

Migration File Instructions – Unofficial translation

4.2.2021



Table of Contents

1	Introduction.....	6
2	Migration file structure.....	6
2.1	Migration file content.....	9
2.2	Migration file format	11
3	Examples of migration files	13
3.1	Only data belonging to data migration.....	16
3.2	Party information	16
3.3	Customer information	17
3.3.1	Consumer	17
3.3.1.1	Basic case	17
3.3.1.2	Personal ID missing	18
3.3.1.3	Estate of a deceased person.....	18
3.3.1.4	Names in Swedish	18
3.3.2	Company	18
3.3.2.1	Estate.....	19
3.4	Product information.....	19
3.5	Accounting point data	20
3.5.1	Production accounting point.....	21
3.5.2	Temporary accounting point	21
3.6	Production unit data	21
3.7	Agreement information	22
3.7.1	Grid agreement	23
3.7.2	Sales agreement.....	23
3.7.2.1	Several people on the same agreement.....	23
3.7.2.2	An agreement that ended less than six weeks ago	23
3.7.2.3	Small-scale production purchase agreement.....	23

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

3.8	Authorisation information	23
3.9	Additional accounting point addresses	24
3.10	Accounting point supplier data	25
3.11	Time stamps in migration files.....	26
3.11.1	Handling of DST-shift in period prior to 1996.....	27
3.11.2	The earliest time stamp allowed.....	27
4	Metering data	27
4.1	Naming of metering data	28
4.2	Structure and data content of migration file	28
4.2.1	EXH: File header	29
4.2.2	TSH: Time series header	29
4.2.3	TSV: Metering values.....	30
4.3	SAF-file size	31
4.4	Example cases	31
4.4.1	Reactive energy metering	31
4.4.2	Exchange point metering	32
5	Data Maintained through the Titta User Interface.....	33
5.1	Metering Grid Area Data	33
5.2	Exchange Point Data	34

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21 FI-00620 Helsinki	P.O.Box 530 FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	FI27455435, VAT reg forename.surname@fingrid.fi www.fingrid.fi

File history

Date	Version	Changes
19.12.2017	1.0	First official version
16.3.2018	1.1	No changes
14.10.2019	1.2	<p>Use of -character has be specified in chapter 2.2</p> <p>Validations for time series import have been specified in chapters 3 and 4</p> <p>Other updates to comply with Finnish version 1.8</p>
10.2.2020	1.9	<ul style="list-style-type: none"> Document version changed to correspond to the version of Finnish document "Siirtotiedosto-ohjeistus". Section 2.2: Added note that data migration filenames must use the GLN code as of data migration milestone DM-3-05 Section 2.2: Added instruction for situation where available revision numbers run out. Section 3.3.2.1: Added example of estate. Section 3.6. Detailed description of usage of an accounting point ID for deletion, with the addition of the requirement that the accounting point ID should be provided as such without any prefixes or suffixes. Section 3.7: Detailed description of usage of GSRN codes and Production unit IDs to be deleted. Specified that only production units defined in eSett should be reported to datahub. Section 3.8: Detailed description of usage of GSRN codes and Production unit IDs to be deleted. Section 3.10: Added note that only authorizations for corporate customers are delivered in data migration. Section 3.13: New section: 'Time stamps in migration files' Section 3.11: Added note that up to seven additional addresses can be reported for an accounting point. Section 4.1: Added note that GLN codes must be used in migration file names as of data migration milestone DM-3-05.

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

		<ul style="list-style-type: none"> Section 4.2: Added note that TSU and TSM records supported by SAF format should not be used in SAF files. Section 4.2: Invalid table reference fixed. Section 4.2.2: Added specification that the number of metering values should always be equal to the length of the time period in hours. Section 4.2.3: Added specification that distribution system operator should inform metering value in TSH row for every hour of the given time period.
17.4.2020	2.0	<ul style="list-style-type: none"> Added section 3.13.1 Handling of DST-shift in period prior to 1996 Added section 4.3 SAF-file size
15.5.2020	2.1	<ul style="list-style-type: none"> Added instructions for reporting of reactive energy time series for grid exchange points <ul style="list-style-type: none"> 4.2.2 Table 6, slot 9: Specified that the slot can be left empty of the measurement belongs to an exchange point 4.4.1 and 4.4.2 Added instructions for reporting of reactive measurements for exchange points
24.6.2020	2.2	<ul style="list-style-type: none"> Section 3.9.1: It has been clarified that the grid agreement means an electricity distribution agreement, connection maintenance agreements should not be delivered to Titta Section 4: It has been clarified that saf files must be delivered compressed using the file format “zip” and the compression method “Deflate”
16.9.2020	2.3	<ul style="list-style-type: none"> Section 4.2: Updated the format of time stamps in Metering Data to match the format of time stamps given in Enoro SAF Technical Description document.
6.11.2020	2.4	<ul style="list-style-type: none"> Changes due to the introduction of the Exchange Point Register and Metering Grid Area Register. References to Metering Grid Area Data and Exchange Point Data migration files removed from Tables 1 and 2 (not yet from the data standard at the time of publication of this document) Descriptions of Metering Grid Area Data and Exchange Point Data moved to Chapter 5 “Data Maintained Through the Titta User Interface” (new). Section 3.3.1.2 Added guidance for situations where the customer's date of birth is unknown.
4.2.2021	2.5	<ul style="list-style-type: none"> Added section 3.11.2 “The earliest time stamp allowed”

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

1 Introduction

The purpose of this document is to specify the format and data content of the migration files used in Datahub's data migration. The document also looks at cases chosen as examples, the purpose of which is to describe different practical situations, about which market parties might have questions. The information in the instructions is based on the *Data Migration plan* with which you should familiarise yourself before reading these instructions. The document also refers to the *Data Standard*, which is a technical description of the Datahub's data model. It contains further information about data field content, such as the purpose of the data fields and the permitted values.

Metering Grid Area Data and Exchange Point Data are maintained by the Grid Operators responsible for metering through the Titta user interface. Thus, this information is not imported by migration files, but is stored and maintained in Titta. The information to be maintained is described in Chapter 5.

2 Migration file structure

Market party information will be delivered to Datahub in file format by the so-called migration files. Figure 3 specifies the migration files which market parties produce from their own systems to be transferred to the data migration system for checking. Data content is specified for each migration file, which is illustrated as presented in Figure 1. The data content of migration files can be examined more closely from the *Data Standard* using the information in the 'migration file' column. Please note that although the migration file content is presented in English in this document, that in the actual migration, market parties must be able to handle the migration using the Finnish version of the data standard.

In Figure 1, the data content of the migration file is divided into three parts:

1. The attributes that identify the rows and the attributes that combine the information in the different migration files with each other. The identifying attributes are marked in red.
2. Some attributes are purely related to data migration, for example the date and revision of a migration file, by which it is possible to identify the migration files.
3. Other entities are related to the migration file and refer to the entity column in the data standard and the value there.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Last updated
4.2.2021

7 (36)

Customer Data
Customer ID
Migration file's party ID
Migration file's date
Migration file's revision
Customer (Entity)
Consumer (Entity)
Postal address (Entity)
Company (Entity)

FIGURE 1. EXAMPLE OF MIGRATION FILE DATA CONTENT

The relationship between the migration files is indicated by cardinality, which specifies how many objects appear between them. The example in the figure below can be read as follows: several or no items of authorisation data may be added to one customer, and one item of authorisation data may be added to only one item of customer data.



FIGURE 2. CARDINALITY INDICATES HOW MANY OBJECTS APPEAR IN THE RELATIONSHIP BETWEEN MIGRATION FILES

Figure 3 shows the connections between source data and the cardinalities that connect them. Note that the metering grid area data and exchange point data are maintained through the Titta interface.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

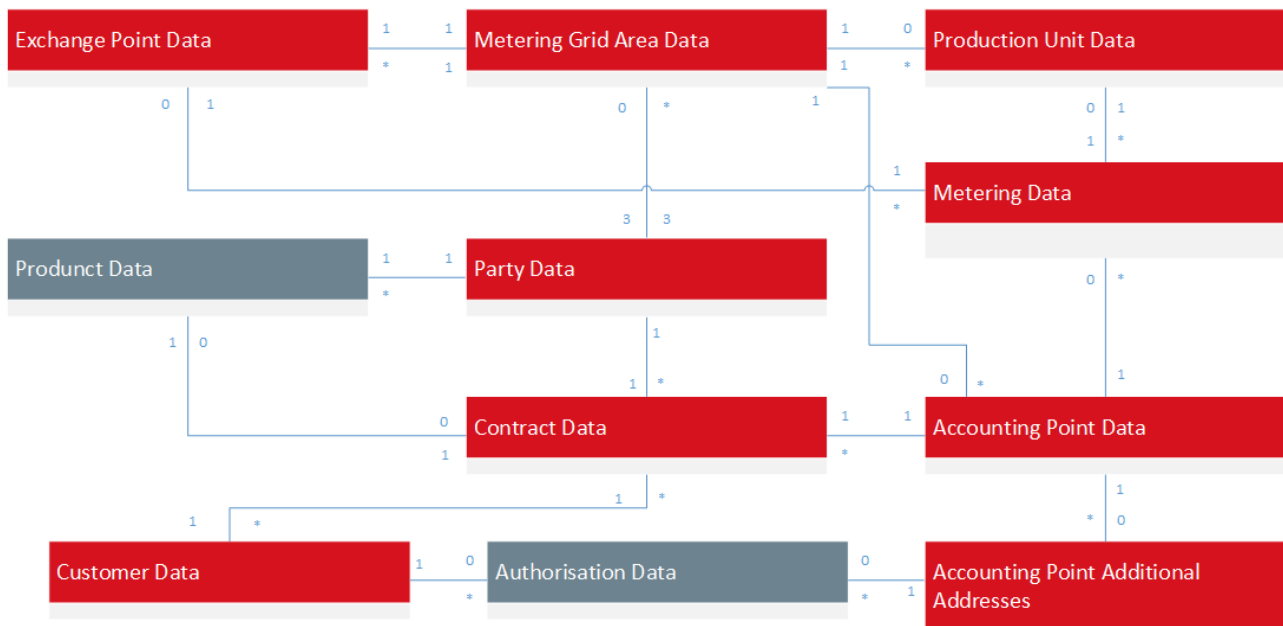


FIGURE 3. SOURCE DATA PRODUCED FROM MARKET PARTY DATA SYSTEMS

In addition to the dependency relationships described above, migration files can be divided hierarchically as shown in Figure 4. The lower-level data (larger number) is dependent on the upper-level data and, for this reason, the upper-level data must be downloaded to the data migration service before the reference integrity checks can be performed for the lower-level migration files.

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

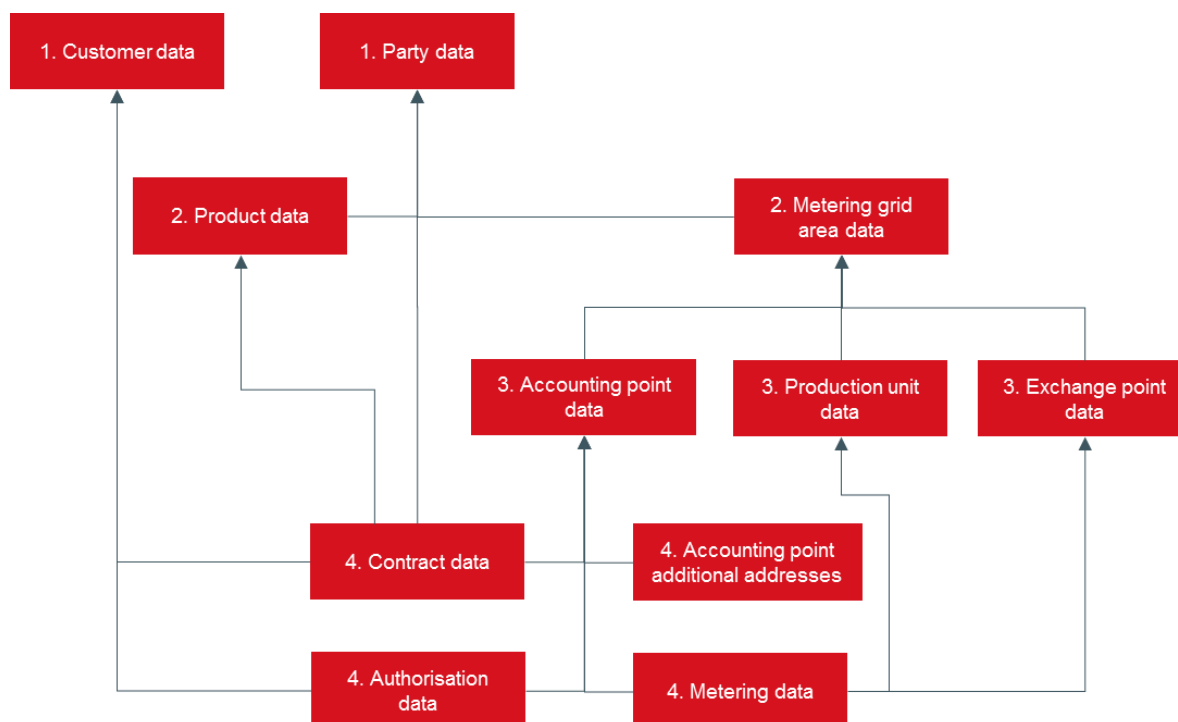


FIGURE 4 SOURCE DATA HIERARCHY.

2.1 Migration file content

The attributes of each individual migration file and rules concerning attribute quality are described in the *Data standard*. The migration file header row is formed based on the data standard fields, and the data fields of the entities concerning the migration file in question are selected for it. The order among the columns of each migration file has no significance.

Example files have been made of each migration file, which specify the header row and the example rows. Example rows clarify possible problem situations related to picking, such as the display of address information in different cases.

Based on the information in Table 1, it is possible to pick the attributes of each migration file from the *Data standard*. For example, all fields belonging to a customer information migration file can be filtered from the *Data standard* by picking all the rows from the 'Migration file' column whose value is 'A'. The table also shows other data standard columns and their significance in terms of data migration.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

TABLE 1. FIELDS IN THE DATA STANDARD CONCERNING DATA MIGRATION

Field	Description
Attribute	Attribute name, which is used as the name for the migration file column heading
Migration file	<p>A=Customer information</p> <p>K=Accounting point data</p> <p>KI= Additional accounting point addresses</p> <p>Km=Accounting point supplier data</p> <p>M=Metering data</p> <p>O=Party information</p> <p>S=Agreement information</p> <p>T=Production unit data</p> <p>Tu=Product information</p> <p>V=Authorisation information</p>
Field belongs to migration file	<p>An attribute which belongs to a migration file. Other attributes are only in internal Datahub use. They do not need to be transferred in data migration and are therefore left outside the migration file.</p> <p>K=Data content of the field is included in the migration file</p> <p>E=Field is outside data migration</p>
Belongs to a unique key	The field identifies the row in the migration file and the rows in different migration files can be combined with each other on the basis of the identifying fields.
Only information related to data migration	An attribute is only a field needed for data migration. For example, the date of a migration file connects the downloaded data and the migration file from which the data has been downloaded to the data migration system. The party ID is also included in every migration file so that the origin of the data can be traced.
Distribution system owner attribute	<p>This attribute applies to the distribution system owner. The field may not necessarily be mandatory. If the field concerns only a distribution system owner, other parties may leave this field empty in the information that they deliver.</p> <p>K=Applies to the distribution system owner.</p> <p>E=Does not apply to the distribution system owner.</p>
Supplier attribute	<p>This attribute applies to the supplier. The field may not necessarily be mandatory. If the field concerns only a supplier, other parties may leave this field empty in the information that they deliver.</p> <p>K=Applies to the supplier</p> <p>E=Does not apply to the supplier</p>
Third party attribute	<p>This attribute applies to a third party. The field may not necessarily be mandatory. If the field concerns only a third party, other parties may leave this field empty in the information that they deliver.</p> <p>K=Applies to a third party</p> <p>E=Does not apply to a third party</p>
Format	<p>Format in which the data must be entered in the field. The data validations check whether the given value is in the correct form. The forms used are listed below:</p> <p>Text = Can contain letters, numbers and special characters</p>

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Field	Description
	<p>Number = Decimal or whole number. A comma (,) is used as a decimal separator</p> <p>Day = Date in the format YYYY-MM-DD</p> <p>Time stamp = Time stamp in the format YYYY-MM-DDTHH:MI:SS+00:00 e.g. 2016-03-17T14:05:25. Time is expressed in UTC time.</p> <p>Boolean = 0 (false)/1 (true)</p> <p>Code list = A list of values specified in advance, in which the permitted values are specified as a code-description pair in the data standard field Permitted values/code list/code. A migration file must always have a code.</p> <p>Relationship = The attribute refers to another entity. Relation-type fields are not included in a migration file.</p>
Technical example	An example of the provided data that observes the format and rules specified for the field.
Field length	The longest permitted field length. If this is a decimal, the decimal numbers are reported after a comma, for example, 9,3 = 9 whole numbers and 3 decimals.
Permitted values/code list/code	A value list, some of which must be selected for the field if the data is mandatory. The value list is specified as a code-description pair. A code is always entered in the field.
Terms and dependencies	A field's value or necessity may depend on the value of some other attribute, or the dependency may extend to the attribute of a completely different migration file.
Default value	If the value is unknown, the value specified in the Default value column is entered in the field. The Default value field specifies the default value code and its description in the format <code> = <description>.
Priority	<p>Classifies attributes according to whether they are necessary with regard to Datahub operation or merely data useful for the market.</p> <p>Essential = this attribute is mandatory and must be delivered to Datahub.</p> <p>Useful = if this data can be found in the source system of a market party, it can be given but lack of the data is not critical from Datahub's perspective.</p>
Cardinality	If the field contains value 1, it is mandatory.

2.2 Migration file format

With regards to basic data, migration files are specified in xlsx format and use UTF-8 characters. Except for |-character, which is reserved as a separator character for data transmission between data migration tool and datahub. The data must be specified in one worksheet. The rules for naming migration files are specified in the table below.

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

TABLE 2. THE RULES FOR NAMING A MIGRATION FILE IN XLSX FORMAT

File name part	Description and specification of file name part
Party's ID	Individual retail market party ID, which is specified in Fingrid's document on the Datahub Services portal . From data migration milestone DM-3-05 onwards, the GLN code must be used as the Party ID.
Migration file type	Customer information Accounting point data Additional accounting point addresses Party information Agreement information Production unit data Product information Authorisation information
Date	Date when the data was downloaded from the source system. The date format is YYYY-MM-DD.
Revision	Consecutive revision number starting from 001. Each migration file is always given a new revision number when taken out of the system.
Ending	Type of migration file ending which is .xlsx.

All in all, the names of the migration files of basic data are in the form: <Party ID>-<migration file type>-<date>-<revision>.<ending> e.g. **MSOY-Asiakastiedot-2016-05-26-001.xlsx**

If migration file data has to be divided between several files, each migration file is numbered consecutively. The migration file revision number is kept the same. For example, **MSOY-Asiakastiedot-2016-05-26-001-1.xlsx**, **MSOY-Asiakastiedot-2016-05-26-001-2.xlsx**, **MSOY-Asiakastiedot-2016-05-26-001-3.xlsx**, etc.

In the data migration service checking rules, the following requirements are specified for date and revision number:

- The date should be situated between 1 Jan 2017 at the present day
- The revision number should be greater than that previously delivered
 - For example, 004 is permitted after revision 002, but 001 is not
- The order number that may come after a revision should be unique, but the order does not matter
 - For example, it is permitted first to deliver 001-8 then 001 and then 001-2

Please note! The revision number length is three digits. If the available numbers run out, numbering can be started over again, after a Titta administrator has erased all previously delivered

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

migration files delivered by market party. Data erasure can be requested from Solteq support service (titta@solteq.com).

The naming of metering data is described in the chapter 4.1.

3 Examples of migration files

Example migration files were created to correspond completely to the file format and data content specified in these instructions. Except for metering data, the files are in xlsx format, and are named in accordance with these instructions.

All attributes connected to a migration file in question can be found from the migration file columns, and different records can be found from the rows. In example files, column headings are organised by entity group. In the final migration files, the columns are identified based on the column name in the first row, so column order is not significant.

The necessity of fields can be seen in the columns *Data standard* cardinality and conditions and dependencies. In addition to these, data model class diagrams should also be viewed, because, for example, when reading the data standard data row the electronic invoicing address attribute has 'mandatory' as a cardinality, but the class diagram shows that several or none (0..*) electronic invoicing address entities may be connected to an agreement. An attribute in question is thus only mandatory if an electronic invoicing address is required, e.g. if the method of invoicing is 'electronic invoice'. The situation in question is illustrated in Figure 5.

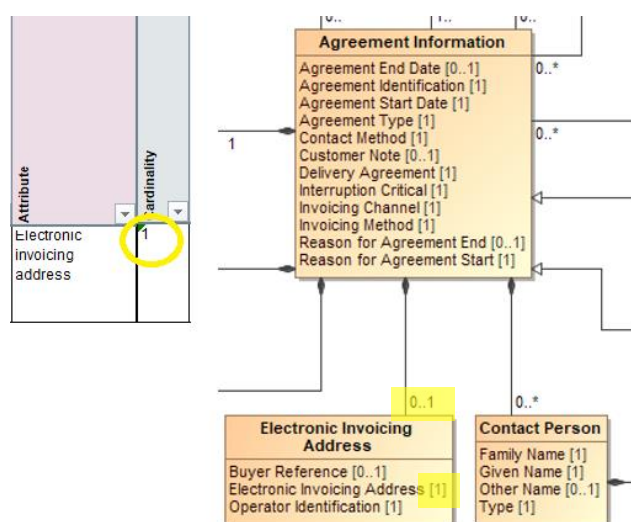


FIGURE 5 THE ILLUSTRATION OF NECESSITY IN A DATA FIELD.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Table 3 lists all files belonging to migration files examples. The table also shows which migration files should be delivered by suppliers, grid companies and third parties. It is possible to download example files from the Edie portal. As mentioned in the beginning of chapter 2, the migration files must be delivered according to the Finnish version of the Datahub Data standard, and thus the example files are only in Finnish.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

TABLE 3 FILES BELONGING TO MIGRATION FILE EXAMPLES

Migration example files	Content in English
Supplier delivers:	
6434567890011-Osapuolitiedot-2020-01-20-002.xlsx	Party information
6434567890011-Asiakastiedot-2020-01-20-002.xlsx	Customer information
6434567890011-Tuotetiedot-2020-01-20-003.xlsx	Product information
6434567890011-Sopimustiedot-2020-01-20-004.xlsx	Agreement information
Grid company delivers:	
6434567890028-Osapuolitiedot-2020-01-20-002.xlsx	Party information
6434567890028-Asiakastiedot-2020-01-20-002.xlsx	Customer information
6434567890028-Tuotetiedot-2020-01-20-003.xlsx	Product information
6434567890028-Käyttöpaikkatiedot-2020-01-20-002.xlsx	Accounting point data
6434567890028-Tuotantoyksikkötiedot-2020-01-20-002.xlsx	Production unit data
6434567890028-Sopimustiedot-2020-01-20-003.xlsx	Agreement information
6434567890028-Käyttöpaikan lisäosoitteet-2020-01-20-002.xlsx	Additional accounting point addresses
6434567890028-Käyttöpaikan myyjätiedot-2020-01-20-002.xlsx	Accounting point Supplier information
6434567890028-Mittaustiedot-20200120191147-3.saf	Metering data
Third party delivers:	
6434567890035-Osapuolitiedot-2020-01-20-002.xlsx	Party information
6434567890035-Valtuutustiedot-2020-01-20-002.xlsx	Authorisation information

There is also a metering data example file amongst the above-listed files containing basic data. Chapter 4 includes instructions on the data content and use of metering data migration files. The processing of metering data differs from basic data in that it is not imported in data migration together with basic data but will be imported separately. The following describes in greater detail

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

what kind of data the migration file examples concerning the above-listed basic data contain. The paragraphs below explain how efforts have been made to illustrate migration file data content using example files.

3.1 Only data belonging to data migration

The same attributes, specific only to migration files, appear in all migration files:

- Migration file party
- Migration file date
- Migration file revision.

Migration file party indicates from which party's system the data in question originates. The date and revision number of the migration file indicate which file version is in question, and the market party's export tool always updates them when creating a new migration file.

3.2 Party information

All parties deliver their own data to Datahub through the party information migration file. Figure 6 shows party information data content and, as illustrated in the figure, contact person name data is also identifying data in addition to the party ID attribute. Because of this, a party may give several contact persons in their own rows without the rows being interpreted as duplicates in checks. A party information migration file example can be found for the supplier, grid company and third party.

Party Data
Party ID
Contact person first name
Contact person last name
Migration file party ID
Migration file date
Migration file revision
Distribution system operator (Entity)
Invoicing address(Entity)
Party (Entity)
Bank contact information (Entity)
Postal address(Entity)
Online invoicing address (Entity)
Contact person (Entity)
Contact information (Entity)

FIGURE 6 DATA CONTENT OF PARTY INFORMATION MIGRATION FILE.

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

3.3 Customer information

This chapter describes example cases of migration files concerning customer information. There are two kinds of customers in a migration file example containing customer information: consumers and companies. ‘Company’ means a customer in a Datahub information model, which is not a consumer customer, i.e. in associations and public bodies in addition to companies.

When importing customer information, it should be taken into account that all customers should be connected to at least one agreement. So-called ‘orphan’ customers are not imported to Datahub. Furthermore, if there is a desire to import several items of agreement information related to a customer relationship, they are imported as part of agreements. One customer may have only one telephone number and email address. Figure 7 shows customer information data content.

Customer Data
Customer ID
Migration file party ID
Migration file date
Migration file revision
Customer (Entity)
Consumer (Entity)
Postal address(Entity)
Company (Entity)

FIGURE 7 DATA CONTENT OF CUSTOMER INFORMATION MIGRATION FILE.

3.3.1 Consumer

3.3.1.1 Basic case

Row 2 of the supplier’s Customer information migration file example is a basic case of a consumer customer for which all possible data has been filled in. Some of the data fields, such as customer type and method of contact, have been filled in based on the code list in accordance with Datahub’s data model, and their explanations can be found in *Data standard*. Row 4 contains information concerning a customer in row 2, which describes the business name of the person in question, and which has as an identifier the customer’s business ID and, in the additional ID field, the person’s personal ID.

The records in rows 6-9 describe different basic cases of commonly occurring situations, which can give rise to questions in the sector such as the way of writing different kinds of addresses. The paragraph below describes the examples in greater detail.

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

3.3.1.2 Personal ID missing

In row 9 of the supplier's example file, the customer's personal ID is missing from the source system, and the party's own ID based on the data standard is used as the customer ID: <party ID>_<party's own customer ID>, which is created based on source system data. In this situation, the customer ID in question should be of the type AA04 (Party's own ID: Consumer). A similar example of the same customer can be found in row 6 of the grid company's customer information migration file.

In situations where, in a market party's system, the same customer ID has more than one person and all personal IDs are missing, only one of the persons can be imported in order to avoid duplication arising.

The customer's date of birth (Consumer-Date of birth) is mandatory if the customer ID type AA04 is used. If the customer's date of birth is unknown and cannot be ascertained, the date of birth is set to 1900-01-01.

3.3.1.3 Estate of a deceased person

Row 5 of the supplier's customer information has an example of reporting an estate in a migration file. An estate is reported in the field 'customer subtype' with the code 'BF02'. Regarding an estate, it should also be taken into account that if an estate has a business ID, it should be used as the customer ID.

3.3.1.4 Names in Swedish

Swedish-language street names and towns can also be imported to Datahub as they are. Furthermore, the Finnish-language abbreviation 'as.' (apartment) in the stair ID corresponds to the Swedish abbreviation 'bst.'. An example of a Swedish address file can be found in row 5 of the supplier's migration file example. If there is a desire to import several addresses to an accounting point in both Finnish and English, the desired number of them can be imported in the '*Additional accounting point addresses*' migration file.

The language of communication used by the customer is given in the 'Language' field, and the two-letter codes based on the ISO 639-1 standard are used to specify it (e.g. the codes corresponding to Finnish, Swedish and English are: fi, sv and en respectively).

3.3.2 Company

Row 3 of supplier's customer information is an example of reporting company customer information in a migration file in which a business ID is used as the customer ID. In this example, only the mandatory fields have been filled in and, for example, only the PO box, number and town have been given for the postal address.

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21 FI-00620 Helsinki	P.O.Box 530 FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	FI27455435, VAT reg forename.surname@fingrid.fi www.fingrid.fi

The association's registration code (association ID) granted by the Finnish Patent and Registration Office should primarily be used as a customer ID for associations, even if an association also has a business ID. The use of a business ID or some other ID does not, however, prevent the importing of customer information to Datahub. If a party's system contains both a business ID and a registration code in the association's information, the business ID should be entered in the 'Additional ID' field. The data migration services should suggest the use of a registration code in situations where the information supplied by different parties about the same association is inconsistent.

3.3.2.1 Estate

Row 4 of supplier's customer information is an example of reporting estate in a migration file. Estate is reported in "asiakkaan alityyppi" field using code "BF03".

3.4 Product information

Two different agreements are created for a supplier's product information example file, from which a product in row 2 is given not only an end time for the validity of mandatory data but also start- and end times for the application of the price. Rows 3 and 4 show an example of a product for which both the basic charge and a price per unit of energy are given. Price calendar time series are not imported in migration files in xlsx format. The VAT-free price is always imported in price data. Figure 9 shows Product information migration file data content.

Product Data
Product ID
Product name language
Product component ID
Product component language
Migration file party ID
Migration file date
Migration file revision
Price (Entity)
Product (Entity)
Product component (Entity)
Product name (Entity)

FIGURE 8 DATA CONTENT FOR A PRODUCT INFORMATION MIGRATION FILE.

The supplier's product information is not mandatory in Datahub from the perspective of business processes, but grid service products must basically be imported. Through them, the supplier can make a sales agreement with a product corresponding to an accounting point grid service product.

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

The Datahub product information data model is structurally simple. Suppliers may maintain complex product structures that don't fit into the data model. Such structures must be left out from the migration data. Different product pricings can, however, be imported in their own rows, such as the basic charge based on fuse size.

3.5 Accounting point data

Figure 10 shows information contained in accounting point data. The accounting point ID is used as the identifying data for the row. In the early stage of data migration, the old accounting point ID can be entered in the migration file's accounting point ID field but, by data migration milestone DM-3-05 market parties should have the readiness to give GSRN codes based on the GS1 system. Retired IDs should be reported to a dedicated column in the migration file from data migration milestone DM-3-05 onwards. The data migration service has a function that suppliers can use to download correspondence tables for accounting point IDs, and thereby to update their own ID. More specific instructions about the use of GS1 codes can be found from a separate document from Fingrid's Datahub Services -portal.

Please note! Retired Accounting point ID must be informed as such without any prefixes or suffixes. The distribution system operator ID is informed in a separate field, so it must not be included in the accounting point ID.

Accounting Point Data	
Accounting point ID	
Controllable load ID	
Production device ID	
Storage device ID	
Metering grid area ID	
Migration file party ID	
Migration file date	
Migration file revision	
Coordinates (Entity)	
Accounting point characteristics (Entity)	
Accounting point address (Entity)	
Accounting point (Entity)	
Controllable load (Entity)	
Production device (Entity)	
Storage device (Entity)	

FIGURE 9 ACCOUNTING POINT DATA.

In the example file for accounting point data, all possible information for the consumption accounting point is filled in in the example in row 2, including data concerning controlling loading- and storage device entities. The voluntary entities of accounting point data have many attributes, which look mandatory according to the data standard data row, but in practice they are only

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

mandatory if the entity in question is given in the same way as in the case of the Electronic invoicing address attribute mentioned in Chapter 1.

Regarding the accounting points in rows 3-5, only mandatory fields are filled in and to that extent they are basic cases. Various examples have been created for address information, the purpose of which is to clarify how address fields should be used in different situations.

In situations where a market party tries to import, for example, address information so that all the data is entered in the same field, such as the entire address being put in the street-name field, this is flagged up in the checking process as missing mandatory information (house number, post code, town, etc.).

3.5.1 Production accounting point

Row 6 describes a production accounting point, which is on the same premises as the consumption accounting point in row 5. These rows differ from each other in that the production accounting point has the value AG02 (production) in the 'Accounting point type' field, and the consumption accounting point value is AG01 (consumption). Also, in the production accounting point data are fields, which are mandatory only for consumption accounting points and which have been left blank in this example. These fields are: User group, Heating is dependent on electricity and Annual consumption estimate.

3.5.2 Temporary accounting point

Row 7 has an example of a temporary construction site electricity accounting point. The status of the accounting point field shows that it is a question of an accounting point under construction (code AE03).

3.6 Production unit data

The production unit data example file reported by the grid company has two examples of basic cases. Just like accounting points, production unit IDs must also be replaced by GSRN IDs before introduction of Datahub, and the parties must be able to deliver the IDs in question by the data migration milestone DM-3-05. An old ID can be entered in the dedicated column for Retired Production unit ID in the migration file.

Production unit capacity must be reported in megawatts (MW), and the type of production is reported in codes based on NBS (listed in Data standard). Virtual production units are not imported to Datahub. Instead, small production sites are imported separately as production accounting points. Production unit data content is presented in Figure 11.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Last updated
4.2.2021

22 (36)

Production Unit Data
Production unit ID
Metering grid area ID
Migration file party ID
Migration file date
Migration file revision
Production unit (Entity)

FIGURE 10 PRODUCTION UNIT DATA.

Please note! A metering point must be reported as production unit in datahub data migration only if the metering point is reported as production unit in eSett's system. So called virtual production units should not be reported to datahub.

3.7 Agreement information

From a perspective of the supplier and the grid owner, several possible situations can be found in the agreement information example file. Agreement information is divided into grid and sales agreements. Figure 13 shows the data content of agreement information.

Contract Information
Contract ID
Customer ID
Contact person first name
Contact person last name
Contact person type
Accounting point ID
Product ID
Migration file party ID
Migration file date
Migration file revision
Invoicing address (Entity)
Sales agreement (Entity)
Agreement (Entity)
Email invoicing address (Entity)
Online invoicing address (Entity)
Contact person (Entity)
Contact information (Entity)

FIGURE 11 AGREEMENT INFORMATION MIGRATION FILE

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530	+358 30 395 5000	+358 30 395 5196	FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki			forename.surname@fingrid.fi
				www.fingrid.fi

3.7.1 Grid agreement

In Datahub, a grid agreement refers to electricity distribution agreements, not electricity connection maintenance agreements. Therefore, connection maintenance agreements (or other agreements that are not electricity distribution agreements) should not be provided by the distribution system operator in the agreement data.

The example in row 2 of a grid company's agreement information sample file is a basic case which contains not only mandatory but also several voluntary fields filled in, such as electronic invoicing address and information pertaining to the contact information entity (in this case trustee).

3.7.2 Sales agreement

In sales agreements reported by suppliers, accounting point IDs must correspond to the IDs used by the grid company. At the data transfer stage, suppliers' possible own accounting point IDs cannot therefore be imported to Datahub. Example cases concerning sales agreements are described below.

3.7.2.1 Several people on the same agreement

Rows 5-6 of the supplier's agreement information example file and rows 3-4 of the grid company's example file have two example cases of agreement with two customers. The agreement ID is therefore always connected to one agreement, which in turn may be connected to several customers. In these cases, the same agreement ID thus appears in more than one row.

3.7.2.2 An agreement that ended less than six weeks ago

Row 3 has an example of an agreement that ended less than six weeks after the information was downloaded. When carrying out downloading iterations, it should be taken into account that, in one download, agreement information may have ended less than six weeks ago and, in the following, more than six weeks ago. This may lead to error messages in reference integrity checks.

3.7.2.3 Small-scale production purchase agreement

Row 7 describes the reporting of a small-scale production purchase agreement in Datahub, which takes place as the making of a sales agreement for an accounting point whose type is given as 'production'. The accounting point for which the agreement in question is made can be found in row 6 of the file '6434567890028-Käyttäpaikkatiedot'.

3.8 Authorisation information

The authorisation information migration file example has two cases of different authorisations. Authorisation is connected to the customer using the customer's ID and an accounting point ID. For this reason, in authorisation information sent by a third party, the ID used by the grid company

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21 FI-00620 Helsinki	P.O.Box 530 FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	FI27455435, VAT reg forename.surname@fingrid.fi www.fingrid.fi

should be used as the accounting point ID. Regarding authorisation validity, both the start time and end time are mandatory. The end time must be entered because the authorisation may be valid for up to 2 years. The Datahub information model has several alternatives for the purpose of authorisation. Electricity agreement tendering and energy reporting are selected as examples of these. Figure 14 shows authorisation information data content.

Authorisation Data
Party ID
Customer ID
Accounting point ID
Authorisation start time
Authorisation end time
Authorisation purpose
Migration file party ID
Migration file date
Migration file revision
Authorisation (Entity)

FIGURE 12 AUTHORISATION INFORMATION.

Authorisation verification cannot be done in the data migration system, because the powers of attorney required for it cannot be found in imported information. An agreement model must later be created for verification, in which authorisation information can be connected to powers of attorney.

Please note! Only authorisations for corporate customers are delivered in data migration. Consumer customer authorisations cannot be delivered in data migration.

3.9 Additional accounting point addresses

The purpose of additional accounting point addresses is to act as additional data fields in situations in which an address can be given using two or more street names. There are also many accounting points whose address can be given using both Finnish and Swedish street names. All example file records are basic cases, which are connected to the accounting points of an accounting point information migration file. The data content of additional accounting point addresses can be seen in Figure 15.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Accounting Point Additional Addresses
Accounting point ID
Migration file party ID
Migration file date
Migration file revision
Accounting point address (Entity)

FIGURE 13 ADDITIONAL ACCOUNTING POINT ADDRESSES.

Please note! In datahub, the maximum amount of accounting point addresses is eight. Therefore, up to seven additional accounting point addresses can be given for an accounting point.

3.10 Accounting point supplier data

Grid companies deliver supplier data concerning their accounting points using this file. Originally the intention was to deliver supplier data as part of grid owner agreement information but, in order to simplify the extraction and checking of data, the data was transferred to its own file. Data is used only in the consistency checking of data migration.

The data content of a migration file consists of agreement entity data, from which only the necessary items have been picked. All the fields of the file are listed in the table below. All the fields, except for the agreement end date, are mandatory.

In the migration file hierarchy described in Figure 4, accounting point supplier data corresponds to agreement information.

TABLE 4. DATA CONTENT OF ACCOUNTING POINT SUPPLIER DATA MIGRATION FILE

Information field	Description
Agreement-Agreement ID	Sales agreement ID
Agreement-Accounting point ID	
Agreement-Migration file's party ID	Party ID of distribution system owner that delivered the file
Agreement-Migration file date	
Agreement-Migration file revision	
Agreement-Party ID	Sales company party ID
Agreement start date	Date of start of validity of accounting point sales agreement
Agreement-Agreement end date	Date of end of validity of accounting point sales agreement

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

3.11 Time stamps in migration files

Time stamps in migration files must be reported in UTC time based on document “Datahub events v1.11” section 2.4.4, that is

- 28.1.2020 at 00:00 (Finnish wintertime) → 2020-01-**27T22:00:00+00:00**
- 15.6.2020 at 00:00 (Finnish summertime) → 2020-06-**14T21:00:00+00:00**

For example, if start and end dates of agreements are maintained by day resolution in the source system, reporting the correct dates in the transfer files must be carried out very carefully. The principle is illustrated in Figure 16.

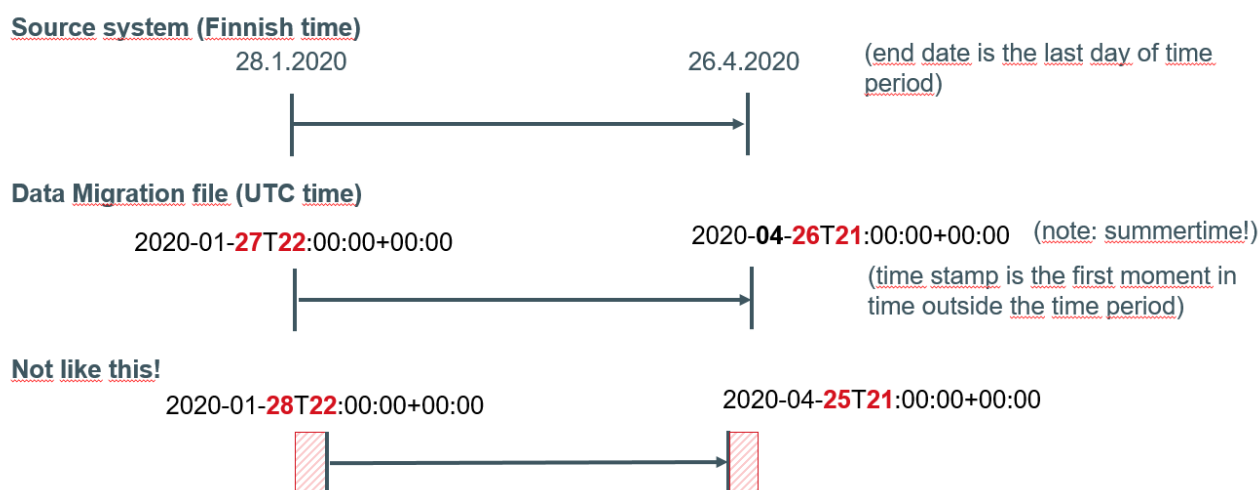


FIGURE 16 EXAMPLE: REPORTING START AND END DATES OF AGREEMENTS IN MIGRATION FILES

Assumptions in Figure 16:

- Start and end dates of agreements are maintained by day resolution in the source system
- The end date is the last day of validity of the agreement

Note!

- Adding the times directly to the start date shifts the agreement start date by one day forward.
- Shifting the end date directly to UTC time shifts the agreement end date backwards.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

3.11.1 Handling of DST-shift in period prior to 1996

The Market parties' systems may contain agreements with validity start time far back in time. In Finland the DST-shift was standardized as late as year 1996 and all commonly used code libraries don't handle DST-shift in the same way during the period prior to 1996.

The business significance of these time stamps is small and because of that the market parties are allowed to use or not use DST-shift in time stamps prior to 1.1.1996 00:00 EET.

3.11.2 The earliest time stamp allowed

The earliest time stamp allowed for data validity is 2.1.1900 00:00 EET and in the date format 2.1.1900. In the migration file, therefore, 1900-01-01T22:00:00+00:00 for timestamps and 1900-01-02 for dates. This restriction is used for the following reasons:

- Datahub does not accept 19th century timestamps, e.g., 1.1.1900 00:00 EET cannot be used because when converted to UTC the year is 1899
- The start and end dates of the agreements must be at the turn of the day (Finnish time), so for the sake of clarity, a limit that also complies with this rule is used.

The earliest time stamp allowed should be considered for the following time stamps:

- Agreement-Agreement start date
- Sales agreement- Fixed-term start date
- Sales agreement-Termination period start date
- Product-Product start time
- Price-Price start time
- Production unit-Production unit start time
- Authorisation-Authorisation start time

4 Metering data

Hansen Technologies Finland Oy's SAF file format is used to transfer metering data. It is a text-based format, which is generally used to transfer metering data. The files are uploaded to the data migration system by each market party. Migration service will verify whether the related accounting point can be found from the delivered accounting point data or not. Because of the large volume of data, the files may be delivered compressed (file format "zip", compression method: "Deflate").

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

The metering data example file is also in SAF format, and can be opened, for example, using a Windows Notepad application. The data in the file is divided into slots, which are separated from each other by a semi-colon (;). In order to illustrate the method of presentation, below is an example row of a migration file in SAF format.

TSV;1;201609210000+00;10.21;136;

Precise instructions about the use of SAF format can be found in the document in the Datahub Services portal: [Enoro SAF Technical Description 20160921](#). This document is freely available for Datahub data migration.

4.1 Naming of metering data

The rules for naming metering data migration files are specified in the table below.

TABLE 5. THE RULES FOR NAMING A MIGRATION FILE IN SAF FORMAT

File name part	Description and specification of file name part
Party's ID	Individual party ID, which is specified in the Datahub Services portal https://palvelut.datahub.fi/en/nykyinen-tiedonvaihto/yhteystietotaulukko From data migration milestone DM-3-05 onwards, the GLN code must be used as the Party ID.
Type of migration file	Metering data
Time stamp	Time stamp when the data was downloaded from the source system. The time stamp format is YYYYMMDDHHMISS.
Consecutive number	Consecutive number starting from 1. Consecutive numbering avoids the creation of files with the same name. There is no restriction on the number of characters in a consecutive number.
Ending	Type of migration file ending which is saf.

Migration files containing metering data are thus in the format: <Party ID>-<migration file type>-<Time stamp>-<Consecutive number>-<ending> e.g. **FSJ000-Metering data-20160920191147-1.saf** until data migration milestone DM-3-05 and **6434567890028-Mittautiedot-20160920191147-1.saf** from the milestone DM-3-05. The file is therefore from the moment in time: 20.9.2016 at 19.11.47.

4.2 Structure and data content of migration file

This chapter describes the structure and data content of a migration file example in SAF format (FSJ000-metering data-20160920191147-2.saf). The file is named as presented in chapter.

Link to the example file can be found in Table 3 on page 16. Next, the content of the example file is presented.

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530			FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki	+358 30 395 5000	+358 30 395 5196	forename.surname@fingrid.fi
				www.fingrid.fi

Please note! TSU and TSM records supported by SAF format should not be used.

4.2.1 EXH: File header

The first row of the file begins with an ID, which shows that it is a question of a header row: EXH (Export Header). In the next slot is a version number (in-house version), whose value is used in the present version: 2. The third item of information is a time stamp from the moment of creation of the file. The time stamp is expressed in the format:

YYYYMMDDhhmm+XX,

Where +XX means the UTC time zone. An example of a migration file header row:

EXH;2;201603012000+00;

4.2.2 TSH: Time series header

In the second row of the file is a time series header with the code TSH (Time Series Header). The data content of the row is described in the table below.

TABLE 6 TIME SERIES HEADER INFORMATION IN SAF FILE

Slot	Content	Description
0	Row ID	TSH
1	Time series ID	The metering point ID is used as the ID
2	Type of time series	0 = non-interval metering 1 = interval metering (this is always used in files containing hourly time series)
3	Length of time step	Numerical value, value in the case of hourly time series = 1
4	Time step unit	All transferable values are hourly metered, so the value is always: HOUR
5	Unit of metering value	Text value. Either kWh or kvarh are used. The value must be given precisely, taking account of upper- and lower-case letters.
6	Number of rows	Number of transferred metering values. In datahub data migration, only hour values are used. Therefore, the number of metering values should always be equal to the length of the time period in hours.
7	Start time time stamp	Is given in the format: YYYYMMDDhhmm+XX,

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

		Where +XX means the UTC time zone.
8	End time time stamp	Is given in the format: YYYYMMDDhhmm+XX, Where +XX means the UTC time zone.
9	Additional data field 1	This field is used to express whether it is a question of capacity or inductive metering in reactive energy metering. Correspondingly, either 'k' or 'i' are written in the field. The field may be left empty for exchange points.
10	Additional data field 2	This field is only used for exchange point measurements and expresses whether it is a question of output ('out') or input ('in') energy from the perspective of the default grid owner. In cases other than exchange point metering, this field is blank.

The header row of a time series appearing in a migration file example is in the format:

TSH;890040000502043087;1;1;HOUR;kWh;24;201609210000+00;20
1609220000+00;,,,,,,,,;

The semicolons coming after the additional data field are empty slots, which belong to the SAF file format, but which are not needed in Datahub data migration.

4.2.3 TSV: Metering values

In the following rows are n pieces of metering values, whose ID is TSV (Time Series Value). The rows include the following information:

TABLE 7 METERING VALUES INFORMATION IN SAF FILE

Slot	Content	Description
0	Row ID	TSV
1	Index	Metering value order number, which begins with 1.
2	Time stamp	Metering value time stamp in the format: YYYYMMDDhhmm+XX, Where +XX means the UTC time zone. In datahub data migration, only interval metering values are transmitted. Distribution system operator should inform metering value in TSH row for every hour of the given time period.

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

3	Value	Metering value to an accuracy of two decimal places. A point (.) is used as a decimal separator.
4	Status	Metering value status in accordance with values used in MSCONS: 136=OK 99=Estimated Z02=Uncertain Z01=Corrected OK

One metering data row of a migration file example:

TSV;17;201609211600+00;10.78;136;

The SAF format would enable the complete omission of the time stamp from individual items of metering data. It would be possible to specify the moment in time related to metering using the time stamp of the time series start time and the value indices. In Datahub data migration, however, the format contained in the time stamp is used in order to simplify the search for individual metering values for a certain moment in time.

4.3 SAF-file size

The maximum size of saf-files is 1 gigabyte. The performance on the datahub side benefits from bigger file size, so we ask market parties to provide the time series data in as big files as possible.

4.4 Example cases

In the example file there are four separate metering time series. As noted in the header row of the first time series, the unit of the values is 'kWh', so it is a question of active energy metering. Correspondingly, the second and third time series are reactive energy metering whose unit is 'kvarh'. The first of the time series contains 24 values and the others 10. The purpose of this is to illustrate that the number of time series metering events may vary, and the number of different time series values affects other time series.

4.4.1 Reactive energy metering

Because reactive energy metering can be both capacitive and inductive, these are distinguished from each other by adding to the time series header either a letter 'k' or 'i' to the first additional data field after the end time time stamp. Reporting reactive energy is illustrated by the second and third time series of the example file.

For exchange points it is possible to report one reactive energy measurement per direction. Additional instructions can be found in section 4.4.2 .

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

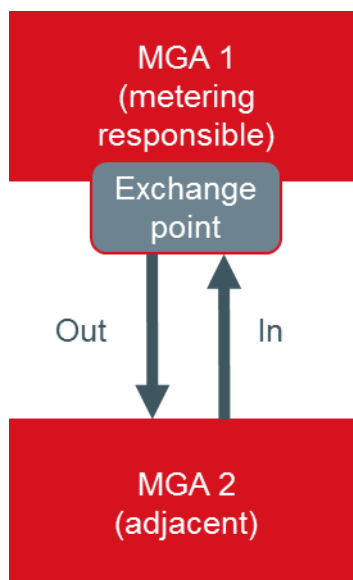
+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

4.4.2 Exchange point metering

At the same time as reporting exchange point metering, another additional data field is used in the time series header row to tell whether it is a question of output ('out') or input ('in') energy from a perspective of the metering responsible grid owner's metering grid area (MGA). Delivering exchange point metering to Datahub is always the responsibility of the metering responsible grid owner. In cases other than exchange point metering, this field is blank. Specifying the direction of metering is illustrated in the figure below.

Eventual reactive energy measurements are reported in the same way as active energy, i.e. one time series per direction. Indicators for capacitive or inductive reactive energy is not needed when the measurement belongs to an exchange point.



Direction of measurement must be reported with exchange point data. Direction describes how measurement data is reported to the exchange point, reported timeseries cannot contradict with the reported direction. Possible directions are described in the table 8

TABLE 8 REPORTING MEASUREMENTS TO EXCHANGE POINT

DIRECTION OF ELECTRICITY	REPORTING MEASUREMENTS
BG01	Only 1 timeseries will be reported, which has value "Out" in additional data field 2
BG02	Only 1 timeseries will be reported, which has value "In" in additional data field 2

Fingrid Datahub Oy

Street address	Postal address	Phone	Fax	Business Identity Code
Läkkisepäntie 21	P.O.Box 530	+358 30 395 5000	+358 30 395 5196	FI27455435, VAT reg
FI-00620 Helsinki	FI-00101 Helsinki			forename.surname@fingrid.fi
				www.fingrid.fi

BG03 2 timeseries will be reported

one has the value "Out" in additional data field 2

The other has the value "In" in additional data field 2

Reporting exchange point metering is illustrated by the fourth - seventh time series of the example file.

5 Data Maintained through the Titta User Interface

5.1 Metering Grid Area Data

The grid companies responsible for the metering import their own metering grid areas to the datahub by submitting the data via the Titta user interface. The information to be reported is described in Table 9.

For the supplier data in the metering grid area data, the currently valid data (loss supplier, the open supplier for a balanced deviation, supply responsible supplier) is imported. Validity information is therefore not reported separately.

TABLE 8 METERING GRID AREA REPORTED TO TITTA

Field	Mandatory	Description	Example
EIC Y Code	N	Metering Grid Area ID	44Y-000000000785
Former ID	Y	Former ID of the metering grid area	AJS000
Name	Y	Name of the metering grid area	
Type	Y	Type of the metering grid area	Regional grid (Z01) Industrial grid (Z03) Distribution grid (Z04) Production grid (Z06)

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Transmission grid (Z07)			
Starting date	Y	Starting date of validity of the metering grid area.	01.01.1998
Loss supplier	N*	Loss supplier ID (GLN). Mandatory if Type is Z04.	6434567890011
The open supplier for a balanced deviation	N*	The open supplier for a balanced deviation ID (GLN). Mandatory if Type is Z04.	6434567890011
Supply responsible supplier	N*	Supplier responsible supplier ID (GLN). Mandatory if Type is Z04.	6434567890011

5.2 Exchange Point Data

The delivery of the exchange point data is the responsibility of the grid operator responsible for the metering. Exchange point IDs must correspondingly be replaced by GSRN codes, and the parties must be able to deliver them by the data migration milestone DM-3-05.

Exchange point data is maintained through the Titta interface. The information to be reported is described in Table 10.

TABLE 9 EXCHANGE POINT DATA REPORTED TO TITTA

Field	Mandatory	Description	Example
Identification	Y	Exchange point ID (GSRN)	643456789864735993
Former ID	N	Former exchange point ID (if exists)	RP2343434
Identification of the area responsible for metering	Y	Identification of the grid operator reporting the exchange point data (EIC Y Code).	44Y-00000009001W

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Identification of the neighbouring area	Y	<p>Identification of the neighbouring area (EIC Y Code).</p> <p>The former metering grid area ID is used, until the grid operator of the metering grid area has retrieved the EIC Y Code.</p>	44Y-00000009002U
Direction of electricity transmission	Y	<p>Information on which direction electricity can move at the exchange point or whether electricity can move in both directions.</p> <p>BG01=Metering responsible area -> Neighbouring area</p> <p>BG02= Neighbouring area -> Metering responsible area</p> <p>BG03=Both directions</p>	BG01
Status of the exchange point	Y	Information on the status of the exchange point	AE01
Name of the substation	Y	Name of the substation where the exchange point is physically located.	Nuojua
Identification of the substation	Y	Identification of the substation where the exchange point is physically located.	NUO
Identification of the field	Y	Field of the substation where the boundary point is physically located.	E01

Fingrid Datahub Oy

Street address

Postal address

Phone

Fax

Business Identity Code

Läkkisepäntie 21
FI-00620 Helsinki

P.O.Box 530
FI-00101 Helsinki

+358 30 395 5000

+358 30 395 5196

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi

Last updated
4.2.2021

36 (36)

Starting date of the exchange point	Y	The point in time from which the exchange point is valid	1.1.2010
Ending date of the exchange point	N	The time until which the exchange point is valid	

Fingrid Datahub Oy

Street address

Läkkisepäntie 21
FI-00620 Helsinki

Postal address

P.O.Box 530
FI-00101 Helsinki

Phone

+358 30 395 5000

Fax

+358 30 395 5196

Business Identity Code

FI27455435, VAT reg
forename.surname@fingrid.fi
www.fingrid.fi