



**IPND Manager**

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

**Version No: 3.0.4**

**Date:** November 2024

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**Application:** Integrated Public Number Database

## Release History

Release No	Release Date	Major Changes
1.1.13	8 <sup>th</sup> November 2006	Updated section 6.1.2 to include more details regarding the format of the Public Number field.
1.1.14	7 <sup>th</sup> 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	22 <sup>nd</sup> May 2007	Updated sections to include changes made during CR78 – Regional BU Feed.
2.0.2	30 <sup>th</sup> May 2007	Additions by Sanjay Prem IRT CR78 changes.
2.0.3	30 <sup>th</sup> May 2007	Additional service entity attributes (section 5.3.5.2.1) added as a result of CR78 changes.
2.0.4	13 <sup>th</sup> July 2007	Minor modifications made by IPND Manager Sanjay Prem.
2.0.5	22 <sup>nd</sup> August 2007	Minor modifications re Transaction and Service Status Date definitions required by IPND Manager Sanjay Prem
2.0.6	25 <sup>th</sup> February 2008	Changes related to CR80.
2.0.7	14 <sup>th</sup> 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
2.0.21	August 2019	Updates required for CR 158 – IPND Web Portal. Output on Request and Data Provider Snapshot Additional Selection Criteria. Clarification of Span number
2.0.22	February 2020	Correction of Data Provider Snapshot filename
2.0.23	September 2020	Update to files available for Data Providers to download.

		Update to IPND Manager name. Update to frequency of MDE report Addition of MNB/MNL reports
2.0.24	January 2021	Automatic deletion of pending records 30 days after they are received by the IPND.
2.0.25	October 2021	Removal of incorrect MS 053 message. Addition of 244F documentation.
2.0.26	November 2021	Update for CR 174 - Pending Record rejection, introduction of MH 106 error, clarification of MH 104 error.
2.0.27	March 2022	Update to Change Data Provider report format to correct header.
3.0.0	August 2022	Updates to several areas to include changes to application and align with deployment in new environment.
3.0.1	June 2023	Updates to Type of Service field and AQF Error Description field.
3.0.2	January 2024	Daily Changed Data Provider Report New Changed CarriageServiceProvider Reports by FileSource Data Provider Extracts Complex and Soft Error Name changes Validation Error Codes Changes re Carriage Service Providers New and depreciated Error Codes
3.0.3	June 2024	Changes re Validation Error Codes Changes re Carriage Service Providers New and depreciated Error Codes
3.0.4	November 2024	Corrected error class in table 6.1.2 Data Provider Code.

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## **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.

“Telstra Limited Carrier Licence Conditions”.

“ACIF G619:2007 IPND Data Industry Guideline”

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.

SFTP and scp access is provided via a secure VPN connection to allow Data Providers and Data Users access to send and receive files.

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).

During June 2024 planned changes will be introduced to enable registered Carriage Service Providers (CSPs) to download encrypted reports and data extracts for Customer Records containing a matching CSP Code directly from the portal. The remainder of this section has no relevance to CSPs.

### 2.1 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 an encrypted connection

### 2.2 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.

### 2.3 Directory Structures

#### 2.3.1 SCP and SFTP

Data Users and Providers can only transfer (upload) files directly into their home directory.

Once a file has been transferred it is pre-validated to ensure that it is encrypted, has a valid IPND filename and is within expected size parameters. 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 as a zero byte version of the file.

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.

##### 2.3.1.1 Data Users

Data Users 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 as zero byte versions of the files 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.

### ***2.3.1.2 Data Providers***

Data Providers have access to the following directories:

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

**download** – This directory contains encrypted User Error files. All IPND generated reports are 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 as zero byte versions of the file 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/UAT FTS	Production/UAT Portal
IPND Data User	Xfer up & down	View report availability Schedule extracts – limits apply Raise User Queries
IPND Data Provider	Xfer up & down	View errors arising from file uploads View trends re errors View report availability Schedule extracts – limits apply Acknowledge User Queries View limited history about uploaded services
IPND Carriage Service Provider	n/a	View report availability Schedule extracts – limits apply Xfer down
IPND Manager	Xfer up & down	View file upload history View extract history View limited history about uploaded services Approve extracts exceeding limit Request MD/ME reports Xfer down management reports Overall Organisation User management

Where,

FTS Production/UAT	are the Production and User Acceptance file transfer environments
Portal Production/UAT	Are the Production and User Acceptance Web Portal
Xfer Up	is the ability to upload encrypted files
Xfer Down	is the ability to download encrypted files

##### 3.1.1 Data User FTS Access

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 SCP/SFTP service

##### 3.1.2 Data Provider FTS Access

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
- initiate a file download of monthly Changed Data Provider reports
- initiate downloads of any requested data provider extracts

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

### **3.1.3 IPND Manager FTS Access**

The IPND Manager has the ability to initiate a file download from IPND for Management Report files and a file upload to initiate Management (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 an extended scheduled maintenance period, with an indication of any expected impact.

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

### **4.2 Timeframes**

A maintenance window of 12:00 (noon) and 14:00 daily 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.

Data uploads and downloads to be scheduled by Data Users from 14:00 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.

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 and the Download File Generator has run. The Download File Generator will be invoked on a 15 minute basis. The system will normally process files as they arrive.

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 encrypted download files will be available for 6 months, after which time they will be archived.

IPND encrypted upload files will also remain available for 6 months, but valid files will have been encrypted with the IPND public key so will not be decryptable by Data Providers. The list can serve as an audit trail that files have been received.

#### **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**

Upload files are 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/onboarding 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 Overview

IPND is a batch file processing system. This section describes the general File Upload and Download Processes. Data Providers upload customer details in IPND Upload Files. Data Users can upload potential corrections/queries. All users download error/status files relating to their uploads as well as other output allowed for their user type.

##### 5.2.1.1 Initial Validation of Uploaded Files

Uploaded files must be sent encrypted to the Data Provider/Data User root FTS directory after logging in.

Initial FTS validation includes:

- the file name complies with allowed pattern for User/Provider
- the filesource is in the allowed list for uploading user
- the file is encrypted
- The file is empty and not excessively large

If the file fails initial FTS validation, a zero byte version of the file is written to the rejected directory. The files are prefixed with a unique timestamp code and a suffix indicating the reason for failure.

For more details on initial FTS validation and error codes refer to IPND Data Users and Data Providers Access to Internet Interface Service (IIS)

If the file passes initial FTS validation, it is sent to the IPND Core for decryption and more detailed validation.

##### 5.2.1.2 Decryption of Upload Files

The IPND Core system decrypts the uploaded file. Files that fail decryption are placed as 0 byte files in the users rejected directory with the appropriate FTS error code.

Decrypted files are placed in the relevant core directory for processing.

##### 5.2.1.3 Processing

The core system validates and processes upload files.

An Error/Status File is produced for each upload file.

All valid Customer Records uploaded by Data Providers are made available to be downloaded by eligible Data Users.

A point in time Service table is maintained for reporting.

A process log is maintained.

Output on Request files are generated.

Scheduled Reports are generated.

#### ***5.2.1.4 Encryption of Files for Data Provider and Data User Download***

The core system encrypts all files with the FTS users public key or if required with the specific File Source public key.

#### ***5.2.1.5 Downloading of Files by Data Providers and Data Users***

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 download directory of the FTS system.

The Download files will be available in the download directory of the Data Provider/Data User after logging in.

The users’ download directory will only contain the relevant files for that user. Also note that it will be the users’ responsibility to keep track of the files that have been downloaded. These files cannot be removed by the user once downloaded and will be archived with the schedule defined in this document.

#### ***5.2.1.6 Encryption and Download of Files for Carriage Service Providers***

Planned change June 2024: Carriage Service Provider Organisations registered with the portal will be able to specify a public key with which to encrypt their files.

These encrypted files will be downloadable from the portal only.

## **5.2.2 File Upload by Data Providers**

This section describes the processing and validation that will take place on the decrypted Data Provider Upload data files . It also describes the principles that will apply to notification to Data Providers of the results of processing the corresponding upload file

#### ***5.2.2.1 Notification of Upload File Processing Status and Errors***

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. The trailer should be checked to ensure that the expected number of records were uploaded.**

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.

### **5.2.2.2 Validate Upload File – File Level Errors**

This section describes the checks and controls that will be applied to the decrypted 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.

#### **5.2.2.2.1 Upload File Name Structure**

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

Note that as the initial FTS checking will reject files if they do not match this pattern, an error should not occur at this stage.

Note that all letters must be upper case.

IPND<TT><XXXXXX>.<NNNNNNNN>

Where

"IPND" is a constant,

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

<XXXXXX> is the File Source,

"." is an extension marker ,

<NNNNNNNN> 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.

#### **5.2.2.2.2 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 for a File Source 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.

#### **5.2.2.2.3 Allocation of Retry Number**

Each upload file and subsequent error status file will be allocated 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.

#### **5.2.2.2.4 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 **5.2.2.2.1 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.

#### **5.2.2.2.5 File Record Count Mismatch**

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

#### **5.2.2.2.6 Maximum Record Count**

If the number of Customer 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.

### 5.2.2.3 *Validate Upload File – Record Level*

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.

#### 5.2.2.3.1 **General Rules**

1. Only one current Customer Record may exist for a Public Number. The Public Number will be the unique identifier for the service.
2. A Customer Record will never be deleted from the Public Number 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.
3. As of 17<sup>th</sup> November 2021, Pending records will no longer be accepted in the IPND. Pending records received after this date will be rejected with a 106 Hard error.

Any existing Pending records will be deleted from this date.

#### 5.2.2.3.2 **Validate Record for Hard Errors**

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

##### 5.2.2.3.2.1 *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).

##### 5.2.2.3.2.2 *Incompatible Data Types*

If a Mandatory Hard numeric field contains non-numeric data the Customer 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.

##### 5.2.2.3.2.3 *Invalid Code Values*

If a Customer Record for a Mandatory Hard code field has a value that is not valid then the Customer 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.

##### 5.2.2.3.2.4 *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.

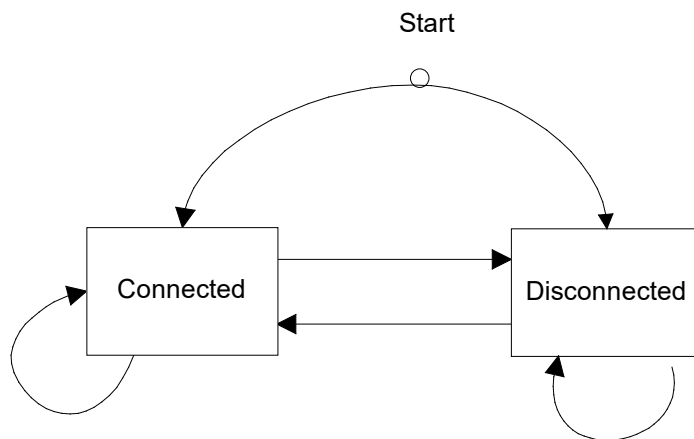
##### 5.2.2.3.2.5 *Record State Transition*

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

A Customer 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.

The following diagram shows valid state/transitions.



The above diagram shows that a Customer 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 Customer Record with a certain Service Status Code can be updated by a subsequent Customer Record with the same Service Status Code. This implies that an update of the data associated with the Public Number has taken place.

#### 5.2.2.3.2.5.1 Change Data Provider Validation

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

1. IPND will accept a new Customer Record with a Service Status code of Connected even though it has a different Data Provider Code value to the existing Customer Record already in the database.
2. IPND will only accept and upload a new Customer Record with a Service Status code of Disconnected if either it is the first Customer Record for a Public Number, or the Data Provider Code value in the new Customer Record matches the Data Provider Code value in the existing Customer Record for that Public Number. This ensures that Data Providers can only disconnect their own Customer Records.
3. Once a Service has a Service Status Code of Disconnected, it can validly be Connected by any Data Provider.

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

**The Data Provider Code on an uploading Customer Record with a Service Status Code of Disconnected must match the Data Provider Code on the existing Customer Record (where the Public Number is already in the IPND database), if this condition is not met a Hard Error (MH 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 Customer Record that resulted in the error being generated. In other words the Customer Record with a Service Status Code of Disconnected may arrive late (i.e. subsequent to the Connected Customer Record from the gaining Data Provider).

#### 5.2.2.3.2.6 *Pending Numbers*

Pending records are no longer be accepted by the IPND. Any records received with the Pending or CancelPendingSet flag set will be rejected with a MH 106 error.

NOTE: Values other than T or F will still result in existing hard errors:

MH 012 - Incorrect pending flag.

MH 008 - Missing Pending flag.

MH 009 - Missing cancel pending flag.

The only values that are acceptable for the Pending and Cancel Pending fields are 'F'

#### 5.2.2.3.3 **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).

##### 5.2.2.3.3.1 *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).

##### 5.2.2.3.3.2 *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.

##### 5.2.2.3.3.3 *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.

#### *5.2.2.3.3.4 Mandatory Fields for Listed Entry (LE) or Suppressed Address (SA)*

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.

#### *5.2.2.3.3.5 Mandatory Fields if Alternate Address Flag set*

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 Customer Record will be loaded but flagged as having a Soft Error.

### **5.2.2.3.4 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.

Customer Records associated with warnings may not require correction.

#### *5.2.2.3.4.1 Date Relationships*

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

If the Transaction Date for a Customer Record is earlier than the Transaction Date for an existing Customer 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.



### 5.2.2.3.5 Error Files for Data Providers

For each source file from a Data Provider there will be a corresponding error file generated.

#### 5.2.2.3.5.1 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 5.2.2.2.1 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><XXXXXX>.<NNNNNNNN> to  
IPND<TT><XXXXXX>.<NNNNNNNN>.<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><XXXXXX>.<NNNNNNNN>.<MMM> .err

The encrypted error file available for download will be

IPND<TT><XXXXXX>.<NNNNNNNN>.<MMM> .err.asc

Note that letters are in upper case with the exception of the constants “.err” and “.asc

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

The encrypted file available for download in this case would be  
IPNDUPAXIS10000001.001.err.asc

### 5.2.2.4 Data Upload and associated Download Rules

#### 5.2.2.4.1 General Issues

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

When a Customer 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 Customer Record is updating or modifying the Customer Record in relation to the Public Number. Refer to *section 5.2.2.3.2.5 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.

#### 5.2.2.4.2 Unlisted Numbers

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

Customer 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”.

**Data Users who are not entitled to publish or utilise Unlisted Public Numbers need to ensure that they promptly remove from their databases Public 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 Public Number because it is disconnected,**
- 2. There may be an explicit “Partial” record explicitly indicating that the Public Number 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 Data Users not entitled to receive them. Bulk Refreshes received by these Data Users should be considered the current definitive list of Public 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.

#### 5.2.2.4.3 Suppressed Addresses

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

Customer Record 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.

#### 5.2.2.4.4 Assertions for File Output

This section describes the characteristics of the Customer Record output from IPND in terms of the rules that they will adhere to.

##### 5.2.2.4.4.1 *Mandatory Hard Fields in File Output*

Fields that are Mandatory Hard will always contain a value in the output files, because according to section **5.2.2.3.2.1 Missing Mandatory Hard Fields** Customer Record will not be loaded into the IPND unless all Mandatory Fields have valid data.

##### 5.2.2.4.4.2 *Mandatory Soft Fields in File Output*

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 Customer Record. Refer to section **5.2.2.3.3.1 Missing Mandatory Soft Fields**.

### **5.2.2.5 Download Files for Data Users generated by Download File Generator**

This section refers to the regularly Download Files for Data Users that are produced as a result of Data Provider Uploads. Refer 4.2 Timeframes for when the Download File Generator (DFG) is run.

The IPND will produce a distinct Download File for each Data User (excluding Bulk Extract Only Data Users). There are 6 types of Data Users for whom Download Files are generated, these are :

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

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

Note: Users of type ‘Health and Policy Researcher’ are not eligible for these files. They receive Output on Request files only.

#### **5.2.2.5.1 Download File Name Structure**

The output Download File will be called:

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

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

<NNNNNNNN> refers to a sequence number uniquely enumerating the output file.

The encrypted filename would be

IPND<TT>.<DU File Source>.<NNNNNNNN>.asc

“.asc” is a constant and indicates an encrypted file.

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

Note that Data Users may only access files generated for that specific Data User and they will be encrypted with their organisation or specific File Source public key.

### **5.2.3 File Download of interim uploaded records by Data Users**

Multiple daily Download Files for non-bulk Data Users are generated that contain the validated uploaded records that have been received from Data Providers.

A Data 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 Data 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 Customer Record changes then any IPND Data User that had subscribed to the original locality will be informed that that Data User has now left that locality. This is done through the provision of a Customer Record that only includes the Public Number and the transaction data. The onus is on the IPND Data User to remove that Customer Record from their database.

The files are available in the Data Users download dir with .asc extension indicating encryption with the Data Users or Data User File Source public key.

### **5.2.4 Output on Request Overview**

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

#### ***5.2.4.1 Data Snapshot Extract for Data Providers***

These are scheduled at a specific Date (and time if required) to allow the Data Provider to reconcile their systems with IPND Customer Records.

They can also be scheduled on request and extra criteria can be applied.

Refer to Section 5.2.5 Data Provider Data Snapshot for full details.

#### ***5.2.4.2 Data Snapshot Extracts for Carriage Service Providers***

Planned to commence June 2024, Carriage Service Providers will be able to register as Web Portal Users and request Data Extracts for their specific Carriage Service Provider Code.

The Data Snapshot Extracts can be scheduled to at a specific Date (and time if required) and extra criteria can be applied.

For details, refer to Section 5.2.6 Carriage Service Provider Data Snapshot Extract for CSPs.

#### ***5.2.4.3 Bulk Data Extracts for Data Users***

Data Users can request Data Extracts of data that they are permitted to view.

For details refer to 5.2.7 Bulk Data Extracts for Data Users

## 5.2.5 Data Provider Data Snapshot

### 5.2.5.1 Overview

The main purpose of this report is to provide Data Providers with a snapshot of the data that they have uploaded into the IPND. The record format is the same as the Upload File Format with the exception of header and trailer differences.

### 5.2.5.2 Frequency

This report will be run “on request” on a specific Date (and time if required), although a maximum of 10 requests per year will be accepted from any single Data Provider without IPND Manager approval. Note that the report will be run on the basis of the File Source not the Data Provider code.

### 5.2.5.3 Optional Limiting Criteria for Data Providers

Limiting criteria can be applied to specific invocations of a Data Provider Snapshot.

Limiting Criteria	Description
Is Connected Only	Exclude Disconnected services
Invalid Code Combinations	Only includes Services with invalid combination of File Source Id, Carriage Service Provider Code and Data Provider Code The filler will reflect this run reason
Is Soft Errors Only	Only include Services with Soft errors
Public Number list	List of public numbers can be specified

Other Special Conditions may be applied with agreement of the IPND Manager and for clarity a business reason can be specified.

Unlimited full extracts / Snapshot have the File Type of RU.

If Soft Errors Only is one of the conditions, the report will be of type SE otherwise the report will be of type SC. See File Name Structure below.

The filler field in the header record of the Bulk Data Extract download file will indicate whether any additional criteria has been applied and where space permits, the actual additional criteria and any specified run reason.

If there is no additional limiting criteria, the filler field of a file will include the text  
\*\*Criteria: All.

If there is additional limiting criteria \*\*Criteria: will be followed by any special criteria applied. For example,

\*\*Criteria: Connected SoftErrorsOnly

The criteria may be postfixed by ‘..’ to indicate that the filler field is not large enough to hold all the criteria.

For example. choosing “Exclude Invalid Code Combinations” on portal as well as Connected Only will produce a report of type SC with:

\*\*Criteria: Connected Exclude-Valid-Code-Combinations

If a run reason has been given, the Reason will precede the Criteria. The Reason is preceded by the tag **\*\*Reason:**.

#### 5.2.5.4 Data Provider Snapshot File Name Structure

Note that letters are always in upper case.

Encrypted Output on Request File names will be structured as follows:

IPND<TT>.<XXXXX>.<MMMMMMM>.<NNNNNNN>.<PPP(P)>

Where

- |                 |   |   |
|-----------------|---|---|
| "IPND"          | - | constant identifier string  |
| <TT>            | - | String "RU" for Refresh Upload – <b>only no limiting criteria specified</b><br>String "SE" for Soft Errors if limited to Soft Errors Only with/without additional limiting criteria<br>String "SC" for if limiting criteria not including Soft Errors Only  |
| <XXXXX>         | - | The File Source code.   |
| <MMMMMMM>       | - | Run number uniquely identifying the output file. It indicates that a file was part of the MMMMMMM <sup>th</sup> 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.   |
| <PPP> or <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.<br>If the number of output files exceeds 999, the spanned number will increment to 1000 onwards. |

The encrypted filename will be:

IPND<TT>.<XXXXX>.<MMMMMMM>.<NNNNNNN>.<PPP(P)>.asc

Where

"asc" is a constant indicating the the file is encrypted

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

## 5.2.6 Carriage Service Provider Data Snapshot Extract for CSPs

### 5.2.6.1 Overview

The purpose of this report is to provide Carriage Services with a snapshot of the data that has been have uploaded into the IPND with a specific Carriage Service Provider Code. The Data Snapshot Extract is available for Carriage Service Providers registered on the Web Portal.

### 5.2.6.2 Frequency

This report will be run “on request”, although a maximum of 10 requests per year will be accepted from any single Carriage Service Provider without IPND Manager approval. Note that the report will be run on the basis of the Carriage Service Provider code.

### 5.2.6.3 Optional Limiting Criteria for Carriage Service Providers

Limiting criteria can be applied to specific invocations of a Carriage Service Provider Snapshot.

The report can be set to exclude Disconnected numbers if applicable. The report can be limited to records with Soft Errors Only. Other Special Conditions may be applied with agreement of the IPND manager and for clarity a run reason can be specified.

The filler field in the header record of the Bulk Data Extract download file will indicate whether any additional criteria has been applied and where space permits, the actual additional criteria and any specified run reason.

If there is no additional limiting criteria, the filler field of a file will include the text **\*\*Criteria: All.**

If there is additional limiting criteria **\*\*Criteria:** will be followed by any special criteria applied. For example,

**\*\*Criteria: Connected SoftErrorsOnly**

The criteria may be postfixed by ‘..’ to indicate that the filler field is not large enough to hold all the criteria.

If a special run reason has been given, the Reason will proceed the Criteria.

Application of Limiting Criteria will be reflected in a different report type and sequence. Only unlimited full extracts will have the CRU File Type

### 5.2.6.4 Carriage Service Provider Snapshot File Name Structure

Note that letters are always in upper case.

Encrypted Output on Request File names will be structured as follows:

IPND<TTT>.<XXX>.<MMMMMMMM>.<PPP(P)>.asc

Where

“IPND” – constant identifier string

- <TTT>
  - String “CRU” for Refresh Upload – **only no limiting criteria specified**
  - String “CSE” for Soft Errors if limited to Soft Errors Only with/without additional limiting criteria
  - String “CSC” for if limiting criteria not including Soft Errors Only
- <XXX>
  - The Carriage Service Provider code.
- <MMMMMMM>
  - Run number uniquely identifying the output file. It indicates that a file was part of the MMMMMMM<sup>th</sup> run for that download file type <TTT>. A higher number indicates a later run.
- “.”
  - extension marker
- <PPP> or <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.
  - If the number of output files exceeds 999, the spanned number will increment to 1000 onwards.

“asc” is a constant indicating the the file is encrypted

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

## 5.2.7 Bulk Data Extracts for Data Users

### 5.2.7.1 Overview

A Bulk Data Extract 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 Extract 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 Data Users not entitled to receive them. Bulk Refreshes received by these Data Users should be considered the current definitive list of Public Numbers available to be published at that point in time and any internal databases should reflect this state.**

Bulk Data Extract files are always limited to the localities that a Data User has subscribed to, regardless of other criteria applied.



Unless other specified, Bulk Data Extract files will include both connected and disconnected Customer Records.

Bulk Data Extract Download files generated for Directory Publishers, Location Dependent Carriage Service providers, and Researchers (RS) will not include Unlisted Public Numbers.

Bulk Data Extract 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.

### ***5.2.7.2 Optional Limiting Criteria for Data Users***

**Further limiting criteria can be applied to specific invocations of a Bulk Data Extract.**

These criteria can include optional Service Post Code ranges and/or Directory Post Code ranges, when invoked. In addition the report can be set to exclude Disconnected Customer Records (Criteria: Connected) if applicable. Other Special Conditions may be applied with agreement of the IPND manager and for clarity a run reason can be specified.

The criteria are applied in addition to any standard criteria. For example a Data User limited to specific postcodes will not receive additional Customer Records by including a larger postcode range.

The filler field in the header record of the Bulk Data Extract download file will indicate whether any additional criteria has been applied and where space permits, the actual additional criteria and any specified run reason.

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

For other Bulk Data Extract file types without any additional criteria, the filler field of a file will include the text **\*\*Criteria: All**.

Otherwise the **\*\*Criteria:** will be followed by any specific Criteria used. PN= will proceed any public number ranges, SvcPcode= any Service Postcode ranges and DirPCode=any Directory Postcode ranges. Other text words may include Connected and/or 'SpecialConditions' if other coded special conditions have been applied. This text is included to be informational purposes only and is not meant to be machine parsable.

The criteria may be postfixed by '.' to indicate that the filler field is not large enough to hold all the criteria.

If a run reason has been given, the Reason will proceed the Criteria. The Reason is proceeded by the tag **\*\*Reason:**.

Any additional criteria are stored for audit in the IPND database.

### ***5.2.7.3 Output on Request File Name Structure for Data Users***

Note that letters are always in upper case.

Encrypted Output on Request File names will be structured as follows:

IPND<TT>.<DU File Source>.<MMMMMMM>.<NNNNNNN>.<PPP(P)>.asc

Where

<DU File Source>	IPND Data User
"IPND"	Literal identifier string
<TT>	File type and may be one of "RE" for Emergency Services ( Refresh Emergency ), "RL" for Law Enforcement Agencies (Refresh Law), "RI" for Directory Publishers (Refresh Directory Information ), "RD" for Location Dependent Carriage Service providers (Refresh Location Dependent), "RR" for Researchers (Refresh Researcher)  "PR" for Health and Public Policy Researchers  "RW" for Early Warning Systems,  "BC" for Book Close.
"."	extension marker
<MMMMMMM>	Run number uniquely identifying the output file. It indicates that a file was part of the MMMMMMM <sup>th</sup> run for that download file type <TT>. A higher number indicates a later run.
<NNNNNNN>	File sequence number with leading 0s.
<PPP> or <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.  If the number of output files exceeds 999, the spanned number will increment to 1000 onwards.
".asc"	constant indicating that the file is encrypted.

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 Extract for Emergency Services data for the 5th time could result in :

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

The last physical file in the logical Bulk Data Extract 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.asc  
IPNDES.User1.0000100.asc  
IPNDRE.User1.0000005.0000100.0001.asc  
IPNDRE.User1.0000005.0000100.0002.asc  
IPNDRE.User1.0000005.0000100.0003.asc  
IPNDES.User1.0000101.asc  
IPNDES.User1.0000102.asc

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

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

## 5.2.8 Changed Data Provider Report for Data Providers

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 Customer Records “owned” by a Data Provider are mapped to the File Source that submitted the Customer Record.

### 5.2.8.1 Frequency

The Changed Data Provider Report will be run monthly on the 1<sup>st</sup> of the month for all Customer Records that have changed Data Provider code during the previous month.

The daily Changed Data Provider Report will be produced only if there is a loss or gain of the Data Provider code on Customer Records for the previous day.

### 5.2.8.2 File Name Structure

Note that letters are always in upper case.

Changed Data Provider File names will be structured as follows:

IPND<TT><XXXXXX>.<NNNNNNNN>

Where

- “IPND” – constant identifier string
- <TT> – refers to the file type which is
  - “DP” for the Monthly “Data Provider” Report File.
  - “DD” for any Daily “Data Provider” Report File
- <XXXXXX> – refers to the file source code.
- <NNNNNNNN> – File sequence number with leading 0s. DP and DD Files will have separate consecutive sequences.

The encrypted filename will be:

IPND<TT><XXXXXX>.<NNNNNNNN>.asc

Where

“.asc” is a constant indicating an encrypted file.

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 Changed Carriage Service Provider Reports for Data Providers

The purpose of this report is to provide Data Providers with information regarding lost and gained Customer Records by Carriage Service Provider Code (CSP). This is necessitated by the fact that Public Numbers may be transferred between CSPs any number of times.

Note that Customer Records “owned” by a CSP are mapped to the File Source that submitted the Customer Record.

### 5.2.9.1 Frequency

The Changed Carriage Service Provider Report for Data Providers will be run monthly on the 1<sup>st</sup> of the month for all Customer Records where a CSP Code change occurred in the previous month.

The daily Changed Carriage Service Provider Report for Data Providers will be produced only if there is a loss or gain of the CSP Code on a Customer Record during the previous day.

### 5.2.9.2 File Name Structure

Note that letters are always in upper case.

Changed Carriage Service Provider File names will be structured as follows:

IPND<TT><XXXXXX>.<NNNNNNNN>

Where

- |            |  |
|------------|--|
| “IPND”     | - constant identifier string   |
| <TT>       | - refers to the file type which is<br>“CM” for the Monthly “Change CSP” Report File for Data Providers<br>“CD” for any Daily “Change CSP” Report File for Data Providers |
| <XXXXXX>   | - refers to the file source code.  |
| <NNNNNNNN> | - File sequence number with leading 0s. CM and CD Files will have separate consecutive sequences.  |

The encrypted filename will be:

IPND<TT><XXXXXX>.<NNNNNNNN>.asc

Where

“.asc” is a constant indicating an encrypted file.

Change Carriage Service Provider Files may be accessed by the submitting filesources from the download directory that is visible after connecting via ftp to IPND.

**5.2.10 Changed Carriage Service Provider Report for CSPs via Portal**

The purpose of this report is to provide Carriage Service Providers (CSPs) with information regarding lost and gained Customer Records by Carriage Service Provider Code (CSP Code). This is necessitated by the fact that Public Numbers may be transferred between CSPs any number of times.

CSPs will need to registered for the Web Portal.

**5.2.10.1 Frequency**

The Changed Carriage Service Provider Report will be run monthly on the 1<sup>st</sup> of the month for all Customer Records where a change in CSP Code has occurred during the previous month.

The daily Changed Carriage Service Provider Report for Data Providers will be produced only if there is a loss or gain of the CSP Code on a Customer Record during the previous day.

The Reports will only be produced for CSP Codes mapped to CSP Organisations registered on the Web Portal.

**5.2.10.2 File Name Structure**

Note that letters are always in upper case.

Changed Carriage Service Provider File names will be structured as follows:

IPND<TTT>.<XXX>.<NNNNNNNN>.asc

Where

- “IPND” - constant identifier string
- <TTT> - refers to the file type which is
  - “CCM” for the Monthly “Change CSP” Report File.
  - “CCD” for any Daily “Change CSP” Report File
- <XXX> - refers to the Carriage Service Provider Code
- <NNNNNNNN> - File sequence number with leading 0s. CCM and CCD Files will have separate consecutive sequences.

The encrypted filename will be:

IPND<TTT>.<XXX>.<NNNNNNNN>.asc

Where

“.asc” is a constant indicating an encrypted file.

Change Carriage Service Provider Files may be accessed by the CSP Organisation Users on the portal. There will be single encryption code per CSP Organisation.

## 5.2.11 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.

This should be limited to issues that are not already automated in 6.1.3 IPND error file Report to Data Providers.

### 5.2.11.1 IPND Upload Query File Process

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

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 5.2.11.1.1 *Data User Query File ( DUQF )*
- 3) Insert valid queries from the file into the Service User Query Table

Subsequent Processing of User Query data is as follows

- 4) Produce a DUQF error/status file for each DUQF file processed.
- 5) Provide a Daily DPQF report to Data Providers including any Active User Query that has not been reported previously in a DPQF.
- 6) Mark the User Query as non-Active if the Data Provider updates the record
- 7) Provide a monthly audit to Data Users via DAQF of any Active User Queries that have been uploaded in the month.

#### 5.2.11.1.1 Data User Query File ( DUQF )

The DUQF can be generated by non-bulk 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 6.1.12 *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 for which a query is being raised has previously been created by the Download File Generator and made available for download by the IPND Data User.
- the User Query Error code is valid.

Also note that if a duplicate Customer Record is received it will be treated as an update, thus any existing active query will be marked as replaced by the newly received Customer Record. A duplicate Customer 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.

#### 5.2.11.1.1 DUQF - File Name

The correct file name structure for an encrypted DUQF is  
IPNDQU<XXXXX>.<yyyymmddhhmmss>.asc

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,

“.asc” is a constant indicating that the file is encrypted.

All characters with the exception of the constant “asc” are in uppercase.

Note All filenames received and decrypted 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.

#### 5.2.11.1.2 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 6.1.13 *IPND DUQF Error File Structure* for details on UQF error file structure and section 6.1.14 *IPND DUQF Error File Codes* for details of DUQF error file codes issued.

##### 5.2.11.1.2.1 DUQF Error File Name

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

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

Or

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

Where

“IPNDQU” is a constant,

All characters are in uppercase with the exception of the “.err” and “.asc” extensions.

<XXXX> 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.

“.asc” is a constant indicating that the file is encrypted.

### ***5.2.11.2 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 new Active User Query records exist for the File Source.

#### **5.2.11.2.1 Data Provider Query File (DPQF)**

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

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

Note that the Data Provider code is included in the DPQF to facilitate the processing of the Customer Record in the case where a File Source provides Customer Record 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 a Customer Record is valid.

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

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

##### ***5.2.11.2.1.1 Data Provider Query File - Name***

The correct file name structure for the DPQF is

IPNDQP.<XXXXXX>.<NNNNNNNN>.asc

Where

“IPNDQP” is a constant,

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

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

“.asc” is a constant indicating that the file is encrypted.

### ***5.2.11.3 IPND Amalgamated Query File Process***

The AQFP will be run on a monthly basis to produce a Data user Amalgamated Query File (DAQF). The DAQF will contain a snapshot of all Active User 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 Customer Record.

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 Customer Record for the Public Number referred to in the User Query Table has a list code of “UL” then the Customer Record 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 Customer Record 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 Data 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.)

The Error Description field will be blank in the DAQF report.

### 5.2.11.3.1 Data user Amalgamated Query File - Name

The correct file name structure for the encrypted DAQF is:

IPND<TT>.<DU File Source>.<NNNNNNNN>.asc

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

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

“.asc” is a constant indicating that the file is encrypted.

All characters, with the exception of the constant “.asc”, will be upper case.

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

## 5.2.12 Management Reports

Management Reports will generate output files that are available to the IPND Manager and the Industry Regulator. These reports are not distributed to Data Users. They will be used by the IPND Manager and the Industry Regulator to gauge the quality of Customer Records provided to the IPND.

### 5.2.12.1 Outstanding Soft Errors (M1)

The Outstanding Soft Errors Report comprises a summary of the number of Customer Records and Public Numbers with soft errors by Filesource, Data Provider Code, CSP, connected/disconnected status. It also shows the earliest and latest modified date time and whether the combination of codes (Filesource, Data Provider Code, CSP) is valid.

### ***5.2.12.2 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 Customer Records for each Carriage Service Provider.

### ***5.2.12.3 Weekly Upload Transactions (M4)***

The weekly Upload Transactions report shows, for each Filesource: the daily count of Customer Records included in Upload files, regardless of whether they received errors (H or S) and whether or not they were added to the IPND. The report will be run on a Sunday for the week starting on the previous Sunday.

### ***5.2.12.4 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.

### ***5.2.12.5 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 Customer Records in size. This report will be run on the first day of the month for the previous month.

### ***5.2.12.6 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..

### ***5.2.12.7 User Query (MC)***

The User Query Management report will show a count of User Queries loaded against the Data Providers Customer Records 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.

### ***5.2.12.8 Service History (MD/ME)***

The Control Field Log Report has two components, a report that shows the Control Field history for all Customer Records loaded into IPND for a specified Public Number (IPNDMD<nnnnnn>.rpt) and a report that shows all the Customer Records currently held in the database from the Service and Last Service tables (IPNDME<nnnnnn>.rpt).

The Customer Record(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 half-hourly (excluding the maintenance window 12:00 – 14:00 ) every day, the report will then be generated if the process finds a file named IPNDM<D|E>\* in the \$IPNDATA/mgrpt/receive directory.

#### ***5.2.12.9 Rejected File (MF)***

The File Rejected Management report shows files that have been rejected during the previous day.

#### ***5.2.12.10 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 count of Customer Records contained in these files.

#### ***5.2.12.11 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 daily showing the last 30 days.

#### ***5.2.12.12 Outstanding Soft Errors by Data Provider (MK)***

This report shows the number of Customer Records identified as having Soft Errors as a proportion of total Customer Records by Data Provider and Status.

#### ***5.2.12.13 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 Customer Record for each Carriage Service Provider, the Mandatory Soft 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 Customer Records by Carriage Service Provider.

#### ***5.2.12.14 Outstanding Soft Errors by Carriage Service Provider (MM)***

This report shows the number of Customer Records identified as having Soft Errors as a proportion of total Customer Records by Carriage Service Provider and Status.

#### ***5.2.12.15 Upload Files Processed (MY)***

This report was used for internal management and is now redundant.

#### ***5.2.12.16 Daily reports on Output On Request Extracts (MNB/MNL)***

These reports describe any extracts run on the previous day for either Data Providers or Data Users.

There are two formats of the information:

Brief (MNB) lists Filesource, Finished Date, Number of output files, First file name, Last file name and Total Records extracted.

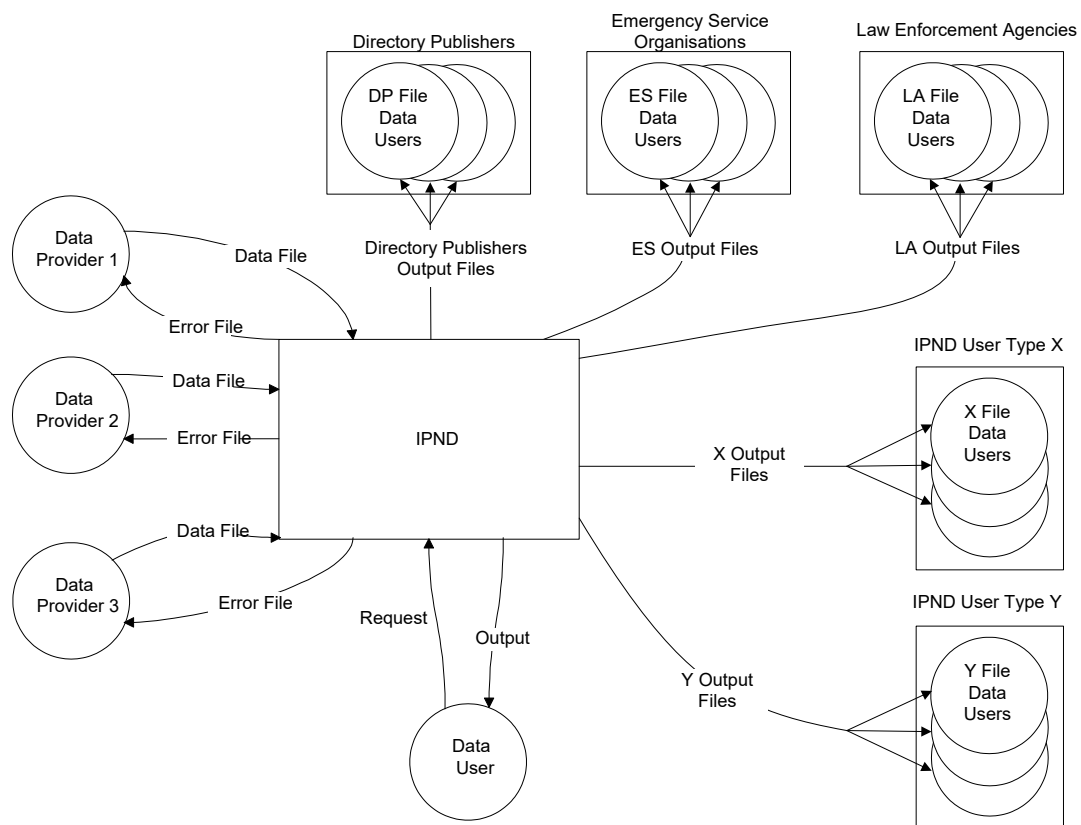
Long (MNL) Lists the information for each extract in a more detailed format. It includes filter criteria and reasons if applicable.

### 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.

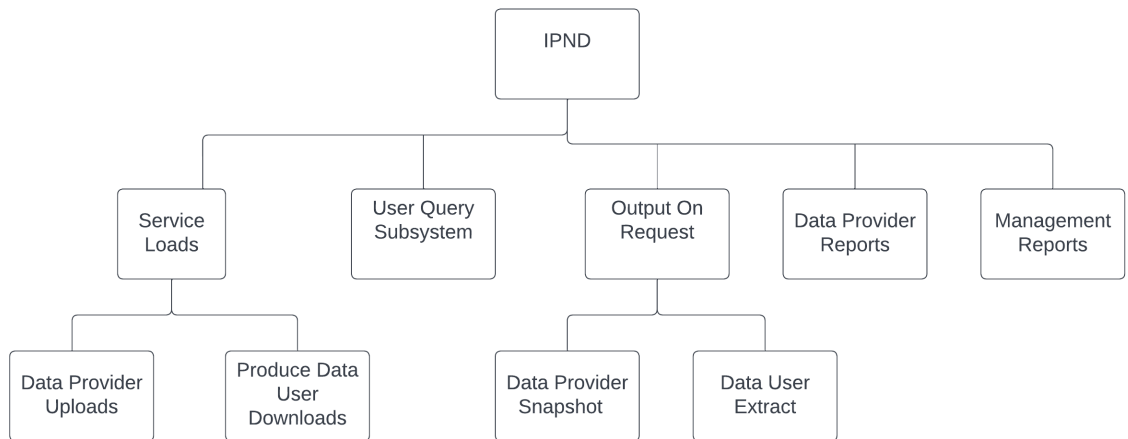
The requirements are for a batch processing system, without on-line access. As a result the application will be optimised for batch processing.

#### 5.3.1 Main System Context Diagram



### 5.3.2 Functional Model

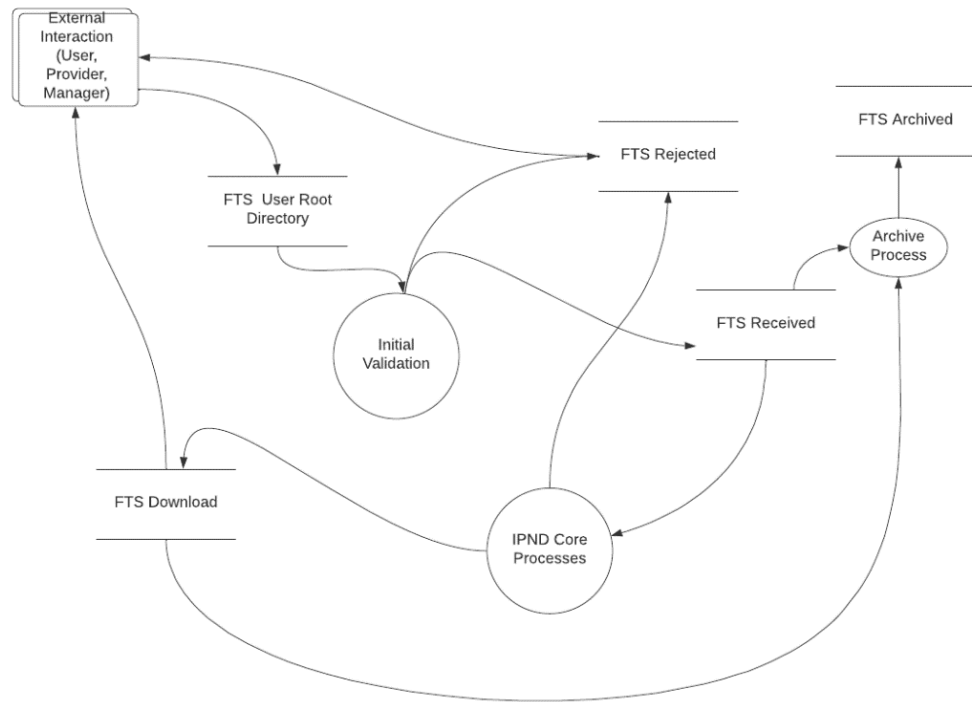
The following diagrams gives an overview of the system in terms of the high order functions that it will provide.



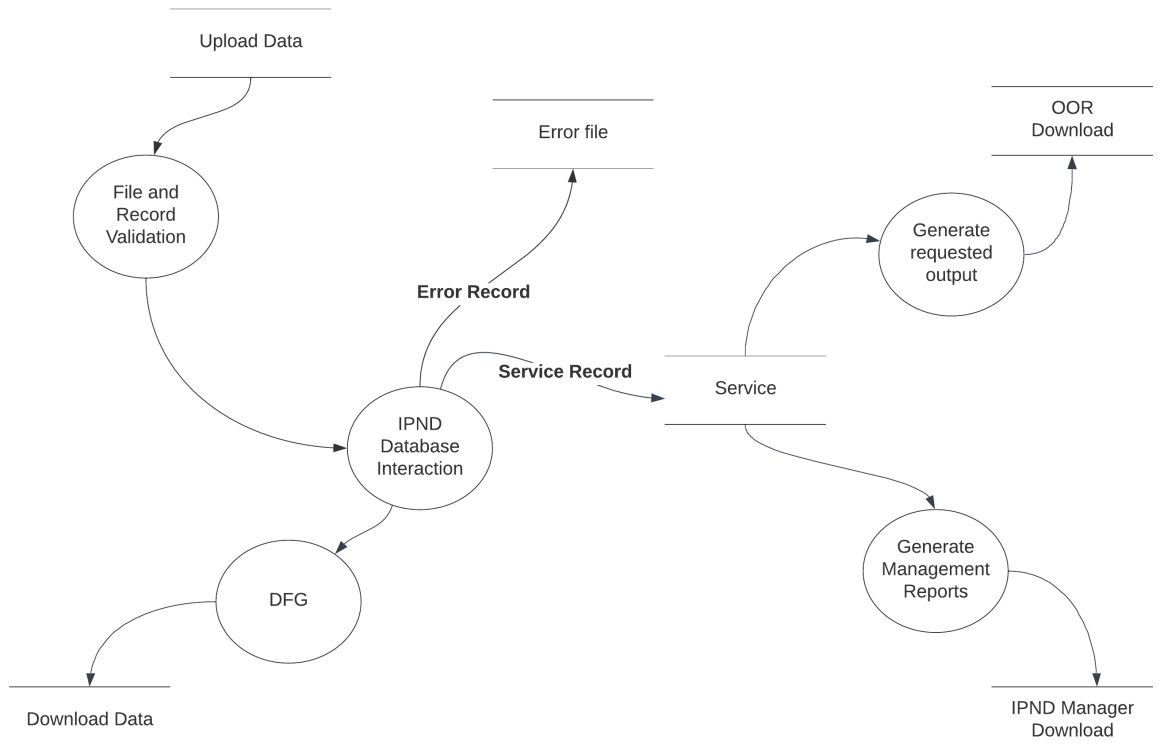
### 5.3.3 Data Flow Diagrams

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

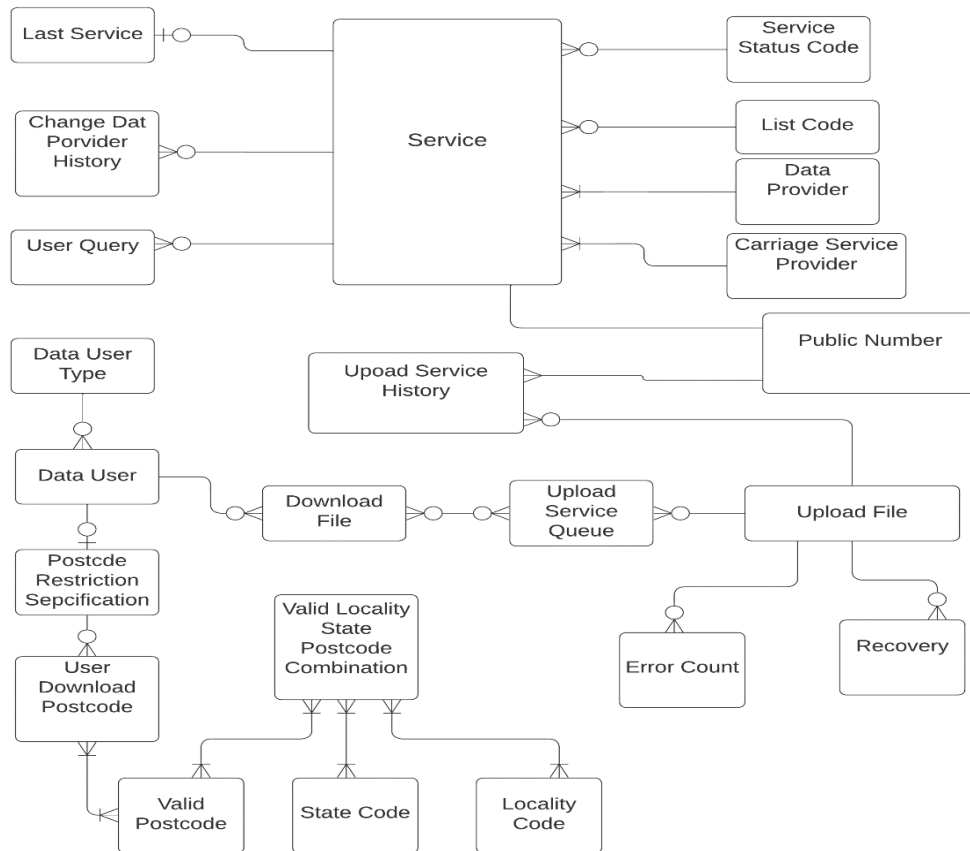
#### 5.3.3.1 FTS – Data Flow



### 5.3.3.2 IPND Core Application – Data Flow



## 5.3.4 Logical Data Model



### 5.3.4.1 Entity Relationship Diagram

### 5.3.4.2 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.

#### 5.3.4.2.1 Service

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

Note Other meta data such as Change Data Provider and User Query information is stored in separate tables.



#### 5.3.4.2.1.1 *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. The date is now captured both as UTC and Melbourne Australia local time. Only the local time is currently downloadable.

#### 5.3.4.2.1.2 *Soft Error Flag*

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

#### 5.3.4.2.1.3 *PublicNumberLoadSeq (Internal Only)*

This is a unique consecutive number incremented each successful load of a specific Public Number. Historically it was also incremented for PendingService updates. It is used internally to identify a specific instance of a Public Number. For user queries against a Customer Record, the most recent downloaded PublicNumberLoadSeq is recorded when the user query is received and it is assumed that the query has been raised against that instance of a PublicNumber. The Service Query is considered updated/resolved when a Customer Record with higher PublicNumberloadSeq has been downloaded to Users.

#### 5.3.4.2.1.4 *UploadId/DownloadId (Internal Only)*

All numbers successfully uploaded since February 2008 have been assigned a unique Id. For successful Uploads UploadId=DownloadId. This is an internal Id.

#### 5.3.4.2.1.5 *FileId/UploadFileName (Internal Only)*

The internal FileId and corresponding UploadFileName is recorded against the service.

### 5.3.4.2.2 **Last Service**

This entity implemented as ServiceLast will have the same structure as Service. It will contain the Service information prior to the last modification. Multiple successful uploads of the same service number in the same file result the ServiceLast being updated with the penultimate update.

Will implement the Last Service Before Image Log.

### 5.3.4.2.3 **Public Number**

This entity will maintain processing information about a Public Number. It will just store a counter against the number indicating the number of times this Customer Record has been updated.

This entity includes attributes

- Public Number
- Load Sequence.

#### 5.3.4.2.4 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 Changed Data Provider Report.

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

- Public Number
- New and Prior Data Provider Codes
- New and Prior FileSources
- New and Prior Service Status Code
- New and Prior FileIds (originating Upload File Reference)
- New and Prior UploadIds (internal reference to Upload Record)
- Modified Data Time

#### 5.3.4.2.5 User Query

This entity will be 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)
- Public Number Load Sequence (assumed to match the Public Number Load Sequence of Public Number when it was last downloaded)
- StatusCode indicating Active User Query or otherwise

Other processing attributes are stored as required.

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

#### 5.3.4.2.6 Upload Service History

Logically this entity is

This entity will store basic reference data for each service record in non-rejected Upload Files. It is a complete history of most attributes since 2013 and a sparse history prior to 2013. 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 (via FileId)
- Service Status Code
- Pending Flag
- Cancel Pending Flag
- List Code
- Carriage Service Provider Code
- Data Provider Code
- Directory Address Post Code – sparse pre 2022
- Service Address Post Code – sparse pre 2022
- Transaction Date Time as the String Field supplied
- Processed Date Time in UTC
- Flags for RecordRejected, RecordErrorSoft, RecordWarning
- Error Number Lists
- Internal Ids – FileId, UploadId, DownloadId

#### **5.3.4.2.7 Upload Service Queue**

This is a processing entity. It contains the Data Provider Upload File Records queued to be updated to the Point in Time Service and to the regular Download Files for Data Users.

#### **5.3.4.2.8 Upload File**

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

- Upload File Source,
- Upload File Sequence Number,
- Upload Start Date,(Local and UTC)
- Upload File Retry Number,
- Upload End Date,
- Upload File Name,
- Time Stamp Prefix added on File Receipt
- Total Records Processed (Non MH Record count)
- Total MH Errors,
- Total MS Errors,

- Total OK Records,
- Total Warning Records,
- Total NotOK Records,
- Upload File Rejected Flag,
- Upload File Status and other processing metadata
- File Level Error List if applicable

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

#### **5.3.4.2.9 Error Count**

This entity records the number and type of errors associated with an Upload File. It is used for reporting. It is derived from the Upload File and Service Upload History.

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

#### **5.3.4.2.10 Carriage Service Provider, Data Provider**

Refer Glossary. These entities contain the identifying code, a short description, an optional long description and end date. They are a sub-type of Code Values.

#### **5.3.4.2.11 Code Values**

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

The code values that will need to be validated are:

- Service Status
- List Code
- Type of Service (not shown in Diagram)
- Usage Code (not shown in Diagram)

They will all have the structure described below.

##### *5.3.4.2.11.1 Code*

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

##### *5.3.4.2.11.2 Description*

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

### 5.3.4.2.11.3 End Date

The date time on which a Code becomes invalid.

### 5.3.4.2.11.4 Valid Locality State Postcode (LSP) Combination

This data is updated quarterly.

Entities not defined above may be described in the Glossary and also listed in the Logical to Physical Mapping.

## 5.3.5 Physical Data Model

### 5.3.5.1 Logical to Physical Mapping

Logical Entity	Table	Comment
Service	ServiceCurrent	Direct 1:1 mapping
Last Service	ServiceLast	Direct 1:1 mapping
Change Data Provider History	UploadCDPLog UploadCDPHistLog	UploadCDPLog contains more metadata than the pre-strategic migration UploadCDPHistLog
Upload Service History	UploadServiceControlFieldLog	Direct 1:1 mapping
Upload Service Queue	UploadServiceInterim	Stores all service records that have been unprocessed by main Service upload process, the DFG and UQ maintenance process.. Also stores previous state of Service records that the DFG needs to manage service state and postcode transitions
User Query	ServiceQuery	Direct 1:1 mapping
Upload File	UploadServiceFileLog	Direct 1:1 mapping
Error Count	ErrorCountLog view of UploadYearMonthErrorLog	Direct 1:1 mapping Note:UploadYearMonthErrorLog is derivable from error lists in Upload File and Service History.
Recovery	UploadRecoveryLog	Direct 1:1 mapping
n/a	FtpTransferHistLog	Historic FTP Transfers Archived
n/a	Report_AllUploads	All Uploads via sftp or scp.. Table in separate database.
n/a	Report_AllDownloads	All file reads by sftp or scp users. Table in separate database.
Download File	DownloadDFGLog	Records metadata for all DFG files produced and a Summary record per DFG run.
n/a	DownloadOORLog	Records metadata for all Output on Request files generated

Logical Entity	Table	Comment
n/a	DownloadCDPLog	Records metadata on Change Data Provider download files generated.
n/a	DownloadMgmtLog	Records metadata on management reports generated.
Service Status Code	LookupRefStaticData	Validation codes are stored in a single table differentiated by a column representing code type.
List Code	LookupRefStaticData	See above.
Type of Service	LookupRefStaticData	See above.
State Code	LSP	Set of distinct states
Valid Postcode	LSP	Set of distinct postcodes
Locality Code	LSP	Set of distinct localities
n/a	LSPAlternateLocalityRule	Adjustments to LSP eg. Mt-Mount, St=Saint
Carriage Service Provider	LookupRefCSP	Carriage Service Provider codes CSP data can be provided by multiple Data Providers.
Data Provider	LookupRefFileSource IISUser	Entries with type of 'provider'
Data Provider	LookupRefDataProvider	Data Provider codes
Data User	LookupRefFileSource IISUser	Entries with user type of 'consumer'
Data User DownloadFileType	UserDataSpec	Specifies the type of data available for the data user and whether the data user is bulk only.
Postcode Restriction Specification	UserDataSpec	Field of UserDataSpec 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 are used for internal processing purposes only and have no logical equivalent in the entity.

## **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 position of 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 its 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 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 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
	<b>Header Record</b>									<b>One per file</b>	
	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 MH 040-Invalid Combination of codes – filesource ID, carriage service provider code, data provider code 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 (YYYYM MDDHH MMSS)	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	
	<b>Transaction Record</b>										
1	Public Number	X (20)*	1	20	Mandatory.		Number	Number means a number		The Number is the unique	MH 006 - Missing number.

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
					The record will be rejected by the IPND if a valid value is not provided and a Mandatory Hard (MH) error will be generated.			specified in the Numbering Plan.		<p>identifier for the service.</p> <p>* 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.</p>	<p>MH 110 - Non numeric in number.</p> <p>MH 101 - Number includes embedded spaces.</p> <p>MH 100 - Number includes leading spaces.</p>
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.	<p>MH 013 - Incorrect service status code.</p> <p>MH 007 - Missing service status code.</p>
3	Pending Flag	X (1)	22	22	Mandatory. The record	U	Valid value F	F - False		Must exit and must be set to F	<p>MH 014 - Incorrect pending flag.</p> <p>MH 008 - Missing Pending flag.</p>

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
					will be rejected by the IPND, if a valid value is not provided and a Mandatory Hard (MH) error will be generated.						MH 106 – Pending Service no longer accepted.
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 value F	F - False		Must exit and must be set to F	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. MH 106 – Pending Service no longer accepted.
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	

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
5.4	Customer Title	X (12)	184	195	Optional	C	Title		2.1	Title	
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 1 <sup>st</sup> Nr	X (5) *	294	298	Optional		First Number		3.1(ii)	First Number * AS 4212 specifies N(5)	
7.1.3	Service Building 1 <sup>st</sup> Suffix	X (1)	299	299	Optional		First Suffix		3.1(iii)	First Suffix	
7.1.4	Service Building 2 <sup>nd</sup> Nr	X (5)	300	304	Optional		Second Number		3.1(iv)	Second Number * AS 4212 specifies N (5)	
7.1.5	Service Building 2 <sup>nd</sup> Suf'x	X (1)	305	305	Optional		Second suffix of premises.		3.1 (v)	Second suffix of premises.	
7.2	Service 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
	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 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)	2 <sup>nd</sup> number associated with the building	
7.5.4	Service Street House Nr 2 Suffix	X (1)	396	396	Optional				3.6 (ii)	2 <sup>nd</sup> number suffix	
7.6	Service Address Street										
7.6.1	Service Street Name 1	X (25)	397	421	Mandatory if the Service Building Property is empty. Note the IPND will		Name part of street		3.8 (i)	Name part of street This column results in the generation of a MS error if the Service Building Property column is empty.	MS 104 - Missing service building property or street name

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
					process the record but generate a Mandatory Soft (MS) error.						
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
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		Valid Postcode	Valid Postcode	4.2	The Service Address Postcode is an important part of the Service Address	MS 050 - Invalide service address postcode MS 086 - Missing service address

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
					process the record if not populated and generate a Mandatory Soft (MS) error					details in a data record. This field should not contain non-numeric characters.	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 1 <sup>st</sup> Nr	X (5)*	520	524	Optional				3.1(ii)	First number * AS4212 specifies N (5)	
8.1.3	Directory Building 1 <sup>st</sup> Suffix	X (1)	525	525	Optional				3.1(iii)	First suffix	
8.1.4	Directory Building 2 <sup>nd</sup> Nr	X (5)*	526	530	Optional				3.1(iv)	Second Number * AS4212 specifies N (5)	
8.1.5	Directory Building 2 <sup>nd</sup> 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	
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".		Building Name		3.3	Building/Property Name. Eg Treasury Building, Kickatinalong. This column results in the generation of a MS error if	MS 103 - Missing directory building property or street name



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
					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.					the List Code is LE or SA and the Directory Street Name 1 column is empty.	
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	
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				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

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
					“SA” or “LE” and Directory Building Property is empty.						
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)	
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”.	U	Valid State or territory		3.12	State or Territory	MS 034 - Missing Directory Address state

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
					Note the IPND will process the record if not populated and generate a Mandatory Soft error.						
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
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
11	Type of Service	X (5)	743	747	Optional	U	Expected values are: DODAT DOM2M DOIOT	Data only/modems Machine to machine Internet of things		The Type of Service field identifies the type of service. This is particularly important for ESOs to identify the appropriate	

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
							FAX FCALL FIXED  MOBIL MODEM ONE3 PAGER PAYPH PRVPY PREM SATEL VMFIX VMMOB VMPDM VMMVH	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 Geographic voice Mobile voice Personal device/medical alert Motor vehicle		processes to be followed to ascertain the customer's location.	
12	Customer Contact										
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		Telephone number of customer contact			Telephone number of above	MS 048 - Missing customer contact number

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
					process the record if not populated and generate a Mandatory Soft (MS) error.						
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	MH 011 - Missing carriage service provider code MH 019 - Incorrect carriage service provider code MS 027 - Missing carriage service provider code MS 037 - Incorrect carriage service provider code MH 040 - Invalid Combination of codes – filesource ID, carriage service provider code, data provider code
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	MH 012 - Missing Data Provider Code MH 017 - Incorrect Data Provider Code MH 040 - Invalid Combination of codes – filesource ID, carriage service provider code, 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		This field must contain a valid date and time and should be provided	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
					Soft (MS) error		in the format (YYYYM MDDHH MMSS)				
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 (YYYYM MDDHH MMSS)	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 representing the date and time on which the current service status was 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		Customers 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	

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
										used.	
19	Record Delimiter	1	906	906			\n	ASCII 10		Newline	
	<b>Trailer record</b>									<b>One Per file</b>	
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 (YYYYM MDDHH MMSS)	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
4	File Record Count	N (7)	25	31	Mandatory. The entire file will be		The file trailer record				MF 239 - Upload file footer record count does not match number of records found in file.

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
					rejected if a valid value is not populated and a Mandatory File (MF) error will be generated		count is a 7 digit field reflecting the number of transaction records in the file excluding the header and trailer records				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 Customer 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 Customer Records read from the upload file.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
<b>HEADER RECORD</b>								
								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
<b>ERROR RECORD</b>								
								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.
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
<b>TRAILER RECORD</b>								
								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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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
011	Missing carriage service provider 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 file source ID code.	F
019	Incorrect carriage service provider code.	MH
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. Depreciated June 2024 – refer 011MH and 019MH	MS
038	Incorrect alternate address flag.	MS
040	Invalid Combination of codes – file source ID, carriage service provider code, data provider code.	MH
041	CDP disconnect attempted.	MH
042	Depreciated – see error 106	MH
043	Warning older transaction date.	W
044	Warning - Duplicate record to prior non MH record - all fields including Transaction Date and Service Status Date. Not Applicable prior June 2024	W
045	Warning - Duplicate record to prior non MH record - all fields excluding Transaction Date and Service Status Date. Not Applicable prior June 2024	W
047	Missing customer contact name1.	MS
048	Missing customer contact number.	MS

Message #	Text	Error Classification
050	Invalid Service Address Postcode	MS
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	Deprecated see Error 106	MH
103	Missing directory building property or street name.	MS
104	Missing service building property or street name.	MS
105	Deprecated see Error 106	MH
106	Pending service record no longer accepted	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
242	Invalid character(s) found in upload file footer sequence number.	F
243	Upload file footer sequence number is null.	F
244	Upload file footer create end date is null. (Duplicate of 234)	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

<b>Message #</b>	<b>Text</b>	<b>Error Classification</b>
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.

Where a change of Data Provider has occurred, a subsequent disconnect from the old Data Provider will not be included in this file.

Directory Publisher and Directory Assistance 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
	<b>HEADER RECORD</b>							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
	<b>TRANSACTION RECORD</b>							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 state of the service.
3	Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
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	<b>Directory Address</b>							Address for Directory Purposes.
6.1	Directory Building Subunit							

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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							
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)
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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
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.
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					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.
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.



No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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
	<b>TRAILER RECORD</b>							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(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, or 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 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
	<b>HEADER RECORD</b>							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
	<b>TRANSACTION RECORD</b>							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		F	False		From 17/11/2021 this flag will always be F
4	Cancel Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
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.
6	<b>Service Address</b>							
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 Suffix	X(1)	O				3.1(v)	Second suffix of premises.
6.2	Service Building Floor							

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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.
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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
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					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.
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
	<b>TRAILER RECORD</b>							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 change of 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
	<b>HEADER RECORD</b>							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)
5	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
	<b>TRANSACTION RECORD</b>							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 state of the service.
3	Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
4	Cancel Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
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.
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	<b>Service Address</b>							
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

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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.
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.
<b>8</b>	<b>Directory Address</b>							<b>Address for Directory Purposes.</b>
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).
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.



No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
12	Customer Contact							Name of business telecommunications consultant or Contact for IPND purposes
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					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.
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
<b>TRAILER RECORD</b>								
								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.

Where a change of 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
	<b>HEADER RECORD</b>							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDLD			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
	<b>TRANSACTION RECORD</b>							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		F	False		From 17/11/2021 this flag will always be F
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.
<b>5</b>	<b>Service Address Street</b>							
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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
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					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.
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
	<b>TRAILER RECORD</b>							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)

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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.

Where a change of 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
	<b>HEADER RECORD</b>							One per file
1	Record Type	X(3)	MF		HDR	Header		
2	File Type	X(6)	MF		IPNDRS			
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
	<b>TRANSACTION RECORD</b>							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.
3	Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
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	<b>Directory Address</b>							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).

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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							
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)
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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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 (SA TEL), Premium service (PREM),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
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.
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					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.
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.



No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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
	<b>TRAILER RECORD</b>							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(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 o 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
	<b>HEADER RECORD</b>							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
	<b>TRANSACTION RECORD</b>							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 state of the service.
3	Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F.
4	Cancel Pending Flag	X(1)	MH		F	False		From 17/11/2021 this flag will always be F
5	<b>Service Address</b>							
5.1	Service Building Subunit							
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.

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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).
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		

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
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),geographic voice (VMFIX), mobile voice (VMMOB) , personal device/medical alert (VMPDM), motor vehicle (VMMVH), data only /modems (DODAT), machine to machine (DOM2M), internet of things (DOIOT)
11	Customer Contact							Name of business telecommunications consultant or Contact for IPND purposes
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					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.
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.
18	Record Delimiter	1			\n	ASCII 10		Newline
	<b>TRAILER RECORD</b>							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	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).

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	<b>HEADER RECORD</b>							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
	<b>TRANSACTION RECORD</b>							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
	<b>TRAILER RECORD</b>							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	Record Delimiter	1			\n	ASCII 10		Newline

### 6.1.12 IPND DUQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
<b>HEADER RECORD</b>								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
<b>ERROR RECORD</b>								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 6.1.15 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
<b>TRAILER RECORD</b>								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

### 6.1.13 IPND DUQF Error File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	<b>HEADER RECORD</b>							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
	<b>ERROR RECORD</b>							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 6.1.14 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
	<b>TRAILER RECORD</b>							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



#### 6.1.14 IPND DUQF Error File Codes

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

<b>Error Code</b>	<b>Error Description</b>
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

### 6.1.15 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 value is F	F - False	U0030	T	T	T	T	T	T
4	Cancel Pending Flag	Valid value is F	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		
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

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
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
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
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		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
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		
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		
8.6.1	Directory Street Name 1			U 0861		T	T	T		
8.6.2	Directory Street Type 1			U 0862		T	T	T		

No	Field Name	Values	Value Description	UQF Error Code	ES	LA	DI	RS	LD	EW
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
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: DODAT DOM2M DOIOT FAX FCALL FIXED  MOBIL MODEM ONE3 PAGER PAYPH PRVPY PREM SATEL VMFIX VMMOB VMPDM VMMVH	Data only/modems Machine to machine Internet of things 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 Geographic voice Mobile voice Personal device/medical alert Motor vehicle	U 1100	T	T	T	T	T	T
12.1	Customer Contact Name 1	Customer contact surname.		U 1210	T	T	T	T		
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

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

### 6.1.16 IPND DPQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
<b>HEADER RECORD</b>								
								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
<b>ERROR RECORD</b>								
								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 6.1.15 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
<b>TRAILER RECORD</b>								
								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.
5	Record Delimiter	1			\n	ASCII 10		Newline



### 6.1.17 IPND DAQF File Structure

No.	Field Name	Format	Mandatory	Case	Values	Value Description	AS 4212	Description
	<b>HEADER RECORD</b>							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
	<b>ERROR RECORD</b>							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 6.1.15 DUQF Upload error codes for Data Users for the list of errors
4	Error Description	X(256)	O					This field will be blank in this report.
5	Record Delimiter	1			\n	ASCII 10		Newline
	<b>TRAILER RECORD</b>							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

## 6.1.18 IPND Changed Data Provider and Carriage Service Provider Report File Structures

### 6.1.18.1 Changed Data Provider Report by File Source (for Data Providers)

**Note: The daily Change Data Provider DD will be produced only on days when an applicable gaining or losing change has occurred.**

No.	Field Name	Format	From	To	Values	Value Description	Description
	<b>HEADER RECORD</b>						One per file
1	Record Type	X(3)	1	3	HDR	Header	
2	File Type	X(6)	4	9	IPND<FF>		Where <FF> is DP for monthly or DD for single day Note: DD will only be produced when there is a change to report
3	File Source Id	X(5)	10	14		File Source	File Source for which this file is destined.
4	File Sequence No.	N(7)	15	21			Unique consecutive number for file within FileType Daily Sequence numbers will have leading 0s
5	File Creation Start	N(14)	22	35			Date and time creation of this error file commenced. (YYYYMMDDHHMMSS)
6	Filler or Change Data Collection Start	X(14)	36	49	SPACES Or DateTime	ASCII 32 Or N(14)	Start of changed Data Provider reporting period (YYYYMMDDHHMMSS) For DP – will generally be SPACES as current – else first day of reporting month For DD– generally previously day of report run
7	Record Delimiter	1	50		\n	ASCII 10	Newline
	<b>DATA RECORD</b>						One per change Data Provider change detected
1	Public Number	X(20)	1	20			Public Number of Service that has changed Data Provider.
2	Pending Flag	X(1)	21	21	N	False	From 17/11/2021 this flag will always be F
3	Last Data Provider Code	X(6)	22	27			Data Provider Code of the “losing” Data Provider.
4	Last Status Code	X(1)	28	28	C	Connected	The Status of the Service when held by the “losing” Data Provider. Note: Status change not reported when Losing Status is D Disconnected
5	Current Data Provider Code	X(6)	29	34			Data Provider Code of the “gaining” Data Provider.
6	Current Status Code	X(1)	35	35	C D	Connected Disconnected	The current Status of the Service.
7	CDP Date	N(14)	36	49			Date and time the Service Data Provider Code changed. (YYYYMMDDHHMMSS)
8	Record Delimiter	1	50		\n	ASCII 10	Newline
	<b>TRAILER RECORD</b>						One per file
1	Record Type.	X(3)	1	3	TRL		
2	File Sequence No	N(7)	4	10			Unique consecutive number for file from IPND System.
3	File Creation End	N(14)	11	24			Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	25	31			Number of CDPR records in the file. (Does not include header or trailer)
5	Filler	X(18)	32	49	SPACES	ASCII 32	Padding to make all records in file the same length.

No.	Field Name	Format	From	To	Values	Value Description	Description
6	Record Delimiter	1	50		\n	ASCII 10	Newline

### 6.1.18.2 Changed Carriage Service Provider Report by File Source (for Data Providers)

**Note: The daily Change Carriage Service Provider CD reports are produced only when an applicable gaining or losing change has occurred.**

No.	Field Name	Format	From	To	Values	Value Description	Description
	<b>HEADER RECORD</b>						One per file
1	Record Type	X(3)	1	3	HDR	Header	
2	File Type	X(6)	4	9	IPND<FF>		Where <FF> is CM or CD
3	File Source Id	X(5)	10	14		File Source	File Source for which this file is destined.
4	File Sequence No.	N(7)	15	21			Unique consecutive number for file.
5	File Creation Start	N(14)	22	35			Date and time creation of this report commenced. (YYYYMMDDHHMMSS)
6	Change Data Collection Start	N(14)	36	49			Start of CDP reporting period (YYYYMMDDHHMMSS) For CM – will generally be first day of previous month For CD – generally previously day
7	FILLER	X(10)	50	59	SPACES	ASCII 32	Padding to make all records in file the same length.
8	Record Delimiter	1	60		\n	ASCII 10	Newline
	<b>DATA RECORD</b>						One record per change CSP detected
1	Public Number	X(20)	1	20			Public Number of Service that has changed Data Provider.
2	Last Carriage Service Provider code	X(3)	21	23		CSP	CSP Code of “losing” Carriage Service Provider Prior to validation of FS/DP/CSP this value may be an invalid CSP or empty (spaces)
3	Last Data Provider Code	X(6)	24	29			Data Provider Code of the “losing” Data Provider.
4	Last File Source Id	X(5)	30	34		File Source	Filesource that had sent the “losing” record
5	Last Status Code	X(1)	35	35	C	Connected	The Status of the Service when held by the “losing” Data Provider/CSP Note: Status change not reported when Losing Status is D Disconnected
6	Current Carriage Service Provider Code	X(3)	36	38		CSP	CSP Code of the “gaining” Carriage Service Provider Prior to validation of FS/DP/CSP this value may be an invalid CSP or empty (spaces)
7	Current Data Provider Code	X(6)	39	44			Data Provider Code of the “gaining” Data Provider.
8	Current Status Code	X(1)	45	45	C D	Connected Disconnected	The current Status of the Service.
9	CDP Date	N(14)	46	59			Date and time the Service Data Provider Code changed. (YYYYMMDDHHMMSS)
10	Record Delimiter	1	60		\n	ASCII 10	Newline
	<b>TRAILER RECORD</b>						One per file
1	Record Type.	X(3)	1	3	TRL		
2	File Sequence No	N(7)	4	10			Unique consecutive number for file from IPND System.
3	File Creation End	N(14)	11	24			Date and time creation of the data file was completed.

No.	Field Name	Format	From	To	Values	Value Description	Description
							(YYYYMMDDHHMMSS)
4	File Record Count	N(7)	25	31			Number of CDPR records in the file. (Does not include header or trailer)
5	Filler	X(28)	32	59	SPACES	ASCII 32	Padding to make all records in file the same length.
6	Record Delimiter	1	60		\n	ASCII 10	Newline

### 6.1.18.3 Changed Carriage Service Provider Report (for CSPs)

**Note: CCD reports are produced only when an applicable gaining or losing change has occurred.**

No.	Field Name	Format	From	To	Values	Value Description	Description
	HEADER RECORD						One per file
1	Record Type	X(3)	1	3	HDR	Header	
2	File Type	X(7)	4	10	IPND<FFF>		Where <FFF> is CCM for monthly <FFF> is CCD for daily
3	Carriage Service Provider Code	X(3)	11	13		CSP	CSP for which this file is destined.
4	File Sequence No.	N(7)	14	20			Unique consecutive number for file.
5	File Creation Start	N(14)	21	34			Date and time creation of this report commenced. (YYYYMMDDHHMMSS)
6	Change Data Collection Start	N(14)	35	48			Start of CDP reporting period (YYYYMMDDHHMMSS) For CCM – will be first day of month re reported changes For CCD – will be day that reported changes occurred
7	FILLER	X(13)	49	61	SPACES	ASCII 32	Padding to make all records in file the same length.
8	Record Delimiter	1	62	62	\n	ASCII 10	Newline
	DATA RECORD						One record per change CSP detected
1	Public Number	X(20)	1	20			Public Number of Service that has changed Data Provider.
2	Last Carriage Service Provider code	X(3)	21	23		CSP “losing”	CSP Code of “losing” Carriage Service Provider Prior to validation of FS/DP/CSP this value may be an invalid CSP or empty (spaces)
3	Last Data Provider Code	X(6)	24	29			Data Provider Code of the “losing” Data Provider.
4	Last File Source Id	X(5)	30	34		File Source	Filesource that had sent the “losing” record
5	Last Status Code	X(1)	35	35	C	Connected	The Status of the Service when held by the “losing” Data Provider/CSP Note: Status change not reported when Losing Status is D Disconnected
6	Current Carriage Service Provider Code	X(3)	36	38		CSP “gaining”	CSP Code of the “gaining Carriage Service Provider Prior to validation of FS/DP/CSP this value may be an invalid CSP or empty (spaces)
7	Current Data Provider Code	X(6)	39	44			Data Provider Code of the “gaining” Data Provider.
8	Current Status Code	X(1)	45	45	C D	Connected Disconnected	The current Status of the Service.
9	CDP Date	N(14)	46	59			Date and time the Service Data Provider Code changed. (YYYYMMDDHHMMSS)
10	Record Delimiter	1	60		\n	ASCII 10	Newline
	TRAILER RECORD						One per file
1	Record Type.	X(3)	1	3	TRL		
2	File Sequence No	N(7)	4	10			Unique consecutive number for file from IPND System.
3	File Creation End	N(14)	11	24			Date and time creation of the data file was completed. (YYYYMMDDHHMMSS)

No.	Field Name	Format	From	To	Values	Value Description	Description
4	File Record Count	N(7)	25	31			Number of CDPR records in the file. (Does not include header or trailer)
5	Filler	X(28)	32	59	SPACES	ASCII 32	Padding to make all records in file the same length.
6	Record Delimiter	1	60		\n	ASCII 10	Newline

### 6.1.19 IPND Data Provider Data Snapshot Extract File Structure

The customer record structure is exactly the same as the Customer Record IPND Upload File described in Section 6.1.2.

The header and trailer records are detailed as per below:

No.	Field Name	Format	From	To	Values	Value Description	Description
	<b>HEADER RECORD</b>						One per file
1	Record Type	X(3)	1	3	HDR	Header	
2	File Type	X(6)	4	9	IPND<FF>		Where <FF> varies as follows: <FF>=RU for unmodified snapshot showing all connected and disconnected records for the mapped filesource in the filename <FF>=SE if soft errors is specified with or without additional criteria. <FF>=SC if any conditions other than soft error are specified.
3	File Source	X(5)	10	14			
3	File Sequence No.	N(7)	15	21			Unique consecutive number for file within File Type
4	File Creation Start	N(14)	22	35			Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Report criteria	X(870)	36	905	**Text followed by ASCII 32		Where <FF>=RU field will be **Criteria:All  Where <FF>=SE or SC then Filler will be preceded by **Criteria: <criteria> where <criteria> indicates selection criteria specified. Padded with Spaces.
6	Record Delimiter	1			\n	ASCII 10	Newline
	<b>TRAILER RECORD</b>						One per file
1	Record Type	X(3)	1	3	TRL	Header	
2	File Sequence No.	N(7)	4	10			Unique consecutive number for file within File Type
3	File Creation End	N(14)	11	24			Date and time finish of the data file commenced. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	25	31			Count of records in the file.
5	Filler	X(874)	32	905	SPACES Or LAST + SPACES	ASCII 32 ASCII	The last physical file in the logical Bulk Data Extract will be identified by the first 4 characters in the trailer record filler field having the word "LAST" followed by SPACES.
6	Record Delimiter	1			\n	ASCII 10	Newline



## 6.1.20 IPND Carriage Service Provider Data Snapshot Extract File Structure

The customer record structure is exactly the same as the Customer Record IPND Upload File described in Section 6.1.2.

The header and trailer records are detailed as per below.

No.	Field Name	Format	From	To	Values	Value Description	Description
	<b>HEADER RECORD</b>						One per file
1	Record Type	X(3)	1	3	HDR	Header	
2	File Type	X(7)	4	10	IPND<FFF>		Where <FFF> varies as follows: <FFF>=CRU for unmodified snapshot showing all connected and disconnected records for the mapped Carriage Service Provider in the filename <FFF>=CSE if soft errors is specified with or without additional criteria. <FFF>=CSC if any conditions other than soft error are specified.
3	Carriage Service Provider Code	X(3)	11	13			CSP Code
3	File Sequence No.	N(7)	14	20			Unique consecutive number for file within File Type
4	File Creation Start	N(14)	21	34			Date and time creation of the data file commenced. (YYYYMMDDHHMMSS)
5	Filler	X(871)	35	905	SPACES Or Criteria: <criteria>	ASCII 32  ASCII	Where <FF>=RU field will be SPACES  Where <FF>=SE or SC then Filler will be preceded by **Criteria: <criteria> where <criteria> indicates selection criteria specified. Padded with Spaces.
6	Record Delimiter	1			\n	ASCII 10	Newline
	<b>TRAILER RECORD</b>						One per file
1	Record Type	X(3)	1	3	TRL	Header	
2	File Sequence No.	N(7)	4	10			Unique consecutive number for file within File Type
3	File Creation End	N(14)	11	24			Date and time finish of the data file commenced. (YYYYMMDDHHMMSS)
4	File Record Count	N(7)	25	31			Count of records in the file. Left justified zero filled
5	Filler	X(872)	32	905	SPACES Or LAST + SPACES	ASCII 32  ASCII	The last physical file in the logical Bulk Data Extract will be identified by the first 4 characters in the trailer record filler field having the word "LAST" followed by SPACES.
6	Record Delimiter	1			\n	ASCII 10	Newline

## 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.

<b>Term</b>	<b>Definition</b>
Application Provider	The organisation, LogicalTech Pty Ltd, 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.
Bulk Only Data User	A Data User who gets requested extracts only but not the interim DFG files.
Carriage Service Provider (CSP)	The entity/organisation that is ultimately responsible for providing data to the IPND. CSPs may choose one or more Data Providers to provide their data.
Change Data 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
Data User	An IPND User who consumes data by receiving DFG and/or OOR data. Data Users can upload User Queries providing they are not defined as Bulk Only Data Users. A Data User is allocated a unique FileSource code
Data Provider	An Ipnd User who providers service data to the IPND. A Data Provider is allocated a FileSource and one or more Data Provider Codes.
Data Provider Code	6 character code allocated to identify a Data Provider
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
DAQF	Data User Amalgamated Query File – contains any Active User Queries relevant to Data Users that have not already been sent in prior DAQF
DPQF	Data Provider Query file – contains any Active User Queries raised against services that have not already been sent in a prior DPQF report
DUQF	Data User Query File – Generated by Data Users to provide feedback to Data Providers. Only errors not already automatically detectable by IPND error checking should be provided. For example, incorrect address.
ES	Emergency Service Organisation
EW	Early Warning System or Organisation
File Source	A 5 character code used as the primary source identifier of Upload and Download Files.
IPND User	Includes the IPND Manager, Data Providers and Data Users
LA	Law Enforcement Agency
LD	Location Dependent Data Users.
List Code	Code indicating whether Public Number is UL=Unlisted, LE=Listed or SA=Suppressed Address.

<b>Term</b>	<b>Definition</b>
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.
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	From 17/11/2021 Pending Records are no longer accepted in the IPND
Pending Service	A potential telephone facility with an intended PublicNumber. Included for historic reasons. Uploading of Pending Service records was discontinued in 2021.
PU/PR	Health and Policy Researcher (user type PU) who receives Output on Request Files with type PR
Service	A telephone facility that employs a Public Number.
Service Status Code	Indicates Connected C or Disconnected D 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.
UQF	Process to upload User Query in DUQF Data User Query File
User Query (UQ)	Feedback from the Data User that data is incorrect. It should be restricted to errors that are not already automated in Data Provider Upload File checking.
User Query Active	A User Query that is still Active ie not replaced by the Data User or updated by a new upload of the PublicNumber by a Data Provider

## 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.
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.

No	Version	Section No	Section Name	Change	Reason
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 Extract	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.
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

No	Version	Section No	Section Name	Change	Reason
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
53	1.1.7	5.6.2	Bulk Data Extract	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

No	Version	Section No	Section Name	Change	Reason
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 errors	
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.
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.

No	Version	Section No	Section Name	Change	Reason
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
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 Extract	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, 5.2.7.21	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 IPND	included as part of CR 141 requested by IPND
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



No	Version	Section No	Section Name	Change	Reason
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,	Clarification 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
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 Extract, IPND Download File to Health and Policy Researchers	Addition of new Researcher Type Clarification of Bulk Extract Only Users	CR 167
88	2.0.21	5.2.6,5,2,8,5.2 .9	Output on Request , Changed Data Provider Report, Data Provider Data Snapshot	Clarification of criteria, Span number clarification.	
89	2.0.22	5.2.9.2	Data Provider Snapshot File Name Structure	Correct file name – was missing extension marker	
90	2.0.23	Title Page 3.1.2 5.2.7.13 5.3.7.23	IPND Manager Data Provider Management Reports	Update IPND Manager Name Include all files a Data Provider can download Update MD/MD Frequency Add description of MNB/MNL reports	
91	2.0.24	5.2.2.6.2	Pending Records	Include reference to delete script and MH 105	
92	2.0.25	6.1.4	IPND Error Messages	Remove incorrect references to MS 053 Add 244F as a duplicate of 234F	

No	Version	Section No	Section Name	Change	Reason
93	2.0.26	5.2.2 5.3 6	Process Upload High Level design, Data Files	Remove references to Pending. Document MH106 error. Clarify obsolete errors for Pending Remove obsolete Management reports Remove obsolete UEF references	
93	2.0.26	6.1.2	IPND Data Provider Upload file/ Data Provider Extract	Changed name of table to clarify Removed restriction to SA and LE for MH 104 error	
94	2.0.27	6.1.18	IPND Changed Data Provider Report File Structure	Add sequence number to header	Correction to documentation.
95	3.0.0	Several	Several	Inclusion of FTS changes, updates to database entity names, updates to management reports, consolidation of information, removal of redundant data, updates to diagrams	Reflect updates to application to allow processing in new environment.



No	Version	Section No	Section Name	Change	Reason
		5.2.4	Output of Request	This is now a summary section with the detail in the following sections	Clarity
		5.2.5	Data Provider Data Snapshot	Add overview Clarified limiting criteria available and affect on report name/type Introduce new “Exclude Invalid Code Combination” option	Non-standard Data Extracts
		5.2.6	Carriage Service Provider Data Snapshot Extract	New section	Carriage Service Provider Extracts
		5.2.7	Bulk Data Extracts for Data Users	New section – previously part of 5.2.4.2	Clarity
		5.2.8	Changed Data Provider Report for Data Providers	Change to Frequency and introduce new daily report type	New daily Change Data Provider Report
		5.2.9	Changed Carriage Service Provider Report for Data Providers	New Section	New monthly and daily Change Carriage Service Provider
		5.2.10	Changed Carriage Service Provider Report for CSPs via Portal	New Section	New reports
		6.1.4	IPND Error Messages	011H New 019H New 037S Depreciate June 2024 040H	New hard errors re validation of carriage service provider codes and code combinations
				044W 045W	New Warnings
		6.1.18	IPND Changed Data Provider and Carriage Service Provider Reports	Add subsections for various report formats	New reports
		6.1.19	IPND Data Provider Data Snapshot Extract File Structure	Add header and trailer record section New filetypes SE and SC RU only for report without criteria	Clarity – the header and trailer always differed from the customer record upload file. Allow RU to be used for reconciling
		6.1.20	IPND Carriage Service Provider Data Snapshot Extract File Structure	New Section	New report
97	3.0.2	Overall		End of 3.0.2 Changes – as detailed above	

No	Version	Section No	Section Name	Change	Reason
98	3.0.3	6.1.2.4	Customer Record IPND Upload File – Filesource	Add MH 040-Invalid Combination of codes – filesource ID, carriage service provider code, data provider code	
		6.1.2.13	Customer Record IPND Upload File – Carriage Service Provider Code	Add MH 011 - Missing carriage service provider code MH 019 - Incorrect carriage service provider code MH 040 - Invalid Combination of codes – filesource ID, carriage service provider code, data provider code	
		6.1.2.14	Customer Record IPND Upload File – Data Provider Code	Add MH 040-Invalid Combination of codes – filesource ID, carriage service provider code, data provider code	
98	3.0.3	Overall		End of 3.0.3 Changes – as detailed above	
99	3.0.4	6.1.2.14	Customer Record IPND Upload File – Data Provider Code	Correction of error classification: Change from MS12 and MS17 to MH12 and MH17	Incorrect error classification.