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Document Title: Pathway to HAPS Application Interface Specification (Horizon Release 2+)

Document Type: Interface Specification

Release: CSR+

Abstract: This document defines the record formats to be used to support Release 2+ of the Automated Payments System. It describes the data interfaces between the Pathway Host system and POCL HAPS to support the Automated Payments Service within the Horizon project.

Document Status: Approved

Distribution:

Steve Warwick	Bob Cragg (POCL)
Dai Jones	Pete Lindsey
Stephan Robson	Dave McDonnell
Simon Palladino	Nial Finnegan
Library (PATHWAY)	Library (Horizon)

Reviewed By:

Steve Warwick	Bob Cragg (POCL)
Dai Jones	Pete Lindsey
Stephan Robson	Dave McDonnell
Simon Palladino	Nial Finnegan

Author: W. Curtis (A&TC)/Richard Hicks

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0 DOCUMENT CONTROL

0.1 Document History

Version	Date	Reason
1.0	10/07/97	Issued for initial comments.
1.1	28/07/97	Revised after comment. Transaction records are defined by Token type. Other data types are described by cross reference to POCL documents. The Transfer Processes have been revised to support multiple Clients.
0.1	4/12/97	Version number changed to follow standards. File transfer process modified after comments. Minor corrections made to record definitions.
0.2	13/3/98	Updated following input from The Post Office following a meeting between Pathway, PDA and POCL staff.
0.3	2/7/98	Updated following further input from Post Office Counters Ltd. A section has been added to describe the record formats produced by the Pathway APS Host to facilitate the implementation of file conversion software. File conversion and validation is done on the Pathway PC not the HAPS PC. The Clerk Id. value has been removed from the Receipt Reference number. Pisces data definitions have been removed completely.
2.0	21/10/98	Issued at version 2.0 as baseline.
2.1	8/1/99	The HAPS interface will not now be used to transfer Quantum transactions to the TIP interface since Operational TIP will be in place before Release 2+ goes live. The validation and conversion of data files will be performed by the Pathway Host AP System and not on the Pathway PC. The File Identifier field format is to be maintained at 11 characters and a transaction type value is now included.
3.0	22/2/99	Issued at version 3.0 as baseline.
3.1	8/4/99	Revised following comments received. Directory names modified to aid compatibility with NR2. Information contained in other documents removed. Detail not relevant to HAPS has been removed.
4.0	23/4/99	Issued at version 4.0 as baseline. All references to GEC WaterCard have been changed to ABB WaterCard as this is how it is now known. Other minor changes have been made to the wording to clarify some points.
4.1	16/03/00	Updated for POCL CR 0084a; CP 2488; CCN 621: 1) To change the description of the acceptable method of payments to allow '0' as sent by DPC:- a) i.e. **Appendix A.2** 'Method of Payment - number(1) - How payment was made, values: *0 = DPC*, 1= Cash, 2 = Other; 2) Also, the following updates:- **Appendix A. Section A.2** – a) 'Time Entered - Number(4) - Time of the AP Transaction (Local Time) *for DPC transactions the time will be set to zeros'*, format: HHMM. b) 'Microfilm Reference Number - Char(10) - Only used in HAPS to Pathway DPC transactions, holds reference number to identify DPC sales vouchers. Otherwise set to

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		c) spaces *or zero's*
5.0	10/04/00	Updated for comments. Issued for approval

0.2 Approval authorities

Name	Position	Signature	Date
Stephan Robson	TDA		
Peter Wiles	Pathway Chief Architect		
John Dicks	Pathway Customer Requirements Director		
Chris Humphries	Pathway Development Manager		
Steve Doyle	Pathway APS Delivery Manager		
Bobb Cragg	POCL APS Product Manager		

0.3 Associated Documents

Reference	Version	Date	Title	Source
TD/ARC/0001	4.2	27/11/98	Technical Environment Description	Alan Ward
CR/FSP/0004	5.1	23/7/98	Service Architecture Design Document	John C. C. Dicks
APMIG_O	A	4/10/96	Automated Payment System Migration Overview	John Bruce BA/POCL
APAY/CIDS/021	Issue 1 Amend 0	12/5/94	Automated Payments POCL Host/Client Systems GEC WaterCard Interface Spec.	K. Norman POCL
TTSGEC0C	DRAFT - C	31/10/96	POCL Token Technology Specification GEC WaterCard	M. Shuttleworth POCL
BP/DES/0002	3.0	29/5/98	APS Design Specification - Release 2	R.Smethurst
AP/IFS/029	2.0	28/9/98	Pathway to HAPS Technical Interface Specification	R.Smethurst
AP/IFS/001	5.0	22/09/99	Pathway to HAPS Interface Specification	R.Smethurst
Tba			Operational Procedures	

0.4 Terms & Abbreviations

APS	Automated Payments Service
DPC	Document Processing Centre
FTMS	File Transfer Managed Service
HAPS	Host Automated Payments System run by POCL
HAPS gateway PC	Pathway HAPS Site FT System
Pathway gateway PC	Pathway Bootle (Wigan) FT System
POCL	Post Office Counters Limited
RDMC	Reference Data Management Centre
RDP	Reference Data Project (POCL)
Smart Token	ABB WaterCard (previously GEC WaterCard)
TIP	Transaction Information Processing

Data Types

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The format of each of the data types is defined using the Oracle SQL Server convention. The character set used is ASCII.

Type	Size and description
char(n)	fixed length character string of n bytes
varchar(n)	variable length character string to a maximum of n bytes, left justified and space filled
number(n)	an integer with a total of n ASCII digits (this is NOT binary)
byte(n)	binary data or byte representation of n bytes

0.5 Changes in this Version

0.6 Changes Forecast

0.7 Table of Contents

1. Introduction

The objective of the document is to define the format of the files which are transferred between the Pathway Host system and the POCL Host Automated Payments System (HAPS). The definition of the file formats and the file naming convention enables the functions required at both systems to be developed. The Operational Procedures define the functions required to support the transfer of the files. Files are transferred in both directions depending on the origin

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of the data. However the solution is for any one Client Account to be only supported from one Host system.

At Release 2 all transactions are transferred to HAPS for onward transmission to the respective Clients. Release 2+ enables Clients to directly receive transactions from Pathway and this requires that transactions for Clients supported by Pathway but generated by POCL counter systems are passed to Pathway via HAPS for onward transfer to the Client. Also at Release 2+ the Pathway counter system supports Smart Tokens and this requires AP Client data to be transferred between the two systems as appropriate to where the service is supported.

2. Scope

The document defines the Pathway to POCL HAPS Application Interface. It is an extension of the Release 2 Automated Payments system and describes the file formats of the files required by both systems to support Automated Payments within the Pathway and HAPS systems. The Release 2 interface specification still applies for Release 2 systems but this document extends the specification to include support for Smart Token technology and Client communication by Pathway. This document when read in conjunction with the Pathway to HAPS Technical Interface Specification replaces the Release 2 document although some areas may be covered by both documents.

Operational TIP will be in place before Release 2+ is live and all transactions will be sent there for settlement purposes.

The names of the directories used on the HAPS gateway PC are fixed and are defined here.

The cut-over of Clients to being directly supported by Pathway is defined in the Client Migration Strategy.

2.1 Assumptions

Client Reference Data is NOT delivered via HAPS but from the Reference Data Project.

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3. Background

The Release 2 Automated Payments System handles a subset of possible transactions that can be performed at a post office. The Release 2+ APS supports Smart Tokens which are used for pre-payment meters and this requires data, supplied by the Client, to be written onto the Token.

There are several different Smart Token Technologies that are supported and each one is different in its format but generally manages a common set of data. However only ABB WaterCard is supported across the interface between Pathway and HAPS. The three types of data transferred between the two systems are transaction data, tariff data and distribution data, which is customer specific. For ABB WaterCard, the distribution data is referred to as Customer Update Lists. The tariff data and distribution data are transferred from the Client across the Pathway to HAPS interface unchanged and this format is as previously agreed with the WaterCard Clients.

The transaction data files are formatted as described in this document and these are then processed before forwarding to the appropriate Client. To facilitate the processing of the large volumes of transaction data a control file is transferred describing the details of the transaction files. Also further files are generated to enable error reporting and acknowledgment of successful transfers.

During the interim period when post office counter systems are supported both by Pathway and by POCL it will be necessary to transfer tariff and distribution data from HAPS to Pathway and vice versa. This is necessary to cover the migration of Clients to being directly supported by Pathway. In either case the format of a file for a particular data type is the same no matter in which direction the transfer occurs. The Client defines the formats of the tariff data and distribution files and these are the formats to be used in any transfer between Pathway and HAPS.

3.1 Transaction Data

The transaction data is generated at the Post Office Counter and is needed by the Client for accounting and is needed by POCL for settlement of monies within the whole system. Transactions are routed directly to Clients either from HAPS or from Pathway. Any transactions collected by POCL supported outlets for transfer to Clients supported by Pathway are transferred to Pathway. Similarly transactions from Pathway supported outlets for transfer to Clients supported by HAPS are transferred to HAPS.

The transaction data content and format for smart tokens will be different to other token types and there are two transaction file types:

1. one containing magnetic card and bar code transactions,
2. one containing ABB WaterCard transactions,

The name of a transaction file indicates the file type, as defined in Section 5., but each file type has the same structure:

- file header,
- transaction detail records,
- file trailer.

The file header and trailer for the two types of transaction file are in the same format.

The transaction file records do not need to be sorted and can contain records for several Clients. The records will usually be sorted by FCD Office Code value when produced by Pathway.

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A control file is produced once all of the transaction files are complete and this indicates how many transaction files were transferred since the production of the previous control file.

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3.2 Control file

A control file consists of a header record, zero or more control detail records and a trailer record. The format is described in Appendix B. A control file indicates how many transaction files have been sent since the production of the previous control file. If no transaction files are sent then a control file is still sent but with no control detail records, just a header and a trailer record. A control file is sent each business day.

The control file is renamed by the receiving system once all of the transaction files have been processed and this renamed file is transferred back to the originating system.

3.3 Response file

The system that receives the transaction files validates the content of the files and produces a response file for every transaction file sent. If a transaction file is valid then an OK file is produced but if validation fails then an error file is produced. The OK file consists of a header record, zero or more detail records and a trailer record. The error file consists of a header record, one or more detail records and a trailer record. The format is described in Appendix C.

The receiving system also renames each transaction file depending on successful validation or unsuccessful validation. These files are not transferred to the originating system whereas the response files are transferred back. The response files are used to correct any errors in the transaction data and to register either successful validation or an error condition.

3.4 Client Tariff Data

The Utility companies define tariffs to be used in their meters which are updated infrequently. The data is transmitted to the Service providers in files and the file formats for each of the currently supported Client Utility companies has been agreed between POCL and the Client.

3.5 Client Distribution Data

The term Distribution Data is used because the token manufacturers use different terms to describe the data targetted at specific customers. The ABB Watercard Client generates the Customer Update Lists in the format specified by agreement with them.

This data is distributed according to the Client's requirements. This is currently specified to be to all post offices for ABB WaterCard.

3.6 Reference Data

The Automated Payments Service relies on data specific to each Client supported that provides parameters to be used when transacting a payment. The Reference Data Management Service provides this reference data.

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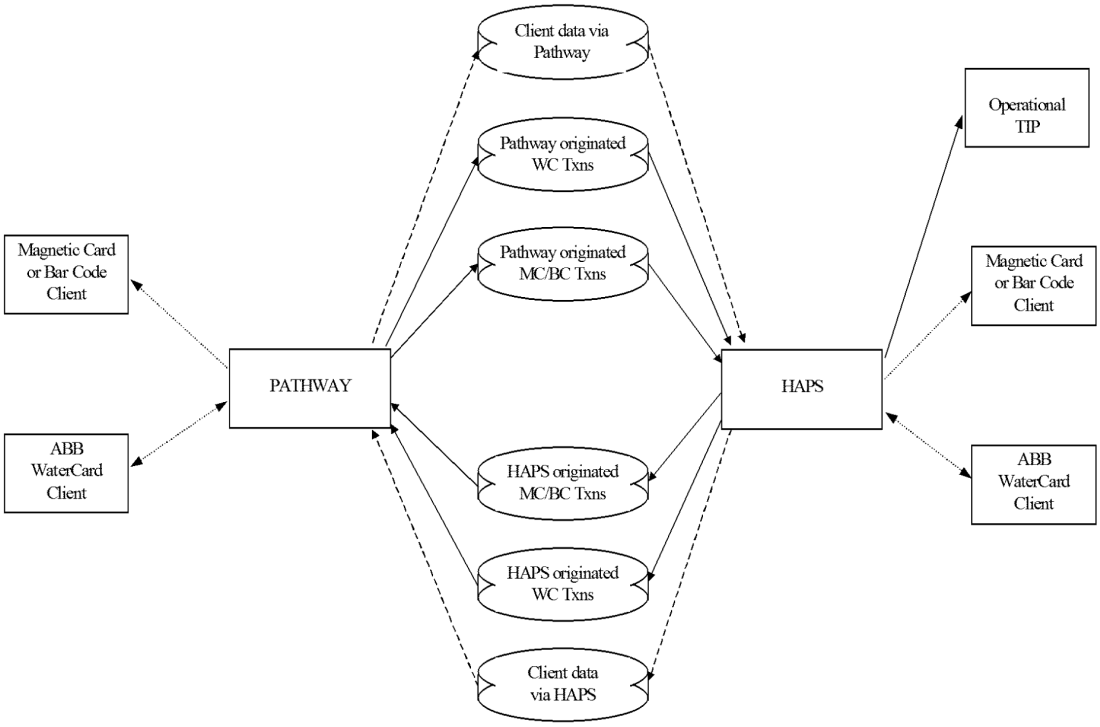
3.7 Data Flows

The diagram following illustrates the data flows between the various systems. POCL Clients can communicate with either Pathway or HAPS but any one Client, uniquely identified by a Client Account code allocated by POCL, only sends and receives data from one AP Host. A Client could receive transactions for one service/account from HAPS and for another service/account from Pathway, but this does not affect the interface between the two host systems.

The solid lines indicate the transaction data, in Pathway/HAPS format. The dashed lines indicate the tariff data and distribution data, in Client data format, and the dotted lines indicate all data types but in Client format.



3.8 Year 2000

The date fields used by APS conform to Year 2000 standards, however certain date fields held within the APS transaction data only use 2 digits for the year. This data is not used within the systems and is transferred unchanged from the originating source, usually the Customer's Home Unit or Meter, to the Client who then interprets the data appropriately.

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4. Physical data formats

All data is transferred in one or more files and each file has a header record, zero or more data records and a trailer record. Since the Client Data formats are immutable then it will be observed that some of these files have no trailer record.

There are no record delimiters, such as <CR> <LF>, in the transaction files, tariff data files or distribution data files and it is the record type which determines the record format.

4.1 Transaction data

At Release 2 of the Pathway system AP transaction data is transferred to the HAPS system as defined in the 'Pathway to HAPS Interface Specification, Ref. AP/IFS/001'. The extra data that is required to support Smart Tokens necessitates that the record format for the files to be transferred is modified.

There will be a different file for each token technology type,

- magnetic card and bar code,
- ABB Watercard.

4.1.1 Transfer Structure

The Transaction Files have the same format for both directions of transfer, though the content of some of the record fields is dependent on which is the sending system.
Each file has the same structure:

- File Header record,
- Transaction records,
- File Trailer record.

There can be zero or more transaction records in a file. Dependent on the file type there may be more than one type of transaction record, in which case the order of the transaction records is specified with the record formats for the file type below.

The control file consists of a header record, zero or more control records and a trailer record. There is one control record for each transaction file in the transmission.

The error file consists of a header record, one or more error records and a trailer record. There is one error record for each transaction record in the corresponding transaction file that is in error. If there are no errors then an error file will not be produced but an OK file is produced.

An OK file consists of a header record, zero or more error records and a trailer record. Errors recorded in the OK file indicate that the format of the transaction is valid but that the transaction is undeliverable. This is because the Client is either unknown to the receiving system or is disowned, i.e. the originating system owns this Client interface.

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4.1.2 Record Formats

The generic header and trailer record for all transaction data files are specified below. The records for the transaction detail records for each file type are specified in appendix A.

Header Record		
Field name	**Format**	**Description**
Label Identifier	char(4)	The header record type, set to := "AHR1"
Source	char(7)	A POCL allocated FAD Code to identify the sending system. (Same value as at Release 2 for Pathway.) 0360775 = Pathway live, 9990771 = Pathway test, 0370770 = HAPS live, 9980776 = HAPS test.
File Identifier	char(11)	For Pathway to HAPS this is the file name as defined in section 5.2. If the file is retransmitted the file name and consequently this field is updated. For HAPS to Pathway this is the file name as defined in section 5.2. If the file is retransmitted the file name and this sequence number is not updated.
Token type	char(1)	Indicates the type of transaction by token type. Set to space for magnetic card and bar code and set to 'A' for WaterCard transactions.
Filler	char(84)	Set to spaces to maintain backwards compatibility.

Trailer Record		
Field name	**Format**	**Description**
Label Identifier	char(4)	The trailer record type, set to "ATL1"
Filler1	number(13)	Set to zeros
Credit Items Total	number(13)	The total of all the amounts (ignoring their sign) of each transaction in the file. Derivation: sum(Amount Paid)
Filler2	number(7)	Set to zeros
Credit Record Count	number(7)	The count of all transactions in the file, i.e. the count of all data records in the file. Derivation: count(Transaction Detail Records)
Filler3	char(63)	Set to spaces

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5. Transfer Processes

5.1 Platforms

The files are held within the Pathway system at the Data Centre on the Pathway APS Host and transferred between the gateway PCs as defined in the Pathway to HAPS Technical Interface Specification, AP/IFS/0029. Software running on the Pathway gateway PC, the Pathway FT System, has access to the Pathway APS Host file system. The files are made available on the Pathway Main File Transfer PC, the HAPS gateway PC, for the POCL HAPS platform to access.

The transaction files sent from HAPS are validated at the Pathway Host and files sent from Pathway are validated by HAPS. Each system produces notification files (.OK), or error files (.ERR), for transfer back to Pathway or HAPS using a defined directory structure. The Client data files are not verified by the receiving Host system before they are transferred to the other Host. The File Transfer Managed Service, FTMS, transfers the files between the Pathway gateway PC and the HAPS gateway PC.

5.2 Filenames

The files are held in specific directories depending on the direction of transfer but the filenames used are only dependent on the file type. The originating system creates the file and gives it a name according to the specifications below. The receiving system then renames the file, in situ, and sets the file creation date after it has successfully transferred it. The table below defines the file names and file types to be used.

The file types are

- TXN for AP Transaction files
- CTL for the control file associated with the transaction files
- NOT for renamed AP transaction files notifying successful validation, which remain on the gateway PC
- NOX for renamed AP transaction files notifying unsuccessful validation, which remain on the gateway PC
- OK for OK files returned to the originator indicating successful validation of the corresponding AP transaction file
- ERR for error files returned to the originator indicating unsuccessful validation of the corresponding AP transaction file
- CTN for renamed notification of control files, returned to Host which originated the control file
- TFD for ABB WaterCard Tariff data
- TFN for renamed Tariff data successfully received, which remain on the gateway PC
- DID for ABB WaterCard Distribution data
- DIN for renamed Distribution data successfully received, which remain on the gateway PC

Note. The tariff data and distribution data filenames are different to that defined by the Client and it is the responsibility of the Client facing Host system to rename the files.

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File Type	Transaction data from Pathway	Transaction data from HAPS
Data file	Pdddsss.TXN	Hdddsss.TXN
Control file	Pddd001.CTL	Hddd001.CTL
Notification file, success	Hdddsss.NOT	Pdddsss.NOT
Notification file, failure	Hdddsss.NOX	Pdddsss.NOX
Rename of control file	Hddd001.CTN	Pddd001.CTN
OK file	Hdddsss.OK	Pdddsss.OK
Error file	Hdddsss.ERR	Pdddsss.ERR

The file identifier, "odddsss.typ", for both Pathway and HAPS generated files is derived as follows:

- o= source of file, P for Pathway and H for HAPS;
- ddd = business day of the year (January 1st is 001);
- sss=file sequence number starting at 001 on each transaction day.

The sequence number increases by 1 for each transaction file and is maintained by the sending host system. If a file is retransmitted from Pathway to HAPS, for whatever reason, the file is regenerated and the file is named using the next available sequence number.

If a transaction file is retransmitted from HAPS to Pathway it will have the same file name, i.e. the same sequence number is used.

File Type	Tariff data	Distribution data
Data file	ClientName.TFD	ClientName.DID
Notification file, successfully received	ClientName.TFN	ClientName.DIN

For files other than transaction files then the Clients determine the names according to the Application Interface Specifications and the filename, including the file type, is modified during the copying phase. The name given to a Client data file is fixed for each Client and every new delivery of a file of a given type from that Client uses the same name. Once the receiving system has processed the file, successfully or unsuccessfully, then the file is renamed. The table below defines the file names used for each of the identified Clients. The names provided here are only suggested names and the definitive values used are contained in the Operational Procedures.

Client Name	File Name
Welsh Water	GWELSHV1
Three Valleys Water	G3VALV1
Anglian Water	GANGWV1
Mid Kent Water	GMIDKV1
North West Water	GNWWV1
Wessex Water	GWESV1
Cambridge Water	GCAMBV1
South West Water	GSWWV1
North Surrey Water	GNSURV1

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5.3 Validation

The records in each transaction file are checked to be of the correct size as defined by the specified format but the content of every field is not validated. Only fields which have a defined range or value specified or are used as an index entry or record length are validated. The error codes, defined in Appendix C, indicate the current set of fields to be validated.

The Client data is only validated where an index entry or record length value exists.

The notification and error files produced after the validation of the transaction data are placed in the same directory on the HAPS gateway PC using the same sequence number as the original file. The directory names used are described later.

5.4 Usernames

The username POCLHAPS is available for POCL read and write access to files on the \WORKING and \PATHWAY directories on the HAPS gateway PC.

5.5 Directories

Each file is held in a well-known place on the Pathway Main File Transfer PC at HAPS, the HAPS gateway PC, using a pre-defined name that is configured into the FTMS system. The currently defined name of the directory is \WORKING and this directory continues for files sent from Pathway. For files transferred from HAPS the \PATHWAY directory is allocated.

File Type	HAPS gateway PC
Transactions & Control Files Pathway Originated	\WORKING
Acknowledgments from HAPS for Pathway Originated files	\WORKING
Transactions & Control Files HAPS Originated	\PATHWAY
Acknowledgments from Pathway for HAPS Originated files	\PATHWAY
Client Data via Pathway	\WORKING
Client Data via HAPS	\PATHWAY

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Appendix A. Record formats for AP Transaction Files

A.1 Magnetic card and bar code AP Transaction File structure

This file contains transaction records for magnetic card and bar code transactions. There is only one type of Transaction record, with the records in any order in the file between the header and trailer records.

A.2 Magnetic card and bar code AP Transaction Detail Record

Field name	Format	Description
Record Type	number(2)	Identifies the type of record: 31 = magnetic card AP transaction 32 = bar code AP transaction.
FCD Office Code	char(7)	Post Office code identifying the Outlet (FAD code)
Client Id	number(4)	The code by which the AP Client is identified
Client Account Code	number(4)	The code by which the AP Client account is identified
Client Service Code	number(4)	The code by which the AP Client service is identified
Customer Reference	char(20)	Customer reference number, left justified, space filled
Date Entered	number(8)	Date of the AP transaction, format: YYYYMMDD
Time Entered	number(4)	Time of the AP transaction (Local Time), for DPC transactions the time will be set to zeros, format: HHMM
Accounting Date	number(8)	The accounting date on which the transaction was performed, format: YYYYMMDD
Service Group	char(2)	The service group to which the client/service belongs.
Transaction Type	number(1)	The type of transaction, values: 0 = Normal, 1 = Reversed, 2 = Reversal
Receipt Reference	char(5)	Part of the transaction reference to enable identification of the transaction. See note below.
Receipt Serial Number	number(4)	Uniquely identifies the transaction within the Receipt Reference.
Filler	char(2)	set to spaces
Method of Capture	number(1)	The method of transaction capture, values: 0 = Automatic, 1 = Manual, 2 = DPC (HAPS to Pathway only)
Method of Payment	number(1)	How payment was made, values: 0 = DPC, 1 = Cash, 2 = Other
Amount Paid	number(10)	The actual amount of the transaction in pence
Reversing/Reversed Receipt Reference	char(5)	For reversed or reversal transactions, the receipt reference of the reversing or reversed transaction.
Reversing/Reversed Receipt Serial Number	number(4)	For reversed or reversal transactions, the receipt serial number of the reversing or reversed transaction. See above.
Microfilm Reference Number	char(10)	Only used in HAPS to Pathway DPC transactions, holds reference number to identify DPC Sales voucher. Otherwise set to spaces or zeros.
Batch Status	char	Only used in HAPS to Pathway DPC transactions, otherwise set to spaces. Values: B = Balanced, U = Unbalanced.

Note. The Receipt Reference, for Horizon generated transactions, is composed as follows:

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"ttccH" tt = terminal number and cc is set to spaces.

For HAPS originated transactions the value depends on the capture device and is not used by Pathway.

A.3 ABB Watercard Transaction File structure

This file contains transaction records for ABB WaterCard transactions. There is only one type of transaction record, which can be in any order in the file between the header and trailer records.

A.4 ABB Watercard Transaction Detail Record

Field name	Format	Description
Record Type	number(2)	Identifies the record: 33 = ABB Watercard AP transaction.
FCD Office Code	char(7)	Post Office code identifying the Outlet (FAD code)
Client Id	number(4)	The code by which the AP Client is identified
Client Account Code	number(4)	The code by which the AP Client account is identified
Client Service Code	number(4)	The code by which the AP Client service is identified
Customer Reference	char(16)	Customer reference number, left justified, space filled
Home Unit Reference number	number(6)	Identifies the unit in the customer's home (from the card).
Date Entered	number(8)	Date of the AP transaction, format: YYYYMMDD
Time Entered	number(4)	Time of the AP transaction (Local Time), format: HHMM
Accounting Date	number(8)	The accounting date on which the transaction was performed, format: YYYYMMDD
Service Group	char(2)	The service group to which the client/service belongs.
Receipt Reference	char(5)	Part of the transaction reference to enable identification of the transaction. This follows the same format as the magnetic card.
Receipt Serial Number	number(4)	Uniquely identifies the transaction within the Receipt Reference.
Method of Capture	number(1)	The method of transaction capture, values: 0 = Automatic, 1 = Manual
Amount Paid	number(10)	The actual amount of the transaction in pence
Amount on card	number(6)	The actual amount on the card on completion of the transaction, in pence.
Transaction Type	number(1)	The type of transaction, values: 0 = Normal, 1 = Reversed, 2 = Reversal
Method of Payment	number(1)	How payment was made, values: 1 = Cash, 2 = Other
Reversing/Reversed Receipt Reference	char(5)	For reversed or reversal transactions, the receipt reference of the reversing or reversed transaction.
Reversing/Reversed Receipt Serial Number	number(4)	For reversed or reversal transactions, the receipt serial number of the reversing or reversed transaction. See above.
Transaction Status	number(2)	See below for values.
Captured card data	byte(256)	The data captured from the card.

Notes.

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1. *The Client transaction format includes a System Type and a Terminal Number field. These values can be obtained from the Receipt Reference when generating the Client format record.*

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A.5 ABB Watercard Transaction Status

The Transaction status field of the ABB WaterCard Transaction detail record can take the following values.

Status	Meaning
0	Successful transaction, full operation available.
1	Successful transaction, credit adjustment only available.
2	Successful transaction, card rebuild successfully performed.
3	Card rebuild successful, but transaction cancelled.
4	Transaction re keyed, minimal card data populated.
70	Client tariff file missing.
71	Region code missing from tariff file or invalidated by ref data.
72	Property band missing from tariff file or invalidated by ref data.
73	Validation word has value of 0xFFFF.
74	Invalid card state (e.g. Home Unit with non-zero credit).
75	Card rebuild not available for client.
76	Transaction canceled, the clerk abandoned processing during the ‘get amount’ phase of a normal transaction.
77	Unable to access card.

[DN: These status values are defined in other documentation for ABB WaterCard.]

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Appendix B. Transaction Control File Structure

The record layout and field sizes are shown in the following tables.
Records are variable length and are separated by record separator characters CR/LF.

Header record
The header record identifies the file source.

Field name	Format	Description
Label identifier	char(4)	The header record type, "AHR2"
Source	char(7)	Source identifier for the sending host using a POCL FAD Code, 0360775 = Pathway live, 9990771 = Pathway test, 0370770 = HAPS live, 9980776 = HAPS test.
File identifier	char(11)	The file identifier of the control file
Format version	char(8)	Version of detail record format, ie 1.0.0 for this version
File creation date	char(12)	Date and local time the control file is created (format *ccyymmddhhmm*)

Control detail record

The control record identifies the AP transaction files that form part of the transmission.

Field name	Format	Description
Record type	number(2)	Identifies the detail record type, 91=file detail
Date generated	char(8)	Date the transaction file created, ccyymmdd
File identifier	char(11)	The transaction file identifier
Transaction file type	char	' ' = magnetic card/ bar code , 'A' = Watercard
Number of txns	number(7)	The number of transaction records in the file (i.e. excluding header and trailer records)
Value of txns	number(13)	The total value of the transactions in pence

Note. The field Transaction file type replaces the field File status from Release 2 which was unused.

Trailer record

The trailer record identifies the number of control detail records.

Field name	Format	Description
Label identifier	char(4)	The trailer record type, "ATL2"
Number of detail records	number(5)	The number of detail records in the control file, i.e. number of transaction files in the transmission

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Appendix C. Transaction Response File structure

The record layout and field sizes are shown in the following tables.
Records are variable length and are separated by record separator characters CR/LF.

Header record

The header record identifies the file source

Field name	Format	Description
Label identifier	char(4)	The header record type, "AHR3"
Source	char(7)	Source identifier for the sending host using a POCL FAD Code, 0360775 = Pathway live, 9990771 = Pathway test, 0370770 = HAPS live, 9980776 = HAPS test.
File identifier	char(11)	The file identifier of the error file or OK file
Format version	char(8)	Version of detail record format, ie 1.0.0 for this version
File creation date	char(12)	Date and local time the error file is created (format *ccyymmddhhmm*)
Source application	char(4)	The application that created the error file, one of PVAL, PFTM, HAPS

Error detail record

The error record identifies the errors detected in the AP transaction files that formed part of the original transmission.

Field name	Format	Description
Record type	number(2)	Identifies the detail record type, 92=error detail
Date generated	number(8)	Date error detected, ccyymmdd
Error code	number(3)	The unique error code
Record number	number(7)	The number of the transaction record in error (the header record counts as record 1)
Field number	number(2)	The field number in error, if applicable
Error description	char(40)	A short text description of the error

Trailer record

The trailer record identifies the number of error detail records.

Field name	Format	Description
Label identifier	char(4)	The trailer record type, "ATL3"
Number of records	number(5)	The number of detail records, i.e. number of errors in the transaction file

The process used to report undeliverable AP transactions is by reporting an error detail record in the corresponding response file. If there are no other types of error detected then these are placed in the OK file otherwise they are placed in the error file with the other detected errors.

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Error codes are allocated in ranges for ease of use and extension.

These are:

1 to 99	General use
100 to 199	Pathway use
200 to 299	HAPS use

The following table defines some general error codes and a description. The description may be used as the default text for the Error detail field in an error detail record:

Error code	Description
001	Header missing
002	Trailer missing
003	Header FAD code not Pathway
004	File Identifier not same as filename
005	Trailer Credit Record Count is wrong
006	Trailer Credit Items Total is wrong
007	Record length incorrect for record type
008	Record type invalid
009	Record out of sequence
010	Txn Type not Normal/Reversed/Reversing
011	Client unknown
012	Amount not numeric
013	Header repeated
014	Trailer repeated
015	Client disowned