Teldas GmbH

Project: **TSP INet-Server**

Title: **SSH File Transfer Detailed Technical Specifications ONP**

Abstract: This document describes in detail the Interface between TSP and WWW/SSH-Server, the functionality sending mails and the work of the Test Client

Replaces document: V4.7.2-1
Version: V4.8
Author (of changes): Adrien Schaer
Issued on: 14.02.2017
File: SSH_File_Transfer_Detailed_Technical_Specifications_ONP.doc
Document number: -

Department	Person	Assessment Type	Approval Date / Visa
PM Teldas Support	Adrien Schaer		
PM TSP	Ruedi Messer		

Distribution list: <Distribution List>

Revision History

The revision history shows the change status of each chapter in the document. The entire document is reissued with each revision.

Version	Revision	Author	Date
X1.0-1		Ralf Messerer	29-Jul-1999
V1.0-1		Ralf Messerer	03-Aug-1999
V1.1-0		Ralf Messerer	20-Aug-1999
V2.0-0		Ralf Messerer	1-Sep-1999
V2.0-1		Ralf Messerer	06-Sep-1999
V2.0-2		Ralf Messerer	21-Sep-1999
V2.0-3		Ralf Messerer	26-Oct-1999
V2.0-4		Ralf Messerer	07-Dec-1999
V2.1-0	Only Version numberchanged for Acceptance	Hans Hartmann	16-Dec-1999
V2.1-2	Minor changes	Ralf Messerer	14-Feb-2000
V2.1-3	After Input from Herr Thomi	Hans Hartmann	16-Mar-2000
V2.2-0	Update for Release V2.2	Hans Hartmann	08-Aug-2000
V2.2-3	Update after input from Mr Thomi	Hans Hartmann	26-Sep-2000
V2.2-4	Add Counter Info	Hans Hartmann	14-Mar-2001
V2.2-5	Add SYNC_INA record	Ralf Messerer	20-Apr-2001
V2.2-6	Add TSP's comments	Hans Hartmann	15-May-2001
V3.1-0	Only Version number changed	Hans Hartmann	04-Feb-2002
V3.1-1	Add Mr. Thomi's comments	Hans Hartmann	11-Feb-2002
V3.2-0	Add CR84,97 for Release V3.2	Hans Hartmann	28-Aug-2002
V3.3-0	Add CC79: PoA date	Ueli Waldispühl	09-June-2003
V3.3-1	Correction related to CC79 (LIST command)	Ueli Waldispühl	11-June-2003
V3.3-2	Correction related to CC79 (extended format explanations, lpw format)	Ueli Waldispühl	12-June-2003
V3.3-3	Add CC91: TSP modification data	Ueli Waldispühl	11-July-2003
V3.3-4	Correct CC91 description	Ueli Waldispühl	24-July-2003
V3.4-0	CC 116: New field Company Name + 2 more	Ueli Waldispühl	18-June-2004
V3.4-1	Add Mr. Thomi's comments	Hans Hartmann	02-Aug-2004
V3.4-2	CC 125: New field PARTIAL_PORTING	Ueli Waldispühl	16-Dec-2004
V3.5-0	CC 93 and 98: .tsp and .tsn files	Ueli Waldispühl	08-Jul-2005
V3.6-0	CC 135: READZ and LISTZ commands	Ueli Waldispühl	17-May-2006
V3.6-1	Update for CC 143	Ueli Waldispühl	29-Aug-2006
V3.7-0	Update for CC 151	Hans Hartmann	31-Jul-2007

V3.7-1	Update SSH detail information	Ueli Waldispühl	24-Aug-2007
V4.0-0	Update for CC 152	Ueli Waldispühl	09-Jan-2008
V4.0-1	Corrections to NSN functions	Ueli Waldispühl	11-Jan-2008
4.0-2	Integrate reviewer's feedback	Ueli Waldispühl	26-Feb-2008
4.0-3	Integrate reviewer's feedback	Ueli Waldispühl	10-Mar-2008
4.0-4	Integrate reviewer's feedback	Ueli Waldispühl	05-Apr-2008
4.0-5	Add WO_ID_FROM/_TO to NSN_LIST	Ueli Waldispühl	08-Apr-2008
4.1-0	FA related parts removed	Ueli Waldispühl	20-Oct-2008
4.2-0	Release V4.2 (CC 1133, 1135)	Ueli Waldispühl	19-Feb-2009
4.2-1	Integrate reviewer's feedback	Ueli Waldispühl	09-Mar-2009
4.3-0	Release V4.3 (PR 10466)	Ueli Waldispühl	26-Aug-2009
4.3-1	Integrate reviewer's feedback, rename document	Ueli Waldispühl	07.Sep.2009
4.5-0	Release V4.5 (CC 1166, 1178)	Ueli Waldispühl	19.Dec.2011
4.5-1	CC1192, fixes for upl examples and ack record format, update of reject reasons	Ueli Waldispühl	08.May.2012
4.5-2	General documentation maintenance	Ueli Waldispühl	18.Jan.2013
4.6-0	Inet Migration from HP to Veltigroup and from HP Unix to Linux	Anne-Catherine Christen	05.Nov-2013
4.6-3	Correction related to ALL FLAG modification	Adrien Schaer	06.06.2014
4.7.0	INet Release 2016: DDI field validation rules (CR 1215) Sync flexibility (CR 1224) Work-order fields cleanup (CR 1225) Reject reasons management (CR 1225) INA allocation table (CR 1226) File non-working-days (CR 1228) Donor look-up (CR 1233) Optional wish-date (CR 1234) Runtime of cronjobs (CR 1235) Prepay with PoA (CR 1237) Small precisions and bug corrections	Adrien Schaer	11.12.2015
4.7.1	INet-Release 2016: clarifications and small corrections	Anne-Catherine Christen	02.05.2016
4.7.2	INet-Release 2016: .ack file example corrected and .tsp file precisions about cdp, csc fields	Anne-Catherine Christen	23.06.2016
4.7.2-1	Chapt. 2.2.1.3 small corrections in the documentation (precisions about TSP_INT_REFERENCE and POA_ID fields) + chapt.2.2.2 correction .ack example	Anne-Catherine Christen	31.08.2016
4.8	Small corrections in non-working-day file (was wrongly specified)	Anne-Catherine Christen	14.02.2017

Table Of Contents

1 Introduction

1.1 Introduction

The TSP INet-Server (Telephone Service Provider) is a centralized database system to which the Swiss TSP can connect via the public Internet. It will be used to exchange work orders between TSP in the number porting process and keep one point of reference of all ported numbers in Switzerland.
The functionality for the porting process can be done by a WWW interface or in a form of batch processing using automatic file transfer. This paper describes the detailed technical specification for the implementation of the file transfer, the automatic processing of the up– and downloaded file and the TSP notification using signed emails. Further the paper describes the detailed technical specification for the Test Client who periodically checks the availability, security and the performance of the whole TSP INet-Server.

Important Note:

This document is in addition to reference [1], which is the contractually and technically relevant documentation!

1.2 References

[1] Functional_Specifications_ONP
[2] SSH_File_Transfer_Detailed_Technical_Specifications_INA
[3] INA_SS_Detailed_Technical_Specification_SSH_Filetransfer_for_Bakom
[4] Functional_Specifications_INA
[5] INet-Server_Messages
[6] General User Manual (GUM) for the INet-Server

2 SSH/Filetransfer-Server

2.1 SSH Server

SSH2 (Secure Shell) is a program to securely log into a remote machine, execute commands and transfer files from and to a remote machine. It is intended to replace rlogin, rsh, telnet, ftp and provide secure encrypted communications between two untrusted hosts over an insecure network. SSH2 is based on public/private keys. Each TSP creates a public / private key pair for authentication purpose. The TSP INet-Server knows the user's public key, and only the TSP has the private key. When the TSP tries to authenticate himself, the server checks the authorization file for filenames of matching public keys and sends a challenge to the TSP back. Signing the challenge using the private key authenticates the TSP.
After authentication the clients (TSP) can securely transfer their data over the Internet. Nobody can then track or manipulate the data in the transferred file.

On the WWW/SSH-Server each TSP has its own user account. The user accounts have the following syntax:

hostname: `www.numberportability.ch`
username: tsp<TSP_ID> e.g.: tsp98123

<TSP_ID> is the ID which is assigned by BAKOM or Teldas. The currently used TSP_IDs of TSP-INet can be looked up in TSP-INet System Status.

SSH2 is installed on TCP port 22. For this reason TCP/port 22 must be open on the firewalls of the TSP.

2.1.1 Overview important ssh commands

- ssh2 With ssh2 the TSP is able to log in to the TSP INet-Server and execute Shell commands.
- scp2 Program for coping files over the network.
- sftp2 This is a file transfer program like ftp but it works on a secure connection.

2.1.2 User Directory Structure

.../tsp<TSP_ID>	Home directory
.../tsp<TSP_ID>/archive	Archive directory for the processed files (periodically purged, read only)
.../tsp<TSP_ID>/tmp	Temp directory (read only)
.../tsp<TSP_ID>/log	Log directory for the logfiles (periodically purged, read only) Syntax of logfile: <TSP_ID>_YYYYMMDD.log
.../tsp<TSP_ID>/lpn	Location of the automatically created lpn files

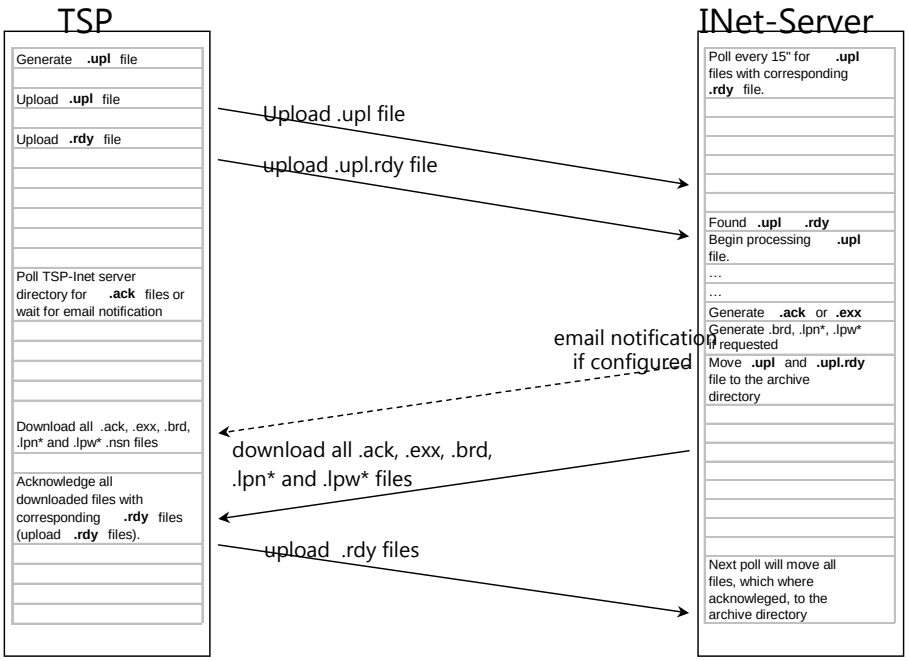
.../tsp<TSP_ID>/misc	Location of the "working-day" file. (read only)
.../tsp<TSP_ID>/misc/doc	Location of all relevant documentation. (read only)
.../ina<TSP_ID>/misc/doc/ONP	Location of all relevant documentation (read only). This includes yearly lists with non-working days and the system status file.
.../tsp<TSP_ID>/misc/examples	Location of examples for uploaded and downloaded files. (read only)
.../tsp<TSP_ID>/reports	Location of all report files. (read only)
.../tsp<TSP_ID>/clsn	Location of all CLSN lists for interactive users

2.1.3 Flow of Filetransfer

The TSP INet-Server polls every x minutes (x being a configurable system parameter REPEAT_RATE (cron job) minutes, job scan_onp.pl)) the home directory of every TSP for new uploaded .upl files. When a TSP finished upload a .upl file to the TSP INet-Server he must acknowledge the uploaded .upl file with a corresponding .upl.rdy files. The TSP INet-Server will see this pair of files and begin processing them. If an error occurs in the filename, header or trailer of the file it will generate a .exx file. When it passes the first check, it will send sequentially all commands to the WWW-Server. The results are then stored in the .ack file. When the LIST, LISTZ, READ, READZ, HANDOVER or RETURN_NRH command was transmitted, the corresponding .brd, .lpn, .lpn.gz,.lpw, or .lpw.gz will be created too. The TSP can download (secure copy with scp2) all .ack, .exx, .brd, .lpn* or .lpw* files from his home directory on the TSP INet-Server. When the TSP has successful downloaded the files he must acknowledge (upload by secure copy with scp2) them with a corresponding .rdy file. In the next start of the Transaction Parser the files will be moved to the archive directory.

Note: Files with an outstanding .rdy will be removed automatically after a time period defined by the system parameter AUTO_FILE_REMOVAL_AFTER_MONTHS.

The next diagram shows the before described flow.



2.1.4 Command for uploading files

The following commands must be processed by the TSP to upload files:

2.1.4.1 Uploading .upl an .upl.rdy files

```
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.upl        tsp<TSP_ID>@www.numberportability.ch:
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.upl.rdy    tsp<TSP_ID>@www.numberportability.ch:

e.g.: scp2 98123_001_20001128000001.upl      tsp98123@www.numberportability.ch:
      scp2 98123_001_20001128000001.upl.rdy  tsp98123@www.numberportability.ch:
```

2.1.4.2 Uploading .rdy files

```
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.ack.rdy    tsp<TSP_ID>@www.numberportability.ch:
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.brd.rdy    tsp<TSP_ID>@www.numberportability.ch:
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.exx.rdy    tsp<TSP_ID>@www.numberportability.ch:
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.lpn.rdy    tsp<TSP_ID>@www.numberportability.ch:
scp2 <TSP_ID>_SSS_YYYYMMDDXXXXXX.lpw.rdy    tsp<TSP_ID>@www.numberportability.ch:
```

e.g.: `scp2 98123_001_20001128000001.exx.rdy tsp98123@www.numberportability.ch:`

All .rdy files are empty files and are needed for acknowledge.

2.1.5 Command for downloading files

The following commands must be processed by the TSP to download files:

```
scp2 tsp<TSP_ID>@www.numberportability.ch:<TSP_ID>_SSS_*.ack  .
scp2 tsp<TSP_ID>@www.numberportability.ch:<TSP_ID>_SSS_*.brd  .
scp2 tsp<TSP_ID>@www.numberportability.ch:<TSP_ID>_SSS_*.exx  .
scp2 tsp<TSP_ID>@www.numberportability.ch:<TSP_ID>_SSS_*.lpn  .
scp2 tsp<TSP_ID>@www.numberportability.ch:<TSP_ID>_SSS_*.lpw  .
```

e.g.: `scp2 tsp98123@www.numberportability.ch:98123_001_20001128*.ack .`

SSS is an internal TSP assigned number.

Attention: It is possible that for example an .ack and .ack.rdy was down-loaded. This is possible when the WWW/SSH-Server did not yet move all files, with the corresponding .rdy files, to the archive directory. In this case the TSP has to ignore this pair of files. Only files without the corresponding .rdy file are relevant.

Scp2 is based on sftp2. Sftp2 is a part of the ssh2 package. For more information look at chapter3.

2.1.6 Life cycle of TSP files

Files related to file transfer processing are subject to periodic clean-up as described in [1], chapter *Data reduction and housekeeping*.

2.2 Format of downloaded and uploaded files

The field delimiter is the TAB character and the record delimiter is the <CR><LF> character. The <CR><LF> character comes directly after the last field in the record.

NOTE: this means that <TAB> and <CR><LF> characters can never be used in field contents. It is the responsibility of the TSP to make sure that this is not the case.

2.2.1 Format of .upl file

In the next lines we show an upload file with the name `98100_000_19990823000001.upl`. In the next chapters we will then describe exactly the different records.

```
HEADER→98100→98100_000_19990823000001.upl→4↓                                  HEADER Record
LIST→004→0791234567→0791234569→20030830→20030910→0145→0940→...↓               LIST Record
INIT→→004→0792342499→→→→→→→→→→002→Meier→Otto→Laugweg→60→...↓                  INIT Record
READ→→→→→→20031022→20031123→→→→→→→→→→→→→20030816→...↓                        READ Record
RETURN_NRH→0791234567↓                                                        RTN_NRH Record
TRAILER→6999a34c8722e775b59970b3e6e989b4↓                                     TRAILER Record
```

→ ... <TAB> (\t)
↓ ... <CR><LF> (\r\n)

2.2.1.1 Filename of .upl file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.upl, where <**TSP_ID**> is the ID assigned by BAKOM, **SSS** is an internal TSP assigned number, **YYYYMMDD** is the date of upload and **XXXXXX** is a unique sequence number that starts with 000001 in case of several uploads in one day.

2.2.1.2 Header of .upl file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,05)	r	Unique identifier assigned by BAKOM
<Filename>	char (var,28)	r	Filename of the .upl file
<Number of records>	char (var,05)	r	Number of records in .upl file without header and trailer.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max lenght, r...required, o...optional, -...empty.

2.2.1.3 Records of .upl file

2.2.1.3.1 INIT Record of .upl file

Attribute name	Format	r/o/-	Description
INIT	char (04)	r	The Init record begin with the word INIT
<WO_ID>	char (17)	-	At this stage, the WO_ID is not known, so this field is always empty.
<CON_TYPE>	char (03)	r	001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE", 005="MOBILE PRE-PAID"
<SUB_NR1>	char (var,13)	r	E.164 number requested to port
<SUB_NR2>	char (var,13)	r/o	If CON_TYPE=002. Lowest number in the range (last digit must be 0) If CON_TYPE=004 or 005. '*' indicates the donor to return the appropriate fax number by the function ONPACCEPT_WO().
<SUB_NR3>	char (var,13)	r/o	If CON_TYPE=002. Highest number in the range (last digit must be 9) If CON_TYPE=004 or 005. '*' indicates the donor to return the appropriate data number by the function ONPACCEPT_WO().
<SUB_NR4>	char (var,13)	r/o	If CON_TYPE=001, 4th number in the ISDN-package. If CON_TYPE=004 or 005. '*' indicates the donor to return the appropriate ALS number by the function ONPACCEPT_WO().
<SUB_NR5>	char (var,13)	r/o	5th ...
<SUB_NR6>	char (var,13)	r/o	6th ...
<SUB_NR7>	char (var,13)	r/o	7th ...
<SUB_NR8>	char (var,13)	r/o	8th ...
<SUB_NR9>	char (var,13)	r/o	9th ...
<SUB_NR10>	char (var,13)	r/o	10th ...
<FAMILY_NAME>	char (var,60)	r/o	Family name of subscriber, r if PoA_Id is not empty
<FORENAME>	char (var,30)	r/o	First name of subscriber, r if private person and PoA_Id is not empty
<COMPANY_NAME>	char (var, 60)	o	Name of subscriber's company, r if company and PoA_Id is not empty
<STREET>	char (var,30)	o	Street of subscribers address
<STREET_NR>	char (var,12)	o	Street number of subscriber address
<CITY>	char (var,25)	o	City of subscribers address
<POST_CO>	char (var,06)	o	Postal code of subscriber address
<PO_BOX>	char (var,05)	o	Postal box of subscriber address
<POA_ID>	char (var,17)	r/o	r if the recipient sends the power of attorney (PoA) to the donor before issuing the WO, he assigns a number and have to fill it in. Recommended value is: IIIXXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXXX–number TSP chooses internally.
<TSP_INT_REFERENCE>	char (var,17)	o	Recommended value is: IIIXXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXXX– number TSP chooses internally.
<RECIP_ID>	char (var,05)	-/o	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	o	Identifies the donor TSP. Taken from TSP_ID.

			If empty, the system will try to determinate automatically the Donor.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	o	The date YYYYMMDD the recipient (or the subscriber) wishes to port the number(s). If empty, the earliest possible activation date/time will be calculated during the ACCEPT step.
<WISH_TIME>	char (04)	r/o	The time HHMM the recipient (or the subscriber) wishes to port the number(s), r if CON_TYPE =002, 004 or 005
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	r	001="Respect contract end date" 002="Early termination penalty"
<POA_DATE>	char(08)	r	Power of Attorney date for WO. Must be <= today.
<PARTIAL_PORTING>	char(01)	o	Partial porting indicator. Possible values: Y or N. Default N
<COMMENT>	char(var, 80)	o	Free form text for recipient TSP's internal use
<SUBSCRIBER_LANGUAGE_ID>	char(03)	r/-	Required if CON_TYPE=005, empty otherwise. Select SMS language for Departure confirmation. 001="English", 002="French" 003="German" 004="Italian"
<RECIPIENT_BRAND_NAME>	char(var,20)	r/-	Required if CON_TYPE=005, empty otherwise. Text specifying recipient's brand name. Note: If this field contains one of the following: UNKNOWN, INCONNU, UNBEKANNT or SCONOSCIUTO (upper and lower case are considered equal) then a special SMS text will be sent to the subscriber.
<PORT_PRIORITY>	Char (03)	r	001=normal (default), 002=emergency

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing an INIT record.

2.2.1.3.2 ACCEPT Record of .upl file

Attribute name	Format	r/o/-	Description
ACCEPT	char (06)	r	The Accept record begin with the word ACCEPT
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	E.164 number requested to port
<SUB_NR2>	char (var,13)	r/o	r if CON_TYPE=004 or 005 and '*'. Add fax number belonging to SUB_NR1, if not available add '*'.

<SUB_NR3>	char (var,13)	r/o	if CON_TYPE=004 or 005 and '*'. Add data number belonging to SUB_NR1, if not available add '*'.
<SUB_NR4>	char (var,13)	r/o	r if CON_TYPE=004 or 005 and '*'. Add ALS number belonging to SUB_NR1, if not available add '*'.
<SUB_NR5>	char (var,13)	r/o	5th ...
<SUB_NR6>	char (var,13)	r/o	6th ...
<SUB_NR7>	char (var,13)	r/o	7th ...
<SUB_NR8>	char (var,13)	r/o	8th ...
<SUB_NR9>	char (var,13)	r/o	9th ...
<SUB_NR10>	char (var,13)	r/o	10th ...
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	o	The ACTI_DATE can be manually filled if WISH_Date in the INIT is empty. Else it must be left empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.
<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing an ACCEPT record.

2.2.1.3.3 REJECT Record of .upl file

Attribute name	Format	r/o/-	Description
REJECT	char (06)	r	The Reject record begin with the word REJECT
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR2>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR3>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR4>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR5>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR6>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR7>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR8>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR9>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR10>	char (var,13)	-	At this stage, this field is empty.
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128)	r	See section 5.1 for reject reasons. Enter multiple rejects in the format like 001,002,003. Only active reject reasons can be used.
<REJECT_COM>	char (var,75)	r/o	Additional comments from donor for reject reason. r if REJECT_COM is defined in the system_parameters
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.

<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing a REJECT record.

2.2.1.3.4 REPRESENT Record of .upl file

Attribute name	Format	r/o/-	Description
REPRESENT	char (09)	r	The Represent record begin with the word REPRESENT
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	r/o	001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<SUB_NR1>	char (var,13)	r/-	Must be present for CON_TYPE other than 003
<SUB_NR2>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR3>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR4>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR5>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR6>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR7>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR8>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR9>	char (var,13)	o	Must be the same as in the original work order
<SUB_NR10>	char (var,13)	o	Must be the same as in the original work order
<FAMILY_NAME>	char (var,60)	o/r	Family name of subscriber, r if PoA_Id is not empty.
<FORENAME>	char (var,30)	r/o	First name of subscriber, r if private person and poA_Id is not empty
<COMPANY_NAME>	char (var, 60)	o	Name of subscriber's company, r if company and PoA_Id is not empty.
<STREET>	char (var,30)	o	Street of the subscriber
<STREET_NR>	char (var,12)	o	Street number of the subscriber
<CITY>	char (var,25)	o	City where subscriber lives
<POST_CO>	char (var,06)	o	Postal code of the subscriber
<PO_BOX>	char (var,05)	o	Postal box of the subscriber
<POA_ID>	char (var,17)	r/o	r if the recipient sends the power of attorney (PoA) to the donor before issuing the WO, he assigns a number and have to fill it in. IIIXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXX–number TSP chooses internally.
<TSP_INT_REFERENCE>	char (var,17)	r	IIIXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXX– number TSP chooses internally.
<RECIP_ID>	char (var,05)	r	Identifies the recipient TSP
<DONOR_ID>	char (var,05)	o	Identifies the donor TSP. If empty, the system will try to determinate automatically the Donor.

<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	o	The date YYYYMMDD the recipient (or the subscriber) wishes to port the number(s). If empty, the earliest possible activation date/time will be calculated during the ACCEPT step.
<WISH_TIME>	char (04)	r/o	The time HHMM the recipient (or the subscriber) wishes to port the number(s), r if CON_TYPE=004
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	r	001="Respect contract end date" 002="Early termination penalty"
<POA_DATE>	char(08)	r	Power of Attorney date for WO. Must be <= today.
<PARTIAL_PORTING>	char(01)	o	Partial porting indicator. Possible values: Y or N. Default N
<COMMENT>	char(var, 80)	o	Free form text for recipient TSP's internal use
<SUBSCRIBER_LANGUAGE_ID>	char(03)	r/-	Required if CON_TYPE=005, empty otherwise. Select SMS language for Departure confirmation. 001="English", 002="French" 003="German" 004="Italian"
<RECIPIENT_BRAND_NAME>	char(var,20)	r/-	Required if CON_TYPE=005, empty otherwise. Text specifying recipient's brand name. Note: If this field contains one of the following: UNKNOWN, INCONNU, UNBEKANNT or SCONOSCIUTO (upper and lower case are considered equal) then a special SMS text will be sent to the subscriber.
<PORT_PRIORITY>	Char (03)	-	001=normal (default), 002=emergency

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.
No files will be created as a result of processing a REPRESENT record.

2.2.1.3.5 SYNC Record of .upl file

Attribute name	Format	r/o/-	Description
SYNC	char (04)	r	The Sync record begins with the word SYNC SYNC cannot be used on CON_TYPE = '003'
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR2>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR3>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR4>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR5>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR6>	char (var,13)	-	At this stage, this field is empty.

<SUB_NR7>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR8>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR9>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR10>	char (var,13)	-	At this stage, this field is empty.
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.
<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing a SYNC record.

2.2.1.3.6 SYNC_INA Record of .upl file

Attribute name	Format	r/o/-	Description
SYNC_INA	char (04)	r	The INA-Sync record begins with the word SYNC_INA (dependency from INA, see [4]). SYNC_INA is only used by CON_TYPE = '003'
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	At this stage, this field is empty.

<SUB_NR2>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR3>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR4>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR5>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR6>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR7>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR8>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR9>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR10>	char (var,13)	-	At this stage, this field is empty.
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<ACCESS_ABROAD>	char (03)	r	Access from abroad (dependency from INA, see [4]). 001="yes" 002="no"
<TARIFF_CLASS>	char (var,5)	r	Tariff class (dependency from INA, see [4])
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.
<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing a SYNC_INA record.

2.2.1.3.7 HANDOVER Record of .upl file

Attribute name	Format	r/o/-	Description
HANDOVER	char (08)	r	The Handover record begin with the word HANDOVER
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID

			YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR2>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR3>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR4>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR5>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR6>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR7>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR8>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR9>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR10>	char (var,13)	-	At this stage, this field is empty.
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.
<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

A brd file will be created as a result of processing a HANDOVER record.

2.2.1.3.8 CANCEL Record of .upl file

Attribute name	Format	r/o/-	Description
CANCEL	char (06)	r	The Cancel record begin with the word CANCEL

<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	-	At this stage, this field is empty.
<SUB_NR1>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR2>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR3>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR4>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR5>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR6>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR7>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR8>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR9>	char (var,13)	-	At this stage, this field is empty.
<SUB_NR10>	char (var,13)	-	At this stage, this field is empty.
<FAMILY_NAME>	char (var,60)	-	At this stage, this field is empty.
<FORENAME>	char (var,30)	-	At this stage, this field is empty.
<COMPANY_NAME>	char (var, 60)	-	At this stage, this field is empty.
<STREET>	char (var,30)	-	At this stage, this field is empty.
<STREET_NR>	char (var,12)	-	At this stage, this field is empty.
<CITY>	char (var,25)	-	At this stage, this field is empty.
<POST_CO>	char (var,06)	-	At this stage, this field is empty.
<PO_BOX>	char (var,05)	-	At this stage, this field is empty.
<POA_ID>	char (var,17)	-	At this stage, this field is empty.
<TSP_INT_REFERENCE>	char (var,17)	-	At this stage, this field is empty.
<RECIP_ID>	char (var,05)	-	At this stage, this field is empty.
<DONOR_ID>	char (var,05)	-	At this stage, this field is empty.
<ACTI_DATE>	char (08)	-	At this stage, this field is empty.
<ACTI_TIME>	char (04)	-	At this stage, this field is empty.
<WISH_DATE>	char (08)	-	At this stage, this field is empty.
<WISH_TIME>	char (04)	-	At this stage, this field is empty.
<REJECT>	char (var,128)	-	At this stage, this field is empty.
<REJECT_COM>	char (var,75)	-	At this stage, this field is empty.
<POA_TYPE>	char (03)	-	At this stage, this field is empty.
<POA_DATE>	char(08)	-	At this stage, this field is empty.
<PARTIAL_PORTING>	char(01)	-	At this stage, this field is empty.
<COMMENT>	char(var, 80)	-	At this stage, this field is empty.
<SUBSCRIBER_LANGUAGE_ID>	char(03)	-	At this stage, this field is empty.
<RECIPIENT_BRAND_NAME>	char(var,20)	-	At this stage, this field is empty.
<PORT_PRIORITY>	Char (03)	-	At this stage, this field is empty.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

No files will be created as a result of processing a CANCEL record.

2.2.1.3.9 RETURN_NRH Record of .upl file

Attribute name	Format	r/o/-	Description
RETURN_NRH	char (10)	r	The Return_nrh record begin with the word RETURN_NRH
<SUB_NR>	char (var,13)	r	One ported number to return to the NRH. If the number is in a DDI range, the whole range will be returned.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

No files will be created as a result of processing a RETURN_NRH record.

2.2.1.3.10 READ Record of .upl file

The results of the READ record will be presented in the form of a .lpw file (see section 2.2.6).

Note: The result set will only list records related to work orders in which the requesting TSP is participating as Donor or Recipient.

Attribute name	Format	r/o/-	Description
READ	char (04)	r	Selects work order records : The Read record begin with the word READ
<WO_ID_START>	char (var,17)	o	Selects work order records where either the exact WO_ID is found or the WO_ID between start and end is found. Wildcard char '?' & '*' may be used. IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001).
<WO_ID_END>	char (var,17)	o	Must be empty, when WO_ID_START is empty Wildcard char '?' & '*' may be used. IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<CON_TYPE>	char (03)	o	Selects work order records where the exact CON_TYPE is found 001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<SUB_NR_START>	char (var,13)	o	If <SUB_NR_END> is empty, then this field selects the work order record where the exact subscriber number is found. If the number is found in a DDI

			range, the work order record with the range will be selected. If <SUB_NR_END> is not empty, then <SUB_NR_START> specifies the first of a range of selected numbers.
<SUB_NR_END>	char (var,13)	o	Specifies the last of a range of selected numbers.
<WISH_DATE_START>	char (08)	o	Selects work order records where either the exact WISH_DATE YYYYMMDD or the WISH_DATE between start and end date is found.
<WISH_DATE_END>	char (08)	o	Must be empty, when WISH_DATE_START is empty Date YYYYMMDD the recipient (or the subscriber) wishes to port the number(s).
<ACTI_DATE_START>	char (08)	o	Selects work order records where either the exact ACTI_DATE or the ACTI_DATE between start and end date is found. Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_DATE_END>	char (08)	o	Must be empty, when ACTI_DATE_START is empty Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_TIME_START>	char (04)	o	Selects work order records where either the exact ACTI_TIME or the ACTI_TIME between start and end date is found. The time HHMM the recipient is going to port the number(s).
<ACTI_TIME_END>	char (04)	o	Must be empty, when ACTI_TIME_START is empty The time HHMM the recipient is going to port the number(s).
<WO_STATUS>	char (03)	o	Selects work order records with a matching WO_STATUS. For values see section 5.3.
<RECIP_ID>	char (var,05)	r/-	Selects work order records where the exact RECIP_ID is found r if .lpw should list my required actions as recipient.
<DONOR_ID>	char (var,05)	r/-	Selects work order records where the exact DONOR_ID is found r if .lpw should list my required actions as donor.
<ACTION_BY_SENDER>	char (03)	r/-	Selects work order records where the exact ACTION_BY_SENDER is found 001="Yes", 002="No". Value that signal to the system that only work orders should be displayed where an action from the inquiring TSP is needed. r if the field(s) ACTION_DAYS, ACTION_HOURS, ACTION_MINUTES are filled
<ACTION_DAYS>	char (var,05)	o/-	Selects work order records where the number of days in advance for the action is needed. For example, if this is 3, work orders will be selected which need action within the next 3 days. If left empty all work orders needing action will be selected.
<ACTION_HOURS>	char (var,05)	o/-	Selects work order records where the number of hours in advance for the action is needed. This field

			is related with ACTION_DAYS and ACTION_MINUTES.
<ACTION_MINUTES>	char (var,05)	o/-	Selects work order records where the number of minutes in advance for the action is needed. This field is related with ACTION_DAYS and ACTION_HOURS.
<REJECT>	char (03)	o	Selects work order records where the exact REJECT reason is found. See section 5.1 for reject reason definitions. Also inactive reject reasons can be used.
<POA_TYPE>	char (03)	o/-	001="Respect contract end date" 002="Early termination penalty"
<TRANS_DATE_START>	char (08)	o	Selects work order records where either the exact TRANS_DATE or the TRANS_DATE between start and end date is found. The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_DATE_END>	char (08)	o	Must be empty, when TRANS_DATE_START is empty The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME_START>	char (04)	o	Selects work order records where either the exact TRANS_TIME or the TRANS_TIME between start and end date is found. The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME_END>	char (04)	o	Must be empty, when TRANS_TIME_START is empty The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<POA_DATE_START>	char(08)	o	Selects work order records where either the exact POA_DATE or the POA_DATE between start and end date is found. Power of Attorney date YYYYMMDD of WO.
<POA_DATE_END>	char(08)	o	Must be empty when POA_DATE_START is empty. Power of Attorney date YYYYMMDD of WO.
<DEPARTURE_STATUS>	char (03)	o	Select a work orders by departure status. See 5.4 for possible values.
<DEPARTURE_TRANS_DATE_START>	char (08)	o	Select work orders where the associated DEPARTURE's TRANS_DATE is either exactly the value specified here or in the range given by start and end date. Meaningful for CON_TYPE=005 only.
<DEPARTURE_TRANS_DATE_END>	char (08)	o	Must be empty when DEPARTURE_TRANS_DATE_START is empty. Select work orders where the associated DEPARTURE's TRANS_DATE is in the range given by start and end date. Meaningful for CON_TYPE=005 only.
<DEPARTURE_TRANS_TIME_START>	char (04)	o	Extends DEPARTURE_TRANS_DATE_START by the time of the day.
<DEPARTURE_TRANS_TIME_END>	char (04)	o	Extends DEPARTURE_TRANS_DATE_END by the time of the day.

RECIPIENT_BRAND_NAME	char(var,20)	o	Select work orders with a matching brand name.
<PORT_PRIORITY>	char(03)	o/-	001=normal, 002=emergency

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

An lpw file will be created as a result of processing a READ record. The number of returned records is limited by the *System Parameter* MAX_ROWS_FTP.

2.2.1.3.11 READZ Record of .upl file

The READZ record is identical to the READ record (except for the first field, which contains READZ).
It is also functionally equivalent to READ, except

- The number of returned records is limited by the system parameter MAX_ROWS_FTP_ZIP.
- The result file is compressed by the gzip utility, and the suffix ".gz" is appended to the file name.

2.2.1.3.12 LIST Record of .upl file

The results of the LIST record will be presented in the form of a .lpn file (see section 2.2.5).
Note: The result set will include all subscriber numbers that match the selection criteria, regardless of the TSP currently operating them.

Attribute name	Format	r/o/-	Description
LIST	char (04)	r	Selects ported number records The List record begin with the word LIST
<CON_TYPE>	char (03)	o	Selects ported number records where the exact CON_TYPE is found 001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<SUB_NR_START>	char (var,13)	o	If <SUB_NR_END> is empty, then this field selects the ported number record where the exact subscriber number is found. If <SUB_NR_END> is not empty, then <SUB_NR_START> specifies the first of a range of selected numbers.
<SUB_NR_END>	char (var,13)	o	Specifies the last of a range of selected numbers.
<ACTI_DATE_START>	char (08)	o	Selects ported number records where either the exact ACTI_DATE or the ACTI_DATE between start and end date is found. Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_DATE_END>	char (08)	o	Must be empty, when ACTI_TIME_START is emtpty Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_TIME_START>	char (04)	o	Selects ported number records where either the exact ACTI_TIME or the ACTI_TIME between start and end date is found. The time HHMM the recipient is going to port the number(s).
<ACTI_TIME_END>	char (04)	o	Must be empty, when ACTI_TIME_START is empty The time HHMM the recipient is going to port the number(s).
<RECIP_ID>	char (var,05)	o	Selects ported number records where the exact RECIP_ID is found Identifies the recipient TSP. Copied from TSP_ID.
<DONOR_ID>	char (var,05)	o	Selects ported number records where the exact DONOR_ID is found Identifies the donor TSP. Taken from TSP_ID

<NRH_ID>	char (var,05)	o	Selects ported number records where the exact NRH_ID is found The identification of the number range holder is automatically assigned by the TSP INet-Server to each ported number.
<WO_STATUS>	char (03)	o	Selects ported number records where the exact WO_STATUS is found. 006="OK", 008="RET_TO_NRH"
<TRANS_DATE_START>	char (08)	o	Selects ported number records where either the exact TRANS_DATE or the TRANS_DATE between start and end date is found. The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_DATE_END>	char (08)	o	Must be empty, when TRANS_DATE_START is empty The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME_START>	char (04)	o	Selects ported number records where either the exact TRANS_TIME or the TRANS_TIME between start and end date is found. The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME_END>	char (04)	o	Must be empty, when TRANS_TIME_START is empty The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

An lpw file will be created as a result of processing a LIST record. If no attribute beside LIST is given, you will receive an .lpn file with all ported numbers, the one with WO_STATUS='OK' and the one with the WO_STATUS='RET_TO_NRH'. However , this is limited by the *System Parameter* MAX_ROWS_FTP

2.2.1.3.13 LISTZ Record of .upl file

The LISTZ record is identical to the LIST record (except for the first field, which contains LISTZ).
It is also functionally equivalent to LIST, except

- The number of returned records is limited by the system parameter MAX_ROWS_FTP_ZIP.
- The result file is compressed by the gzip utility, and the suffix ".gz" is appended to the file name.

2.2.1.3.14 LIST_DEPARTURES Record of .upl file

The results of the LIST_DEPARTURES record will be presented in the form of a .lpd file (see section 2.2.7).
Note: The result set will only list DEPARTURE records related to work orders accessible by the requesting TSP or not related to an open work order. When there is no related work order, the requesting TSP must be the current operating TSP of the subscriber number.

Attribute name	Format	r/o/-	Description
LIST_DEPARTURES	char (15)	r	Select DEPARTURE records. The LIST_DEPARTURES record begins with the word LIST_DEPARTURES
<SUB_NR_FROM>	char (var,13)	o	Select Departure for the given subscriber number. Select Departures for all subscriber numbers if no value is given. This field specifies either the exact subscriber number or the beginning of a range.
<SUB_NR_TO>	char (var,13)	o	Must be empty when SUB_NR_FROM is empty. Select Departures for the range of subscriber

			numbers defined by SUB_NR_FROM and SUB_NR_TO.
<DEPARTURE_STATUS>	char (03)	o	Select Departures with the given status. Select Departures with any status if no value is given. See 5.4 for possible values.
<SMS_ DATE_START>	char (08)	o	Select Departures where either the exact SMS_DATE or an SMS_DATE between start and end date is found. Select Departures by the date for which the first departure confirmation SMS was requested.
<SMS_ DATE_END>	char (08)	o	Must be empty, when SMS_ DATE_START is empty. Select Departures with an SMS_DATE between start and end date.
<SMS_ TIME_START>	char (04)	o	Extends SMS_ DATE_START by the time of the day.
<SMS_ TIME_END>	char (04)	o	Extends SMS _DATE_END by the time of the day.
<RECIP_ID>	char (var,05)	o	Selects departure records having an associated work order with a recipient matching RECIP_ID
<DONOR_ID>	char (var,05)	o	Selects departure records having an associated work order with a recipient matching DONOR_ID

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

An lpd file will be created as a result of processing a LIST_DEPARTURES record. If no attribute beside LIST_DEPARTURES is given, the result will be a .lpd file with all accessible DEPARTURE records. However , the result set is limited by the *System Parameter* MAX_ROWS_FTP

2.2.1.4 Trailer of .upl file

The trailer in the .upl file is optional. If the word TRAILER is in the .upl file a MD5 checksum must follow.

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	o	The trailer line begin with the word TRAILER
<MD5 checksum>	char (32)	o	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.2 Format .ack file

In the next lines we show an acknowledge file with the name `98100_000_20160623000001.ack`. In the next chapters we will then describe exactly the different records.

```
HEADER→98100→98100_000_19990823000001.ack→4↓                                   HEADER Record
LIST→10019990824000122→→→→→0→→→↓                                               LIST Record
INIT→99020160615000015→001→20160615→1130→→000→89990→→↓                         INIT Record
ACCEPT→99020160615000016→004→20160615→1130→→000→89990→20160625→0830↓           ACCEPT Record
READ→99020160615000017→→→→→0→→→→→→→↓                                          READ Record
RETURN_NRH→10019990824000001→008→19990823→1055→→0→→→↓                          RTN_NRH Record
TRAILER→7890b34e8722e995b50070b3f6a98999↓                                      TRAILER Record
```

→ ... <TAB> (\t)
↓ ... <CR><LF> (\r\n)

2.2.2.1 Filename of .ack file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.ack, where the first part of the filename "**<TSP_ID>_SSS_YYYYMMDDXXXXXX**" (without **.ack**) is the same of the corresponding **.upl** file.

2.2.2.2 Header of .ack file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,05)	r	Unique identifier assigned by BAKOM
<Filename>	char (var,28)	r	Filename of the .ack file
<Number of records>	char (var,05)	r	Number of acknowledgements in .ack file without header and trailer.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.2.3 Records of .ack file

Attribute name	Format	r/o/-	Description
<MESSAGE_CODE>	char (var,15)	r	"INIT", "ACCEPT", "CANCEL", "REJECT", "REPRESENT", "SYNC", "HANDOVER", "RETURN_NRH" , "READ" , "READZ" , "LIST" , "LISTZ", "LIST_DEPARTURES"
<WO_ID>	char (17)	r/-	<WO_ID> is always returned for valid requests INIT, ACCEPT, CANCEL, REJECT, REPRESENT, SYNC, HANDOVER, RETURN_NRH. It is not guaranteed to be available for invalid requests (see also field <MESSAGE_ID>). The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests. Format: IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<WO_STATUS>	char (03)	r/-	Work order status. For values see section 5.3. <WO_STATUS> is always returned for valid requests INIT, ACCEPT, CANCEL, REJECT, REPRESENT, SYNC, HANDOVER, RETURN_NRH. It is not guaranteed to be available for invalid requests (see also field <MESSAGE_ID>). The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<TRANS_DATE>	char (08)	r/-	The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS) <TRANS_DATE> is always returned for valid requests INIT, ACCEPT, CANCEL, REJECT, REPRESENT, SYNC, HANDOVER, RETURN_NRH. It is not guaranteed to be available for invalid requests (see also field <MESSAGE_ID>). The field

			is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<TRANS_TIME>	char (04)	r/-	<TRANS_TIME> is always returned for valid requests INIT, ACCEPT, CANCEL, REJECT, REPRESENT, SYNC, HANDOVER, RETURN_NRH. It is not guaranteed to be available for invalid requests (see also field <MESSAGE_ID>) The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS). The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<TSP_INT_REFERENCE>	char (17)	r/-	IIIXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXX – number TSP chooses internally. <TSP_INT_REFERENCE> is always returned for valid requests INIT, ACCEPT, CANCEL, REJECT, REPRESENT, SYNC, HANDOVER. It is not guaranteed to be available for invalid requests (see also field <MESSAGE_ID>). The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<MESSAGE_ID>	char (03)	r/-	This is the response code of the TSP INet-Server. Please refer to [5] for values. Applicable codes are between 100 and 800, as explained in [5] . The field is equal to 000 if no error message.
<DONOR_ID>	Char (05)	r/-	Unique identifier assigned by BAKOM. The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<ACTI_DATE>	char (08)	r/-	Date YYYYMMDD the donor / INet is offering to port the number(s). Information available after ACCEPT, SYNC, HANDOVER, REPRESENT. If the Recipieent has left the wish_date field empty at INIT and the Donor has left the Acti_Date field empty at ACCEPT, then INet calculates the ACTI_Date based on Transaction Date/Time + MIN_ACTIDATE_{PoA_Type}_MIN_ The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests
<ACTI_TIME>	char (04)	r/-	Time HHmm the donor / INet is offering to port the number(s). Information available after ACCEPT, SYNC, HANDOVER, REPRESENT. Same rules than for the ACTI_DATE apply. The field is empty for READ, READZ, LIST, LISTZ, LIST_DEPARTURES requests

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.2.4 Trailer of .ack file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begin with the word TRAILER
<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max lenght, r...required, o...optional, -...empty.

2.2.3 Format .exx file

This is in fact the same **.upl** file as uploaded by the TSP, but renamed to an error file (**.exx**) when validation on the file and/or its header fails.

2.2.3.1 Filename .exx file

<**TSP_ID**>**_SSS_YYYYMMDDXXXXXX.exx,** where the first part of the filename "**<TSP_ID>_SSS_YYYYMMDDXXXXXX**" (without **.upl**) is the same of the corresponding **.upl** file. The **.exx** is the error number. This is in fact the same file as uploaded by the TSP, but renamed to an error file (**.exx**) when validation on the file and/or its header fails.
Please refer to [5] for a list of error numbers (the *xx* part in *exx*). As explained there, numbers below 100 are reserved for file transfer diagnostics.

2.2.4 Format .brd file (Result of HANDOVER)

Broadcast messages belonging to successful HANDOVER and RETURN_NRH transactions in a batch job. Only ported numbers where the handover was done via SSH are present in the .brd file.

In the next lines we show a .brd file with the name `98100_000_19990823000001.brd`. In the next chapters we will then describe exactly the different records.

```
HEADER→98100→98100_000_19990823000001.brd→1↓                                    HEADER Record
01419990823023115→0812347890→→→→→→→→→→004→19990509→1723→→98013→...              RTN_NRH Record
TRAILER→6999a34c8722e775b59970b3e6e989b4↓                                       TRAILER Record
```

→ … <TAB> (\t)
↓ … <CR><LF> (\r\n)

2.2.4.1 Filename .brd file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.brd, where <**TSP_ID**> is the ID assigned by BAKOM, **SSS** is a internal TSP assigned number, **YYYYMMDD** is the date **XXXXXX** is the sequence number belonging to the uploaded file with the HANDOVER and RETURN_NRH transactions to which the broadcast messages belong.

2.2.4.2 Header .brd file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,05)	r	Unique identifier assigned by BAKOM
<Filename>	char (var,28)	r	Filename of the .brd file
<Number of records>	char (var,05)	r	Number of broadcast messages in .brd file without header and trailer.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.4.3 Records in .brd file

Attribute name	Format	r/o/-	Description
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<SUB_NR1>	char (var,13)	r	E.164 number requested to port or returned to NRH
<SUB_NR2>	char (var,13)	r/o	r if CON_TYPE=002. Lowest number in the range r if CON_TYPE=004 and donor returned fax number on ONPACCEPT_WO().
<SUB_NR3>	char (var,13)	r/o	r if CON_TYPE=002. Highest number in the range r if CON_TYPE=004 and donor returned data number on ONPACCEPT_WO().
<SUB_NR4>	char (var,13)	r/o	r if CON_TYPE=001, 4th number in the ISDN-package. r if CON_TYPE=004 and donor returned ALS number on ONPACCEPT_WO().
<SUB_NR5>	char (var,13)	r/o	5th ...
<SUB_NR6>	char (var,13)	r/o	6th ...
<SUB_NR7>	char (var,13)	r/o	7th ...
<SUB_NR8>	char (var,13)	r/o	8th ...
<SUB_NR9>	char (var,13)	r/o	9th ...
<SUB_NR10>	char (var,13)	r/o	10th ...
<CON_TYPE>	char (03)	r	001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<ACTI_DATE>	char (08)	r	The Date YYYYMMDD the donor did offer to port the number(s) or being returned to the NRH.
<ACTI_TIME>	char (04)	r	The time HHMM the recipient did commit in the SYNC message to port the number(s) or being returned to the NRH
<RECIP_ID>	char (var,05)	r/-	r if the record is written because of a HANDOVER transaction found in the .upl file. If the record is written because of a RETURN_NRH transaction, this field is empty.
<DONOR_ID>	char (var,05)	r	Identifies the donor TSP. If the record is written because of a RETURN_NRH transaction found in the .upl file this will represent the TSP who returns the number. Copied from the TSP_ID.
<NRH_ID>	char (var,05)	r	Identification of the number range holder. Is set by the TSP INet-Server the first time the number is ported.
<MESSAGE_ID>	char (03)	r	This is the response code of the TSP INet-Server.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.4.4 Trailer .brd file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begin with the word TRAILER

<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.5 Format .lpn file (Result of LIST)

The .lpn file contains the list of ported numbers, which was requested.

In the next lines we show a .lpn file with the name `98100_000_19990823000001.lpn`. In the next chapters we will then describe exactly the different records.

```
HEADER→98100→98100_000_19990823000001.lpn→3↓                                    HEADER Record
0812347890→→→001→98001→19991200→1059→98003→98002→001xxxxxxxxxxxxxx→006↓         OK Record
0812247890→→→001→98001→19991201→0802→→98002→001xxxxxxxxxxxxxx
→008→000→19991200→1059→98003→98002→0812347890→00?xxxxxxxxxxxxxx006↓             RTN_NRH
Record
0812347800→→→001→98001→19991201→1135→98004→98002→001xxxxxxxxxxxxxx→006↓         OK Record
TRAILER→6999a34c8722e775b59970b3e6e989b4↓                                       TRAILER Record
```

→ ... <TAB> (\t)
↓ ... <CR><LF> (\r\n)

2.2.5.1 Filename .lpn file

The following naming convention is used for all lpn files created as a result of a .upl LIST command: **<TSP_ID>_SSS_YYYYMMDDXXXXXX.lpn**, where **<TSP_ID>** is the ID assigned by BAKOM, **SSS** is an internal TSP assigned number, **YYYYMMDD** is the date of creation of the download file and **XXXXXX** is a unique sequence number that starts with 000001 in case of several download requests.

In addition, TSP_INet creates periodically a list of all ported numbers (i.e. since the beginning of TSP-INet) in zipped lpn format. This list is named as follows:
allnumbers_YYYYMMDD.lpn.gz where YYYYMMDD is the end date of the reporting period. Please refer to section *Time based lpn processing* in [1] for scheduling details.

2.2.5.2 Header .lpn file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,5)	r	Unique identifier assigned by BAKOM
<Filename>	char (var,28)	r	Filename of the .lpn file
<Number of records>	char (var,10)	r	Number of records in .lpn file without header and trailer.
<Filename corresp. upl>	char (var,28)	r	r if the .lpn file has been requested by a .upl file.
<Record in .upl >	char (var,05)	r	r if the .lpn file has been requested by a .upl file. Record number in corresponding .upl file (header record not included)

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.5.3 Records of .lpn file

Attribute name	Format	r/o/-	Description

<SUB_NR>	char (var,13)	r	Successfully ported number and identifier for Ported Number
<SUB_NR2>	char (var,13)	r/-	r if CON_TYPE=002. Lowest number in the range.
<SUB_NR3>	char (var,13)	r/-	r if CON_TYPE=002. Highest number in the range.
<CON_TYPE>	char (03)	r	001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<NRH_ID>	char (var,05)	r	The identification of the number range holder is automatically assigned by the TSP INet-Server to each ported number the first time the number is ported (first donor is and remains always the NRH).
<ACTI_DATE>	char (08)	r	Date YYYYMMDD the donor did offering to port the number(s)
<ACTI_TIME>	char (04)	r	The time HHMM the recipient did port the number(s).
<RECIP_ID>	char (var,05)	r/-	r if WO_STATUS='OK'. If the WO_STATUS='RET_TO_NRH, this field is empty.
<DONOR_ID>	char (var,05)	r	Identifies the donor TSP. Taken from TSP_ID
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<WO_STATUS>	char (03)	r	006="OK", 008="RET_TO_NRH"
<TRANS_DATE>	char (08)	r	The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME>	char (04)	r	The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<PORT_HISTORY_ID>	char (03)	r	Part of the primary key of Ported Number History, identifying the history record for a ported number.
<ACTI_DATE>	char (08)	r/o	Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_TIME>	char (04)	r/o	The time HHMM the recipient is going to port the number(s).
<RECIP_ID>	char (var,05)	r/o	Identifies the recipient TSP. Copied from TSP_ID.
<DONOR_ID>	char (var,05)	r/o	Identifies the donor TSP. Taken from TSP_ID
<SUB_NR>	char (var,13)	r/o	Successfully ported number and identifier for Ported Number
<WO_ID>	char (17)	r/o	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<WO_STATUS>	char (03)	r/o	006="OK", 008="RET_TO_NRH"
next history entry			
...			

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.5.4 Trailer .lpn file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begin with the word TRAILER
<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length r...required, o...optional, -...empty.

2.2.6 Format .lpw file (Result of READ)

The .lpw file contains the list of work orders, which was requested.

In the next lines we show a .lpw file with the name `98100_000_19990823000001.lpw`. In the next chapters we will then describe exactly the different records.

```
HEADER→98100→98100_000_19990823000001.lpw→1↓                                    HEADER Record
013199908230123456→001→001→012345678→→→→→→→→→→002→Meier→W.→Rehweg→10...↓  INIT Record
TRAILER→6999a34c8722e775b59970b3e6e989b4↓                                       TRAILER Record
```

2.2.6.1 Filename .lpw file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.lpw, where **<TSP_ID>** is the ID assigned by BAKOM, **SSS** is an internal TSP assigned number, **YYYYMMDD** is the date of creation of the download file and **XXXXXX** is a unique sequence number that starts with 000001 in case of several download requests.

2.2.6.2 Header .lpw file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,5)	r	Unique identifier assigned by BAKOM
<Filename>	char (var,28)	r	Filename of the .lpw file
<Number of records>	char (var,10)	r	Number of work order records in .lpw file without header and trailer.
<Filename corresp. upl>	char (var,28)	r/-	r if the .lpw file has been requested by a .upl file. Filename of corresponding .upl file
<Record in .upl >	char (var,05)	r/-	r if the .lpw file has been requested by a .upl file. Record number in corresponding .upl file (header record not included)

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.6.3 Records of .lpw file

Attribute name	Format	r/o/-	Description
<WO_ID>	char (17)	r	IIIYYYYMMDDXXXXXX The WO_ID is unique and build-up of the following items : III - the 3 right-most digits of RECIP_ID YYYY - Year MM - Month DD - Day XXXXXX - sequence number generated by the system (starting with 000001)
<WO_STATUS>	char (03)	r	Work order status. For values see section 5.3.
<CON_TYPE>	char (03)	r	001="PSTN/ISDN", 002="DDI", 003= "INA", 004="MOBILE" , 005="MOBILE PRE-PAID"
<SUB_NR1>	char (var,13)	r	E.164 number requested tp port
<SUB_NR2>	char (var,13)	r/-	If CON_TYPE=002. Lowest number in the range (ends with 0) If CON_TYPE=004. '*' indicates the donor to return the appropriate fax number by the function ONPACCEPT_WO().
<SUB_NR3>	char (var,13)	r/-	If CON_TYPE=002. Highest number in the range (ends with 9) If CON_TYPE=004. '*' indicates the donor to return the appropriate date number by the function ONPACCEPT_WO().
<SUB_NR4>	char (var,13)	r/-	If CON_TYPE=001, 4th number in the ISDN-package. If CON_TYPE=004. '*' indicates the donor to return the appropriate ALS number by the function ONPACCEPT_WO().
<SUB_NR5>	char (var,13)	r/-	5th ...
<SUB_NR6>	char (var,13)	r/-	6th ...
<SUB_NR7>	char (var,13)	r/-	7th ...
<SUB_NR8>	char (var,13)	r/-	8th ...
<SUB_NR9>	char (var,13)	r/-	9th ...
<SUB_NR10>	char (var,13)	r/-	10th ...
<FAMILY_NAME>	char (var,60)	r/-	Family name of subscriber
<FORENAME>	char (var,30)	r/-	First name of subscriber
<COMPANY_NAME>	char (var, 60)	r/-	Name of subscriber's company
<STREET>	char (var,30)	r/-	Street of the subscriber
<STREET_NR>	char (var,12)	r/-	Street number of the subscriber
<CITY>	char (var,25)	r/-	City where subscriber lives
<POST_CO>	char (var,06)	r/-	Postal code of the subscriber
<PO_BOX>	char (var,05)	r/-	Postal box of the subscriber
<POA_ID>	char (17)	r/-	IIIXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXX – sequence number generated by the system
<TSP_INT_REFERENCE>	char (17)	r/-	IIIXXXXXXXXXXXXX. III...3 right digits of RECIP_ID, XXXXXXXXXXXXX – sequence number generated by the system
<WISH_DATE>	char (08)	o	The date YYYYMMDD the recipient (or the subscriber)

			wishes to port the number(s), can be empty
<WISH_TIME>	char (04)	o/-	The time HHMM the recipient (or the subscriber) wishes to port the number(s, can be empty).
<ACTI_DATE>	char (08)	r/-	Date YYYYMMDD the donor is offering to port the number(s)
<ACTI_TIME>	char (04)	r/-	The time HHMM the recipient is going to port the number(s).
<RECIP_ID>	char (var,05)	r	Identifies the recipient TSP. Copied from TSP_ID.
<DONOR_ID>	char (var,05)	r	Identifies the donor TSP. Taken from TSP_ID
<DONOR_READ_DATE>	char (08)	r/-	Date YYYYMMDD that the donor TSP reads the details of a new work order for the first time
<DONOR_READ_TIME>	char (04)	r/-	Time HHMM that the donor TSP reads the details of a new work order for the first time
<POA_TYPE>	char (03)	r	001="Respect contract end date" 002="Early termination penalty"
<POA_DATE>	char(08)	r	Power of Attorney date for WO. Must be <= today.
<REJECT>	char (var,128)	r/-	Reject reason for rejected work order. See section 5.1 for definitions.
<REJECT_COM>	char (var,75)	r/-	Additional comments from donor for reject reason.
<TRANS_DATE>	char (08)	r	The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME>	char (04)	r	The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<PARTIAL_PORTING>	char(01)	r	Partial porting indicator. Possible values: Y or N
<COMMENT>	char(var, 80)	o	Free form text for recipient TSP's internal use
<SUBSCRIBER_LANGUAGE_ID>	char(03)	r/-	For CON_TYPE=005 only: SMS language for Departure confirmation. 001="English", 002="French" 003="German" 004="Italian"
<RECIPIENT_BRAND_NAME>	char(var,20)	r/-	For CON_TYPE=005 only: Recipient's brand name.
<DEPARTURE_STATUS>	char(03)	r/-	For CON_TYPE=005 only: Status of DEPARTURE associated with work order. See 5.4 for possible values.
<DEPARTURE_TRANS_DATE>	char (08)	o	For CON_TYPE=005 only: TRANS_DATE of DEPARTURE associated with work order. Note: Filled only if DEPARTURE_STATUS=002
<DEPARTURE_TRANS_TIME>	char (04)	o	For CON_TYPE=005 only: TRANS_TIME of DEPARTURE associated with work order. Note: Filled only if DEPARTURE_STATUS=002
<Port_Priority>	char(03)	r/-	001=normal, 002=emergency
<RFU_1>	char(var)	-	Reserved for future use
<RFU_2>	char(var)	-	Reserved for future use
<RFU_3>	char(var)	-	Reserved for future use
<RFU_4>	char(var)	-	Reserved for future use
<WO_HISTORY_ID>	char (03)	r	Part of the primary key of Work Order History, identifying the history record for a work order.

<WO_STATUS>	char (03)	r/-	Work order status. For values see section 5.3.
<REJECT>	char (var,128)	r/-	"Forename or Family/Company name is wrong", "Type and Tel. Number mismatch", "Tel. Number does not belong to the donor", "Prepaid GSM or invalid PUK", "Access is blocked", "Work order is not complete", "The desired porting date is out of scope", "PoA has not been received within 7 working days", "PoA is incomplete / incorrect", " PoA is not signed" , "Other" Format for multiple rejects like 001,002,004. Also inactive reject reasons can be used.
<REJECT_COM>	char (var,75)	r/-	Additional comments from donor for reject reason.
<TRANS_DATE>	char (08)	r/-	The date YYYYMMDD the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<TRANS_TIME>	char (04)	r/-	The time HHMM the TSP INet-Server has processed a step in the work order (flagged by a change in WO_STATUS)
<SUBSCRIBER_LANGUAGE_ID>	char(03)	r/-	For CON_TYPE=005 only: SMS language for Departure confirmation. 001="English", 002="French" 003="German" 004="Italian"
<RECIPIENT_BRAND_NAME>	char(var,20)	r/-	For CON_TYPE=005 only: Recipient's brand name.
<DEPARTURE_STATUS>	char(03)	r/-	For CON_TYPE=005 only: Status of DEPARTURE associated with work order. See 5.4 for possible values.
<DEPARTURE_TRANS_DATE>	char (08)	o	For CON_TYPE=005 only: TRANS_DATE of DEPARTURE associated with work order. Note: Filled only if DEPARTURE_STATUS=002
<DEPARTURE_TRANS_TIME>	char (04)	o	For CON_TYPE=005 only: TRANS_TIME of DEPARTURE associated with work order. Note: Filled only if DEPARTURE_STATUS=002
next history entry		o	
...			

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.6.4 Trailer .lpw file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begin with the word TRAILER
<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.7 Format of the .lpd file (Result of LIST_DEPARTURES)

The .lpd file contains the list of Departure records, according to a set of selection criteria.

This is an example of a .lpd file with the name `98100_000_20120823000001.lpd`. The following sections will then describe the records.

```
HEADER→98100→98100_000_20120823000001.lpd→1↓                                    HEADER record
0791234567→001→09920121018000002→20121018→1234→20121018→1400→→→1→001→20121018→1234→→↓  Departure record
TRAILER→6999a34c8722e775b59970b3e6e989b4↓                                       TRAILER record
```

2.2.7.1 Filename of the .lpd file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.lpw, where **<TSP_ID>** is the ID assigned by BAKOM, **SSS** is a number. The number is taken from the .upl file requesting the lpd file, i.e. a number assigned by the TSP. In other cases (GUI request) SSS is 000. **YYYYMMDD** is the date of creation of the download file and **XXXXXX** is a unique sequence number that starts with 000001 in case of several download requests on the same date.

2.2.7.2 Header of the .lpd file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begin with the word HEADER
<TSP_ID>	char (var,5)	r	Unique identifier assigned by OFCOM
<Filename>	char (var,28)	r	Filename of the .lpd file
<Number of records>	char (var,10)	r	Number of departure records in .lpd file without header and trailer.
<Filename corresp. upl>	char (var,28)	r/-	r if the .lpd file has been requested by a .upl file. Filename of corresponding .upl file
<Record in .upl >	char (var,05)	r/-	r if the .lpd file has been requested by a .upl file. Record number in corresponding .upl file (header record not included)

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.7.3 Records of the .lpd file

Attribute name	Format	r/o/-	Description
<SUB_NR>	char (var,13)	r	Subscriber number of the work order
<WO_ID>	char (17)	o	Work order ID: Reference to the work order associated with this departure record.
<DEPARTURE_STATUS>	char (03)	r	Departure status. For values see 5.4
<TRANS_DATE>	char (08)	r	Date of the last modification of the departure record.
<TRANS_TIME>	char (04)	r	Extends TRANS_DATE by the time of the day.
<SMS_DATE>	char (08)	o	Date for which a departure SMS was requested (first SMS).
<SMS_TIME>	char (04)	o	Extends SMS_DATE by the time of the day.
<SMS_DIRECTION>	char(003)	r	001=sent, 002=received
<SMS_CONTENT>	char(var,160)	r	Content of SMS sent or received
<DEPARTURE_HISTORY_ID>	char (03)	r	History records are numbered sequentially, starting with 1 when creating the first version of a record.
<DEPARTURE_STATUS>	char (03)	r	Departure status of history record.
<TRANS_DATE>	char (08)	r	Date of the modification of the history record.
<TRANS_TIME>	char (04)	r	Extends TRANS_DATE by the time of the day.
<SMS_DATE>	char (08)	o	Date for which a departure SMS was requested (first SMS).
<SMS_TIME>	char (04)	o	Extends SMS_DATE by the time of the day.
<SMS_DIRECTION>	char(003)	r	001=sent, 002=received
<SMS_CONTENT>	char(var,160)	r	Content of SMS sent or received
next history entry		o	
...			

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.7.4 Trailer of the .lpd file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begins with the word TRAILER
<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.2.8 Format .rdy file

The **.rdy** files is a empty file which the TSPs upload to the TSP INet-Server to signal to the system that the up- or download of a **.upl**, **.exx**, **.ack**, **.brd**, **.lpn** or **.lpw** file has successfully completed.

2.2.8.1 Filename of upl.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.upl.rdy, where <**TSP_ID**>, **SSS**, **YYYYMMDD** and **XXXXXX** have the same values as the **.upl** filename to which this **.rdy** file belongs. After detection of the .rdy file the TSP INet-Server will process the .upl file. The next time the Transaction Parser starts, the .upl file will be moved to the archive directory and the .rdy file will be deleted.

2.2.8.2 Filename of ack.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.ack.rdy, where <**TSP_ID**>, **SSS**, **YYYYMMDD** and **XXXXXX** have the same values as the **.ack** filename to which this **.rdy** file belongs. After detection of this file the **.ack** file will be moved to the archive directory and the **ack.rdy** file will be deleted.

2.2.8.3 Filename of brd.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.brd.rdy, where <**TSP_ID**>, **SSS**, **YYYYMMDD** and **XXXXXX** have the same values as the **.brd** filename to which this **.rdy** file belongs. After detection of this file the **.brd** file will be moved to the archive directory and the **brd.rdy** file will be deleted.

2.2.8.4 Filename of lpw.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.lpw.rdy, where <**TSP_ID**>, **SSS**, **YYYYMMDD** and **XXXXXX** have the same values as the **.lpw** filename to which this **.rdy** file belongs. After detection of this file the **.lpw** file will be moved to the archive directory and the **lpw.rdy** file will be deleted.

2.2.8.5 Filename of lpn.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.lpn.rdy, where <**TSP_ID**> is the ID assigned by BAKOM, **SSS** is an internal TSP assigned number, **YYYYMMDD** and **XXXXXX** are the same numbers as in the **.lpn** filename to which this **.rdy** file belongs. After detection of this file the **.lpn** file will be moved to the archive directory and the **lpn.rdy** file will be deleted.

2.2.8.6 Filename of exx.rdy file

<TSP_ID>_SSS_YYYYMMDDXXXXXX.exx.rdy, where **<TSP_ID>** is the ID assigned by BAKOM, **SSS** is an internal TSP assigned number, **YYYYMMDD** and **XXXXXX** are the same numbers as in the **.exx** filename to which this .**rdy** file belongs. After detection of this file the **.exx** file will be moved to the archive directory and the **exx.rdy** file will be deleted.

2.2.9 Format .tsp files

The .tsp files are created for publishing important TSP parameters. There are 2 types: Full reports with all TSPs and delta reports containing only TSPs that have been modified during the last period. The period is based on the system parameter SELECT_TSP_PERIOD and is initially set to 24h.

2.2.9.1 Notifications of changes

If the delta file not not empty, the TSP can be notified (configurable) by e-mail. E-mails will be sent to the onp.tspmod98xxx mailbox (and/or ina.tspmod98xx mailbox) which can be registered via the Helpdesk. By default, no e-mail will be sent.

2.2.9.2 Filename of the full .tsp file

YYYYMMDD_HHMM_full.tsp, where **YYYYMMDD_HHMM** is a numeric representation of date and time when the report was created.

2.2.9.3 Filename of the delta .tsp file

YYYYMMDD_HHMM_delta.tsp, where **YYYYMMDD_HHMM** is a numeric representation of date and time when the report was created.

2.2.9.4 Header .tsp file

Attribute name	Format	r/o/-	Description
HEADER	char (6)	r	The header line begins with the word HEADER
TSP_ID	char(5)	r	Placeholder (always "00000")
<Filename>	char (var,28)	r	Filename of the .tsp file
<Number of records>	char (var,05)	r	Number of work order records in .tsp file without header and trailer.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty.

2.2.9.5 Body record of a .tsp file

Attribute name	Format	r/o/-	Description
<TSP_ID>	char (var,05)	r	Identifies the TSP whose characteristics are described in the following fields.
<TSP_NAME>	char (var, 40)	r	Name of the TSP (text)
<WS_BILLING_VIA>	char (var,05)	o	Billing TSP for wholesale (corresponds to its CSC)
<SECOND_PARTY>	char (var,05)	o	Second Party NPRN (where all XDR and VTA files received by the TSP are copied). This field is normally used in combination with the Second_INA_TSP field.
<SECOND_INA_TSP>	char (var,05)	o	Second INA TSP ID. In case the company owning the CSC has no direct interconnection contract with Swisscom, it must indicate which company is playing the intermediary role for the wholesale billing (="Second_INA_TSP"). Swisscom will invoice the Second_INA_TSP for the INA-traffic of the 3rd party. The Second_INA_TSP has an Interconnection Contract with Swisscom and the third party not. Field only informative in INet (not used by Inet for file processing, see "Second_Party" field if copies of files must be done to a Second Party).
<ONP_TSP>	char (01)	r	Indicator for ONP user: Value is Y or N
<INA_TSP>	char (01)	r	Indicator for INA user: Value is Y or N
<FILTER_OPTION>	char (02)	o	INA traffic filter option (01=Option 1 filtered, 02=Option 2 not filtered, 03 = not applicable)
<DLFL_DEFAULT>	char (03)	r	Default download flag. The value consists of 3 characters, each

			of which can be 'Y', 'N' or '–', where '–' means '*not applicable*' . The first character is for tariff profiles of type Online, the next for type Offline-A, the last for type Offline-B. See also footnote. The values shown in the file are currently not used in the application.
<DLFL_SYSTEM>	char (03)	o	Not used currently. System wide default download flag. The value consists of 3 characters, each of which can be 'Y', 'N' or '–', where '–' means '*not applicable*' . The first character is for tariff profiles of type Online, the next for type Offline-A, the last for type Offline-B. See also footnote.
<TSP_START_DATE>	char (08)	r	Date YYYYMMDD when the TSP becomes active in the system.
<TSP_END_DATE>	char (08)	o	Date YYYYMMDD when a TSP is no longer active in the system
<TRANS_DATE>	char (08)	o	Date of transaction for establishing this set of parameters.
<TRANS_TIME>	char (04)	o	Time of transaction for establishing this set of parameters.
<VTA_TSP>	char (01)	r	Indicator for VTA user: Value is Y or N
<OFCOM_TSP>	Char (01)	R	Indicator for OFCOM special rights: (Value is Y or N (default is N)
<CDP_ID>	char (60)	o	List of all CDP_IDs of this TSP, coma separated values (used to identify the origin of traffic for calls to INA numbers, requested when traffic_status = 001)
<CDP_ID_TYPE>	char (40)	o	List of all CDP_TYPE_ID, (one per CDP_ID), coma separated values. 001 = national, 002 = international, 003 = Prepay
<TRAFFIC_STATUS>	char (03)	r	Traffic status (001=active, 002=passive)
<TSP_TYPE>	char (03)	r	Type of TSP 001 = Standard TSP User 002 = Not Teldas user 003 = Passive 004 = Teldas Support 005 = Dummy TSP 006 = Teldas Helper
<CSC_ID >	char (60)	o	List of all CSC numbers (Carrier Selection Code allocated by OFCOM), coma separated values
<TSP_HISTORY_ID>	char (03)	r/-	Identifies the TSP parameter history entry. Must have a value if there is a history entry. Is absent if there is no history entry.
<TSP_NAME>	char (var, 40)	r/-	Name of the TSP (text)
<WS_BILLING_VIA>	char (var,05)	o	Billing TSP for wholesale (corresponds to its CSC)
<SECOND_PARTY>	char (var,05)	o	Second Party NPRN (where all XDR and VTA files received by the TSP are copied)
<SECOND_INA_TSP>	char (var,05)	o	Second INA TSP ID. In case the company owning the CSC has no direct interconnection contract with Swisscom, it must indicate which company is playing the intermediary role for the wholesale billing (="2nd party"). Swisscom will invoice the 2nd party for the INA-traffic of the 3rd party. The second party has an Interconnection Contract with Swisscom and the third party not.
<ONP_TSP>	char (01)	r/-	Indicator for ONP user: Value is Y or N
<INA_TSP>	char (01)	r/-	Indicator for INA user: Value is Y or N
<FILTER_OPTION>	char (02)	o	INA traffic filter option (01=Option 1 filtered, 02=Option 2 not filtered, 03 = not applicable)
<DLFL_DEFAULT>	char (03)	o	TSP specific default download flag. The value consists of 3 characters, each of which can be either 'Y' or 'N'. The first character is for tariff profiles of type Online, the next for type Offline-A, the last for type Offline-B.

<DLFL_SYSTEM>	char (03)	-	System wide default download flag.
<TSP_START_DATE>	char (08)	r/-	Date YYYYMMDD when the TSP becomes active in the system.
<TSP_END_DATE>	char (08)	o	Date YYYYMMDD when a TSP is no longer active in the system
<TRANS_DATE>	char (08)	o	Date of transaction for establishing this set of parameters.
<TRANS_TIME>	char (04)	o	Time of transaction for establishing this set of parameters.
<VTA_TSP>	char (01)	r	Indicator for VTA user: Value is Y or N
<OFCOM_TSP>	Char (01)	R	Indicator for OFCOM special rights: (Value is Y or N (default is N)
<CDP_ID>	char (05)	o	List of all CDP_IDs of this TSP, coma separated values
<CDP_ID_TYPE>	char (03)	o	List of all CDP_TYPE_ID, (one per CDP_ID), coma separated values
<TRAFFIC_STATUS>	char (03)	r	Traffic status (001=active, 002=passive)
<TSP_TYPE>	char (03)	r	Type of TSP (001=Teldas user, 002= not Teldas user)
<CSC_ID >	char (05)	o	CSC number (Carrier Selection Code allocated by OFCOM)
next history entry		o	Complete history entry beginning with <TSP_HISTORY_ID>
...			

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

Note: The field <DLFL_SYSTEM> and <DLFL_DEFAULT> is not part of the TSP history. Therefore, the field is always filled in the current part and always empty in all history entries.

2.2.9.6 Trailer .tsp file

Attribute name	Format	r/o/-	Description
TRAILER	char (7)	r	The trailer line begins with the word TRAILER
<MD5 checksum>	char (32)	r	MD5 checksum of the whole file without the trailer line.

Format: char (x) number...fixed length, (var)...variable length, (var,xx)...variable but limited by max length, r...required, o...optional, -...empty. Dates with a format of char(08) are formatted as YYYYMMDD.

2.3 Result Codes (MESSAGE_ID)

See document [7]

2.4 Syntax non-working-day file

The non-working-day file is located in directory .../tsp<TSP_ID>/misc.

Syntax file name: none_working_days_YYYY.txt

YYYY ... 4 digit number of the year
e.g.: none_working_days _2001.txt
Syntax of the entries: 4 header rows followed by a list of entries in form of:

<CALENDAR_DATE>4-5 spaces<NON_WORKING_DAY_NAME>

The calendar date is in the format DD-MM-YYY and the name of the non working day is a string.

e.g.:

```
14-04-2019    Weekend
19-04-2019     Good Friday
20-04-2019    Weekend
21-04-2019    Weekend
22-04-2019     Easter Monday
```

```
            27-04-2019    Weekend
            28-04-2019    Weekend
            01-05-2019     Labour Day
              ...
```

→ … <TAB> (\t)

2.5 SSH Transaction Parser

After successfully transferring the file from the TSP to the TSP INet-Server, the SSH-Transaction Parser checks for consistency and then processes the commands, which are located in the file. The results are then inserted in an .ack and .brd file. Query results are written to .lpw and .lpn files. Files with errors are returned as .exx files (where xx is an error number). The TSP has to poll the directory and download the file if necessary. The character set of all downloaded and uploaded files is ISO latin-1.

2.5.1 Consistent check of uploaded files

When the Transaction Parser (TP) discovers a upl.rdy file it will begin processing the .upl file. The following validations are done sequentially:

1. Check for TSP_ID in filename with the username
2. The unique sequent number XXXXXX in file is greater than expected
3. The unique sequent number XXXXXX in file is less than expected. (already received)
4. Check first header record
5. TSP_ID in header record
6. Check filename in header record
7. Check number of transactions in file with the number in header record
8. Check last record
9. Check MD5 checksum in trailer record

Files with errors are returned as .exx files (where xx is the error number).
Descriptions of the error_messages see [7] errors 000-099

2.5.2 Processing commands and Results

After removing the header and trailer record of the uploaded .upl file, each command will be send separately to the WWW-Server on port 80. The results are then written into the files .ack, .brd, .lpn and .lpw. For detailed description see the 0 chapter 2.5.4.2. The header as well as the trailer record with MD5 checksum is included on each created file. All files that are created in the temporary directory are moved to the TSP home directory.
The .upl and the upl.rdy file are then moved to the archive directory. Now the TSP can download the result files (when polling their directories). To confirm a successfully downloaded result file the TSP has to create an empty .rdy file with the same name.

2.5.3 TRAILER with md5sum

All uploaded files (trailer is optional) and downloaded files have checksums in their trailer records. The checksum is calculated using the program md5sum from the GNU utilities and is calculated over the file contents (HEADER and Record lines) without the trailer record.

The program md5sum is located in package `textutils-1.22.tar.gz` which can be found on the ftp server: `ftp://sunsite.cnlab-switch.ch/mirror/gnu/textutils/textutils-1.22.tar.gz`
TSP with UNIX/Linux have to compile the source.

The usage of the programm is: `md5sum filename`

The algorithms for MD5 is described in the source file md5sum.c.

TSP with NT can find a precompiled version in following package:
`ftp://sunsite.cnlab-switch.ch/mirror/gnu-win32/latest/usertools.exe`

3 SSH and Licences

3.1 Introduction

Each TSP is responsible for licensing its softwares to generate key pairs or to connect via SSH. The following open source SSH clients can be downloaded:

- Putty (command) - http://www.putty.org/
- WinSCP (graphical) - http://winscp.net/

3.1.1 Installation ssh

1) Install ssh tool
2) Generate key pair
3) Send public key to the Helpdesk for implementation in INet.
4) Test the connection with your SSH software (putty, winscp, …)

3.1.2 Key management

After the generation of the public and private keys for PGP and SSH the TSP have to send their public key(s) to the Helpdesk for implementation in INet.

If an SSH key is not used to login during more than 6 months, it will be deactivated from INet production at the next cleanup (twice a year). On test, non-active SSH keys are kept implemented for a longer period. This is described in the Document [6].

4 Mail/PGP Server (MTA)

4.1 Introduction

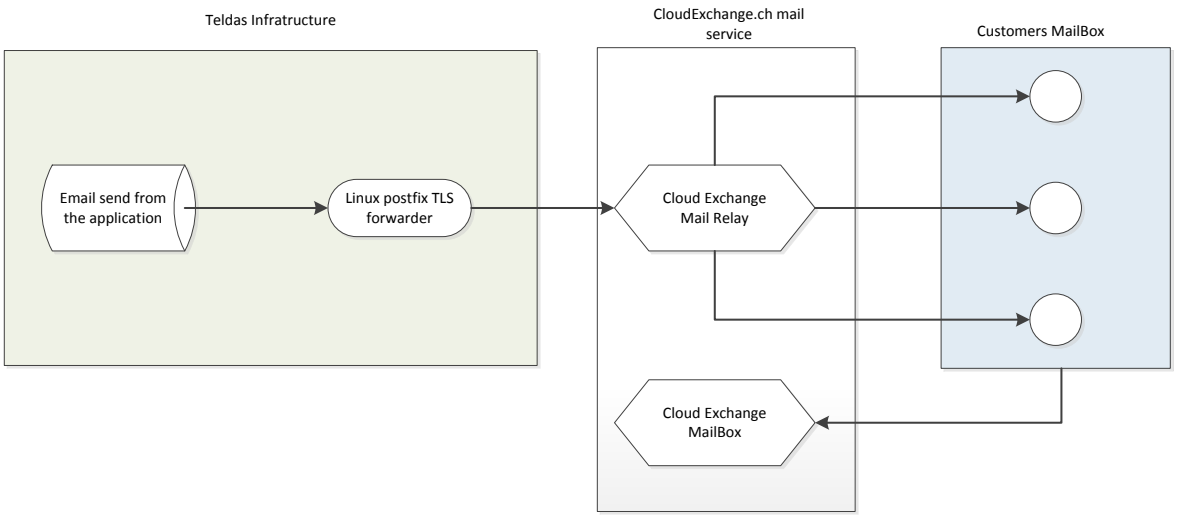
The Email module is responsible for signing and delivering Emails. After signing the email with PGP it will be send to the TSP.

4.2 Emails

In order to send emails to every client, the following configuration is used:

- Each email is forwarded through postfix forwarder.
- A TLS link is configured to use smtps connection between TelDaS servers to CloudExchange.ch platform.
- CloudExchange.ch will send each email to the right mailbox with all anti-spam activated
- If an email cannot be send (mailbox unreachable, false email address …), a reject message will be forwarded to the CloudExchange mailbox admin@numberportability.ch or admin.test@numberportability.ch (test server).
- For specific request the customer can send a mail to these mailboxes.

Email module architecture:



4.3 PGP

PGP (Pretty Good Privacy) is a public key encryption package to protect E-mail and data files. It enables a secure communication between two partners over an insecure network. We will use PGP version 2.6.3i.

Initially a public / private key pair must be generated with the command "pgp –kg". The TSP must know the public key. With the public key the TSP can verify the E-mail which was signed by the TSP INet-Servers. The private key will secretly remain on the WWW/SSH and on the DB/Appl.-Server, which is used for signing emails.

Each TSP is responsible for licensing its softwares to implement PGP keys. It is possible to use OpenPGP, one of the most open source email encryption standard.

5 Additional Information

5.1 Reject Reasons

Note: The following list is subject to change at any time. Please refer to the system status for current definitions.

Description	Numeric representation	status
Forename or family/company name is wrong	001	active
Type and telephone number mismatch	002	active
Telephone number does not belong to the donor	003	inactive
Number and name mismatch	004	inactive
Access is blocked	005	inactive
Work order is not complete	006	inactive
The desired porting date is out of scope	007	active
Po A has not been received by the donor within the required provisioning time	008	active
PoA is incomplete or incorrect	009	active
PoA is not signed	010	active
PrePay customer must announce departure	011	active
Fax & Data active	012	inactive
Disconnect-date too far back	013	active
Other	000	active

Reject reasons 014 to 199 are reserved for future use.

5.2 Connection Types

Description	Numeric representation
PSTN/ISDN	001
DDI	002
INA	003
MOBILE	004
MOBILE PREPAID	005

5.3 Work Order Status

Description	Numeric representation
ALL_OPEN	000
NEW	001
REJECT	002
REPRESENT	003
ACCEPT	004
SYNC	005
OK	006
CANCEL	007
RETURN_NRH	008
TIMEOUT_A	009
TIMEOUT_B	010
TIMEOUT_H	011
CANCEL_L	012
CANCEL_M	013
CANCEL_H	014
CANCEL_I	015
CANCEL_D	016

5.4 Departure Status

Description	Numeric representation
INVALID	000
MISSING	001
CONFIRMED	002
REFUSED	004
SMS NOT REQUIRED / POA SIGNED	005

6 Implementation hints for TSP

6.1 MESSAGE_ID 202

When the output of a LIST or READ request is too large , then the MESSAGE_ID 202 is set in the .ack file.

6.2 MESSAGE_ID 998

When MESSAGE_ID 998 is set an communication failure occurred between the application and the DB. In this case the desired command (INIT, READ, ACCEPT, ...) must be downloaded again in a new .upl to the www server.

6.3 MESSAGE_ID 999

In this case the hotline must be contacted immediately. This indicates that an error occurred in the DB.

6.4 .upl and .rdy file

It is very important when more than one .rdy file are download for corresponding .upl files, that the right order is correct.

e.g. xxx00001.rdy
xxx00002.rdy
xxx00003.rdy

and not xxx00001.rdy
xxx00003.rdy
xxx00002.rdy

(If this happens the TSP can sometimes receive a .e03 error)

6.5 Problem with empty Files and SSH

Because some UNIX/Linux-System has problems with SSH and empty File it is possible to send .rdy files with a carriage return. (\r\n).

6.6 .upl counter synchronisation

The .upl counter is stored in the directory …/tspxxxxx/tmp/counter_YYYYMMDD_upl, where tspxxxxx is the TSP login ID and YYYYMMDD the date of the actual transactions. The file contains the sequence number for the next upl file.

e.g.: …/tsp984/tmp/counter_19991021_upl

7 Example file transfer processing

All example files are available on the SSH folder: **/misc/examples/ONP_examples**.