National Directory Database

Operational Specification

Document Index

Author   PXS
Date   20-06-2022
Classification Redacted

Document History

Version	Description	Author	Issue Date
1.0	Final version	RVL, JM	June 21, 2019
1.1	- Changed DISP header for incremental update files - Added report file NDX specification	RVL	September 25, 2019
1.2	Updated 'Post Code' field to accommodate for the length of an Eircode	RVL	November 27, 2019
1.3	Added column id's to specification tables	RVL	January 2, 2020
1.4	- Corrected sections 3.5.1, 3.5.4 and 3.5.5 to reflect the as-is situation - Corrected process flows B, D and E to reflect the as-is situation	RVL	August 13, 2020
2.0	Updated document lay-out Added Appendix XI (Data Protection)	PXS	November 03, 2021
2.1	Corrected paragraph 1.6.1	PXS	June 20, 2022

Table of Contents

1 Introduction

Porting Access B.V. ("PortingXS") is the undertaking directed by the Commission for Communications Regulation ("ComReg") under ComReg Decision D16/18[1] ("ComReg Decision D16/18") to manage and maintain the National Directory Database ("NDD") in accordance with the operational specification[2] agreed with ComReg ("the Operational Specification"), for a minimum period of 3 years, and up to 5 years from 1 July 2019.

1.1 Purpose

The purpose of this document is to provide an overview of how PortingXS will manage and maintain the NDD during the period in which PortingXS will provide the National Directory Database Service ("NDS") as set out in summary in section 1.6.1.1. This document contains the Operational Specification and it specifies the process and all technical requirements necessary for managing and maintaining the NDD and details of PortingXS' NDS, notably, the terms of formats, functionality, interfaces, connections and its services.

The NDD must be managed and maintained in accordance with law and in particular, in accordance with the relevant provisions of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 ("the Universal Service Regulations") and the European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011 ("the e-Privacy Regulations"). The provisions of this Operational Specification are intended to fulfil these requirements and should be construed accordingly. In the event of any conflict between a provision of this Operational Specification and a relevant legal obligation, the former shall be interpreted in light of the latter.

1.2 Severability

If any section, clause, provision or portion of this Operational Specification is found to be invalid or prohibited by law or judged by a court to be unlawful, void or unenforceable, that section, clause or provision or portion thereof shall, to the extent required, be severed from the rest of the Operational Specification and rendered ineffective as far as possible without modifying the remaining section(s), clause(s), provision(s) or portion thereof of this Operational Specification and shall not in any way affect the validity or enforceability of the Operational Specification.

Any breach by PortingXS of any of its legal obligations shall not give rise to any liability on the part of ComReg.

1.3 Variability

The Operational Specification may need to be varied from time to time. This Operational Specification may not be amended or changed by PortingXS (or for the avoidance of doubt by any third party) unless the specific amendments are agreed in writing by ComReg. Where necessary to ensure the maintenance, integrity or availability of the NDD, or to ensure compliance with regulatory obligations ComReg may issue a direction to PortingXS to do or refrain from doing anything specified in the direction.

1.4 Audience

This document has been prepared by PortingXS (and has been agreed by ComReg) and will be made

---

[1] ComReg Document 18/108 and ComReg Decision D16/18, "*Management and Maintenance of the National Directory Database*", 6 December 2018.
[2] Defined in ComReg Decision D16/18 as *"the process, and all technical requirements necessary for managing and maintaining the NDD, as agreed with ComReg"*.

available to inform parties that interact with the NDD including ComReg, undertakings as referred to in Regulation 19(1) and 19(2) of the Universal Service Regulations ("Undertakings" or "U") and Directory Data Users ("DDU") (who can be directory service providers, directory enquiry service providers or direct marketers).

1.5 Overview of the National Directory Database

The NDD is a record of all subscribers of publicly available telephone services in Ireland, including those with fixed, personal and mobile numbers who have not refused to be included in that record, kept in accordance with Regulation 19(4) of the Universal Service Regulations and the e-Privacy Regulations. The function of the NDD is primarily to facilitate the compilation of and access to information for telephone directories and directory enquiry services. The NDD also contains the preference of subscribers in relation to the receipt of unsolicited marketing communications.

1.5.1 Entries in a Directory and Directory Enquiry Service and the NDD

The Universal Service Regulations provide that subscribers have the right without charge, to have an entry in a directory as provided for in Regulation 4(1)(a) of the Universal Service Regulations ("Directory") and a directory enquiry service as provided for in Regulation 4(1)(b) of the Universal Service Regulations ("Directory Enquiry Service"). The Directory and Directory Enquiry Service comprise all subscribers of publicly available telephone services in the State (including those with fixed, mobile and personal numbers) who have not refused to have their personal particulars included in those directories[3].

The NDD holds details of subscriber preferences for listing their telephone numbers as entered on the NDD by Undertakings. The following are the possible subscriber listing preferences ("Directory Listing Preferences"):

I. **Listed**: Subscriber details (name, address, telephone number) are to be listed in the printed Directory and with Directory Enquiry Services;
II. **Unlisted**: Subscriber details are not to be listed in the printed Directory and are to be listed with Directory Enquiry Services, and (I and II are together known as "Directory Preferences");
III. **Ex-Directory**: Subscriber details are not to be listed in the printed Directory and are not to be listed with Directory Enquiry Services ("Ex Directory Preferences").

1.5.2 Unsolicited communications for the purpose of direct marketing and the NDD

The Data Protection Commission is the independent regulator responsible for upholding the EU fundamental right of individuals to data protection through the enforcement and monitoring of compliance with data protection legislation in Ireland.

The e-Privacy Regulations provide that subscribers of publicly available telephone services have certain rights in relation to the potential inclusion of their personal data in a Directory and/or Directory Enquiry Service[4]. The e-Privacy Regulations prohibit unsolicited communications (including telephone calls or calls by automated calling machines or facsimile machines) for the purpose of direct marketing ("Direct Marketing Communications") to subscribers who do not consent to receiving such communications[5]. The e-Privacy Regulations contain obligations on Undertakings to record certain information in the NDD about whether an individual subscriber consents to Direct Marketing Communications or not ("Direct Marketing Preferences").

The Direct Marketing Preferences are held on the NDD and consist of:
1) A record of those fixed subscribers who have notified their service provider that they do not consent to receiving unsolicited Direct Marketing Communications and all ex-directory numbers.

---

[3] Regulation 4(2) of the Universal Service Regulations.
[4] Regulation 12 of the e-Privacy Regulations.
[5] Regulation 13(1) of the e-Privacy Regulations.

This list is known as the "opt out register" and is a means by which direct marketers can check telephone numbers to ensure that they do not conduct unsolicited communications with a subscriber who has indicated that they do not consent to unsolicited Direct Marketing Communications or an ex directory number (i.e. those that have "opted out" of Direct Marketing Communications).

2) A record of those mobile subscribers who have consented to receiving Direct Marketing Communications[6] i.e. "opted-in" to unsolicited Direct Marketing Communications. All other mobile subscribers have not consented to Direct Marketing Communications.

1.6 Roles and Responsibilities

1.6.1 PortingXS, the manager of the NDD

In accordance with ComReg Decision D16/18, PortingXS will manage and maintain the NDD in accordance with this Operational Specification.

PortingXS shall comply with all applicable EU Data Protection Law (as defined in Appendix XI (Data Protection)) in managing and maintaining the NDD in accordance with this Operational Specification. Without limiting or affecting this requirement, Porting XS shall comply with the Joint Controller Agreement in Appendix XI (Data Protection) of this Operational Specification with respect to data protection requirements in connection with the NDD.

1.6.1.1   The National Directory Database Service (NDS)

PortingXS are responsible for managing and maintaining the NDD and to fulfill this obligation PortingXS will provide the NDS as set out in summary in Figure I and in detail in this Operational Specification. The NDS is a system developed by PortingXS that enables it to:

I.   Collect inputs from Undertakings in relation to Directory Listing Preferences and Direct Marketing Preferences. PortingXS will provide Undertakings with access to the NDS to enable the upload of these Directory Listing Preferences and Direct Marketing Preferences on to the NDD ("Inputs"). The Inputs shall be stored on the NDD by PortingXS once received from Undertakings. PortingXS will ensure the comprehensiveness of the NDD by gathering data from all Undertakings in accordance with section 4.1 Input – Directory Listing of the Operational Specification; and

II.   Provide access to Directory Listing Preferences and Direct Marketing Preferences held on the NDD to DDUs on terms as specified by PortingXS (and as approved by ComReg) upon reasonable request ("Outputs"). DDUs can use the Outputs as input to their business processes. Only providers of Directories or Directory Enquiry Services ("Directory Information Service Providers" or "DISPs") can obtain the Directory Listing Preferences and only direct marketers can obtain the Direct Marketing Preferences.

Figure I: National Directory Database service

---

[6] Regulation 13(6) of the e-Privacy Regulations. Communications by facsimile machine are not included for the purpose of mobile subscribers.

PortingXS will provide DISPs with access to the information contained in the NDD relating to Directory Listing Preferences in the format provided for at section 4 of this Operational Specification. DISPs are required to use accurate and up to date data for the purposes of the services they provide. The DISPs should therefore use the Directory Listing Preferences for the collation of Directories and for Directory Enquiry Services.

PortingXS will provide direct marketers with access to the information contained in the NDD relating to Direct Marketing Preferences in the format provided for at section 4.3 Output – Direct market of this Operational Specification. The direct marketers are required to use accurate and up to date data for the purposes of their services. Direct Marketers should therefore use the Direct Marketing Preferences to ensure that they do not conduct unsolicited communications with a subscriber who has indicated that they do not consent to unsolicited Direct Marketing Communications or an ex-directory number (i.e. those that have "opted out" of Direct Marketing Communications).

PortingXS will enter into such agreements with Undertakings and entities (including DDUs) as are necessary to give effect to the requirements of the Universal Service Regulations and the e-Privacy Regulations and must do so in accordance with and within the timeframe specified in ComReg Decision D16/18.

PortingXS will safeguard the correct distribution of information held in the NDD having regard to the requirements in the Universal Service Regulations and the e–Privacy Regulations and in accordance with the Operational Specification, in particular section 4 and Appendix VII – Process Flows of the Operational Specification.

Upon request, PortingXS will provide information from the NDD free of charge, in the format and within the timeframe specified to:

    I.   ComReg for the purposes of the carrying out its regulatory functions;
    II.   the Data Protection Commission for the purposes of the carrying out its regulatory functions;
    III.   a designated undertaking if requested by ComReg for the purposes of Regulation 4 of the Universal Service Regulations.

PortingXS will, on a continuous and free of charge basis, provide the Data Protection Commission with access to the information contained in the NDD relating to Direct Marketing Preferences for the purpose of carrying out its regulatory functions.

PortingXS will take all necessary steps to ensure that it can fulfil its obligations in this regard completely and promptly.

1.6.1.2   Back Up and Security

PortingXS will back up the contents of the NDD at regular intervals as set out in Appendix VIII – NDD Backup and make arrangements for the data contained on the NDD[7] to be put in Escrow (in accordance with the detailed requirements set out in

---

[7] This means the entirety of the contents of the NDD including any information thereon.

Appendix X – Escrow – Safeguarding contents of the NDD) as a means of ensuring the security, integrity and continuity of the NDD.

To ensure that the NDD continues to be managed and maintained at all times and to ensure the integrity and comprehensiveness of the NDD and compliance with data protection law, PortingXS will, in the event of any changeover of provider of the NDD at any time or catastrophic event, provide and facilitate access by ComReg (and/or any person nominated by ComReg in this regard) to any information contained in the NDD in such format, and within such time period, as may be specified by ComReg. Appendix VIII – NDD Backup and Appendix IX – Security Plan of the Operational Specification contains more information concerning Back Up and Security.

1.6.1.3 Data quality

PortingXS will not modify the Inputs as provided by Undertakings. The data that PortingXS receives as Inputs from Undertakings will be held on the NDD and provided by PortingXS as Outputs to DDUs as-is or unchanged.

The quality of the data in the Outputs which PortingXS provides to DDUs will be equal to the quality of the data in the Inputs as provided by Undertakings.

This is also illustrated by the process flows depicted in Appendix VII – Process Flows.

1.6.2 Undertakings

Undertakings must ensure that their subscribers' right to have an entry in a Directory and/or a Directory Enquiry Service without charge is upheld. Regulation 19(2) of the Universal Service Regulations obliges Undertakings to meet all reasonable requests to make available the relevant subscriber information for the provision of Directories and Directory Enquiry services and for the provision of the NDD. Section 4.14.1 of this Operational Specification outlines the format in which Undertakings should supply this information.

In addition, the onus is on Undertakings to ensure that their subscribers' entitlements under the e-Privacy Regulations and in particular, regulations 12, 13 and 14 are upheld. Undertakings are required to place and update their subscribers' Direct Marketing Preferences on the NDD in accordance with Regulation 14 of the e-Privacy Regulations, in particular:

   I. *Fixed subscribers: If a subscriber to a fixed telecoms service has notified the relevant Undertaking that they do not consent to the receipt of unsolicited Direct Marketing Communications the Undertaking must make that information available to be recorded in the NDD; and*

   II. *Mobile subscribers: If a subscriber to mobile services has consented (or opted-in) to unsolicited Direct Marketing Communications, Undertakings must ensure this consent stands recorded on the NDD; and*

   III. *Ex-directory subscribers: Subscribers who are ex-directory are presumed not to consent to unsolicited Direct Marketing Communications and must be recorded as such in the NDD in the absence of any express instruction to the contrary.*

Each Undertaking is solely responsible for the quality of the Inputs they provide to the NDD as regards Directory Listing Preferences and Direct Marketing Preferences. Undertakings are required to place and update their subscribers' Directory Listing Preferences on the NDD. In the absence of a notification from a subscriber, the Directory Listing Preferences should remain unchanged and no amendment should be made to the Inputs (and recorded in the NDD).

1.6.3 Directory Information Service Providers

DISP's must regularly consult the NDD to obtain an up-to-date copy of the Directory Listing Preferences in order to ensure that they continue to use the relevant and most up-to-date Directory Listing Preferences when providing Directories and Directory Enquiry Services. Frequent consultation should help ensure that DISPs are compliant with their GDPR obligations and that subscribers' rights under the Universal Service Regulations and e-Privacy Regulations are protected.

1.6.4 Direct marketing industry
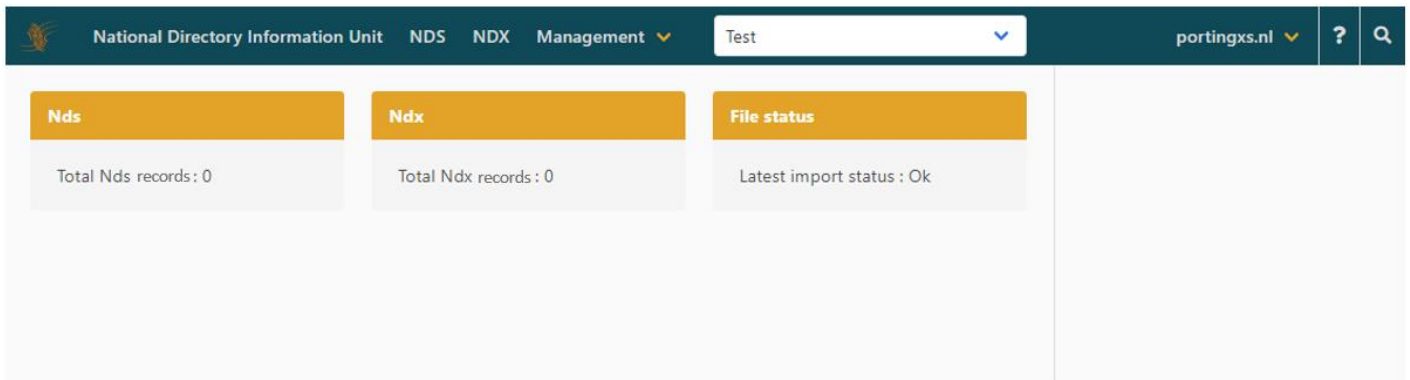
Direct marketers are prohibited from engaging in unsolicited Direct Marketing Communications in circumstances where persons have indicated that they do not consent to the receipt of such a communication (Regulation 13 of the e-Privacy Regulations). Direct marketers are required to consult the NDD to establish the Direct Marketing Preferences of subscribers and to help ensure that their activities are compliant with the law and that subscribers' entitlements under the e-Privacy Regulations are upheld.

2 Graphical User Interface

A web based Graphical User Interface **("GUI")** is available for the Undertakings, which acts as a view on the NDD. Undertakings only have access to their own complete installed base of records as registered in the NDD. These records can be viewed and downloaded in .csv format.

After logging into the NDD application, the Undertaking is shown a dashboard relating to its own record of subscriber details and indicating:
- The number of Directory Preference records held by that Undertaking
- The number of Ex-Directory Preference records held by that Undertaking
- The status of the file imports for that Undertaking

3 Files

3.1 Input – Directory Preferences

Directory Preferences can be submitted as either updates (changes to existing information since last modified or uploaded to the NDD) or a complete load (full dump of all records belonging to that Undertaking).

For each file type a report file will be generated when the data is uploaded to the NDD.

Refer to Appendix VII – Process Flows sections A and B for details about the process flows.

3.2 Input – Ex-Directory Preferences

Ex-Directory Preferences uploads can be provided as complete loads only (full dump of all records belonging to that Undertaking).

A report file will be generated when the data is uploaded to the NDD.

Refer to Appendix VII – Process Flows section C for details about the process flow.

3.3 Output – DISPs

Directory Listing Preferences output data will be provided by PortingXS to DISPs pursuant to the licence as updates or complete/partial loads.

Data received from Undertakings will be alphabetically arranged in a single file and this information will be made available to DISPs with the following options:

[I] Customer Type.
All, Business, Residential.

[II] Listing Type.
All (Listed and Unlisted), Listed

[III] All/Regions All
Regions (as per area codes).

[IV] Download Type
Transactions (i.e. Inserts, Deletes, Changes) Complete/Partial Load -
(Note: A Complete/Partial Load is an instance of the database at a given time as per options I,II and III.)

[V] Frequency
Updates - Nightly
Complete/Partial Loads – Nightly

Where information is required by 'area code' then only listed entries will be provided.

Refer to Appendix VII – Process Flows sections D and E for details about the process flow.

3.4 Output – Direct Marketers

Direct Marketing Preferences output data will be provided by PortingXS to direct marketers pursuant to the licence as complete loads only.

Refer to Appendix VII – Process Flows section F for details about the process flow.

3.5 File names

3.5.1 Input – Update files

The input update file name is as follows:
NDS_TYPE_13OPID_YYYYMMDD_BATCHNO

Where:

NDS denotes NDD Service
TYPE is either 'I' for Input, 'R' for Report
OPID is Operator ID assigned by PortingXS
YYYYMMDD is date of input file.
BATCHNO is batch number. There will only be one file per day, therefore BATCHNO = 001

e.g.
NDS_I_13XXX_20000312_001
NDS_R_13XXX_20000312_001

3.5.2 Input – Complete Load files
The input complete load name is as follows:
NDS_TYPE_OPID_YYYYMMDD_CLD or
NDX_TYPE_OPID_YYYYMMDD_CLD

Where:
NDX denotes NDD Ex-Directory Preference
OPID is Operator ID assigned by PortingXS
CLD denotes a complete load

e.g.
NDS_I_XXX_20000312_CLD
NDS_R_XXX_20000312_CLD
NDX_I_XXX_20060815_CLD
NDX_R_XXX_20060815_CLD

3.5.3 Input – Renaming files
When an input file is processed by the NDD the file will be renamed depending on the process result.
When the contents of the file have been successfully uploaded to the NDD then "NDS_I_…" will be
changed to "NDS_P_…".
If the file is completely rejected, then "NDS_I_…" will change to "NDS_J_…".

3.5.4 Output – Update files
The output update file name is as follows:
NDS_TYPE_13OPID_YYYYMMDD_BATCHNO

Where:
TYPE is O for Output
OPID is Operator ID assigned by PortingXS

e.g.
NDS_O_13001_20000312_001

3.5.5 Output – Complete Load files
The output complete load file name is as follows:
NDS_TYPE_13OPID_YYYYMMDD_CLD or
NDD_E_YYYYMMDD_BATCHNO.TXT

Where:
TYPE is O for Output
OPID is Operator ID assigned by PortingXS
NDD denotes National Directory Database
E denotes Extract
TXT is the file extension

e.g.
NDS_O_13001_20000312_CLD

NDD_E_20040823_001.TXT

3.5.6 Output – Renaming files

When a Directory Listing Preferences output file has been retrieved by the DDU, the file on the DDU directory must be renamed from "NDS_O_..." to "XDS_O_..." by the DDU.

Please note renaming files does not apply to Direct Marketing output files, e.g. "NDD_E_..." files.

3.6 High Level File Specifications

3.6.1 Input – Directory Preferences & Ex-Directory Preferences

The format of the Input file must comply with the following requirements:

- ASCII, flat file format must be used
- Variable length fields. Each field within the record will be delimited by an Exclamation Mark (!)
- Any unused field within a record will be seen as two consecutive delimiters
- No fields within the record need to be padded out.
- All fields within the record must be left Justified.
- Each record will be separated by a carriage return, line feed.
- The last record within each file will hold the number of records sent.
- The first record will be written as *__SOF*!INPUT__
- The last record will be written as *__EOF*!<Number of records in file>__

3.6.2 Output – DISPS

- ASCII, flat file format.
- Variable length fields. Each field within the record will be delimited by an Exclamation Mark (!)
- Any unused field within a record will be seen as two consecutive delimiters
- All fields within the record will be left Justified
- Each record will be separated by a carriage return, line feed.
- The last record within each file will hold the number of records sent.
- For incremental update files, the first record will be written as *__SOF*!UPDATE__
- For complete load files, the first record will be written as *__SOF*!OUTPUT__
- The last record will be written as *__EOF*!<Number of records in file>__

3.6.3 Output – Direct marketers

- ASCII, flat file format.
- The transfer syntax will be variable length records with variable length data fields.
- Each field within the record will be delimited by an Exclamation Mark (!).
- Any unused field within a record will be seen as two consecutive delimiters (!!).
- Fields within the record will not be padded out with extra characters.
- All fields within the record will be left Justified.
- Each record will be separated by a carriage return, line feed.
- The last record within each file will hold the number of records sent.
- The first record will be written as:
  - File name (as per above)
  - Exclamation mark
  - Date created (Date file was created: dd/mm/yyyy)
  - Exclamation mark
  - Time created (Time file was created: hh:mm:ss)
  - Exclamation mark
  - Data contract version number (Data contract version number as applicable at the time the file is created)
    - Example: "NDD_E_20190902_001.TXT!02/09/2019!05:10:21!1.0"
- The last record will be written as *__EOF*!<Number of records in file>__

All header fields will be delimited by a single exclamation mark (!)

3.7 Application of a complete load

When a complete load is received from the Undertaking then all the Undertaking's current data will be deleted from the NDD and the complete load will be uploaded.

3.8 Capitalisation within a file

The following fields should be supplied in the way a subscriber wishes their listing to appear for display or publishing, i.e. the fields must be in the proper case. Directory Listing Preferences should be supplied by the Undertakings exactly as a subscriber wishes them to appear in a printed format.

- Surname or Company/Business Name or Indent Information
- First Name/Rest of Name
- Business Description
- Title
- Qualification
- Address Premises
- House Number
- House Name
- Thoroughfare/Street Name
- Locality/Townland
- City/Town
- Post Code
- County
- Cross Reference Text

The fields Company/Business Name or Indent Information may incorporate capitals throughout the string if appropriate, e.g. ABC Flowers or MBNA International

All other fields except those listed above **must** be in uppercase only.

All core data will be published exactly as provided to the NDD with the exception of applying appropriate publishing criteria. For example, in address fields road may be changed to rd etc.

3.9 Report File NDS

Only applicable to the input scenario.

The report file will contain summary information and details of records rejected by the NDD.
A record can either be:
- Accepted and processed without issues
- Accepted but processed only partially because one or more records are rejected
- Rejected completely because it is invalid

If one or more records are rejected, those rejected records will not be uploaded to the NDD. Per rejected record, the rejection reason will be provided in the report as well. Possible rejection reasons are mentioned in the next sections.

Rejected records should be corrected by the Undertaking and can be provided to the NDD again as part of next day's delivery to the NDD.

3.9.1 Summary information

	Field	Type	Size	Description
01	Valid record	A	1	Valid values are Y - Yes, N-No No implies 1. the file could not be read 2. there are invalid header and/or trailer records

					3. there is an invalid number of records etc. If N, then the whole file will be rejected.
02	No of Inserts Residential	N	10		
0**3**	No of Inserts Business	N	10		
04	No of Inserts Dublin Government	N	10		
05	No of Inserts Provincial Government	N	10		
06	No of Deletes Residential	N	10		
07	No of Deletes Business	N	10		
08	No of Deletes Dublin Government	N	10		
09	No of Deletes Provincial Government	N	10		
10	No of Changes Residential	N	10		
11	No of Changes Business	N	10		
12	No of Changes Dublin Government	N	10		
13	No of Changes Provincial Government	N	10		
14	No of records exceeding published length	N	10		
15	Total No of records in file	N	10		
16	Total No of records read	N	10		
17	Total No of records uploaded	N	10		
18	Total No of records rejected	N	10		

3.9.2 Rejected records

Field	Type	Size	Description
Record Reference	AN	16	
Sequence No	N	10	
Field number	N	2	
Error Class	N	2	

If a record is rejected, then the NDD will not be changed.
If a record within a long list of records is rejected, then the whole list will be rejected.

3.9.3 Field numbers

Field	Type
Reference Number	01
Sequence Number	02
Transaction Type	03
Customer Type	04
Single or multiple entry	05
Indentation Level	06
Surname or Company/ Business Name or Indent Information	07
First Name/Rest of Name	08
Business Description	09
Title	10
Qualification	11
Address Premises	12
House Number	13
House Name	14
Thoroughfare/Street Name	15

Locality/Townland	16
City/Town	17
Post Code	18
County	19
STD	20
Telephone Number	21
Type of Telephone listing	22
Mail Shot	23
PSTN/ISDN/Mobile	24
Telephone Book for Publishing	25
Cross Reference Text	26
Geo Code	27
X. Co-ordinate	28
Y. Co-ordinate	29
CD Rom	30
Internet	31
email	32
URL	33

3.9.4 Error classes

Class	Description
01	Invalid Transaction Type (i.e. for Insert - Reference number exists, for Delete - Reference number does not exist, for Change - Reference number does not exist and in general – The combination of Reference number and Sequence number appears multiple times in the input file)
02	Mandatory field not included
03	Field is incorrect size
04	Field is incorrect type (i.e. Alpha characters for numeric) or invalid characters
05	Field has incorrect value e.g. P for 'Type of Telephone Listing'

3.9.5 Report file format
The report file shall comply with the following requirements

-   ASCII, flat file format must be used
-   Variable length fields. Each field within the record will be delimited by an Exclamation Mark (!)
-   All fields will be populated
-   All fields within the record will be left justified
-   Each rejected record will be separated by a carriage return, line feed
-   The first record will be written as ***SOF*!REPORT**
-   The start of rejected records will be designated as ***REJECT***
-   The last record will be written as ***EOF***

3.10 Report File NDX
Only applicable to the input scenario.

The report file will contain summary information and details of records rejected by the NDD.
A record can either be:
-   Accepted and processed without issues
-   Accepted but processed only partially because one or more records are rejected
-   Rejected completely because it is invalid

If one or more records are rejected, those rejected records will not be uploaded to the NDD. Per rejected record, the rejection reason will be provided in the report as well. Possible rejection reasons are mentioned in the next sections.

Rejected records should be corrected by the Undertaking and can be provided to the NDD again as part of next day's file delivery to the NDD.

3.10.1 Summary information

	Field	Type	Size	Description
01	Valid record	A	1	Valid values are Y - Yes, N-No. No implies 1. the file could not be read 2. there are invalid header and/or trailer records 3. there is an invalid number of records etc. If N then the whole file will be rejected.
02	No of Inserts Residential	N	10	
03	No of Inserts Business	N	10	
04	No of Deletes Residential	N	10	
05	No of Deletes Business	N	10	
06	Total No of records in file	N	10	
07	Total No of records read	N	10	
08	Total No of records uploaded	N	10	
09	Total No of records rejected	N	10	

3.10.2 Rejected records

Field	Type	Size	Description
Record number	N	10	
Record Reference	AN	16	
Sequence No	N	1	
Field number	N	2	
Error Class	N	2	

If a record is rejected, then the record will not be uploaded to the NDD.

3.10.3 Field numbers

Field	Type
Reference Number	01
Sequence Number	02
Transaction Type	03
Customer Type	04
Single or multiple entry	05
Indentation Level	06
Surname or Company/ Business Name or Indent Information	07
First Name/Rest of Name	08
Business Description	09
Title	10
Qualification	11
Address Premises	12
House Number	13
House Name	14
Thoroughfare/Street Name	15
Locality/Townland	16
City/Town	17
Post Code	18
County	19
STD	20
Telephone Number	21
Type of Telephone listing	22
Mail Shot	23
PSTN/ISDN/Mobile	24
Telephone Book for Publishing	25
Cross Reference Text	26
Geo Code	27
X. Co-ordinate	28
Y. Co-ordinate	29
CD Rom	30
Internet	31
email	32
URL	33

3.10.4   Error classes

Class	Description
01	Invalid Transaction Type (i.e. for Insert - Reference number exists, for Delete - Reference number does not exist, for Change - Reference number does not exist and in general – The combination of Reference number and Sequence number appears multiple times in the input file)
02	Mandatory field not included
03	Field is incorrect size
04	Field is incorrect type (i.e. Alpha characters for numeric) or invalid characters
05	Field has incorrect value e.g. P for 'Type of Telephone Listing'
06	Duplicate record received in file

3.10.5 Report file format
The report file shall comply with the following requirements

- ASCII, flat file format must be used
- Variable length fields. Each field within the record will be delimited by an Exclamation Mark (!)
- All fields will be populated
- All fields within the record will be left justified
- Each rejected record will be separated by a carriage return, line feed
- The first record will be written as *SOF*!REPORT
- The start of rejected records will be designated as *REJECT*
- The last record will be written as *EOF*

4 Detailed file specifications

4.1 Input – Directory Listing Preferences

The table below details the fields that define a record in both input and output files for Directory Preferences and Ex-Directory Preferences. Each field within the record shall be separated by an Exclamation Mark "!".

	Field	Type	Size	Description	Mandatory /Optional
01	Reference Number	AN	16	Unique identifier for each unique record (see section 4.1.1 on reference number)	Mandatory
02	Sequence Number	N	10	Unique identifier for each record within a record. For single records, the value will be 1. For multiple records, the value will be from 1 to the number of records within the record. For Ex-Directory Preferences, this field must contain the value **1**	Mandatory
03	Transaction Type	A	1	Describes the type of transaction. Valid values are: I – Insert of entry D – Delete of entry C – Change of entry For Ex-Directory Preferences, this field must contain the character **I**	Mandatory
04	Customer Type	A	1	R – Residential, B – Business	Mandatory
05	Single or multiple entry	A	1	Field to identify if the entry is a single line entry or a multiple line entry. Valid values are: S – Single M – Multiple Line RESIDENTIAL RECORDS MUST BE SINGLE ONLY For Ex-Directory Preferences, this field must contain the character **S**	Mandatory
06	Indentation Level	N	2	Degree of indentation. Up to 10 levels of indentation are allowed under the Main Header. Valid values are: 0 – Main Header 1 – Indent Level 1 2 – Indent Level 2 3 – Indent Level 3 4 – Indent Level 4 5 – Indent Level 5 6 – Indent Level 6 7 – Indent Level 7 8 – Indent Level 8 9 – Indent Level 9 10 – Indent Level 10 For Ex-Directory Preferences, this field must contain the value **0**	Mandatory

	Field	Type	Size	Description	Mandatory /Optional
07	Surname or Company/ Business Name or Indent Information	ANP	70	Surname (Family Name (for Residential records)) or Full Name of Company or Business - For Business records the full Company name or full Business name must be entered in this field - e.g. 'Irish Tourist Board' or 'Murphy John & Sons' - Indent information e.g. Branches, Head Office, Departments. - In Business records if the name contains a title e.g. Dr (Doctor) enter the - Title in this field as the first word following the Surname e.g. Murphy Dr John as well as in the title field - In Residential records title should only be entered in the Title field. For Ex-Directory Preferences, this field must contain the word **blank**	Mandatory
08	First Name/Rest of Name	ANP	35	First Name or Rest of name for Residential records only. This field is not used for Business records. For Ex-Directory Preferences, this field must contain the word **blank**	Optional
09	Business Description	ANP	50	This field contains a description of the Business, abbreviated if possible, Not used in Residential record (see Appendix I for Business Name/Business Description Abbreviations) For Ex-Directory Preferences, this field must contain the word **blank**	Optional
10	Title	ANP	16	Mode of address e.g. Rev, Fr, Dr etc. (see Appendix II for valid Title/Qualification Abbreviations) For Ex-Directory Preferences, this field should be left empty	Optional
11	Qualification	ANP	30	A Persons qualifications e.g. BSc, MSc etc. (see Appendix II for valid Title/ Qualification Abbreviations) Not used in Business Records For Ex-Directory Preferences, this field should be left empty	Optional
12	Address Premises	ANP	25	This field will be used (if needed) where there is an apartment block or other physical location that cannot form part of the street address. It will also be used (if needed) where a building is sub-divided into separate sub- units, e.g., several apartments, flats or offices or to record the precise location of an office in a multi-tenant complex. For Ex-Directory Preferences, this field should be left empty	Optional
13	House Number	ANP	7	This field holds the House number of an entry. A range of numbers can also be entered e.g. 46-50 For Ex-Directory Preferences, this field should be left empty	Optional
14	House Name	ANP	30	This field is to identify the House Name e.g. 'Churchview'	Optional

	Field	Type	Size	Description	Mandatory /Optional
				For Ex-Directory Preferences, this field should be left empty	
15	Thoroughfare/ Street Name	ANP	50	This field identifies the Main Street Name / Thoroughfare. (see Appendix III for Address Abbreviations) For Ex-Directory Preferences, this field must contain the word **blank**	Optional
16	Locality/Townland	ANP	35	Locality (Rathmines, Marino) For Ex-Directory Preferences, this field should be left empty	Optional
17	City/Town	ANP	20	City/Town (Dublin, Limerick, Donegal) For Ex-Directory Preferences, this field should be left empty	Optional
18	Post Code	ANP	8	Post Code For Ex-Directory Preferences, this field should be left empty	Optional
19	County	ANP	15	County For Ex-Directory Preferences, this field should be left empty	Optional
20	STD	N	8		Mandatory for Residential
21	Telephone Number	N	8		Mandatory for Residential
22	Type of Telephone listing	A	1	Telephone numbers can be Listed, or Unlisted. Only Listed numbers can be used for both publishing and enquiry purposes. Unlisted Numbers can be used for enquiry purposes but not publishing purposes. Valid values for Directory Listing Preferences are: L – Listed U – Unlisted For Ex-Directory Preferences, this field must contain the character **X**	Mandatory
23	Direct Marketing Preference	A	1	This field indicates that the subscriber prefers not to be contacted in any way for any Direct Marketing Campaign. This field is to be left empty in case no Direct Marketing restriction applies R – Direct Marketing restricted	Optional
24	PSTN/ISDN/ Mobile	A	1	This field indicates the type of Telephone Number. Valid values are: P – PSTN Line I – ISDN Line M – Mobile	Mandatory for listings which have a Telephone Number
25	Telephone Book for Publishing	AN	2	This field is to Identify which Telephone Directory the 'Listed' entry should be published in. This field is also used to identify if a record should be published in the Dublin Government section (DG) or the Provincial Government section (PG) For Ex-Directory Preferences, this field should be left empty	Mandatory for all 'Listed' entries.

	Field	Type	Size	Description	Mandatory /Optional
26	Cross Reference Text	AN	60	For Listed Preferences Cross reference text-used to refer to another record under a different Name (e.g. A Cross reference may be as follows: 'Virgin Airlines see Virgin Atlantic Airways'). NB only the reference text must be entered in this field i.e. 'Virgin Atlantic Airways'. The name must be entered in the Surname/Business Name and First Name fields as per normal entry. Not used in Residential records For Ex-Directory Preferences, this field should be left empty	Optional
27	Geo Code	*		Geographical Directory Code	
28	X. Co-ordinate	*			
29	Y. Co-ordinate	*			
30	CD Rom	*		This field restricts the record from being printed on the output to the direct marketers	
31	Internet	*		This field restricts the record from being printed on the Internet	
32	email	*		This field contains the customers email address	
33	URL	*		This field contains the customers URL	

*   Please note that at present these fields are not used but provision was made here for possible inclusion in a later release of NDD

**   Character Type: A-Alphabetic, N-Numeric, P-Punctuation

Notes:
   (1) If an Undertaking wishes to supply a record which has a field length which exceeds the specification above, then they must contact PortingXS directly and there may be a charge for this.
   (2) To enter a residential record which consists of more than one Name, the data should be entered/will be output as follows e.g.

Murphy John & Mary,
Surname   -   Murphy
First Name/Rest of Name   -   John & Mary

Or

Murphy John & O'Byrne Mary
Surname   -   Murphy
First Name/Rest of Name   -   John & O'Byrne Mary

   (3) The following is a guide for entering/outputting Business Names

-    Business record is Michael Murphy, Plumber, 120 High street 01 1234567

Enter as follows
Surname/Company or Business Name -   Murphy Michael
First Name/Rest of Name   -   *Blank*
Business Description   -   Plumber

-    Business record is Michael Murphy & Sons Ltd, Painter & Decorators, 11 West rd 01 2345678
Enter as Follows

Surname/Company or Business Name -   Murphy Michael & Sons Ltd.

First Name/Rest of Name	-	*Blank*
Business Description	-	Painter & Decorator

- Business record is ABC Intercontinental Carriers 10 Low St 01 3456789

Enter as follows

Surname/Company or Business Name	-	ABC Intercontinental Carriers
First Name/Rest of Name	-	Blank
Business Description	-	Blank

(4) The following is an example of how to enter a cross reference record. The company name is Virgin Atlantic Airways but the majority of people ask for Virgin Airlines. A cross reference is entered/output on/from the NDD as follows

Surname/Company or Business Name	-	Virgin Airlines
First Name	-	*Blank*
Cross reference Text	-	Virgin Atlantic Airways

(5) Irish Language. A fada can be applied to a character by adding a\after the appropriate character (e.g. Sea\n for Seán)

(6) Long Lists: A long list may consist of many records but only one reference number should be applied for the complete list (i.e. for all records within a long list)

(7) Residential record must have at least one part of the Address fields populated

4.1.1 Reference number

Each record contains a unique reference number which is maximum 32 characters long. This reference number shall be applied by the NDS.

All records are validated for correct format prior to the transactions being uploaded to the NDD. The reference number will be used by the NDS to enact the Delete, Insert and Changes transactions as follows.

4.1.1.1 Insert

The NDS will check there is no current record using the reference number supplied. This will ensure that there is no duplication of entries. If the reference number is found to already exist on the NDS system, then the transaction will be rejected.

Note: Only the reference number will be used for checking the record exists. The name and address fields etc. will not be used to check the existence of a record.

4.1.1.2 Delete

The NDS checks for the reference number and deletes the associated record. The Delete transaction record will be checked for valid fields but will not be checked to ensure that the contents of the record being deleted are the same as the record already on the NDD. i.e. Only the reference number will be used to access the record for deletion. All other data within that record is necessary for audit purposes only.

For long lists, only the header record should be provided. The complete long list will be deleted.

4.1.1.3 Change

The Change transaction will be a combination of the Delete and Insert transactions. The NDS will first check that there is an existing record using the reference number. If a valid record is found, then the complete record will be deleted and a new record inserted.

If there is no existing valid record found, then the transaction will be rejected, and no update will be executed. Note: A long list has one reference number, and the above rules will apply to the complete record.

The first 3 characters of the reference number will identify the Undertaking. The next 13 characters will

be a unique number for each record.

e.g. EIR0000000123456 is a reference number for an eircom record

4.1.2 Consolidation (Grouped records)

It could be that a company or person has numbers assigned by different Undertakings. For presentation purposes it could be desired to group those numbers so they are shown as part of the same company or person. However, since the NDD cannot be absolutely sure which numbers from which Undertakings are to be grouped, this cannot and will not be supported by the NDD.

4.1.3 Indentation level

Indentation allows complex entries to be summarised and logically structured as a long list.
The following is an example of a record for Allied Irish Banks, as it appears in the telephone directory, and the file layout relevant to this record.

Record name		Indent level
ALLIED IRISH BANKS PLC		0
Group Headquarters		1
Bankcentre Ballsbridge 4	-6600311'I'	1
Chairman		2
Group Chief Executive		2
Secretary	-6600311	2
Branches		1
AIB Private Banking		2
Bankcentre 4	-6415111	3
Also	-6604733	4
Annesesley Bridge		2
87 Nth Strand 3	-8554500	3
Arran Quay		2
24 Arran qy Smithfield 7	-8725266	3
Also	-8725818	4
Artane		2
62 St Brigids rd 5	-8315530	3
Also	-8318466	4
Also	-8318681	4
Bray		2
107 Main st :Banklink	-2867771	3
Also	-2862477	4
20 Vevay rd : Banklink	-2867771	3

FILE LAYOUT
Reference Number!1!I!B!M!0!ALLIED IRISH BANKS PLC!!!!!!!!!!!!!!!!L!!!!!!!!!!!!!
Reference Number!2!I!B!M!1!Group Headquarters!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!3!I!B!M!1!Bankcentre Ballsbridge 4!!!!!!!!!!!!!!01!6600311!L!!I!!!!!!!!!!!!
Reference Number!4!I!B!M!2!Chairman!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!5!I!B!M!2!Group Chief Executive!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!6!I!B!M!2!Secretary!!!!!!!!!!!!!!01!6600311!L!!!!!!!!!!!!
Reference Number!7!I!B!M!1!Branches!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!8!I!B!M!2!AIB Private Banking!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!9!I!B!M!3!Bankcentre 4!!!!!!!!!!!!!!01!6415111!L!!!!!!!!!!!!
Reference Number!10!I!B!M!4!Also!!!!!!!!!!!!!!01!6604733!L!!!!!!!!!!!!
Reference Number!11!I!B!M!3!87 Nth Strand 3!!!!!!!!!!!!!!01!8554500!L!!!!!!!!!!!!
Reference Number!12!I!B!M!2!Annesley Bridge!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!13!I!B!M!2!Arran Quay!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!14!I!B!M!3!24 Arran qy Smithfield 7!!!!!!!!!!!!!!01!8725266!L!!!!!!!!!!!!
Reference Number!15!I!B!M!2!Artane!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!16!I!B!M!3!62 St Brigids rd 5!!Banklink!!!!!!!!!!!!01!8315530!L!!!!!!!!!!!!
Reference Number!17!I!B!M!4!Also!!!!!!!!!!!!!!01!8318466!L!!!!!!!!!!!!

Reference Number!18!I!B!M!4!Also!!!!!!!!!!!!!!01!8318681!L!!!!!!!!!!!!!
Reference Number!19!I!B!M!2!Bray!!!!!!!!!!!!!!!!L!!!!!!!!!!!!
Reference Number!20!I!B!M!3!107 Main st!!Banklink!!!!!!!!!!!!01!2867771!L!!!!!!!!!!!!!
Reference Number!21!I!B!M!4!Also!!!!!!!!!!!!!!01!2862477!L!!!!!!!!!!!!
Reference Number!22!I!B!M!3!20 Vevay rd!!Banklink!!!!!!!!!!!01!2867771!L!!!!!!!!!!!!

The main header (Level 0) will appear in the Surname/Company or Business Name field. Indent Information (Levels 1-10) will appear in the Indent Information field.

The Indent information may be entered as follows
- Name or description of Sub Header (With or without address information supplied in the address fields)
- Name or description of Sub Header **and** address information (**N.B.** No address information is to be supplied in the address fields)
- Address information only (**N.B.** No address information is to be supplied in the address fields)

4.1.4 Allowed data characters

The following characters are the **only** valid data characters within a Record:

Character	Printer Graphic	Position in field
Space	Space	Anywhere except first or last character in a populated field
Full stop	.	Anywhere except first character in a populated field
Ampersand	&	Anywhere except first character in a populated field. Ampersand can be used instead of the word 'and' e.g. John & Mary etc.
Back slash	\	Irish Language (Fada); Anywhere in Alpha or Alpha/Numeric fields
Forward slash	/	Anywhere except first character in a populated field
Left Parenthesis	(	Anywhere except first character in a populated field
Right Parenthesis	)	Anywhere except first character in a populated field
Minus	-	Anywhere except first character in a populated field
Apostrophe	'	Anywhere except first character in a populated field
Comma	,	Anywhere except first character in a populated field
A to Z	A to Z	Anywhere in Alpha or Alpha/Numeric fields
a to z	a to z	Anywhere in Alpha or Alpha/Numeric fields
0 to 9	0 to 9	Anywhere in Numeric or Alpha/Numeric fields
Colon	:	Anywhere except first character in a populated field
At symbol	@	Anywhere except first character in a populated field
Plus	+	Anywhere except first character in a populated field
Quotation Mark	"	Anywhere except first character in a populated field
Question Mark	?	Anywhere except first character in a populated field
Percentage Sign	%	Anywhere except first character in a populated field

TABLE II: Allowed Data Characters.

4.1.5 Sample records

Sample Business Record:
Reference Number!Sequence Number!Transaction Type!Customer Type!Single or Multiple!Indentation Level! Surname/Company or Business Name!!Business Description!Title!!Address Premises!House Number!House Name!Thoroughfare/Street Name!Locality/Townland!City/Town!Post Code!County!STD!Telephone Number!Type of Listing!Mail Shot!ISDN!Telephone Book!Cross Reference Text!Geo Code!X!Y!CD- Rom!Internet!email!URL!

Sample Residential Record
Reference Number!Sequence Number!Transaction Type!Customer Type!Single or Multiple!Indentation Level!Surname!First Name!!Title!Qualification!Address Premises!House

Number!House Name!Thoroughfare/Street Name!Locality!City/Town!Post Code!County!STD!Telephone Number!Type of Listing!Mail Shot!ISDN!Telephone Book!!Geo Code!X!Y!CD-Rom! Internet!email!URL!

4.1.6 Transactions

There are 3 different types of transactions that can be uploaded to the NDD i.e. Insert, Delete and Change.

4.1.6.1   Insert new entry

Field	Type	Size	Description
Transaction Type	A	1	Used to determine the type of transaction. Valid field for Insert is I

4.1.6.2   Delete entry

Field	Type	Size	Description
Transaction Type	A	1	Used to determine the type of transaction. Valid field for Delete is D

4.1.6.3   Change entry

Field	Type	Size	Description
Transaction Type	A	1	Used to determine the type of transaction. Valid field for Change is C

The change operation will consist of 'delete old listing' and 'insert new listing'. Note: The reference number for the old record and the new record must be the same.

(Note: a complete new load of the **FULL** record must be supplied i.e. the FULL EXISTING record will be deleted and a **COMPLETE NEW** record must be supplied).

For long lists the complete new list must be provided.

4.2 Output – DISPs

Refer to section 4.1 Input – Directory Listing Preferences for the file specifications.

4.3 Output – Direct marketers

The following are the fields that define a direct marketing record. Each field within the record shall be separated by an Exclamation Mark "!".

	Field	Type	Size	Description	Mandatory /Optional
01	STD Code	N	8	This field will contain the STD code for this record	**Mandatory**
02	Telephone Number	N	8	This field will contain the telephone number for this record	**Mandatory**
03	Customer Type	A	1	This field will contain the character **R** for Residential or **B** for Business	**Mandatory**
04	Marketing Preference	A	1	Direct Marketing Restricted Flag. The field value should be interpreted as follows:- A value of R indicates that the fixed line subscriber has expressed the	**Optional**

					preference **NOT TO BE CONTACTED** for direct marketing purposes. An empty or null field value for mobile records indicates that the mobile subscriber has expressed the preference that he or she **IS CONTACTABLE** for direct marketing purposes.	

* Character Types A-Alphabetic, N-Numeric, P-Punctuation

Notes:

1. Regardless of how many records exist for the same telephone number this extract file will contain a maximum of 2 records for the same telephone number. One business and/or one residential
2. This extract shall contain the following records: -
    a. Listed & Unlisted numbers for customers who DO NOT WISH to be marketed to.
    b. Ex-Directory numbers for customers who DO NOT WISH to be marketed to
    c. Mobile numbers for customers who DO WISH to be marketed to.
3. There will be no indication in the file if a number is ex-directory, listed or unlisted.

4.3.1 Allowed data characters

Character	Printer Graphic	Position in Field
A to Z	A to Z	Anywhere in Alpha or Alpha/Numeric fields
0 to 9	0 to 9	Anywhere in Numeric or Alpha/Numeric fields
Null	Null value	**In any optional field**

4.3.2 Sample files
The following is a sample of the Direct Marketing Extract File with a single residential record, a business record with 2 telephone numbers and a single mobile record.

NDD_E_20040823_001.TXT!23/08/2004!10:30:00!1.0
01!12345678!R!R
01!12345678!B!R
086!8293332!R!
EOF!3

5 Transfer of Data

5.1 Method

Any input/output file will be uploaded/downloaded to/from the PortingXS SFTP-server by using SFTP PUT or SFTP GET.

The PortingXS SFTP-server can be reached at sftp.portingxs.com and credentials will be provided in order to be able to connect to the NDD.

5.2 Input

This section describes the input process flow in general, please refer to Appendix VII – Process Flows sections A, B and C for a depiction of the different input process flows.

The PortingXS SFTP-server will contain a secure directory structure for each operator and supports a 'push/pull' method of delivering/acknowledging Undertaking's data transmissions.

Each Undertaking will connect to the SFTP and put files on there destined for the NDD. To ensure the integrity of the transfer process the file should be transferred with the first letter of the file name changed to "T". This will indicate on the receiving system that the file is being transferred. On completion of the transfer and verification that the file is correct (e.g. verifying the file size) the first letter should be changed to "N".

e.g. during file transfer: "NDS_I_13001_20000115_01" will be sent as "TDS_I_13001_20000115_01".

On successful completion of the file transfer the Undertaking will rename the file to "NDS_I_13001_20000115_01" on the SFTP-server.

PortingXS will pull the files, whose prefix indicates successful transfer and will apply the input data to the NDD.

A transaction file will be generated and placed into the Undertaking's directory. The Undertaking should pull the transaction file from the SFTP-server and evaluate its contents.

The step by step input process is provided below:
- Input data from a Undertaking to the NDD will be generated by the Undertaking.
- Files are transmitted (pushed) by the Undertaking to a directory (which is assigned to each Undertaking) on the PortingXS SFTP-server. The method of file transfer is sftp.
- After transmission the Undertaking will check the directory to determine if the batch file was received correctly by verifying the number of bytes in the stored file.
- When the U has verified basic integrity, it will rename the file.
- The files will be transferred to the NDD.
- The Undertaking's information will be uploaded to the NDD and a transaction report created.
- The transaction report will be placed in the U directory.
- The Undertaking will retrieve (pull) the transaction file.

5.3 Output

This section describes the output process flow in general, please refer to Appendix VII – Process Flows sections D, E and F for a depiction of the different input process flows.

The PortingXS SFTP-server will contain a secure directory structure for each Undertaking and supports a 'pull' method of acknowledging DDU data transmissions.

Each DDU will connect to the SFTP and access to their own base directory where they can retrieve the output files.

When the DDU has retrieved the output file, they should change the name of the file by replacing the first 'N' with 'X'.

e.g. "NDS_O_13001_20000312_001" is changed to "XDS_O_13001_20000312_001".

The step-by-step output process for Directory Preferences is provided below:
- NDD output file is generated by the NDD
- The output file is put into the DDUs directory on the SFTP-server.
- The DDU will log into the SFTP-server and retrieve the file.
- The DDU will change the name of the file on the SFTP-server to indicate that they have received the file.

The step by step output process for Direct Marketing Preferences is provided below:
- NDD output s file generated by the NDD
- The output file is put into the DDUs directory on the SFTP-server.
- The DDU will log into the SFTP-server and retrieve the file.

5.4 Undertaking and DDU responsibilities as regards interfacing with the NDD service

Undertakings and DDUs are responsible for the development of their own order handling applications, Graphical User Interfaces (GUI), databases and any other system components that are required to support this interface specification.

5.5 Transfer Security

Undertakings and DDUs ("Connecting Parties") can only connect to the PortingXS SFTP-server by trusting PortingXS's ed25519 public host key. This host key will be provided to Connecting Parties before connecting to the NDD.

Please note that some SFTP applications do not allow for accepting/trusting public host keys upfront and only allow accepting/trusting public host keys manually on first connection. This could mean that the first time a connection attempt is made, a warning is displayed regarding the PortingXS SFTP-server host key. If the host key is then accepted/trusted, the warning should not return for any subsequent connection attempt.

5.6 Sftp set-up and operations

5.6.1 SFTP set-up and initial testing

End to end testing of the SFTP and file transmissions are required before the connection can be used for live customer data.

5.6.2 Set-up Information

The Undertaking or DDU must contact PortingXS at ndd@portingxs.nl for initial set-up.
The Undertaking will be allocated a unique operator identification number at this time which will be used as the name in all transmitted files.

5.6.3 Host Access

Access to the SFTP will be restricted by a username/password combination. Each Undertaking/DDU will only have access to their own directory.

5.6.4 Directory and file naming

Each Undertaking/DDU will have a base directory on the SFTP-server. The directory structure will appear as '\' (only the root folder).

5.6.5 Time schedule

The following sequencing shall take place during normal operation.
00:00 – 03:00 Undertaking puts directory data file into own directory (and optionally obtains report file from previous day)
03:00 – 06:00 The directory data file is uploaded to NDD and a report file generated. The report file is put into Undertaking directory

06:00 – 12:00   DDU retrieves output file

5.6.6 Frequency of transmissions
The transfer of directory data files to/from PortingXS will be on a once daily basis during normal operations. Likewise one transaction report file will be created for every directory data file.
The concerning process flows and files are depicted in Appendix VII – Process Flows.

5.6.7 File maintenance
Any files older than 30 days will be automatically removed by PortingXS, so the Undertaking/DDU needs to make sure any required files are downloaded before getting removed.

5.6.8 SFTP maintenance
The regular maintenance window is weekly on Thursdays from 18:00 – 21:00 hrs.
Any planned outages will be communicated to the Connecting Parties via email with a notice period of at least 5 working days .

5.6.9 Failure
If the PortingXS SFTP experiences a failure or the Undertaking experiences a failure while sending a daily file, then the Undertaking should send all delayed records during next regular transmission.
Likewise if the DDU failed to retrieve a daily file, the DDU should retrieve the daily file during the next period of normal operation.
If the PortingXS SFTP experiences a major outage, all Connecting Parties will be informed about this via e-mail.

6 Services using NDD data

Service	Title	Description	Examples	Data Class B R G			Data Access L U X			Data Modification
AW	White Pages Printed Phonebooks	Compiling, publishing and distributing, printed telephone directories, based wholly or partly on the system provided by PortingXS accessed by the DISP under licence, which a. are ordered alphabetically by name b. contain at least the name, address and telephone number (including at the DISPs option the std code) of subscriber c. contain no records classified on the system provided by PortingXS accessed by the DISP under licence as Unlisted or Ex Directory or any other Directory Listing Preference preventing such use	Local area directories.	Y	Y	Y	Y	N	N	No
AY	Yellow Pages Printed Phonebooks	Compiling, publishing and distributing, printed telephone directories, based wholly or partly on the system provided by PortingXS accessed by the DISP under licence, which a. are ordered alphabetically by name within a business category b. contain at least the name, address and telephone number (including at the DISP's option the std code) of customers c. contain no records classified on the system provided by PortingXS accessed by the DISP under licence as Unlisted or Ex Directory or any other Directory Listing Preference preventing such use	Golden Pages Independent Directories	Y	N	Y	Y	N	N	Limited. May categorise record into business classification. May apply different telephone number. May amend address. (- Subject to consent from subscriber to DISP)
BW	White Pages Voice Directory Enquiries	Providing operator assisted telephone directory enquiry services based wholly or partly on the system provided by PortingXS accessed by the DISP under licence using voice services whether automated or not supplying only telephone numbers (including at the Licensee's option the area codes and/or exchange names) provided that no enquiry shall be undertaken unless the enquirer first supplies the name and approximate address of the party sought.		Y	Y	Y	Y	Y	N	No

Service	Title	Description	Examples	Data Class			Data Access			Data Modification
				B	R	G	L	U	X	
BY	Yellow Pages Voice Directory Enquiries	Providing operator assisted telephone directory enquiry services based wholly or partly on the system provided by PortingXS accessed by the DISP under licence using voice services whether automated or not supplying only telephone numbers (including at the Licensee's option the std codes) provided that no enquiry shall be undertaken unless the enquirer first supplies approximate business category.		Y	N	Y	Y	Y	N	Limited. May categorise record into business classification. May apply different telephone number. May amend address. (-Subject to consent from subscriber to DISP)
CW	White Pages - electronic format	Compiling, publishing and distributing to the public, telephone directories in electronic format in machine readable media, based wholly or partly on the system provided by PortingXS accessed by the DISP under licence provided that no such telephone directories in electronic format shall be compiled, published or distributed unless the DISP has configured the directory product so that: 1. no search is possible unless the enquirer first supplies the name and approximate address of the party sought 2. the results of a search are only displayed ordered alphabetically by name 3. the number of matching records resulting from a single search is no greater than two hundred (200) 4. the telephone directories in electronic form are encrypted using a method approved of in writing by PortingXS 5. it contains no Entries classified on system provided by PortingXS accessed by the DISP under licence as Unlisted or Ex Directory or any other Directory Listing Preference preventing such use; and provided that: 6. the Licensee shall only distribute such product in the form of disc sale or hire and shall not undertake or permit any on-line distribution or downloading,		Y	Y	Y	Y	N	N	No

Service	Title	Description	Examples	Data Class B R G			Data Access L U X			Data Modification
CY	Yellow Pages - electronic format	Compiling, publishing and distributing to the public, telephone directories in electronic format in machine readable media, based wholly or partly on the system provided by PortingXS accessed by the DISP under licence provided that no such telephone directories in electronic format shall be compiled, published or distributed unless the DISP has configured the directory product so that: 1. no search is possible unless the enquirer first supplies 2. the approximate business category 3. the results of a search are only displayed ordered alphabetically by name 4. the number of matching records resulting from a single search is no greater than two hundred (200) 5. the telephone directories in electronic form are encrypted using a method approved of in writing by PortingXS 6. it contains no records classified on the Licensed Database as Unlisted or Ex Directory or any other Directory Listing Preferences preventing such use; and provided that: 7. the DISP shall only distribute such product in the form of disc sale or hire and shall not undertake or permit any on-line distribution or downloading,		Y	N Y	Y N N			Limited. May categorise record into business classification. May apply different telephone number. May amend address. (- Subject to consent from subscriber to DISP)
DW	White Pages - on-line	Providing directory enquiry services based wholly or partly on the system provided by PortingXS accessed by the DISP under licence by online electronic access provided that the DISP shall configure the on line service so that: 1. no search is possible unless the enquirer first supplies the name and approximate address of the party sought 2. the results of a search are only displayed ordered alphabetically by name, and 3. the number of matching records resulting	Internet Electronic White Pages	Y	Y Y	Y N N			No

Service	Title	Description	Examples	Data Class B R G	Data Access L U X	Data Modification
DY	Yellow Pages - online	Providing directory enquiry services based wholly or partly on the system provided by PortingXS accessed by the DISP under licence by online electronic access provided that the DISP shall configure the on line service so that: 1. no search is possible unless the enquirer first supplies the name and approximate address of the party sought 2. the results of a search are only displayed ordered alphabetically by name, and 3. the number of matching records resulting from a single search is no greater than two hundred (200) 4. it contains no record classified on the Licensed Database as Unlisted, Ex-directory or any other Directory Listing Preference preventing such use	Internet	Y N Y	Y N N	Limited. May categorise record into business classification. May apply different telephone number. May amend address. (-Subject to consent from subscriber to DISP)

B = Business, R= Residential, G=Government, L=Listed, U=Unlisted, X=Ex-directory.

7 Test Directives

Any Undertaking connecting to the NDD will need to perform the below tests before live data will be accepted by PXS for entry on the NDD.

7.1 Valid types

	Transaction Type	Single / Multiple	Cust Type	Comment
1	Insert	S	R	The record does not exist on the NDS and therefore will be inserted
2	Insert	S	B	The record does not exist on the NDS and therefore will be inserted
3	Insert	M(HI)	B	The record does not exist on the NDS and therefore will be inserted. (There must be a header and at least 1 indent)
4	Delete	S	R	The record exists on the NDS and is deleted
5	Delete	S	B	The record exists on the NDS and is deleted
6	Delete	M(H)	B	The record exists on the NDS and the full multiple list is deleted
7	Change	S	R	The record exists on the NDS. It is deleted and the changed record is inserted
8	Change	S	B	The record exists on the NDS. It is deleted and the changed record is inserted
9	Change	M(HI)	B	The record exists on the NDS. Full list is deleted and the complete changed record is inserted

(Note: H - Header, I- Indent)

7.2 Invalid types

Rejections will be generated for the following types.

	Transaction type	Single / Multiple	**Cust Type**	**Comment**
1	Insert	S	R	The record already exists on the NDS
2	Insert	S	B	The record already exists on the NDS
3	Insert	M(HI)	R	Multiple must be business record
4	Insert	M(HI)	B	The record already exists on the NDS
5	Insert	M(I)[NOTE1]	B	The Indent is sent without a header
6	Delete	S	R	The record does not exist on the NDS
7	Delete	S	B	The record does not exist on the NDS
8	Delete	M(HI)	R	Multiple must be a business record
9	Delete	M(H)	B	The record does not exist on the NDS
10	Delete	M(I)	B	Cannot delete an indent.
11	Change	S	R	The record does not exist on the NDS
12	Change	S	B	The record does not exist on the NDS
13	Change	M(HI)	R	Multiple must be a business record
14	Change	M(HI)	B	The record does not exist on the NDS.
15	Change	M(I)	B	Cannot delete an indent.

Note 1: Multiple lists must contain a header and at least one indent. They shall also be provided in sequence without interruption (i.e. a record from another record must not be inserted within a long list).

7.3 Test using Standard files.

There shall be three test files used during test (TDS_I_13xxx_20000101_001, TDS_I_13xxx_20000102_001 and TDS_I_13xxx_20000103_001). (Where xxx is the Undertaking operator ID)

The file TDS_I_13xxx_20000101_001 (Appendix IV) shall contain inserts only and shall be used to setup records on the database for the U.

The file TDS_I_13xxx_20000102_001(Appendix V) will contain main valid transaction types and will be used to test normal operation.

Finally, TDS_I_13xxx_20000103_001 (Appendix VI) will be used to test main invalid transaction types. Report files (Appendix IV, V and VI) will be generated for all the above.

7.4 Test Plan

7.4.1 Step 1 - Set-up and 1st file

7.4.1.1 Invalid file size sent to the SFTP

Resp	Event	Expected Result	Actual Result
U	File TDS_I_13999_20000101_001 transmitted to Undertaking's NDS directory	File is on SFTP	
U	Check size of transferred file	Mismatch in file sizes	
U	Transfer failed. Bad file deleted from SFTP by Undertaking	File deleted from SFTP	

7.4.1.2 Valid file sent to SFTP

Resp	Event	Expected Result	Actual Result
U	File TDS_I_13999_20000101_001 re-transmitted to Undertaking's NDS directory.	File TDS_I_13999_20000101_001 is on SFTP	
U	Size of transfer file verified (byte size compared)	File size is correct	
U	First letter of file name changed from 'T' to 'N'	File name changed from TDS_I_13999_20000101_001 to NDS_I_13999_20000101_001	

7.4.2 Step 2 - Apply 1st file to NDD

Resp	Event	Expected Result	Actual Result
NDD	File NDS_I_13xxx_20000101_001 is uploaded to the NDD	File uploaded to NDD	
NDD	All records uploaded and report file (NDS_R_13xxx_20000101_001) generated.	Report file NDS_R_13xxx_20000101_001 is generated	
NDD	Put report file into U's NDS directory and delete NDS_I_13xxx_20000101_001 file	Report file is put onto U's Directory	
NDD	NDS_I_13xxx_20000101_001 is renamed to NDS_P_13xxx_20000101_001 on	File is renamed to NDS_P_13xxx_20000101_001	

	U's directory		
U	Report file retrieved by Undertaking from SFTP	Undertaking retrieves report file from SFTP	
U	Check report File (Undertaking)	Undertaking checks report file	
U	Delete report file (Undertaking)	Undertaking deletes report file from SFTP	

7.4.3 Step 3 - Apply 2nd file to NDD

Resp	Event	Expected Result	Actual Result
U	File TDS_I_13999_20000102_001 transmitted to U's NDS directory.	File is on SFTP	
U	Check size of transferred file	File size is correct	
U	rename file TDS_I_13xxx_20000102_001 to NDS_I_13xxx_20000102_001	File is renamed from TDS_I_13xxx_20000102_001 to NDS_I_1xxx_20000102_001	
NDD	File NDS_I_13xxx_20000102_001 is uploaded to NDD	File uploaded to NDD	
NDD	Report file NDS_R_13xxx_20000102_001 is generated	File NDS_R_13xxx_20000102_001 is generated	
NDD	Report file NDS_R_13xxx_20000102_001 is put onto U's directory on SFTP	File NDS_R_13xxx_20000102_001 is put onto SFTP	
NDD	File NDS_I_13xxx_20000102_001 is renamed to NDS_P_13xxx_20000102_001	File is renamed to NDS_P_13xxx_20000102_001	
U	Report file retrieved by Undertaking	Undertaking retrieves report file	
U	Undertaking checks report file	Report file is checked	
U	Undertaking deletes report file from SFTP	Report file is deleted from SFTP	

7.4.4 Step 4 - Apply 3rd file to NDD

Resp	Event	Expected Result	Actual Result
U	File TDS_I_13xxx_20000103_001 transmitted to U's NDS directory.	File is on SFTP	
U	Check size of transferred file	File size is correct	
U	rename file TDS_I_13xxx_20000103_001 to NDS_I_13xxx_20000103_001	File is renamed from TDS_I_13xxx_20000103_001 to NDS_I_1xxx_20000103_001	
NDD	File NDS_I_13xxx_20000103_001 is uploaded to NDD	File uploaded to NDD	
NDD	Report file NDS_R_13xxx_20000103_001 is generated	File NDS_R_13xxx_20000103_001 is generated	
NDD	Report file NDS_R_13xxx_20000103_001 is put onto Undertaking's directory on SFTP	File NDS_R_13xxx_20000103_001 is put onto SFTP	

NDD	File NDS_I_13xxx_20000103_001 is renamed to NDS_P_13xxx_20000103_001	File is renamed to NDS_P_13xxx_20000103_001	
U	Report file retrieved by U	Undertaking retrieves report file	
U	Undertaking checks report file	Report file is checked	
U	Undertaking deletes report file from SFTP	Report file is deleted from SFTP	

Note: For the purpose of tests, the 'time schedule' for depositing and retrieving files will be ignored.

7.4.5 Step 5 - delete all test records

Resp	Event	Expected Result	Actual Result
NDD	Check number of test records on NDD for Undertaking.	Number of records for Undertaking is calculated	
NDD	Delete all test records for Undertaking	All records for Undertaking have been deleted	

7.4.6 Pilot test

Steps 1, 2, 3 and 5 are repeated using files generated solely by Undertaking.

The Undertaking should compile the test files. The first should contain inserts only and the second should contain sample transactions. It is recommended that the Undertaking uses this pilot test to validate all transaction types that they are likely to generate.

Appendix I – Business Name/Business Description Abbreviations

A
Accommodation [Accom]
Accountant [Acctnt]
Addressing [Addgg]
Administrator [Adm]
Advertising [Advts]
Aeronautical [Aero]
Agency [Agcy]
Agent [Agt]
Agricultural [Agricl]
Agriculture [Agric]
Aluminium [Almnm]
Analytical [Anal]
And [&]
Antiques [Antiq]
Apartment [Apt]
Appliances [Appl]
Appointments [Appts]
Architect [Archt]
Artificial [Artif]
Artificial Insemination [AI]
Assessor [Assr]
Assistance [Asstce]
Assistant [Asst]
Association [Assn]
Assurance [Assce]
Auction [Auct]
Auctioneer [Auctnr]
Automatic [Autmtc]
Automobile [Auto]
Automobile Engineer [Auto Engr]

B
Baker [Bkr]
Bakery [Bkry]
Banker [Bnkr]
Banking [Bnkg]
Baronet [Bart]
Barrister-at-Law [Barrstr]
Bed & Breakfast [B&B]
Blacksmith [Bksmth]
Boarding [Boards]
Boatbuilder [Btbldr]
Bookbinder [Bkbinder]
Booking [Bookg]
Bookseller [Bkseller]
Box Maker [Boxmkr]
Branch [Bch]
Brigadier [Brig]
Broker [Brkr]
Brothers [Bros]
Builder [Bldr]

Building [Bldg]
Bureau [Bur]

C
Cabinetmaker [Cabtmakr]
Cafeteria [Cafe]
Calculating [Calc]
Calculator [Calcr]
Captain [Capt]
Cardboard [Cardbd]
Carpenter [Cpntr]
Carrier [Carr]
Central [Centl]
Chartered [Chtrd]
Chartered Accountant [Chtrd Acctnt]
Chemical [Chem]
Chemist [Chmst]
Chimney Sweep [Chim Swp]
Chiropodist [Chrpdst]
Chocolate [Choc]
Cigarettes [Cigs]
Cinematorgroph [Cinemat]
Cleaner [Clnr]
Clothier [Clothr]
Clothing [Cloths]
College [Coll]
Commercial [Comml]
Commission [Commn]
Committee [Ctee]
Company [Co]
Component[Compnt]
Conditioning [Cond]
Confectioner [Confec]
Confectionery [Confctnry]
Construction [Constn]
Constructional [Constnl]
Constructor [Constr]
Consultant [Conslt]
Consulting [Consltg]
Continental [Contl]
Contractor [Contr]
Controller [Cntrlr]
Cooperative [Coop]
Co-operative [Co-op]
Collector [Collr]
Corporation [Corpn]
Correspondent [Corr]

D
Dealer [Dlr]
Decorating [Decoratg]
Decorator [Decor]

Dental [Dent]
Department [Dept]
Designer [Desnr]
Detective [Detec]
Developer [Devlpr]
Development [Devlopmt]
Director [Dir]
Dispensary [Dispnsy]
Dispensing [Dispns]
Distiller [Dstlr]
Distribution [Distn]
Distributor [Distr]
District [Dist]
Division [Div]
Divisional [Divnl]
Domestic [Dom]
Draper [Drpr]
Drapery [Drpry]
Draughtsman [Drghtsmn]
Dressmaker [Dressmkr]
Dressmaking [Dressmkg]
Duplicating [Dupl]

E
Electric [Elec]
Electricial [Electl]
Electrician [Electn]
Employers [Emplyrs]
Employment [Emplymt]
Engineer [Engr]
Engineering [Engrs]
Engraver [Engrv]
Enquiry [Enq]
Entertainment [Entrtnmt]
Equipment [Eqpt]
Establishment [Estab]
Etcetera [etc]
Excavation [Excavatn]
Exchange [Exch]
Export [Expt]
Exporter [Exptr]
Extension [Extn]

F
Fabricator [Fabctr]
Factor [Fctr]
Factory [Fcty]
Farmer [Frmr]
Farmhouse [Frmhse]
Fashion [Fash]
Federation [Fed]
Financier(s) [Financr(s)]
Finisher [Fnshr]
Fishmonger [Fishmgr]

Fittings [Ftngs]
Floor Coverings [Flr Cvrngs]
 Florest [Flor]
Footwear [Footwr]
Foreign [Fgn]
Forwarding [Fwdg]
Friday [Fri]
Funeral [Funrl]
Funeral Directory [Funrl Dir]
Furnisher [Furn]
Furnishing [Furn]
Furniture [Furn]
Furrier [Furr]

G
Garage [Gar]
Garden [Gdn]
Gardener [Gndr]
General [Genl]
Gentlemen [Gents]
Gentlemen's [Gents]
Glazier [Glaz]
Government [Govt]
Great [Gt]
Greengrocer [Grngrcr]
Greyhound [Greyhnd]
Grocer [Grcr]
Group [Gp]
Grower [Grwr]
Gynaecologist [Gynalcol]

H
Haulier [Halr]
Haberdasher [Hbdshr]
Hairdresser [Hrdrsr]
Hairdressing [Hrdrsg]
Hardware [Hdwre]
Haulage [Hlge]
Headquarters [Hq]
Heating [Htg]
Horticulture [Hortl]
Hospital [Hosp]
Housefurnishers [Hsefurns]
Household [Hsehld]
Housing [Hsng]
Hydraulic [Hydr]

I
Implements [implmts]
Import [Impt]
Importer [Imptr]
Importing [Imptg]
Incorporated [Inc]
Independent [Indept]
Industrial [Indstl]
Information [Informn]
Inspector [Inspr]
Installation [Instln]

Institure [Inst]
Instrument [Instmt]
Insurance [Insce]
Interior [Int]
International [Internatl]
Investment [Invest]
Iromnonger [Ironmgr]
Ironmongery [Ironmgry]
Ironwork [Ironwk]

J
Jeweller [Jewlr]
Joiner [Joinr]
Journalist [Journ]

K
Kitchen [Kitch]
Knitwear [Knitwr]

L
Laboratory [Lab]
Launderer [Laundr]
Lawyer [Lwyr]
Leader [Ldr]
Leather [Lthr]
Letterpress [Ltrpress]
Library [Lib]
Licensed [Licd]
Lieutenant [Lt]
Limited [Ltd]
Linoleum [Lino]
Lithographer [Lthgphr]
Lithographic [Lthgphc]
Lithography [Lthgphy]
Livestock [Livestk]
Locomotive [Loco]

M
Machinery [Mach]
Machines [Machs]
Madamoiselle [Mlle]
Maintenance [Maintce]
Maker [Mkr]
Mail Order [Mail Ord]
Management [Mgmt]
Manager [Mgr]
Manufacturer [Mfr]
Manufacturing [Mfg]
Market [Mkt]
Marketing [Mktgl]
Materials [Matls]
Mechanic [Mech]
Mechanical [Mechl]
Medical [Med]
Medical Officer [MO]
Medical Practitioner [Med Pract]

Medicine [Med]
Mercantile [Merc]
Merchandise [Mchndise]
Merchant [Mchnt]
Middle [Mid]
Mineral [Minrl]
Modern [Mod]
Monday [Mon]
Month [Mth]
Monthly [Mthly]
Monumental [Monmtl]
Mortgage [Mortg]
Municipal [Mun]
Music [Mus]
Musician [Musn]
Mutual [Mutl]

N
National [Nat]
National School [NS]
Newsagent [Newagt]
Northern [Nthn]
Nurse [Nrse]
Nurseries [Nsries]
Nursery [Nsry]
Nurserymen [Nsrymen]
Nursing [Nrsg]

O
Off Licence [Off Lic]
Operator [Opr]
Ophthalmic [Ophth]
Optical [Optcl]
Optician [Optcn]
Ornamental [Ornamtl]
Outfitter [Outftr]
Outward [Out]

P
Panal Beater [Panl Btr]
Panel Beater [Panel Btr]
Panel Beating [Panel Btg]
Passenger [Passgr]
Pawnbroker [Pwnbrbkr]
Pharmaceutical [Pharml]
Pharmacist [Pharm]
Pharmacy [Pharmy]
Photographer [Photogr]
Photography [Photog]
Physician [Physn]
Physiotherapist [Physthpst]
Plumbing [Plumbg]
Post Office [PO]
Poulterer [Poulter]
Practitioner [Pract]
Preparation [Prepn]
Preparatory [Prep]

Presbytery [Presby]
Printer [Prntr]
Private [Priv]
Produce [Prod]
Producer [Prodcr]
Professional [Profsnl]
Professor [Prof]
Promoter [Promtr]
Property [Propty]
Proprietor [Prop]
Providers [Provdrs]
Provision [Provn]
Public [Pblc]
Publican [Publn]
Publication [Pubn]
Publicity [Pubcty]
Publisher [Publr]
Publishing [Pubg]
Purchase [Pchse]
Purveyor [Purvyr]

Q
Qualified [Qualfd]
Quantity [Qty]
Quarters [Qrs]

R
Radiation [Radtn]
Radiator [Radtr]
Rainwear [Rainwr]
Reception [Recptn]
Rectory [Rety]
Refiners [Refnrs]
Refinery [Refny]
Refreshments [Refreshmts]
Refrigeration [Refrig]
Registered [Regd]
Registration [Regn]
Registry [Regy]
Removal [Reml]
Repairer [Rpr]
Representative [Rep]
Requisites [Reqs]
Residence [Res]
Resident [Resdt]
Restaurant [Rstrnt]
Retail [Rtl]

Retailer [Rtlr]
Retired [Ret]
Roofing [Roofg]
Ropeworks [Ropewks]

S
Saints [SS]
Salesman [Slsmn]
Sanitary [San]
Saturday [Sat]
School [Sch]
Scientific [Scien]
Sculptor [Sclptr]
Secondary [Secndry]
Secretary [Sec]
Service [Svc]
Shipper [Shpr]
Shipping [Shpg]
Shopkeeper [Shopkr]
Shorthand [Shthd]
Showroom [Shwrm]
Silversmith [Silvsmth]
Society [Soc]
Solicitor [Solr]
Spares [Sprs]
Special [Spl]
Specialist [Spclst]
Spinners [Spnrs]
Spirits [Spts]
Station [Stn]
Stationer [Stnr]
Stationery [Stnry]
Stevedores [Stevdrs]
Stockbroker [Stkbrkr]
Structural [Structl]
Sunday [Sun]
Superintendent [Supt]
Supermarket [Supmkt]
Supervisor [Supvr]
Supplier [Supplr]
Supplies [Supps]
Surgeon [Surgn]
Surgical [Surg]
Surveyor(s) [Survyr]

T
Taxation [Taxn]

Technical [Tech]
Technician [Techn]
Telegraph [Teleg]
Telephone [Tel]
Television [Tv]
Teoranta [Teo]
Textile, [Txtl]
Theatrical [Theat]
Thermometer [Thermtr]
Timber Yard [Timb Yd]
Tobacconist [Tobccnst]
Transport [Transp]
Transportation [Transpn]
Traveller [Trav]
Tuberculosis [TB]
Turf Commissioner Agt [Turf Comm Agt]
Typewriter [Typw]
Typewriting [Typwrg]

U
Undertaker [Undrtkr]
Undertaking [Undrtkng]
Underwriter [Undwtr]
Upholsterer [Uphol]
Urban Distnct Council [UDC]

V
Valuer [Valr]
Vegetable [Veg]
Veterinary [Vet]
Victualler [Victlr]
Vintner [Vntr]
Voluntary [Vol]

W
Warehouse [Whouse]
Warehousemen[Whousemn]
Watchmaker [Wtchmkr]
Wholesale [Wsale]
Wholesaler [Wsaler]
Woodworkr [Wdwkr]
Works [Wks]
Workshop [Wkshp]
Worsted [Wrstd]

Appendix II – Title/Qualification Abbreviations

Valid values* are shown between brackets "[" and "]" below.

B
Bachelor of Arts [BA]
Bachelor of Commerce [BComm]
Bachelor of Dental Surgery [BDS]
Bachelor of Science [BSc]

C
Captain [Capt]
Catholic Curate [CC]
Colonel [Col]
Commandant [Comdt]
Commander [Commdr]
Commissioner [Commr]

D
Doctor [Dr]
Doctor of Divinity [DD]

F
Fellow of Royal College of Surgeons Ireland [FRCSI] Fellow of Royal College of Surgeons [FRCS]
Flight Lieutenant [Flt Lt]
Fr [Fr]

H
Honorary [Hon]
Honourable [Hon]

J
Junior [Jr]
Justice of Peace [JP]

M
Major [Maj]
Major General [Maj Gen]
Master of Arts [MA]

Master of Science [MSc]
Member of Pharm Society of Ireland. [MPSI]
Member of Royal College of Physns Ireland [MRCPI]
Member of Royal College of Vet Surgeon [MRCVS]
Member of Royal College of Physns [MRCP]
Miss [Miss]
Monsignor [Mons]
Mister [Mr]
Mrs [Mrs]
Ms [Ms]

N
National Teacher [NT]

O
Officer [Offr]

P
Parish Priest [PP]
Professor [Prof]

R
Reverend [Rev]
Right [Rt]
Right Honourable [Rt Hon]
Right Reverend [Rt Rev]

S
State Certified Midwife [SCM]
Senior [Sen]
Squadron Leader [Sqdn-Ldr]
State Registered Nurse [SRN]

V
Vicar General [VG]

* Additional Title/Qualification Abbreviations will be considered valid for the purposes of the transfer of the NDD from Eircom Limited to PortingXS. However, a review of assigned titles/Qualifications should be undertaken by Undertakings following the transfer to ensure that only the specified titles and qualifications are used on the NDD going forward.

Appendix III – Address Abbreviations

A
Apartments [apts]
Arcade [arc]
Avenue [ave]

B
Bank [bk]
Banks [bks]
Boulevard [blvd]
Bridge [bdge]
Building [bldg]
Buildings [bldgs]

C
Chambers [chmbs]
Close [cl]
Cliff [clf]
Cliffs [clfs]
Common [cmn]
Corner [cnr]
Centre [cntr]
College [coll]
Circle [crcl]
Cresent [cres]
Castle [cstl]
County [Co]
Court [ct]
Cottage [ctge]
Cottages [ctges]

D
Dock [dk]
Drive [dr]

E
Embankment [embkt]
Estate [est]
Exchange [exch]
Extension [extn]

F
Field [fld]
Fields [flds]
Farm [fm]
Fort [ft]

G
Garden [gdn]
Gardens [gdns]
Green [gn]

Grange [gnge]
Grove [gro]
Gate [gte]

H
Harbour [hbr]
Hamlet [hmlt]
Haven [hvn]
Heath [hth]
Height [ht]
Heights [hts]
Hill [hl]
Hills [hls]
Hours [hrs]
House [hse]
Houses [hses]

J
Junction [jct]

L
Lane [la]

Lodge [ldg]
Lawn [ln]
Lawns [lns]
Lower [lr]

M
Mansion [man]
Mansions [mans]
Meadow [mdw]
Meadows [mdws]
Market [mkt]
Mount [mt]
Mews [mws]

N

North [nth]
North Circular Rd [NCR]

O
Orchard [ochd]

P
Parade [pde]
Park [pk]
Parks [pks]
Place [pl]

Promenade [prom]
Passage [psge]
Point [pt]

Q
Quarters [qrs]
Quay [qy]

R
Road [rd]
Roads [rds]
Residence [res]
Ridge [rge]
Railway [rly]

S
School [sch]
South [sth]
South Circular Rd [SCR]
Square [sq]
Station [stn]
Strand [str]
Street [st]

T
Terrace [tce]
Tower [twr]
Towers [twrs]

U
Upper [upr]

V
Valley [vly]
View [vw]
Villa [vla]
Village [vlge]
Villas [vlas]
Ville [vle]

W
Walk [wlk]
Walks [wlks]
Way [wy]
Wood [wd]
Woods [wds]

Y
yard [yd]

Appendix IV – TDS_I_13xxx_20000101_001

```
*SOF*!!INPUT
EIR5000001125771!1!!!R!S!0!Connors!A!!!!!171!The Oaks!Belgard hts!!!24!!074!622440!L!!P!07!!!!!!!!
EIR5000001125772!1!!!R!S!0!Connors!A!!!!!1A!!Tibradden dr!!!12!!074!627585!L!!P!07!!!!!!!!
EIR5000001125773!1!!!R!S!0!Connors!Aileen!!!!!49!!!Lissenfield!!16!!074!960464!L!!P!07!!!!!!!!
EIR5000001125774!1!!!R!S!0!Connors!Alan!!!!!238!!Crescent pl!!!24!!074!530660!L!!P!07!!!!!!!!
EIR5000001125775!1!!!R!S!0!Connors!Albert!!!!!!Alden!62 Foxrock pk!!!15!!074!903212!L!!P!07!!!!!!!!
EIR5000001125776!1!!!R!S!0!Connors!Ally!!!!!!Greggan!Rusty Lane!!!15!!074!202321!L!!P!07!!!!!!!!
EIR5000001125777!1!!!R!S!0!Connors!Arnold!!!!!3!!Wontsbrook ln!Esker!!!!074!249042!L!!P!07!!!!!!!!
EIR5000001125778!1!!!R!S!0!Connors!Ants!!!!!51!!Kenelstown St!!!24!!074!265448!L!!P!07!!!!!!!!
EIR5000001125779!1!!!R!S!0!Connors!Bil!!!!!27!!Primary pl!Kill!!10!!074!311031!L!!P!07!!!!!!!!
EIR5000001125780!1!!!R!S!0!Connors!Ben!!!!!12!!Miley st!!!20!!074!236282!L!!P!07!!!!!!!!
EIR5000001125781!1!!!R!S!0!Connors!Biff!!!!!13!!Rock st!!!8!!074!892876!L!!P!07!!!!!!!!
EIR5000001125782!1!!!R!S!0!Connors!Boss!!!!!38!!Sprongvale ln!!!15!!074!479159!L!!P!07!!!!!!!!
EIR5000001125783!1!!!R!S!0!Connors!Butch!!!!!14!!Keep pl!Rath!!!!074!350589!L!!P!07!!!!!!!!
EIR5000001125784!1!!!R!S!0!Connors!Dan!!!!!222!!Tonoffing pl!!!13!!074!322403!L!!P!07!!!!!!!!
EIR5000001125785!1!!!R!S!0!Connors!Rian!!!!!58!!Hill vw!Greystones!!!!074!868809!L!!P!07!!!!!!!!
EIR0000000218480!1!!!B!S!0!Murphy Ants!!Elec Works!!!!11!!Mond pl!Killester!!10!!074!971834!L!!P!07!!!!!!!!
EIR0000000218481!1!!!B!S!0!Murphy Tony!!Lwyr!!!!100!!New Brick!Kill!!!!074!858220!L!!P!07!!!!!!!!
EIR0000000218482!1!!!B!S!0!Murphy Partners!!Bldrs!!!!52!!Countdown pl!Foxrock!!!!074!350660!L!!P!07!!!!!!!!
EIR0000000218483!1!!!B!S!0!Murphy S & M!!!!!!!Barnone!Blue st!Stillorgin!!!!074!888338!L!!P!07!!!!!!!!
EIR0000000218484!1!!!B!S!0!Murphy J B & Friends!!Geographers!!!!88!!Sweet Afton ln!Stillorgin!!!!074!
600020!L!!P!07!!!!!!!!
EIR0000000218485!1!!!B!S!0!Murphy Purple!!Trucker!!!!!Sliver Mountain!!Bride Manor!!!!074!582364!L!!P!07!!!!!!!!
EIR0000000218486!1!!!B!S!0!Murphy Harry!!Horse Shoeer!!!!!Belows Cottage!!Mycool!!!!074!589239!L!!P!07!!!!!!!!
EIR0000000218487!1!!!B!S!0!Murphy Ben!!Desnr!!!!!!Somewhere ln!!Dublin!!!074!681346!L!!P!07!!!!!!!!
EIR0000000218488!1!!!B!S!0!Murphy Bone Ltd!!Conslt!!!!44!Winterhill ln!Stillorgin!!Dublin!!!074!804837!L!!P!07!!!
!!!!!
EIR0000000218489!1!!!B!M!0!Allied Irish Banks PLC!!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!2!!!B!M!1!Group Headquarters!!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!3!!!B!M!1!Bankcentre Ballsbridge 4!!!!!!!!!!!!!!!074!1600311!L!!!07!!!!!!!!
EIR0000000218489!4!!!B!M!2!Chairman!!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!5!!!B!M!2!Group   Chief   Executive!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!6!!!B!M!2!Secretary!!!!!!!!!!!!!!074!1600311!L!!!07!!!!!!!!
EIR0000000218489!07!!!B!M!1!Regional Offices Area Offices!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!8!!!B!M!2!Dublin!!!!!!!!!!!!!!074!1600311!L!!!07!!!!!!!!
EIR0000000218489!9!!!B!M!2!East West!!!!!!!!!!!!074!1600311!L!!!07!!!!!!!!
EIR0000000218489!10!!!B!M!1!Branches!!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!11!!!B!M!2!AIB Private Banking!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!12!!!B!M!3!Bankcentre 4!!!!!!!!!!!!!!074!1415111!L!!P!07!!!!!!!!
EIR0000000218489!13!!!B!M!4!Also!!!!!!!!!!!!!!074!1604733!U!!P!07!!!!!!!!
EIR0000000218489!14!!!B!M!2!AIB 24 Hour Banking!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!15!!!B!M!3!Time Hse Blessington Rd Naas!!General Enquiry!!!!!!!!!!!!1800!142000!L!!P!07!!!!!!!!
EIR0000000218489!16!!!B!M!3!Customer Services!!LoCall!!!!!!!!!!!1890!142424!L!!P!07!!!!!!!!
EIR0000000218489!17!!!B!M!3!Registration!!LoCall!!!!!!!!!!!1890!142000!L!!P!07!!!!!!!!
EIR0000000218489!18!!!B!M!3!AIB Student Line!!Freephone!!!!!!!!!!!1800!141000!L!!P!07!!!!!!!!
EIR0000000218489!19!!!B!M!3!AIB Travel Insurance Services!!LoCall!!!!!!!!!!!1890!142242!L!!P!07!!!!!!!!
EIR0000000218489!20!!!B!M!2!Annesley Bridge!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!21!!!B!M!3!87 Nth Strand 3!!!!!!!!!!!!!!!074!1554500!L!!P!07!!!!!!!!
EIR0000000218489!22!!!B!M!2!Arran Quay!!!!!!!!!!!!!!!!L!!!07!!!!!!!!
EIR0000000218489!23!!!B!M!3!24 Arran Qy Smithfield 7!!!!!!!!!!!!!!!074!1725266!L!!P!07!!!!!!!!
EIR0000000218489!24!!!B!M!4!Also!!!!!!!!!!!!!!074!1725818!U!!P!07!!!!!!!!
*EOF*!46
```

Appendix V – TDS_I_13xxx_20000102_001

```
*SOF*!INPUT
EIR5000001125786!1!I!R!S!0!Connors!Michael!!!!!6!Bayside Villas!Sandy ln!Rush!!!Dublin!074!1407032!L!!P!07!!
!!!!!!
EIR0000000218490!1!I!B!S!0!Murphy Michael Ltd!!Actor!!!!6!!Sandy ln!Rush!!!Dublin!074!1274506!L!!P!07!!!!!!!!
EIR0000000218491!1!I!B!M!0!Allied O'Sullivan!!Bnkr!!!!!Millbank!Chapel Green!Rush!!!!074!1437475!L!!P!07!!!!!!!!
EIR0000000218491!2!I!B!M!1!Secretary!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
EIR5000001125787!1!I!R!S!0!Connors!Joseph!!!!!33!!Framlee st!Skerries!!!Dublin!074!1499012!L!!P!07!!!!!!!!
EIR5000001125787!1!D!R!S!0!Connors!Joseph!!!!!33!!Framlee st!Skerries!!!Dublin!074!1499012!L!!P!!!!!!!!!
EIR0000000218492!1!I!B!S!0!Murphy Joseph Ltd!!Prntr!!!!!!Linn Beag!Rush!!!!074!1843888!L!!P!07!!!!!!!!
EIR0000000218492!1!D!B!S!0!Murphy Joseph Ltd!!Prntr!!!!!!Linn Beag!Rush!!!!074!1843888!L!!P!07!!!!!!!!
EIR0000000218493!1!I!B!M!0!Allied Joseph & Michael!!Barmen!!!!!The Drop!Main
st!Rush!!!!074!1843777!L!!P!07!!
!!!!!! EIR0000000218493!2!I!B!M!1!Celler!!!!!!!!!!!!!!074!1843765!L!!P!07!!!!!!!!
EIR0000000218493!1!D!B!M!0!Allied Joseph & Michael!!Barmen!!!!!The Drop!Main
st!Rush!!!!074!1843777!L!!P!07!
!!!!!!!!
EIR5000001125786!1!C!R!S!0!Connors!Michael!!!!!6!Bayside Villas!Sandy
ln!Rush!!!Dublin!074!1407032!L!!P!07!!!!
!!!!
EIR0000000218490!1!C!B!S!0!Murphy   Michael   PLC!!Actor!!!!6!!Sandy
ln!Rush!!!Dublin!074!1274506!L!!P!07!!!!!!!!
EIR0000000218491!1!C!B!M!0!Allied      O'Sullivan!!Bnkr!!!!!Millbank!Chapel
Green!Rush!!!!074!1437475!L!!P!07!!!!!!
!! EIR0000000218491!2!C!B!M!1!Secretary!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
*EOF*!15
```

## Appendix VI – TDS_I_13xxx_20000103_001

SOF!INPUT
EIR5000001125786!1!!!R!S!0!Connors!Michael!!!!!!6!Bayside Villas!Sandy ln!Rush!!!!074!1407032!L!!P!07!!!!!!!!
EIR0000000218490!1!!!B!S!0!Murphy Michael Ltd!!Actor!!!!6!!Sandy ln!Rush!!!Dublin!074!1274506!L!!P!07!!!!!!!!
EIR0000000218491!1!!!R!M!0!Allied O'Sullivan!!Bnkr!!!!!Millbank!Chapel Green!Rush!!!!074!1437475!L!!P!07!!!!!!!!
EIR0000000218491!2!!!R!M!1!Secretary!!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
EIR0000000218491!1!!!B!M!0!Allied O'Sullivan!!Bnkr!!!!!Millbank!Chapel Green!Rush!!!!074!1437475!L!!P!07!!!!!!!!
EIR0000000218491!2!!!B!M!1!Secretary!!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
EIR0000000218493!2!!!B!M!1!Celler!!!!!!!!!!!!!!074!1843765!L!!P!07!!!!!!!!
EIR5000001125787!1!D!R!S!0!Connors!Joseph!!!!!33!!Framlee st!Skerries!!!Dublin!074!1499012!L!!P!!!!!!!!!!
EIR0000000218492!1!D!B!S!0!Murphy Joseph Ltd!!Prntr!!!!!!Linn Beag!Rush!!!!074!1843888!L!!P!07!!!!!!!!
EIR0000000218493!1!D!R!M!0!Allied Joseph & Michael!!Barmen!!!!!The Drop!Main st!Rush!!!!074!1843777!L!
!P!07!!!!!!!!
EIR0000000218493!1!D!B!M!0!Allied Joseph & Michael!!Barmen!!!!!The Drop!Main st!Rush!!!!074!1843777!L !
P!07!!!!!!!!
EIR0000000218491!2!D!B!M!1!Secretary!!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
EIR5000001125787!1!C!R!S!0!Connors!Joseph!!!!!33!!Framlee st!Skerries!!!Dublin!074!1499012!L!!P!!!!!!!!!!
EIR0000000218492!1!C!B!S!0!Murphy Joseph Ltd!!Prntr!!!!!!Linn Beag!Rush!!!!074!1843888!L!!P!07!!!!!!!!
EIR0000000218491!1!C!R!M!0!Allied O'Sullivan!!Bnkr!!!!!Millbank!Chapel Green!Rush!!!!074!1437475!L!!P!07!!!
!!!!! EIR00000000218491!2!C!R!M!1!Secretary!!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
EIR0000000218493!1!C!B!M!0!Allied Joseph & Michael!!Barmen!!!!!The Drop!Main st!Rush!!!!074!1843777!L!!P
!07!!!!!!!! EIR0000000218493!2!C!B!M!1!Celler!!!!!!!!!!!!!!074!1843765!L!!P!07!!!!!!!!
EIR0000000218491!2!C!B!M!1!Secretary!!!!!!!!!!!!!!074!1437717!U!!P!07!!!!!!!!
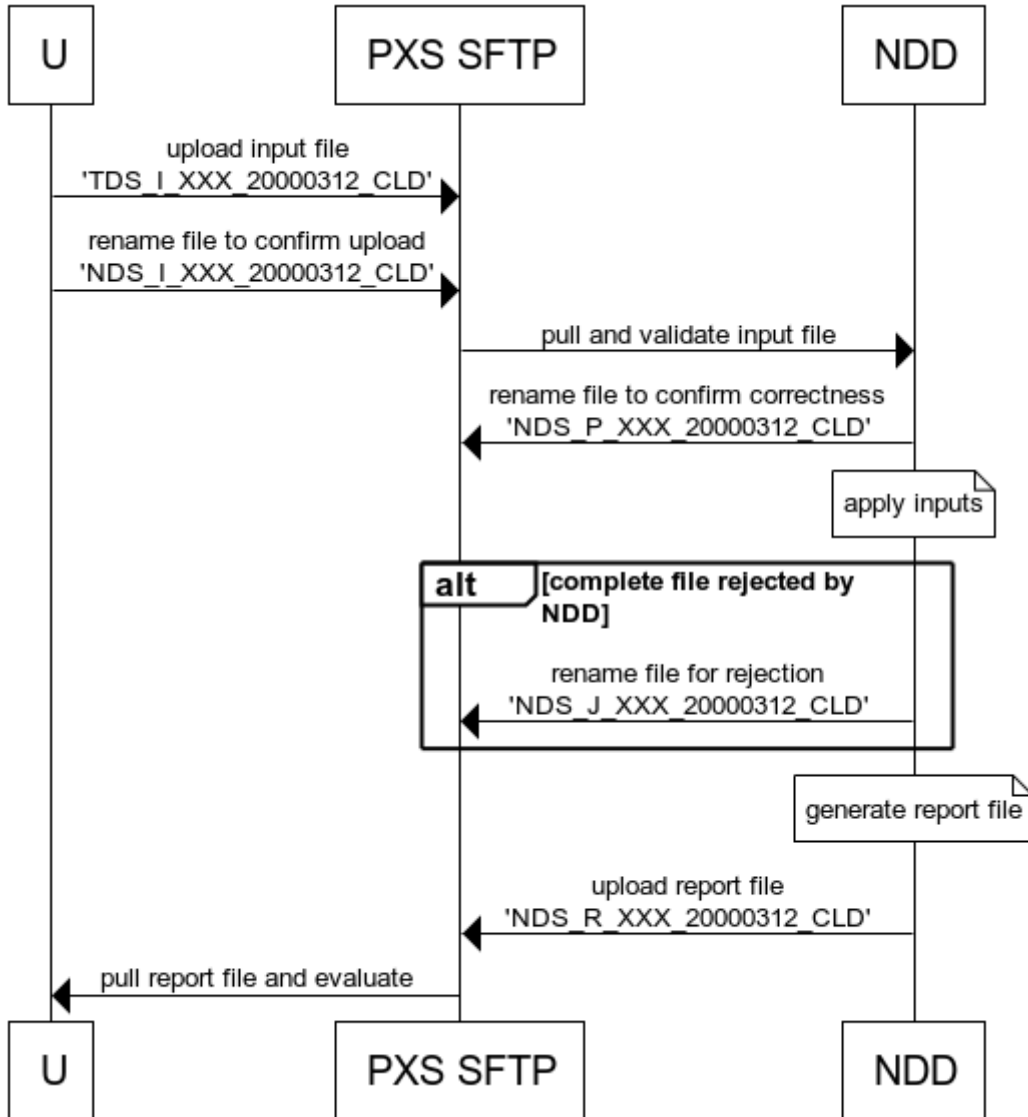*EOF*!19

Appendix VII – Process Flows

The different process flows are depicted below and show the different processes for providing input files or retrieving output files.
The diagrams also show which filenames are to be used at which stage in the processes.
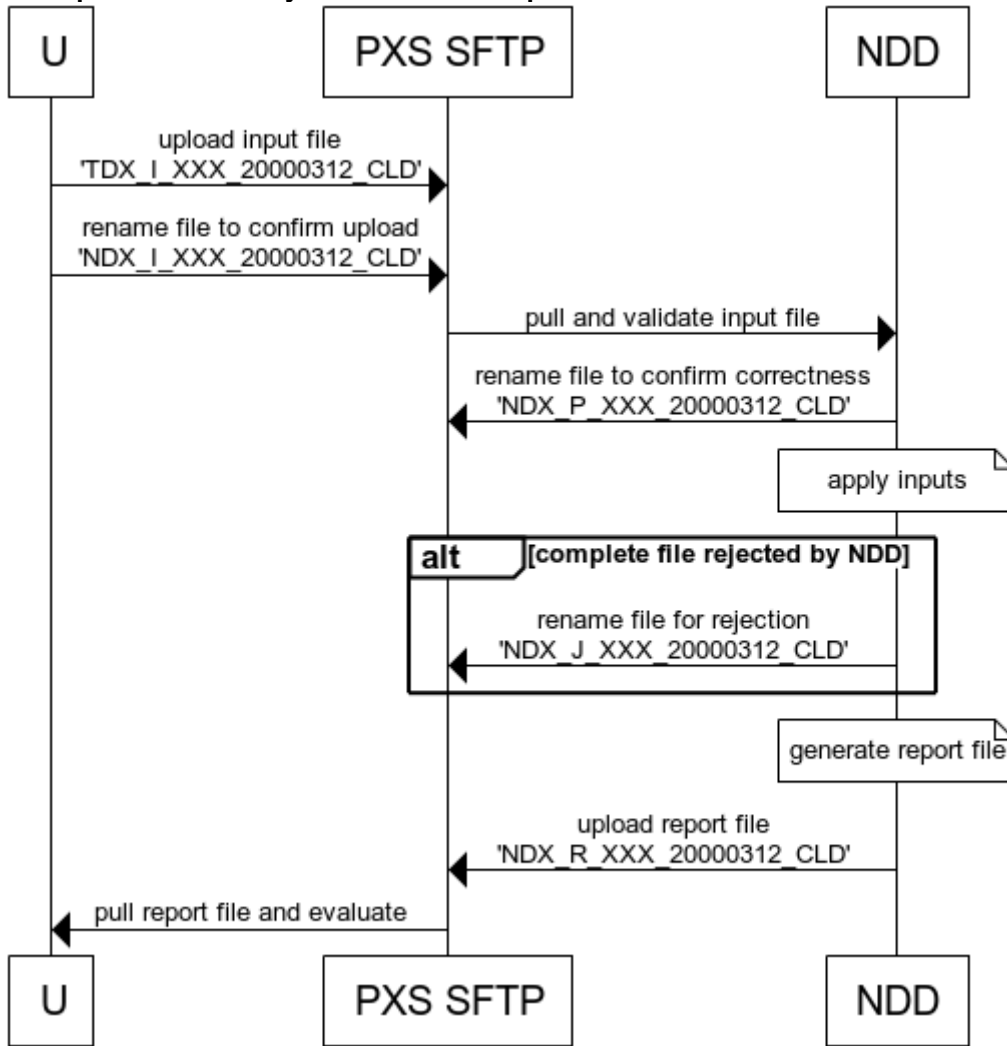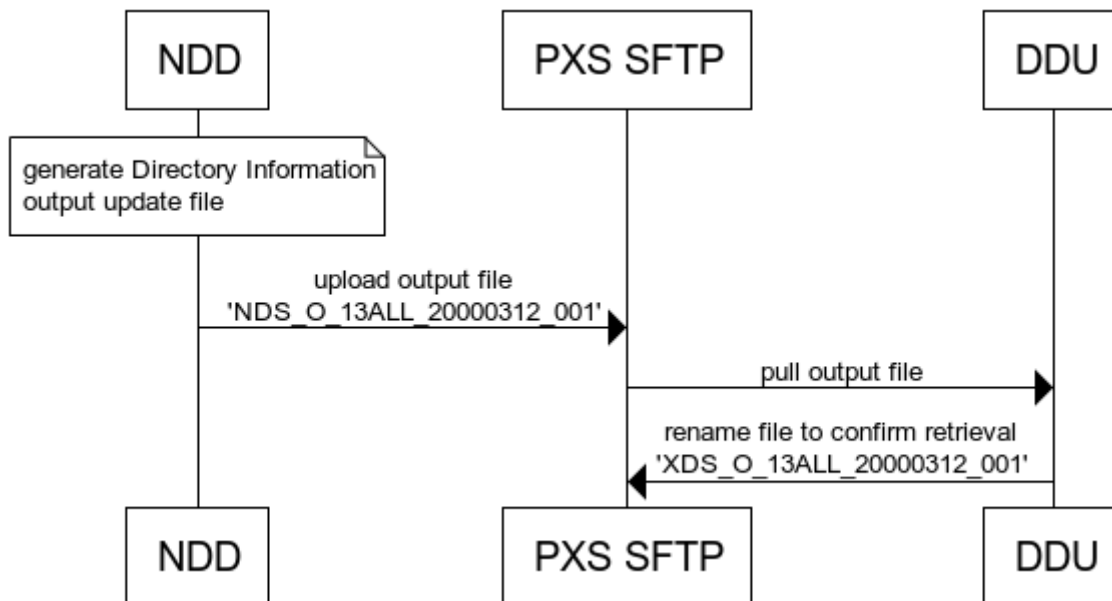
A. Input - Directory Preferences Update files
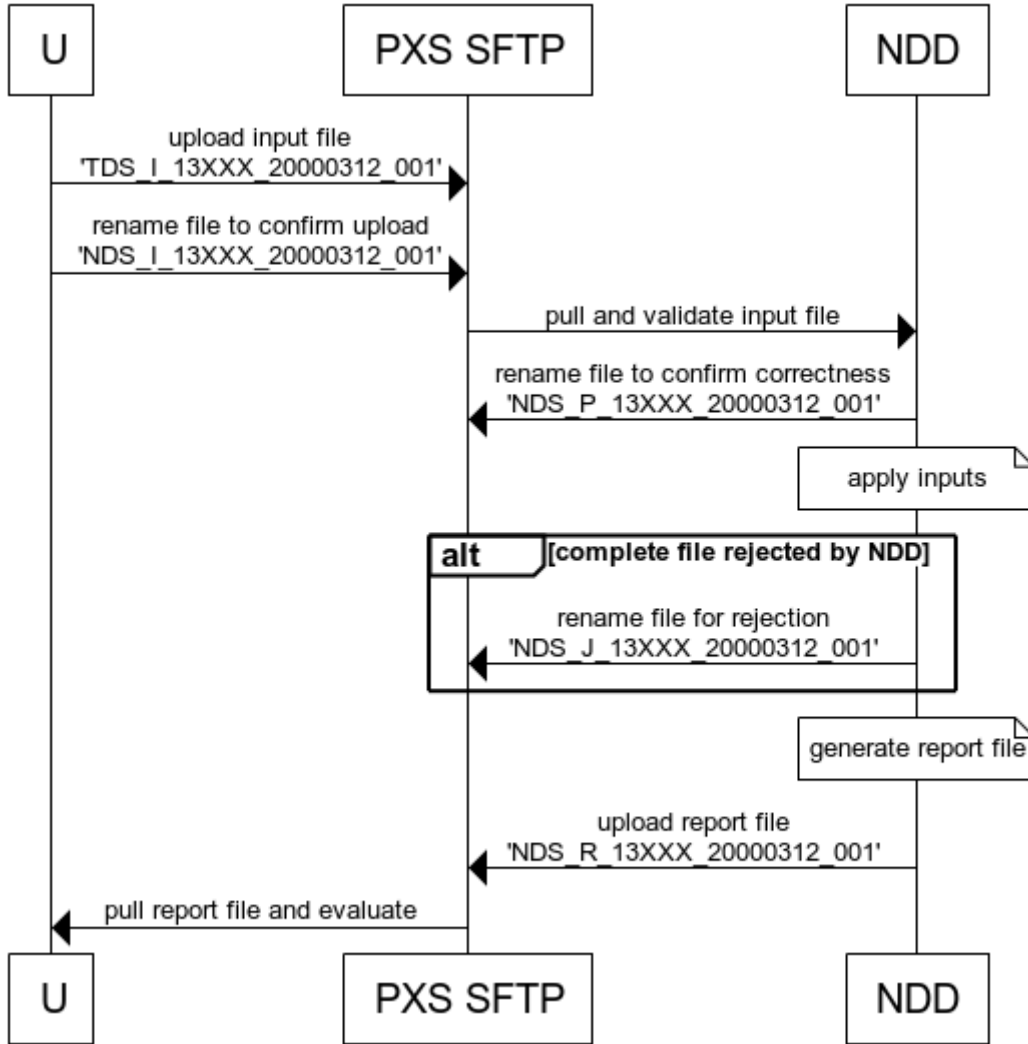
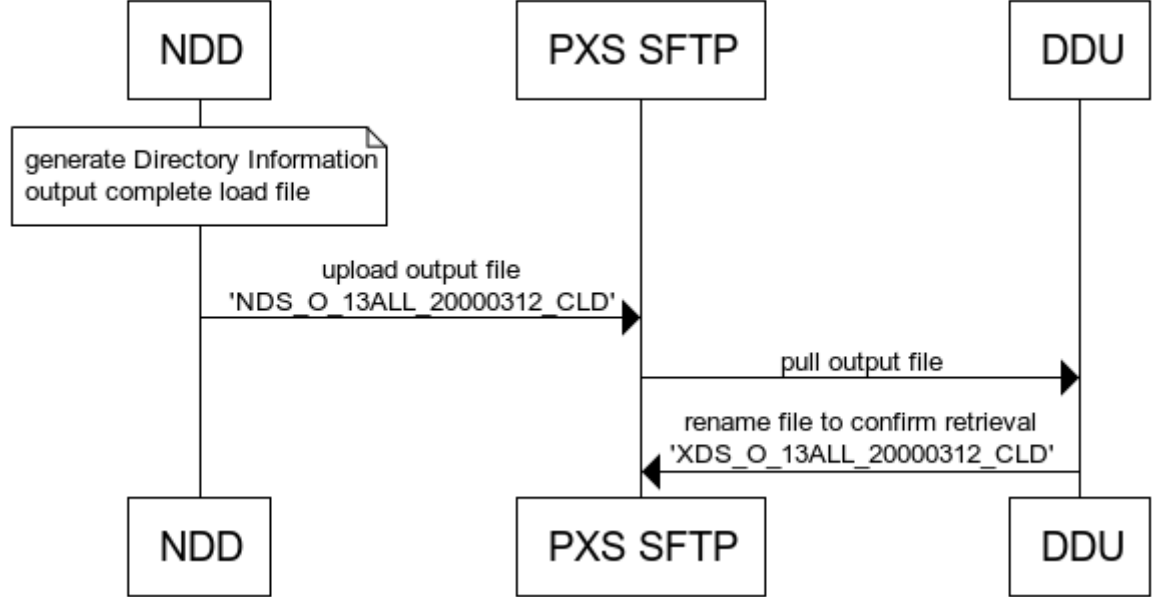## B. Input - Directory Preferences Complete Load files

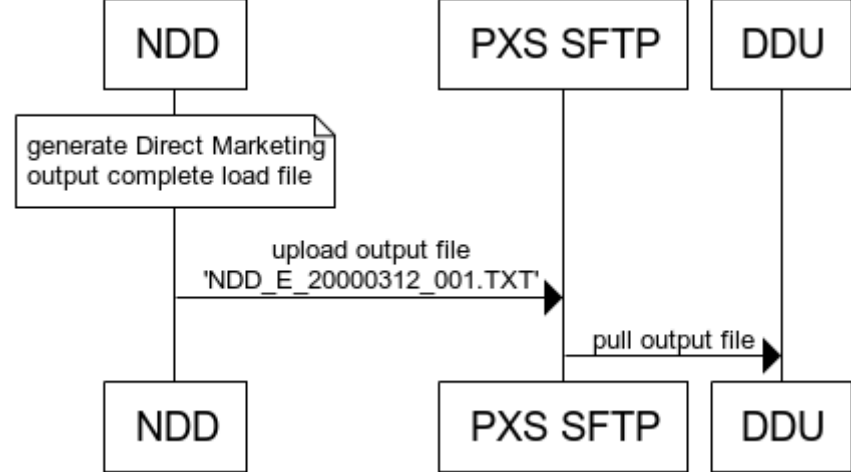## C. Input - Ex-Directory Preferences Complete Load files

D. Output – Directory Information Listing Preferences Update files

E. Output – Directory Information Listing Preferences Complete Load files

F. Output – Direct Marketing Preferences Complete Load files

Appendix VIII – NDD Backup

PortingXS guarantees to back up the entirety of the contents of the NDD at regular intervals as set out in this appendix. Every server on which the NDD is stored will be backed up by PortingXS daily. This backup also includes an online backup of the database. Also, each virtual machine will be copied daily by PortingXS to PortingXS's two disaster recovery locations in the Netherlands.

Daily	Type	Start	Stop (+/-)
Saturday	Full	23:30	**0:30**
Sunday	Incremental	23:30	**23:45**
Monday	Incremental	23:30	**23:45**
Tuesday	Incremental	23:30	**23:45**
Wednesday	Incremental	23:30	**23:45**
Thursday	Incremental	23:30	**23:45**
Friday	Incremental	23:30	**23:45**

Backup rotation schema

Backup Type	Retention
Daily Back-up	**14 days (+6 till Full)**
Weekly Back-up	**4 Weeks**
Monthly Back-up	**3 Months**
Quarterly Back-up	**1 Quarter**

The complete architecture underpinning the provision of the NDD is fully geo-redundant being stored on two other locations in the Netherlands, and therefore any potential server crash will not cause outages. In case of a disaster, a complete move to the available disaster recovery site will take place. This will take up to eight hours maximum to rebuild. The disaster recovery site is already prepared with the latest software. PortingXS only need to add the back-up data to the system and make sure Connecting Parties are connected.

Appendix IX – Security Plan

Appendix IX – Security Plan is not relevant to stakeholders or for public consumption and therefore is redacted.

Appendix X – Escrow – Safeguarding contents of the NDD

PortingXS shall make arrangements to put the full contents of the NDD into escrow through an independent third party immediately upon transfer of the NDD to PortingXS and at regular intervals thereafter (no more than 28 days apart).

ComReg will be the beneficiary of this escrow arrangement.

The contents of the NDD in escrow shall be released to ComReg upon reasonable request. For the avoidance of doubt, a request will be considered reasonable, without limitation, in any of the following circumstances:

i.   If PortingXS is dissolved;
ii.   If PortingXS enters into liquidation whether compulsory or voluntarily;
iii.   If PortingXS enters administration;
iv.   If PortingXS enters a compromise or arrangement with creditors;
v.   If a receiver is appointed over all or part of the assets of PXS;
vi.   If any similar or analogous proceedings or event to those in (i) – (iv) above occurs in respect of PortingXS within any jurisdiction outside of Ireland;
vii.   If PortingXS ceases to carry on its business or part of its business that relates to the management of the NDD;
viii.   If PortingXS assigns any rights that relate in any way to the management of the NDD; and
ix.   If PortingXS is in material breach of their obligations under this Operational Specification and/or ComReg Decision D16/18 and remains to be in breach after a period of at least ten (10) business days following notification of the breach.

While the independent third party providing escrow may be chosen by PortingXS, this is subject to the approval in writing by ComReg. The escrow agreement shall be formalised in an escrow agreement between PortingXS and the independent third party and the terms of the agreement are subject to the approval in writing by ComReg. For the purpose of providing such written approval, PortingXS shall, prior to any agreement being concluded between the independent third party and PortingXS, provide ComReg with the identity of the proposed independent third party and a copy of the proposed escrow agreement. PortingXS cannot enter into any escrow agreement unless it has received approval in writing from ComReg of (i) the identity of the proposed escrow provider and (ii) the terms of the escrow agreement.

Appendix XI – Data Protection

Appendix XI – Data Protection is not relevant to stakeholders or for public consumption and therefore is redacted. The essence of the provisions will be publicly available in relevant data protection privacy notices