPS harvester cut-off time. (See also 4 - Wan failures)	If a non -gateway node fails whilst EOD is running then EOD fails to complete and ♦ No private end of day markers will be written for node that dies ♦ No public end of day markers are written ♦ No Daily Transaction Control Totals written ♦ No Daily Cash Account Control Totals written ♦ No CA Reconciliation is carried out if it is a Cash Account day ♦ No transactions are harvested ♦ No transaction details are output to TIP. If the node is restored before midnight (local time) EOD will run as normal for that day. It may be that such “late EODs” will not be harvested until the next day since the EODs may miss the 20:30 TPS harvester cut-off time. (See also 4 - Wan failures)	Whilst node is down: ♦ No private end of day markers will be written for dead node ♦ No public end of day markers are written ♦ No Daily Transaction Control Totals written ♦ No Daily Cash Account Control Totals written ♦ No CA Reconciliation is carried out ♦ No transactions are harvested ♦ No transaction details are output to TIP. Note that if a node is down when EOD is attempted on the gateway no further attempt to write EOD will be made until “tomorrow’s EOD time” When the node is restored a private EOD marker will be inserted at the normal EOD time. System recovers when all nodes restored as described below.

	If node is restored after midnight EOD will run on the day it is restored at the normal time for EOD	If node is restored after midnight EOD will run on the day it is restored at the normal time for EOD	
2. End of Day - Gateway node failure	End of Day will not run if gateway server is down: ♦ No public end of day markers are written ♦ No Daily Transaction Control Totals written ♦ No Daily Cash Account Control Totals written ♦ No CA Reconciliation is carried out if it is a Cash Account day ♦ No transactions are harvested ♦ No transaction details are output to TIP. If the node is restored before midnight (local time) EOD will run as normal (see above)	If node goes down then end of day will fail: ♦ No public end of day markers are written ♦ No Daily Transaction Control Totals written ♦ No Daily Cash Account Control Totals written ♦ No CA Reconciliation is carried out if it is a Cash Account day ♦ No transactions are harvested ♦ No transaction details are output to TIP. If the node is restored before midnight (local time) EOD will run as normal (see above)	As above System recovers when all nodes restored: ♦ Public end of day markers will be inserted at appropriate places ♦ Daily Transaction Control Totals written for each end day that node was down ♦ CA Reconciliation is carried out if it is a Cash Account day ♦ Daily Cash Account Control Totals written for each end day that node was down ♦ All missing days will be harvested ♦ Daily Transaction Control Totals will be checked by TPS Host Transaction files will be passed onto TIP. (All “missing” Transactions will be harvested with the “correct” Trading date)
3. End of Day - LAN failure	Same as for failure in non-gateway node (see 1 above)	Same as for failure in non-gateway node (see 1 above)	Same as for failure in non-gateway node (see 1 above)
4. End of Day - WAN failure	End of Day will run if WAN is down:	♦ End of Day will continue to run if WAN goes down:	♦ During period of WAN failure:

This condition is not detected at the counter. It is only visible at the data Centre	♦ Public end of day markers will be inserted at appropriate places ♦ Daily Transaction Control Totals written ♦ Daily Cash Account Control Totals written ♦ Reconciliation checks will be carried out if CA day ♦ No transactions are harvested ♦ No transaction details are output to TIP. When WAN recovers: ♦ All missing days will be harvested ♦ Daily Transaction Control Totals will be checked by TPS Host ♦ Transaction files will be passed onto TIP	♦ Public end of day markers will be inserted at appropriate places ♦ Daily Transaction Control Totals written ♦ Daily Cash Account Control Totals written ♦ Reconciliation checks will be carried out if CA day ♦ No transactions are harvested ♦ No transaction details are output to TIP. When WAN recovers: ♦ All missing days will be harvested ♦ Daily Transaction Control Totals will be checked by TPS Host ♦ Transaction files will be passed onto TIP	♦ Public end of day markers will be inserted at appropriate places ♦ Daily Transaction Control Totals written ♦ Daily Cash Account Control Totals written ♦ Reconciliation checks will be carried out if CA day ♦ No transactions are harvested ♦ No transaction details are output to TIP. When WAN recovers: ♦ All missing days will be harvested ♦ Daily Transaction Control Totals will be checked by TPS Host ♦ Transaction files will be passed onto TIP
5. End of Day - Node rebuilding following failure	N/A	Node rebuilding for a non gateway node will have no effect on end of day and details will be harvested to TIP in the normal way Node rebuilding of gateway node will delay end of day processing until rebuilding is complete. Then end of day will run and harvesting will run as normal.	N/A
6. End of Day -	N/A	Messages are not physically committed until EOD has completed successfully.	N/A

Application failure		I.e. When the last message has been written to the message store. Service will automatically restart when the system is re-booted or the overnight reload of desktop takes place	
7. Cash Account Production and Rollover - Non-gateway node failure	Cash Account Production can proceed on gateway node so long as: ♦ All stock units have been rolled over ♦ User says OK to proceed when warned that all nodes are not available But subsequent end of day will not run. Thus: ♦ Outlet will roll over and process as normal ♦ Cash Account will be produced ♦ Weekly Cash Account Control Totals written ♦ No cash account details will be harvested ♦ No cash account details will be output to TIP.	♦ Failure of a non-gateway node during the production of the cash account will cause Cash Account to fail. ♦ However production of the Cash Account can be restarted on the gateway node: (or this node when back on line). ♦ But subsequent end of day will not run. Thus: ♦ Outlet will roll over and process as normal ♦ Cash Account will be produced ♦ Weekly Cash Account Control Totals written ♦ No cash account details will be harvested ♦ No cash account details will be output to TIP.	♦ During period of node failure: ♦ Outlet can roll over and process as normal (see column 1) ♦ Cash Account can be produced ♦ Weekly Cash Account Control Totals can be written ♦ No cash account details will be harvested ♦ No cash account details will be output to TIP. When non-gateway node is restored the system recovers when next EOD is run: ♦ All missing cash account details and totals will be harvested ♦ Stock Holding and Cash Account Line Control Totals will be checked by TPS Host ♦ Cash account details will be output to TIP. ♦ CA Reconciliation is carried out if it is a Cash Account day

8. Cash Account Production and Rollover - gateway node failure	N/A	CA production can proceed on any other node. As for 7 above.	As for 7 above
9. Cash Account Production and Rollover - LAN failure	As for (7) above		
10. Cash Account Production and Rollover - WAN failure	During period of WAN failure: ♦ Outlet will roll over and process as normal ♦ Cash Account will be produced ♦ Weekly Cash Account Control Totals written ♦ No cash account details will be harvested ♦ No cash account details will be output to TIP. When WAN recovers: ♦ All missing cash account details and totals will be harvested ♦ Stock Holding and Cash Account Line Control Totals will be checked by TPS Host	Same as column 1	During period of WAN failure: ♦ Outlet will roll over and process as normal ♦ Cash Account will be produced ♦ Weekly Cash Account Control Totals written ♦ Weekly cash account reconciliation will be carried out at outlet ♦ No cash account details will be harvested ♦ No cash account details will be output to TIP. When WAN recovers: ♦ All missing cash account details and totals will be harvested ♦ Stock Holding and Cash Account

	♦ Cash account details will be output to TIP.		♦ Line Control Totals will be checked by TPS Host ♦ Cash account details will be output to TIP.
11. Cash Account Production and Rollover - Node rebuilding following failure	N/A	Node rebuilding for a non gateway node will have no effect on CAP rollover and details will be harvested to TIP in the normal way Node rebuilding of gateway node will delay CAP rollover until rebuilding is complete.	N/A
12. Cash Account Production and Rollover - Application failure	N/A	If these do not complete successfully, then they can be re-invoked Since harvesting is based on "trailer messages" written at the end of the process, then the harvester should only pick up the successfully completed Rollovers and cash Account reports. There are checks to prevent 2 Rollovers being done for the same week and 2 cash Accounts to be produced.	N/A
13. Agent & Harvester processing - application failure		Harvesters consider the following types of failure :- Riposte failures. If these failures are "expected" failures such as Riposte has died, then the agent will die leaving another instance of the agent to tidy up The chunk may well be marked as "Failed" (thus requiring manual intervention by CFM before recovery), since if Riposte has died it is likely that other instances of the agent would have	N/A

		the same problem Oracle failures. If these failures are “expected” failures such as Oracle having died then the agent will die leaving another instance of the agent to tidy up The chunk may well be marked as “Failed” (thus requiring manual intervention by CFM before recovery), since if Oracle has died it is likely that other instances of the agent would have the same problem Unexpected Oracle failures. These are assumed to be data failures, and so a message is logged to the Oracle database and reported by the Host (see 5.2)	
14. Agent & Harvester processing - normal interface failure			
15. File transfer - application failure	To be supplied	To be supplied	To be supplied