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BRP – Implementation guide

Fifty MMS – FCR

Version 3

Svenska kraftnät

Svenska kraftnät is a state owned enterprise with the task of maintaining Sweden's electricity transmission grid, which consists of about 16,000 kilometres of 400 kV and 220 kV transmission lines with substations and interconnectors. Svenska kraftnät is also the system operator for electricity in Sweden.

Svenska kraftnät is developing the transmission grid and the electricity market to meet society's need for a secure, sustainable and cost-effective supply of electricity. In this, Svenska kraftnät plays an important role in implementing national climate policies.

Version 3

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1 Introduction

1.1 Background

The Frequency Containment Reserve (FCR) is one of several different types of Balancing Services that TSOs use for balancing of the Nordic synchronous area. The FCR product divides further into FCR-N and FCR-D upwards and FCR-D downwards.

Fifty MMS has been developed by Svenska kraftnät and Statnett to allow a joint platform for procurement of FCR balancing capacity.

1.2 Scope

This document covers the technical implementation details when integrating with Fifty MMS and provides information about the processes required to interact with a FCR market. Both functional and technical aspects are covered. The intended users of this document are the participating BRPs.

The main processes described are:

- > Bid handling process
- > Market clearing process
- > Scheduling and reporting process

1.3 Terms and definitions

Acronym	Term	Definition
BRP	Balance Responsible Party	A BRP is a market participant having a valid balance responsibility agreement with the TSO of the area of operation and an imbalance settlement agreement with eSett
EDIEL	Electronic Data Interchange EI	Standardized message exchange in energy sector
FCR	Frequency Containment Reserve	Automatically activated services that stabilizes the frequency in case of small changes in consumption or production (FCR-N) or in the event of a disturbance (FCR-D)
GCT	Gate Closure Time	Deadline for submitting a bid
GOT	Gate Opening Time	Opening time for bid submission
SMTP	Simple Mail Transfer Protocol	Communication protocol for sending electronic mail
TSO	Transmission System Operator	Transmission System Operator, for example Svenska kraftnät

Table 1. Terms and definitions.

2 Business context

2.1 Timeline

The FCR capacity market involves several operational phases. The diagram below shows the timeline for the FCR capacity market. For each operating day FCR is traded in two auctions: First and Second auction.

Between the FCR capacity market Gate Opening Time (GOT) and the FCR capacity market Gate Closure Time (GCT), the BRP can submit and update their bids (Bidding period). The bidding periods are described in Figure 1 below.

After gate closure, the "Market Clearing" runs and the results are published to the BRP and TSO. The TSO have the possibility to extend the bidding period.

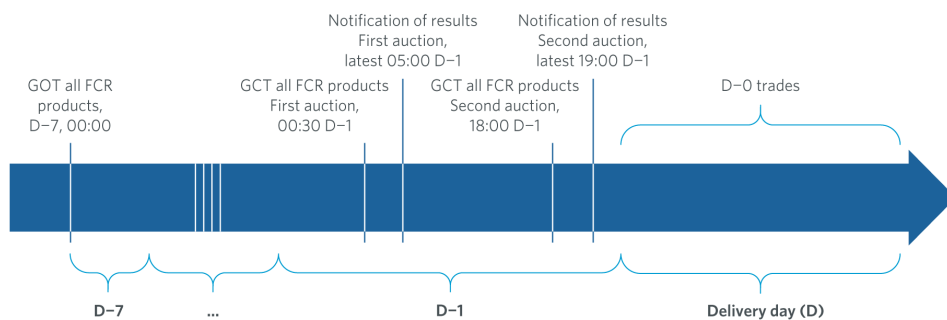


Figure 1. Timeline for the FCR capacity market.

2.2 System context

The diagram below shows an overall system context for the FCR capacity market. It shows how Fifty MMS integrates with the BRP and other participating systems. It also shows how a BRP can use FiftyWeb to enter bids and retrieve information. This document provides detailed information about the message exchanges between Fifty MMS and the BRP. The other exchanges are shown for information purposes only and are outside the scope of this document.

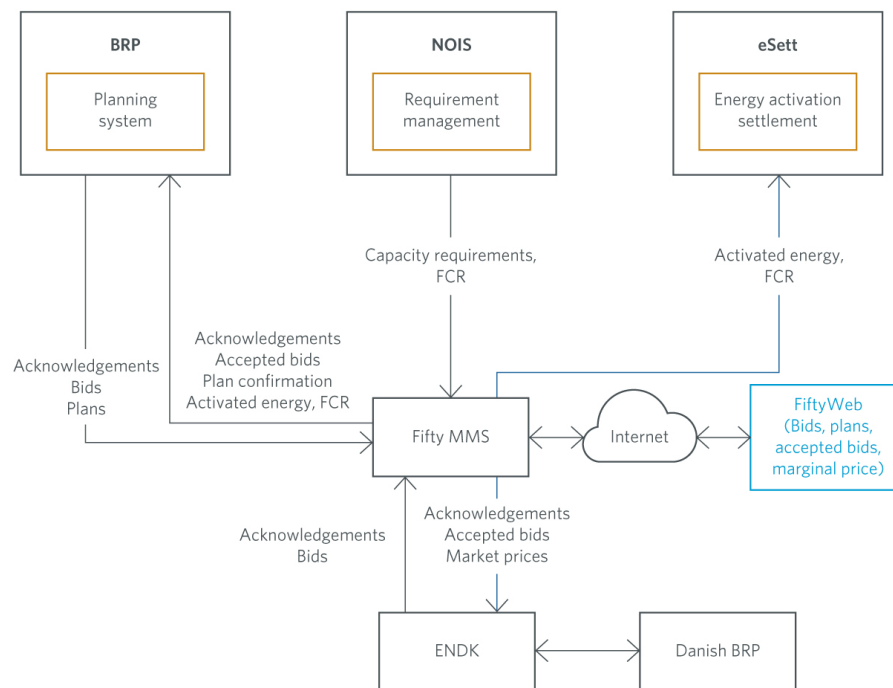


Figure 2. Overall system context.

The table below provide an overview of the flows between Fifty MMS and the BRP. The tables show that Ediel format is used as data exchange format and SMTP is used as communication protocol.

Sender	Receiver	Data	Channel	Documents
BRP	Fifty MMS	Bids	SMTP	QUOTES
BRP	Fifty MMS	Plans	SMTP	DELFOR
Fifty MMS	BRP	Accepted bids	SMTP	UTILTS
Fifty MMS	BRP	Committed plans	SMTP	UTILTS
Fifty MMS	BRP	Activated energy	SMTP	UTILTS

Table 2. Overview of the flows between Fifty MMS and the BRPs

2.3 Specification of messages

General changes valid from 1 June 2023

Product codes

The product codes that has been used for production will be used for all FCR-bids, even if the bid refers to a consumption resource.

Message ID

The GCT for the First auction, that used to be at 15.00 D-2, is moved to D-1 at 00:30. The specification SD1/SD2 (in the segment containing the Message ID, see the example files in Appendix A) has not been changed and the following should still be applied:

- > SD2 is used for bids to the First auction
- > SD1 is used for bids to the Second auction

2.3.1 Inbound data to Svenska kraftnät

2.3.1.1 Bids FCR

Incoming bids are sent as QUOTES-messages. Information about and specifications on QUOTES-messages are available at the Ediel portal: <https://www.ediel.se/Portal/>. Please note that the information is only available in Swedish. However, a generic common Nordic implementation guide for QUOTES in English is available at: <https://ediel.org/guides/>.

Bids are sent by price area and all price areas must be included in one and the same file. Separate files are sent for each individual product that BRP wishes to bid on, one for FCR-N, one for FCR-D up and one for FCR-D downwards (if all products are offered from the BRP).

Table 2 shows the product codes for FCR-bids. As of June 1, 2023, the product codes previously used for production are used for all FCR bids, i.e. even if the bid is for a consumption unit/group.

Product code	Product
1256	FCR-N
1249	FCR-D upwards
1245	FCR-D downwards

Table 3. Product codes used for submitting FCR bids.

Example files for FCR-bids for both First and Second auction can be found in Appendix A.

2.3.1.2 Plans

Incoming plans are sent as DELFOR-messages which are specified at the Ediel portal: <https://www.ediel.se/Portal/>.

Table 3 shows the product codes for FCR-plans. As of June 1, 2023, the product codes previously used for production are used for all FCR bids, i.e. even if the bid is for a consumption unit/group.

Product code	Product
1250	FCR-N
1240	FCR-D upwards
1244	FCR-D downwards

Table 4. Product codes used for submitting FCR-plans.

Example files can be found in Appendix A.

2.3.2 Outbound data from Svenska kraftnät

2.3.2.1 Accepted bids

The accepted bids for the First and Second FCR-auctions will be sent in the UTILTS format. Note that one accepted bid file contains all products (FCR-N, FCR-D upwards, FCR-D downwards).

Please note that the product code previous used for production is to be used for all FCR bids, regardless of bid type.

Further information about the time series products can be found at Edielportalen under “6. UTILTS-APERAK”:
<https://www.ediel.se/Info/edielanvisningar>.

Time series product	Product
S419	FCR-N First auction
S420	FCR-N Second auction
S423	FCR-D upwards First auction
S424	FCR-D upwards Second auction
S431	FCR-D downwards First auction
S432	FCR-D downwards Second auction

Table 5. Times series products for accepted FCR bids, all products.

Example files can be found in Appendix B.

2.3.2.2 Committed plan FCR

The committed plan is sent once per day, after the delivery day has ended, in the UTILTS format. Further information about the time series products can be found at Edielportalen under “6. UTILTS-APERAK”:

<https://www.ediel.se/Info/edielanvisningar>.

Please note that the product code previous used for production is to be used for all FCR bids, regardless of bid type.

Time series product	Product
S195	FCR-N
S197	FCR-D upwards
S437	FCR-D downwards

Table 6. Times series products for committed plan for FCR

Example files can be found in Appendix B.

2.3.2.3 Activated energy FCR

Activated energy for FCR-D follows the same codes as for FCR-D upwards. The difference is the sign of the value in the time series; FCR-D upwards has a positive sign and FCR-D downwards has a negative sign. Further information about the time series products can be found at Edielportalen under “6. UTILTS-APERAK”:

<https://www.ediel.se/Info/edielanvisningar>.

Please note that the product code previous used for production is to be used for all FCR bids, regardless of bid type.

Time series product	Product
S402	FCR-N
S403	FCR-D upwards
S403	FCR-D downwards

Table 7. Times series products for activated FCR energy

Example file can be seen in Appendix B.

2.4 General rules

The FCR business process flows assume certain basic rules. These rules are described below.

2.4.1 Date and time

Date and time are formatted using the universal time standard UTC. During winter time, the period is from 00:00 UTC to 00:00 UTC. During summer time, the period is from 23:00 UTC to 23:00 UTC.

Document coverage

For bids (QUOTES) the beginning and ending date and time of the period covered by the document shall cover just one CET/CEST day.

Daylight saving time

- > On the date of the change from winter time to summer time, the period is from 00:00 UTC to 23:00 UTC. This change occurs on the last Sunday in March at 02:00 UTC.
- > On the date of the change from summer time to winter time, the period is from 23:00 UTC to 24:00 UTC. This change occurs on the last Sunday in October at 02:00 UTC.

2.4.2 Document identification

The document identification must be unique for the sender in question. Furthermore, the document identification itself should not have any significant meaning.

2.4.3 Update/cancel principles

In general, a new received file will always completely replace a previous received file. Update of any time series is done by sending a new document honouring these rules.

- > A new file mRID (document identification)
- > A newer created date-time
- > The same period/day and subject market participant (for bids) as for the data being updated. I.e. to cancel one or more time series, a new document is submitted honouring the above rules, omitting the bids that should be cancelled.

In order to cancel all bids, a new document with a zero volume and price time series should be submitted for each price area and all hours of the day

2.4.4 Acknowledgement

The acknowledgement documents, as defined at: <https://www.ediel.se>, is generated as response, either completely accepting the received document or completely rejecting it. Partly accept is not used. Example files for APERAKs for UTILTS, DELFOR and QUOTES can be found in Appendix C.

2.4.5 Time series period

Within a time series for a bid QUOTES, the position must always refer to one hour within the time interval of the document. Furthermore, gaps within the time series (one LIN-segment) are allowed.

Within a time series for a plan DELFOR, the position must always refer to one hour within the time interval of the document.

3 Business process

This chapter provides information related to the business rules that apply.

3.1 The FCR capacity market sequence diagram

The sequence diagram for the FCR capacity market is depicted below.

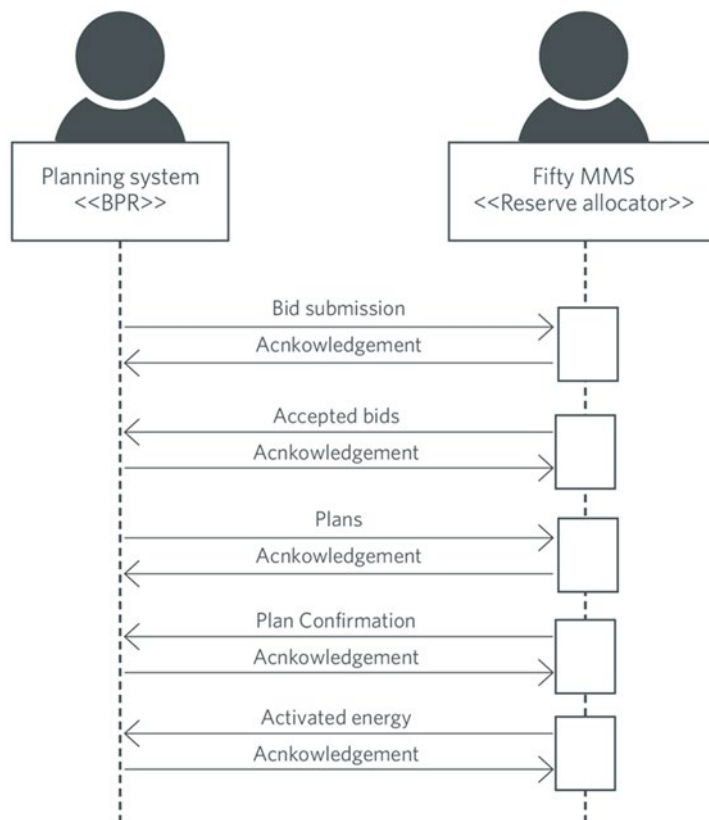


Figure 3. Sequence diagram for the FCR capacity market.

3.2 Bid submission

During the bidding phase, the participating BRP provide all information related to offers for the FCR capacity market. The QUOTES format is used to provide this information. Alternatively, bids can be submitted via the FiftyWeb user interface. The same business rules apply for both alternatives. For a general description of the QUOTES schema, please refer to the Ediel portal:

<https://www.ediel.se/Portal/>.

The following business rules apply to the bid submission process.

3.2.1 General

- > A QUOTES document contains a set of bids (a bid is represented by a time series).
- > A QUOTES document shall be for only one subject party.
- > The number of bids submitted may not exceed 999 LIN-segments per bid file.
- > Bids with the same price should be contained in the same time series (LIN segment).

3.2.2 Bid quantity

- > Bid quantity may vary for all hours in the time series.
- > The minimum bid quantity is 0.1 MW and the maximum bid quantity is 9999 MW.
- > Bid quantity (and minimum bid quantity) must be a multiple of 0.1 MW.

3.2.3 Bid price

- > Bid price must be present and have the same value for all positions in a time series (LIN-segment).
- > Bid price can be minimum 0.01 EUR or 1 (one) SEK (if submitted in SEK).
- > Bid price can be maximum 99 999 EUR or 99 999 SEK.
- > Bid price must be a multiple of 0.01 EUR or 1 (one) SEK.

3.2.4 Block bids

- > All quantities in a LIN-segment containing a block bid must be equal and represent a continuous interval of at least the amount of hours the block bid consists of.
- > The maximum length of a block bid is 6 (six) hours for the First auction and 3 (three) hours for the Second auction.

3.3 Accepted bids and market result publishing

When the bid selection process is completed, and the result from the auction is ready, the Fifty MMS system publishes an UTILTS file with accepted and non-accepted bids. All FCR products are published in the same file for all price areas. If intraday trades (D–O) are made, an updated accepted bid file from the Second auction will be sent containing a complete Second auction result as well as the D–O trade.

Settlement of accepted bids will use the marginal pricing methodology. Please note that the UTILTS file contains bid quantity and bid price. Marginal price is not included in the result file.

3.3.1 Accepted bids

The accepted bid file consists of the BRP complete set of bids and the status code to determine whether it is accepted or not.

- > Status code 194: Bid is accepted
- > Status code 195: Bid is not accepted

BRPs that did not enter bids into an auction do not receive accepted bid messages.

3.3.2 Prices

The marginal price will be available in Fifty Web and published at the Mimer portal: mimer.svk.se.

3.3.3 Withdrawal and republishing of market results

Fifty MMS can republish the market results multiple times due to different reasons.

In case of republishing of market results, Svenska kraftnät will first send a complete set of bids for the BRP with the status code for ‘not accepted’ for all bids. After that, a new market result with a new accepted bid file containing a new result will be sent. This means that the BRP needs to completely replace a previous file with a new accepted bid file.

3.4 Plans and plan confirmation

Plans for FCR should be submitted at latest 16:00 CET D-1 for the next delivery day. Plans can then be updated up to 45 minutes before delivery hour. A plan confirmation will be sent back after the delivery day has passed.

3.5 Activated energy

Activated energy for FCR is calculated in Fifty MMS and sent out to the BRP after the delivery day. The same values are sent to eSett for settlement purpose.

Appendix A – Example files inbound (from Svk:s view)

This Appendix contains example files for bids (First and second auction) for FCR-N, FCR-D upwards and FCR-D downwards as well as for FCR plans.

FCR-N Bids

Bid First auction

UNA:+.? '	
UNB+UNOB:2+EDIELID:ZZ:SUBADDRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table). Ediel ID for the BRP.
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD2+MESSAGEID+9+AB'	SD2 stands for FCR First auction. The Message ID must be unique for each bid.
DTM+137:202201191200:203'	Message date
DTM+163:202201200000:203'	Start of time interval in file
DTM+164:202201210000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+EDIELID:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1256:::SVK'	First bid ladder (1), in this case FCR-N (1256)
DTM+48:1:805'	Min. duration 1 hours (If block bids are submitted this is stated here)

PRI+CAL:1'	Price for the bid (1 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:2'	Identifies the quantity. In this case 2 MW.
DTM+324:202201200000202201200100:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID1'	Bid identification – the Bid ID must be unique for each bid.
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1256::SVK'	Next bid ladder (2) in the bid FCR-N (1256).
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid
PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201200100202201200200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.

UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.
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Bid Second auction

UNA:+.? '	
UNB+UNOB:2+EDIELID:ZZ:SUBADRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID+++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD1+MESSAGEID+9+AB'	SD1 stands for FCR Second auction. The Message ID must be unique for each bid.
DTM+137:202201171200:203'	Message date
DTM+163:202201190000:203'	Start of time interval in file
DTM+164:202201200000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+EDIELID:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – this is not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1256:::SVK'	First bid ladder (1), in this case FCR-N (1256)
DTM+48:2:805'	Min. duration 2 hours (Block bid 2 hours)
PRI+CAL:1'	
RNG+4+MAW:2'	
DTM+324:202201190000202201190100:Z13'	
RFF+PR:BIDID1'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1256:::SVK'	Next bid ladder (2) in the bid FCR-N (1256).
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid

PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201190100202201190200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for bidding zone SE1 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

FCR-D upwards bids

Bid First auction

UNA:+.?'	
UNB+UNOB:2+EDIELID:ZZ:SUBADDRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD2+MESSAGEID+9+AB'	SD2 stands for FCR First auction. The Message ID must be unique for each bid.
DTM+137:202201171200:203'	Message date
DTM+163:202201200000:203'	Start of time interval in file
DTM+164:202201210000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+EDIELID:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1249:::SVK'	First bid ladder (1), in this case FCR-D upwards (1249)
DTM+48:1:805'	Min. duration 1 hours (If block bids are submitted this is stated here)
PRI+CAL:1'	Price for the bid (1 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:2'	Identifies the quantity. In this case 2 MW.
DTM+324:202201200000202201200100:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID1'	Bid identification – the Bid ID must be unique for each bid.

LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1249::SVK'	Next bid ladder (2) in the bid FCR-D upwards (1249)
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid
PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201200100202201200200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

Bid Second auction

UNA:+.? '	
UNB+UNOB:2+EDIELID:ZZ:SUBADDRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD1+MESSAGEID+9+AB'	SD1 stands for FCR Second auction. The Message ID must be unique for each bid.
DTM+137:202201171200:203'	Message date
DTM+163:202201190000:203'	Start of time interval in file
DTM+164:202201200000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+EDIELID:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – this is not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1249:::SVK'	First bid ladder (1), in this case FCR-D upwards (1249)
DTM+48:1:805'	Min. duration 2 hours (Block bid 2 hours)
PRI+CAL:1'	
RNG+4+MAW:2'	
DTM+324:202201190000202201190100:Z13'	
RFF+PR:BIDID1'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1249:::SVK'	Next bid ladder (2) in the bid FCR-D upwards (1249)
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid
PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201190100202201190200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)

LOC+48+SE3::SVK'	The bid is valid for bidding zone SE1 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

FCR-D downwards bids

Bid First auction

UNA:+.?'	
UNB+UNOB:2+EDIELID:ZZ:SUBADRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD2+MESSAGEID+9+AB'	SD2 stands for FCR First auction. The Message ID must be unique for each bid.
DTM+137:202201171200:203'	Message date
DTM+163:202201200000:203'	Start of time interval in file
DTM+164:202201210000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+40900:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1245:::SVK'	First bid ladder (1), in this case FCR-D downwards (1245)
DTM+48:1:805'	Min. duration 1 hours (If block bids are submitted this is stated here)
PRI+CAL:1'	Price for the bid (1 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:2'	Identifies the quantity. In this case 2 MW.
DTM+324:202201200000202201200100:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID1'	Bid identification – the Bid ID must be unique for each bid.

LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1245::SVK'	Next bid ladder (2). Valid for FCR-D downwards (1245)
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid
PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201200100202201200200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)
LOC+48+SE3::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

Bid Second auction

UNA:+.?'	
UNB+UNOB:2+EDIELID:ZZ:SUBADDRESS+10000:ZZ:MARKNAD+210927:1200+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+QUOTES:D:96A:UN:EDIEL2+F'	F in the end indicate FCR
BGM+SD1+MESSAGEID+9+AB'	SD1 stands for FCR Second auction. The Message ID must be unique for each bid.
DTM+137:202201171200:203'	Message date
DTM+163:202201190000:203'	Start of time interval in file
DTM+164:202201200000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
CUX+2:EUR'	Currency of the bid (SEK/EUR)
NAD+FR+EDIELID:160:SVK++++++SE'	Identification Balance Responsible Party (BRP)
CTA+MS+:Contactperson'	Contact person – this is not mandatory to submit.
NAD+DO+10000:160:SVK'	Receiver identification
LIN+1++1245:::SVK'	First bid ladder (1), in this case for FCR-D downwards (1245)
DTM+48:1:805'	Min. duration 2 hours (Block bid 2 hours)
PRI+CAL:1'	
RNG+4+MAW:2'	
DTM+324:202201190000202201190100:Z13'	
RFF+PR:BIDID1'	Bid identification (must be unique)
LOC+48+SE3:::SVK'	The bid is valid for price area SE3 (It would not be possible to send bids on Sweden level or regulation object any more)
LIN+2++1245:::SVK'	Next bid ladder (2). Valid for FCR-D downwards (1245)
DTM+48:1:805'	Min. duration 1 hour, that is a regular hourly bid
PRI+CAL:3'	Bid price (3 EUR in this case). Price is stated for each hour, but have to be the same for the whole bid ladder.
RNG+4+MAW:4'	Identifies the quantity. In this case 4 MW.
DTM+324:202201190100202201190200:Z13'	Time interval valid for the quantity and price. Should be 1 hour.
RFF+PR:BIDID2'	Bid identification (must be unique)

LOC+48+SE3::SVK'	The bid is valid for bidding zone SE1 (It would not be possible to send bids on Sweden level or regulation object any more)
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:6'	Sum of the values in RNG (in this case 6 MW)
CNT+ZZZ:4'	Sum of the values in PRI (in this case 4 EUR)
UNT+28+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

FCR-plans

UNA:+.? '	
UNB+UNOB:2+EDIELID:ZZ:SUBADDRESS+10000:ZZ:MARKNAD+181018:0944+INTERCHANGEID++++1'	Interchange header. Specification in general specification for UNA, UNB and UNZ, available at ediel.se. The Interchange ID must be identical as in the UNZ-segment (see the last row of this table).
UNH+1+DELFOR:D:96A:ZZ:EDIEL2'	Message type with message reference 1
BGM+241+MESSAGEID+9+AB'	The Message ID must be unique.
DTM+137:202201251244:203'	Message date
DTM+163:202201251800:203'	Start of time interval in file
DTM+164:202201260000:203'	End of time interval in file
DTM+ZZZ:1:805'	Offset to UTC in hours (+1)
NAD+FR+EDIELID:160:SVK'	Identification Balance Responsible Party (BRP)
NAD+DO+10000:160:SVK'	Identification of receiver
UNS+D'	Separates header from detail section
NAD+XX'	Not used in energy sector and therefore code XX
LOC+90+EDIELIDSN21244XYZ::SVK+EDIELID::SVK:SN2'	Identity of the time series with location and additional information". Identity code is built up according to: Ediel-ID, SN2 represents area code for SE2, product code in the case 1244 for FCR-D downwards, XYZ is replaced by code for BRP.
LIN+++1244:::SVK'	Product identification. In this case FCR-D downwards (1244). For FCR there is also codes for FCR-D upwards (1240) and FCR-N (1250).
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201251800202201251900:Z13'	Time for the first position
QTY+135:1.000'	Quantity for the second position
DTM+324:202201251900202201252000:Z13'	Time for the second position

QTY+135:1.000'	...
DTM+324:202201252000202201252100:Z13'	
NAD+XX'	Not used in energy sector and therefore code XX
LOC+90+EDIELIDSN11244XYZ::SVK+EDIELID::SVK:SN1'	Plan number two for: Ediel-ID (67800), price area SE1 (SN1), FCR-D downwards (1244), abbreviation of BRP (XYZ)
LIN+++1244::SVK'	Product identification. In this case 1244 for FCR-D downwards.
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201252100202201252200:Z13'	Time for the first position
QTY+135:1.000'	Quantity for the second position
DTM+324:202201252200202201252300:Z13'	Time for the second position
QTY+135:1.000'	...
DTM+324:202201252300202201260000:Z13'	...
NAD+XX'	Not used in energy sector and therefore code XX
LOC+90+EDIELIDSN21240XYZ::SVK+EDIELID::SVK:SN2'	Plan number three for: Ediel-ID (67800), price area SE2 (SN2), FCR-D upwards (1240), abbreviation of BRP (XYZ)
LIN+++1240::SVK'	Product identification. In this case 1240 for FCR-D upwards.
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201251800202201251900:Z13'	Time for the first position
QTY+135:1.000'	Quantity for the second position
DTM+324:202201251900202201252000:Z13'	Time for the second position
QTY+135:1.000'	...
DTM+324:202201252000202201252100:Z13'	...
NAD+XX'	Not used in energy sector and therefore code XX

LOC+90+EDIELIDSN21240XYZ::SVK+EDIELID::SVK:SN2'	Plan number four for: Ediel-ID (67800), price area SE2 (SN2), FCR-D upwards (1240), abbreviation of BRP (XYZ)
LIN+++1240::SVK'	Product identification. In this case 1240 for FCR-D upwards.
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201252100202201252200:Z13'	Time for the first position
QTY+135:1.000'	Quantity for the second position
DTM+324:202201252200202201252300:Z13'	Time for the second position
QTY+135:1.000'	...
DTM+324:202201252300202201260000:Z13'	...
NAD+XX'	Not used in energy sector and therefore code XX
LOC+90+EDIELIDSN21250XYZ::SVK+EDIELID::SVK:SN2'	Plan number five for: Ediel-ID (67800), price area SE2 (SN2), FCR-N (1250), abbreviation of BRP (XYZ)
LIN+++1250::SVK'	Product identification. In this case 1250 FCR-N
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201251800202201251900:Z13'	Time for the first position
QTY+135:1.000'	Quantity for the second position
DTM+324:202201251900202201252000:Z13'	Time for the second position
QTY+135:1.000'	...
DTM+324:202201252000202201252100:Z13'	...
NAD+XX'	Not used in energy sector and therefore code XX
LOC+90+EDIELIDSN21250XYZ::SVK+EDIELID::SVK:SN2'	Plan number five for: Ediel-ID (67800), price area SE2 (SN2), FCR-N (1250), abbreviation of BRP (XYZ)
LIN+++1250::SVK'	Product identification. In this case 1250 for FCR-N
MEA+AAZ++MAW'	Unit of the delivery plan, in this case MW
QTY+135:1.000'	Quantity for the first position
DTM+324:202201252100202201252200:Z13'	Time for the first position

QTY+135:1.000'	Quantity for the second position
DTM+324:202201252200202201252300:Z13'	Time for the second position
QTY+135:1.000'	...
DTM+324:202201252300202201260000:Z13'	...
UNS+S'	Separates the sum parts of the message with the rest of the message.
CNT+1:18.000'	Sum of the quantity of al plans in the message, in this case 18.000 MW
UNT+72+1'	Sum of the amount of segments except the segments UNA, UNB and UNZ. The number 1 corresponds to the number 1 in UNH.
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

Appendix B – Example files outbound (Svk view)

This Appendix contains outbound example files for Accepted bids (First and Second auction), committed plans and activated FCR-energy. All products are found in the same file.

Accepted bids

The accepted bid file will contain up to three time series depending on how many products the BRP has offered. One series per product (FCR-N, FCR-D upwards, FCR-D downwards).

Example file Accepted bid First auction

UNA:+.? '	
UNB+UNOC:3+10000:ZZ+EDIELID:ZZ+YYMMDD:HHMM+INTERCHANGEID++23-DDK-So8-A52++1'	Interchange header. Specification is available in the general editing instructions for UNA, UNB and UNZ. The Interchange ID must be identical as in the UNZ-segment. Ediel ID for the BRP as well as message date.
UNH+1+UTILTS:D:02B:UN:E5SE9B'	Type of message with message reference 1
BGM+So8:SVK:260+DOCUMENTID+9+AB'	Unique Document ID for accepted bids (So8). The Document ID will be unique for each message.
DTM+137:YYYYMMDDHHMM:203'	Message date
DTM+735:?+0100:406'	Offset to UTC in hours (+0100)
MKS+23+E05::260'	Market Information 23 = Electricity Market E05 = Operation phase
NAD+MS+10000:SVK:260'	Sender Ediel ID (10000 is for Svenska kraftnät)
NAD+MR+EDIELID:SVK:260'	Recipient Ediel ID
NAD+DDK'	DDK stands for balance responsible party
IDE+24+TransactionID1'	Transaction ID for the first time series
LOC+239+SE3:SVK:260'	Bidding zone - in this case SE3
NAD+BY+10000:SVK:260'	Ediel-ID for the buyer (10000 is for Svenska kraftnät)
NAD+SE+EDIELID:SVK:260'	Ediel-ID for the seller

LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z40:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Z03:BAP:SVK:260'	Time series product S419, FCR-N First auction
DTM+324:202201200000202201210000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181117:203'	Latest update date in this case 2022-01-18 11:17
STS+7++Z03:SVK:260'	The reason for the transaction Z03 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID1'	Bid identification (must be unique)
CCI+++E02::260'	This segment, together with the next segment, specifies the settlement method
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+194:2.0'	Accepted bid quantity (194 = Accepted bids) 2 MW in this case
IDE+24+ TransactionID2'	Transaction ID for the second time series
LOC+239+SE3:SVK:260'	Bidding zone - in this case SE3
NAD+BY+10000:SVK:260'	Ediel-ID for the buyer (10000 is for Svenska kraftnät)
NAD+SE+EDIELID:SVK:260'	Ediel-ID for the seller
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z01:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Z03:BAP:SVK:260'	Time series product S431, FCR-D downwards First auction
DTM+324:202201200000202201210000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181117:203'	Latest update date in this case 2022-01-18 11:17

STS+7++Zo3:SVK:260'	The reason for the transaction Zo3 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID2'	Bid identification (must be unique)
CCI+++E02::260'	This segment, together with the next segment, specifies the settlement method
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+194:2.0'	Accepted bid quantity (194 = Accepted bids) 2 MW in this case
IDE+24+ TransactionID3'	Transaction ID for the third time series
LOC+239+SE3:SVK:260'	Bidding zone - in this case SE3
NAD+BY+10000:SVK:260'	Ediel-ID for the buyer (10000 is for Svenska kraftnät)
NAD+SE+EDIELID:SVK:260'	Ediel-ID for the seller
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z41:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Zo3:BAP:SVK:260'	Time series product S423, FCR-D upwards First auction
DTM+324:2022012000000202201210000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181117:203'	Latest update date in this case 2022-01-18 11:17
STS+7++Zo3:SVK:260'	The reason for the transaction Zo3 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID3'	Bid identification (must be unique)
CCI+++E02::260'	This segment, together with the next segment, specifies the settlement method

CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+195:2.0'	Accepted bid quantity (195 = Not Accepted bids) 2 MW in this case
UNT+63+1'	The sum of the number of segments apart from UNA, UNB and UNZ. The 1st is the same as the message reference in UNH (1)
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment.

Example file Accepted bid Second auction

UNA:+.? '	
UNB+UNOC:3+10000:ZZ+EDIELID:ZZ+YYMMDD:HHMM+INTERCHANGEID++23-DDK-So8-A52++1'	Interchange header. Specification is available in the general editing instructions for UNA, UNB and UNZ. The Interchange ID must be identical as in the UNZ-segment.
UNH+1+UTILTS:D:02B:UN:E5SE9B'	Type of message with message reference 1
BGM+So8:SVK:260+DOCUMENTID+9+AB'	Unique Document ID for accepted bids (So8). The Document ID will be unique for each message.
DTM+137:202201181112:203'	Message date
DTM+735:?+0100:406'	Offset to UTC in hours (+0100)
MKS+23+E05::260'	Market Information 23 = Electricity Market E05 = Operation phase
NAD+MS+10000:SVK:260'	Sender Ediel-ID
NAD+MR+EDIELID:SVK:260'	Recipient Ediel-ID
NAD+DDK'	DDK stands for balance manager
IDE+24+ TransactionID1'	Transaction ID for the first time series
LOC+239+SE3:SVK:260'	Network area page in this case SE3
NAD+BY+10000:SVK:260'	Ediel-ID buyer
NAD+SE+EDIELID:SVK:260'	Ediel-ID seller
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z42:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Z03:BAP:SVK:260'	Time series product S420, FCR-N Second auction
DTM+324:202201190000202201200000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181112:203'	Latest update date in this case 2018-11-05 13:05
STS+7++Z03:SVK:260'	The reason for the transaction Z03 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID1'	Bid Identity

CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+194:2.0'	Accepted bid quantity (194 = Accepted bids) 2 MW in this case
IDE+24+ TransactionID2'	Transaction ID for the second time series
LOC+239+SE3:SVK:260'	Network area page in this case SE3
NAD+BY+10000:SVK:260'	Ediel-id buyer
NAD+SE+EDIELID:SVK:260'	Ediel-id seller
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z43:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Z03:BAP:SVK:260'	Time series product S424, FCR-D upwards Second auction
DTM+324:202201190000202201200000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181112:203'	Latest update date in this case 2018-11-05 13:05
STS+7++Z03:SVK:260'	The reason for the transaction Z03 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID2'	Bid identity (must be unique)
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+195:2.0'	Not accepted budget (195 = Not accepted bid) 2 MW in this case

IDE+24+ TransactionID3'	Transaction ID for the third time series
LOC+239+SE3:SVK:260'	Network area page in this case SE3
NAD+BY+10000:SVK:260'	Ediel-id buyer
NAD+SE+EDIELID:SVK:260'	Ediel-id seller
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z02:PT:SVK:260+X05:OT:SVK:260+Z55:LOD:SVK:260+Z03:BAP:SVK:260'	Time series product S432, FCR-D downwards Second auction
DTM+324:202201190000202201200000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201181112:203'	Latest update date in this case 2018-11-05 13:05
STS+7++Z03:SVK:260'	The reason for the transaction Z03 = activated reserves
MEA+AAZ++MAW'	The unit of measurement values in this case MW
RFF+BD:BIDID3'	Bid identity (must be unique)
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
PRI+CAL:1.00'	Bid price (in this case 1 EUR)
CUX+2:EUR'	Currency for the price (EUR)
QTY+194:2.0'	Not accepted budget (194 = Accepted bid) 2 MW in this case
UNT+62+1'	The sum of the number of segments apart from UNA, UNB and UNZ. The 1st is the same as the message reference in UNH (1)
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment

Plan confirmation

The plan confirmation file will contain up to three time series depending on how many products the BRP has offered. One series per product (FCR-N, FCR-D upwards, FCR-D downwards).

UNA:+.? '	
UNB+UNOC:3+10000:ZZ+EDIELID:ZZ+220126:0135+INTERCHANGEID++23-DDK-S01-A52++1'	Interchange header. Specification is available in the general editing instructions for UNA, UNB and UNZ
UNH+1+UTILTS:D:02B:UN:E5SE9B'	Type of message with message reference 1
BGM+S01:SVK:260+DOCUMENTID+9+AB'	Unique Document ID for aggregated settlement values (S01)
DTM+137:202201260135:203'	Message Date
DTM+735:?+0100:406'	Offset to UTC in hours (+0100)
MKS+23+E03::260'	Market Information 23 = Electricity Market E03 = Settlement
NAD+MS+10000:SVK:260'	Sender Ediel-ID
NAD+MR+EDIELID:SVK:260'	Recipient Ediel-ID
NAD+DDK'	DDK stands for balance manager
IDE+24+ TransactionID1'	Transaction ID of the first time series
LOC+239+SN1:SVK:260'	Network area page in this case SE1
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager and 67800 EDIELID for this
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z08:PT:SVK:260+Z14:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S437, Binding planned FCR-D Downwards, reporting
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260135:203'	Latest update date in this case 2022-01-12 01:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++MAW'	The unit of measurement values in this case MW
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled

SEQ++1'	Observation number 1
QTY+136:0.000'	Quantity o MW in this case
SEQ++2'	
QTY+136:0.000'	
SEQ++3'	
QTY+136:0.000'	
SEQ++4'	
QTY+136:0.000'	
SEQ++5'	
QTY+136:0.000'	
SEQ++6'	
QTY+136:0.000'	
SEQ++7'	
QTY+136:0.000'	
SEQ++8'	
QTY+136:0.000'	
SEQ++9'	
QTY+136:0.000'	
SEQ++10'	
QTY+136:0.000'	
SEQ++11'	
QTY+136:0.000'	
SEQ++12'	
QTY+136:0.000'	
SEQ++13'	
QTY+136:0.000'	
SEQ++14'	
QTY+136:0.000'	
SEQ++15'	
QTY+136:0.000'	

SEQ++16'	
QTY+136:0.000'	
SEQ++17'	
QTY+136:0.000'	
SEQ++18'	
QTY+136:0.000'	
SEQ++19'	
QTY+136:0.000'	
SEQ++20'	
QTY+136:0.000'	
SEQ++21'	
QTY+136:0.000'	
SEQ++22'	Observation number 22
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++23'	Observation number 23
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++24'	Observation number 24
QTY+136:1.000'	Quantity 1 MW in this case
IDE+24+ TransactionID2'	Transaction ID of the second time series
LOC+239+SN2:SVK:260'	Network area page in this case SE2
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager as well as Ediel ID for the BRP
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z31:PT:SVK:260+Z14:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S197, Binding planned FCR-D upwards, reporting
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260135:203'	Latest update date in this case 2022-01-26 01:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++MAW'	The unit of measurement values in this case MW

CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
QTY+136:0.000'	Quantity o MW in this case
SEQ++2'	
QTY+136:0.000'	
SEQ++3'	
QTY+136:0.000'	
SEQ++4'	
QTY+136:0.000'	
SEQ++5'	
QTY+136:0.000'	
SEQ++6'	
QTY+136:0.000'	
SEQ++7'	
QTY+136:0.000'	
SEQ++8'	
QTY+136:0.000'	
SEQ++9'	
QTY+136:0.000'	
SEQ++10'	
QTY+136:0.000'	
SEQ++11'	
QTY+136:0.000'	
SEQ++12'	
QTY+136:0.000'	
SEQ++13'	
QTY+136:0.000'	
SEQ++14'	

QTY+136:0.000'	
SEQ++15'	
QTY+136:0.000'	
SEQ++16'	
QTY+136:0.000'	
SEQ++17'	
QTY+136:0.000'	
SEQ++18'	
QTY+136:0.000'	
SEQ++19'	Observation number 19
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++20'	Observation number 20
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++21'	Observation number 21
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++22'	
QTY+136:0.000'	
SEQ++23'	
QTY+136:0.000'	
SEQ++24'	
QTY+136:0.000'	
IDE+24+ TransactionID3'	Transaction ID of the third time series
LOC+239+SN2:SVK:260'	Network area page in this case SE2
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager as well as Ediel ID for the BRP
LIN+++8716867000016:::9'	Generic product code for power active
PIA+1+Z51:PC:SVK:260+Z24:PT:SVK:260+Z14:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S195, Binding planned FCR-N, reporting
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260135:203'	Latest update date in this case 2022-01-26 01:35

STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++MAW'	The unit of measurement values in this case MW
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
QTY+136:0.000'	Quantity o MW in this case
SEQ++2'	
QTY+136:0.000'	
SEQ++3'	
QTY+136:0.000'	
SEQ++4'	
QTY+136:0.000'	
SEQ++5'	
QTY+136:0.000'	
SEQ++6'	
QTY+136:0.000'	
SEQ++7'	
QTY+136:0.000'	
SEQ++8'	
QTY+136:0.000'	
SEQ++9'	
QTY+136:0.000'	
SEQ++10'	
QTY+136:0.000'	
SEQ++11'	
QTY+136:0.000'	
SEQ++12'	
QTY+136:0.000'	
SEQ++13'	

QTY+136:0.000'	
SEQ++14'	
QTY+136:0.000'	
SEQ++15'	
QTY+136:0.000'	
SEQ++16'	
QTY+136:0.000'	
SEQ++17'	
QTY+136:0.000'	
SEQ++18'	
QTY+136:0.000'	
SEQ++19'	Observation number 19
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++20'	Observation number 20
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++21'	Observation number 21
QTY+136:1.000'	Quantity 1 MW in this case
SEQ++22'	
QTY+136:0.000'	
SEQ++23'	
QTY+136:0.000'	
SEQ++24'	
QTY+136:0.000'	
UNT+189+1'	The sum of the number of segments apart from UNA, UNB and UNZ. The 1st is the same as the message reference in UNH (1)
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment

Activated energy

The activated energy file will contain up to four time series depending on how many products the BRP has offered. One series per product category (FCR-N, FCR-D) as well as direction (upwards/downwards).

UNA:+.? '	
UNB+UNOC:3+10000:ZZ+EDIELID:ZZ+YYMMDD:HHMM+INTERCHANGEID++23-DDK-So1-A52++1'	Interchange header. Specification is available in the general editing instructions for UNA, UNB and UNZ. The Interchange ID must be the same as in the UNZ-segment (see the last row in this table)
UNH+1+UTILTS:D:02B:UN:E5SE9B'	Type of message with message reference 1
BGM+So1:SVK:260+DOCUMENTID+9+AB'	The Document ID for aggregated settlement values (So1). It will be unique for each file.
DTM+137:202201260235:203'	Message date
DTM+735:?+0100:406'	Offset to UTC in hours (+0100)
MKS+23+E03::260'	Market Information 23 = Electricity Market E03 = Settlement
NAD+MS+10000:SVK:260'	Sender Ediel ID
NAD+MR+EDIELID:SVK:260'	Recipient Ediel ID
NAD+DDK'	DDK stands for balance manager
IDE+24+ TransactionID1'	Transaction ID for the first time series
LOC+239+SE1:SVK:260'	Network area ID - in this case SE1
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager and 67800 Ediel ID for this
LIN+++8716867000030:::9'	Generic Product Code for Active Energy (8716867000030)
PIA+1+Z51:PC:SVK:260+Z89:PT:SVK:260+X17:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S403 FCR-D enabled energy production.
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)

DTM+368:202201260235:203'	Latest update date in this case 2022-01-26 02:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++KWH'	The unit of measurement, in this case kWh
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
MOA+9:0.00:EUR'	Amount of 0 EUR when no money is paid for activating volume of FCR-D
QTY+136:0'	
SEQ++2'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++3'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++4'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++5'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++6'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++7'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++8'	
MOA+9:0.00:EUR'	

QTY+136:0'	
SEQ++9'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++10'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++11'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++12'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++13'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++14'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++15'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++16'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++17'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++18'	
MOA+9:0.00:EUR'	

QTY+136:0'	
SEQ++19'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++20'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++21'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++22'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++23'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++24'	Observation number 24
MOA+9:0.00:EUR'	Amount of 0 EUR when no money is paid for activating volume of FCR-D
QTY+136:-1000'	Quantity 1000 kWh downregulated (FCR-D downwards is activated) (Negative quantity = power out of Svenska kraftnät)
IDE+24+ TransactionID2'	Transaction ID for the second time series
LOC+239+SE2:SVK:260'	Network area ID - in this case SE2
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager and 67800 Ediel ID for this
LIN+++8716867000030:::9'	Generic Product Code for Active Energy (8716867000030)
PIA+1+Z51:PC:SVK:260+Z88:PT:SVK:260+X17:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S402 FCR-N enabled energy production

DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260235:203'	Latest update date in this case 2022-01-26 02:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++KWH'	The unit of measurement, in this case kWh
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++2'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++3'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++4'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++5'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++6'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++7'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++8'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++9'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++10'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++11'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++12'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++13'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++14'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++15'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++16'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++17'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++18'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++19'	Observation number 19
MOA+9:11.00:EUR'	Amount of 11 EUR is paid for activation of FCR-N
QTY+136:-1000'	Quantity 1000 kWh downregulated (Negative quantity = power out of Svenska kraftnät)
SEQ++20'	Observation number 20
MOA+9:11.00:EUR'	Amount of 11 EUR is paid for activation of FCR-N
QTY+136:-1000'	Quantity 1000 kWh downregulated (Negative quantity = power out of Svenska kraftnät)
SEQ++21'	Observation number 21
MOA+9:-15.83:EUR'	Amount of 15.83 EUR is paid for activation of FCR-N
QTY+136:1000'	Quantity 1000 kWh upregulated (Positive quantity = power in to Svenska kraftnät)
SEQ++22'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++23'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++24'	
MOA+9:0.00:EUR'	
QTY+136:0'	
IDE+24+ TransactionID3'	Transaction ID for the third time series
LOC+239+SE2:SVK:260'	Network area ID - in this case SE2

NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager and 67800 Ediel ID for this
LIN+++8716867000030:::9'	Generic Product Code for Active Energy (8716867000030)
PIA+1+Z51:PC:SVK:260+Z88:PT:SVK:260+X17:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S402 FCR-N enabled energy production.
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260235:203'	Latest update date in this case 2022-01-26 02:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++KWH'	The unit of measurement, in this case kWh
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++2'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++3'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++4'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++5'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++6'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++7'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++8'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++9'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++10'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++11'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++12'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++13'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++14'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++15'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++16'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++17'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++18'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++19'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++20'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++21'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++22'	Observation number 22
MOA+9:-15.85:EUR'	Amount of 15.85 EUR is paid for activation of FCR-N
QTY+136:1000'	Quantity 1000 kWh upregulated (Positive quantity = power in to Svenska kraftnät)
SEQ++23'	Observation number 23
MOA+9:-15.34:EUR'	Amount of 15.34 EUR is paid for activation of FCR-N
QTY+136:1000'	Quantity 1000 kWh upregulated (Positive quantity = power in to Svenska kraftnät)
SEQ++24'	Observation number 24

MOA+9:10.50:EUR'	Amount of 10.50 EUR is paid for activation of FCR-N
QTY+136:-1000'	Quantity 1000 kWh downregulated (Negative quantity = power out of Svenska kraftnät)
IDE+24+ TransactionID4'	Transaction ID for the fourth time series
LOC+239+SE2:SVK:260'	Network area ID - in this case SE2
NAD+DDK+EDIELID:SVK:260'	DDK = Balance Manager and 67800 Ediel ID for this
LIN+++8716867000030:::9'	Generic Product Code for Active Energy (8716867000030)
PIA+1+Z51:PC:SVK:260+Z89:PT:SVK:260+X17:OT:SVK:260+Z55:LOD:SVK:260+Z05:BAP:SVK:260'	Time series product S403 FCR-D enabled energy production
DTM+324:202201250000202201260000:719'	Delivery period for the entire transaction
DTM+354:60:806'	The length of each observation in minutes (60 in this case)
DTM+368:202201260235:203'	Latest update date in this case 2022-01-26 02:35
STS+7++E44::260'	The reason for the transaction E44 = Settlement
MEA+AAZ++KWH'	The unit of measurement, in this case kWh
CCI+++E02::260'	Settlement method is used with the next segment of specification
CAV+E02::260'	Non-profiled
SEQ++1'	Observation number 1
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++2'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++3'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++4'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++5'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++6'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++7'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++8'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++9'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++10'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++11'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++12'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++13'	
MOA+9:0.00:EUR'	
QTY+136:0'	

SEQ++14'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++15'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++16'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++17'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++18'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++19'	Observation number 22
MOA+9:0.00:EUR'	Amount of 0 EUR when no money is paid for activating volume of FCR-D
QTY+136:-1000'	Quantity 1000 kWh downregulated (FCR-D downwards) (Negative quantity = power out of Svenska kraftnät)
SEQ++20'	Observation number 23
MOA+9:0.00:EUR'	Amount of 0 EUR when no money is paid for activating volume of FCR-D
QTY+136:-1000'	Quantity 1000 kWh downregulated (FCR-D downwards) (Negative quantity = power out of Svenska kraftnät)
SEQ++21'	Observation number 24
MOA+9:0.00:EUR'	Amount of 0 EUR when no money is paid for activating volume of FCR-D

QTY+136:1000'	Quantity 1000 kWh upregulated (FCR-D upwards) (Positive quantity = power out of Svenska kraftnät)
SEQ++22'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++23'	
MOA+9:0.00:EUR'	
QTY+136:0'	
SEQ++24'	
MOA+9:0.00:EUR'	
QTY+136:0'	
UNT+345+1'	The sum of the number of segments apart from UNA, UNB and UNZ. The 1st is the same as the message reference in UNH (1)
UNZ+1+INTERCHANGEID'	The Interchange ID must be the same as in the UNB-segment

Appendix C – Acknowledgement files

Example file – Acknowledgement for UTILTS-documents

UNA:+.?'	
UNB+UNOC:3+44444:ZZ+66666:ZZ+111002:1610+INTERCHANGEID++23-DDK-208-A52++1'	
UNH+1+APERAK:D:04A:UN:E5SE9B'	Message = APERAK
BGM+312+99900033+9'	Message type 312 (positive APERAK) (313 for negative APERAK)
DTM+137:201110021510:203'	Message date
DTM+735:?+0100:406'	Time zone +1 CET
DOC+E31::260+205436160319'	Reference to UTILTS message type and message number from UTILTS BGM-segment
NAD+MS+54345:SVK:260'	Legal sender
NAD+MR+33333:SVK:260'	Legal receiver
NAD+DDK'	
ERC+100::260'	First transaction from UTILTS is approved
FTX+AAO+++OK'	-"-
RFF+DM:APE12345'	APERAKS own unique transaction ID
RFF+ACW:MD200205832134'	Reference to the first UTILTS-transaction
ERC+100::260'	The second transaction from UTILTS is approved
FTX+AAO+++OK'	-"-
RFF+DM:APE12346'	APERAKS own unique transaction ID
RFF+ACW:MD200205832136'	Reference to the second UTILTS transaction
UNT+17+1'	The number of segments from UNH to and including UNT
UNZ+1+INTERCHANGEID'	

Example file – Acknowledgement for DELFOR/QUOTES-documents

UNA:+.? '	
UNB+UNOC:3+10000:ZZ:MARKNAD+67800:ZZ+180510:0905+INTERCHANGEID++++1'	
UNH+1+APERAK:D:96A:UN:E2SE3B'	
BGM+++29'	29=positive APERAK, 27=negative APERAK
DTM+137:201805100805:203'	Message time
RFF+ACW:A438775'	Reference to the received document
NAD+FR+10000:160:SVK'	Sender ID
NAD+DO+67800:160:SVK'	Receiver ID
UNT+7+1'	
UNZ+1+INTERCHANGEID'	

Svenska kraftnät is a state owned enterprise with the task of maintaining Sweden's electricity transmission grid, which consists of about 16,000 kilometres of 400 kV and 220 kV transmission lines with substations and interconnectors. Svenska kraftnät is also the system operator for electricity in Sweden. Svenska kraftnät is developing the transmission grid and the electricity market to meet society's need for a secure, sustainable and cost-effective supply of electricity. In this, Svenska kraftnät plays an important role in implementing national climate policies.

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