FEBRUARY 2003

Requirements Specification

MODIFICATION PROPOSAL P116 --

CHANGES TO ALLOW LINE LOSS FACTOR DATA FROM BSC WEBSITE TO BE USED IN SETTLEMENT

Prepared by the P116 Volume Allocation Standing Modification Group (P116 VASMG)

Document Reference	P116RS
Version no.	1.0
Issue	Final
Date of Issue	21 February 2003
Reason for Issue	Impact Assessment
Author	ELEXON Limited

I DOCUMENT CONTROL

a Authorities

Version	Date	Author	Signature	Change Reference
0.1	10/02/03	Change Delivery		Initial Draft
0.2	20/02/03	Change Delivery		Modification Group Discussion
1.0	21/02/03	Change Delivery		Impact Assessment

Version	Date	Reviewer	Signature	Responsibility
1.0	21/02/03	Change Delivery		Final Review

b Distribution

Name	Organisation
Each BSC Party	Various
Each BSC Agent	Various
The Gas and Electricity Markets Authority	Ofgem
Each BSC Panel Member	Various
energywatch	energywatch
Core Industry Document Owners	Various

c Intellectual Property Rights and Copyright

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1 INTRODUCTION

1.1 Scope

The purpose of this document is to identify the requirements for the implementation of Modification Proposal P116 'Changes to Allow Line Loss Factor Data from BSC Website to be Used in Settlement' (P116). It is intended that this document be used as a basis for responding to a detailed level Impact Assessment.

This document sets out the interpretation of the Modification Proposal and the issues considered by the P116 Volume Allocation Standing Modification Group (P116 VASMG) during its assessment of the Modification Proposal. It also details the implementation method, and seeks to identify costs, time-scales and other impacts. These costs and timescales will enable the P116 VASMG to agree on the implementation method and discuss whether or not P116 better facilitates the Applicable BSC Objectives.

1.2 Background

P116 was submitted on 6 January 2003 by East Midlands Electricity Distribution plc. P116 seeks to amend provisions in Section S of the Balancing and Settlement Code (the Code) concerning the method by which Half Hourly Data Aggregators (HHDA) obtain Line Loss Factor (LLF) data to be used in Settlement. Currently, the Code requires HHDAs to use LLF data provided directly by the Public Distribution System Operators[1] (PDSO). LLF data is currently sent by the PDSOs via the Line Loss Factor Data File (the D0265 data flow), as well as being reported on the BSC Website. P116 seeks:

(i) to allow LLF data from the BSC Website to be used in Settlement; and

(ii) to amend BSC Procedure (BSCP) 528 in order to remove the obligation on PDSOs to publish LLF data via the D0265 flow to all relevant Parties, Party Agents and BSC Agents.

An initial assessment of P116 identified that the Proposed Modification should be submitted to a 3-month Assessment Procedure to be undertaken by the P116 VASMG.

1.3 Glossary of Terms

The following acronyms have been used throughout this document:

Acronym	Definition
BSC	Balancing and Settlement Code
BSCP	Balancing and Settlement Code Procedure
DTC	Data Transfer Catalogue
DTN	Data Transfer Network
LLF	Line Loss Factor
HHDA	Half Hourly Data Aggregator
PDSO	Public Distribution System Operator

[1] It should be noted that Modification Proposal P62 has been approved by the Authority. As a result, the new term 'Licensed Distribution System Operator' (LDSO) will replace 'Public Distribution System Operator' (PDSO) after 1 August 2003 for all purposes relevant to P116.

2 THE PROPOSED MODIFICATION

P116 seeks:

(i) to allow LLF data from the BSC Website to be used in Settlement; and

(ii) to amend BSCP 528 in order to remove the obligation on PDSOs to publish LLF data via the D0265 flow to all relevant Parties, Party Agents and BSC Agents.

During their first meeting, the P116 VASMG noted that P116 does *not* seek to alter the content of LLF data. It concerns only the method of dissemination of the data, and any consequent amendments to the BSC Website in order to increase the robustness and usefulness of the service so far as the provision of LLF data is concerned.

3 REQUIREMENTS

3.1 Requirements Specification Overview

P116 seeks to allow LLF data from the BSC Website to be used in Settlement. Currently, LLF data is sent over the Data Transfer Network (DTN) via the D0265 data flow, as well as being reported on the BSC Website. There are r a number of different file formats in which the D0265 file is stored and used by BSC Parties, Party Agents and BSC Agents. For the purposes of this impact assessment, respondents need to be aware that the D0265 file exists in at least three file formats:

1. The SVA Pool File Transfer Format, which is used by certain SVAA Applications. This type of file starts with the character string 'ZHD'. It must be noted however that the structure of the ZHD header used in this file format is slightly different from the ZHD header found in the (plain-vanilla, "non-SVA") Pool File Transfer Format. Currently, the BSC Website publishes LLF data only in the SVA Pool File Transfer Format.
2. The Pool File Transfer Format, which is distinct from the SVA Pool File Transfer Format but which also starts with the character string 'ZHD'. It must be emphasised again that the structure of the ZHD header record is different from the ZHD header record in the SVA Pool File Transfer Format.
3. The User File Format, which starts with the character string 'ZHV' or 'ZHF' depending on the variant used.

The structure of all three file formats is further explained in Section 3.2 of the Requirements Specification. It must be emphasised that the LLF file published on the BSC Website conforms to the SVA Pool File Transfer Format. It is essential that the respondents identify which file format (if any) their systems utilise, before responding to the impact assessment.

During their meeting on 20 February 2003, the P116 VASMG noted the use of various file formats and other technical details relating to the dissemination of LLF data. The Modifaction Group then identified three possible options for implementing P116. These options are described in the following table:

Implementation Option	Description
1	Publish LLF data on the BSC Website in the SVA Pool File Transfer Format only. Discontinue sending the D0265 data flow over the DTN.

2	Publish LLF data on the BSC Website in all relevant file formats. Discontinue sending the D0265 data flow over the DTN.
3	Publish LLF data on the BSC Website in the SVA Pool File Transfer Format only. Discontinue the D0265 data flow to those Parties, Party Agents and BSC Agents who can utilise the SVA Pool File Transfer Format available on the BSC Website. But continue sending the D0265 data flow (on request) to Parties or Party Agents who cannot process the file from the BSC Website.

The Impact Assessment requires Parties, Party Agents and BSC Agents to estimate the costs, benefits, risks and implementation time-scales (separately for each implementation option) in terms of the systems and processes that they operate. The following sections of the Requirements Specification contain information intended to assist the completion of such a detailed level impact assessment.

3.2 The Relevant File Formats

As noted above, there are a number of different file formats in which the D0265 data flow is stored and used by Parties, Party Agents and BSC Agents. For the purposes of this impact assessment, respondents need to be aware that the D0265 flow may be available in at least three file formats. The formats are described below.

3.2.1 The SVA Pool Transfer Format (D0265 file on the BSC Website)

The format of the D0265 file published on the BSC Website conforms to the following specification given in the SVA Data Catalogue (Volume 1 Data Interfaces, Appendix F).

record	field name	value
ZHD	File Header Record Type	ZHD
	File Type	D0265001
	From Role Code	
	From Participant Id	
	To Role Code	
	To Participant Id	
	Creation Time	
DIS	PDSO Record Type	DIS
	PDSO Id	
LLF	Line Loss Factor Class Record Type	LLF
	Line Loss Factor Class Id	
SDT	Settlement Date Record Type	SDT
	Settlement Date	
SPL	Settlement Period LLF Record Type	SPL
	Settlement Period Id	
	Line Loss Factor	
ZPT	File Footer Record Type	ZPT
	Record count	
	Checksum	

Backus-Naur Format (BNF) Line Loss Factor Data File ::= ZHD DIS { LLF {SDT {SPL}}} ZPT

This file format is generated from the Pool File Transfer Format described in Section 3.2.2 of this document. Essentially, the SVA Pool File Transfer Format is a simplified version of the (plain vanilla, “non-SVA”) Pool File Transfer Format. Currently, it is used by certain SVAA Applications, BSC Parties and BSC Agents as well as being available on the BSC Website.

For the sake of clarity, a D0265 file in this format will look as follows. It must be noted that there is no delimiter ‘|’ after the final field in each record:

ZHD|D0265001|R|XXXX|G|CAPG|20020131095106
DIS|XXXX
LLF|1

SDT|20020401
SPL|1|1.079
SPL|2|1.079
**********more records**********
SPL|45|1.016
SPL|46|1.016
SPL|47|1.016
SPL|48|1.016
ZPT|1377225|924267796

3.2.2 The Pool Transfer File Format

As noted above, the SVA Pool Transfer File Format published on the BSC Website is essentially a variant of the (plain vanilla, non-SVA) Pool Transfer File Format described below. The ElectraLink Data Transfer Handbook (Section 3, Part 4 -- User File Specification) specifies the header record type for the Pool Transfer File Format as follows:

ZHD-File Header			
Field	**Field Name**	**Type**	**Comments**
1	Record Type	Text(3)	= ZHD
2	File Identifier	Text(10)	
3	File Type	Text(8)	5 character type (ranges allocated for DTS, Pool or internal use) plus 3 character version
4	From Role Code	Text(1)	
5	From Participant Id	Text(4)	
6	To Role Code	Text(1)	
7	To Participant Id	Text (4)	
8	Creation Time	Text (14)	Time file processing was started. Specified in GMT.
9	Sending Application Id	Text (5)	Application Identifier. For possible future use
10	Receiving Application Id	Text(5)	Application Identifier. For possible future use
11	Broadcast	Text (1)	For possible future use
12	Test data flag	Text(4)	Indicates whether this file contains test data

It must be noted the ZHD header for this type of file contains 5 additional fields in addition to the 7 fields specified in the SVA Pool File Transfer Format.

The ZPT file footer of the Pool Transfer File Format is specified as follows. Please note that the checksum will be sensitive to the presence of the additional fields in the header record and hence will differ from the checksum published on the BSC Website.

ZPT-File Footer			
Field	**Field Name**	**Type**	**Comments**
1	Record Type	text(3)	= ZPT
2	Record count	integer(10)	Includes header and footer
3	Checksum	integer(10)	Readers should apply to the Pool Helpdesk for further information.

3.2.3 User File Formats (Variable or Fixed)

According to the ElectraLink Data Transfer Handbook, there are two variants of the User File Format: the fixed format (starting with a ZHF file header type) and the variable format (starting with a ZHV file header type).

The structure for ZHV and ZHF header record types is summarised in the ElectraLink Data Transfer Handbook as follows (where status 'M' denotes 'mandatory', 'O' denotes Optional, 'C' denotes Conditional):

ZHV or ZHF File Header			
Data Item	**Status**	**Format**	**Comments**
File Identifier	M	CHAR(10)	File identifier – unique within Market Participant
Data flow and Version Number	M	CHAR(8)	Dxxxxnnn Consists of 5 char data flow reference followed by 3 character flow version number – where 'n' has a range of 0-9 e.g. 001, 105....
From Market Participant Role Code	M	CHAR(1)	e.g. 'data aggregator' value 'A'
From Market Participant Id	M	CHAR(4)	Market participant
To Market Participant Role Code	M	CHAR(1)	e.g. 'data aggregator' value 'A'
To Market Participant Id	M	CHAR(4)	Market participant
File creation timestamp	M	CHAR(14)	DATETIME (GMT)
Sending Application Id	O	CHAR (5)	Application identifier. For possible future use
Receiving Application Id	O	CHAR (5)	Application identifier. For possible future use
Broadcast	O	CHAR (1)	For possible future use.
Test data flag	O	CHAR (4)	Indicates whether or not this file contains test data.

Furthermore, the structure of the ZPT footer record type as specified in the Data Transfer Handbook also differs from the SVA Pool File Transfer Format:

Data Item	**Status**	**Format**	**Comments**
File identifier	M	CHAR(10)	File identifier - unique within Market Participant
Total Group Count	M	INT (10)	total number of Groups in file excluding header/trailer
Checksum	O	INT (10)	Checksum
Flow count	C	INT (8)	Number of flow instances excluding file header/trailer
File completion timestamp	O	CHAR(14)	DATETIME (GMT)

It is also important to note that this file format requires a field delimiter '|' after the final field of each record whereas the SVA Pool File Transfer Format used on the BSC Website does not.

For the sake of clarity, a D0265 file in the Variable User File Format will look as follows:

```
ZHV|LLAF000025|D0265001|R|XXXX|X|YYYY|20020318112848|||OPER|
DIS|XXXX|
LLF|100|
SDT|20020401|
SPL|1|1.087|
```



```
SPL|2|1.087|
**********more records**********
SPL|45|1.087|
SPL|46|1.087|
SPL|47|1.087|
SPL|48|1.087|
ZPT|LLAF000025|1359337|56457521|||
```

3.2.4 Translation between the Formats

The file format in which the D0265 files are received over the DTN depends on the configuration of the Gateway, which sits between user Systems and the DTN. The Gateway may be configured to receive either the Pool File Transfer Format or one of the User File Formats. Conversion from the Pool File Transfer Format to the SVA Pool File Transfer Format is achieved by a separate software application.

Appendix C of the ElectraLink Data Transfer Handbook describes the process of translating between the User File Formats and the Pool Transfer File Format. For ease of reference, this information is also included as Annex 1 of this Requirements Specification. The various file formats allow a checksum value to be supplied within the trailer of each flow. According to paragraph 66 of Section 3, Part 4 of the ElectraLink Data Transfer Handbook (User File Specification), it is possible that the algorithm used to generate and validate the checksum might rely upon the format of the User File being used.

3.3 Requirements for BSC Systems and Processes

It is not envisaged that P116 would impact BSC Systems and processes other than changes to the BSC Website identified in Section 3.5 below. However, BSC Agents and BSCCo are requested to confirm whether or not there is any impact on any of their systems and processes, should any of the three options identified in Section 3.1 of this Requirements Specification were implemented.

3.4 Requirements for Party and Party Agent Systems and Processes

Implementation Options 1 and 2 would affect systems and processes currently utilising the D0265 flow to obtain LLF data. If P116 were implemented via these two options, all systems and processes would need to use the D0265 file from the BSC Website[2] because Parties and Party Agents would no longer receive individualised D0265 flows over the DTN. It is possible that certain Parties and Party Agents may incur costs and risks as a result. The Impact Assessment requests such Parties to specify any expected impact in terms of costs, risks and time-scales. Parties and Party Agents would also experience a change in the "To Role Code" and "To Participant ID" fields within the ZHD record of the file that they receive. The file published on the BSC Website contains the values "G" and "CAPG" for these field respectively, whereas the files currently received by Parties and Party Agents contain values specific to that Party or Party Agent. If any systems or processes are designed to validate the values in these fields, the validation would need to be reconfigured to accept the values in the file available from the BSC Website. If on the other hand P116 were implemented via Option 3, Parties and Party Agents requesting LLF data in the Pool File Transfer Format would not be impacted in any way. The impact for Parties and Party Agents utilising the file on the BSC Website would be analogous to the impact of Options 1 and 2 as described in the preceding paragraph.

PDSO's would also be impacted differently by the three Implementation Options proposed. Options 1 and 2 would ensure that PDSO's would never need to send out individualised D0265 files over the DTN. Option 3 would require PDSO's to keep a register of Parties requesting the D0265 flow and publish the relevant LLF data over the DTN.

Please see Section 5.2 of the Requirements Specification for more details on the Impact Assessment response requested from BSC Parties and Party Agents.

[2] In order to provide the required level of service, the BSC Website will be enhanced as described in Section 3.4 of this document.

3.5 Requirements for BSCCo Systems and Processes

3.5.1 Background

P116 would place an obligation on the BSC Website to become a fully authorised provider of LLF data. Currently, the obligation is on PDSO's to provide the data via the D0265 flow on the DTN.

LLF data is already being published on the BSC Website[3]. There are currently two files containing LLF data for each PDSO:

1. A zipped text file containing the data currently distributed in the D0265 data flow. This file is in the SVA Pool File Transfer Format as described above.
2. A summarised view of LLF data in Rich Text Format (RTF)

These files cover the span of 1 April to 31 March of the relevant year. If, on occasion, LLF data is updated during the course of the year, new files are produced and published so as to reflect these changes. Previous versions of the D0265 and summary files are then removed. The title of each file incorporates an *Effective From* and *Effective To* date and a version number (e.g. "01/04 - 31/03_v1.0") in order that any updates can be identified easily. If an earlier version of the data currently displayed on the BSC Website is required, the information is made available via the ELEXON Help Desk within ten working days. However, the previous year's worth of data is not made available in this way.

3.5.2 Enhancements Required

During their meeting on 20 February 2003, the P116 VASMG agreed to conduct an Impact Assessment on the basis of the three Implementation Options that are identified in Section 3.1 of this Requirements Specification. It was determined that the service provided by the BSC Website would need to be enhanced regardless of the Implementation Option chosen. However, if P116 were implemented via Implementation Option 2, the BSC Website would need to store LLF data in all of the relevant file formats.

The Modification Group asked ELEXON to assess the following issues:

1. The BSC Website would need to display data files containing three years' worth of data, as they became available. For the avoidance of doubt, these files would contain data for the previous year, the current year and the next year.
2. If any changes were made to LLF data during the course of the year, ELEXON would issue an ELEXON Circular and retain the old version of the data on the BSC Website in archived form.
3. The P116 VASMG requested an assessment of the robustness of the BSC Website, including costs and time-scales for any improvements specifically required for P116. The Modification Group also requested ELEXON to specify the time-scales of any improvements in this field that are already being undertaken outside the scope of P116. The group also noted that P116 would increase the amount of data downloaded from the BSC Website.
4. The Modification Group asked ELEXON to assess ways of making the LLF data more easily accessible on the BSC Website.

Further details regarding the Impact Assessment may be found in Section 5.3 of this Requirements Specification.

[3] Currently, the following URL is used: <http://www.elexon.co.uk/ta/market_data/ll_factor.html>.

4 OTHER CHANGES REQUIRED

4.1 The Code

The initial assessment indicates that P116 would impact paragraph 2.4.1(e) of Section S and paragraph 3.4.1(d) of Annex S-2.

4.2 Core Industry Documents

There is a potential impact on the Data Transfer Catalogue (DTC). This could require joint impact assessments to be undertaken with the Master Registration Agreement Service Company (MRASCo). However, depending on the solution adopted by the Modification Group, it may also be possible to amend the DTC post implementation or not at all.

4.3 Code Subsidiary Documents

P116 seeks to amend BSCP 528 – "SVA Line Loss Factors For Half Hourly and Non-Half-Hourly Metering Systems Registered in SMRS". P116 could also impact BSCP 503 -- "Half Hourly Data Aggregation for SVA Metering Systems registered in SMRS" and BSCP 508 – "Supplier Volume Allocation Agent".

4.4 Other Configurable Items

The SVA Data File Catalogue contains references to the D0265 flow. It is possible that other SVA-related documentation, whether or not owned by ELEXON, could be impacted.

5 RESPONSES REQUIRED

The following responses are required to complete the impact assessment.

5.1 BSC Agent Response

Please indicate if you believe that the implementation of P116 will have any impact on your systems and processes. Please give costs, benefits, risks and time-scales for each Implementation Option identified in Section 3.1 of this Requirements Specification.

Please indicate if you believe that there are changes to the Code, Code Subsidiary Documents or other configurable items that have not been identified within this document. Please give time-scales for changes to the documentation.

5.2 BSC Party / Party Agent Response

Please indicate if you believe that the implementation of P116 will have any impact on your systems and processes. Please give costs, benefits, risks and time-scales for each Implementation Option identified in Section 3.1 of this document.

Please indicate if you believe there are changes to the Code, Code Subsidiary Documents or other configurable items that have not been identified within this requirements specification. Please give time-scales for changes to the documentation.

Please note that during their meeting on 20 February 2003, the Modification Group agreed to conduct a cost-benefit analysis in order to assess P116 against the Applicable BSC Objectives. It is essential therefore to obtain explicit estimates of costs, benefits, risks and time-scales from all relevant Parties and Party Agents. The following table is intended to provide a framework to help Parties and Party Agents to conduct their Impact Assessment:

Party or Party Agent:
Q1. Please provide an estimate of your costs, benefits, risks and time-scales for each of the three distinct Implementation Options identified in Section 3.1 of this Requirements Specification.
Q2. Which file format do your systems and processes expect the LLF data file to be in? What changes would you envisage if you had to reconfigure your systems so that they were able to process the SVA Pool File Transfer Format?
Q3. If all LLF data were downloaded from the BSC Website instead of being sent over the DTN, what changes would you envisage to your current process? Please specify costs, benefits, risks and time-scales.
Q4. Do you believe that the Modification Group should consider any other Implementation Options? If so, please specify in detail, as well as providing estimated costs and time-scales.
Q5. What would be your preferred Implementation Option, if P116 were implemented?
Q6. Would you like to make any comments regarding the enhancements to the BSC Website or the use of ELEXON Circulars, as described in Section 3.5 of this Requirements Specification?
Q7. Any other comments on technical issues concerning P116?

5.3 BSCCo Response

Please indicate if you believe that the implementation of P116 will have any impact on your departmental systems and processes. Please give costs, benefits, risks and time-scales for each Implementation Option identified in Section 3.1 of this document.

Please indicate if you believe there are changes to the Code, Code Subsidiary Documents or other configurable items that have not been identified within this requirements specification. Please give time-scales for changes to the documentation.

The following table is provided in order to assist the Impact Assessment undertaken by the BSC Website and Communications Teams within ELEXON:

Issue	Time-scale and Costs	Impact
Increased Volume of Downloads		
Publication of 3 years' worth of data		
Online archiving of updated versions		
Concurrent publication of LLF data in different file formats		
The use of ELEXON Circulars when LLF data is updated		
Robustness of BSC Web service		
Other Requirements		

5.4 Core Industry Document Owners

Please indicate if you believe there are changes to the Code, Code Subsidiary Documents or other configurable items that have not been identified within this requirements specification. Please give time-scales for changes to the documentation.

ANNEX 1 –

As noted in Section 3.2.4 above, this Annex reproduces Appendix C in Section 3 of Part 4 of the ElectraLink Data Transfer Handbook (User File Specification):

File Format Translations

The purpose of this appendix is to clarify the precise content of the User File header and trailer when translating from User File Format (fixed or variable) to and from Pool Transfer File Format. There are two scenarios to consider:

- translating between User File Format and Pool Transfer File Format.
- translating between Pool Transfer File Format and User File Format.

Both of these scenarios are considered in detail later in this note and summarised in the following points:

- The *Checksum* data item is optional in the User File Format. If present in a User File, then the checksum will be transferred transparently to the equivalent Pool File. If absent, then this field in the Pool Transfer File Format is delimited.
- Data items which are present in User File Format but absent in Pool Transfer File Format e.g. *Flow count* are simply not included in the Pool Transfer File Format and they are not delimited. When translating from Pool Transfer File Format to User File Format, any missing values are delimited in the User File Format trailer as necessary.
- The Pool Transfer File Format *Record Count* is always 2 greater than the equivalent *Total Group Count* in User File Format. This is because the Pool Transfer File Format count includes the header and the trailer.

The remainder of this note tabulates the contents of the User and Pool Transfer File Format headers and trailers for easy comparison and considers each of the two scenarios in detail.

File Header Comparison

User File Format				**Pool Transfer File Format**			
Data Item	Status	Format	Comments	Data Item	Status	Type	Comments
Group Name	M	CHAR(3)	ZHF (fixed) or ZHV (variable)	Record type	M	Text(3)	ZHD
File Identifier	M	CHAR(10)		File Identifier	M	Text(10)	
Data Flow and Version Number	M	CHAR(8)	Dxxxxnnn e.g. D0235001	File Type	M	Text(8)	Dxxxxnnn e.g. D0235001
From Market Participant Role Code	M	CHAR(1)		From Role Code	M	Text(1)	
From Market Participant Id	M	CHAR(4)		From Participant Id	M	Text(4)	
To Market Participant Role Code	M	CHAR(1)		To Role Code	M	Text(1)	
To Market Participant Id	M	CHAR(4)		To Participant Id	M	Text(4)	
File Creation Timestamp	M	CHAR(14)	DATETIME (GMT)	Creation Time	M	Text(14)	DATETIME (GMT)
Sending Application Id	O	CHAR(5)		Sending Application Id	NULL	Text(5)	
Receiving Application Id	O	CHAR(5)		Receiving Application Id	NULL	Text(5)	

Broadcast	O	CHAR(1)		Broadcast	NULL	Text(1)	
Test Data Flag	O	CHAR(4)	10 valid values. Routed to TR01 if absent or invalid	Test Data Flag	NULL	Text(4)	10 valid values. Routed to TR01 if absent or invalid

File Trailer Comparison

User File Format				**Pool Transfer File Format**			
Data Item	Status	Format	Comments	Data Item	Status	Type	Comments
Group Name	M	CHAR(3)	ZPT	Record type	M	Text(3)	ZPT
File Identifier	M	CHAR(10)				Text (10)	Not present or delimited
Total Group Count	M	INT(10)	Excludes header and trailer	Record Count	M	Integer(10)	Includes header and footer
Checksum	O	INT(10)		Checksum	M	Integer(10)	
Flow Count	C	INT(8)					Not present or delimited
File Completion Timestamp	O	CHAR(14)	DATETIME (GMT)				Not present or delimited

Scenario 1: User to Pool Transfer File Format

When transferring from User File to Pool Transfer File Format, the following changes to the header occur:

- The Pool Transfer File header has a record type of 'ZHD'.

When transferring from User File to Pool Transfer File Format, the following changes to the trailer occur:

- The *File Identifier* in the User File Format is discarded by MDNS and not carried in the Pool Transfer File Format i.e. the data item is not present or delimited.
- The *Record Count* in the Pool Transfer File Format is 2 greater than the *Total Group Count* data item in the User File trailer.
- The *Checksum* is optionally present in the User File trailer. If present, the checksum is carried in the Pool Transfer File trailer. If absent, then there is no checksum field in the translated Pool Transfer File and the Pool Transfer File trailer contains a delimited field.
- The *Flow Count* and *File Completion Timestamp* data items, both of which are optional in the User File trailer, are not carried in the Pool Transfer File trailer i.e. they are not present or delimited and are discarded by MDNS.

Scenario 2: Pool Transfer File Format to User File Format

When transferring from Pool Transfer File Format to User File Format, the following changes to the header occur:

- The User File header has a Group name of 'ZHF' or 'ZHV', depending on whether fixed or variable file format is chosen.

When transferring from Pool Transfer File to User File Format, the following changes to the trailer occur:

- The *File Identifier* is copied from the file header.
- The *Total Group* in the User File Format is 2 less than the *Record Count* in the Pool Transfer File trailer.
- The *Checksum* in the User File is identical to that in the Pool Transfer File.
- The *Flow Count* and *File Completion Timestamp* fields are not supplied, as the Pool Transfer File has no direct equivalent. Null delimited values are inserted in the User File trailer.

