IPND Manager

Integrated Public Number Database (IPND) Data Users and Data Providers Technical Requirements for IPND

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Release History

Release No	Release Date	Major Changes
1.1.13	8th November 2006	Updated section 6.1.2 to include more details regarding the format of the Public Number field.
1.1.14	7th February 2007	Updated section 2 to make explicit reference to Frame Relay and ISDN as only types of network links that are possible.
2.0.1	22nd May 2007	Updated sections to include changes made during CR78 – Regional BU Feed.
2.0.2	30th May 2007	Additions by Sanjay Prem IRT CR78 changes.
2.0.3	30th May 2007	Additional service entity attributes (section 5.3.5.2.1) added as a result of CR78 changes.
2.0.4	13th July 2007	Minor modifications made by IPND Manager Sanjay Prem.
2.0.5	22nd August 2007	Minor modifications re Transaction and Service Status Date definitions required by IPND Manager Sanjay Prem
2.0.6	25th February 2008	Changes related to CR80.
2.0.7	14th September 2009	Changes related to CR95.
2.0.8	November 2010	Changes related to CR 116 – DUQF Reimplementation And minor updates required by IPND Manager – Tony Parker.
2.0.9	January 2012	Updated references, elaborated DPQF details and MY management report details.
2.0.10	February 2012	Minor formatting fix.
2.0.11	May 2013	Removal of old server details and additional emphasis on handling of unlisted numbers.
2.0.12	August 2013	Clarification on obsolescence of UEF subsystem and addition of ML report
2.0.13	July 2014	Change of DFG frequency from hourly to half hourly. Addition of reference to MK and MM reports.
2.0.14	May 2015	Update to description of LA download file to include modifieddatetime. Included as part of CR 141 requested by IPNDe
2.0.15	July 2015	Clarified references to noon in Timeframes section
2.0.16	October 2016	Updates to include 241F error for files exceeding 100,000 records.
2.0.17	February 2017	Updates to fields provided to Publishers Modification of Upload Table descriptions post IPND Code review by Comms Alliance
2.0.18	March 2017	Clarification of file limit in usertest environment
2.0.19	January 2018	Updates required for CR 154a

2.0.20	January 2019	Updates required for CR 167 – New Researcher Type – Policy and Health

Contents

1. Introduction

1.1 Purpose

Provide sufficient technical information to Data Providers and Data Users to enable them to commence implementation of an interface to the IPND.

1.2 Scope

This document will only cover:

Transfer of data files between the IPND and its users;

Data to be provided to the IPND;

Data to be made available by the IPND;

High Level Description of the IPND.

1.3 Version

This document has been approved.

1.4 References

"Geographic information systems – Data dictionary for transfer of street addressing information", AS 4212 – 1994.

"Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997".

"ACIF G619:2007 IPND Data Industry Guideline"

TAF001 – 32574 – IPND Hardware and Software Asset Lists.

IPND Data Users and Data Providers Access to Internet Interface Service (IIS)

2. Data Transfer

Data Providers, Data Users and the IPND Manager are required to upload files to IPND and/or download files from IPND. Data Transfer is an integral component of the IPND system.

All data transfers are to be initiated by the IPND Users. It is the responsibility of the process that initiated the transfer to detect any file transfer errors and retry the operation.

The data transfer mechanism design is independent of any physical communications infrastructure choices that may be made.

As of 1st February 2018, access to the IPND has been available via a Frame Relay, ISDN link or secure IP access.

For new Data Providers or Users setting up access or after 1st Feb 2018, the only access method will be secure IP access.

An FTP interface is in place for Frame and ISDN access. SFTP and SCP interfaces are available via the secure IP link also known as the IPND Internet Interface Service (IIS)

More detailed information on how to send and receive data to/from the IIS can be found in the document – IPND Data Users and Data Providers Access to Internet Interface Service (IIS).

2.1 File Transfer Protocol

Most IT departments are familiar with FTP implementation and scripting.

The connection to IPND is generally a batch interface which suits FTP implementation.

FTP clients exist on many platforms, and users may select their preferred tool to transfer files to and from their system. However due to the non-standardisation of FTP clients, it is not possible to provide a standard for messaging and user feedback. Users are responsible for interpreting the error codes returned by their FTP client software.

FTP uses two connections: one for control information and one for actual data transfers. Depending on client and server capabilities, the data connection may be established in either direction. This complicates passing the protocol through firewalls and packet filters.

2.2 Secure File Transfer Protocol (SFTP)

SFTP, which stands for SSH File Transfer Protocol, or Secure File Transfer Protocol, is a separate protocol packaged with SSH that works in a similar way to FTP, but over a an encrypted connection

2.3 Secure Copy Protocol (SCP)

Secure copy or SCP is a means of securely transferring computer files between a local host and a remote host. It is based on the Secure Shell (SSH) protocol.

2.4 Directory Structures

2.4.1 FTP

2.4.1.1 Data Users

Data Users will have access to 2 directories from their root directory:

download - is the directory from which the appropriate download files will be available.

upload - is the directory to which User Error Files will be transmitted.

2.4.1.2 Data Providers

Data Providers will have access to 2 directories from their root directory.

download - is the directory from which the error and User Error files will be available.

upload - is the directory to which Upload Files will be transmitted.

2.4.2 SCP and SFTP

Data Users and Providers can only transfer (upload) files directly into their home directory (unlike the FTP subsystem, where they can only transfer files into the **upload** directory).

Once a file has been transferred it is pre-validated to ensure that it is encrypted and has a vaild IPND filename. If the file is deemed valid it is moved to the the User/Provider's **received** directory and a copy sent to the IPND for decryption and processing. If the file fails pre-validation it is moved to the User/Provider's **rejected** directory.

Files that are unable to be decrypted by the IPND are also sent back to the User/Provider's **rejected** directory. In this case they will be in both received and rejected.

2.4.2.1 Data users

Data users will have access to the following directories:

The root directory is where data users are positioned in when first logging in. This will be the directory to to which encrypted upload files e.g DUQF will be transmitted.

download – This directory contains a user's encrypted download files that are less than 6 months old.

archived - This directory contains encrypted files from the download directory that are older than 6 months and younger than 24 months. Files older than 24 months are deleted.

rejected – This directory contains files that a user has uploaded, but were rejected for processing by the IPND. Rejected files are held in this directory for a limited period before being deleted.

received – This directory contains a copy of recently uploaded files. Received files are held in this directory for a limited period before being deleted.

2.4.2.2 Data providers

Data providers will have access to the following directories:

The root directory that providers are positioned in when first logging in. This will be the directory to which all encrypted upload files will be transmitted.

download – This directory contains encrypted User Error files. Monthly reports will also be available in this directory.

archived - This directory contains encrypted files from the download directory that are older than 6 months and younger than 24 months. Files older than 24 months are deleted.

rejected – This directory contains files that a Data Provider has uploaded, but were rejected for processing by the IPND. Rejected files are held in this directory for a limited period before being deleted.

received – This directory contains a copy of recently uploaded files. Rejected files are held in this directory for a limited period before being deleted.

3. Security

This section covers user security within the IPND as it relates to its interface with IPND Data Users and Data Providers.

3.1 IPND User Types requiring Access

The following table describes the two types of users that will have access to IPND and the types of access available to them.

User	Production	Test
IPND Data User	Xfer up & down	Xfer up & down on failover
IPND Data Provider	Xfer up & down	Xfer up & down on failover
IPND Manager	Xfer up & down on failover	Xfer up & down

Where,

Test server	is the Secondary machine with test database
Production server	is the Primary machine with production database
Xfer Up	is the ability to Upload files to IPND or to upload encrypted files to the IIS
Xfer Down	is the ability to Download files from IPND or to download encrypted files from the IIS
Failover	Is the transfer operation of the Production database to the Secondary machine.

- Hardware details for the Production and test servers can be found in the document TAF001 – 32574 – IPND Hardware and Software Asset Lists

3.1.1 Data User

The Data User has the ability to:

- initiate a file upload to the IPND for DUQF files created by that user
- initiate a download from the IPND for Output files and DUQF err files created for that user.

No direct access to the operating system will be provided as any access will be via the FTP Server or the SCP/SFTP service

3.1.2 Data Provider

The Data Provider has the ability to:

- initiate a file upload to IPND for Upload files created by that user
- initiate a file download from IPND for Error files and DPQF files created for that user

No direct access to the operating system will be provided, as any access will be via the FTP Server or the SCP/SFTP service

3.1.3 IPND Manager

The IPND Manager has the ability to initiate a file download from IPND for Management Report files and a file upload to initiate history reports.

4. Operational

This section refers to operational aspects of IPND only inasmuch as it directly impacts on IPND Users, specifically issues of Availability and Timeframes.

4.1 Availability

The system will be available for transfer of upload files in the prescribed time frames 99.5% of the time.

The system will be available for transfer of download files in the prescribed timeframes 99.5% of the time.

Upload error and download data files will be created by the prescribed time 99.5% of the time, where the prescribed time is the start of the download window.

System may be available for transfer of upload and download files outside the prescribed timeframes, but use of this availability is not covered by this availability requirement.

Provide provision for a scheduled maintenance period during a nominated period. The IPND Manager and IPND Users to be notified, two weeks in advance, of intention to utilise a scheduled maintenance period, with an indication of any expected impact.

Test automatic cut-over to secondary machine on a six monthly cycle.

System availability of 99.5% is defined to not include periods where the scheduled maintenance period is utilised.

4.2 Timeframes

Data uploads and downloads to be scheduled by Data Users during 2 pm until 12:00 (noon) the next day, allowing a 22 hour file transfer window. Any Data uploads that have not completed by 12.00 (noon) may be terminated, an error message will be written to the File Transfer Log.

A maintenance window of 10 am to 6 pm Sunday will be reserved. Unless there are exceptional circumstances, users will be given two weeks notice of any maintenance that may disrupt the file transfer window.

The reports for Data Users (excluding Bulk Extract Only Data Users) will be available for download as soon as the uploaded file from Data Providers is processed. The Download File Generator will be invoked on a half hourly basis. The system will normally process files as they arrive. There remains a requirement that data processing of files received prior to 11 pm to be completed by 1 am the next day.

Data Users defined as Bulk Extract Only will only receive Output on Request data.

4.3 Data User files and frequency

Users should be encouraged to transfer files throughout the day. This will even out processing and enable Data Users to update their systems more frequently and reduce the dependency on a single daily data feed.

IPND upload and download files will be available for at least a calendar month. Note however that files are not retained on disk for an indefinite period and that regular archive processes move the files to archive media.

4.4 Requirements of IPND Users Following Recovery

In the case where IPND is unavailable due to hardware or software failure it may be necessary for Data Providers to re-transmit upload files. Data Providers should therefore retain uploaded files for a sufficient period of time

4.5 File Size Constraints

From December 1st 2016, files will be limited to 100,000 records. Files transmitted with more than 100,000 records (excluding header and footer) will be rejected with a file level error of 241F.

An Upload file with this number of rows is approximately 90 Mb in size. This minimises the amount of data that needs to be re-transmitted in the event of a network failure during the file transfer process, reduces the effect on downstream users and preserves the integrity of the IPND application.

It is important that Data Providers do not upload more than 200,000 records in a single day without advising the IPND Manager of their intention to do so.

The IPND will not produce files that contain more than 100,000 records (exclusive of Header and Trailer).

NOTE: This limit for upload files is 10,000 (exclusive of header and trailer) in the usertest environment.

5. Processing

5.1 Overview

This section is targeted at all IPND stakeholders. Its main purpose is to provide an overview of the functional requirements of the system. Technical Requirements refer to **what** business functions the system is implementing. This section will also provide a high level design overview which focuses on **how** the system will implement its functions.

5.2 Functional Requirements

5.2.1 File Upload

This section describes the processing and validation that will take place on the Upload data files once they have been checked for transmission errors but prior to checking at the record level or field level. It also describes the principles that will apply to error processing.

5.2.1.1 Error Processing

Data Providers will not be directly notified of any Data Processing Errors identified. Data Providers are required to connect to IPND and look for an Error File to determine the results of processing the corresponding upload file.

The generation of an Error File signifies that the Upload File has been processed by the IPND. Note that an Error File may only contain a single Header and Trailer record; this will be the case when no errors are encountered.

Errors resulting from Upload File inconsistencies, at a file level, will result in an error code being written to the error file indicating that the Upload File was rejected and no changes were applied to IPND.

Hard errors resulting from Upload File inconsistencies, at a record or field level, will result in the record in question being rejected and written to the error file with an appropriate error code.

Soft errors resulting from Upload File inconsistencies, at a record or field level, will result in the record in question being applied to the database, tagged as having a Soft Error, and written to the error file with an appropriate error code.

5.2.1.2 Receive Upload File from Data Provider

After an Upload File has been received and checked for transmission errors it will be moved to a reception location.

5.2.1.3 Validate Upload File

This section describes the checks and controls that will be applied to the Upload data file to ensure the integrity of the data at the file level. It focuses on such attributes as the structure of the file name, the sequence number of the file, record count checks etc.

5.2.1.3.1 Upload File Name Structure

This function will ensure that the file name is correct. The correct file name will have the following structure.

Note that all letters must be upper case.

IPND<TT><XXXXX>.<NNNNNNN>

Where

"IPND" is a constant,

<TT> refers to the file type which is "UP" for Upload file,

<XXXXX> is the File Source,

"." is an extension marker ,

<NNNNNNN> is a file sequence number with leading 0.

Any file that fails to comply with the above name structure will be rejected and reported in the Error file.

5.2.1.3.2 File Header/Footer

The File Header record will conform to the structure specified in the section ***6*** *Data Files.* A file that fails to comply with the structure specified will be rejected and reported in the Error file.

The File Trailer record will conform to the structure specified in the section ***6*** *Data Files*. A file that fails to comply with the structure specified will be rejected and reported in the Error file.

The File Sequence No field value on the Header Record will match the File Sequence No field value on the Trailer Record that will match the File Sequence number component of the file name as specified in section **5.2.1.3.1** *Upload* File Name Structure. If the File Sequence Numbers do not match then the file will be rejected and reported in the Error file. The File Source field on the Header Record must match the File Source component of the Upload File name. If they do not match the file will be rejected and reported in the Error file

The File Source field on the Header Record must match the File Source component of the Upload File name. If they do not match the file will be rejected and reported in the Error file.

The File Creation Start field must contain a valid date and time.

5.2.1.3.3 File Sequence Number

IPND will maintain a log of loaded Upload File from a Data Provider.

File Sequence Numbers will be sequential and contiguous.

The File Sequence Number of the last successfully loaded Upload File will be compared with the File Sequence Number of the current file. If Last File Sequence Number + 1 does not equal Current File Sequence Number then the file will be rejected and reported in the Error file.

This has the following implications. If a file is rejected because of a Hard Error at the file level, e.g. the Header Record count does not match the actual number of records in the file, then no further files may be processed from that provider until a file arrives with that specific sequence number. Thus if file f5 is rejected on day 1, file f6 that arrives on day 2 and file f7 that arrives on day 3 will not be loaded until file f5 is corrected and re-transmitted.

5.2.1.3.4 File Record Count

If the File Record Count field in the Upload File trailer record does not match the total number of records in the file then the file will be rejected and reported in the Error file.

5.2.1.3.5 Maximum Record Count

If the number of records in the file exceeds 100,000 (excluding header and footer) the file will be rejected and the error will be reported in the Error file.

NOTE: The maximum record count is 10,000 (excluding header and footer) in the usertest environment.

5.2.1.4 Transfer to Working Directory

After an Upload File has been validated it will be moved to a working directory from where it will be processed and loaded into the database. This will ensure that a file is not mistakenly processed more than once.

When the file is moved it will also be given a filename extension comprising 3 digits, this is referred to as a "retry number" and serves to uniquely identify the uploaded file in case the IPND Data Provider subsequently uploads a different version of the file but with the same name.

5.2.2 Process Upload File

This section describes the validation that will take place to ensure the integrity and consistency of the data at the record and field levels. It will contain the bulk of the business rules that will be implemented in relation to the data received.

5.2.2.1 General Rules

1. Only one current Service record may exist for a Public Number. The Public Number will be the unique identifier for the service.
2. Two pending Service records may exist for a Public Number, one pending Connected Service and one pending Disconnected Service. The Public Number and the Service Status will be the unique identifier for the pending Service.
3. A Service record will never be deleted from the Service entity. The data associated with the last transaction will remain in the database. Under certain circumstances the IPND Manager may authorise the removal of obsolete data.

5.2.2.2 Validate Record for Hard Errors

Hard errors are defined as those that prevent the upload of the record into the IPND database. The following sections describe in detail the major types of Hard Errors.

5.2.2.2.1 Missing Mandatory Hard Fields

Fields defined as Mandatory Hard must have valid data. Any field that is defined as Mandatory Hard but contains no data will be rejected as a hard error and added to the error file. Please refer to the section ***6** Data Files* for details of which fields are defined as Mandatory Hard (MH).

5.2.2.2.2 Incompatible Data Types

If a Mandatory Hard numeric field contains non-numeric data the record will be rejected as a hard error and added to the error file.

Any unprintable ASCII codes in the file other than Record Delimiter code will result in a hard error.

5.2.2.2.3 Invalid Code Values

If a data record for a Mandatory Hard code field has a value that is not valid then the record will be rejected as a hard error and added to the error file. For example, if the List Code field has a value other than "LE", “SA” or "UL" then the record will be rejected as a hard error and added to the error file.

5.2.2.2.4 Locality State Postcode Values

The Service Address Locality, State and Postcode (LSP) fields are validated against the Australia Post postcode datafile. Each of these fields must exist in the data file, otherwise a mandatory soft error is generated. The LSP fields must also exist as a valid combination.

5.2.2.2.5 Record State Transition

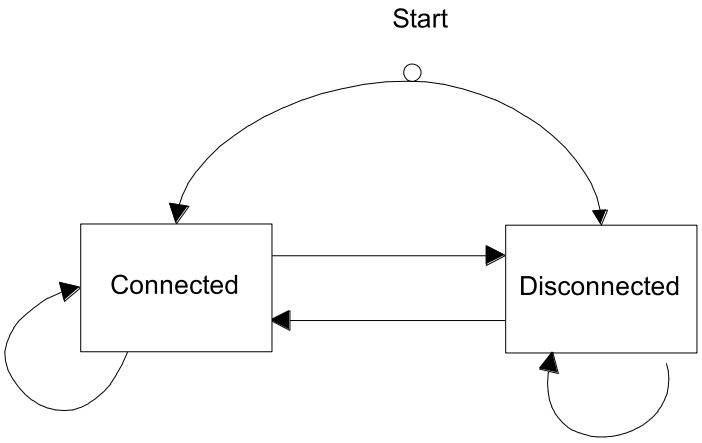
Please refer to the section *6 Data Files* for details of fields and values.

A data record will have a Service Status Code value that is either "C" for Connected or "D" for Disconnected.

Note that there will not be a field to represent the type of transaction, ie if a Public Number Service Status Code changes from Connected to Disconnected then the "Disconnect" transaction is implied by the transition between states.

Note that the "Pending" attribute of a record will be stored in the Pending Flag field.

The following diagram shows valid state/transitions.



The above diagram shows that a Service data record can be created with any of the 2 Service Status Code field values.

All transitions between the 2 states are valid.

Note that a Service with a certain Service Status Code can be updated by a subsequent record with the same Service Status Code. This implies that an update of the data associated with the Service has taken place.

5.2.2.2.6 Change Data Provider Validation

There are 4 main principles governing the handling of changed Data Provider transactions.

1. IPND will accept a new Service data record with a Service Status code of Connected even though it has a different Data Provider Code value to the existing Service data record already in the database.
2. IPND will only accept and upload a new Service data record with a Service Status code of Disconnected if either it is the first Service data record for a Public Number, or the Data Provider Code value in the new record matches the Data Provider Code value in the existing record for that Public Number.
   This ensures that Data Providers can only disconnect their own Public Numbers.
3. Once a Service has a Service Status Code of Disconnected, it can validly be Connected by any Data Provider.
4. The Data Provider Code for Pending Service data records will not be validated against the Data Provider Code for actual Service data records. Refer to section ***5.2.2.6.2*** *Pending* Numbers for further information on the handling of Pending Service transactions.

There will be no validation on ensuring that the Data Provider Code on a Public Number record matches the File Source field on the Upload File Header record. This is a consequence of the varied relationships between Carriage Service and Data providers and of the fact that data from a Data Provider may be sourced from multiple systems, each being a different File Source.

As the Data Provider identifier at the record level will not be validated against the Data Provider field at the file level, it is possible for one Data Provider to send data with another Data Provider's code. All validation based on the Data Provider assumes that all data contains the correct Data Provider's code.

If a Service data record arrives with Service Status Code of Connected and the Service already exists with a Connected Service Status and the new Data Provider Code is different to the old Data Provider Code, then the old data for the Service Number will be updated with the new data.

The Data Provider Code on an uploading Service data record with a Service Status Code of Disconnected must match the Data Provider Code on the existing data record (where the Public Number is already in the IPND database), if this condition is not met a Hard Error (41) will be generated.

Hard Error 41 has special significance because unlike other Hard Errors it may not require further action from the Data Provider that submitted the Service data record that resulted in the error being generated. In other words the Service data record with a Service Status Code of Disconnected may arrive late (i.e. subsequent to the Connected Service data record from the gaining Data Provider).

5.2.2.3 Validate Record for Soft Error

When a Soft Error occurs the record is loaded into the database with as much data as possible being used. A record for the Service with the Soft Error will also be added to the Error File. The Soft Error Flag of the Service record in IPND will be set to True (T).

5.2.2.3.1 Missing Mandatory Soft Fields

A Soft Error will result when a field that is identified as Mandatory Soft (MS) as identified in the section ***6*** *Data Files* is empty (space filled).

5.2.2.3.2 Incompatible Data Types

If a Mandatory Soft field contains data that is incompatible with the type of the field in the database then a Soft Error will result and the data for that field will not be loaded into the database. For example an incorrectly formatted date will not be loaded.

5.2.2.3.3 Invalid Code Values

If a data record for a Mandatory Soft code field has a value that is not valid then a Soft Error will result. The data for that field will be loaded into the database if consistent with the database structure. If the field cannot be loaded it will be left empty.

5.2.2.4 Validate Record for Warnings

Warnings are generated for issues with the data where there may be a potential problem but not sufficiently severe to generate a Soft Error requiring attention.

Records associated with warnings may not require correction.

5.2.2.4.1 Date Relationships

The Transaction Date refers to the date and time the record was last changed on the Data Provider's system.

If the Transaction Date for a data record is earlier than the Transaction Date for an existing record then a Warning is generated and added to the error file. The rationale behind generating a Warning is related to the importance of ensuring that data arrives in the correct sequence. However given the difficulties associated with data being sourced from multiple systems this cannot be enforced.

5.2.2.5 Variable Validation

This section describes the business rules that vary depending on the value of certain fields in the data record.

5.2.2.5.1 Listing Fields

If the data record List Code is Listed Entry (LE) or Suppressed Address (SA) then the data record must include

Find Name 1

Directory Building Property or Directory Address Street

Directory Address Locality

Directory Address State

Directory Address Postcode.

If any of these fields is missing then the data record will be loaded but flagged as having a Soft Error.

5.2.2.5.2 Alternate Address Flag

If the Alternate Address Flag is set to true (T) then the data must include

1. Customer Contact Name 1
2. Customer Contact Number

If any of these fields is missing then the data record will be loaded but flagged as having a Soft Error.

5.2.2.6 Validation During Data Upload

5.2.2.6.1 General Issues

When a data record has been validated as being correct , i.e. with no Hard or Soft errors it will be loaded into the database.

When a data record has been validated as only having errors of type Soft Error, all fields consistent with the database structure will be loaded.

If the Public Number is new and does not already exist in the database the row will be inserted.

If the Public Number already exists in the database it is assumed that the record is updating or modifying the data in relation to the Public Number. Refer to *section **5.2.2.2.5** Record* State Transition for details.

The IPND will not store trailing spaces in character fields.

The IPND will not store leading zeros for numeric fields.

The IPND will store leading zeros for numbers in character fields.

5.2.2.6.2 Pending Numbers

The handling of Pending Service Transactions is complex and is described in the following table. In general Pending Transactions have to conform to the validation rules described above.

The following general principles govern the handling of Pending Service transactions.

1. It is assumed that there can only be a single Pending Connect and Pending Disconnect in relation to each Public Number.
2. Pending Service data records with different Service Status Code values may coexist even if the Data Provider Code values are different.

Further rules are described below.

Last State			New State			Key P = Pending Flag ("P" Pending, "A" Actual), S = Service Status Code ("C" Connected, "D" Disconnected), PD = Pending Delete Flag ("D" Delete)	
P	**S**	**PD**	**P**	**S**	**PD**	**Result**	**Comment**
-	-	-	P	C	-	Valid	The only record on the number is a Pending Connect.
-	-	-	P	D	-	Valid	A Pending Disconnect is the only record that has been received for a Service. This is allowed to provide information for ESs.
P	C	-	A	C	-	Valid	Standard scenario where a Pending Connect is superseded by an Actual Connect. Result is that the Pending Service is deleted from the Pending Service entity and the new actual Service is inserted into the Service table. However, if there is a pre-existing Connected Service then the Pending Connection will only be deleted if the Data Provider Code for the Pending Connection is the same as the Data Provider Code of the Actual Connection. This allows for updates of Connected transactions to coexist with Pending Connected.
P	D	-	A	D	-	Valid	Standard scenario where a Pending Disconnect is superseded by an Actual Disconnect. Result is that the Pending Transaction is deleted from the Pending Service table and the new actual Transaction is inserted into the actual Service table. If the Data Provider Code on the Pending Disconnect does not match the Data Provider Code on the Actual Disconnect then the Pending Transaction is not deleted. However this rule is superfluous as a Pending Disconnect transaction can't be created unless the Data Provider Code matches. The Pending Disconnect should also only be deleted if the new Actual Disconnect implies a change of state for the Public Number.

Last State			New State			Key P = Pending Flag ("P" Pending, "A" Actual), S = Service Status Code ("C" Connected, "D" Disconnected), PD = Pending Delete Flag ("D" Delete)	
P	**S**	**PD**	**P**	**S**	**PD**	**Result**	**Comment**
P	C	-	P	C	-	Valid	Pending Connect is superseded by another Pending Connect. This is interpreted as an update of the data relating to the Pending Transaction.
P	C	-	P	D	-	Valid	A Pending Connect is already in existence and is followed by a Pending Disconnect. The Pending Disconnect is stored in addition to the Pending Connect.
P	D	-	P	C	-	Valid	There is a Pending Disconnect and a Pending Connect arrives later.
P	C	-	P	C	D	Valid	A Pending Delete transaction has been received resulting in the deletion of the Pending Connect Transaction.
P	D	-	P	D	D	Valid	A Pending Delete transaction has been received resulting in the deletion of the Pending Disconnect Transaction.
A	C	-	P	C	-	Valid	An Actual Connect is already in existence and a Connect is expected in the future. The Pending Connect is stored in addition to the Actual Connect.

5.2.2.6.3 Unlisted Numbers

Unlisted numbers are identified by a code value of UL in the List Code field.

Records for unlisted public numbers are not written to the Directory Publisher, Directory Assistance, Location Dependent Carriage Service or Researcher output files unless the public number undergoes a transition from being Listed to being Unlisted. That is that the Service had a prior list code value of “LE” or “SA” and has now a list code value of “UL”.

Users who are not entitled to publish or utilise Unlisted public numbers need to ensure that they promptly remove from their databases numbers that they are not allowed to publish or utilise The notification can occur in one of 2 ways:

1. **The Service may transition through an intermediate Disconnect – in which case the user will need to remove that number because it is disconnected,**
2. **There may be an explicit “Partial” record explicitly indicating that the Service used to be Listed but is now Unlisted. The “Partial” record will contain only the number, the list code set to “UL” and the Service Status Date.**

Records for unlisted public numbers are not included in Bulk Refresh extracts for users not entitled to receive them. Bulk Refreshes received by these users should be considered the current definitive list of numbers available to be published at that point in time and any internal databases should reflect this state.

They will however be written with all data intact to the Emergency Call Services output file and the Law Enforcement Agencies output file. This requirement will apply to both Pending and actual Services.

5.2.2.6.4 Suppressed Addresses

Suppressed Addresses are identified by a code value of SA in the List Code field.

Records for Suppressed Addresses will not be modified and will be written to the Directory Publishers' or Location Dependent Carriage Service providers' download file. It will be the Directory Publishers' or Location Dependent Carriage Service providers' responsibility not to publish the customer's address.

5.2.2.7 File Output

This section deals with the characteristics of files produced by IPND.

5.2.2.7.1 Assertions

This section describes the characteristics of the Download files in terms of the rules that they will adhere to.

5.2.2.7.1.1 Mandatory Hard Fields

Fields that are Mandatory Hard will always contain a value in the output files, because according to section **5.2.2.2.1** *Missing* Mandatory Hard Fields Service data records will not be loaded into the IPND unless all Mandatory Fields have valid data.

5.2.2.7.1.2 Mandatory Soft Fields

Fields that are Mandatory Soft will always contain a value in the output files if the Soft Error Flag is false (F) for that record. If data for a desirable field is missing then the Soft Error Flag will be set to true (T) for that record. Refer to section **5.2.2.3.1** *Missing Mandatory Soft* Fields.

5.2.2.7.2 Download Files

The IPND will produce a distinct Download File for each Data User. There are 6 types of Data Users who receive Download Files, these are :

1. Emergency Services
2. Law Enforcement Agencies
3. Directory Publishers and Directory Assistance
4. Location Dependent Carriage Service
5. Researchers File
6. Early Warning Systems .

For details regarding details of the file structure please refer to the *section **6** Data Files*.

5.2.2.7.2.1 Download File Name Structure

The output Download File will be called:

IPND<TT>.<DU File Source>.<NNNNNNN>.
where
<TT> refers to the file type and may be one of
"ES" for Emergency Services
"LA" for Law Enforcement Agencies
"DI" for Directory Publishers and Directory Assistance
“LD” for Location Dependent Carriage Service
“RS” for Researcher
“EW” for Early Warning System

<DU File Source> refers to the individual DU, and
<NNNNNNN> refers to a sequence number uniquely enumerating the output file.

Download files may be accessed by Data Users from the download directory that is visible after connecting via ftp to IPND.

Note that Data Users may only access files generated for that specific Data User.

5.2.2.7.3 Error Files

For each source file from a data provider there will be a corresponding error file generated.

5.2.2.7.3.1 Error File Name Structure

The error file name will be based on the name of the input file for which it was generated. Refer to section *5.2.1.3.1 Upload* File Name Structure for details on file names.

Note that each Upload File is given a retry number extension number when it is processed by the IPND application. This retry number is used to differentiate each version of the Upload File uploaded by an IPND Data Provider so that an audit trail is maintained. Thus the Upload File will be renamed from
IPND<TT><XXXXX>.<NNNNNNN> to
IPND<TT><XXXXX>.<NNNNNNN>.<MMM>
where
<MMM> represents a retry number incremented by 1 every time the IPND Data Provider uploads a version of the file.

The error file name will comprise the modified source file name (i.e.with the retry extension) with an addition ".err" extension, viz,
IPND<TT><XXXXX>.<NNNNNNN>.<MMM> .err

Note that letters are in upper case with the exception of the literal ".err".

For example, a file named IPNDUPAXIS10000001 will initially result in an error file called IPNDUPAXIS10000001.001.err.

However, note also that because of backwards compatibility issues a link (shortcut) is created to the latest version of the Upload File that has been processed. This link does not include the retry number, i.e. it will be named
IPND<TT><XXXXX>.<NNNNNNN>.err and it will point to the latest
IPND<TT><XXXXX>.<NNNNNNN>.<MMM>.err.

5.2.3 File Download

Output files are downloaded by Data Users. That is, the organisation requiring a file will have to initiate the transfer process to "pick up" the file from the IPND system.

The Data User organisation accessing IPND will be automatically placed into the appropriate directory from which it will be able to access the files it has the privileges to download.

An IPND user's ftp client will only list and provide access to the IPND download files that they're entitled to see, i.e. a Directory Publisher type Data User called "User1" will only see IPND DI and RI User1 files. Also note that it will be the user's responsibility to keep track of the files that have been downloaded. These files cannot be removed by the user once downloaded; this is because the files are not copies but symbolic links and are therefore shared with all other users of the same type.

A user will only have access to the data in the locality that they have subscribed to. Locality is defined by either the Directory Address Postcode or the Service Address Postcode depending on the type of user and may be specified as individual postcodes, postcode ranges, wildcards, or the phrase "ALL".

When the Directory or Service Address Postcode that is associated with a service changes then any IPND Data user that had subscribed to the original locality will be informed that that user has now left that locality. This is done through the provision of a service record that only includes the public number and the transaction data. The onus is on the IPND Data User to remove that record from their database.

Note also that each file will be listed by a users' ftp client in 4 different formats, the characteristics are shown in the table below; nb the label X is used to refer to an IPND file name as defined in section **5.2.2.7.2** Download Files.

File	Extension	Type	Comment
X	None	None	No compression, file will be downloaded in native form.
X.Z	.Z	Compress	Uses Unix compress to compress files,
X.gz	.gz	Gzip	Used gzip to compress files. Very efficient.
X.zip	.zip	Zip	Common Windows compression algorithm.

5.2.4 User Error Report Files

The UEF subsystem is obsolete. UEF files have been replaced by DUQF files. Refer 5.2.5 Data User Query File Sub-system; the following information is historical only.

User Error Report Files are created by Data Users when errors are discovered in the data provider's Download file. It provides a mechanism for feedback back to the data providers whenever an inconsistency is discovered by the Data User.

These Error Report Files will not be loaded into the IPND database. For these files IPND is a redistribution point.

Refer to the *section **6** Data Files* for file structure details.

Data Users will upload User Error Report Files to a directory that other Data Providers will have access to.

5.2.4.1 User Error Report File Name Structure

Note that letters are in upper case with the exception of the literal ".err".

The correct file name structure for the User Error Report file name is UEF<SSSSS><yyyymmddmmss>.err

Where "UEF" is a constant,

<SSSSS> is the File Source (Data Providers' unique identifier – ie organisation providing the error file not the original Service data),

<yyyymmddhhmmss> is a date stamp indicating when the file was created,

"." is an extension marker,

"err" is a constant.

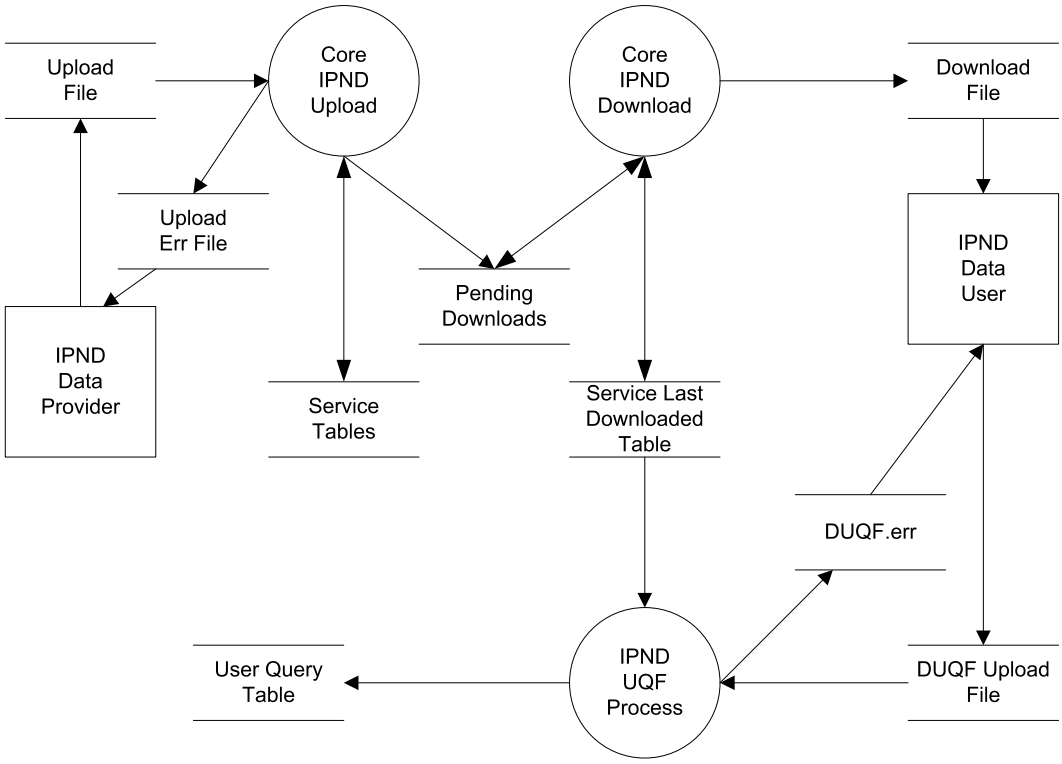
5.2.5 Data User Query File Sub-system

This section refers to the mechanism by which IPND Data Users can provide feedback to IPND Data Providers regarding data quality issues.

Note that for a brief period this sub-system will run in parallel with the User Error Report see section **5.2.4** *User Error Report Files.*

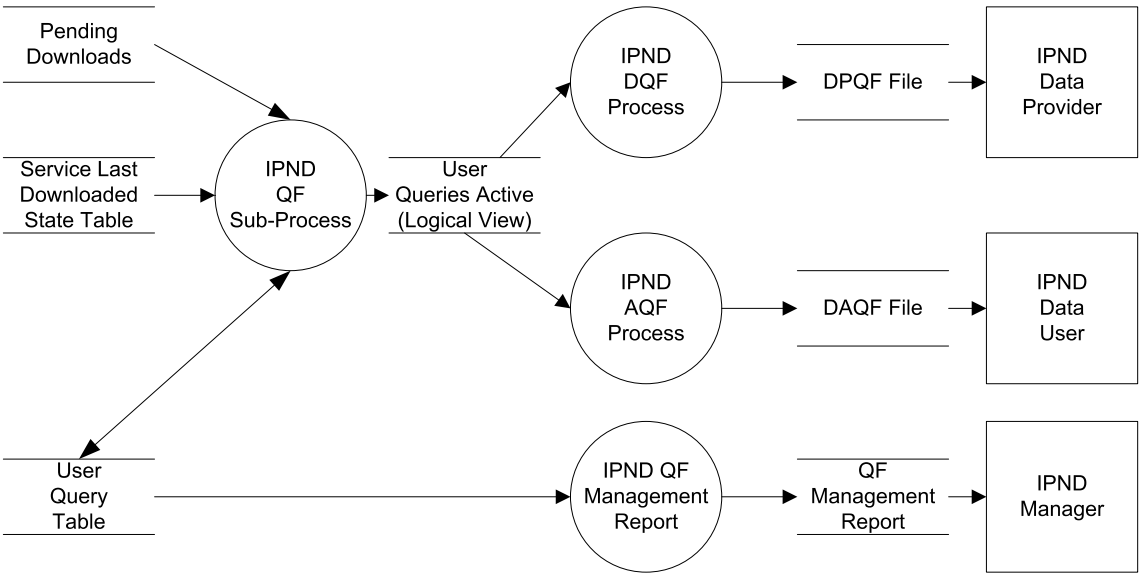
5.2.5.1 Architecture

The architecture of the IPND Query File Process is described by the following diagrams.



The diagram above is a high level Data Flow Diagram showing the processing of IPND QF sub-system and its interaction with the core upload/download process.

The diagram below is a high level Data Flow Diagram showing the processing and generation of QF sub-system files, the Data User Query File (DUQF), Data Provider Query File (DPQF) the Data user Amalgamated Query File (DAQF) and the management report.



Glossary of Data Flow Elements

	Processes
Core IPND Download	IPND processes that process Pending Downloads and produce Download files for IPND Data Users.
Core IPND Upload	IPND processes that load data into the database and creates upload error files and Pending Downloads..
IPND AQF Process	IPND process that invokes the IPND QF subprocess and then generates Download Amalgamated Query Files (DAQF) for specific Data Users.
IPND DQF Process	IPND process that invokes the IPND QF subprocess and then generates DPQF files for specific Data Providers.
IPND QF Management Report	The process that generates the QF Management Report .
IPND QF Sub-Process	IPND sub-process invoked by both IPND DQF and AQF process. Compares current active user queries to determine if record has since been changed by the Data Provider. If the Data Provider has subsequently uploaded a new record then the User Query is marked inactive. Only active queries are available for download by the DPQF and DAQF processes.
IPND UQF Process	IPND process that processes the UQF files and generates UQF.err files. File structure must conform. Service numbers must exist in Service Last Downloaded State Table. Error codes must be valid. Valid queries are stored in the User Query table.
	Data Stores
Download File	File produced by Core IPND Process for download by Data Users, specific to each Data User.

DPQF	Data Provider Query File containing issues raised by IPND Data Users.
DAQF	Data User specific File containing active issues raised by all users since last run of the DAQF.. The user must have permission to see the underlying public number.
Pending Downloads	Uploaded Service Records not yet made available to Data Users Physically implemented as AllServiceDownloadInterim table.

QF Management Report	A report showing the following breakdown by Data Provider:
	• A count of queries loaded against the Data Providers numbers grouped into:
	  ○ Queries older than three days
	  ○ Queries between three and seven days old
	  ○ Queries older than seven days
	• A count of the outstanding queried services against the Data Provider on the date the report is run.

Service Last Downloaded Table	Key data from each Service Record as at last download to Data Users. Physically implemented as AllServiceLastDownloaded table.
Service Tables	The IPND Database tables that store Service information.
Upload File	File uploaded by the Data Providers.
User Query Table	User Query Table storing Valid Data User queries relating to services..
User Query Active	This is a LogicalView of the UserQuery table showing User Queries that have not since had a Service Record Upload processed.
DUQF	Data User Query File contains the Public Number of the Service that is queried by the Data User. Also a code and description for the error.
DUQF.err	Feedback/ error file to Data User on the processing of the UQF Upload File. Each UQF will result in a UQF error file. The UQF error file will be created regardless of any errors being identified in the UQF file
	External Entities
IPND Data Provider	Organisation physically providing data to IPND. (In this context synonymous with File Source.)
IPND Data User	Organisation receiving data from IPND.
IPND Manager	Designated IPND Manager

The following sections elaborate on the key elements of the architecture outlined above.

5.2.5.2 IPND Upload Query File Process

The IPND UQF Process will run in the background checking at frequent intervals for the arrival of UQF files.

When an DUQF is found in the receive directory, it will be moved to a working directory from where it will be processed. This will ensure that a file is not mistakenly processed more than once.

When the file is moved it will also be given a filename extension comprising 3 digits, this is referred to as a "retry number" and serves to uniquely identify the uploaded file in case the IPND Data User subsequently uploads a different version of the file but with the same name.

The following processing applies to each file read.

1) Validate the DUQF to ensure correct file name structure, including validating that the Data User File Source code is valid.

2) Validate the file as described below in Section 5.2.5.2.1. Data User Query File (DUQF)

3) Insert valid queries from the file into the UQ Table.

4) Produce a UQF error file for each UQF file processed.

5.2.5.2.1 Data User Query File (DUQF)

The DUQF will be generated by IPND Data users and uploaded to the IPND.

Feedback regarding the processing of a DUQF will be provided to the IPND Data User providing the DUQF. Feedback will be provided through a DUQF error file and will include "File Level" and "Record Level" errors. Please refer to section **6.1.13** *IPND DUQF File Structure* for further details on the structure of UQF files.

Data will be validated as follows:

- the header and trailer records are correct.

- the record and field lengths are correct

the public number being reported on exists as an Actual Service in the Service Last Downloaded table.

- the User Query Error code is valid.

Also note that if a duplicate record is received it will be treated as an update, thus any existing active query will be marked as replaced by the newly received data. A duplicate record is defined as the same Public Number and error code from a given data user.

There will be no mechanism to ensure correct sequencing of files from a Data User.

5.2.5.2.1.1 DUQF - File Name

The correct file name structure for a DUQF is
IPNDQU<XXXXX>.<yyyymmddhhmmss>

Where
"IPNDQU" is a constant,

<XXXXX> is the File Source (Data Users' unique identifier – ie organisation providing the error file not the original Service data),

<yyyymmddhhmmss> is a date stamp indicating when the file was created,

All characters are in uppercase.

Note All filenames received will be automatically allocated a retry number as part of the UQF Upload Process

IPNDQU<XXXXX>.<yyyymmddhhmmss>.<MMM>

Where

<MMM> represents a retry number incremented by 1 every time a duplicate file name is received from a data user.

5.2.5.2.2 DUQF Error File

The purpose of the DUQF error file is to provide feedback to the IPND Data User providing the DUQF. Refer to section **6.1.14** *IPND DUQF Error File Structure* for details on UQF error file structure and section **6.1.15** *IPND DUQF Error File Codes* for details of DUQF error file codes issued.

5.2.5.2.2.1 DUQF Error File Name

The UQF Error File name is based on the DUQF file with a ".err" extension.

The correct file name structure for the DUQF is
IPNDQU<XXXX>.<yyyymmddhhmmss>.err

Or

IPNDQU<XXXX>.<yyyymmddhhmmss>.<MMM>.err

Where

"IPNDQU" is a constant,

All characters are in uppercase with the exception of the ".err" extension.

<XXXXX> is the File Source (Data Users' unique identifier – ie organisation providing the error file not the original Service data),

<yyyymmddhhmmss> is a date stamp indicating when the file was created,

".err" is a constant indicating that this file is an error file,

<MMM> is a retry number allocated in case a duplicate UQF filename was received

The error file IPNDQU<XXXX>.<yyyymmddhhmmss>.err is a link to IPNDQU<XXXX>.<yyyymmddhhmmss>.<MMM>.err with the highest retry number.

5.2.5.3 IPND Download Query File Process

The IPND DQFP will run daily. It will generate a DPQF for each File Source that has provided data into the IPND. The DPQF file will only be produced if active User Query records exist for the File Source.

5.2.5.3.1 Data Provider Query File (DPQF)

The DPQF will be generated by the DPQF Process from the data uploaded by the user in the DUQF.

The DPQF will be available in the download directory of the File Source that originally provided the Service Data which is being queried.

Note that the Data Provider code is included in the DPQF to facilitate the processing of the data in the case where a File Source provides data for different data providers.

Data Providers should download DPQF files as they become available and determine whether the feedback sent by the Data User for service data is valid.

The Data Provider can upload the service data again incorporating the feedback received in the DPQF file. Alternatively, the Data Provider can upload the service data again without any change.

Either of these two actions will clear the query flag against the service. This service will therefore, not be included in the IPND Manager's QF Management report.

5.2.5.3.1.1 Data Provider Query File - Name

The correct file name structure for the DPQF is

IPNDQP.<XXXXX>.<NNNNNNN>

Where

"IPNDQP" is a constant,

<XXXXX> is the File Source (Data Providers' unique identifier – ie organisation providing the original Service data),

<NNNNNNN> is a file sequence number with a leading 0.

5.2.5.4 IPND Amalgamated Query File Process

The AQFP will be run on a monthly basis to produce aData user Amalgamated Query File (DAQF). The DAQF will contain a snapshot of all ActiveUser Queries in the User Query Table that have been not been uploaded since the last AQFP run. The DAQF is intended for all Data Users to determine what other issues have been reported on a Service.

A distinct DAQF is produced for all Data Users. The content of the DAQF is determined by the type of user and by the Service or Directory address locality as specified by the Postcode that the DU has subscribed to.

If the record for the Service referred to in the User Query Table has a list code of "UL" then the data will only be written to the LA, ES and EW DAQF files. If the Service in the User Error Table has a list code of "LE" or "SA" then the data will be written to all 6 types of files.

The LE/ES/EW DAQF file will be generated from all queries raised by all Data Users that relate to their subscription.

An IPND User will only be able to access the DAQF associated with its particular locality subscription.

Note that DAQF is the only mechanism whereby the IPND Data User can directly verify that the data from a UQF is still in the User Query table. (However, it may also be inferred from the receipt of a record for the service subsequent to the user query being issued , in this case the User Query will no longer be considered active as a consequence of the new data being loaded.)

5.2.5.4.1 Data user Amalgamated Query File - Name

The correct file name structure for the DAQF is:

IPND<TT>.<DU File Source>.<NNNNNNN>

where
"IPND" is a constant,
<TT> refers to the file type and may be one of

"QE" for a Emergency Services DAQF

"QL" for a Law Enforcement Agencies DAQF

"QW" for a Early Warning System DAQF

"QI" for a Directory Publishers DAQF

"QD" for a Location Dependent Carriage Service DAQF

"QS" for a Researcher DAQF

<DU File Source> refers to the individual DU, and
<NNNNNNN> is file sequence number with a leading 0.

All characters will be upper case.

An Amalgamated Query File will not be provider to Bulk Extract Only Data Users.

5.2.6 Output on Request

The following output will be generated on a per request basis.

5.2.6.1 Book Close

A Book Close request may be made by Data Users that are Directory Publishers.

A Book Close request must be made in advance and Data Users will need to specify the date that will apply to the Book Close. The Output can be limited by including optional Public Number ranges and/or Service Post Code ranges and/or Directory Post Code ranges, when invoked.

The Book Close output Download File will contain only pending transactions from the Pending Service table that are scheduled to have been activated by the date that will apply to the Book Close.

The Book Close output Download File will only contain data for Pending transactions that have a List Code of Listed (LE) or Suppressed Address (SA).

The Book Close output Download File will not contain data for Public Numbers that have an actual connected service with a List Code of Unlisted (UL). Refer to section **5.2.2.6.3** *Unlisted Numbers*.

The filler field in the header record of the Book Close download file will contain the command line parameters concatenated together. The concatenated command line parameters are prefixed by '**'. The concatenated command line parameters may be postfixed by '..' to indicate that the filler field is not large enough to hold all the command line parameters.

NB:Unlisted Number report will not be provided because of privacy considerations.

A Book Close file will be generated for specific IPND Data users and will only contain data for the localities that the user has subscribed to.

5.2.6.2 Bulk Data Refresh

A Bulk Data Refresh request may be made by any type of Data User, i.e. Law Enforcement Agencies (LA), Emergency Service Organisation (ES), Directory Publisher (DI), Location Dependent Carriage Service Provider (LD), Research (RS), Health and Public Policy Research (PR) or Early Warning System (RW). The Bulk Data Refresh output file will conform to the format of the Data Users' Download File. That is a DI Data User will receive a DI type file, a ES Data User will receive a ES type file etc.

Note: Health and Policy Researchers are defined as a "Bulk Extract Only" type of user. This means that only Output on Request data (and not incremental data) is available to this type of user.

Records for unlisted public numbers are not included in Bulk Refresh extracts for users not entitled to receive them. Bulk Refreshes received by these users should be considered the current definitive list of numbers available to be published at that point in time and any internal databases should reflect this state.

Output for the Bulk Data Refresh request can be limited by including optional Public Number ranges and/or Service Post Code ranges and/or Directory Post Code ranges, when invoked.

Unless other specified, Bulk Data Refresh files will include all connected and disconnected Services within the ranges specified.

Bulk Data Refresh Download files generated for Directory Publishers, Location Dependent Carriage Service providers, and Researchers (RS) will not include Unlisted or Pending Services.

Bulk Data Refresh Download files generated for Health and Public Policy Researchers are limited to Unlisted Connected mobile numbers with usage code not Government (G), Commercial (C) or Business(B). For the purpose of this extract mobile numbers are defined as 10 character numbers commencing with prefix 04.

This report will only show data for the localities that a user has subscribed to.

Where space permits, the filler field in the header record of the Bulk Data Refresh download file will contain the command line parameters concatenated together. The concatenated command line parameters are prefixed by '**'. The concatenated command line parameters may be postfixed by '..' to indicate that the filler field is not large enough to hold all the command line parameters.

The filler field in the header record of the Bulk Data Refresh download file for Health and Public Policy Researchers will only indicate Y or N as to whether there are any additional command line parameters.

The additional command line parameters are stored for audit in the IPND database.

5.2.6.3 Output on Request File Name Structure

Note that letters are always in upper case.

Output on Request File names will be structured as follows:

IPND<TT>.<DU File Source>.<MMMMMMM>.<NNNNNNN>.<PPP>

Where

<DU File Source>	–	IPND Data User
"IPND"	–	Literal identifier string
"."	–	extension marker
<MMMMMMM>	–	Run number uniquely identifying the output file. It indicates that a file was part of the MMMMMMMth run for that download file type <TT>. A higher number indicates a later run.
<NNNNNNN>	–	File sequence number with leading 0's.
<PPP>	–	number. All Output On Request download files are limited to 100,000 rows of data. Requests that generate > 100,000 rows are written to spanned files.
<TT>	–	File type and may be one of "RE" for Emergency Services (**R**efresh **E**mergency), "RL" for Law Enforcement Agencies (**R**efresh **L**aw), "RI" for Directory Publishers (**R**efresh Directory **I**nformation), "RD" for Location Dependent Carriage Service providers (**R**efresh Location **D**ependent), "RR" for Researchers (**R**efresh **R**esearcher) "PR" for Health and Public **P**olicy **R**esearchers "RW" for Early Warning Systems, "BC" for **B**ook **C**lose.

For example, using an Emergency Service DU Type user called "User1", assuming that the last Emergency Service file generated is IPNDES.User1.0000100, then running a Bulk Data Refresh for Emergency Services data for the 5th time could result in :

IPNDRE.User1.0000005.0000100.0001
IPNDRE.User1.0000005.0000100.0002
IPNDRE.User1.0000005.0000100.0003.

The last physical file in the logical Bulk Data Refresh will be identified by the first 4 characters in the trailer record filler field having the word "LAST".

In order to create a consistent image of the IPND database, given the above list of files a user downloading ES data would need to download the 3 RE files plus any subsequent ES files that have sequence numbers greater than 100.

IPNDES.User1.0000099
IPNDES.User1.0000100
IPNDRE.User1.0000005.0000100.0001
IPNDRE.User1.0000005.0000100.0002
IPNDRE.User1.0000005.0000100.0003.
IPNDES.User1.0000101
IPNDES.User1.0000102

In the above example to get a consistent image of the IPND database a user will have to download the three RE files together with IPNDES.User1.0000101 and IPNDES.User1.0000102.

Bulk Data Refresh files will be made available in the download directory of the organisation that requested the data.

5.2.7 Management Reports

Management Reports will generate output files that are available only to the IPND Manager, these reports will not be automatically distributed to Data Users. They will be used by the IPND Manager to gauge the quality of data being provided.

5.2.7.1 Outstanding Soft Errors (M1)

The Outstanding Soft Errors Report comprises a summary of the number of soft errors by Data Provider Code and the total soft errors for all Data Providers. Data Providers with no outstanding soft errors will not appear in the report..

5.2.7.2 Monthly Connected Services by Carriage Service Provider (M3)

The Monthly Connected Services by Carriage Service Provider File comprises a summary of the number of connected and disconnected Services for each Carriage Service Provider.

5.2.7.3 Weekly Upload Transactions (M4)

The weekly Upload Transactions report shows the number of transactions processed that have been uploaded by individual Data Provider File Sources during the previous week. The report will be run on a Sunday for the week starting on the previous Sunday.

5.2.7.4 Weekly Download Transactions (M5)

The weekly Download Transactions report shows the number of transactions processed that have been downloaded by individual Data User Files Sources during the previous week. The report will be run on a Sunday for the week starting on the previous Sunday.

5.2.7.5 Upload Profile (M6)

The Upload Profile report shows the maximum and average number of transactions processed during each hour by the Upload File Processor. The maximum and average will be for the period that the report is run. This report will be run on the first day of the month for the previous month. This report will have a textual as well as a graphical component (pdf format).

5.2.7.6 Speed of Batch Processing (M7)

The Speed of Batch Processing report shows the time taken to process each IPND Upload File. Speed of processing will be normalised as time taken to process 100,000 transactions. Normalised rate will not be computed for Upload files less than 10,000 records in size. This report will be run on the first day of the month for the previous month.

5.2.7.7 Batch Processing Trend (M8)

The Batch Processing Trend report generates a scatter plot showing time to process a file against file size for all IPND Upload files from each File Source during the reporting period. This report is run on the first day of the month for the previous month. A separate "bmp" file will be created for data from each File Source.

5.2.7.8 Batch Processing Completion Time (M8)

The Batch Processing Completion Time report shows the start and end times for processing the last file prior to a specified control time. This report will be run on the first day of the month for the previous month and with a control times of 11:00 and 23:00. The report will have a textual as well as graphical component (bmp format).

5.2.7.9 Batch Job Abends (M9)

The Batch Job Abends report shows the number of abends (application failures) as a percentage of IPND Upload files processed per day. The data will be based on the number of times that the IPND application has needed to recover on startup. The report will only be in textual format.

5.2.7.10 Record Level Error Analysis (MA)

The Record Level Error Analysis Report shows the number and type of errors reported for each IPND Upload file processed. This report will be run on the first day of the month for the previous month. The report has a textual as well as a graphical component (bmp format). The graphical component shows the Pareto Distribution of error numbers.

5.2.7.11 Upload file content snapshot (MB)

This Perl program iterates through the last N Upload files that have been uploaded by each IPND Data Provider. For each of the N Upload files it displays data from the Service and Pending Service tables for the first M Service records in each of the files.

5.2.7.12 User Query (MC)

The User Query Management report will show a count of user queries loaded against the Data Providers numbers grouped into:

- Queries older than three days
- Queries between three and seven days old
- Queries older than seven days

In each category a total count and a count of outstanding active queries will be shown.

5.2.7.13 Control Field Log (MD/ME)

The Control Field Log Report has two components, a report that shows the Control Field history for all records loaded into IPND for a specified Service (IPNDMD<nnnnnnn>.rpt) and a report that shows all the Service data currently held in the database from the Service, Last Service and Pending Service tables IPNDME<nnnnnnn>.rpt). The service(s) that this report will generate data on is specified by a file containing Public Numbers that is uploaded by the IPND Manager. The Control Field Log process will poll the directory at 10:00 and 16:00 ever day, the report will then be generated if the process finds a file named IPNDM<D|E>* in the $IPNDDATA/mgrpt/receive directory.

5.2.7.14 Rejected File (MF)

The File Rejected Management report shows files that have been rejected during the previous day, output is non-graphical and comprises of a tabular textual format.

5.2.7.15 UploadControlFieldLog Purge (MG)

This report is obsolete; the following information is historical only.

Data from UploadControlFieldLog is deleted on a monthly basis. This program will execute on a monthly basis and generate a simple report showing what date the data has been deleted.

5.2.7.16 Aggregate Totals (MH)

This management report is run weekly. It provides a summary of files produced by the IPND system during a given time period (Default is previous week) It includes all download file types, error files and all OOR files. This summary is sorted by file type and provides a total count of the number of file types produced along with the total number of records of these files.

5.2.7.17 Download Profile (MI)

The Download Profile report shows the maximum and average number of transactions processed during each hour by the Download File Generator. The maximum and average will be for the period that the report is run. This report will be run on the first day of the month for the previous month. This report will have a textual as well as a graphical component (pdf format).

5.2.7.18 Postcode Distribution Generation (MJ)

This report shows the number services associated with each Directory Address Postcode. This report is comprised of 2 components, MJ1 and MJ2. MJ1 extracts the data into a table and MJ2 produces a report.

5.2.7.19 Outstanding Soft Errors by Data Provider (MK)

This report shows the number of service records identified as having soft errors as a proportion of total service records by Data Provider and Status.

5.2.7.20 Outstanding Soft Errors by Carriage Service Provider (MM)

This report shows the number of service records identified as having soft errors as a proportion of total service records by Carriage Service Provider and Status.

5.2.7.21 Upload Files Processed (MY)

This report shows the upload files processed by Filesource. The report is comprised of 2 sections. The first section details the last upload file processed by the production system at the time the report was run.

The second section shows the latest file processed for each Filesource in the IPND database. It icomprises the following information.

Filesource, Sequence number of last uploaded file for filesource, date of start of upload , time upload started, date upload ended, time upload ended, total number of records in the upload file. ,

The report which is named IPNDMY0000000.txt is overwritten hourly.

5.2.7.22 Monthly Connected Services by Carriage Service Provider - extended (ML)

This report expands on the information provided in the M3 report. As well as the summary of the number of connected and disconnected Services for each Carriage Service Provider, the MandatorySoft Flag and the CSP code in the LookupRefData Table are also provided.

The additional fields allow the IPND Manager to determine the count of valid Connected Services by Carriage Service Provider.

5.2.8 Changed Data Provider Report

The purpose of this report is to provide Data Providers with information regarding lost and gained Services. This is necessitated by the fact that Services may be transferred between Data Providers any number of times.

Note that Service records "owned" by a Data Provider are mapped to the File Source that submitted the Service record.

5.2.8.1 Frequency

The Changed Data Provider Report will be run monthly on the 1st of the month for all Data Provider changes that occurred in the previous month.

5.2.8.2 Changed Data Provider Report File Name Structure

Note that letters are always in upper case.

Output on Request File names will be structured as follows:

IPND<TT><XXXXX>.<NNNNNNN>

Where

"IPND"	–	constant identifier string
<TT>	–	refers to the file type which is "DP" for "Data Provider" Report File.
<XXXXX>	–	refers to the file source code.
<NNNNNNN>	–	File sequence number with leading 0's.

Data Provider Report Files may be accessed by Data Providers from the download directory that is visible after connecting via ftp to IPND.

5.2.9 Data Provider Data Snapshot

The purpose of this report is to provide Data Providers with a snapshot of the data that they have uploaded into the IPND.

5.2.9.1 Frequency

This report will be run "on request", although a maximum of 4 requests per year will be accepted from any single Data Provider. Note that the report will be run on the basis of the File Source not the Data Provider code.

5.2.9.2 Data Provider Snapshot File Name Structure

Note that letters are always in upper case.

Output on Request File names will be structured as follows:

IPND<TT><XXXXX><MMMMMMM>.<NNNNNNN>.<PPPP>

Where

"IPND"	–	constant identifier string
<TT>	–	String "RU" for Refresh Upload.
<XXXXX>	–	The File Source code.
<MMMMMMM>	–	Run number uniquely identifying the output file. It indicates that a file was part of the MMMMMMMth run for that download file type <TT>. A higher number indicates a later run.
"."	–	extension marker
<NNNNNNN>	–	File Sequence Number for last Upload File from the Data Provider for which the report is being run.
<PPPP>	–	Span number. All Output On Request download files are limited to 100,000 rows of data. Requests that generate > 100,000 rows are written to spanned files.

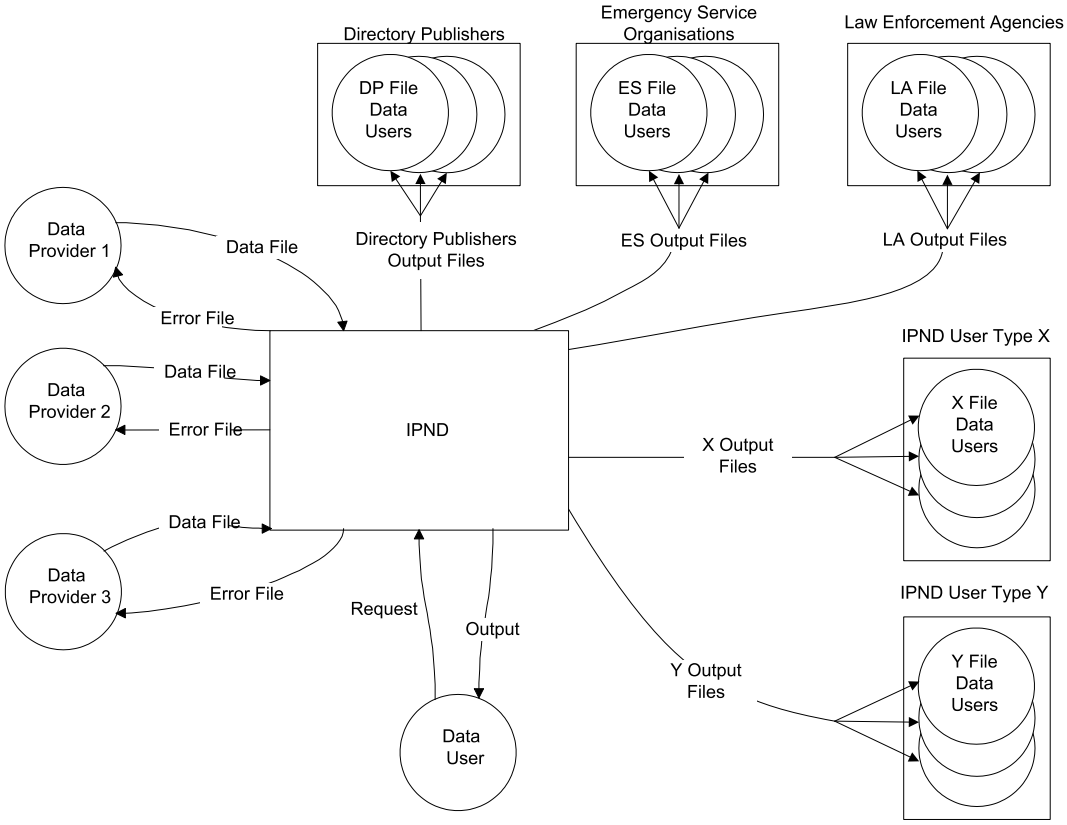
Data Provider Data Snapshot Files may be accessed by Data Providers from the download directory that is visible after connecting via ftp to IPND.

5.3 High Level Design

This section provides an initial, draft overview of the architecture of IPND. The Context Diagram portrays the system in terms of its interfaces with the data provider and Data Users. The Functional Model provides an overview of the structure of the system in terms of the functions it provides and how these functions are decomposed. The Data Flow Model portrays the system in terms of the flow of data through it. Finally the Logical Data Model portrays the system in terms of the data it contains.

The requirements are for a batch processing system, without on-line access. As a result the application will be optimised for batch processing.

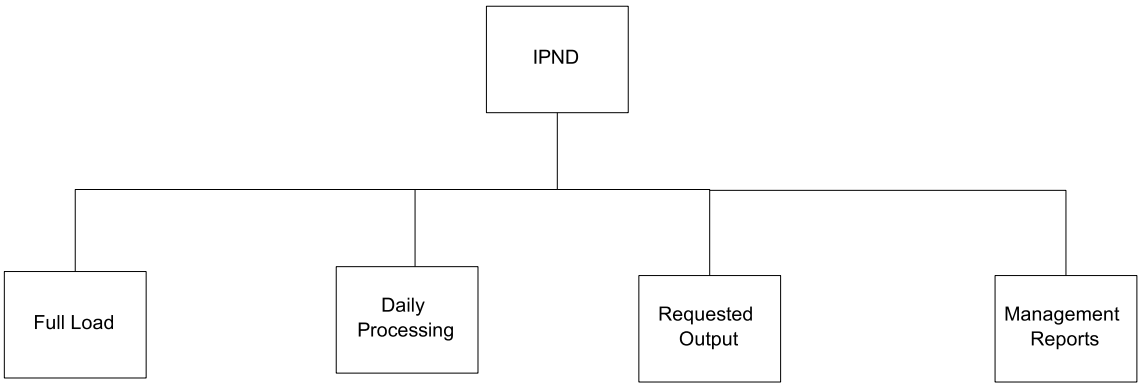
5.3.1 Main System Context Diagram



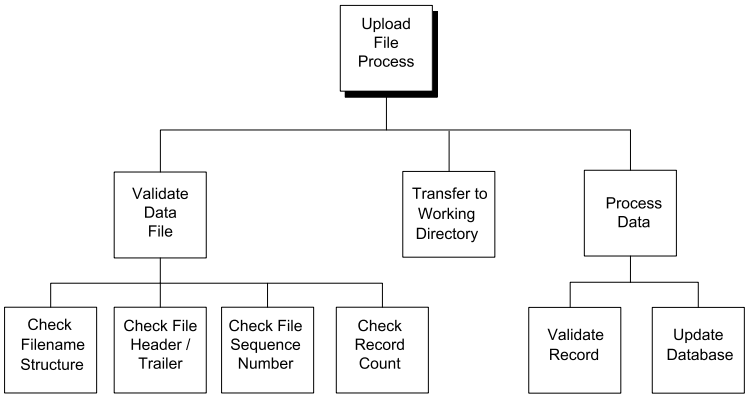
5.3.2 User Error File Transfer Context Diagram

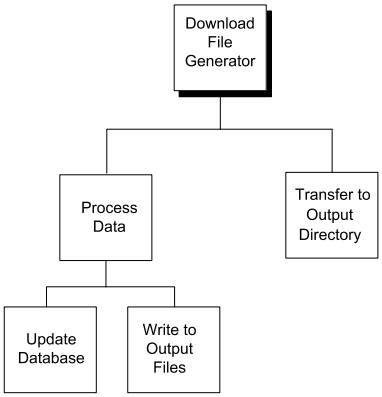
5.3.3 Functional Model

The following diagrams gives an overview of the system in terms of the high order functions that it will provide.



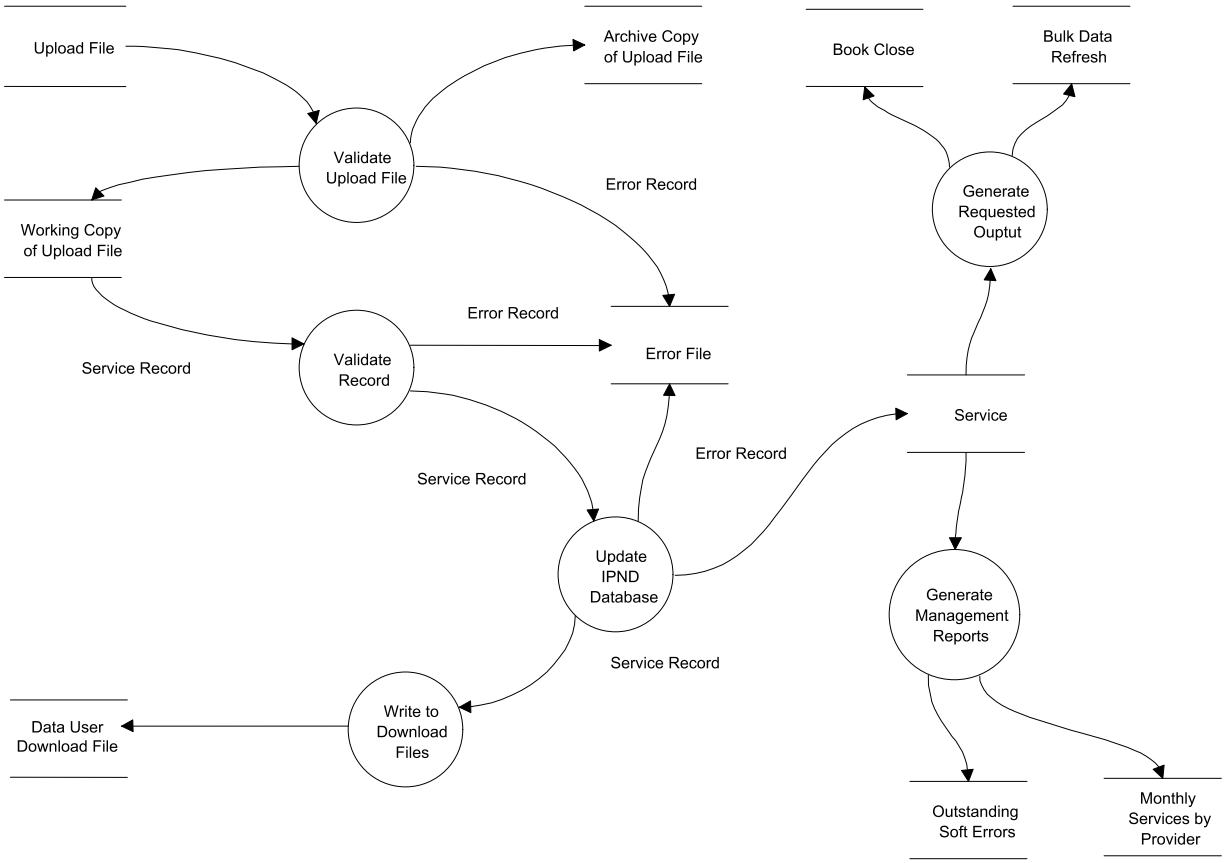
The following diagram shows a high level view of the functional structure of the main IPND functional elements. Note that they have not been decomposed to fine detail and that the Requested Output and Management Report functions have not been decomposed further due to their relatively simple structure.





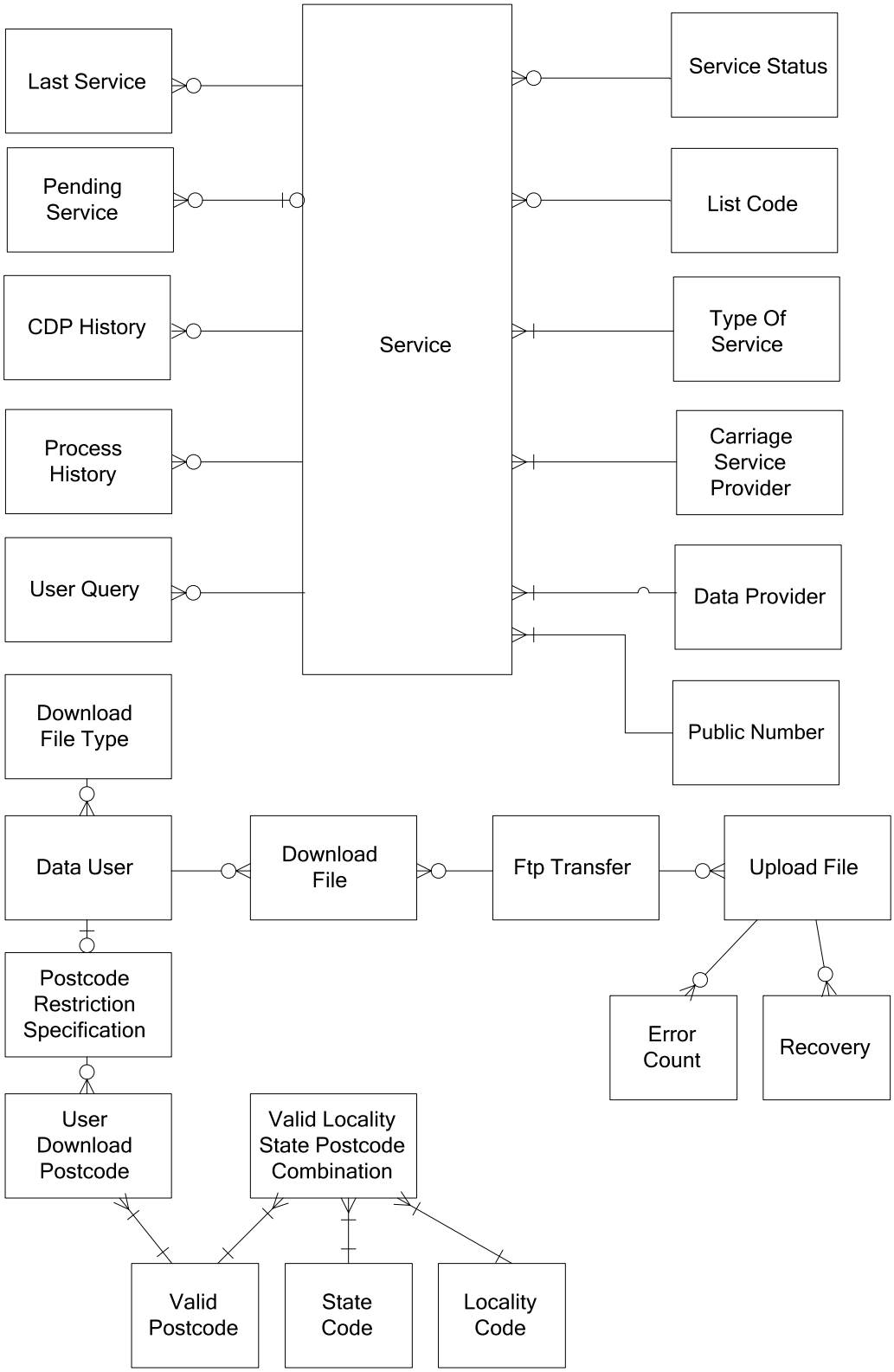
5.3.4 Data Flow Diagram

The purpose of this diagram is to provide a high level view of the main flow of data through the IPND system.



5.3.5 Logical Data Model

5.3.5.1 Entity Relationship Diagram



5.3.5.2 Data Dictionary

Given the similarity between the database tables and the Upload File formats (refer to File Formats document) this section specifies only those attributes that exist in addition to the fields that exist in the Upload file.

5.3.5.2.1 Service

This entity will contain the data relating to the Service data record. In addition to the fields outlined in the File Formats document it will contain the following attributes.

The Pending Flag field and the Cancel Pending Flag field will not be stored in the Service entity.

5.3.5.2.1.1 Modified Date Time

The date and time the data relating to the Public Number was last modified. If there have been no modifications this will be the date and time the Public Number was added to the IPND.

5.3.5.2.1.2 Change Data Provider Connect Date Time

The data and time a data record is modified where the Data Provider code in the new data record does not match the Data Provider code in the Service entity.

5.3.5.2.1.3 Old Data Provider

The Data Provider code for the old Data Provider where the Data Provider code in the new data record does not match the Data Provider code in the Service entity.

5.3.5.2.1.4 Soft Error Flag

When the value of this attribute is True (T) a Soft Error has occurred when the data record was processed.

5.3.5.2.1.5 User Query Flag

This column is now redundant The information is contained within the User Query table.

5.3.5.2.2 Pending Service

The Pending Service entity will have the same structure as the Service entity. It will contain the data relating to Pending Service data records. That is, data for Public Number data records that are received with a Pending Flag value of True (T).

The Pending Flag field and the Cancel Pending Flag field will not be stored in the Pending Service entity.

5.3.5.2.3 Last Service

This entity will have the same structure as Service. It will contain the Service information prior to the last modification.

Will implement the Last Service Before Image Log.

5.3.5.2.4 Public Number

This entity will maintain processing information about a PublicNumber regardless of whether it is a Pending or Actual service. It will just store a counter against the number indicating the number of times this service number has been updated.

This entity includes attributes

- Public Number

- Load Sequence

5.3.5.2.5 Change Data Provider History

Change Data Provider transactions, ie where the Data Provider Code in the newly arrived Service data record is different to the Data Provider Code for the Service in IPND.

This entity will store the data required for the Change Data Provider Transaction Log.

Change Data Provider History will contain the following attributes, refer to the File Formats document for details.

- Public Number
- Old Data Provider Code
- New Data Provider Code
- Modified Data Time

5.3.5.2.6 Process History

This entity will store basic reference data for each service record processed by the IPND system. This data is used for reporting.

The attributes that will be included are as follows:

- Upload File source
- Upload File Sequence Number
- Upload File Retry Number
- Upload File Record Position
- Public Number
- Upload File Name
- Service Status Code
- Pending Flag
- Cancel Pending Flag
- List Code
- Carriage Service Provider Code
- Data Provider Code
- Transaction Date Time
- Modified Date Time
- Error Number List

Refer to the File Formats section of this document for details.

5.3.5.2.7 User Query

This entity is used to store semantic data quality issues raised by data users..

Attributes included in this entity from the uploaded Query File are:

- Public Number
- User File Source,
- User Error Code,
- User Error Description,
- Date Time Loaded.

Plus the following key processing attributes

- QueryId (unique identifier of the query)
- PublicNumber Load Seq (as last downloaded)
- StatusCode

Refer to the File Formats section of this document for details of the attributes related to the Uploaded Query Files .

5.3.5.2.8 Upload File

This entity is used to log details of all the Upload Files processed by the IPND. This entity contains the following attributes:

- Upload File Source,
- Upload File Sequence Number,
- Upload Start Date,
- Upload File Retry Number,
- Upload End Date,
- Upload File Name,
- Total Records Processed,
- Total MH Errors,
- Total MS Errors,
- Total OK Records,
- Total Warning Records,
- Total NotOK Records,
- Upload File Rejected Flag,
- Upload File Status.

Refer to the File Formats section of this document for details.

5.3.5.2.9 Error Count

This entity records the number and type of errors associated with an Upload File. It is used for reporting. It contains the following attributes:

- Upload File Source,
- Upload File Sequence Number,

- Upload File Retry Number,
- Upload File Name,
- Error Type,
- Error Number,
- Error Count.

5.3.5.2.10 Code Values

The following entities will be used to store valid codes for those attributes of the Service entity that need to be validated.

Note that although these values will be dynamic there will be no “front end” tools to modify the data, ie modifications will be through SQL scripts.

The code values that will need to be validated are:

- Service Status
- List Code
- Type of Service
- Usage Code
- Carriage Service Provider
- Data Provider

They will all have the structure described below.

5.3.5.2.10.1 Code

The code value, ie for Service Status one of “C” or “D”.

5.3.5.2.10.2 Description

The description associated with the code, ie for Service Status, “Connected” for “C” and “Disconnected” for “D”.

5.3.5.2.10.3 End Date

The date time on which a Code becomes invalid.

5.3.6 Physical Data Model

5.3.6.1 Logical to Physical Mapping

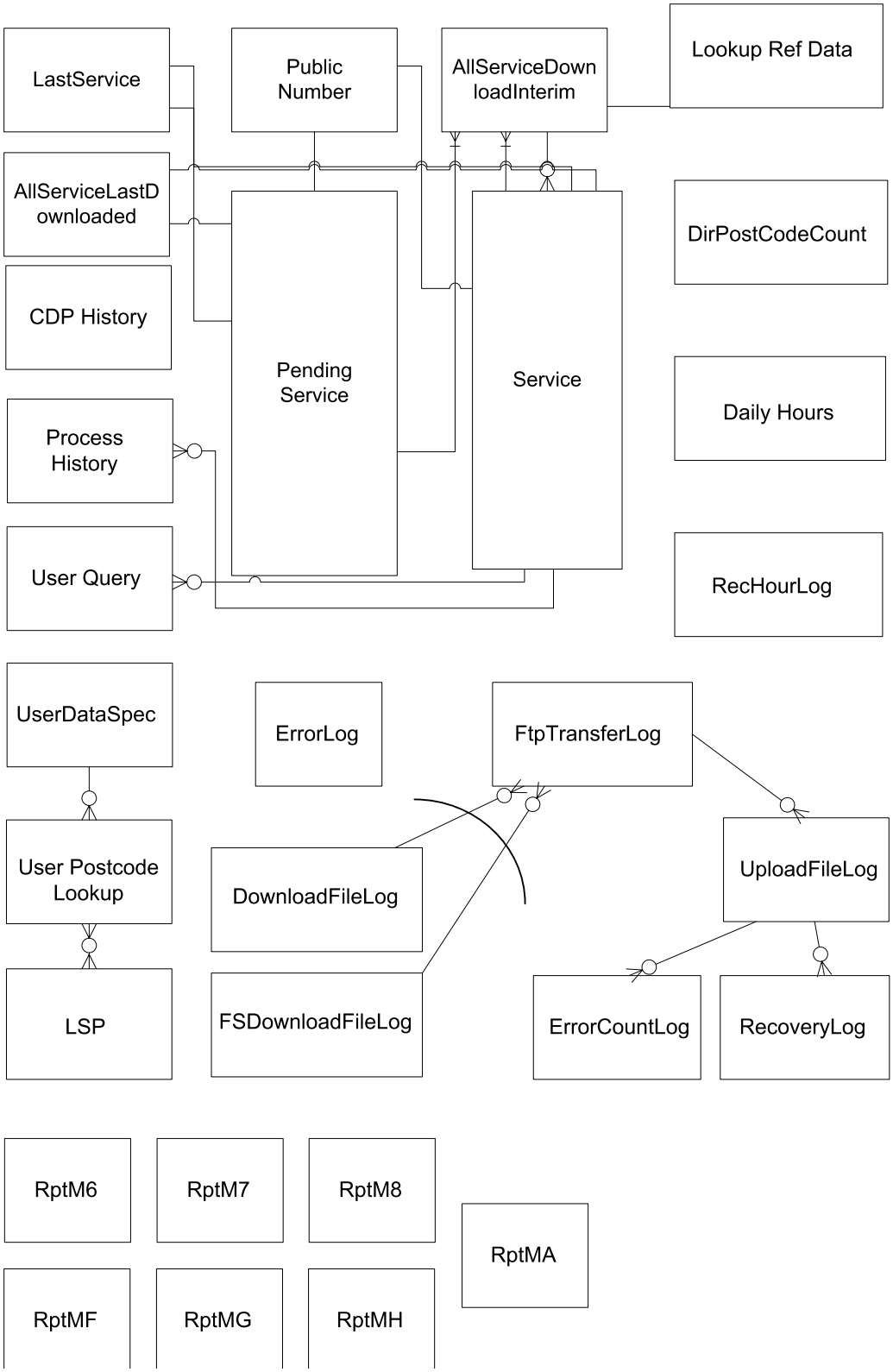
Logical Entity	Table	Comment
Service	Service	Direct 1:1 mapping
Pending Service	PendingService	Direct 1:1 mapping
Service	AllServiceDownloadInterim	Stores all service records that have been unprocessed by the DFG..

PendingService	AllServiceDownlaoadInterim	Stores all service records that have been unprocessed by the DFG..
Service	AllServiceLastDownloaded	Stores previous state of data for Service and PendingService columns that are required to manage service state transitions.
PendingService	AllServiceLastDownloaded	Stores previous state of data for Service and PendingService columns that are required to manage service state transitions.
Last Service	LastService	Direct 1:1 mapping
CDP History	CDPLog	Direct 1:1 mapping
Process History	UploadControlFieldLog	Direct 1:1 mapping
User Query	UserQuery	Direct 1:1 mapping
Upload File	UploadFileLog	Direct 1:1 mapping
Error Count	ErrorCountLog	Direct 1:1 mapping
Recovery	RecoveryLog	Direct 1:1 mapping
Ftp Transfer	FtpTransferLog	Direct 1:1 mapping
DownloadFile	DownloadFileLog	Download file maps to one of 2 physical tables depending on the characteristics of the file being generated.
DownloadFile	FSDownloadFileLog	Download file maps to one of 2 physical tables depending on the characteristics of the file being generated.
Service Status	LookupRefData	Validation codes are stored in a single table differentiated by a column representing code type.
List Code	LookupRefData	See above.
Type of Service	LookupRefData	See above.
Carriage Service Provider	LookupRefData	See above.
Data Provider	LookupRefData	See above.
State Code	LookupRefData	See above
Valid Postcode	LSP	Set of distinct postcodes
Locality	LSP	Set of distinct localities
Data User	DataUserSpec	Direct 1:1 mapping

Postcode Restriction Specification	DataUserSpec	Field of DataUserSpec may hold postcode restriction specification If no restriction, field = 'ALL'
User Download Postcode	UserPostcodeLookup	Direct 1:1 mapping

Note that this table does not include references to physical tables that do not have logical equivalents.

5.3.6.2 Entity Relationship Diagram



5.3.6.3 Physical Dictionary

This section will only describe those physical tables that do not have an equivalent in the logical model. These tables do not usually represent significant entities.

5.3.6.3.1 RecHourLog

This table logs the number of records processed during each hour of the day. This is required for reporting.

5.3.6.3.2 RecoveryLog

This table logs when the IPND core application needs to recover from any abnormal termination such as an operating system or Oracle database failure.

5.3.6.3.3 RptMx

These tables are used to store intermediate data for reporting.

6. Data Files

6.1 File Formats

All files contain a header record, zero or more detail records and a trailer record.

All fields relating to the service will be included in a record, not just those which have changed.

All files will be in 'flat ASCII' format. All data are to be printable characters in the range ASCII 32 to ASCII 126 inclusive. The only exceptions are to be the record delimiter characters which will be a ASCII 10 (newline).

6.1.1 Columns

This section provides a description of the headings used for the tables used to define the file formats.

6.1.1.1 No.

A unique number for the field within the record.

6.1.1.2 Field Name

A descriptive name for the data attribute.

Field names are unique within a record.

6.1.1.3 Format

Describes the format in which data should be entered.

All fields are fixed length and space padded.

X(n) denotes an alpha-numeric field of n characters. To be left justified. Leading zeros will be retained.

N(n) denotes a numeric field of n characters. To be right justified. Leading zeros will not be stored by the IPND. Each digit is to be stored in it's ASCII representation (not as a binary).

Where a field has no value (null or empty), the field should be filled with spaces.

Where field formats have departed from AS 4212, this has been indicated with an asterisk, and the AS 4212 format has been given in the description column. This has been done to minimise impact on the existing systems. Where possible systems should provide the data in the AS 4212 format. It is expected that at some future date, the IPND will be requested to enforce the AS 4212 format.

NB it is acknowledged that AS4212 is partly superseded by AS4590 but the IPND address structure is currently based on AS4212.

6.1.1.4 From/To

The absolute positions in the upload file for the start and end of each field.

6.1.1.5 Mandatory

Denotes whether the IPND expects to find the field in the upload file.

In the download file, this will indicate whether the value is expected to be found. Note that MS fields may not be populated in the download files if Soft Error Flag is T.

O Optional. The field may be left empty (space filled).

MF Mandatory File. The field must contain a valid value; otherwise the entire file will be rejected.

MH Mandatory Hard. The field must contain a valid value; otherwise the record will not be applied to the IPND.

MS Mandatory Soft. The field must contain a valid value; otherwise a soft error will be returned, but the record will still be applied to the IPND, wherever possible.

MW Mandatory Warning. If the field does not contain a valid value, a warning will be returned in the error file. The record will be applied to the IPND.

M Mandatory. Field must be entered.

6.1.1.6 Case

This specifies a preferred case where one exists. The case specified is based primarily on AS4212. No validation or data manipulation of the case will occur within the IPND. Case is only indicated to steer Data Providers towards providing consistent data.

U Upper Case - All characters in upper case. Eg MALL

C Capitalised – The first character of each word in uppercase; subsequent characters in lower case. Eg Douglas, MacGregor, McCrae, Macclesfield.

6.1.1.7 Values

Provides a list of valid values, which may be entered in the field.

Values are case sensitive.

6.1.1.8 Value description

Describes each of the values.

6.1.1.9 AS 4212

Gives a reference to the section in AS 4212, which relates to the field.

6.1.1.10 Description

Provides further information about the field.

6.1.1.11 Error number and Message

This field provides an overview of the error numbers and messages generated if the field is left blank or contains invalid data. Note that the this does not comprise a full set of IPND error messages, refer to *section* 6.1.4 ***IPND Error Messages***.

6.1.2 Customer Record System Extract IPND Upload File

Each IPND upload file will contain details from one or more Data Providers, giving changes to services since the last IPND upload file was created.

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
	Header Record									**One per file**	
1	Record Type	X (3)	1	3	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.	U	Valid value is HDR	Header		There are three types of records that the database recognises as part of a file. They are headers, footers (or trailers) and actual data records that have no prefix. The record types 'HDR' and 'TRL' are abbreviations for header and trailer.	MF 249 - Invalid record type found in upload file header.
2	File Type	X (6)	4	9	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.	U	Valid value is IPNDUP			In an upload file the file type field will be populated with 'IPNDUP'. Any other entry is considered invalid.	MF 248 - Invalid file type found in upload file header.
3	File Source	X (5)	10	14	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.		Valid value to be provided by the IPND Manager.	The IPND Manager allocates a unique file source code on receipt of an application from a Data Provider		The File Source Code is a 5-character code embedded in the filename which identifies the Data Provider's source system sending the data. Each Data Provider will have at least one but may have a number of different codes.	MF 247 - Invalid file source found in upload file header

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
4	File Sequence No.	N (7)	15	21	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.		Unique consecutive number for file from file source.	The file sequence number will be sequential and contiguous. <NNNNNNN> is a file sequence number with leading 0. E.g file sequence number 1 will be uploaded to the IPND as 0000001, sequence number 2 will be uploaded as 0000002 and so on.		The File Sequence Number is used to uniquely identify each file created within the same File Source Code. The Sequence Number is a component of the filename and refers to the position of an individual file in relation to the other files provided from this File Source. This number is incremented by 1 for each new file created and sent to the database.	MF 001-File out of sequence MF 225-Embedded spaces found in upload file sequence number MF 227-Leading space(s) found in upload file sequence number MF 228-Non-digit characters found in upload file sequence number MF 230-Trailing space(s) found in upload file sequence number MF 250-Invalid character(s) found in upload file header sequence number. MF 251-Upload file header sequence number is null.
5	File Creation Start	N (14)	22	35	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.		This field must contain a valid date and time and should be provided in the format (YYYYMMDDHHMMSS)	Date and time creation of the data file commenced.		This field contains details of the date and time the creation of the data file commenced. The file header create start date field is 14 digits in length and follows the format YYYYMMDDHHMMSS	MF 246-Upload file header create start date is null. MF 245-Invalid upload file header create start date format.
6	Filler	X (870)	36	905	Padding to make all records in file same length.		SPACES	ASCII 32		Padding to make all records in file same length.	
7	Record Delimiter	1	906	906			\n	ASCII 10		Newline	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
	Transaction Record										
1	Public Number	X (20)*	1	20	Mandatory. The record will be rejected by the IPND if a valid value is not provided and a Mandatory Hard (MH) error will be generated.		Number	Number means a number specified in the Numbering Plan.		The Number is the unique identifier for the service. * This field is defined as type X to ensure leading zeros can be entered; however only digits may be used. In other words the Public Number field is treated as a "string" that only accepts numeric characters. Any leading zeros are not stripped out. Like all IPND string fields it must be left justified. Do not left pad the string with spaces and only include as many zeros as is conformant with the Numbering Plan, i.e. for number 03 1234 5678 provide the string 0312345678. Note that unlike integers 0312345678 is NOT equivalent to 312345678 or 00312345678.	MH 006 - Missing number. MH 110 - Non numeric in number. MH 101 - Number includes embedded spaces. MH 100 - Number includes leading spaces.
2	Service Status Code	X (1)	21	21	Mandatory. The record will be rejected by the IPND if a valid value is not provided and a Mandatory Hard (MH) error will be generated.	U	Valid values are C or D	C - Connected D -Disconnected		The Service Status Code is a one-character field indicating the status of the service record. A data record will have a Service Status Code value that is either 'C' for connected or 'D' for disconnected.	MH 013 - Incorrect service status code. MH 007 - Missing service status code.

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
3	Pending Flag	X (1)	22	22	Mandatory. The record will be rejected by the IPND, if a valid value is not provided and a Mandatory Hard (MH) error will be generated.	U	Valid values are T or F	T - True F - False		Identifies whether the transaction is to happen at some future time.	MH 014 - Incorrect pending flag. MH 008 - Missing Pending flag.
4	Cancel Pending Flag	X (1)	23	23	Mandatory. The record will be rejected by the IPND, if a valid value is not provided and a Mandatory Hard (MH) error will be generated.	U	Valid values are T or F	T - True F - False		Identifies whether a pending transaction is to be cancelled. (A service cancellation is regarded as a disconnection).	MH 009 - Missing cancel pending flag. MH 015 - Incorrect cancel pending flag. MH 102 - Cancel pending service flag set to true for non-pending service. MH 105 - Pending service cancel for a non-pending service.
5	Customer Name										
5.1	Customer Name 1	X (40)	24	63	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error.	C	Surname/ Company Name 1	Surname/ Company Name 1	2.4	Surname/ Company Name 1	MS 020 - Missing customer name 1
5.2	Customer Name 2	X (40)	64	103	Optional	C	Given/ Company Name 2		2.3	Given/ Company Name 2	
5.3	Long Name	X (80)	104	183	Optional	C	Characters which do not fit into Customer Name 2			Characters which do not fit into Customer Name 2	
5.4	Customer Title	X (12)	184	195	Optional	C	Title		2.1	Title	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
6	Finding Name										
6.1	Finding Name 1	X (40)	196	235	Optional if the Number is tagged as "UL". Mandatory if the Number is tagged as "SA" or "LE". Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error.	C	Surname /Company Name 1		2.4	The Directory Finding Name field must have a valid entry if the data record List Code is Listed Entry or Suppressed address. The Finding Name is the name under which customer details are listed for directory purposes.	MS 031 - Missing finding name
6.2	Finding Name 2	X (40)	236	275	Optional	C	Given or Initials/Company Name 2		2.3	Given or Initials/Company Name 2	
6.3	Finding Title	X (12)	276	287	Optional	C	Title		2.1	Title	
7	Service Address										
7.1	Service Building Subunit										
7.1.1	Service Building Type	X (6)*	288	293	Optional	U	Type of premises		3.1(i)	Type of premises * AS 4212 specifies X (2).	
7.1.2	Service Building 1st Nr	X (5) *	294	298	Optional		First Number		3.1(ii)	First Number * AS 4212 specifies N(5)	
7.1.3	Service Building 1st Suffix	X (1)	299	299	Optional		First Suffix		3.1(iii)	First Suffix	
7.1.4	Service Building 2nd Nr	X (5)	300	304	Optional		Second Number		3.1(iv)	Second Number * AS 4212 specifies N (5)	
7.1.5	Service Building 2nd Suf''x	X (1)	305	305	Optional		Second suffix of premises.		3.1 (v)	Second suffix of premises.	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
7.2	Service Building Floor										
7.2.1	Service Building Floor Type	X (2)	306	307	Optional	U	Building floor type		3.2 (i)	Building floor type	
7.2.2	Service Building Floor Nr	X (4)	308	311	Optional		Floor Number		3.2(ii)	Floor Number	
7.2.3	Service Building Floor Nr Suffix	X (1)	312	312	Optional		Floor Number suffix.		3.2(iii)	Floor Number suffix.	
7.3	Service Building Property	X (40)	313	352	Mandatory if the Service Street Name 1 is empty. Note the IPND will process the record but generate a Mandatory Soft (MS) error		Building Name		3.3	Building Name. Eg Treasury Building. This column results in the generation of a MS error if the List Code is LE or SA and the Service Street Name 1 column is empty.	MS 104 - Missing service building property or street name
7.4	Service Building Location	X (30)	353	382	Optional				3.4	Eg REAR, Corner.	
7.5	Service Street House										
7.5.1	Service Street House Nr 1	X (5)	383	387	Optional				3.5 (i)	Building Number.	
7.5.2	Service Street House Nr 1 Suffix	X (3)*	388	390	Optional				3.5(ii)	Building Number suffix * AS4212 specifies X (1)	
7.5.3	Service Street House Nr 2	X (5)	391	395	Optional				3.6 (i)	2nd number associated with the building	
7.5.4	Service Street House Nr 2 Suffix	X (1)	396	396	Optional				3.6 (ii)	2nd number suffix	
7.6	Service Address Street										

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
7.6.1	Service Street Name 1	X (25)	397	421	Mandatory if the Service Building Property is empty. Note the IPND will process the record but generate a Mandatory Soft (MS) error.		Name part of street		3.8 (i)	Name part of street This column results in the generation of a MS error if the List Code is LE or SA and the Service Building Property column is empty.	MS 104 - Missing service building property or street name
7.6.2	Service Street Type 1	X (8)*	422	429	Optional	U			3.8(ii)	Street type abbreviation * AS 4212 specifies X (4)	
7.6.3	Service Street Suffix 1	X (6)*	430	435	Optional	U			3.8(iii)	Suffix part of street. Eg N (North). * AS4212 specifies X (2).	
7.6.4	Service Street Name 2	X (25)	436	460	Optional					Name part of street that does not fit into Service Street Name 1.	
7.6.5	Service Street Type 2	X (4)	461	464	Optional	U			3.9(ii)	Street type of abbreviation.	
7.6.6	Service Street Suffix 2	X (2)	465	466	Optional	U			3.9(iii)	Suffix part of street. Eg N (North)	
7.7	Service Address Locality	X (40)	467	506	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error	U	Suburb, town, locality	Suburb, town, locality	3.10	The Service Address Locality is a vital part of the Service address, indicating the locality, suburb or town of the Number. Only approved names should be entered	MS 052 - Invalid service address locality MS 084 - Missing service address locality MS 053 - Invalid location, state, postcode combination

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
7.8	Service Address State	X (3)	507	509	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error	U	State or Territory	State or Territory	3.12	The Service Address State is an important part of the Service Address details in a data record indicating the State or Territory in which the Number is located.	MS 051 - Invalid service address state MS 085 - Missing service address state MS 053 - Invalid location, state, postcode combination
7.9	Service Address Postcode	N (4)	510	513	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error		Valid Postcode	Valid Postcode	4.2	The Service Address Postcode is an important part of the Service Address details in a data record. This field should not contain non-numeric characters.	MS 050 - Invalide service address postcode MS 086 - Missing service address postcode MS 080 - Non numeric in service address postcode MS 053 - Invalid location, state, postcode combination
8	Directory Address										Address for directory purposes
8.1	Directory Building Subunit										
8.1.1	Directory Building Type	X (6)*	514	519	Optional	U			3.1 (i)	Type of premises *AS4212 specifies X (2)	
8.1.2	Directory Building 1st Nr	X (5)*	520	524	Optional				3.1(ii)	First number * AS4212 specifies N (5)	
8.1.3	Directory Building 1st Suffix	X (1)	525	525	Optional				3.1(iii)	First suffix	
8.1.4	Directory Building 2nd Nr	X (5)*	526	530	Optional				3.1(iv)	Second Number * AS4212 specifies N (5)	
8.1.5	Directory Building 2nd Suffix	X (1)	531	531	Optional				3.1(v)	Second suffix of premises	
8.2	Directory Building Floor				Optional						
8.2.1	Directory Building Floor Type	X (2)	532	533	Optional	U			3.2 (i)	Building Floor Type	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
8.2.2	Directory Building Floor Nr	X (4)	534	537	Optional				3.2(ii)	Floor Number	
8.2.3	Directory Building Floor Nr Suffix	X (1)	538	538	Optional				3.2(iii)	Floor Number Suffix	
8.3	Directory Building Property	X (40)	539	578	Optional if the Public Number is tagged as "UL". Mandatory if the Public Number is tagged as "SA" or "LE" and Directory street name 1 is empty. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error.		Building Name		3.3	Building/Property Name. Eg Treasury Building, Kickatinalong. This column results in the generation of a MS error if the List Code is LE or SA and the Directory Street Name 1 column is empty.	MS 103 - Missing directory building property or street name
8.4	Directory Building Location	X (30)	579	608	Optional				3.4	Eg REAR, Corner	
8.5	Directory Street House				Optional						
8.5.1	Directory Street House Nr 1	X (5)	609	613	Optional				3.5 (i)	Building Number	
8.5.2	Directory Street House Nr 1 Suffix	X (3) *	614	616	Optional				3.5(ii)	Building Number Suffix * AS 4212 specifies X (1)	
8.5.3	Directory Street House Nr 2	X (5)	617	621	Optional				3.6 (i)	2nd number associated with the building	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
8.5.4	Directory Street House Nr 2 Suffix	X (1)	622	622	Optional				3.6 (ii)	2nd number suffix	
8.6	Directory Address Street										
8.6.1	Directory Street Name 1	X (25)	623	647	Optional if the Number is tagged as "UL". Mandatory if the Number is tagged as "SA" or "LE" and Directory Building Property is empty.				3.8 (i)	Name part of Street This column results in the generation of a MS error if the List Code is LE or SA and the Directory Building Property column is empty	MS 103 - Missing directory building property or street name
8.6.2	Directory Street Type 1	X (8)*	648	655	Optional	U			3.8(ii)	Street type abbreviation * AS4212 specifies X (4)	
8.6.3	Directory Street Suffix 1	X (6)*	656	661	Optional	U			3.8(iii)	Suffix part of street. Eg N (North) *AS4212 specifies X (2).	
8.6.4	Directory Street Name 2	X (25)	662	686	Optional					Name part of street that does not fit into Directory Street Name 1	
8.6.5	Directory Street Type 2	X (4)	687	690	Optional	U			3.9(ii)	Street type abbreviation	
8.6.6	Directory Street Suffix 2	X (2)	691	692	Optional	U			3.9 (iii)	Suffix part of street. Eg N (North)	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
8.7	Directory Address Locality	X (40)	693	732	Optional if the Number is tagged as "UL". Mandatory if the Number is tagged as "SA" or "LE". Note the IPND will process the record if not populated and generate a Mandatory Soft error.	U	Suburb, town, locality		3.10	Suburb, town, locality	MS 033 - Missing Directory Address locality
8.8	Directory Address State	X (3)	733	735	Optional if the Number is tagged as "UL". Mandatory if the Number is tagged as "SA" or "LE". Note the IPND will process the record if not populated and generate a Mandatory Soft error.	U	Valid State or territory		3.12	State or Territory	MS 034 - Missing Directory Address state
8.9	Directory Address Postcode	N (4)	736	739	Optional if the Number is tagged as "UL". Mandatory if the Number is tagged as "SA" or "LE".		Valid Postcode		4.2	Postcode, should not include any non-numeric characters	MS 035 - Missing directory address postcode MS 081 - Non numeric in Directory Address postcode

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
9	List Code	X (2)	740	741	Mandatory. The record will be rejected by the IPND, if a valid value is not provided and generate a Mandatory Hard (MH) error.	U	Valid values are LE, UL and SA	LE - Listed Entry UL - Unlisted Entry SA-Suppressed Address		Indicates whether the customer has explicitly stated that their directory entry is to be Listed, Unlisted or Listed with a Suppressed Address.	MH 016 - Incorrect list code MH 010 - Missing List Code
10	Usage Code	X (1)	742	742	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft error.	U	Valid values are R, B, G, C and N	R-Residential B-Business G-Govt C-Charity N-Not Available		'N' should only be used where the usage is unknown.	MS 026 - Missing usage code MS 036 - Incorrect usage code

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
11	Type of Service	X (5)	743	747	Optional	U	Expected values are: FAX FCALL FIXED MOBIL MODEM ONE3 PAGER PAYPH PRVPY PREM SATEL	 Facsimile services Freecall services Geographic (local call service) PMTS Data services Local rate call services Pager services Public payphone services Private payphone Premium services Satellite Service		The Type of Service field identifies the type of service. This is particularly important for ESOs to identify the appropriate processes to be followed to ascertain the customer's location.	
12	Customer Contact										

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
12.1	Customer Contact Name 1	X (40)	748	787	Mandatory if Alternate Address code is T. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error.		Customer contact surname.			Surname.	MS 047 - Missing customer contact name 1
12.2	Customer Contact Name 2	X (40)	788	827	Optional field		Customer contact given name			Given Name	
12.3	Customer Contact Nr	X (20)	828	847	Mandatory if Alternate Address code is T. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error.		Telephone number of customer contact			Telephone number of above	MS 048 - Missing customer contact number
13	Carriage Service Provider Code	X (3)	848	850	Mandatory. Note the IPND will process the record if not populated with a valid value and generate a Mandatory Soft (MS) error.		Valid value to be provided by the IPND Manager.	Carriage Service Provider (CSP) code		The IPND Manager allocates a unique CSP code on receipt of an application from a Data Provider	MS 027 - Missing carriage service provider code MS 037 - Incorrect carriage service provider code

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
14	Data Provider Code	X (6)	851	856	Mandatory. The IPND will not process the record if this field is not populated with a valid value and generate a Mandatory Hard (MH) error		Valid value to be provided by the IPND Manager.	Data Provider Code		The IPND Manager allocates a unique Data Provider code on receipt of an application from a Data Provider	MS 012 - Missing Data Provider Code MS 017 - Incorrect Data Provider Code
15	Transaction Date	N (14)	857	870	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error		This field must contain a valid date and time and should be provided in the format (YYYYMMDDHHMMSS)	Date and time at which the transaction occurred on the Data Provider's system		The transaction date is a 14 digit numeric field referring to the date the record was last changed on the Data Provider's system.	MS 028 - Missing transaction date MS 082 - Badly formed transaction date

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
16	Service Status Date	N (14)	871	884	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error		This field must contain a valid date and time and should be provided in the format (YYYY MMDDH HMMSS	The service status date is a 14 digit numeric field referring to the date the record was created on the Data Provider's system.		The Service Status Date may be the same date as the transaction date and is a 14 digit numeric field. If Pending Flag is F the date and time on which the current service status was reached. If Pending Flag is T the date and time on which the pending Service Status Date is expected to be reached. Note if a change is being made to any of the other fields other than Service Status Date should show the date the service was connected. For instance if the Finding Name is changed then the fact that a change has occurred on a certain date would be indicated by the transaction date.	MS 83 - Badly formed service status date MS 29 - Missing service status date
17	Alternate Address Flag	X (1)	885	885	Mandatory. Note the IPND will process the record if not populated and generate a Mandatory Soft (MS) error	U	Valid values are T or F.	T-True F-False		This field is used to flag where the Service Address provided is the location where the service terminates (the flag is set to false), or to identify where the Service Address provided may be not be where the service terminates (the flag is set to true). Typically this can apply to a PABX or VOIP service.	MS 038 - Incorrect alternate address flag MS 030 - Missing alternate address flag
18	Prior Public Number	X (20)*	886	905	Optional		Customer s prior Number	Customer's Prior Number		* This field is defined as type X to ensure leading zeros can be entered; however only digits may be used.	
19	Record Delimiter	1	906	906			\n	ASCII 10		Newline	

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
	Trailer record									**One Per file**	
1	Record Type	X (3)	1	3	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.	U	Valid value is TRL				MF 237 - Unknown footer record type found in upload file
2	File sequence number	N (7)	4	10	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File error will be generated.		Unique consecutive number for file from file source.	The file sequence number will be sequential and contiguous.		The File Sequence Number is used to uniquely identify each file created within the same File Source Code.	MF 243 - Upload file footer sequence number is null MF 242 - Invalid character (s) found in upload file footer sequence number
3	File Creation End	N (14)	11	24	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated.		This field must contain a valid date and time and should be provided in the format (YYYYMMDDHHMMSS)	This field contains details of the date and time the creation of the data file was completed.		There is a corresponding field in the file header which details the date and time the creation of the data file commenced. These two fields mark the beginning and end of the creation of the data file on the Data Provider's source system.	MF 233 - Invalid upload file footer create end date format. MF 234 - Upload file footer create end date is null

No	Field Name	Format	From	To	Mandatory/ Optional	Case	Values	Value Description	AS 4212	Description	Error number and message if field is not populated with data
4	File Record Count	N (7)	25	31	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated		The file trailer record count is a 7 digit field reflecting the number of transaction records in the file excluding the header and trailer records				MF 239 - Upload file footer record count does not match number of records found in file. MF 240 - Upload file footer record count is null
5	Filler	X (874)	32	905	Mandatory. The entire file will be rejected if a valid value is not populated and a Mandatory File (MF) error will be generated		SPACES	ASCII 32		Padding to make all records in file the same length	
6	Record Delimiter	1	906	906			\n	ASCII 10		New line	

Please note the errors described in the table above is not a complete list, please refer to *section* **6.1.4** *IPND Error Messages* for a more comprehensive list.

6.1.3 IPND error file Report to Data Providers

The error file contains details of processing for the associated IPND upload file. One error file will be created for each upload file.

There may be multiple error records for each record from the upload file.

The sum of Error Record Count and Success Record Count should equal the record count for the associated upload file.

If an upload has been completely successful and has no warnings, this file will still be created, but will only contain a header and a trailer record. The error and warning counts would be zero, and the Success Record Count would equal the total number of records read from the upload file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPNDPE			
3	File Source	X(5)	M			To be provided by the IPND Manager		Source System of data. A DATA PROVIDER may have multiple systems, each generating it's own sequence of files.
4	File Sequence No.	N(7)	M					Unique consecutive number, for upload file from File Source.
5	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
6	Filler	X(31)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
7	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	O*					Number of record with error. * Field is mandatory if Error Type is H or S
2	Record Number	N(7)	O*					How many records into the IPND upload file the erroneous record was. Does not include the header record. * Field is mandatory if Error Type is H or S
3	Error Number	N(5)	M					Error Code – describes the error.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
4	Error Type	X(1)	M		F H S W	File Hard Soft Warning		The type of error found
5	Filler	X(33)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Sequence No	N(7)	M					Unique consecutive number, for upload file from File Source.
3	Hard Error Record Count	N(7)	M					Number of records in this file with hard errors.
4	Soft Error Record Count	N(7)	M					Number of records in this file with soft errors. Does not include records with both hard and soft errors.
5	Warning Record Count	N(7)	M					Number of warning records in this file, with warnings.
6	Error Record Count	N(7)	M					Number of records in upload file with hard or soft errors. Note a record could have multiple hard and/or soft errors.
7	Success Record Count	N(7)	M					Number of records in upload file, which were processed successfully. Note Success Record Count plus Error Record Count should equal the total number of records in the Upload file.
8	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
9	File Record Count	N(7)	M					Number of records in this file. (Does not include header or trailer)
10	Record Delimiter	1			\n	ASCII 10		Newline

6.1.4 IPND Error Messages

The following is a listing of the error message code combination.

The IPND manager is to provide Data Providers with a list of any error codes which will be used, prior to their use in the IPND system. The text for an error message will not exceed 256 characters.

Message #	Text	Error Classification
001	File out of sequence.	F
005	Unprintable character in record	MH
006	Missing public number.	MH
007	Missing service status code.	MH
008	Missing pending flag.	MH
009	Missing cancel pending flag.	MH
010	Missing list code.	MH
012	Missing data provider code.	MH
013	Incorrect service status code.	MH
014	Incorrect pending flag.	MH
015	Incorrect cancel pending flag.	MH
016	Incorrect list code.	MH
017	Incorrect data provider code.	MH
018	Incorrect source ID code.	F
020	Missing customer name1.	MS
026	Missing usage code.	MS
027	Missing carriage service provider code.	MS
028	Missing transaction date.	MS
029	Missing service status date.	MS
030	Missing alternate address flag.	MS
031	Missing finding name.	MS
033	Missing directory address locality.	MS
034	Missing directory address state.	MS
035	Missing directory address postcode.	MS
036	Incorrect usage code.	MS
037	Incorrect carriage service provider code.	MS
038	Incorrect alternate address flag.	MS
041	CDP disconnect attempted.	MH
042	Pending service from a different data provider, will only be issued when a data provider sends a cancel pending record for a pending service with a different data provider code.	MH
043	Warning older transaction date.	W
047	Missing customer contact name1.	MS
048	Missing customer contact number.	MS
050	Invalid Service Address Postcode	MS

Message #	Text	Error Classification
051	Invalid Service Address State	MS
052	Invalid Service Address Locality	MS
053	Invalid Location, State, Postcode (LSP) Combination	MS
080	Non numeric in service address postcode.	MS
081	Non numeric in directory address postcode.	MS
082	Badly formed transaction date.	MS
083	Badly formed service status date.	MS
084	Missing service address locality.	MS
085	Missing service address state.	MS
086	Missing service address postcode.	MS
100	Public number includes leading spaces.	MH
101	Public number includes embedded spaces.	MH
102	Cancel pending service flag set to true for non pending service.	MH
103	Missing directory building property or street name.	MS
104	Missing service building property or street name.	MS
105	Pending service cancel for a non pending service.	MH
107	Prior public number includes leading spaces.	W
108	Prior public number includes embedded spaces.	W
109	Non numeric in prior public number.	W
110	Non numeric in public number.	MH
201	Incorrect upload filename length.	F
202	Incorrect upload filename prefix.	F
203	Invalid upload filename separator.	F
204	Incorrect upload filename sequence format.	F
205	Upload filename sequence does not match footer sequence.	F
206	Upload filename sequence does not match header sequence.	F
207	Invalid Upload filename source.	F
208	Upload filename source does not match header source.	F
225	Embedded space(s) found in upload file sequence number.	F
227	Leading space(s) found in upload file sequence number.	F
228	Non digit character(s) found in upload file sequence number.	F
230	Trailing space(s) found in upload file sequence number.	F
233	Invalid upload file footer create end date format.	F
234	Upload file footer create end date is null.	F
236	Upload file footer contains a negative record count.	F
237	Unknown footer record type found in upload file.	F
238	Invalid character(s) found in upload file footer record count.	F
239	Upload file footer record count does not match number of records found in file.	F
240	Upload file footer record count is null.	F
241	Number of records exceeds maximum limit	F

Message #	Text	Error Classification
242	Invalid character(s) found in upload file footer sequence number.	F
243	Upload file footer sequence number is null.	F
245	Invalid upload file header create date format.	F
246	Upload file header create start date is null.	F
247	Invalid file source found in upload file header.	F
248	Invalid file type found in upload file header.	F
249	Invalid record type found in upload file header.	F
250	Invalid character(s) found in upload file header sequence number.	F
251	Upload file header sequence number is null.	F
252	Upload file header sequence number does not match footer sequence number.	F
253	Upload file footer is too large.	F
254	Upload file footer is too small.	F
255	Upload file header is too large.	F
256	Upload file header is too small.	F
257	Upload file record is too large.	MH
258	Upload file record is too small.	MH
259	Unprintable character found in header.	F
260	Unprintable character found in footer.	F

6.1.5 IPND Download File to Directory Publishers and Directory Assistance

Download files provided to Directory Publisher and Directory Assistance Data Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Unlisted numbers will be included in the file but will have all fields other than the Public Number, the List Code and the Service Status Date blanked out.

Pending transactions will not be included in the standard download in this file. Pending transactions will be included in a book close, which will also use this file format.

Cancellations of pending transactions will never be included in this file.

Where a LNP connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

Directory Publisher and Directory Assitance Data Users are responsible for ensuring that any changes from a Listed number to an Unlisted number are updated in their records.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDDI			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(649)			SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per number
1	Public Number	X(20)	MH					Unique identifier for the service.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
3	Pending Flag	X(1)	MH		T* F	True False		Identifies whether the transaction is to happen at some future time. * Standard daily download will not contain pending transactions. Book close will only contain pending transactions. Note. No Cancel Pending transactions will ever go to directory publishers.
4	Customer Name							
4.1	Customer Name 1	X(40)	MS	C			2.4	Surname / Company name 1.
4.2	Customer Name 2	X(40)	O	C			2.3	Given / Company name 2.
4.3	Long Name	X(80)	O	C				Characters which do not fit into Customer Name 2.
4.4	Customer Title	X(12)	O	C			2.1	Title.
5	Finding Name							
5.1	Finding Name 1	X(40)	O*	C			2.4	Surname / Company name 1. * This field is MS if List Code is LE or SA.
5.2	Finding Name 2	X(40)	O	C			2.3	Given or Initials / Company name 2.
5.3	Finding Title	X(12)	O	C			2.1	Title.
6	**Directory Address**							Address for Directory Purposes.
6.1	Directory Building Subunit							
6.1.1	Directory Building Type	X(6)*	O	U			3.1(i)	Type of premises. * AS4212 specifies X(2).
6.1.2	Directory Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
6.1.3	Directory Building 1st Suffix	X(1)	O				3.1(iii)	First suffix.
6.1.4	Directory Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).
6.1.5	Directory Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
6.2	Directory Building Floor							

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6.2.1	Directory Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
6.2.2	Directory Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
6.2.3	Directory Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
6.3	Directory Building Property	X(40)	O*	C			3.3	Building/Property Name. Eg Treasury Building., Kickatinalong * This field is MS if List Code is LE or SA and Directory Street Name 1 is empty.
6.4	Directory Building Location	X(30)	O				3.4	Eg REAR, Corner.
6.5	Directory Street House							
6.5.1	Directory Street House Nr 1	X(5)	O				3.5(i)	Building number.
6.5.2	Directory Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
6.5.3	Directory Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
6.5.4	Directory Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
6.6	Directory Address Street							
6.6.1	Directory Street Name 1	X(25)	O*	C			3.8(i)	Name part of street. * This field is MS if List Code is LE or SA and Directory Building Property is empty.
6.6.2	Directory Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
6.6.3	Directory Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North) * AS4212 specifies X(2).
6.6.4	Directory Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
6.6.5	Directory Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
6.6.6	Directory Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North)

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6.7	Directory Address Locality	X(40)	O*	C			3.10	Suburb, town, locality. * This field is MS if List Code is LE or SA.
6.8	Directory Address State	X(3)	O*	U			3.12	State or territory. * This field is MS if List Code is LE or SA.
6.9	Directory Address Postcode	N(4)	O*				4.2	Australian Post code for mail delivery. * This field is MS if List Code is LE or SA.
7	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.
8	Usage Code	X(1)	MS		R B G C N	Residential Business Govt Charity Not Available		
9	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (Fax), modem (Modem), pager (Pager), mobile(Mobil), freecall (Fcall), personal communications services (PCS), incoming business unit fee call (One3) information (info) , payphone (payph) , wireless local loop (WLL), private payphone (PRVPY), Satellite (SATEL), Premium service (PREM)
10	Customer Contact							Data blanked out with spaces.
10.1.1	Customer Contact Name 1	X(40)	O*					Data blanked out with spaces.
10.1.2	Customer Contact Name 2	X(40)	O					Data blanked out with spaces.
10.1.3	Customer Contact Nr	X(20)	O*					Data blanked out with spaces.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
11	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Data blanked out with spaces.
12	Data Provider Code	X(6)	MH			Values defined by IPND Manager		Data blanked out with spaces.
13	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
14	Service Status Date	N(14)	MS					If Pending flag is F - Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T - Date and time on which the pending service status is expected to be reached.
15	Alternate Address Flag	X(1)	MS		T F	True False		Data blanked out with spaces.
16	Prior Public Number	X(20)	O					Data blanked out with spaces.
17	Soft Error Flag	X(1)	M		T F	True False		If T, one or more soft errors exist in the record. Any of the fields with Mandatory MS, may not have a value. All MH fields must have a value. If F, no soft errors exist in the record. Any of the fields with Mandatory MS, must have a value. All MH fields must have a value.
18	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Filler	X(648)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

Differences to upload file:

Does not contain: File Source, Cancel Pending Flag and Service Address.

Does contain: Soft Error Flag.

6.1.6 IPND Download File to Emergency Call Services

Download files provided to Emergency Services Data Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Where a Change Data Provider connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDES			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(538)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per IPND service transaction
1	Public Number	X(20)	MH					Unique identifier for the service.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.
3	Pending Flag	X(1)	MH		T F	True False		Identifies whether the transaction is to happen at some future time.
4	Cancel Pending Flag	X(1)	MH		T F	True False		Identifies wether a pending transaction is to be cancelled. (A service cancellation is regarded a Disconnection.)
5	Customer Name							
5.1	Customer Name 1	X(40)	MS	C			2.4	Surname / Company name 1.
5.2	Customer Name 2	X(40)	O	C			2.3	Given / Company name 2.
5.3	Long Name	X(80)	O	C				Characters which do not fit into Customer Name 2.
5.4	Customer Title	X(12)	O	C			2.1	Title.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6	**Service Address**							
6.1	Service Building Subunit							
6.1.1	Service Building Type	X(6)*	O	U			3.1(I)	Type of premises. * AS4212 specifies X(2).
6.1.2	Service Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
6.1.3	Service Building 1st Suffix	X(1)	O				3.1(iii)	First suffix.
6.1.4	Service Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).
6.1.5	Service Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
6.2	Service Building Floor							
6.2.1	Service Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
6.2.2	Service Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
6.2.3	Service Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
6.4	Service Building Property	X(40)	O	C			3.3	Building Name. Eg Treasury Building.
6.5	Service Building Location	X(30)	O				3.4	Eg REAR, Corner.
6.6	Service Street House							
6.6.1	Service Street House Nr 1	X(5)	O				3.5(i)	Building number.
6.6.2	Service Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
6.6.3	Service Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
6.6.4	Service Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
6.7	Service Address Street							
6.7.1	Service Street Name 1	X(25)	MS	C			3.8(i)	Name part of street.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6.7.2	Service Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
6.7.3	Service Service Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North). * AS4212 specifies X(2).
6.7.4	Service Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
6.7.5	Service Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
6.7.6	Service Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North).
6.8	Service Address Locality	X(40)	MS	C			3.10	Suburb, town, locality.
6.9	Service Address State	X(3)	MS	U			3.12	State or territory.
6.10	Service Address Postcode	N(4)	MS				4.2	Australian Post code for mail delivery.
7	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.
8	Usage Code	X(1)	MS		R B G C N	Residential Business Govt Charity Not Available		
9	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (**Fax**), modem (**Modem**), pager (**Pager**), mobile(**Mobil**), freecall (**Fcall**), personal communications services (**PCS**), incoming business unit fee call (**One3**) information (**info**) , payphone (**payph**) , wireless local loop (**WLL**), private payphone (**PRVPY**, Satellite (**SATEL**), Premium service (**PREM**)

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
10	Customer Contact							Name of business telecommunications consultant or Contact for IPND purposes
10.1	Customer Contact Name 1	X(40)	O*					Surname. * MS where Alternate Address Code is T.
10.2	Customer Contact Name 2	X(40)	O					Given name
10.3	Customer Contact Nr	X(20)	O*					Telephone number of above. * This field is MS where Alternate Address Code is T.
11	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Unique code for Carriage Service Provider.
12	Data Provider Code	X(6)	MH			Values defined by IPND Manager		Unique code for Data Provider.
13	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
14	Service Status Date	N(14)	MS					If Pending flag is F – Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T – Date and time on which the pending service status is expected to be reached.
15	Alternate Address Flag	X(1)	MS		T F	True False		Indicates if the end point for the carriage service may be at an address other than the service address. This is most likely to be used for a PABX, where a caller could be in a different building to the service address. Note. Customer Contact details are mandatory if this is true.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
16	Soft Error Flag	X(1)	M		T F	True False		If T, one or more soft errors exist in the record. Any of the fields with Mandatory MS, may not have a value. All MH fields must have a value. If F, no soft errors exist in the record. Any of the fields with Mandatory MS, must have a value. All MH fields must have a value.
17	Record Delimiter	1			\n	ASCII 10		Newline

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Filler	X(537)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

Differences to upload file:

Does not contain: File Source, Finding Name, Directory Address and Prior Public Number.

Does contain: Soft Error Flag.

6.1.7 IPND Download File to Law Enforcement Agencies

Download files provided to Law Enforcement Agency Data Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Where a LNP connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDLA			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
	Filler	X(890)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per IPND service transaction
1	Public Number	X(20)*	MH					Unique identifier for the service. * This field is defined as type X to ensure leading zeros can be entered; however only digits may be used.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.
3	Pending Flag	X(1)	MH		T F	True False		Identifies whether the transaction is to happen at some future time.
4	Cancel Pending Flag	X(1)	MH		T F	True False		Identifies wether a pending transaction is to be cancelled. (A service cancellation is regarded a Disconnection.)
5	Customer Name							
5.1	Customer Name 1	X(40)	MS	C			2.4	Surname / Company name 1.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
5.2	Customer Name 2	X(40)	O	C			2.3	Given / Company name 2.
5.3	Long Name	X(80)	O	C				Characters which do not fit into Customer Name 2.
5.4	Customer Title	X(12)	O	C			2.1	Title.
6	Finding Name							
6.1	Finding Name 1	X(40)	O*	C			2.4	Surname / Company name 1. * This field is MS if List Code is LE or SA.
6.2	Finding Name 2	X(40)	O	C			2.3	Given or Initials / Company name 2.
6.3	Finding Title	X(12)	O	C			2.1	Title.
7	**Service Address**							
7.1	Service Building Subunit							
7.1.1	Service Building Type	X(6)*	O	U			3.1(I)	Type of premises. * AS4212 specifies X(2).
7.1.2	Service Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
7.1.3	Service Building 1st Suffix	X(1)	O				3.1(iii)	First suffix
7.1.4	Service Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).
7.1.5	Service Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
7.2	Service Building Floor							
7.2.1	Service Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
7.2.2	Service Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
7.2.3	Service Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
7.3	Service Building Property	X(40)	O	C			3.3	Building Name. Eg Treasury Building.
7.4	Service Building Location	X(30)	O				3.4	Eg REAR, Corner.
7.5	Service Street House							
7.5.1	Service Street House Nr 1	X(5)	O				3.5(i)	Building number.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
7.5.2	Service Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
7.5.3	Service Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
7.5.4	Service Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
7.6	Service Address Street							
7.6.1	Service Street Name 1	X(25)	MS	C			3.8(i)	Name part of street.
7.6.2	Service Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
7.6.3	Service Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North). * AS4212 specifies X(2).
7.6.4	Service Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
7.6.5	Service Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
7.6.6	Service Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North).
7.7	Service Address Locality	X(40)	MS	C			3.10	Suburb, town, locality.
7.8	Service Address State	X(3)	MS	U			3.12	State or territory.
7.9	Service Address Postcode	N(4)	MS				4.2	Australian Post code for mail delivery.
8	**Directory Address**							**Address for Directory Purposes.**
8.1	Directory Building Subunit							
8.1.1	Directory Building Type	X(6)*	O	U			3.1(i)	Type of premises. * AS4212 specifies X(2).
8.1.2	Directory Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
8.1.3	Directory Building 1st Suffix	X(1)	O				3.1(iii)	First suffix.
8.1.4	Directory Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
8.1.5	Directory Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
8.2	Directory Building Floor							
8.2.1	Directory Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
8.2.2	Directory Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
8.2.3	Directory Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
8.3	Directory Building Property	X(40)	O*	C			3.3	Building/Property Name. Eg Treasury Building., Kickatinalong * This field is MS if List Code is LE or SA and Directory Street Name 1 is empty.
8.4	Directory Building Location	X(30)	O				3.4	Eg REAR, Corner.
8.5	Directory Street House							
8.5.1	Directory Street House Nr 1	X(5)	O				3.5(i)	Building number.
8.5.2	Directory Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
8.5.3	Directory Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
8.5.4	Directory Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
8.6	Directory Address Street							
8.6.1	Directory Street Name 1	X(25)	O*	C			3.8(i)	Name part of street. * This field is MS if List Code is LE or SA and Directory Building Property is empty.
8.6.2	Directory Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
8.6.3	Directory Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North) * AS4212 specifies X(2).

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
8.6.4	Directory Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
8.6.5	Directory Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
8.6.6	Directory Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North)
8.7	Directory Address Locality	X(40)	O*	C			3.10	Suburb, town, locality. * This field is MS if List Code is LE or SA.
8.8	Directory Address State	X(3)	O*	U			3.12	State or territory. * This field is MS if List Code is LE or SA.
8.9	Directory Address Postcode	N(4)	O*				4.2	Australian Post code for mail delivery. * This field is MS if List Code is LE or SA.
9	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.
10	Usage Code	X(1)	MS		R B G C N	Residential Business Government Charity Not Available		
11	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (Fax), modem (Modem), pager (Pager), mobile(Mobil), freecall (Fcall), personal communications services (PCS), incoming business unit fee call (One3) information (info) , payphone (payph) , wireless local loop (WLL), private payphone (PRVPY), Satellite (SATEL), Premium service (PREM)
12	Customer Contact							Name of business telecommunications consultant or Contact for IPND purposes

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
12.1	Customer Contact Name 1	X(40)	O*					Surname. * MS where Alternate Address Code is T.
12.2	Customer Contact Name 2	X(40)	O					Given name
12.3	Customer Contact Nr	X(20)	O*					Telephone number of above. * This field is MS where Alternate Address Code is T.
13	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Unique code for Carriage Service Provider.
14	Data Provider Code	X(6)	MH			Values defined by IPND Manager		Unique code for Data Provider.
15	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
16	Service Status Date	N(14)	MS					If Pending Flag is F - Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T - Date and time on which the pending service status is expected to be reached.
17	Alternate Address Flag	X(1)	MS		T F	True False		Indicates if the end point for the carriage service may be at an address other than the service address. This is most likely to be used for a PABX, where a caller could be in a different building to the service address. Note. Customer Contact details are mandatory if this is true.
18	Prior Public Number	X(20)*	O					Customer's prior Public Number. * This field is defined as type X to ensure leading zeros can be entered; however only digits may be used.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
19	Soft Error Flag	X(1)	M		T F	True False		If T, one or more soft errors exist in the record. Any of the fields with Mandatory MS, may not have a value. All MH fields must have a value. If F, no soft errors exist in the record. Any of the fields with Mandatory MS, must have a value. All MH fields must have a value.
20	Modified Date Time	N(14)						Date and time the record was processed by the IPND.
21	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Filler	X(889)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

Differences to upload file:

Does not contain: File Source.

Does contain: Soft Error Flag.

Does contain: Modified DateTime field

6.1.8 IPND Download File to Location Dependent Carriage Service Providers

Download files provided to Location Dependent Carriage Service Provider Data Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Unlisted numbers will be included in the file but will have all fields other than the Public Number and the List Code blanked out.

Pending transactions will not be included in the standard download in this file. Pending transactions will be included in a book close, which will also use this file format.

Cancellations of pending transactions will never be included in this file.

Where a LNP connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPND**LD**			LD (BulkData Refresh), UD (Unlisted BulkData Refresh),
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (CCYYMMDDHHMMSS)
5	Filler	X(162)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per IPND service transaction
1	Public Number	X(20)*	MH					Unique identifier for the service. * This field is defined as type X to ensure leading zeros can be entered; however only digits may be used.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.
3	Pending Flag	X(1)	MH		T F	True False		Identifies whether the transaction is to happen at some future time.
4	Service Street House							

4.1	Service Street House Nr 1	X(5)	O				3.5(i)	Building number.
4.2	Service Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
4.3	Service Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
4.4	Service Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
5	**Service Address Street**							
5.1	Service Street Name 1	X(25)	O*	C			3.8(i)	Name part of street. * This field is MS if List Code is LE or SA and Service Building Property is empty.
5.2	Service Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
5.3	Service Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North). * AS4212 specifies X(2).
5.4	Service Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
5.5	Service Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
5.6	Service Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North).
6	Service Address Locality	X(40)	MS	C			3.10	Suburb, town, locality.
7	Service Address State	X(3)	MS	U			3.12	State or territory.
8	Service Address Postcode	N(4)	MS				4.2	Australian Post code for mail delivery.
9	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.

10	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (Fax), modem (Modem), pager (Pager), mobile(Mobil), freecall (Fcall), personal communications services (PCS), incoming business unit fee call (One3) information (info) , payphone (payph) , wireless local loop (WLL), private payphone (PRVPY), Satellite (SATEL), Premium service (PREM)
11	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Party which is providing the carriage service.
12	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
13	Service Status Date	N(14)	MS					If Pending Flag is F - Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T - Date and time on which the pending service status is expected to be reached.
14	Alternate Address Flag	X(1)	MS		T F	True False		Indicates if the end point for the carriage service may be at an address other than the service address. This is most likely to be used for a PABX, where a caller could be in a different building to the service address. Note. Customer Contact details are mandatory if this is true.
15	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (CCYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)

5	Filler	X(161)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

6.1.9 IPND Download File to Researchers

Download files provided to Research Data Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Unlisted numbers will be included in the file but will have all fields other than the Public Number and the List Code blanked out.

Pending transactions will not be included in the standard download in this file. Pending transactions will be included in a book close, which will also use this file format.

Cancellations of pending transactions will never be included in this file.

Where a LNP connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

Research Data Users are responsible for ensuring that any changes from a Listed number to an Unlisted number are updated in their records.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDDI			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(649)			SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per number
1	Public Number	X(20)	MH					Unique identifier for the service.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
3	Pending Flag	X(1)	MH		T* F	True False		Identifies whether the transaction is to happen at some future time. * Standard daily download will not contain pending transactions. Book close will only contain pending transactions. Note. No Cancel Pending transactions will ever go to directory publishers.
4	Customer Name							
4.1	Customer Name 1	X(40)	MS	C			2.4	Surname / Company name 1.
4.2	Customer Name 2	X(40)	O	C			2.3	Given / Company name 2.
4.3	Long Name	X(80)	O	C				Characters which do not fit into Customer Name 2.
4.4	Customer Title	X(12)	O	C			2.1	Title.
5	Finding Name							
5.1	Finding Name 1	X(40)	O*	C			2.4	Surname / Company name 1. * This field is MS if List Code is LE or SA.
5.2	Finding Name 2	X(40)	O	C			2.3	Given or Initials / Company name 2.
5.3	Finding Title	X(12)	O	C			2.1	Title.
6	**Directory Address**							Address for Directory Purposes.
6.1	Directory Building Subunit							
6.1.1	Directory Building Type	X(6)*	O	U			3.1(i)	Type of premises. * AS4212 specifies X(2).
6.1.2	Directory Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
6.1.3	Directory Building 1st Suffix	X(1)	O				3.1(iii)	First suffix.
6.1.4	Directory Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).
6.1.5	Directory Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
6.2	Directory Building Floor							

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6.2.1	Directory Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
6.2.2	Directory Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
6.2.3	Directory Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
6.3	Directory Building Property	X(40)	O*	C			3.3	Building/Property Name. Eg Treasury Building., Kickatinalong * This field is MS if List Code is LE or SA and Directory Street Name 1 is empty.
6.4	Directory Building Location	X(30)	O				3.4	Eg REAR, Corner.
6.5	Directory Street House							
6.5.1	Directory Street House Nr 1	X(5)	O				3.5(i)	Building number.
6.5.2	Directory Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
6.5.3	Directory Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
6.5.4	Directory Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
6.6	Directory Address Street							
6.6.1	Directory Street Name 1	X(25)	O*	C			3.8(i)	Name part of street. * This field is MS if List Code is LE or SA and Directory Building Property is empty.
6.6.2	Directory Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).
6.6.3	Directory Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North) * AS4212 specifies X(2).
6.6.4	Directory Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
6.6.5	Directory Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
6.6.6	Directory Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North)

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
6.7	Directory Address Locality	X(40)	O*	C			3.10	Suburb, town, locality. * This field is MS if List Code is LE or SA.
6.8	Directory Address State	X(3)	O*	U			3.12	State or territory. * This field is MS if List Code is LE or SA.
6.9	Directory Address Postcode	N(4)	O*				4.2	Australian Post code for mail delivery. * This field is MS if List Code is LE or SA.
7	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.
8	Usage Code	X(1)	MS		R B G C N	Residential Business Govt Charity Not Available		
9	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (Fax), modem (Modem), pager (Pager), mobile(Mobil), freecall (Fcall), personal communications services (PCS), incoming business unit fee call (One3) information (info) , payphone (payph) , wireless local loop (WLL), private payphone (PRVPY), Satellite (SATEL), Premium service (PREM)
10	Customer Contact							Data blanked out with spaces.
10.1.1	Customer Contact Name 1	X(40)	O*					Data blanked out with spaces.
10.1.2	Customer Contact Name 2	X(40)	O					Data blanked out with spaces.
10.1.3	Customer Contact Nr	X(20)	O*					Data blanked out with spaces.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
11	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Data blanked out with spaces.
12	Data Provider Code	X(6)	MH			Values defined by IPND Manager		Data blanked out with spaces.
13	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
14	Service Status Date	N(14)	MS					If Pending flag is F - Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T - Date and time on which the pending service status is expected to be reached.
15	Alternate Address Flag	X(1)	MS		T F	True False		Data blanked out with spaces.
16	Prior Public Number	X(20)	O					Data blanked out with spaces.
17	Soft Error Flag	X(1)	M		T F	True False		If T, one or more soft errors exist in the record. Any of the fields with Mandatory MS, may not have a value. All MH fields must have a value. If F, no soft errors exist in the record. Any of the fields with Mandatory MS, must have a value. All MH fields must have a value.
18	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Filler	X(648)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

6.1.10 IPND Download File to Early Warning Systems

Download files provided to Early Warning System Users will contain one transaction record for each change, which will have been applied to the IPND database, since the last download file was created. Exceptions are listed below:

Where a Change Data Provider connection (different Data Provider) has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDES			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(538)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per IPND service transaction
1	Public Number	X(20)	MH					Unique identifier for the service.
2	Service Status Code	X(1)	MH		C D	Connected Disconnected		The current or pending state of the service.
3	Pending Flag	X(1)	MH		T F	True False		Identifies whether the transaction is to happen at some future time.
4	Cancel Pending Flag	X(1)	MH		T F	True False		Identifies wether a pending transaction is to be cancelled. (A service cancellation is regarded a Disconnection.)
5	**Service Address**							
5.1	Service Building Subunit							

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
5.1.1	Service Building Type	X(6)*	O	U			3.1(I)	Type of premises. * AS4212 specifies X(2).
5.1.2	Service Building 1st Nr	X(5)*	O				3.1(ii)	First number. * AS4212 specifies N(5).
5.1.3	Service Building 1st Suffix	X(1)	O				3.1(iii)	First suffix.
5.1.4	Service Building 2nd Nr	X(5)*	O				3.1(iv)	Second number. * AS4212 specifies N(5).
5.1.5	Service Building 2nd Suf'x	X(1)	O				3.1(v)	Second suffix of premises.
5.2	Service Building Floor							
5.2.1	Service Building Floor Type	X(2)	O	U			3.2(i)	Building floor type.
5.2.2	Service Building Floor Nr	X(4)	O				3.2(ii)	Floor Number.
5.2.3	Service Building Floor Nr Suffix	X(1)	O				3.2(iii)	Floor Number suffix.
5.4	Service Building Property	X(40)	O	C			3.3	Building Name. Eg Treasury Building.
5.5	Service Building Location	X(30)	O				3.4	Eg REAR, Corner.
5.6	Service Street House							
5.6.1	Service Street House Nr 1	X(5)	O				3.5(i)	Building number.
5.6.2	Service Street House Nr 1 Suffix	X(3)*	O				3.5(ii)	Building number suffix. * AS4212 specifies X(1).
5.6.3	Service Street House Nr 2	X(5)	O				3.6(i)	2nd number associated with the building.
5.6.4	Service Street House Nr 2 Suffix	X(1)	O				3.6(ii)	2nd number suffix.
5.7	Service Address Street							
5.7.1	Service Street Name 1	X(25)	MS	C			3.8(i)	Name part of street.
5.7.2	Service Street Type 1	X(8)*	O	U			3.8(ii)	Street type abbreviation. * AS4212 specifies X(4).

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
5.7.3	Service Service Street Suffix 1	X(6)*	O	U			3.8(iii)	Suffix part of street. Eg N (North). * AS4212 specifies X(2).
5.7.4	Service Street Name 2	X(25)	O	C			3.9(i)	Name part of street.
5.7.5	Service Street Type 2	X(4)	O	U			3.9(ii)	Street type abbreviation.
5.7.6	Service Street Suffix 2	X(2)	O	U			3.9(iii)	Suffix part of street. Eg N (North).
5.8	Service Address Locality	X(40)	MS	C			3.10	Suburb, town, locality.
5.9	Service Address State	X(3)	MS	U			3.12	State or territory.
5.10	Service Address Postcode	N(4)	MS				4.2	Australian Post code for mail delivery.
8	List Code	X(2)	MH		LE UL SA	Listed Entry Unlisted Number Suppressed Address		Indicates whether the number is listed or unlisted or suppressed. Unlisted lines exist where the customer has explicitly stated they do not want the number listed. Suppressed Address lines exist where the customer has stated that they do not want the address displayed.
9	Usage Code	X(1)	MS		R B G C N	Residential Business Govt Charity Not Available		
10	Type of Service	X(5)	O					Type of Service indicator Eg Facsimile (Fax), modem (Modem), pager (Pager), mobile(Mobil), freecall (Fcall), personal communications services (PCS), incoming business unit fee call (One3) information (info) , payphone (payph) , wireless local loop (WLL), private payphone (PRVPY), Satellite (SATEL), Premium service (PREM)
11	Customer Contact							Name of business telecommunications consultant or Contact for IPND purposes

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
11.3	Customer Contact Nr	X(20)	O*					Telephone number of above. * This field is MS where Alternate Address Code is T.
12	Carriage Service Provider Code	X(3)	MS			Values defined by IPND Manager		Unique code for Carriage Service Provider.
13	Data Provider Code	X(6)	MH			Values defined by IPND Manager		Unique code for Data Provider.
14	Transaction Date	N(14)	MS					Date and time at which the transaction occurred on the Data Provider's system.
15	Service Status Date	N(14)	MS					If Pending flag is F – Date and time on which the current service status was reached. Note. If a change is being made to the Finding Name for a connected service, this should indicate when the service was connected. If Pending flag is T – Date and time on which the pending service status is expected to be reached.
16	Alternate Address Flag	X(1)	MS		T F	True False		Indicates if the end point for the carriage service may be at an address other than the service address. This is most likely to be used for a PABX, where a caller could be in a different building to the service address. Note. Customer Contact details are mandatory if this is true.
17	Soft Error Flag	X(1)	M		T F	True False		If T, one or more soft errors exist in the record. Any of the fields with Mandatory MS, may not have a value. All MH fields must have a value. If F, no soft errors exist in the record. Any of the fields with Mandatory MS, must have a value. All MH fields must have a value.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
18	Record Delimiter	1			\n	ASCII 10		Newline

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			
2	File Sequence No	N(7)	MF					Unique consecutive number for file.
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Filler	X(537)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

6.1.11 IPND Download File to Health and Public Policy Researchers

Download files provided to Policy Research Data Users are only provided as Output on Request.

The download is limited to Unlisted Connected Mobile Numbers identified as commencing with the 04 prefix and 10 characters in length.

Records are excluded if the Usage Code is G, C or B (Government, Charity or Business).

Pending transactions will never be included in this file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDPR			
3	File Sequence No.	N(7)	MF					Unique consecutive number for file.
4	File Creation Start	N(14)	MF					Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Extra Conditions Flag	X(1)			Y or N			Indicator that extra conditions have been specified when the extract was run. These are logged in IPND tables. Normally any extract conditions are included in buffer space of the header (space permitting) but for this file format is cut down to a minimum.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRANSACTION RECORD							One per number
1	Public Number	X(20)	MH					Unique identifier for the service.
2	Service Address Postcode	N(4)	MS				4.2	Australian Post code for mail delivery.
3	Filler	X(7)			SPACES	ASCII 32		Padding to make all records in file the same length.
18	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	MF		TRL			

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
2	File Sequence No	N(7)	MF					Unique consecutive number for file.
3	File Creation End	N(14)	MF					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	MF					Number of transaction records in the file. (Does not include header or trailer)
5	Record Delimiter	1			\n	ASCII 10		Newline

6.1.12 Data user error file Report to Data Providers

The UEF subsystem is obsolete. UEF files have been replaced by DUQF files.

Refer 6.1.13 IPND DUQF File Structure ; the following information is historical only.

This file contains details of errors found by data users. These will not be applied to the IPND.

It is up to the Data Providers to process the files.

Error File contains the Service number & an appropriate message of the service detail record(s) identified by a Data User for flagging in the IPND and forwarding to the relevant Data Provider.

This probably needs to contain some descriptive information as the errors are likely to have been described by a customer.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPNDUE			
3	File Source	X(5)	M			To be provided by the IPND Manager		Data user who created this file.
4	File Sequence No.	N(7)	M					Unique consecutive number for file from Source System.
5	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
	Filler	X(244)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
7	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of record with error.
2	Error Number	N(3)	M					Error Code – describes the error.
3	Error Description	X(256)	O					Description of error if required.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
4	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Sequence No	N(7)	M					Unique consecutive number for file from Source System.
3	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	M					Number of error records in the file. (Does not include header or trailer)
5	Filler	X(248)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

These codes are no longer used. The UEF Subsystem is now obsolete; This information is retained for historical purposes only.

Error list would be a super set of errors from the IPND upload, with extra messages such as "Customer advised of correction".

The text for an error message will not exceed 256 characters.

Message #	Text	Error Classification
001	File out of sequence.	F
005	Unprintable character in record	MH
006	Missing public number.	MH
007	Missing service status code.	MH
008	Missing pending flag.	MH
009	Missing cancel pending flag.	MH
010	Missing list code.	MH
012	Missing data provider code.	MH
013	Incorrect service status code.	MH
014	Incorrect pending flag.	MH
015	Incorrect cancel pending flag.	MH
016	Incorrect list code.	MH
017	Incorrect data provider code.	MH
018	Incorrect source ID code.	F
020	Missing customer name1.	MS
026	Missing usage code.	MS
027	Missing carriage service provider code.	MS
028	Missing transaction date.	MS
029	Missing service status date.	MS
030	Missing alternate address flag.	MS
031	Missing finding name.	MS
033	Missing directory address locality.	MS
034	Missing directory address state.	MS
035	Missing directory address postcode.	MS
036	Incorrect usage code.	MS
037	Incorrect carriage service provider code.	MS
038	Incorrect alternate address flag.	MS
041	CDP disconnect attempted.	MH
042	Pending service from a different data provider, will only be issued when a data provider sends a cancel pending record for a pending service with a different data provider code.	MH
043	Warning older transaction date.	W
047	Missing customer contact name1.	*
048	Missing customer contact name1.	MS
050	Invalid Service Address Postcode	MS
051	Invalid Service Address State	MS

Message #	Text	Error Classification
052	Invalid Service Address State	MS
053	Invalid Service Address Locality	MS
053	Non numeric in service address postcode.	MS
081	Non numeric in service address postcode.	MS
082	Badly formed transaction date.	MS
083	Badly formed transaction date.	MS
084	Missing service address locality.	MS
085	Missing service address state.	MS
086	Missing service address state.	MS
087	Invalid state transition.	*
100	Invalid state transition.	*
101	Public number includes leading spaces.	MH
102	Public number includes embedded spaces.	MH
103	Missing directory building property or street name.	MS
104	Missing service building property or street name.	MS
105	Pending service cancel for a non pending service.	MH
107	Prior public number includes leading spaces.	W
108	Prior public number includes leading spaces.	W
109	Prior public number.	W
110	Non numeric in public number.	W
201	Incorrect upload filename length.	F
202	Incorrect upload filename prefix.	F
203	Invalid upload filename separator.	F
204	Incorrect upload filename sequence format.	F
205	Upload filename sequence does not match footer sequence.	F
206	Upload filename sequence does not match header sequence.	F
207	Invalid Upload filename source.	F
208	Upload filename source does not match header source.	F
225	Embedded space(s) found in upload file sequence number.	F
227	Leading space(s) found in upload file sequence number.	F
228	Non digit character(s) found in upload file sequence number.	F
230	Trailing space(s) found in upload file sequence number.	F
233	Invalid upload file footer create end date format.	F
234	Upload file footer create end date is null.	F
236	Upload file footer contains a negative record count.	F
237	Unknown footer record type found in upload file.	F
238	Invalid character(s) found in upload file footer record count.	F
239	Upload file footer record count does not match number of records found in file.	F
240	Upload file footer record count is null.	F
242	Invalid character(s) found in upload file footer sequence number.	F

Message #	Text	Error Classification
243	Upload file footer sequence number is null.	F
245	Invalid upload file header create date format.	F
246	Upload file header create start date is null.	F
247	Invalid file source found in upload file header.	F
248	Invalid file type found in upload file header.	F
249	Invalid record type found in upload file header.	F
250	Invalid character(s) found in upload file header sequence number.	F
251	Upload file header sequence number is null.	F
252	Upload file header sequence number does not match footer sequence number.	F
253	Upload file footer is too large.	F
254	Upload file footer is too small.	F
255	Upload file header is too large.	F
256	Upload file header is too small.	F
257	Upload file record is too large.	MH
258	Upload file record is too small.	MH
259	Unprintable character found in header.	F
260	Unprintable character found in footer.	F

6.1.13 IPND DUQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPNDQU			
3	File Source	X(5)	M			To be provided by the IPND Manager		Data user who created this file.
4	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(253)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of record with error.
2	Error Code	X(5)	M					Error Code – describes the error. See section 6.1.16 DUQF Upload error codes for Data Users for the list of errors
3	Error Description	X(256)	O					Description of error if required.
4	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
3	File Record Count	N(7)	M					Number of error records in the file. (Does not include header or trailer)
4	Filler	X(257)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
5	Record Delimiter	1			\n	ASCII 10		Newline

6.1.14 IPND DUQF Error File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPNDQR			Note QR not QE.
3	File Source	X(5)	M					Data user who created this file.
4	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(3)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of User Query record with error.
2	Record Number	N(7)	M					How many records into the UQF file the erroneous record was. Does not include the header record. Field is mandatory if the error type is not File.
3	Error Number	N(3)	M					Error number - describing the error.See Section 6.1.15 IPND DUQF Error File Codes
4	Error Type	X(1)	M		F, R			F = File level error, R=Record level error.
4	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
3	File Record Count	N(7)	M					Number of error records in the file. (Does not include header or trailer)
4	Filler	X(7)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
5	Record Delimiter	1			\n	ASCII 10		Newline

6.1.15 IPND DUQF Error File Codes

The following table contains the list of UQF Error codes generated by the UQF process.

Error Code	Error Description
001	Public Number does not exist.
002	Missing Public Number
003	Public Number includes leading spaces
004	Public Number includes embedded spaces
005	Public Number includes non-numeric character
006	UQF filename is too long.
007	Incorrect UQF filename prefix.
009	Incorrect UQF File Source code.
010	Incorrect UQF filename date stamp.
012	Incorrect UQF Header File Source code.
013	Incorrect UQF Header Record Type.
014	Incorrect UQF Header File Type.
015	Incorrect UQF Header File Creation Start Date
016	UQF Header too long
017	UQF Header too short
018	UQF Data record too long
019	UQF Data record too short
020	Incorrect UQF Trailer Record Type
021	Incorrect UQF Trailer File Creation End Date
022	Incorrect UQF Trailer File Record Count
023	UQF Trailer too short
025	UQF Unprintable character in Header
026	UQF Unprintable character in Footer
027	UQF Unprintable character in Record
028	UQF Missing Error Code
029	UQF Embedded space in Error Code
030	UQF Invalid Error Code

6.1.16 DUQF Upload error codes for Data Users

The following table provides Data Users with a set of codes to use in order to provide feedback about fields received in their download files.

The table indicates which Data User type would have received the field and can therefore provide feedback.

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
1	Public Number	Public Number	Public Number means a number specified in the Numbering Plan.	U0010	T	T	T	T	T	T
2	Service Status Code	Valid values are C or D	C - Connected D -Disconnected	U0020	T	T	T	T	T	T
3	Pending Flag	Valid values are T or F	T - True F - False	U0030	T	T	T	T	T	T
4	Cancel Pending Flag	Valid values are T or F	T - True F - False	U0040	T	T				T
5.1	Customer Name 1	Surname/ Company Name 1	Surname/ Company Name 1	U0051	T	T	T	T		
5.2	Customer Name 2	Given/ Company Name 2		U0052	T	T	T	T		
5.3	Long Name	Characters which do not fit into Customer Name 2		U0053	T	T	T	T		
5.4	Customer Title	Title		U0054	T	T	T	T		
6.1	Finding Name 1	Surname /Company Name 1		U0061		T	T	T		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
6.2	Finding Name 2	Given or Initials/Company Name 2		U0062		T	T	T		
6.3	Finding Title	Title		U0063		T	T	T		
7.1.1	Service Building Type	Type of premises		U0711	T	T				T
7.1.2	Service Building 1st Nr	First Number		U0712	T	T				T
7.1.3	Service Building 1st Suffix	First Suffix		U0713	T	T				T
7.1.4	Service Building 2nd Nr	Second Number		U0714	T	T				T
7.1.5	Service Building 2nd Suf''x	Second suffix of premises.		U0715	T	T				T
7.2.1	Service Building Floor Type	Building floor type		U 0721	T	T				T
7.2.2	Service Building Floor Nr	Floor Number		U 0722	T	T				T
7.2.3	Service Building Floor Nr Suffix	Floor Number suffix.		U 0723	T	T				T

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
7.3	Service Building Property	Building Name		U 0730	T	T				T
7.4	Service Building Location			U 0740	T	T				T
7.5.1	Service Street House Nr 1			U 0751	T	T			T	T
7.5.2	Service Street House Nr 1 Suffix			U 0752	T	T			T	T
7.5.3	Service Street House Nr 2			U 0753	T	T			T	T
7.5.4	Service Street House Nr 2 Suffix			U 0754	T	T			T	T
7.6.1	Service Street Name 1	Name part of street		U 0761	T	T			T	T
7.6.2	Service Street Type 1			U 0762	T	T			T	T
7.6.3	Service Street Suffix 1			U 0763	T	T			T	T
7.6.4	Service Street Name 2			U 0764	T	T			T	T
7.6.5	Service Street Type 2			U 0765	T	T			T	T
7.6.6	Service Street Suffix 2			U 0766	T	T			T	T

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
7.7	Service Address Locality	Suburb, town, locality	Suburb, town, locality	U 0077	T	T			T	T
7.8	Service Address State	State or Territory	State or Territory	U 0078	T	T			T	T
7.9	Service Address Postcode	Valid Postcode	Valid Postcode	U 0079	T	T			T	T
8.1.1	Directory Building Type			U 0811		T	T	T		
8.1.2	Directory Building 1st Nr			U 0812		T	T	T		
8.1.3	Directory Building 1st Suffix			U 0813		T	T	T		
8.1.4	Directory Building 2nd Nr			U 0814		T	T	T		
8.1.5	Directory Building 2nd Suffix			U 0815		T	T	T		
8.2	Directory Building Floor			U 0820		T	T	T		
8.2.1	Directory Building Floor Type			U 0821		T	T	T		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
8.2.2	Directory Building Floor Nr			U 0822		T	T	T		
8.2.3	Directory Building Floor Nr Suffix			U 0823		T	T	T		
8.3	Directory Building Property	Building Name		U 0830		T	T	T		
8.4	Directory Building Location			U 0840		T	T	T		
8.5	Directory Street House					T	T	T		
8.5.1	Directory Street House Nr 1			U 0851		T	T	T		
8.5.2	Directory Street House Nr 1 Suffix			U 0852		T	T	T		
8.5.3	Directory Street House Nr 2			U 0853		T	T	T		
8.5.4	Directory Street House Nr 2 Suffix			U 0854		T	T	T		
8.6	Directory Address Street					T	T	T		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
8.6.1	Directory Street Name 1			U 0861		T	T	T		
8.6.2	Directory Street Type 1			U 0862		T	T	T		
8.6.3	Directory Street Suffix 1			U 0863		T	T	T		
8.6.4	Directory Street Name 2			U 0864		T	T	T		
8.6.5	Directory Street Type 2			U 0865		T	T	T		
8.6.6	Directory Street Suffix 2			U 0866		T	T	T		
8.7	Directory Address Locality	Suburb, town, locality		U 0870		T	T	T		
8.8	Directory Address State	Valid State or territory		U 0880		T	T	T		
8.9	Directory Address Postcode	Valid Postcode		U 0890		T	T	T		
9	List Code	Valid values are LE, UL and SA	LE - Listed Entry UL - Unlisted Entry SA-Suppressed Address	U 0900	T	T	T	T	T	T

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
10	Usage Code	Valid values are R, B, G, C and N	R-Residential B-Business G-Govt C-Charity N-Not Available	U 1000	T	T	T	T		T

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
11	Type of Service	Expected values are: FAX FCALL FIXED MOBIL MODEM ONE3 PAGER PAYPH PRVPY PREM SATEL	 Facsimile services Freecall services Geographic (local call service) PMTS Data services Local rate call services Pager services Public payphone services Private payphone Premium services Satellite Service	U 1100	T	T	T	T	T	T
12.1	Customer Contact Name 1	Customer contact surname.		U 1210	T	T	T	T		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
12.2	Customer Contact Name 2	Customer contact given name		U 1220	T	T	T	T		
12.3	Customer Contact Nr	Telephone number of customer contact		U 1230	T	T	T	T		T
13	Carriage Service Provider Code	Valid value to be provided by the IPND Manager.	Carriage Service Provider (CSP) code	U 1300	T	T	T	T	T	T
14	Data Provider Code	Valid value to be provided by the IPND Manager.	Data Provider Code	U 1400	T	T	T	T		T
15	Transaction Date	This field must contain a valid date and time and should be provided in the format (YYYYMMDDHHMMSS)	Date and time at which the transaction occurred on the Data Provider's system	U 1500	T	T	T	T	T	T
16	Service Status Date	This field must contain a valid date and time and should be provided in the format (YYYYMMDDHHMMSS	The service status date is a 14 digit numeric field referring to the date the record was created on the Data Provider's system.	U 1600	T	T	T	T	T	T
17	Alternate Address Flag	Valid values are T or F.	T-True F-False	U 1700	T	T	T	T	T	T

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
18	Prior Public Number	Customers prior Public Number	Customer's Prior Public Number	U 1800	T	T	T	T		

6.1.17 IPND DPQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPNDQP			
3	File Source	X(5)	M			File Source		File source for which this file is destined.
4	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(264)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of record with error.
2	Data Provider Code	X(6)	M					Unique code for the data provider, derived from the Service table.
3	User Query File Source	X(5)	M					File Source from UserQuery table, i.e the File Source code for the user reporting the query.
4	Error Code	X(5)	M					Error Code identifying the error. See section 6.1.16 DUQF Upload error codes for Data Users for the list of errors
5	Error Description	X(256)	O					Description of error if required.
6	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
3	File Record Count	N(7)	M					Number of error records in the file. (Does not include header or trailer)
4	Filler	X(268)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
5	Record Delimiter	1			\n	ASCII 10		Newline

6.1.18 IPND DAQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPND<FF>			Where <FF> is QL , QE, or QI.
3	Filler	X(5)	M		SPACES			This field is empty, it ensures that the structure of the DAQF is similar to the DPQF and UQF.
4	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(258)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1	M		\n	ASCII 10		Newline
	ERROR RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of record with error.
2	User Query File Source	X(5)	M					File source from UserQuery table
3	Error Code	X(5)	M					Error Code – describes the error. See section 6.1.16 DUQF Upload error codes for Data Users for the list of errors
4	Error Description	X(256)	O					Description of error if required.
5	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
3	File Record Count	N(7)	M					Number of error records in the file. (Does not include header or trailer)
4	Filler	X(262)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
5	Record Delimiter	1			\n	ASCII 10		Newline

6.1.19 IPND Data Provider Report File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	HEADER RECORD							One per file
1	Record Type	X(3)	M		HDR	Header		
2	File Type	X(6)	M		IPND<FF>			Where <FF> is DP
3	File Source	X(5)	M			File Source		File Source for which this file is destined.
4	File Creation Start	N(14)	M					Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(14)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1	M		\n	ASCII 10		Newline
	DATA RECORD							One per error detected in related IPND upload file.
1	Public Number	X(20)	M					Public Number of Service that has changed Data Provider.
2	Pending Flag	X(1)	M		Y N	Yes No		Flag indicating whether Service was Pending or not.
3	Last Data Provider Code	X(6)	M					Data Provider Code of the “losing” Data Provider.
4	Last Status Code	X(1)	M		C D	Connected Disconnected		The Status of the Service when held by the “losing” Data Provider.
5	Current Data Provider Code	X(6)	M					Data Provider Code of the “gaining” Data Provider.
6	Current Status Code	X(1)	M		C D	Connected Disconnected		The current Status of the Service.
7	CDP Date	N(14)	M					Date and time the Service Data Provider Code changed. (YYYYMMDDHHMMSS)
8	Record Delimiter	1			\n	ASCII 10		Newline
	TRAILER RECORD							One per file
1	Record Type.	X(3)	M		TRL			
2	File Sequence No	N(7)	M					Unique consecutive number for file from IPND System.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
3	File Creation End	N(14)	M					Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	M					Number of CDPR records in the file. (Does not include header or trailer)
5	Filler	X(18)	MF		SPACES	ASCII 32		Padding to make all records in file the same length.
6	Record Delimiter	1			\n	ASCII 10		Newline

6.1.20 IPND Data Provider Data Snapshot File Structure

This file structure is exactly the same as the Customer Record System Extract IPND Upload File described in Section 6.1.2. Note that this extract will not include Delete Pending transaction records.

7. Glossary

The glossary used by this document includes and supersedes, where different, the glossary as defined in Business Requirements Report 006611 – Integrated Public Number Database Conceptual System Design Issue No: 1.0, dated 11 February 1998.

Term	Definition
Application Provider	The organisation, Logical Technologies, undertaking the design, build and implementation and ongoing management of IPND on behalf of the IPND Manager.
Application Manager	The person in charge of the Application Provider.
CDP	Change Data Provider. Covers scenarios where the Public Number has changed from one Data Provider to another.
CDPR	Change Data Provider Report.
Connected	The Service is connected and operational
DFG	Download File Generator; a component of the IPND that extracts data that needs to be provided to IPND Users.
Disconnected	The Service has been disconnected and for all intents and purposes is not operational. The soft dial tone facility may be available on a disconnected Service.
DI	Directory Publisher and Assistance
Download	Transfer of a file from IPND to an external entity
ES	Emergency Service Organisation
Housing Site	Secure site to physically house the IPND hardware configuration and communications infrastructure
IPND User	Includes the IPND Manager, Data Providers and Data Users
LA	Law Enforcement Agency
List Code	Code indicating whether Public Number is Unlisted or not
LNP	Local Number Portability
Mandatory	Mandatory indicates that the IPND expects to find the field populated in the upload file and the field must contain a valid value; otherwise the entire file or record will be rejected. E.g. If the file source field is not populated the entire file will be rejected. If the Public Number field is not populated the IPND will not accept the record. A data provider must include a Mandatory field in the Upload file to the IPND. This Mandatory field must be formatted and populated with valid customer information in the field as specified in the technical requirements.
Mandatory File Error (MF)	A file level error that results in the Upload File being rejected. This may result from a missing or incorrect header or trailer record field.
Mandatory Hard Error (MH)	A transaction record level error that results in the record being rejected. This may result from a missing or incorrect mandatory transaction record field.
Mandatory Soft Error (MS)	A transaction record level error that does not results in the record being rejected. The record will be processed but will be tagged as needing correction.
Off-Site Tape Transport	Transportation of magnetic tapes to a Secure Tape Site

Term	Definition
Optional	Optional indicates that the IPND expects to find the field in the upload file and the field may contain a valid value or may be left empty (space filled). A data provider must include an Optional field in the Upload file to the IPND (It is the information contained within the field that is optional and not the field itself). This Optional field must be formatted and populated with valid customer information in the field or may be left empty (space filled) as specified in the technical requirements.
Pending	An expected change to a Public Number record
Recovery Site	An alternate secure site to house the IPND in the event the Housing Site becomes unusable. It is the responsibility of the IPND manager to provide the alternate secure site, when required, with suitable hardware configuration and communications infrastructure.
Secure Tape Site	Secure site, separate and distinct from the Housing Site, to physically house the IPND Magnetic Tapes
Service	A telephone facility that employs a Public Number.
Service Order	Request for a change to a Service.
Soft Dial Tone	A carrier service that allows calls to emergency service organisations or to the customer's carrier's business office when the telephone service is disconnected.
Source System	System which is providing data to the IPND. A CSP may have multiple Source Systems.
Warning (W)	Warnings are generated for issues with the data where there may be a potential problem but not sufficiently severe to generate a Soft Error requiring attention. Records associated with warnings may not require correction.
Upload	Transfer of a file from an external entity to IPND
UFP	Upload File Processor; a component of the IPND that processes the data received from IPND Data Providers.
DUQF	Data User Query File – Generated by Data Users to provide feedback to Data Providers

8. Appendix A - Detailed Changes

No	Version	Section No	Section Name	Change	Reason
1	1.1	5.2.2.7.3.1	Error Filename structure	Example changed.	To conform to the Upload file name.
2	1.1	6.1.3	IPND Error File Report to Data Providers	Modified filler field for Data Record to 33.	Incorrect values.
3	2	6.1.4	IPND Download File to Directory Publishers	Item 16, changed type of Prior Public Number from N(20) to X(20)	To keep consistent with public number.
4	1.0.2	Throughout 5.2.2.6.4		Added references to Suppressed Address (SA)	CR 1
5	1.0.2	5.2.2.6.3	Unlisted Numbers	Changed treatment of Unlisted Numbers.	CR 2
6	1.0.2	5.2.2.7.2	Download Files	Changed references to 3 types of Download files. Multiple download files will be produced.	Accuracy.
7	1.0.2	5.2.2.7.3.1	Error File Name Structure	Removed references to sequence numbering of error files.	Obsolete.
8	1.0.2	6.1.7	Data user error file Report to Data Providers	Added error codes.	List did not match that in section 6.1.3
9	1.0.2	Throughout		Added references to new Type of Service code “payph”.	CR 3
10	1.0.2	6.1.4	IPND Download File to Directory Publishers and Assistance	Modified to indicate that Carriage Service Provider Code data is blanked out in Directory Publisher’s download file.	CR 5 (Pending)
11	1.0.3	5.2.2.6.3	Unlisted Numbers	Modified to show new MH error when LE is followed by UL without first receiving a Disconnect.	CR 2 (modified)
12	1.0.3	6.1.3	IPND error file Report to Data Providers	New error codes.	CR 2 and greater error reporting detail.
13	1.0.3	6.1.7	Data user error file Report to Data Providers	New error codes.	CR 2 and greater error reporting detail.
14	1.0.4	2.1.1.1.1	Directory Structures	New Section	Additional information on Directory Structures.

No	Version	Section No	Section Name	Change	Reason
15	1.0.4	4.2	Timeframes	Modified to reflect actual production timeframes.	To reflect actual situation.
16	1.0.4	4.4	File Size Constraints	New Section	To explicitly state file size constraints.
17	1.0.4	5.2.1.3.1 5.2.2.7.3.1 5.2.4.1	Upload File Name Structure Error File Name Structure User Error Report File Name Structure	Modified to explicitly refer to Upper case.	Explicitness.
18	1.0.4	5.2.2.7.2.1	Download File Name Structure	Modified to clarify directory information.	Clarity.
19	1.0.4	5.2.5.3	Output on Request File Name Structure	Modified naming conventions.	Required by IPND MT release.
20	1.0.5	5.2.5.1	Book Close	Expanded Book Close to allow Post Code ranges as well as Public Number ranges to be used in the selection	Change Request 13
21	1.0.5	5.2.5.3	Bulk Data Refresh	Expanded to allow Post Code ranges as well as Public Number ranges to be used in the selection	Change Request 13
22	1.0.5	5.2.5.3	Output on Request File Name Structure	Improve description of File Name	Change Request 13
23	1.0.5	2.	Data Transfer	Remove reference to HTTP	HTTP not required
24	1.0.5	3.1	IPND User Types required Access	Amend HTTP to FTP	HTTP not required
25	1.1.1	5.2.5	User Query Files	Added section.	Change Request 7.
26	1.1.1	6.1.8	IPND UQF File Structure	Added section.	Change Request 7.
27	1.1.1	6.1.9	IPND UQF Error File Structure	Added section.	Change Request 7.
28	1.1.1	6.1.10	IPND UQF Error File Codes	Added section.	Change Request 7.
29	1.1.1	6.1.11	IPND DPQF File Structure	Added section.	Change Request 7.
30	1.1.1	6.1.12	IPND DAQF File Structure	Added section	Change Request 7.
31	1.1.1	5.2.1.2	Receive Upload File From Data Provider	Removed sentence on copying unprocessed file.	Inaccurate, does not reflect actual behaviour.

No	Version	Section No	Section Name	Change	Reason
32	1.1.2	6.2.7.4 - 6.2.7.11	Management Reports	Added sections for new reports.	New reports.
33	1.1.2		All	Minor modifications.	Grammar, clarification.
34	1.1.3		All	Minor modifications	Grammar, clarification
35	1.1.4	7.1.2	Customer Record System Extract IPND Upload File	Added type of service WLL (Wireless Local Loop), PRVPY (Private Payphone)	New codes.
36	1.1.4	5.2.2.2.5	Change Data Provider Validation	Modified to reflect CR 14,15 Changes.	CR 14,15,18
37	1.1.4	5.2.2.6.2	Pending Numbers	Modified to reflect CR 14,15 Changes	CR 14,15,18
38	1.1.4.	5.2.2.6.3	Unlisted Numbers	Modified to reflect CR 18 Changes	CR 14,15,18
39	1.1.4	6.1.3	IPND error file Report to Data Providers	Modified to reflect CR 18 Changes, MH 40, 42, 261 identified as obsolete	CR 14,15,18
40	1.1.4	6.1.7	Data user error file Report to Data Providers.	Modified to reflect CR 18 Changes, MH 40, 42, 261 identified as obsolete	CR 14,15,18
41	1.1.4	5.2.8	Changed Data Provider Report	New section to reflect CR 14,15 changes.	CR 14,15.
42	1.1.4	6.1.13	IPND Data Provider Report File Structure	New section to reflect CR 14,15 changes.	CR 14,15.
43	1.1.5	6.1.13	IPND Data Provider Report File Structure	Corrected DPR file structure definition.	Definition was incorrect.
44	1.1.6	5.2.7.12	Control Field Log	New section to reflect CR 16,17 additions.	CR 16,17
45	1.1.6	5.2.9	Data Provider Data Snapshot	New section to reflect CR 19.	CR 19.
46	1.1.6	6.1.14	IPND Data Provider Data Snapshot File Structure	New section to reflect CR 19.	CR 19.
47	1.1.7	5.2.2.6.3	Unlisted Numbers	Added references to LD files.	CR 21.
48	1.1.7	5.2.2.6.4	Supressed Addresses	Added references to LD Service providers.	CR 21.
49	1.1.7	5.2.2.7.2	Download Files	Added reference to LDS file.	CR 21
50	1.1.7	5.2.2.7.2.1	Download File Name Structure	Added references to LD files.	CR 21
51	1.1.7	5.2.5.4	IPND DAQF Process	Added references to LD DAQF.	CR 21
52	1.1.7	5.2.5.4.1	DAQF – File Name	Added references to LD DAQF File (QD)	CR 21

No	Version	Section No	Section Name	Change	Reason
53	1.1.7	5.6.2	Bulk Data Refresh	Added references to LD BDR File (RD)	CR 21
54	1.1.7	6.1.7	IPND Download File to Location Dependent Service Providers	Added new section. (Note all subsequent sections increment by 1).	CR 21
55	1.1.8	5.2.3	File Download	Clarified file download process.	User support issue.
56	1.1.8	5.3.5	Logical Data Model	Updated Logical Data Model section to reflect changes in IPND Functional Specifications.	Document consistency.
57	1.1.8	5.3.6	Physical Data Model	Added Physical Data Model section to reflect changes in IPND Functional Specifications	Document consistency.
58	1.1.9	5.2.2.2.4	Locality State Postcode Values	New Section	CR 61
59	1.1.9	6.1.2	Customer Record System Extract IPND Upload File	Added comment wrt to validation based on Australia Post postcode data file.	CR 61
60	1.1.9	6.1.3	IPND error file Report to Data Providers	Add error codes associated with LSP validation	CR 61
61	1.1.10	1.4	References	Update references	
62	1.1.10	6.1.2	Customer Record System Extract IPND Upload File	Replaced table with one that contains more details wrt field positions and field associated errrors	
63	1.1.10	General	General	Updates to improve currency and readability	
64	1.1.11	6.1.4	IPND Error Messages	Messages not accurate. Copied from obsoleted Functional Requirements document.	Issue 872
65	1.1.12	4.2	Timeframes	Updated section 4.2 to include reference to retention of files and archive process.	Issue 93
66	1.1.13	6.1.2	6.1.2 Customer Record System Extract IPND Upload File	Include more details regarding the format of the Public Number field.	Avoid confusion on part of users.

No	Version	Section No	Section Name	Change	Reason
67	1.1.14	2	2 Data Transfer	Updated section 2 to make explicit reference to Frame Relay and ISDN as only types of network links that are possible.	Issue 1283
68	2.0.1	Multiple		Major changes to many sections as per CR78 implementation.	CR78 implementation
69	2.0.2	Multiple		Additions made throughout document in relation to CR78 changes made in version 2.0.1	CR78 implementation
70	2.0.3	5.3.5.2.1	Service	Additional Service entity attributes added: User Query Flag, Last Directory Address Postcode, Last Service Code, and Download Unprocessed Flag.	CR78 implementation
71	2.0.4	Multiple		"Location dependent services" replaced by "location carriage dependent services".	CR78. Review by Sanjay Prem.
72	2.0.4	2	Data Transfers	Explicitly stated that any changes in data transfer technology will be determined and approved by the IPND Manager.	CR78. Review by Sanjay Prem.
73	2.0.5	Multiple	Customer Record System Extract IPND Upload File	Minor modifications re Transaction and Service Status Date definitions required by IPND Manager Sanjay Prem	Issue 1783 Request from SP
74	2.0.6	Multiple		Changes required by CR80	CR80
75	2.0.7	Multiple		Changes required by CR95	CR95
76	2.0.8	Multiple		Changes required by CR 116 and changes suggested by IPND Manager Remove 5.2.7.2 – Obsolete reference Update 5.2.9.1 – Update with timeframe	CR 116 and IPND Manager comments
77	2.0.9	1.4 5.2.5.3.1 5.2.7.19	References Data Provider Query File Upload Files Processed (MY)	Changes related to UQF and updated references.	IPND Manager comments

No	Version	Section No	Section Name	Change	Reason
78	2.0.10	5.2.5.3.1	Data Provider Query File	Fixed formatting.	
79	2.0.11	5.2.2.6.3 and 5.2.6.2	Unlisted Numbers And Bulk Data Refresh	Further emphasis on handling of unlisted numbers	
80	2.0.12	3.1.1, 5.2.4, 5.2.7.20	Security, User Error Report Files, Management Reports	Clarification of UEF obsolescence and documentation of ML Management Report.	
81	2.0.13	4.2, 5.2.7.20, 5.27.21	Data Users files and frequency, Outstanding Soft Errors by Data Provider (MK), Outstanding Soft Errors by Carriage Service Provider (MM)	Modified frequency of DFG to half hourly, added reference to MK and MM reports.	
82	2.0.14	6.1.7	IPND Download file to Law Enforcement Agencies	Update to description of LA download file to include modifieddatetime. Included as part of CR 141 requested by IPNDe	ncluded as part of CR 141 requested by IPNDe
83	2.0.15	4.2	Timeframes	Clarified references to noon in Timeframes section	Some confusion in helpdesk calls
84	2.0.16	4.5, 5.2.1.3.5,6.1.4	File Constraints, Maximum Record Count, IPND Error Messages	Updates to include 241F error for files exceeding 100,000 records	IPND Release 7.1.29
84	2.0.17	5.2.2.6.3, 6.1.5, 6.1.2, 6.1.6,6.1.7,6.1.8,6.1.9, 6.1.10	Unlisted Numbers, IPND Download file to Directory Publishers and Directory Assistance, Customer Record System Extract IPND Upload File,IPND Download File to Emergency Call Services, IPND Download File to Law Enforcement Agencies, IPND Download File to Researchers, IPND Download File to Early Warning Systems,	Clarificaltion of fields received by Publishers in LE to UL transition Updates to Type of Service values Modification from public number to number in some tables	Type of Service modification – result of IPND code review by Comms Alliance References to public number – result of IPND code review bu Comms Alliance

No	Version	Section No	Section Name	Change	Reason
85	2.0.18	4.5, 5.2.1.3.5	File Constraints, Maximum Record Count	Clarification of maximum record count of 10,000 in usertest environment	IPND Release 7.1.29
86	2.0.19	2, 2.1,2.2,2.3,2.4	Data Transfer	Addition of SCP and SFTP protocols	CR 154a
87	2.0.20	4.2,5.2.6.2, 6.1.11	Bulk Data Refresh, IPND Download File to Health and Policy Researchers	Addition of new Researcher Type Clarification of Bulk Extract Only Users	CR 167