Location Intelligence
Infrastructure Asset Management

Confirm®

Import Specification PMS (RSH-186-129)

v22.20a.AM

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Table of Contents

Specifications

Specifications

The following sections outline all the Specifications that exist within the Confirm functionality.

In this section

Confirm PMS Import Specification

Introduction

The purpose of this document is to describe the specification of the import files required by the PMS related import utilities in Confirm. Specifically, these utilities are:

- Import Network Data
- Import Inventory Data
- Import Survey Data

For importing of other records, including lookup data relevant to Network Manager and Data Analyser functionality, refer to the Import Specification (RSH-175-129).

The document should be used in conjunction with training/consultancy in the use of the system's Data Import Facilities.

General

Formats

There are three file formats supported.

- HMDIF
- Comma Delimited text
- Tab Delimited text

If a column is optional it can be omitted not only from the records but from the header as well. Any fields found in the header of a file which are not catered for in the import procedure will produce a warning and the user may choose not to proceed with the import.

Errors and warnings are generated as the import files are read and checked. These are reported once the checking process is complete. If errors are encountered the imported data cannot be saved.

HMDIF Format

In HMDIF format all records of different types are contained in a single file. Record types are considered to have different levels in a hierarchical structure. A high level record may be followed by one or more records at a level below it, which are considered as belonging to it. Each of these lower level records may similarly be followed by one or more records of an even lower level, and so on.

For more details refer to UKPMS technical documentation.

Delimited Format

A separate file is used for each record type. In HMDIF import, hierarchical relationships are determined by the last encountered instance of the parent. However, in delimited import this is not possible because of the separate files. For example, in a survey section file, each row must contain information to identify the row in the survey file containing the parent.

Tab or Comma delimited import files are the same except for the character used to separate the values in the file. Where delimited file formats are discussed throughout this document, the term “delimiter” is used to refer to either a tab or a comma, depending on the format chosen.

Two consecutive delimiters will be interpreted as a blank field. The field lengths need not be as shown in the definition tables but any characters in excess of those specified will be truncated.

The columns in an import file may be in any order. The first row of the file identifies the column headings.

A single (‘) or double (“) quote can be used to denote the beginning of a text field. After an opening quote has been encountered, subsequent delimiters and line breaks are imported as part of the field rather than being interpreted as field or record breaks. This continues until a closing quote of the same kind is found.

Key Fields

Key fields must be unique where specified or an error will be generated. Generally alpha key fields will be capitalised.

Where fields in a file being imported reference other files as lookups, the appropriate lookup record must exist to maintain database integrity.

Field Data

In some cases a value may be supplied either as a code or a name. This is indicated in the data dictionaries by a size of the form “4 or 30” where 4 is the length of the code and 30 the length of the name.

For example, in the survey observation file, the cross sectional position value XSECT has a size of “6 or 30” and hence may be supplied as code or name. The cross sectional position “CL1” may be represented by either “CL1” or “Permanent Left Lane 1” in the text file.

Import Network Data

General Notes

Network data consists of four different types of records. One or more section records may be present, and one or more node records. Section nodes and section attributes may also be present but each such record must be identified as belonging to a particular section in the import data.

Network

Where such a record exists (it is optional in HMDIF, and is not supported in delimited import), it must identify the base network.

Field	Size	Type	Comment
CODE	6 or 50	Character	Must be the base network if supplied.

Section

If PLOTNO is not supplied, it will be set by the system. A range and increment for numbers can be defined in Feature System Settings. New numbers will be allocated within each site, using the defined increment, and starting at the largest existing number or the largest supplied in the file, whichever is greater.

The RDNAME and TOWN fields are not saved, but are used to determine the site to which a section belongs.

Field	Size	Type	Comment
STREETID	10	Character	Used to identify Site
PLOTNO	10.2	Numeric	Must be unique within Site if supplied
LABEL	15	Character	Mandatory. Feature Id - must be unique in the import data, and unique at a point in time in the database
LENGTH	10.2	Character	Mandatory. Must be positive
LENSTATUS	1	Numeric	Y for Estimated, N for Measured, defaults to N if not supplied
SDATE	-	Date	Mandatory
EDATE	-	Date	Must be greater than start date if specified
EOCOMMENT		Character	
RDTYPE	4 OR 30	Character	Mandatory. Must be a valid Section Feature Type
DESCRP		Character	
RDNUMB	15	Character	Becomes asset id code
RDNAME	100	Character	Used to identify Site
AREA	4 or 30	Character	Defaults from the Site
TOWN		Character	Used together with RD-NAME to identify Site
OWNER	4 or 30	Character	Customer - must be a valid Customer if supplied. Defaults from the Site if not supplied
DISTRICT	4 or 30	Character	Ward - must be a valid Ward if supplied. Defaults from the Site if not supplied
AGENT	4 or 30	Character	Contract Area - must be a valid Contract Area if supplied. Defaults from the Site if not supplied

Field	Size	Type	Comment
FUNDORG	15	Character	Cost Code - must be a valid Cost Code if supplied. Defaults from the Site if not supplied
HIER	4 or 30	Character	Defaults from Site
TRAFFIC	4 or 30	Character	Converted to an Attribute on import
DIVERSION	4 or 30	Character	Converted to an Attribute on import
DTPCLASS	4 or 30	Character	Converted to an Attribute on import
SPEED	4 or 30	Character	Converted to an Attribute on import
URBANRURAL	4 or 30	Character	Converted to an Attribute on import
RESTRICTWORK	4 or 30	Character	Converted to an Attribute on import
STEPLEVEL	4 or 30	Character	Converted to an Attribute on import
FWAYTIED	4 or 30	Character	Converted to an Attribute on import
FWAYTRAF	4 or 30	Character	Converted to an Attribute on import
FWAYOPEN	4 or 30	Character	Converted to an Attribute on import
NOMINATED	4 or 30	Character	Converted to an Attribute on import
DRNCODE	4 or 30	Character	Converted to an Attribute on import
FWAYHIER	4 or 30	Character	Converted to an Attribute on import

Node

Node name and attribute (DESCRP and NODEATTR) are not saved to the database, but added to the comment field.

This file should not be supplied if Module 4050 is turned on. When using HMDIF import with this module, node records must not be supplied.

Field	Size	Type	Comment
LABEL	20	Character	Mandatory. Must be unique in import file and database.
DESCRP		Character	Concatenated into comment
NODEATTR		Character	Concatenated into comment

Field	Size	Type	Comment
COMMENT		Character	
OSGRE	10.2	Numeric	
OSGRN	10.2	Numeric	

Section Node

Each section can have no more than one node at any one chainage. In addition to this, if nodes are mandatory, one node at each end must be specified.

Section Nodes can either be imported with the corresponding Section, or at a later date in which case the Section Label supplied with the Section node must uniquely identify a live Section in the database.

If Module 4050 is turned on, the file can also include comment and co-ordinates. The system uses each section node record to create a node. A warning will be displayed if any node code occurs more than once in a particular section.

Field	Size	Type	Comment
SECTLAB	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a section in the section file, or uniquely identify a live section in the database
LABEL	20	Character	Mandatory. Must identify a node in the node file or in the data-base
CHAIN	8.2	Numeric	Mandatory. Must be within Section limits
TYPE		Character	Mandatory
COMMENT		Character	Only with Module 4050
OSGRE	10.2	Numeric	Only with Module 4050
OSGRN	10.2	Numeric	Only with Module 4050

Section Attribute

The section attribute file holds attributes, measurements and dates. A different record may be created, depending on which of OPTION, VALUE or DATE are present. Two or three may be present at the same time, provided a suitable type exists for CODE. At least one of OPTION, VALUE and DATE must be present or an error is produced.

If OPTION is present, CODE must identify a valid attribute type, and OPTION must identify a valid value for that attribute.

If VALUE is present, CODE must identify a valid measurement type.

If DATE is present, CODE must identify a valid date type.

Some fields in the section record itself are converted automatically to attributes. An example is URBANRURAL. The attribute created for the URBANRURAL field is determined by system settings.

The attribute could alternatively be imported directly as a section attribute record, however if URBANRURAL and the attribute to which it is mapped are both present, an error will be produced. Where any of these fields is specified, the value must be either the code or the name of an existing value of the relevant attribute.

All attributes that are mandatory for the section's feature group must be specified.

Field	Size	Type	Comment
SECTLAB	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a section in the section file
CODE	4	Character	Mandatory
OPTION	4	Character	
VALUE	10.2	Character	
DATE	-	Date	
DESCRP		Character	

Import Inventory Data

General Notes

An Inventory Import can be carried out using one of three Import Types, which behave as described below:

- Partial – This will check whether there is any overlap between Inventory Items in the import file and those in the database, and if so an error message will be displayed and it will not be possible to save the data.
- Full – This will End Date all existing Inventory Items on the Sections to which new Inventory Items are being imported.
- Full by Inventory Type – This will also End Date existing Inventory Items, however for each Section only existing Inventory of an Inventory Type being imported to that Section will be End Dated. For example if the import file only contains Footway Items for a particular Section, then existing Footway on that Section will be End Dated but all other Inventory will remain Live.

Note: If a Full or Full by Inventory Type import is carried out via an External Network Section (i.e. using Network Translation) with mappings to several Base Network Sections, then Inventory Items on all the mapped Sections will be End Dated, even if the mappings mean that new Items are only imported to some of them.

Section

If NETCODE identifies the Base Network (or is blank), then SECTLAB is used to identify a Section in the database live at the Survey Date. Tolerance checks are carried out between MEASLEN and the stored length of the identified Section.

If NETCODE identifies a Network other than the Base Network, then SECTLAB is used to identify an External Network Section in the database for that Network. Tolerance checks are carried out between MEASLEN and the stored length of the identified External Network Section.

Field	Size	Type	Comment
SURVDTE	-	Date	Defaults to today

Field	Size	Type	Comment
NETCODE	6 or 50	Character	The base network is assumed if none is supplied
SECTNO	8.0	Numeric	
SECTLAB	20	Character	Must identify a valid Section in the database on the specified Network
DIRECT	1 or 7	Character	
MEASLEN	8.2	Numeric	

Inventory Item

An Import Construction Type attribute may be specified in system settings.

If this attribute is present for an inventory item, it is used in conjunction with FEATURE to identify the feature type.

If no such attribute is present, or the combination does not match an existing feature type, then FEATURE is checked to see whether it itself is a feature type.

If an Inventory Item is being imported referenced to an External Network Section, then it will be mapped to any appropriate Base Network Sections live at the Survey Date with a link to this External Network Section. This may involve reversing or stretching/shrinking in addition to that which takes place to take into account the MEASLEN and DIRECT fields. It may result in an Item in the file being split to produce two (or possibly more) Items in the database.r.

If Module 4050 is turned on, and SNODE or ENODE columns are supplied, the associated chainage will be interpreted as an offset from the identified node rather than chainage from the beginning of the section, provided that node exists (and does not exist at multiple points) on the section. This functionality cannot be used if the import is doing a Network Translation, or is reversing or stretching/shrinking inventory data to match stored section length.

Field	Size	Type	Comment
SECTLAB	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a section in the section file
INVKEY	16	Numeric	Not required in HMDIF import, mandatory in Delimited import. Must be unique within section
OWNER	4 or 30	Character	
FEATURE	4	Character	Mandatory
SNODE		Character	Only with Module 4050
SCHAIN	8.2	Numeric	Mandatory
ENODE		Character	Only with Module 4050
ECHAIN	8.2	Numeric	Mandatory
CROSSXSP	6 or 30	Character	Mandatory

Field	Size	Type	Comment
SEQNUM	8	Numeric	
WIDTH1	8.2	Numeric	
WIDTH2	8.2	Numeric	
MEASURE	8.2	Numeric	May be overwritten with a calculated measurement if inventory type is flagged to do so
FWHIER	8.2	Numeric	Becomes site class. Defaults from section
LINKED SITE	10	Character	Site Code of the existing Feature to which this Item is linked. If blank, assumed to be the same as that of the Section
LINKED	10.2	Numeric	Plot Number of the existing Feature to which this Item is linked

Inventory Attribute

The appropriate value column should be supplied depending on the data type of the Attribute.

An additional numeric value NUMVAL may be imported. The value is not saved in its own right, but is added to the comment text.

All Attributes that are mandatory for the item’s Feature Group must be specified.

Field	Size	Type	Comment
SECTLAB	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a section in the section file
INVKEY	16	Numeric	Not required in HMDIF import, mandatory in Delimited import. Must identify an item on the section in the inventory item file
ATTRIB	4 or 30	Character	Mandatory. Must be an existing attribute type
OPTION	4 or 30	Character	Must be a valid value of the attribute type
NUMVAL		Numeric	Included in comment text
NUMERIC VALUE		Numeric	
DATE VALUE		Date	
TEXT VALUE	2000	Character	
COMTEXT	2000	Character	

Import Survey Data

General Notes

Import Survey Data can be used to import a new Survey or also to import additional Survey Sections or Survey Observations to an existing Survey record. In order to import to an existing Survey record it must be in the Edit Area.

There is the option to specify a Survey Type on the filter screen. This is only necessary if you wish to import a delimited file containing multiple Observation records on a single row - for more details see the Survey Observation section below.

Survey

NUMBER must be unique in the import file and must not be the same as any previously imported survey's external reference.

The exception is if NUMBER identifies an existing Edit Area survey. In this case any other details supplied with the Survey record are ignored, a warning is issued, and the import will attempt to add any data to this existing Survey.

Field	Size	Type	Comment
TYPE	6 or 30	Character	Mandatory
VERSION	4	Numeric	If not supplied then type must uniquely identify a valid survey type
NUMBER	20	Character	Mandatory. Must be unique
NAME	30	Character	
CWXSPUSED	1 or 7	Character	
OFFCWXSPUSED	1 or 7	Character	
VIDEO	255	Character	
NOTES		Character	
MACHINE		Character	Concatenated into notes
PREPROC		Character	Concatenated into notes
SUBSECT		Character	Concatenated into notes
WTRACK		Character	Concatenated into notes
REQLIFE		Character	Concatenated into notes
OWNER		Character	Concatenated into notes
COMPARE1		Character	Concatenated into notes
COMPARE2		Character	Concatenated into notes

Field	Size	Type	Comment
SVC		Character	Concatenated into notes

Survey Section

If the Survey of this Section has been identified as an existing one, then a check is made to see whether there is an existing Survey Section to which data can be added. If this is the case then details such as direction supplied in the file will be used to transform the data but will not override the information against the previously imported Survey Section.

If no network code is supplied, import is assumed to be against the base network.

If length is not supplied it is filled in from the relevant section in the database. However, if supplied for one section it must be supplied for all.

NORMDIR is ignored. If SURVDIR is not supplied, SNODE is checked – must be a valid node either at the start or end of the section. If neither SURVDIR or SNODE are supplied it is assumed that the survey was carried out in the forward direction.

STIME and ETIME are used to qualify SDATE and EDATE. If no time is specified, then midnight is assumed. If either of SDATE and EDATE is blank, it is filled in from the other. If both are blank, they are set to the current date when the file is imported.

STARTCHAIN and ENDCHAIN, if not supplied, will be filled in cumulatively assuming the sections were surveyed in the order in which they occur in the file. Where the section was surveyed in reverse, then after import the STARTCHAIN and ENDCHAIN will appear as 100 to 0 or similar. If supplying STARTCHAIN and ENDCHAIN they should not be reversed as the import will do it, and observation chainages should still be from 0 to the length rather than from STARTCHAIN to ENDCHAIN.

Field	Size	Type	Comment
SURVNUM	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a survey in the survey file
NETWORK	6 or 50	Character	Must be a valid network if supplied
NUMBER			
LABEL	20	Character	Must identify an existing network section, valid at the date. Must be unique within survey
NORMDIR	1	Character	
SURVDIR	1 or 7	Character	
SNODE	30	Character	
MASTER	1 or 7	Character	Defaults to M
LENGTH	8.2	Numeric	
STARTCHAIN	8.2	Numeric	
ENDCHAIN	8.2	Numeric	
COMMENT		Character	

Field	Size	Type	Comment
SDATE	8.2		Defaults to EDATE or today
EDATE	8.2		Defaults to SDATE or today
STIME	8.2		
ETIME	8.2		
INSP	4 or 30	Character	

Survey Observation

It is recommended that OBSTYPE and FEATGROUP are specified directly. In this case observation value records cannot be used.

If OBSTYPE and FEATGROUP are left blank, then DEFECT, VERSION, and where necessary SEVERITY, may be used to determine the observation type and feature group. The identified observation type and feature group must both be valid for the survey type.

If Module 4050 is turned on, and the SNODE or ENODE columns are supplied, the associated chainage will be interpreted as an offset from the identified node rather than chainage from the beginning of the section, provided that node exists (and does not exist at multiple points) on the section. This functionality cannot be used if the import is reversing or stretching/shrinking survey observation data to match stored section length. Node plus offset import can also not be used with network translation.

Depending on the Parameter used by the identified Observation Type, VALUE will be calculated from a supplied OPTION or vice versa. If both OPTION and VALUE are supplied, the system checks that the two are equivalent.

When importing to an existing Survey Section, overlap checks include not only Observations in the file but also those already in the database.

Field	Size	Type	Comment
SURVNUM	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a survey in the survey file
LABEL	20	Character	Not required in HMDIF import, mandatory in Delimited import. Must identify a section of the survey in the section file
OBSTYPE	6	Character	
FEATGROUP	4 or 30	Character	
DEFECT	6	Character	
VERSION	4	Numeric	
SEVERITY	4	Numeric	If not supplied then defect must uniquely identify a valid observation type
XSECT	6 or 30	Character	

Field	Size	Type	Comment
SNODE		Character	
SCHAIN	8.2	Numeric	Mandatory
ENODE		Character	
ECHAIN	8.2	Numeric	Mandatory
VALUE	8.4	Numeric	
OPTION	4	Character	
PERCENT	1	Character	Defaults to V
COMMENT		Character	
SECTSNODE	8.2	Character	
DIRECTION	1 or 7	Character	

If a Survey Type is specified on the condition import filter screen, the system can import multiple Observation Types on each length. This only works for the first 20 Observation Types within the Survey Type, in the order defined against the Observation Type.

In addition to all the usual columns, a column such as OBS_SFCT can be imported, where SFCT is one of the Observation Types. If there is a value in this column, a new observation will be created as if SFCT appeared in the OBSTYPE column, and the value in the VALUE column.

So for example, the following three observation files are treated as identical by the system. The first option is the import as usual.

```
SURVNUM,LABEL,SCHAIN,ECHAIN,OBSTYPE,VALUE
SCRIM1,SECT001,0,20,SFC,0.5
SCRIM1,SECT001,0,20,SFCT,0.4
SCRIM1,SECT001,20,40,SFC,0.55
SCRIM1,SECT001,20,40,SFCT,0.45
```

The second option shows a file with the normal OBSTYPE and VALUE columns, together with an OBS_SFCT column in which the SCRIM Threshold observation is specified.

```
SURVNUM,LABEL,SCHAIN,ECHAIN,OBSTYPE,VALUE,OBS_SFCT
SCRIM1,SECT001,0,20,SFC,0.5,0.4
SCRIM1,SECT001,20,40,SFC,0.55,0.45
```

Thirdly, the OBSTYPE and VALUE columns are omitted altogether, and both Observation Types are specified as column headings.

```
SURVNUM,LABEL,SCHAIN,ECHAIN,OBS_SFC,OBS_SFCT
SCRIM1,SECT001,0,20,0.5,0.4
SCRIM1,SECT001,0,20,0.55,0.45
```

Functional Threshold

These are converted to survey observation records and validated accordingly. Observation type and Feature Group are determined from those specified against the survey type.

There is no Functional Threshold file for delimited file import, thresholds should be imported in the Observation file, with appropriate OBSTYPE and FEATGROUP.

Field	Size	Type	Comment
FTXSECT		Character	

Field	Size	Type	Comment
FTSCHAIN		Numeric	
FTECHAIN		Numeric	
FTNUM		Numeric	
FTSDATE			Concatenated into notes
PIFIND			Concatenated into notes
SCODE			Concatenated into notes

Observation Value

This is not needed for delimited file import as VALUE, OPTION and PERCENT may be specified directly against the survey observation.

Where defect codes are being converted, SEVERITY may also be specified against the survey observation.

Field	Size	Type	Comment
PARM		Numeric	
OPTION		Numeric	
VALUE		Numeric	
PERCENT		Character	

Observation Note

These are used to create comment text against the observation, in addition to that specified in the COMMENT field against the observation record itself.

The NOTE code identifies a standard note, and COMMENT is free text. The final notes field against an observation with two observation notes is constructed as follows:

```
Original COMMENT from observation record
Text of first standard note (First NOTE code) - First COMMENT
Text of second standard note (Second NOTE code) - Second COMMENT
```

Field	Size	Type	Comment
NOTE		Character	
COMMENT		Character	

Examples

HMDIF File Format

An example of a network data import file is shown below.

Starts with an HMSTART.

Header block starts with a TSTART and ends with a TEND and a counter. This must be the number of records in the header (inclusive of the TSTART and TEND).

The fields for a particular record type need not all be on a single line. In the file below, NETSECT1, NETSECT2 and so on all contain fields of NETSECT records. These could all be on a single NETSECT line, or divided into separate lines as necessary.

The header block is immediately followed by the data block. Starts with a DSTART and ends with a DEND and counter.

The format of each record must follow the format of the header. However, as seen below, if all fields on a line (e.g. NETSECT5) are optional, the line itself does not need to be present for all records.

Following the data block is an HMEND along with a counter of the number of lines in the file.

```
HMSTART UKPMS 001 " " ; , \
TSTART;
NETSECT1\LABEL,LENGTH,SDATE,EDATE;
NETSECT2\DESCRP,RDNUMB;
NETSECT3\RDNAME,AREA,TOWN;
NETSECT4\DTPCLASS,HIER,SPEED,OWNER,URBANRURAL,RDTYPE;
NETSECT5\EOCOMMENT;
NETSECT6\STEPLEVEL,FWAYTIED,FWAYTRAF,FWAYOPEN,DRNCODE;
SECNODE\LABEL,CHAIN,TYPE;
SECATTR\CODE,OPTION,VALUE,DESCRP,DATE;
NETNODE1\LABEL,DESCRP;
NETNODE2\NODEATTR,COMMENT,OSGRE,OSGRN;
TEND\12;
DSTART;
NETNODE1\NODE1,"Node One";
NETSECT1\UKPMS1,100,191090,;
NETSECT2\”Test import section",A244;
NETSECT3\"WALTON BRIDGE ROAD","Spelthorne","Lower Halliford";
NETSECT4\3,2,30,LA,U,WS2;
NETSECT6\N,Y,1,3,P;
SECNODE\NODE1,0,Start;
SECNODE\NODE2,100,E;
SECATTR\VEHI,”No vehicular trafficking of the footway”,,"OK",;
SECATTR\FREQ,MORE,,"OK",;
SECATTR\DOTC,3,,"OK",;
DEND\13;
HMEND\27;
```

Delimited File Format

An example of a small comma delimited section attribute file, containing only three records, is shown. Note that the column order does not matter, provided of course that the order is consistent for all rows.

```
SECTLAB,CODE,OPTION,VALUE,DATE,DESCRP
UKPMS1,URBN,U,,,”Comment Text:
This comment includes an end of line.”
UKPMS1,SIZE,MED,120,,”Some comment text, with a comma”
UKPMS2,URBN,Rural,,,
```

A corresponding section file would need to be loaded at the same time, with at least two sections in, whose labels were UKPMS1 and UKPMS2.

The file requires an existing attribute URBN. This must have a value code of U and another value code (presumably R) whose associated text is Rural. It also requires an attribute type of SIZE, with a value MED, and a measurement type of SIZE.

The comment text of that line becomes the section attribute notes. Measurements have no notes.