Technical specification of external interfaces for market participants and involved authorized bodies V1.3

MARKET ORGANISER INFORMATION SYSTEM XMtrade®|PXS V3.18

sféra
Grafické informačné systémy

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History of Changes

Date	Version	Description	Author
13/03/2019	1.0	Document processing	Sféra, a.s.
20/05/2019	1.1	Added description of qualified electronic signature usage in the communication security	Sféra, a.s.
17/12/2019	1.2	Changes in XML structure of orders related to introduction of new block order type for day-ahead market.	Sféra, a.s.
02/02/2021	1.3	Disabling of DSTU digital signature in response messages generated by PXS	Sféra, a.s.
16/02/2021	1.4	Extension of DAM products with linked simple block and flexible hourly block orders.	Sféra, a.s.

1 INTRODUCTION

1.1 Characteristics of the document

1.1.1 Purpose of the document

The purpose of this document is to provide all necessary technical information for the implementation of automated data exchange between an external system of a market participant and the market organizer information system XMtrade®|PXS. This document contains specification of communication means and data structures that are used for data exchange.

1.1.2 Specification of the document

The document is dedicated to information system developers who are preparing integration with the market organizer information system XMtrade®|PXS.

2 OVERVIEW OF EXTERNAL INTERFACES

The market organizer information system XMtrade®|PXS provides automated interfaces for data exchange within processes of daily order submission and retrieval of results and evaluations of day-ahead and intraday market via web services used by trading systems of market participants.

ID	Name	Description
OB-01	Management of orders of market participant (day-ahead market)	Market participants are provided with an automated interface for submission and retrieval of own day-ahead market orders for purchase and sale.
OB-02	Management of orders of market participants (intraday market)	Market participants are provided with an automated interface for submission, modification and retrieval of own orders for purchase and sale on intraday market.
OB-03	Access to intraday market order book	Market participants are provided with automated interface for intraday order book retrieval in its current state.
EV-01	Results and evaluation of DAM	Market participants are provided with automated interface for day-ahead market results and evaluations retrieval.
EV-02	Evaluations of IDM	Market participants are provided with automated interface for intraday market evaluations retrieval.

Table 1 Automated interface for data exchange of processes within day-ahead order registration

2.1 Overview of data flows

Basic communication scenarios are primarily dependent on the task that the market organizer currently performs:

- organizing of day-ahead market,
- organizing of intraday market.

2.1.1 Organization of domestic day-ahead market

Within the organization of Ukrainian day-ahead market, communication is established between the information system of Market Operator - XMtrade®|PXS (PXS) and information systems of market participants (ISMP) through web services (

Communication scenario in domestic day-ahead market mode). Using automated method, market participants are able to submit orders into the PXS system, retrieve results and evaluations of day-ahead market.

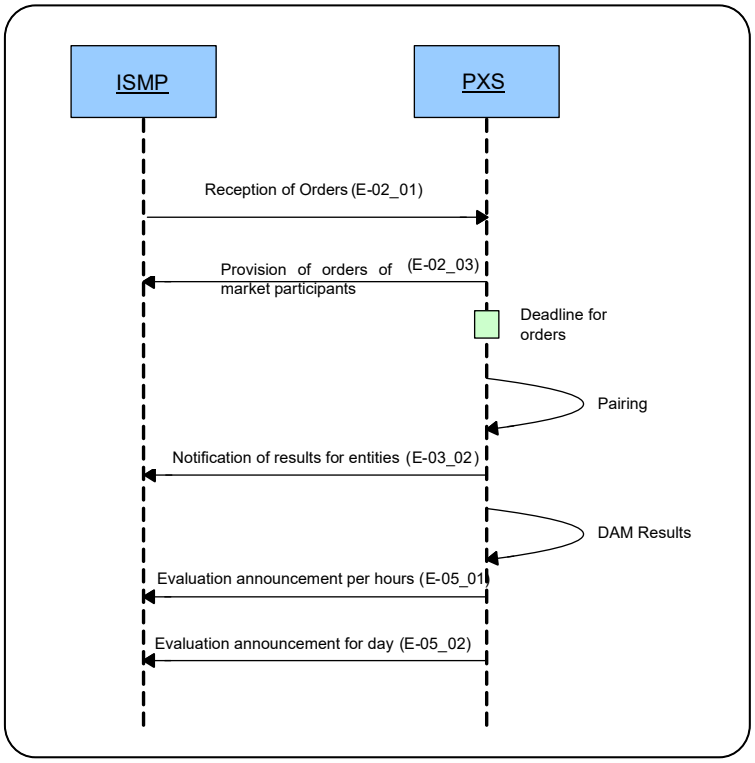

Figure 1 Communication scenario in domestic day-ahead market mode

ID	Description	Source	Target	Initiator
E-02_01	Reception of orders - allows market participant to submit orders by the deadline for order reception	ISMP	PXS	ISMP
E-02_03	Provision of orders of market participant - allows market participant to retrieve information on own orders entered into PXS	PXS	ISMP	ISMP
E-03_02	Notification of results for market participants - allows market participant to retrieve information on DAM results after order matching is finished	PXS	ISMP	ISMP
E-05_01	Evaluation announcement per hours - allows market participant to retrieve detailed information on DAM evaluation after the end of DAM evaluation	PXS	ISMP	ISMP
E-05_02	Evaluation announcement for day - allows market participant to retrieve summary information on DAM evaluation after the end of DAM evaluation	PXS	ISMP	ISMP

Table 2 Overview of interfaces in domestic short-term day-ahead market mode

2.1.2 Organizing domestic intraday market

Within the organization of domestic intraday market, communication is established between the market organizer information system XMtrade®|PXS (PXS) and information systems of market participants (ISMP) through web services (Figure 2). Using automated methods, market participants enter orders into the PXS system and receive related results and evaluations of intraday market.

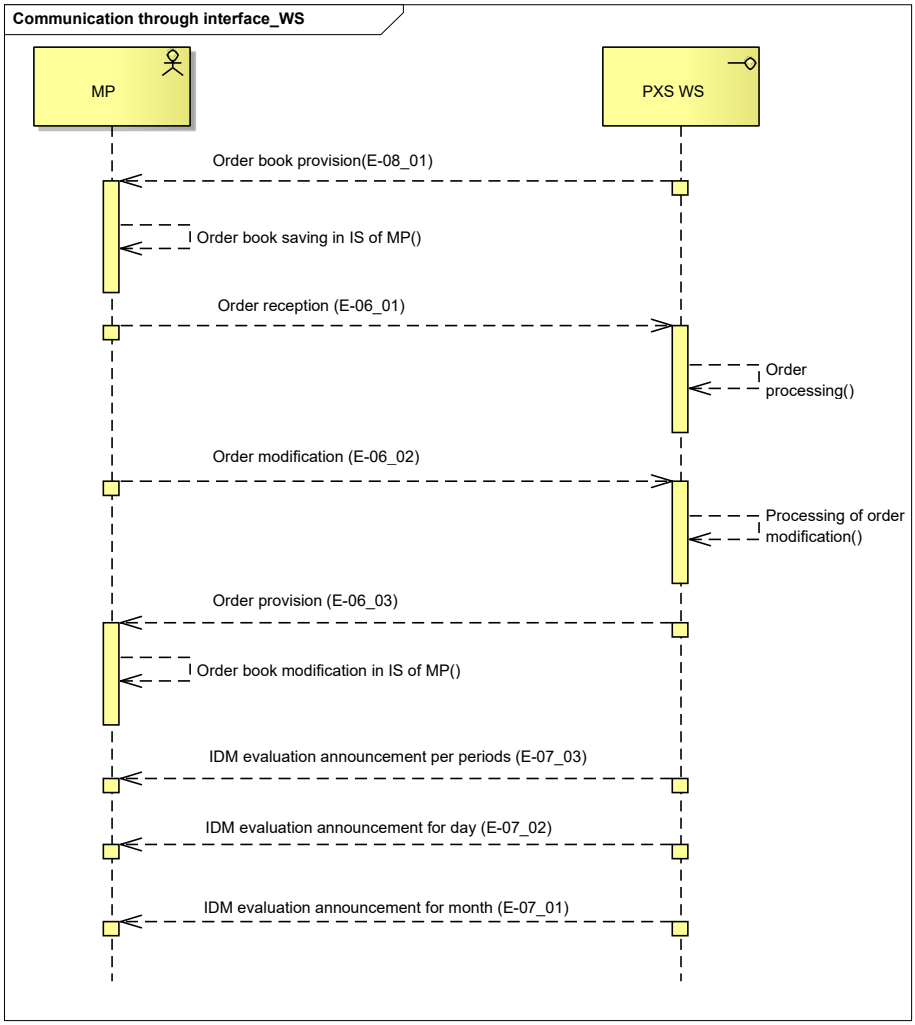

Figure 2 Comunication scenario of the web services in domestic intraday market mode

ID	Description	Source	Target	Initiator
E-06_01	Submission of intraday orders - allows market participant to submit orders until the gate closure for order reception	ISMP	PXS	ISMP
E-06_02	Modification of intraday orders: - allows market participant to modify (activate, deactivate, cancel) own existing order.	ISMP	PXS	ISMP
E-06_03	Provision of intraday orders for market participant - allows market participant to retrieve information on own orders entered into PXS	PXS	ISMP	ISMP
E-07_01	IDM evaluation announcement for day - allows market participant to access information about intraday evaluation after trading day closure and after intraday evaluation is finished.	PXS	ISMP	ISMP
E-07_02	IDM evaluation announcement per month	PXS	ISMP	ISMP

	- allows market participant to access information about intraday evaluation after trading month closure and after intraday evaluation is finished for given month.			
E-07_03	IDM evaluation announcement per periods - allows market participant to access information about their intraday orders per periods.	PXS	ISMP	ISMP
E-08_01	Order book provision: - allows market participant to access immediate data from order book (available quantities and prices) on intraday market.	PXS	ISMP	ISMP

Table 3 Overview of interfaces in domestic intraday market mode

3 SPECIFICATION OF COMMUNICATION

3.1 Web services

The market organizer information system XMtrade®|PXS covers external interfaces with the following set of web services/web methods.

ID	Name of web service	Name of web method	Description
OB-01	Orders	Upload Download	Market participants are provided with automated interface for submission and reception of own orders/instructions on day-ahead market.
OB-02	IdmOrders	Upload Modify Download	Market participants are provided with automated interface for submission, modification and reception of own orders/instructions on intraday market .
OB-03	IdmOrderBook	Download	Market participants are provided with automated interface for downloading intraday order book data.
EV-01	Evaluations	Download	Market participants are provided with automated interface for retrieval of results/evaluations of day-ahead market.
EV-02	IdmEvaluations	Download	Market participants are provided with automated interface for retrieval of results/evaluations of intraday market.

Table 4 Overview of web service interfaces in the organization of day-ahead and intraday market

3.1.1 Communication scenarios

Synchronous communication

Synchronous communication of web services in PXS system can be in general depicted as follows:

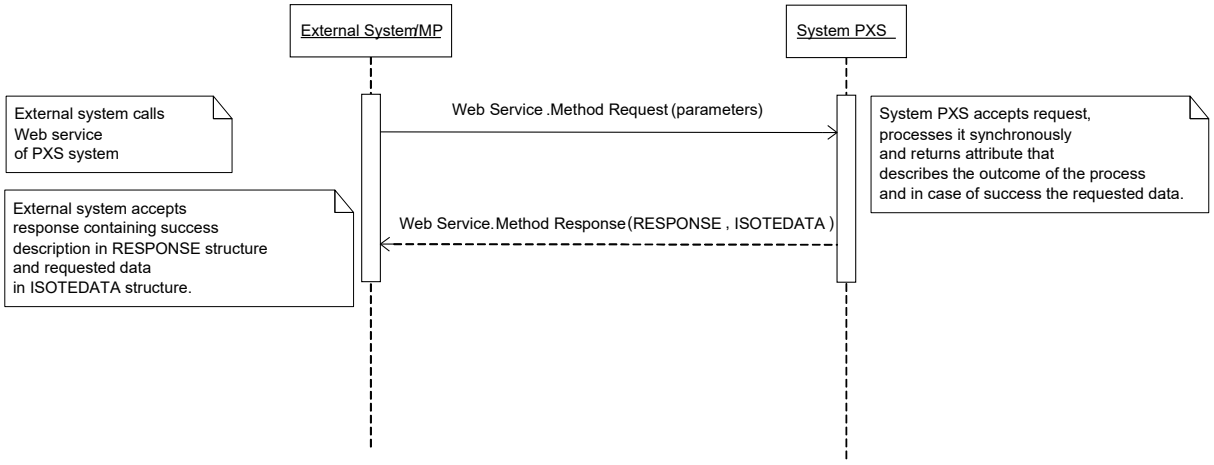

Figure 3 The principle of synchronous communication.

Synchronous call of web method processes the request and returns corresponding response.

3.1.2 SOAP Protocol

The structure of SOAP messages is implemented in SOAP 1.2 version in accordance with recommendations of W3C consortium (http://www.w3.org/TR/soap12) and uses the following extensions:

- WS-Security (http://www.oasis-open.org/specs/index.php#wssv1.0),
- WS-Addressing (http://www.w3.org/Submission/2004/SUBM-ws-addressing-20040810).

In order to shorten the notation of individual SOAP messages, the following namespace aliases are used:

Alias	Namespace
s	http://www.w3.org/2003/05/soap-envelope
o	http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd
a	http://schemas.xmlsoap.org/ws/2004/08/addressing
u	http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd

Table 5 Namespace aliases

SOAP messages of systems web services contain two distinctive parts: header and body, while all messages of PXS system are encoded in UTF-8. In addition to controlling data of the protocol, header contains details for authentication and authorization of the calling system (name, password and digital signature if applicable).

```
<s:Header>
  <!-- WS-Addressing -->
  <!-- WS-Security -->
</s:Header>
```

„WS-Security " contains security tokens necessary for source system authentication and verification of message integrity. This relates to electronic signature tokens, name and password of a user.

„WS-Addressing " contains details to secure addressing of a soap message. Detailed header structure can be found in this example.

Message body contains class element of the message for specific request. Body structure of the message can be defined in general as follows:

Request:

```
<s:Body>
  <MethodNameRequest xmlns=" http://sfera.sk/ws/xmtrade/isot/interfaces/
NameOfService/services/Version">
       <!--message document-->
  </MethodNameRequest>
</s:Body>
```

Response:

```
<s:Body>
  <MethodName Response xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/
NameOfService/services/Version">
      <!--message document -->
  </MethodName Response>
</s:Body>
```

SOAP Fault

SOAP Fault element serves for generic transfer of error information, which are transferred within SOAP message in *<s:Fault>* element, in accordance with SOAP 1.2 specification (http://www.w3.org/TR/soap12-part1/#soapfault). It mainly relates to system error and exception handling during communication etc. However, defining custom types of Fault messages could be advantageously used to catch general application errors.

3.1.3 Orders

Orders web service allows market participants to use automated interface for submission and reception of own orders on day-ahead market.

The service implements the following methods:

- *Upload* – method for submission of orders,
- *Download* – method for reception of own orders.

SOAP Upload

Upload method of *Orders* service operates in synchronous mode, i.e. the request is handled by the response within the same call.

Description of request structure

UploadRequest	Description
ISOTEDATA	Structure of order/instruction in accordance with specification where message-code=811 (see description of E-02_01 data flow)

Table 6 Request structure description – Upload method

Description of response structure

UploadResponse	Description
RESPONSE	Common return structure of request handling effectivity in accordance with specification where message-code=812 (see description of data flow E-02_01)
ISOTEDATA	Structure of order/instruction in accordance specification where message-code=813 (see description data flow E-02_01). Description of order/instruction is returned as it was registered in the system.

Table 7 Response structure description - Upload method

Example of SOAP message

Request:

```
POST /Orders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/services/2009/04/01">
      <ns:ISOTEDATA
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01" id="1"
message-code="811" date-time="2009-05-01T11:48:51" answer-required="1">
        <!-- order/instruction data -->
      </ns:ISOTEDATA>
    </ns:UploadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2008 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/services/2009/04/01">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="812" ...>
        <!-- efficiency description -->
      </ns:RESPONSE>
      <ns:ISOTEDATA
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01"
message-code="813" ...>
        <!-- order/instruction description data -->
      </ns:ISOTEDATA>
    </ns:UploadResponse>
  </s:Body>
</s:Envelope>
```

SOAP Download

Download method of *Orders* service operates in synchronous mode, i.e. the request is handled by the response within the same call.

Description of request structure

DownloadRequest	Description
CDSREQ	Request structure for reception of own order/instruction in accordance with specification, where message-code=831 (see description of E-02_03 data flow)

Table 8 Request structure description – Download method

Description of response structure

DownloadResponse	Description
RESPONSE	Common return structure of request handling effectivity in accordance with specification, where message-code=832 (see description of E-02_03data flow)
ISOTEDATA	Structure of order/instruction in accordance with specification, where message-code=833 (see description of E-02_03 data flow). Description of order/instruction is returned as it was registered in the system.

Table 9 Response structure description – Download method

Example of SOAP message

Request:

```
POST /Orders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/services/2009/04/01">
      <ns:CDSREQ
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01" id="1"
message-code="831" date-time="2009-05-01T11:48:51" >
        <Trade trade-day="2009-05-01" />
      </ns:CDSREQ>
    </ns:DownloadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2008 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/services/2009/04/01">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="832" ... >
            <!-- description of efficiency -->
      </ns:RESPONSE>
       <ns:ISOTEDATA
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01"
message-code="833" ... >
            <!-- description of order/instruction data -->
       </ns:ISOTEDATA>
    </ns:DownloadResponse>
  </s:Body>
</s:Envelope>
```

3.1.4 IdmOrders

IdmOrders web service allows market participants to use automated interface for submission, modification and reception of own orders on intraday market.

Service implements these methods:

- *Upload* - method for order submission,
- *Modify* – method for order modification (activation/deactivation/cancellation),
- *Download* – method for own orders reception.

SOAP Upload

Upload method of *IdmOrders* service operates in synchronous mode, i.e. the request is handled by the response within the same call. Response to this request consists of confirmation of order submission and copy of order data from the request.

Description or request structure

UploadRequest	Description
ISOTEDATA-VDT	Structure of order/instruction in accordance with specification, where message-code=801 (see description of E-06_01 data flow).

Table 10 Request structure description – Upload method

Description of request structure

UploadResponse	Description
RESPONSE-VDT	Common structure of retrieving processing status in accordance with specification, where message-code=802 (see description of E-06_01 data flow).
ISOTEDATA-VDT	Structure of order/instruction in accordance with specification, where message-code=803 (see description of E-06_01 data flow). Returned order/instruction data sent in request.

Table 11 Response structure description - Upload method

Example of SOAP message

Request:

```
POST /IdmOrders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2009/04/0
1">
      <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
id="1" message-code="801" date-time="2016-05-01T11:48:51" answer-required="1">
        <!-- order/instruction data -->
      </ns:ISOTEDATA>
    </ns:UploadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2016 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2016/04/0
1">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="802" ...>
            <!-- proccessing status description-->
      </ns:RESPONSE>
       <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
message-code="803" ...>
            <!--description of order data -->
       </ns:ISOTEDATA>
    </ns:UploadResponse>
  </s:Body>
</s:Envelope>
```

SOAP Modify

Modify method of *IdmOrders* web service operates in synchronous mode, i.e. the request is handled by the response within the same call. Response to this request consists of order modification processing status and order modification data copy from the request.

Description of request structure

UploadRequest	Description
ISOTEDATA-VDT	Structure of order/instruction in accordance with specification, where message-code=804 (see description of E-06_02 data flow).

Table 12 Request structure description – Method Modify

Description of response structure

UploadResponse	Description
RESPONSE-VDT	Common structure of retrieving processing status in accordance with specification, where message-code=805 (see description of E-06_02 data flow).
ISOTEDATA-VDT	Structure of order/instruction in accordance with specification, where message-code=806 (see description of E-06_02 data flow). Response includes modification description sent in the request.

Table 13 Response structure description – Method Modify

Example of SOAP messages

Request:

```
POST /IdmOrders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2009/04/0
1">
      <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
id="1" message-code="804" date-time="2016-05-01T11:48:51" answer-required="1">
        <!-- data of order/instruction modification-->
      </ns:ISOTEDATA>
    </ns:UploadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2016 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2016/04/0
1">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="805" ...>
        <!-- proccessing status description-->
      </ns:RESPONSE>
      <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
message-code="806" ...>
        <!-- order/instruction description -->
      </ns:ISOTEDATA>
    </ns:UploadResponse>
  </s:Body>
</s:Envelope>
```

SOAP Download

Download method of *IdmOrders* web service operates in synchronous mode, i.e. the request is handled by the response within the same call. Response to request for order submission consists of request processing status and data of chosen order or all orders within a specified time interval.

Description of request structure

UploadRequest	Description
CDSREQ-VDT	Order/instruction structure in accordance with specification, where message-code=807 (see description of E-06_03 data flow).

Table 14 Request structure description – Method Download

Description of response structure

UploadResponse	Description
RESPONSE-VDT	Common structure of retrieving processing status in accordance with specification, where message-code=808 (see description of E-06_03 data flow).
ISOTEDATA-VDT	Structure of order/instruction in accordance with specification, where message-code=809 (see description of E-06_03 data flow). Returned data contains data about specific order or all orders in specified time interval depending on request formulation.

Table 15 Response structure description - Method Download

Example of SOAP messages

Request:

```
POST /IdmOrders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2009/04/0
1">
      <ns:CDSREQ xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01" id="1"
message-code="807" date-time="2016-05-01T11:48:51" answer-required="1">
        <!-- data from order/instruction modification -->
      </ns:CDSREQ>
    </ns:UploadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2016 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2016/04/0
1">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="808" ...>
            <!-- processing status description -->
      </ns:RESPONSE>
       <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
message-code="809" ...>
            <!-- description of order/instruction -->
       </ns:ISOTEDATA>
    </ns:UploadResponse>
  </s:Body>
</s:Envelope>
```

3.1.5 IdmOrderBook

Web service *IdmOrderBook* allows market participant to access data describing the immediate status of order book (available quantities and prices) on intraday market.

Service implements the following method:

Download – method for data acquisition of order book on intraday market.

SOAP Download

Download method of *IdmOrderBook* web service operates in synchronous mode, i.e. the request is handled by the response within the same call.

Request structure description

DownloadRequest	Description
CDSREQ-VDT	Structure of request for data acquisition of intraday order book in accordance with specification, where message-code=810 (see description of E-08_01 data flow).

Table 16 Request structure description - Method Download

Response structure description

DownloadResponse	Description
RESPONSE-VDT	Common structure of retrieving processing status in accordance with specification, where message-code=811 (see description of E-08_01 data flow).
ISOTEDATA-VDT	Structure for accessing data from order book in accordance with specification, where message-code=812 (see description of E-08_01 data flow).

Table 17 Response structure description - Method Download

SOAP message example

Request:

```
POST /Orders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/services/2009/0
4/01">
      <ns:CDSREQ
          xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01"
          id="1" message-code="810" date-time="2017-05-01T11:48:51" >
          <!-- message data for order book retrieval-->
      </ns:CDSREQ>
    </ns:DownloadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2016 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:UploadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmorders/services/2016/04/0
1">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="811" ...>
            <!-- status of request processing -->
      </ns:RESPONSE>
       <ns:ISOTEDATA xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01"
message-code="812" ...>
            <!-- data from order book -->
       </ns:ISOTEDATA>
    </ns:UploadResponse>
  </s:Body>
</s:Envelope>
```

3.1.6 Evaluations

Evaluations web service allows market participants to use automated interface for retrieval of results/evaluations of day-ahead market.

The service implements the following methods:

Download – method for retrieval of own results/evaluations of day-ahead market.

SOAP Download

Download method of *Evaluations* service operates in synchronous mode, i.e. the request is handled by the response within the same call.

Request structure description

DownloadRequest	Description
CDSREQ	Request structure for retrieval of own order/instruction in accordance with specification, where message-code=941, 951 or 961 (see description of E-03_02, E-05_01, E-05_02 data flows).

Table 18 Request structure description – Download method

Response structure description

DownloadResponse	Description
RESPONSE	Common return structure of retrieving processing status in accordance with specification, whereas message-code=942, 952 or 962 (see description of E-03_02, E-05_01, E-05_02 data flows)
ISOTEDATA	Structure of results/evaluations in accordance with specification where message-code=943, 953 or 963 (see description of E-03_02, E-05_01, E-05_02 data flows).

Table 19 Response structure description – Download method

Example of SOAP message

Request:

```
POST /Orders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/services/2009/0
4/01">
      <ns:CDSREQ
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01" id="1"
message-code="941" date-time="2009-05-01T11:48:51" >
        <Trade trade-day="2009-05-01" />
      </ns:CDSREQ>
    </ns:DownloadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2008 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/services/2009/04/01">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="942" ... >
            <!-- description of processing status -->
      </ns:RESPONSE>
       <ns:ISOTEDATA
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01"
message-code="943" ... >
            <!-- description of DAM results -->
       </ns:ISOTEDATA>
    </ns:DownloadResponse>
  </s:Body>
</s:Envelope>
```

3.1.7 IdmEvaluations

IdmEvaluations web service allows market participants to use automated interface for retrieval of evaluations of intraday market.

The service implements the following methods:

Download – method for retrieval of own evaluations on intraday market.

SOAP Download

Download method of *IdmEvaluations* service operates in synchronous mode, i.e. the request is handled by the response within the same call.

Request structure description

DownloadRequest	Description
CDSREQ-VDT	Request structure description for IDM results for market participant in accordance with specification, where message-code=961 (see data flow description E-07_01) for daily results, message-code=571 (see data flow description E-07_02) for monthly results message-code=951 (see data flow description E-07_03) for results per periods.

Table 20 Request structure description – Download method

Response structure description

DownloadResponse	Description
RESPONSE-VDT	Common return structure of retrieving processing status in accordance with specification, whereas message-code=962,572 or 952 (see description of E-E-07_01, E-07_02, E-07_03 data flows)
ISOTEDATA-VDT	Structure of results/evaluations in accordance with specification where message-code=963,573 or 953 (see description of E-07_01, E-07_02, E-07_03 data flows).

Table 21 Response structure description – Download method

SOAP message example

Request:

```
POST /IdmOrders.WCF.Host/ServiceReference.svc HTTP/1.1
Content-Type:application/soap+xml; charset=utf-8
Host: ...
Content-Length: ...
Expect: 100-continue
Connection: Keep-Alive

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadRequest
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmevaluations/services/201
6/04/01">
      <ns:CDSREQ
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01" id="1"
message-code="961" date-time="2016-05-01T11:48:51" >
        <Trade trade-day="2016-05-01" />
      </ns:CDSREQ>
    </ns:DownloadRequest>
  </s:Body>
</s:Envelope>
```

Response:

```
HTTP/1.1 200 OK
Server: ASP.NET Development Server/9.0.0.0
Date: Sun, 30 Nov 2016 16:58:25 GMT
X-AspNet-Version: 2.0.50727
Cache-Control: private
Content-Type: application/soap+xml; charset=utf-8
Content-Length: ...
Connection: Close

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
  <s:Header>
    <!-- WS-Addressing -->
    <!-- WS-Security -->
  </s:Header>
  <s:Body u:Id="_1">
    <ns:DownloadResponse
xmlns:ns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmevaluations/services/2016
/04/01">
      <ns:RESPONSE xmlns="http://sfera.sk/ws/xmtrade/isot/ut/types/2009/04/01"
message-code="962" ... >
            <!--processing status -->
      </ns:RESPONSE>
       <ns:ISOTEDATA
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/idmevaluations/types/2009/04/01
" message-code="963" ... >
            ----IDM results description -->
       </ns:ISOTEDATA>
    </ns:DownloadResponse>
  </s:Body>
</s:Envelope>
```

3.1.8 Communication Security

Web services are available exclusively through secured *https* protocol that allows encryption of transmitted messages. Therefore, messages at the SOAP protocol level are not encrypted.

Web service interfaces are secured in accordance with *WS-Security (WSS)* standard, version 1.0, pursuant to which the following techniques of security are designed:

- Electronic signature of sent SOAP requests and responses,
- Transmission of authentication details within SOAP request (username/password, certificate).

Electronic signature

Support for electronic signature of SOAP messages is secured within implementation of *WS-Security* standard, version 1.0.
(http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wss).

Signature is stored in the header of SOAP message, i.e. separately from the message body transmitting data. *WSS* standard implements the signature on *xmldsig* standard (http://www.w3.org/TR/xmldsig-core).

Following signed elements are required:

- message body (s:Body),
- username/password token of a user (o:UsernameToken),
- timestamp (u:Timestamp),
- specification of method name of web service (a:Action),
- sender specification (a:ReplyTo),
- message identification (a:MessageID),
- specification of service target address (a:To).

Example of SOAP message

The following example demonstrates the message structure consisting of soap message elements (envelope), header (header), address specification header elements and security and message body.

Beginning

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://schemas.xmlsoap.org/ws/2004/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
<s:Header>
```

WS-Addressing

```
<a:Action s:mustUnderstand="1" u:Id="id-17567474" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">http://sfera.sk/ws/xmtrade/isot/interfaces/NameOfService/services/2009/04/01/NameOfS
erviceContract/NameOfMethod</a:Action>
<a:ReplyTo s:mustUnderstand="1" u:Id="id-235207" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <a:Address>http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous</a:Address>
</a:ReplyTo>
<a:MessageID s:mustUnderstand="1" u:Id="id-11090325" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">b83ac27b-9a4f-40e3-a782-
96df2cbea73e</a:MessageID>
<a:To s:mustUnderstand="1" u:Id="id-27256294" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">ServiceAddress</a:To>
```

WS-Security

```
<o:Security xmlns:o="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-
1.0.xsd">
  <o:BinarySecurityToken EncodingType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
s-message-security-1.0#Base64Binary" ValueType="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-x509-token-profile-1.0#X509v3" u:Id="CertId-17206535" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"><!-- REMOVED --
></o:BinarySecurityToken>
  <d:Signature Id="Signature-190585" xmlns:d="http://www.w3.org/2000/09/xmldig#">
    <d:SignedInfo>
      <d:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
      <d:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldig#rsa-sha1"/>
      <d:Reference URI="#UsernameToken-13236543">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>lm0E+rpDJ8oSP8Fh+ZlqZRiMjc8=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#Timestamp-2175170">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>02CsUF1As77a6I3+BkQZ22TogWI=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#id-4652787">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>ktXRJoijcGSFrHaUKaLXUnH43XU=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#id-17567474">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>lLOeuXRDI1Gs5IX+zvaWuFIhVzw=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#id-11090325">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>ZsiiDzGRLHuyb8bKASKDo8ryoqc=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#id-235207">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>9p44ZJinb/97IPlX0C7yFayRHpc=</d:DigestValue>
      </d:Reference>
      <d:Reference URI="#id-27256294">
        <d:Transforms><d:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
              </d:Transforms>
        <d:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldig#sha1"/>
        <d:DigestValue>BCxp9HRQ6cJAykEdliom9mU86vA=</d:DigestValue>
      </d:Reference>
    </d:SignedInfo>
    <d:SignatureValue><!-- REMOVED --></d:SignatureValue>
    <d:KeyInfo Id="KeyId-33119438">
      <o:SecurityTokenReference u:Id="STRId-28732159" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
        <o:Reference URI="#CertId-17206535" ValueType="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-x509-token-profile-1.0#X509v3"/>
      </o:SecurityTokenReference>
    </d:KeyInfo>
  </d:Signature>
  <o:UsernameToken u:Id="UsernameToken-13236543" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
    <o:Username><!-- REMOVED --></o:Username>
    <o:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText"><!-- REMOVED --></o:Password>
  </o:UsernameToken>
  <u:Timestamp u:Id="Timestamp-2175170" xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-utility-1.0.xsd">
    <u:Created>2009-07-01T09:24:06.011Z</u:Created>
    <u:Expires>2009-07-01T12:10:46.011Z</u:Expires>
  </u:Timestamp>
</o:Security>
```

Header ending + body + message ending

```
</s:Header>
  <s:Body u:Id="id-4652787">
    <!--  request body -->
  </s:Body>
</s:Envelope>
```

Qualified electronic signature

The qualified electronic signature (QES) is used as an additional layer of security besides the applied electronic signature using WS-Security standards metioned earlier and is required to meet the Ukrainian legislative requirements.

The qualified electronic signature (QES) is supported using CAdES standard in detached mode, where the signature is stored separately from data. It is used as an additional layer of security in addition to electronic signature using WS-Security standards described above.

The signature is stored in the header of the SOAP message inside `<qes xmlns= "http://sfera.sk/ws/headers/security" />` element as base64 encoded string of the CAdES binary format.

The CAdES holds the signature of the content inside SOAP:body element, which is transformed using Exclusive XML Canonicalization (http://www.w3.org/2001/10/xml-exc-c14n#).

CAdES requirements:

- signature has to be created using DSTU4145 signature algorithm
- has to include the timestamp from timestamping service

The QES is required to be filled in all SOAP requests by the caller and will be verified and validated against assigned user certificate with DSTU public key.

Example of embedding QES into SOAP requests:

```
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope">
   <s:Header>
       <qes xmlns="http://sfera.sk/ws/headers/security">MIIkugYJKoZIhvcNAQcCoIIkqzCCJKcCAQ
... Q2wH5NPth9Q+zp69o/naP2536AVCZLkI4JMp05NwR4BWIg==</qes>
       <!-- other header elements such as WS-Security and WS-Addressing headers have been
ommitted for clarity -->
   </s:Header>
   <s:Body>
        <!— the content to be signed has been ommitted for clarity -->
   </s:Body>
</s:Envelope>
```

Authentication and authorization of web service call

Web services are secured against unauthorized use. System user is required to have an assigned user account in XMtrade®|PXS system with the client certificate for signing and verification of identity. User is required to have assigned rights for calling relevant web services.

3.1.9 Description of web services

Description of web services of the market organizer information system XMtrade®|PXS is given in the form of WSDL (http://www.w3.org/TR/wsdl) documents on the following addresses.

Production environment

ID	Web service name	Web service address/Address of WSDL document
OB-01	Orders	https://scmo.oree.com.ua/interfaces/Orders/Service.svc https://scmo.oree.com.ua/interfaces/Orders/Service.svc?wsdl
OB-02	IdmOrders	https://scmo.oree.com.ua/interfaces/IdmOrders/Service.svc https://scmo.oree.com.ua/interfaces/IdmOrders/Service.svc?wsdl
OB-03	IdmOrderBook	https://scmo.oree.com.ua/interfaces/IdmOrderBook/Service.svc https://scmo.oree.com.ua/interfaces/IdmOrderBook/Service.svc?wsdl
EV-01	Evaluations	https://scmo.oree.com.ua/interfaces/Evaluations/Service.svc https://scmo.oree.com.ua/interfaces/Evaluations/Service.svc?wsdl
EV-02	IdmEvaluations	https://scmo.oree.com.ua/interfaces/IdmEvaluations/Service.svc https://scmo.oree.com.ua/interfaces/IdmEvaluations/Service.svc?wsdl

Table 22 Description of web services XMtrade®|PXS – production environment

Testing environment

ID	Web service name	Web service address/Address of WSDL document
OB-01	Orders	https://test-scmo.oree.com.ua/interfaces/Orders/Service.svc https://test-scmo.oree.com.ua/interfaces/Orders/Service.svc?wsdl
OB-02	IdmOrders	https://test-scmo.oree.com.ua/interfaces/IdmOrders/Service.svc https://test-scmo.oree.com.ua/interfaces/IdmOrders/Service.svc?wsdl
OB-03	IdmOrderBook	https://test-scmo.oree.com.ua/interfaces/IdmOrderBook/Service.svc https://test-scmo.oree.com.ua/interfaces/IdmOrderBook/Service.svc?wsdl
EV-01	Evaluations	https://test-scmo.oree.com.ua/interfaces/Evaluations/Service.svc https://test-scmo.oree.com.ua/interfaces/Evaluations/Service.svc?wsdl
EV-02	IdmEvaluations	https://test-scmo.oree.com.ua/interfaces/IdmEvaluations/Service.svc https://test-scmo.oree.com.ua/interfaces/IdmEvaluations/Service.svc?wsdl

Table 23 Description of web services XMtrade®|PXS – testing environment

Addresses of testing environment services are almost identical to production addresses. They only differ in the domain name of the address: https://test-scmo.oree.com.ua instead of https://scmo.oree.com.ua.

4 SPECIFICATION OF DATA STRUCTURES

The Market Operator information system XMtrade®|PXS allows automated data exchange through interface that involves use of data structures defined based on XML format in accordance with following data structures:

- ISOTEDATA,
- RESPONSE,
- CDSREQ,
- SFVOLIMITS

Date and time elements in XML structures are using UTC (Universal Time) format (unless its described otherwise).

Interface	Process	ID	Direction	Format
Market participant order administration	Reception of orders	E-02_01	Input	ISOTEDATA.811
			Output	RESPONSE.812 ISOTEDATA.813
	Provision of orders	E-02_03	Input	CDSREQ.831
			Output	RESPONSE.832 ISOTEDATA.833
ID market Order administration	Reception of orders	E-06_01	Input	ISOTEDATA-VDT.801
			Output	RESPONSE-VDT.802 ISOTEDATA-VDT.803
	Modification of orders	E-06_02	Input	ISOTEDATA-VDT.804
			Output	RESPONSE-VDT.805 ISOTEDATA-VDT.806
	Provision of orders	E-06_03	Input	CDSREQ-VDT.807
			Output	RESPONSE-VDT.808 ISOTEDATA-VDT.809
ID market order book data	Access to order book	E-08_01	Input	CDSREQ-VDT.810
			Output	RESPONSE-VDT.811 ISOTEDATA-VDT.812
Results and evaluations of DAM	Notification of results and evaluations	E-03_02	Input	CDSREQ.941
			Output	RESPONSE.942 ISOTEDATA.943
		E-05_01	Input	CDSREQ.951
			Output	RESPONSE.952 ISOTEDATA.953
		E-05_02	Input	CDSREQ.961
			Output	RESPONSE.962 ISOTEDATA.963
IDM Evaluations	Notification about evaluation	E-07_01	Input	CDSREQ-VDT.961
			Output	RESPONSE-VDT.962 ISOTEDATA-VDT.963
		E-07_02	Input	CDSREQ-VDT.571

			Output	RESPONSE-VDT.572 ISOTEDATA-VDT.573
		E-07_03	Input	CDSREQ-VDT.951
			Output	RESPONSE-VDT.952 ISOTEDATA-VDT.953

Table 24 Structures and data flows overview

4.1 Common data structures

4.1.1 ISOTEDATA

ISOTEDATA structure is a generic data structure that is derived from structures used within data exchange between market participants and market operators in markets organized in Czech and Slovak Republic.

The principle of using this structure in different communication scenarios is based on the specification, i.e. message code (*message-code* attribute) that determines the type/purpose of the content. Due to clarity, types of this structure are further used in the text in *ISOTEDATA.message-code* format.

Order structure

Order represented by *ISOTEDATA* structure consists of the following parts:

- *ISOTEDATA* - contains general details relating to the entire message (message header),
- *Trade* – represents the order itself (order header),
- *ProfileData* – order blocks, stated always in a pair – once it represents amount of electricity, next time it represents the price (*profile-role* attribute specifies the type),
- *Data* – contains values for specific hours of a trading day in the meaning according to *ProfileData* type.

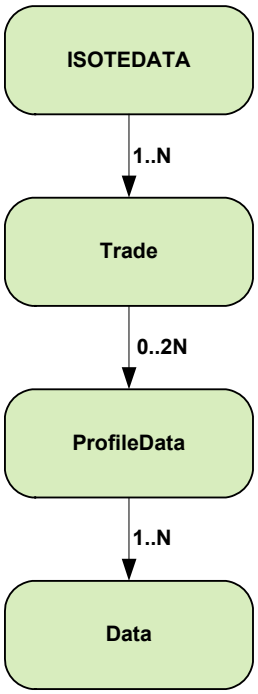

Figure 4 Scheme of order structure

ISOTEDATA

ISOTEDATA root element contains attribute values in accordance with the following table.

Attribute	Value	Description	Use
id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	It determines the purpose of structure content: 811 – submission of order 813 – description of order data (response to 811) 833 - description of order data (response to *CDSREQ.831* request)	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS - second	Required
answer-required	0/1	Attribute of response requirement. 0 - no 1 – yes	Required

Table 25 ISOTEDATA root element

Message header contains values of particular elements in accordance with the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	Sender EIC	Message sender identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required
Receiver Identification/id	10X1001A1001A620	Message receiver identification. EIC = 10X1001A1001A620 is used.	Required
Reference/id	String	Identification of related message, e.g. message involving request for own order data (it is used in responses to the message correlation).	Optional

Table 26 Message header of displayed values of particular elements

Trade

Trade order element contains values of particular attributes in accordance with the following table.

Attribute	Value	Description	Use
id	non-negative number	Order identification in the system (it is used in responses to the order).	Optional
version	non-negative number	Order version registered in the system (it is used in responses to the order).	Optional
trade-day	YYYY-MM-DD	Date of trading day. Date and time format: YYYY - year MM - month DD – day	Required
trade-type	N/P	Order class: N – purchase P – sale	Required
trade-stage	N/P	Order status in the system: N – invalid P – valid (it is used in the response / description of the order)	Optional
acceptance	A/N	Indicator of time divisibility of block No. 1. A - yes, block no. 1 must be accepted as a whole N - no, block no. 1 is divisible by periods. This element will be used only in case of block-type = PB. For other block orders, the new element element block-order will be used.	Required
block-order	A/N	Indicator of block-order. A – yes, submitted order is block order. N – no, submitted order is a simple hourly order. Attribute is mandatory in case acceptance = A.	Optional
block-type	PB/PBWAP	Type of block order (in case acceptance = A): PB – profile block order (standard block order) PBWAP – profile block with weighted-average price (simple block order) LB – linked block order FB – flexible hourly block order Attribute is mandatory in case block-order = A.	Optional

Attribute	Value	Description	Use
linked-order-id	non-negative number	Identifier of linked order (parent). Attribute is mandatory in case block-type = LB.	Optional
sett-curr	UAH	Trading currency.	Required
market-area	UA_IPS / UA_BEI	Trading area: UA_IPS – Ukraine IPS UA_BEI – Ukrainian Area of Burshtyn island	Required

Table 27 Trade order element

Trade order element contains particular elements values in accordance with the following table.

Element /Attribute	Value	Description	Use
Party/id	Data owner EIC.	Identification of data owner on behalf of whom the data are sent. When owner of the data is sending them for himself, it is identical to SenderIdentification. Market participant's EIC is used. Maximum 16 characters.	Required
Party/role	TO	Role of the owner. TO – owner of trade	Required
Comment	string	Comment on the order.	Optional
TimeData/ datetime	YYYY-MM-DDTHH:mm:SSZ	Order timestamp in UTC (Universal Time) : YYYY - year MM - month DD - day HH - hour mm - minute SS - second *(system generated value)*	Optional
TimeData/ datetime-type	DTC	Type of timestamp: DTC – date and time of order entry into the system *(system generated value)*	Optional

Table 28 Trade order element

ProfileData

ProfileData element of order block contains values of particular attributes in accordance with the following table.

Attribute	Value	Description	Use
profile-role	BC01 - BC25 BP01 - BP25	Determines the order and purpose of a block. BC01 - BC24: 1. - 24. Block containing the amount of energy	Required

Attribute	Value	Description	Use
		BP01 - BP24: 1. - 24. Block containing price of corresponding amount of energy. During time shift from Eastern European time to Eastern European Summer time and backwards, 23 or 25 values are used, respectively. BC01 - BC25, or BC01 - BC23 respectively BP01 - BP23, or BP01 - BP23 respectively	

Table 29 ProfileData element of order block

ProfileData are always entered in a pair, one element contains details on energy amounts (BC01-BC25) and the second element contains the corresponding price details to amounts (BP01-BP25).

Data

Data element of data block contains values for specific hours within the day in the meaning according to block type (ProfileData/@profile-role).

Attribute	Value	Description	Use
period	Non-negative number	Specifies the index of hour within the day. 1..24 During time shift from Eastern European time to Eastern European Summer time and backwards, 23 or 25 values are used, respectively.	Required
value	Decimal number	Contains Amount/Price. Amount with precision to one decimal place. Price with precision to two decimal places. Separator of decimal places "." (point)	Required
unit	MWH, UAH	Data unit used in value.	Required
splitting	A/N	Divisibility – performance divisibility A - yes, amount is divisible (default value) N - no, amount is not divisible	Optional

Table 30 Data element of data block

Structure of DAM results and evaluations

Results of DAM trading are represented by *ISOTEDATA* structure consisting of the following parts:

- *ISOTEDATA* - contains general details relating to the entire message (message header),
- *Trade* – represents DAM results in a given day (result header),
- *ProfileData* – blocks of results (*profile-role* attribute specifies the type),
- *Data* – contains values for specific hours within the day with the meaning according to *ProfileData* type.

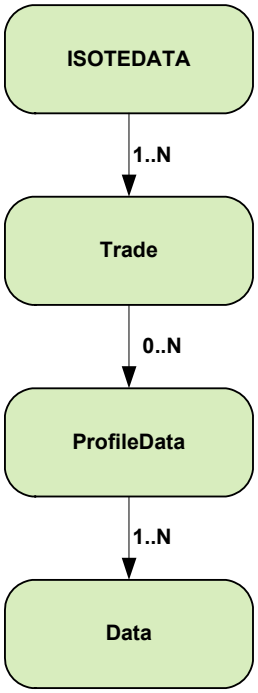

Figure 5 DAM results structure scheme

ISOTEDATA

ISOTEDATA root element contains attribute values according to the following table.

Attribute	Value	Description	Use
id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	Determines the purpose of structure content: 943 – results per market participant 953 – evaluation per hour 963 – evaluation for day	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS – second	Required
answer-required	0/1	Attribute of response requirement. 0 – no 1 – yes	Required

Table 31 ISOTEDATA root element

Message header contains values of particular elements in accordance with the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	Sender EIC	Message sender identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required
Receiver Identification/id	10X1001A1001A620	Message receiver Identification. EIC = 10X1001A1001A620 is used.	Required
Reference/id	String	Identification of related message, e.g. the message on request for own order data (it is used in response to message correlation).	Optional

Table 32 Displayed values message header of particular elements

Trade

Trade element of DAM result/evaluation for a given trading day contains values of particular attributes in accordance with the following table.

Attribute	Value	Description	Use
trade-day	YYYY-MM-DD	Date of trading day. Date and time format: YYYY - year MM - month DD - day	Required

Table 33 Trade element 1 of DAM result/evaluation for a given trading day

Trade element of DAM result/evaluation for a given trading day contains values of particular elements in accordance with the following table.

Element /Attribute	Value	Description	Use
Party/id	Data owner EIC.	Identification of data owner for whom the data are sent. In case of owner sending data for himself, it is identical with SenderIdentification. Market participant's EIC is used. Maximum 16 characters.	Required
Party/role	TO	Role of the owner. TO – owner of trade	Required

Table 34 Trade element 2 of DAM result/evaluation for a given trading day

ProfileData

ProfileData element of result block contains values of particular attributes in accordance with the following table.

Attribute	Value	Description	Use
profile-role	SP02, SC02, SP03, SC03, SP05, SC05, SC19, SP20, SC20, SP90, SC90, SP91, SC91, SP92, SC92, SP93, SC93, ST16	Specifies the meaning of result blocks. *Results:* SC19 – amount of electricity purchased for positive prices *(positive number)* SC20 – amount of electricity sold for positive prices *(positive number)* SP20 – marginal price *(positive number)* *Evaluation:* SP02 – clearing/payment for electricity purchased for positive prices *(positive number)* SC02 – amount of electricity purchased for positive prices *(positive number)* SP03 – clearing/payment for electricity sold for positive prices *(positive number)* SC03 – amount of electricity sold for positive prices *(positive number)* SP05 – fee for traded electricity *(positive number)* SC05 – amount of traded electricity (sum of electricity sold and purchased for positive prices) *(positive number)* ST16 – monthly fee for access to daily market *(positive number);* stated in the period 0 on the last day of the month. SP90 – fee for trading transactions relating to data manipulation *(positive number)* SC90 – amount of trading transactions relating to data manipulation *(positive number)* SP91 – fee for trading transactions using automated interfaces *(positive number)* SC91 – amount of trading transactions using automated interfaces *(positive number)* *Note: payments and fees are stated excluding VAT and electricity tax*	Required

Table 35 ProfileData element of result block

Data

Data element of data block contains values for specific hours within the day in the meaning according to block type (ProfileData/@profile-role).

Attribute	Value	Description	Use
period	Non-negative number	Specifies the index of hour within the day, whereas it can hold values from 1 to 24. (During time shift from Eastern European time to Eastern European Summer time	Required

Attribute	Value	Description	Use
		and backwards, 23 or 25 periods are used, respectively). Summary daily values are stated in the period with index 0.	
value	Decimal number	In case of amount with the precision to: one decimal place. In case of price with the precision to: two decimal places. Separator of decimal places "." (point)	Required
unit	MWH, UAH	Unit of amount stated in values.	Required

Table 36 Data element of data block

4.1.2 ISOTEDATA-VDT

ISOTEDATA-VDT structure is common data structure used for data exchange with market participants within intraday continuous market.

The principle of using this structure in various communication scenarios resides in so-called message code (attribute message-code), with which the type/purpose of content is determined. Types of this structure due to clarity are used in text bellow as ISOTEDATA-VDT.message-code.

ISOTEDATA-VDT Structure

Order or order book description represented by ISOTEDATA-VDT structure consists of these parts:

- *ISOTEDATA* – contains common data relating to the whole message (message header),
- *Trade* – represents the order itself (order header) or group of quantities and prices in the case of order book data transfer,
- *ProfileData* – order blocks, always shown in pair – first time it states amount of energy and second it states the price (attribute profile-role determines the type),
- *Data* – contains the values for specific hours of trade day in meaning according to type ProfileData.

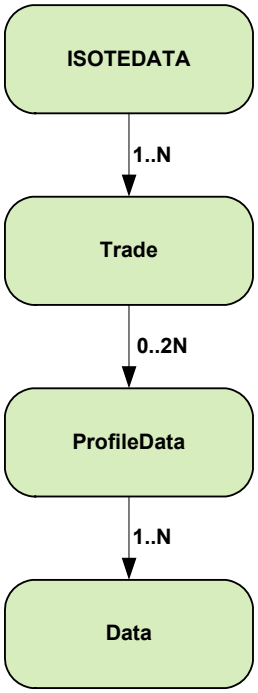

Figure 6 Scheme of order structure

ISOTEDATA-VDT

ISOTEDATA-VDT root element contains attribute values in accordance with the following table.

Attribute	Value	Description	Use
id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	Determinates purpose of structure content: 573 – monthly evaluation IDM (response to CDSREQ-VDT.571), 801 – submission of order 803 – description of order data (response to ISOTEDATA-VDT.801), 804 – order modification, 806 - data description of modified order (response to ISOTEDATA-VDT.804), 809 – data description of order (response to CDSREQ-VDT.807), 812 – description of order book data (response to CDSREQ-VDT.810), 953 – IDM evaluation per periods (response to CDSREQ-VDT.951), 963 – daily IDM evaluation (response to CDSREQ-VDT.961).	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day	Required

Attribute	Value	Description	Use
		HH - hour mm - minute SS - second	
answer-required	0/1	Attribute of response requirement. 0 - no 1 – yes	Required

Table 37 ISOTEDATA-VDT root element

Message header contains values of particular elements in accordance with the following table.

Attribute	Value	Description	Use
Sender Identification/id	Sender EIC	Message sender identification. Depending on the direction of communication: • In direction MP -> PXS: Market participant's EIC is used (determinates coding-schema=15 attribute) • In direction PXS -> MP: EIC = 10X1001A1001A620. Maximum is 16 symbols.	Required
Receiver Identification/id	Receiver EIC	Message receiver. Depending on the direction of communication: • In direction MP -> PXS: EIC = 10X1001A1001A620, • In direction PXS -> MP: Market participant's EIC (determinates coding-scheme=15 attribute). Maximum is 16 symbols. It is not filled in case of E-10_02 data flow.	Optional
Reference/id	String	Referenced message identification for example requests on data of own orders (used in responses for message correlation).	Optional

Table 38 Message header displayed values of single elements

Trade

Trade element of order, contains values of single attributes in accordance with the following table.

Attribute	Value	Description	Use
id	Non-negative number	Identification of order in the system (used in responses to order).	Optional
version	Non-negative number	Version of order registered in the system (used in responses to order).	Optional
trade-day	YYYY-MM-DD	Date of trade day. Format of date and time: YYYY - year MM - month DD - day	Optional
trade-month	YYYY-MM	Date of month for which evaluation is provided.	Optional
order-expiration	YYYY-MM-DDTHH:MM:SS	Date and time of order expiration. If not stated it expires at the time of trade period closure. Format of date and time: YYYY - year MM - month DD – day HH – hour MM – minute SS - second	Optional
block-order	A/N	Attribute for block order: A – yes N –no	Required
block-type	BL/PL/OP/V	Type of block order used only for block orders: BL – Base Load PL – Peak Load OP – Off Peak Load V – User defined block	Optional
indication	N/FOK/IOC/AON	Identification of order: N – no limitations FOK – Fill Or Kill IOC – Immediate Or Cancel AON – All Or None – only for user-defined block orders.	Required
trade-type	N/P	Class of order: N - buy P – sell	Required
trade-stage	N/P	State of order in the system: N - inactive P - active C – partially traded S – completely traded E - expired R – expired inactive	Optional
trader-id	Non-negative number	Anonymous identifier of market participant. Used in data flows E-06_03 and E-10_01.	Optional
sett-curr	UAH	Trade currency.	Required

Attribute	Value	Description	Use
market-area	UA_IPS / UA_BEI	Trading area: UA_IPS – Ukraine IPS UA_BEI – Ukrainian Area of Burshtyn island	Required
Market	IDM	Type of market: IDM – intraday market	Required

Table 39 Elements of order, Trade

Element /Attribute	Value	Description	Use
Party/id	EIC of data owner.	Identification of data owner for whom the data are sent. In case of owner sending data for himself, it is identical with SenderIdentification. Uses EIC of subject. Max. 16 symbols.	Required
Party/role	TO	Role of owner. TO – owner of trade	Required
Comment	string	Commentary for order.	Optional
TimeData/ datetime	YYYY-MM-DDTHH:mm:SSZ	Order timestamp in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS - second *(value is inputted by system)*	Optional
TimeData/ datetime-type	DTC DTR DTO	Type of timestamp: DTC – date and time of order submission into the system DTR – date and time of order modification DTO – date and time of data access *(value is inputted by system).*	Optional

Table 40 Element of order, Trade

ProfileData

ProfileData element of order contains values of single attributes in accordance with the following table.

Attribute	Value	Description	Use
trade-id	string	Identification of trade in the system (used in responses for order description or notifications about change in order status in case the order has traded quantity). Anonym ID of user-defined block order (used in responses for order book access or notifications about change in order book).	Optional

Attribute	Value	Description	Use
		It serves as an identifier for user-defined block orders with same parameters.	
profile-role	Data related to Orders (messages 801, 803, 804, 806, 809, 820, 830) BC01 BP01 TC01 TP01 Data related to evaluation (messages 573, 953, 963) SP08 SC08 SP09 SC09	Orders Designates order and purpose of a block. BC01: block containing energy quantity. BP01: block containing price corresponding to energy quantity. TC01: block containing amount of traded energy quantity. TP01: block containing paired price (mean value in case of several prices) corresponding to amount of traded energy. Evaluations: SP08 - clearing/payment for purchased electricity for a positive price, SC08 - amount of purchased electricity for a positive price, SP09 - clearing/payment for a sold electricity for a positive price, SC09 - amount of sold electricity for a positive price,	Required

Table 41 Element of order, ProfileData

ProfileData is inputted always in pair. One element contains energy quantity data (BC01) and the second corresponding prices to quantity data (BP01).

Data

Element of block data, *Data*, contains values for specific periods within day in relation to block type (ProfileData/@profile-role).

Attribute	Value	Description	Use
period-from	Non-negative number	Designates beginning of term for which the order is entered. 0..24 (during transition from CET to CEST and back, there are 23, or 25 periods)	optional
period-to	Non-negative number	Designates end of term for which the order is entered. 1..25 (during transition from CET to CEST and back, there are 23, or 25 periods)	Optional
value	Decimal number	Contains quantity/price Quantity with one decimal position precision. Price with two decimal position precision. Separator of decimal position is “.“ (Dot).	Required
unit	MW, UAH	Unit of entered value.	Required

Attribute	Value	Description	Use
seq-num	Non-negative number	Sequence number of record about quantity for given price and period. Used within message for order book data access. (data flow E-08_01 and E-10_02)	Optional

Table 42 Element of block data, Data

4.1.3 RESPONSE

RESPONSE structure is used in communication scenarios for confirmation of transaction success during data exchange in *ISOTEDATA* structures.

The so-called message type (message-code attribute) determines the meaning of content, similarly to ISOTEDATA. Due to clarity, specific structure types are further used in *RESPONSE.message-code* format.

RESPONSE structure

Response is represented by *RESPONSE* structure consisting of the following parts:

- *RESPONSE* - contains general details relating to the entire message (message header),
- *Reason* – represents reason/response of request processing.

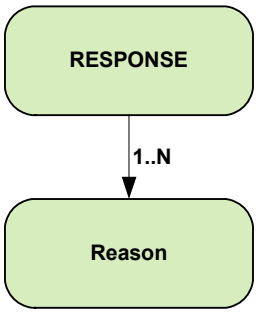

Figure 7 Scheme of RESPONSE structure

RESPONSE

RESPONSE root element contains attribute values according to the following table.

Attribute	Value	Description	Use
id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	Determines the purpose of structure content: 812 - error/confirmation at subnission/replacement of order on DAM (E-02_01) 832 - error/confirmation at sending of request for retrieval of order status on DAM (E-02_03)	Required

Attribute	Value	Description	Use
		942 - error/confirmation at sending of request for data – DAM results (E-03_02) 952 - error/confirmation at sending of request for data – evaluation per hours (E-05_01) 962 - error/confirmation at sending of request for data – evaluation for day (E-05_02)	
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS - second	Required

Table 43 RESPONSE root element

Message header contains values of particular elements in accordance with the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	10X1001A1001A620	Message sender identification. EIC = 10X1001A1001A620 is used.	Required
Receiver Identification/id	Receiver EIC	Message receiver identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required
Reference/id	String	Identification of related message, for which the response is given.	Optional

Table 44 Message header of displayed values of particular elements

REASON

Reason element contains attribute values according to the following table.

Attribute	Value	Description	Use
code	String	Detailed reason/code of response: -1 – Nonexistence of details 0 – Not specified 1 – Noncompliance with ascending/descending price development of blocks 2 - Maximal number of blocks exceeded 3 – Noncompliance with condition for divisibility of the first block	Required

Attribute	Value	Description	Use
		4 – Noncompliance with permitted minimal and maximal amount 5 - Noncompliance with permitted minimal and maximal price 6 – Noncompliance with requested resolution 7 – Noncompliance with input of amount and price in at least one hour of block 8 – Noncompliance with paired input of details 9 – Insufficient financial security towards clearing agent 10 – Insufficient financial security towards market organizer	
type	AXY	Type of response: A01 – Rejection due to syntax error A02 – Rejection due to application reasons A03 – Acceptance without reservation A04 – Acceptance with reservation	Required
trade-id	Non-negative number	Order identification registered in the system.	Optional
version	Non-negative number	Order version registered in the system.	Optional

Table 45 Reason element

4.1.4 RESPONSE-VDT

RESPONSE-VDT structure is used in communication scenarios for confirmation of transaction success during data exchange in *ISOTEDATA-VDT* structures.

The so-called message type (message-code attribute) determines the meaning of content, similarly to ISOTEDATA-VDT. Due to clarity, specific structure types are in *RESPONSE-VDT.message-code* format.

RESPONSE-VDT structure

Response is represented by *RESPONSE-VDT* structure consisting of the following parts:

- *RESPONSE* - contains general details relating to the entire message (message header),
- *Reason* – represents reason/response of request processing

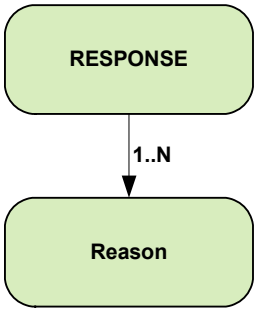

Figure 8 Scheme of RESPONSE-VDT structure

RESPONSE

RESPONSE root element contains attribute values in accordance with the following table.

Attribute	Value	Description	Use
id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of message	Determines the purpose of structure content: 572 – error/confirmation after data request – results for month (E-07_02) 802 – error/confirmation after order entry to IDM (E-06_01) 805 – error/confirmation after IDM order modification (E-06_02) 808 – error/confirmation after IDM order data access request (E-06_03) 811 – error/confirmation after order book access request (E-08_01) 952 – error/confirmation after results per periods data request (E-07_03) 962 – error/confirmation after results for day data request (E-07_01)	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS - second	Required

Table 46 Root element RESPONSE

Message header contains values of particular elements in accordance with the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	10X1001A1001A620	Message sender identification. EIC = 10X1001A1001A620 is used.	Required
Receiver Identification/id	Receiver EIC	Message receiver identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required
Reference/id	String	Identification of related message, for which the response is given.	Optional

Table 47 Message header of displayed values of particular elements

REASON

Reason element contains attribute values according to the following table.

Attribute	Value	Description	Use
code	String	Detailed reason/code of response: -1 – Nonexistence of details 0 – Not specified 4 – Noncompliance with permitted minimal and maximal amount 5 - Noncompliance with permitted minimal and maximal price 8 – Noncompliance with paired input of details 9 – Insufficient financial security towards clearing agent 10 – Insufficient financial security towards market organizer 11- Incorrect combination of order parameters 12- Validity of order after given time period closure 13-Order entry for close trade period	Required
type	AXY	Type of response: A01 – Rejection due to syntax error A02 – Rejection due to application reasons A03 – Acceptance without reservation A04 – Acceptance with reservation	Required
trade-id	Non-negative number	Order identification registered in the system.	Optional
version	Non-negative number	Order version registered in the system.	Optional

Table 48 Reason element

4.1.5 CDSREQ

CDSREQ structure is used in communication scenarios for data retrieval from the PXS system in *ISOTEDATA* structures.

The meaning of content, i.e. the type of requested data is determined by so-called message type (*message-code* attribute) that is further used in the text in *CDSREQ.message-code* format due to clarity.

CDSREQ structure

Data request represented by *CDSREQ* structure consists of the following parts:

- *CDSREQ* - contains general details relating to the entire message (message header),
- *Trade* – identification of requested data.

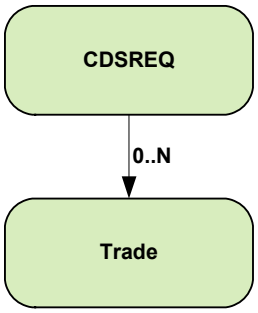

Figure 9 Scheme of CDSREQ structure

CDSREQ

CDSREQ root element contains attribute values according to the following table.

Attribute	Value	Description	Use
Id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	It determines the purpose of structure content: 831 – Request for data on own order (retrieval of status) 941 – Request for DAM results for subject of settlement 951 – Request for DAM evaluation per hours 961 – Request for DAM evaluation for day	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS – second	Required

Table 49 CDSREQ root element

Message header contains values of particular elements according to the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	Sender EIC	Message sender identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required
Receiver Identification/id	10X1001A1001A620	Message receiver identification. EIC = 10X1001A1001A620 is used.	Required

Table 50 Message header of displayed values of particular elements

Trade

Trade element contains attribute values according to the following table.

Attribute	Value	Description	Use
Id	non-negative number	Order identification in the system.	Optional
Version	non-negative number	Order version registered in the system.	Optional
trade-day	YYYY-MM-DD	Date of trading day. Date and time format: YYYY - year MM - month DD – day	Optional

Table 51 Trade header element

4.1.6 CDSREQ-VDT

CDSREQ structure is used in communication scenarios for data retrieval from the PXS system in *ISOTEDATA-VDT* structures.

The meaning of content, i.e. the type of requested data is determined by so-called message type (*message-code* attribute) that is further used in the text in *CDSREQ-VDT.message-code* format due to clarity.

CDSREQ structure

Data request represented by *CDSREQ-VDT* structure consists of the following parts:

- *CDSREQ* - contains general details relating to the entire message (message header),
- *Trade* – identification of requested data.

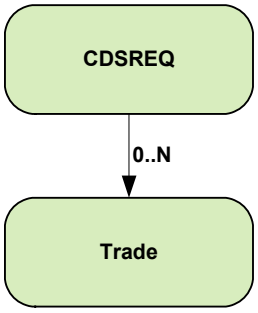

Figure 10 Scheme of CDSREQ-VDT structure

CDSREQ

CDSREQ-VDT root element contains attribute values according to the following table.

Attribute	Value	Description	Use
Id	string	Unique message identifier within the sender system. Maximum 35 characters.	Required
message-code	number/code of the message	Determines the purpose of structure content: 571 - Request for IDM evaluation for month (E-07_02) 807 - Request for order data access 810 - Request for order book access (E-08_01) 951 – Request for IDM evaluation per periods (E-07_03) 961 – Request for IDM evaluation for day (E-07_01)	Required
date-time	YYYY-MM-DDTHH:mm:SSZ	Date and time of message sending in UTC (Universal Time): YYYY - year MM - month DD - day HH - hour mm - minute SS – second	Required

Table 52 CDSREQ root element

Message header contains values of particular elements according to the following table.

Element /Attribute	Value	Description	Use
Sender Identification/id	Sender EIC	Message sender identification. Market participant's EIC is used (it determines *coding-scheme=15* attribute). Maximum 16 characters.	Required

Element /Attribute	Value	Description	Use
Receiver Identification/id	10X1001A1001A620	Message receiver identification. EIC = 10X1001A1001A620 is used.	Required

Table 53 Message header of displayed values of particular elements

Trade

Element Trade contains values of particular elements according to the following table.

Attribute	Value	Description	Use
id	non-negative number	Order identification on the system	Optional
version	non-negative number	Order version registered in the system	Optional
trade-day	YYYY-MM-DD	Date of trading day. Date and time format: YYYY - year MM - month DD – day	Optional
trade-month	YYYY-MM	Date of trading month. Date and time format: YYYY - year MM - month	Optional
period-from	non-negative number	Designates the beginning of the term for which the data are accessed 0..24 (during transition from CET to CEST and back, there are 23, or 25 periods)	Optional
period-to	non-negative number	Designates the end of the term for which the data are accessed 1..25 (during transition from CET to CEST and back, there are 23, or 25 periods)	Optional

Table 54 Trade header element

4.2 Administration of DAM orders

Market participant order administration is carried out through operations of order reception and availability registered in PXS via Orders web service.

4.2.1 Processing level

Market participants enter their orders into PXS by the gate closure time for order registration at the latest (during D-1, while D is the trading day). Orders can be entered into the system in advance, even several days in advance.

Market participant has a possibility to submit unlimited number of orders per trading day and trading zone, respecting the requirements for financial security or maximum sale volumes. An order can have following characteristics:

- standard hourly order, that can contain up to 25 possibilities of price-volume pairs in which the market participant can simulate different values of amount/price for each trading hour. This order type is defined by attributes *acceptance = "N"*
- Block order with following types:
  - profile block order with possibility to submit maximum of 24 (23/25 in case of clock switch day) combination of price and volume per trading period, defined by *acceptance = "A"*, *block-order="A"* and *block-type="PB",*
  - profile block order with weighted-average price (simple block orders) with possibility to submit maximum of 24 (23/25 in case of clock switch day) combination of volume per trading period and one average price weighted by submitted volume, defined by *acceptance = "A"*, *block-order="A"* and *block-type="PBWAP",*
  - linked block order with possibility to identify parent order, which must be accepted in order to accept the linked block order, defined by *acceptance = "A"*, *block-order="A"* and *block-type="LB",*
  - flexible hourly block order with definition of price and volume per one trading period, which will be selected by the matching algorithm based on the matching rules, defined by *acceptance = "A"*, *block-order="A", block-type="LB"* a *linked-order-id="nnnnnn",*

In the case that market participant replaces already existing order, or removes the order from the system, it is not allowed to return to the previous version of the order i.e. not even in case that the original order was valid and the new order is invalid.

In case of invalid order, user is required to remove reasons for its invalidity by replacement with a new version. Orders non-compliant with the input check (invalid) shall be removed and not entered into the matching process.

Removal of already entered and accepted orders is carried out through entry of a new order with null values in the first block (paired values of amount/price).

4.2.2 Submission of orders (E-02_01)

Submission of orders is carried out by request for order submission in *ISOTEDATA.811* structure (message-code=811) and by response in *RESPONSE.812* structure (indication of success/fail) and *ISOTEDATA.813* structure (description of order registered in the system).

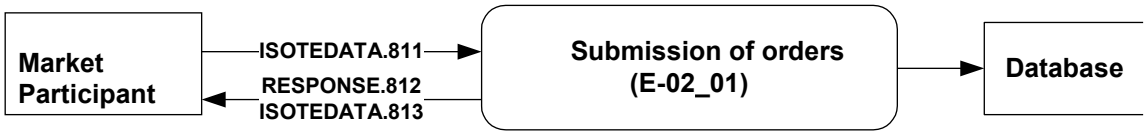

Figure 11 Order submission scheme

ISOTEDATA.811

The structure contains message-code=811 attribute in the header and is filled out in accordance with order structure. Only a single order can be concurrently entered, i.e. entry of multiple orders is carried out through multiple calls.

```
<ISOTEDATA id="1" message-code="811" date-time="2009-06-20T00:00:00" dtd-version="1" dtd-
release="1" answer-required="false"
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Trade trade-day="2009-09-21" trade-type="P" acceptance="A" block-type="PB" market-
area="UA_IPS" sett-curr="UAH">
    <ProfileData profile-role="BC01">
      <Data period="1" value="100.0" unit="MWH" splitting="A" />
      <Data period="2" value="100.0" unit="MWH" splitting="A" />
      <Data period="3" value="100.0" unit="MWH" splitting="A" />
      <Data period="4" value="100.0" unit="MWH" splitting="A" />
      <Data period="5" value="100.0" unit="MWH" splitting="A" />
      <Data period="6" value="100.0" unit="MWH" splitting="N" />
      <Data period="7" value="100.0" unit="MWH" splitting="N" />
      <Data period="8" value="100.0" unit="MWH" splitting="N" />
      <Data period="9" value="100.0" unit="MWH" splitting="N" />
      <Data period="10" value="100.0" unit="MWH" splitting="N" />
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1005.00" unit="UAH" splitting="A" />
      <Data period="2" value="1005.00" unit="UAH" splitting="A" />
      <Data period="3" value="1005.00" unit="UAH" splitting="A" />
      <Data period="4" value="1005.00" unit="UAH" splitting="A" />
      <Data period="5" value="1005.00" unit="UAH" splitting="A" />
      <Data period="6" value="1005.00" unit="UAH" splitting="N" />
      <Data period="7" value="1005.00" unit="UAH" splitting="N" />
      <Data period="8" value="1005.00" unit="UAH" splitting="N" />
      <Data period="9" value="1005.00" unit="UAH" splitting="N" />
      <Data period="10" value="1005.00" unit="UAH" splitting="N" />
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO" />
  </Trade>
</ISOTEDATA>
```

Example 1 Submission of sale order

RESPONSE.812

In case of successful or failed order processing, response is returned in accordance with specification of RESPONSE structure, with *message-code=812* in the header. Identification, under which the order is registered in the system, is returned in *Reason/@trade-id* attribute.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="812"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03" trade-id="1016"/>
</RESPONSE>
```

Example 2 Response on successful order submission

ISOTEDATA.813

In case of successful order processing, the structure is returned as it was registered in the system, where *message-code=813* can be found in the header. Identification and version, under which the order is registered in the system, are returned in *Trade/@id* and *Trade/@version* attribute. Own order data can be retrieved back based on this identification (see E-02_03).

```
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="813"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Reference id="1"/>
  <Trade id="1016" trade-day="2009-09-21" version="1" trade-type="P" acceptance="A" block-
type="PB" trade-stage="P" sett-curr="UAH" market-area="UA_IPS">
    <TimeData datetime="2009-07-03T13:46:26Z" datetime-type="DTC"/>
    <ProfileData profile-role="BC01">
      <Data period="1" value="100.0" unit="MWH" splitting="A"/>
      <Data period="2" value="100.0" unit="MWH" splitting="A"/>
      <Data period="3" value="100.0" unit="MWH" splitting="A"/>
      <Data period="4" value="100.0" unit="MWH" splitting="A"/>
      <Data period="5" value="100.0" unit="MWH" splitting="A"/>
      <Data period="6" value="100.0" unit="MWH" splitting="N"/>
      <Data period="7" value="100.0" unit="MWH" splitting="N"/>
      <Data period="8" value="100.0" unit="MWH" splitting="N"/>
      <Data period="9" value="100.0" unit="MWH" splitting="N"/>
      <Data period="10" value="100.0" unit="MWH" splitting="N"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="2" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="3" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="4" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="5" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="6" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="7" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="8" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="9" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="10" value="1500.00" unit="UAH" splitting="N"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 3 Response with description of submitted order in the system

4.2.3 Removal of orders (E-02_01)

Removal of order is carried out by entry of specific order in *ISOTEDATA.811* structure (message-code=811) containing null values for amount and price in the first block for all periods of a given trading day. Response to order removal is returned in *RESPONSE.812* structure (indication of success/failure) and *ISOTEDATA.813* structure (description of order that was removed from the system).

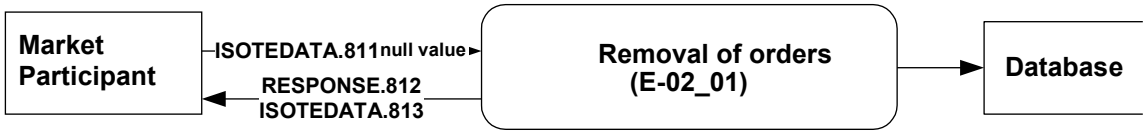

Figure 12 Scheme of market participant order removal

ISOTEDATA.811

The structure contains *message-code=811* attribute in the header and is filled out in accordance with order structure specification, where only the 1. block is entered containing null values for amount and price. Request can be entered for removal of orders for specific trading day (*trade-day* attribute), removal of specific trading day and order type (*trade-type* attribute) or removal of specific order via order identification (*id* attribute returned in responses at order entry).

```
<ISOTEDATA id="1" message-code="811" date-time="2009-06-20T00:00:00" dtd-version="1" dtd-
release="1" answer-required="false"
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Trade id="1016" trade-day="2009-09-21" trade-type="P" market-area="UA_IPS" sett-
curr="UAH">
    <ProfileData profile-role="BC01">
      <Data period="1" value="0.0" unit="MWH" splitting="A"/>
      <Data period="2" value="0.0" unit="MWH" splitting="A"/>
      <Data period="3" value="0.0" unit="MWH" splitting="A"/>
      <Data period="4" value="0.0" unit="MWH" splitting="A"/>
      <Data period="5" value="0.0" unit="MWH" splitting="A"/>
      <Data period="6" value="0.0" unit="MWH" splitting="A"/>
      <Data period="7" value="0.0" unit="MWH" splitting="A"/>
      <Data period="8" value="0.0" unit="MWH" splitting="A"/>
      <Data period="9" value="0.0" unit="MWH" splitting="A"/>
      <Data period="10" value="0.0" unit="MWH" splitting="A"/>
      <Data period="11" value="0.0" unit="MWH" splitting="A"/>
      <Data period="12" value="0.0" unit="MWH" splitting="A"/>
      <Data period="13" value="0.0" unit="MWH" splitting="A"/>
      <Data period="14" value="0.0" unit="MWH" splitting="A"/>
      <Data period="15" value="0.0" unit="MWH" splitting="A"/>
      <Data period="16" value="0.0" unit="MWH" splitting="A"/>
      <Data period="17" value="0.0" unit="MWH" splitting="A"/>
      <Data period="18" value="0.0" unit="MWH" splitting="A"/>
      <Data period="19" value="0.0" unit="MWH" splitting="A"/>
      <Data period="20" value="0.0" unit="MWH" splitting="A"/>
      <Data period="21" value="0.0" unit="MWH" splitting="A"/>
      <Data period="22" value="0.0" unit="MWH" splitting="A"/>
      <Data period="23" value="0.0" unit="MWH" splitting="A"/>
      <Data period="24" value="0.0" unit="MWH" splitting="A"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="0.0" unit="UAH" splitting="A"/>
      <Data period="2" value="0.0" unit="UAH" splitting="A"/>
      <Data period="3" value="0.0" unit="UAH" splitting="A"/>
      <Data period="4" value="0.0" unit="UAH" splitting="A"/>
      <Data period="5" value="0.0" unit="UAH" splitting="A"/>
      <Data period="6" value="0.0" unit="UAH" splitting="A"/>
      <Data period="7" value="0.0" unit="UAH" splitting="A"/>
      <Data period="8" value="0.0" unit="UAH" splitting="A"/>
      <Data period="9" value="0.0" unit="UAH" splitting="A"/>
      <Data period="10" value="0.0" unit="UAH" splitting="A"/>
      <Data period="11" value="0.0" unit="UAH" splitting="A"/>
      <Data period="12" value="0.0" unit="UAH" splitting="A"/>
      <Data period="13" value="0.0" unit="UAH" splitting="A"/>
      <Data period="14" value="0.0" unit="UAH" splitting="A"/>
      <Data period="15" value="0.0" unit="UAH" splitting="A"/>
      <Data period="16" value="0.0" unit="UAH" splitting="A"/>
      <Data period="17" value="0.0" unit="UAH" splitting="A"/>
      <Data period="18" value="0.0" unit="UAH" splitting="A"/>
      <Data period="19" value="0.0" unit="UAH" splitting="A"/>
      <Data period="20" value="0.0" unit="UAH" splitting="A"/>
      <Data period="21" value="0.0" unit="UAH" splitting="A"/>
      <Data period="22" value="0.0" unit="UAH" splitting="A"/>
      <Data period="23" value="0.0" unit="UAH" splitting="A"/>
      <Data period="24" value="0.0" unit="UAH" splitting="A"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO" />
  </Trade>
</ISOTEDATA>
```

Example 4 Removal of sale order of specific trading day

RESPONSE.812

In accordance with specification of RESPONSE structure, response is given in case of successful or unsuccessful order processing. In this case message-code=812 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="812"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 5 Response on success of order removal

ISOTEDATA.813

In case of successful order removal, the original order that was removed from the system will be returned. Message-code=813 can be found in the header.

```
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="813"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Reference id="1"/>
  <Trade id="1016" trade-day="2009-09-21" version="1" trade-type="P" acceptance="A" block-
type="PB" trade-stage="P" sett-curr="UAH" market-area="UA_IPS">
    <TimeData datetime="2009-07-03T13:46:26Z" datetime-type="DTC"/>
    <ProfileData profile-role="BC01">
      <Data period="1" value="100.0" unit="MWH" splitting="A"/>
      <Data period="2" value="100.0" unit="MWH" splitting="A"/>
      <Data period="3" value="100.0" unit="MWH" splitting="A"/>
      <Data period="4" value="100.0" unit="MWH" splitting="A"/>
      <Data period="5" value="100.0" unit="MWH" splitting="A"/>
      <Data period="6" value="100.0" unit="MWH" splitting="N"/>
      <Data period="7" value="100.0" unit="MWH" splitting="N"/>
      <Data period="8" value="100.0" unit="MWH" splitting="N"/>
      <Data period="9" value="100.0" unit="MWH" splitting="N"/>
      <Data period="10" value="100.0" unit="MWH" splitting="N"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="2" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="3" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="4" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="5" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="6" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="7" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="8" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="9" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="10" value="1500.00" unit="UAH" splitting="N"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 6 Response with description of removed order from the system

4.2.4 Modification of orders (E-02_01)

Modification of order is carried out by entry of specific order that is to be modified in *ISOTEDATA.811* structure (message-code=811) containing updated values for amount and price for desired trading periods of a given trading day. Response to order removal is returned in *RESPONSE.812* structure (indication of success/failure) and *ISOTEDATA.813* structure (description of modified order saved in the system).

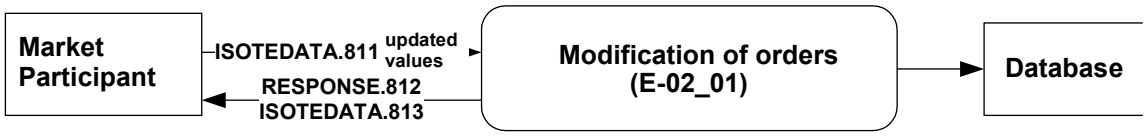

Figure 13 Scheme of market participant order modification

ISOTEDATA.811

The structure contains *message-code=811* attribute in the header and is filled out in accordance with order structure specification. The order that is to be modified must be identified by specification of its ID in the attribute *Trade/id*. Only a single order can be concurrently modified, i.e. modification of multiple orders is carried out through multiple calls.

```
<ISOTEDATA id="1" message-code="811" date-time="2009-06-20T00:00:00" dtd-version="1" dtd-
release="1" answer-required="false"
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Trade id="5016" trade-day="2009-09-21" trade-type="P" acceptance="A" block-type="PB"
market-area="UA_IPS" sett-curr="UAH">
    <ProfileData profile-role="BC01">
      <Data period="1" value="100.0" unit="MWH" splitting="A" />
      <Data period="2" value="100.0" unit="MWH" splitting="A" />
      <Data period="3" value="100.0" unit="MWH" splitting="A" />
      <Data period="4" value="100.0" unit="MWH" splitting="A" />
      <Data period="5" value="100.0" unit="MWH" splitting="A" />
      <Data period="6" value="100.0" unit="MWH" splitting="N" />
      <Data period="7" value="100.0" unit="MWH" splitting="N" />
      <Data period="8" value="100.0" unit="MWH" splitting="N" />
      <Data period="9" value="100.0" unit="MWH" splitting="N" />
      <Data period="10" value="100.0" unit="MWH" splitting="N" />
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1005.00" unit="UAH" splitting="A" />
      <Data period="2" value="1005.00" unit="UAH" splitting="A" />
      <Data period="3" value="1005.00" unit="UAH" splitting="A" />
      <Data period="4" value="1005.00" unit="UAH" splitting="A" />
      <Data period="5" value="1005.00" unit="UAH" splitting="A" />
      <Data period="6" value="1005.00" unit="UAH" splitting="N" />
      <Data period="7" value="1005.00" unit="UAH" splitting="N" />
      <Data period="8" value="1005.00" unit="UAH" splitting="N" />
      <Data period="9" value="1005.00" unit="UAH" splitting="N" />
      <Data period="10" value="1005.00" unit="UAH" splitting="N" />
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO" />
  </Trade>
</ISOTEDATA>
```

Example 7 Modification of sale order of specific trading day

RESPONSE.812

In accordance with specification of RESPONSE structure, response is given in case of successful or unsuccessful order processing. In this case message-code=812 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="812"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 8 Response on success of order modification

ISOTEDATA.813

In case of successful order modification, the succesfully modified order will be returned with increased version in comparison to original order. Message-code=813 can be found in the header.

```
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="813"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Reference id="1"/>
  <Trade id="5016" trade-day="2009-09-21" version="2" trade-type="P" acceptance="A" block-
type="PB" trade-stage="P" sett-curr="UAH" market-area="UA_IPS">
    <TimeData datetime="2009-07-03T13:46:26Z" datetime-type="DTC"/>
    <ProfileData profile-role="BC01">
      <Data period="1" value="100.0" unit="MWH" splitting="A"/>
      <Data period="2" value="100.0" unit="MWH" splitting="A"/>
      <Data period="3" value="100.0" unit="MWH" splitting="A"/>
      <Data period="4" value="100.0" unit="MWH" splitting="A"/>
      <Data period="5" value="100.0" unit="MWH" splitting="A"/>
      <Data period="6" value="100.0" unit="MWH" splitting="N"/>
      <Data period="7" value="100.0" unit="MWH" splitting="N"/>
      <Data period="8" value="100.0" unit="MWH" splitting="N"/>
      <Data period="9" value="100.0" unit="MWH" splitting="N"/>
      <Data period="10" value="100.0" unit="MWH" splitting="N"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="2" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="3" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="4" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="5" value="1500.00" unit="UAH" splitting="A"/>
      <Data period="6" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="7" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="8" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="9" value="1500.00" unit="UAH" splitting="N"/>
      <Data period="10" value="1500.00" unit="UAH" splitting="N"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 9 Response with description of modified order in the system

4.2.5 Provision of orders (E-02_03)

Provision of orders is carried out by request for order retrieval in *CDSREQ.831* structure (message-code=831) and response in *RESPONSE.832* structure (indication of success/failure) and ISOTEDATA.833 *structure* (description of order registered in the system).

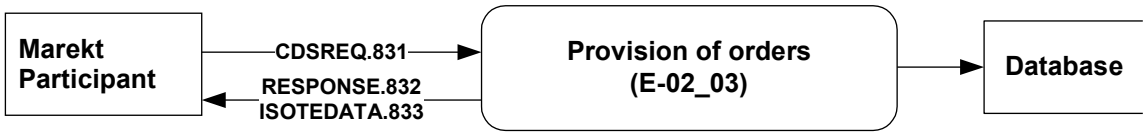

Figure 14 Scheme of market participant order provision

CDSREQ.831

Request can be formulated either for specific trading day (trade-day) or for specific order (id and version) and is filled out according to the specification of CDSREQ structure. Order identification has precedence over trading day.

```
<CDSREQ id="4a6s5d45f" message-code="831" date-time="2014-09-19T01:18:33" dtd-version="1"
dtd-release="1" xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Trade trade-day="2009-09-21"/>
</CDSREQ>
```

Example 10 Request for retrieval of orders for specific day

RESPONSE.832

In case of successful or failed request processing, response is returned in accordance with specification of RESPONSE structure, where message-code=832 can be found in the header.

```
<RESPONSE id="a9e40366-ad70-45ac-8b36-bd8fbce5ef7" message-code="832"
       date-time="2009-07-03T14:02:36Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="4a6s5d45f"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 11 Response on success of order provision for specific day

ISOTEDATA.833

In case of successful request processing, the structure is returned as it was registered in the system and message-code=833 can be found in the header. Identification and version, under which the order is registered in the system, are returned in *Trade/@id* and *Trade/@version* attribute. If there is a single purchase order and a single sale order registered in the system for

a given trading day, return structure of request for specific trading day contains two orders (either valid or invalid).

```
<ISOTEDATA id="1" message-code="833" date-time="2009-07-03T14:02:36Z"
       dtd-version="1" dtd-release="1" answer-required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/orders/types/2009/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Reference id="4a6s5d45f"/>
  <Trade id="977" trade-day="2009-09-21" trade-type="P" acceptance="A" block-type="PB"
trade-stage="P"
       sett-curr="UAH" market-area="UA_IPS">
    <TimeData datetime="2009-07-02T09:00:43Z" datetime-type="DTC"/>
    <ProfileData profile-role="BC01">
      <Data period="1" value="5.0" unit="MWH" splitting="A"/>
      <Data period="2" value="5.0" unit="MWH" splitting="A"/>
      <Data period="3" value="5.0" unit="MWH" splitting="A"/>
      <Data period="4" value="5.0" unit="MWH" splitting="A"/>
      <Data period="5" value="5.0" unit="MWH" splitting="A"/>
      <Data period="6" value="5.0" unit="MWH" splitting="A"/>
      <Data period="7" value="5.0" unit="MWH" splitting="A"/>
      <Data period="8" value="5.0" unit="MWH" splitting="A"/>
      <Data period="9" value="5.0" unit="MWH" splitting="A"/>
      <Data period="10" value="5.0" unit="MWH" splitting="A"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period="1" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="2" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="3" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="4" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="5" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="6" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="7" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="8" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="9" value="1600.00" unit="UAH" splitting="A"/>
      <Data period="10" value="1600.00" unit="UAH" splitting="A"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
```

Example 12 Response containing orders for specific day

4.3 Administration of IDM orders

Administration of market participant's orders is carried out through operations for order submission, order modification and order provision via IdmOrders web service at Intraday Market.

4.3.1 Processing level

Market participants enter their orders into PXS by the deadline for given trading hour, where orders can be entered into the system in advance, even for more trading time periods if they are open. Opening of trading hour for next day begins at 3 p.m. every day.

In case of invalid order, a user is required to remove reasons for its invalidity by replacing it with a new version. Orders non-compliant with the input check (invalid) will be removed and not entered into the matching process.

4.3.1.1 Submission of orders (E-06_01)

Submission of orders is carried out by request for order submission in *ISOTEDATA-VDT.801* structure (message-code=801) and by response in *RESPONSE-VDT.802* structure

(indication of success/failure) and *ISOTEDATA-VDT.803* structure (description of order registered in the system). Market participant is not informed about successfully submitted order, but is informed about successful submission of order since it is synchronous communication (see chapter 3.2).

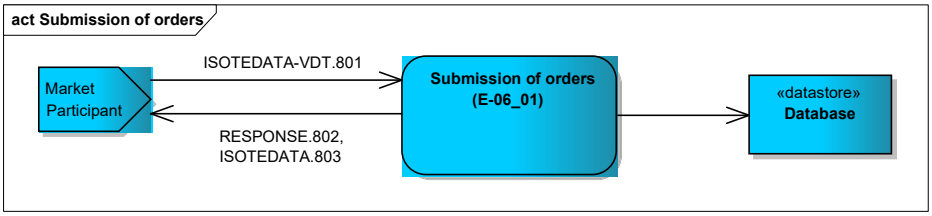

Figure 15 Schema of market participant order submission

ISOTEDATA-VDT.801

The structure contains *message-code=801* attribute in the header and is filled out in accordance with ISOTEDATA-VDT. Only a single order can be concurrently entered, i.e. entry of multiple orders is carried out through multiple calls.

```
<ISOTEDATA id="1" message-code="801" date-time="2016-06-20T00:00:00" dtd-version="1" dtd-
release="1" answer-required="false"
xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Trade trade-day="2016-02-16" order-expiration="2016-02-15T19:30:10" trade-type="N" block-
order="N" indication="N" trade-stage="P" market-area="UA_IPS" sett-curr="UAH" market="IDM" >
    <ProfileData profile-role="BC01">
      <Data period-from="0" period-to="1" value="19.1" unit="MW" />
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="0" period-to="1" value="2100.00" unit="UAH" />
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO" />
  </Trade>
</ISOTEDATA>
```

Example 13 Entry of sale order

RESPONSE-VDT.802

In accordance with specification of RESPONSE-VDT structure, response is given in case of successful or unsuccessful order processing. In this case message-code=802 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="812"
       date-time="2009-07-03T13:46:26Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03" trade-id="1016"/>
</RESPONSE>
```

Example 14 Response on success of order entry

ISOTEDATA-VDT.803

The structure is returned in the form it was registered in the system in case of successful order processing. In this case message-code=803 can be found in the header.

```
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="803"
       date-time="2016-02-15T16:30:10Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
  <Reference id="1"/>
  <Trade trade-day="2016-02-16" order-expiration="2016-02-15T19:30:10" trade-type="N" block-
order="N" indication="N" trade-stage="P" market-area="UA_IPS" sett-curr="UAH" market="IDM">
    <TimeData datetime="2016-02-15T16:30:10Z" datetime-type="DTC"/>
    <ProfileData profile-role="BC01">
      <Data period-from="0" period-to="1" value="19.1" unit="MW" />
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="0" period-to="1" value="2100.00" unit="UAH" />
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 15 Response with description of entered order in the system

4.3.2 Modification of orders (E-06_02)

Modification of orders is realized by request for modification of order in structure ISOTEDATA-VDT.804 and by response in structure RESPONSE-VDT.805 (indication of success/failure). Due to the principals of synchronous communication, a market participant is not informed about successfully submitted order, but is informed about successful reception of the request for order submission (see chapter 3.2).

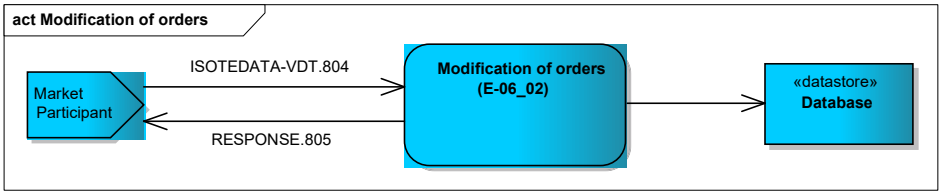

Figure 16 Order modification scheme

Market participant can modify status of the order in case of request for modification. Activating, deactivating or canceling already submitted order can be done through external interfaces.

ISOTEDATA-VDT.804

The structure contains *message-code=804* attribute in the header and is filled out in accordance with ISOTEDATA-VDT. Only a single order can be concurrently entered, i.e. entry of multiple orders is carried out through multiple calls.

```
<ISOTEDATA id="Your_own_ID_for_this_message" message-code="802" date-time="2011-01-
18T09:52:37" dtd-version="1" dtd-release="1" answer-required="false"
xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04">
   <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
   <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15" />
   <Trade id="1234" trade-stage="N" market-area="UA_IPS" market="IDM">
      <Party id="24X--YOUR-EIC--B" role="TO" />
   </Trade>
</ISOTEDATA>
```

Example 16 Deactivation of order

RESPONSE-VDT.805

In accordance with specification of RESPONSE-VDT structure response is given in case of successful or unsuccessful order processing. In this case message-code=805 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="805"
       date-time="2016-02-15T16:30:10Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 17 Successful modification of order response

4.3.3 Provision of orders (E-06_03)

Provision of orders is carried out by request for provision of order in *CDSREQ-VDT.807* structure and response in *RESPONSE-VDT.809* structure (indication of success/fail) and *ISOTEDATA-VDT.809* structure (description of modified order).

Market participant can ask for provision of a specific order or every order for specific time frame in a request for modification of an order.

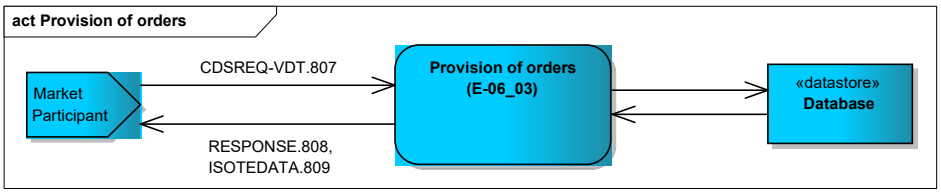

Figure 17 Order provision scheme

CDSREQ-VDT.807

The structure contains *message-code=807* attribute in the header and is filled out in accordance with structure specification of order provosion. Request for order´s data can be formulated either for specific order with order´s identification in attribute Trade/@id, or via request for every order in given time period with attribute Trade/@trade-day. It is possible to specify time period with Trade/@period-from and Trade/@period-to.

```
<CDSREQ date-time="2017-04-11T07:00:00" dtd-release="1" dtd-version="1"  id="45t" message-
code="807"
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
    <SenderIdentification coding-scheme="15" id="24X--YOUR-EIC--B"/>
    <ReceiverIdentification coding-scheme="15" id="10X1001A1001A620"/>
    <Trade id=1/>
</CDSREQ>
```

Example 18 Provision of specific order

```
<CDSREQ date-time="2017-04-11T07:00:00" dtd-release="1" dtd-version="1"  id="45t" message-
code="807"
xmlns:ns=" http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
   <SenderIdentification coding-scheme="15" id="24X--YOUR-EIC--B"/>
   <ReceiverIdentification coding-scheme="15" id="10X1001A1001A620"/>
   <Trade trade-day="2017-02-12" period-from="8" period-to="16"/>
</CDSREQ>
```

Example 19 Provision of all orders in given time period

RESPONSE-VDT.808

In accordance with specification of RESPONSE-VDT structure response is given in case of successful or unsuccessful order processing. In this case message-code=808 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="808"
       date-time="2016-02-15T16:30:10Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 20 Successful modification of order response

ISOTEDATA-VDT.809

In case of successful order processing, the structure is returned as it was registered in the system with a message-code=809 in the header. Attribute Trade/@trade-stage contains state in which the order currently is. Interval of delivery is specified in attributes Trade/ProfileData/Data/@period-from and Trade/ProfileData/Data/@period-to. These intervals represent time periods order of a given day.

```
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="809" date-time="2016-02-
15T16:30:10Z" dtd-version="1" dtd-release="1" answer-required="false"
xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04">
     <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
     <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
     <Reference id="1"/>
     <Trade id="1" trade-day="2016-02-16" order-expiration="2016-02-15T19:30:10" trade-
type="N" block-order="N" indication="N" trade-stage="P" trader-id="123456" market-
area="UA_IPS" sett-curr="UAH" market="IDM">
        <TimeData datetime="2016-02-15T16:30:10Z" datetime-type="DTC"/>
        <ProfileData profile-role="BC01">
           <Data period-from="10" period-to="11" value="19.1" unit="MW" />
        </ProfileData>
        <ProfileData profile-role="BP01">
            <Data period-from="10" period-to="11" value="2100.00" unit="UAH" />
        </ProfileData>
        <Party id="24X--YOUR-EIC--B" role="TO"/>
     </Trade>
     <Trade id="2" trade-day="2016-02-16" order-expiration="2016-02-15T19:30:10" trade-
type="N" block-order="N" indication="N" trade-stage="P" trader-id="123456" market-
area="UA_IPS" sett-curr="UAH" market="IDM">
        <TimeData datetime="2016-02-15T16:35:10Z" datetime-type="DTC"/>
        <ProfileData profile-role="BC01">
           <Data period-from="10" period-to="11" value="2" unit="MW" />
        </ProfileData>
        <ProfileData profile-role="BP01">
            <Data period-from="10" period-to="11" value="1800.00" unit="UAH" />
        </ProfileData>
        <Party id="24X--YOUR-EIC--B" role="TO"/>
     </Trade>
</ISOTEDATA>
```

Example 21 Response with description of two available orders

4.4 Administration of IDM order book

Administration of intraday order book is carried out through operation intraday order book provision via IdmOrderBook web service.

4.4.1 Processing level

Market participants have the option to request data about the current order book status.

Using web service IdmOrderBook market participant gets information about all available quantities in the structure of offered/demanded limited prices for every time period in case of simple orders, or for all products, alternatively intervals in case of block orders.

4.4.2 The order book data (E-08_01)

Provision of order book data is realized by request for provision of order book in CDSREQ-VDT.810 structure and response in RESPONSE-VDT.811 structure (success/failure) and ISOTEDATA-VDT.812 (description of the order book data).

In response, market participant gets all available amounts for a specific time frame in the order book.

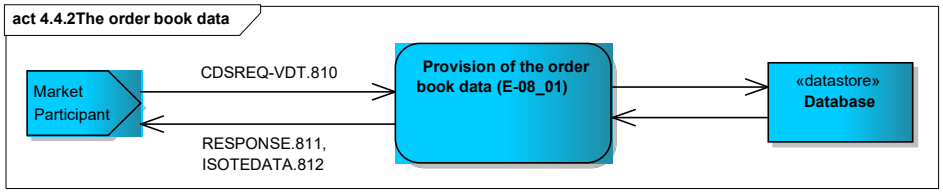

Figure 18 Scheme of order book provision

CDSREQ-VDT.810

The structure contains message-code=810 attribute in the header and is filled out in accordance with specification of order book provision structure. Request for the order book data is realized without any specification. System automatically evaluate current status of the order book after reception of a request and enable status for time period. Market participant receive data for specific time period in response.

```
<CDSREQ date-time="2017-04-11T07:00:00" dtd-release="1" dtd-version="1"  id="45t" message-
code="810"
xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
   <SenderIdentification coding-scheme="15" id="24X--YOUR-EIC--B"/>
   <ReceiverIdentification coding-scheme="15" id="10X1001A1001A620"/>
</CDSREQ>
```

Example 22 Reception of the order book

RESPONSE-VDT.811

In accordance with specification of RESPONSE structure, response is given in case of successful or unsuccessful order processing. In this case message-code=811 can be found in the header.

```
<RESPONSE id="cb4d980f-2f9a-4be7-96ef-850be04b214" message-code="811"
       date-time="2016-02-15T16:30:10Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15" />
  <Reference id="1"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 23 Response about successful modification of order response

ISOTEDATA-VDT.812

In case of successful order processing, all available order book data are returned for a given time period and message-code=812 can be found in the header. Information about amount of particular types of orders are ordered in limited prices and periods can be found in response. Attribute Trade/ProfileData/Data/@seq-num order different prices of periods according to view of the market participant from the best price (the highest for purchase, the lowest for sale) to the worst price (the lowest for purchase, the lowest for sale). Matching of user-defined block orders is established on different principals as other type of orders, so it is not possible aggregate amount of orders after submitted prices. For this reason provision of marked user-defined block orders is shown under anonymous ID in attribute Trade/ProfileData/@trade-id.

```
<?xml version="1.0" encoding="utf-8"?>
<ISOTEDATA id="ac5e799q-2qtr-75e7-9bef-8aabc02b7f4" message-code="812"
date-time="2016-02-15T16:30:10Z" dtd-version="1" dtd-release="1" answer-required="false"
xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"            />
  <Reference id="1"/>
  <!--Simple orders, purchase, day D-->
  <Trade trade-day="2016-07-13" trade-type="N" block-order="N" market-area="UA_IPS" sett-curr="UAH" market="IDM">
    <!--DTO – date and time of orderbook snapshot -->
    <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
    <ProfileData profile-role="BC01">
      <Data period-from="12" period-to="13" value="5" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="12" period-to="13" value="1200" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="12" period-to="13" value="5" unit="MW" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="12" period-to="13" value="800" unit="UAH" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="15" period-to="16" value="3" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="15" period-to="16" value="1300" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="10" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="900" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="10" unit="MW" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="600" unit="UAH" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="5" unit="MW" seq-num="3"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="585.25" unit="UAH" seq-num="3"/>
    </ProfileData>
  </Trade>
  <!--Simple orders, sale, day D-->
  <Trade trade-day="2016-07-13" trade-type="P" block-order="N" market-area="UA_IPS" sett-curr="UAH" market="IDM">
    <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
    <ProfileData profile-role="BC01">
      <Data period-from="12" period-to="13" value="10" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="12" period-to="13" value="990" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="12" period-to="13" value="10" unit="MW" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="12" period-to="13" value="1200" unit="UAH" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="12" period-to="13" value="5" unit="MW" seq-num="3"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="12" period-to="13" value="1230" unit="UAH" seq-num="3"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="14" period-to="15" value="1" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="14" period-to="15" value="600" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="10" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="1225" unit="UAH" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="10" unit="MW" seq-num="2"/>
    </ProfileData>
```

```
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="1235" unit="UAH" seq-num="2"/>
    </ProfileData>
    <ProfileData profile-role="BC01">
      <Data period-from="16" period-to="17" value="2" unit="MW" seq-num="3"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="16" period-to="17" value="1250" unit="UAH" seq-num="3"/>
    </ProfileData>
  </Trade>
  !—Simple orders, purchase, day D+1-->
  <Trade trade-day="2016-07-14" trade-type="N" block-order="N" market-area="UA_IPS" sett-curr="UAH" market="IDM">
    <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
    <ProfileData profile-role="BC01">
      <Data period-from="0" period-to="1" value="5" unit="MW" seq-num="1"/>
    </ProfileData>
    <ProfileData profile-role="BP01">
      <Data period-from="0" period-to="1" value="600" unit="UAH" seq-num="1"/>
    </ProfileData>
    </Trade>
    <!--Jednoduche objednavky, predaj, den D+1-->
    <Trade trade-day="2016-07-14" trade-type="P" block-order="N" market-area="UA_IPS" sett-curr="UAH" market="IDM">
      <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
      <ProfileData profile-role="BC01">
        <Data period-from="0" period-to="1" value="1" unit="MW" seq-num="1"/>
      </ProfileData>
      <ProfileData profile-role="BP01">
        <Data period-from="0" period-to="1" value="630" unit="UAH" seq-num="1"/>
      </ProfileData>
      <ProfileData profile-role="BC01">
        <Data period-from="0" period-to="1" value="1" unit="MW" seq-num="2"/>
      </ProfileData>
      <ProfileData profile-role="BP01">
        <Data period-from="0" period-to="1" value="660" unit="UAH" seq-num="2"/>
      </ProfileData>
    </Trade>
    <!--Block orders, purchase, Base load -->
    <Trade trade-day="2016-07-14" trade-type="N" block-order="A" block-type="BL" market-area="UA_IPS" sett-curr="UAH" market="IDM">
      <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
      <ProfileData profile-role="BC01">
        <Data value="5" unit="MW" seq-num="1"/>
      </ProfileData>
      <ProfileData profile-role="BP01">
        <Data value="600" unit="UAH" seq-num="1"/>
      </ProfileData>
      <ProfileData profile-role="BC01">
        <Data value="1" unit="MW" seq-num="2"/>
      </ProfileData>
      <ProfileData profile-role="BP01">
        <Data value="570" unit="UAH" seq-num="2"/>
      </ProfileData>
    </Trade>
      <!--Block orders, sale, Base load-->
      <Trade trade-day="2016-07-14" trade-type="P" block-order="A" block-type="BL" market-area="UA_IPS" sett-curr="UAH"
market="IDM">
        <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
        <ProfileData profile-role="BC01">
          <Data value="2" unit="MW" seq-num="1"/>
        </ProfileData>
        <ProfileData profile-role="BP01">
          <Data value="660" unit="UAH" seq-num="1"/>
        </ProfileData>
        <ProfileData profile-role="BC01">
          <Data value="1" unit="MW" seq-num="2"/>
        </ProfileData>
        <ProfileData profile-role="BP01">
          <Data value="690" unit="UAH" seq-num="2"/>
        </ProfileData>
      </Trade>
      <!--Block orders, purchase, Peak load-->
      <Trade trade-day="2016-07-14" trade-type="N" block-order="A" block-type="PL" market-area="UA_IPS" sett-curr="UAH"
market="IDM">
        <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
        <ProfileData profile-role="BC01">
          <Data value="4" unit="MW" seq-num="1"/>
        </ProfileData>
       <ProfileData profile-role="BP01">
          <Data value="540" unit="UAH" seq-num="1"/>
        </ProfileData>
        <ProfileData profile-role="BC01">
          <Data value="2" unit="MW" seq-num="2"/>
        </ProfileData>
        <ProfileData profile-role="BP01">
          <Data value="450" unit="UAH" seq-num="2"/>
        </ProfileData>
      </Trade>
```

```
        <!--Block orders, sale, Peak load-->
        <Trade trade-day="2016-07-14" trade-type="P" block-order="A" block-type="PL" market-area="UA_IPS" sett-curr="UAH"
market="IDM">
          <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
          <ProfileData profile-role="BC01">
              <Data value="3" unit="MW" seq-num="1"/>
          </ProfileData>
          <ProfileData profile-role="BP01">
              <Data value="560" unit="UAH" seq-num="1"/>
          </ProfileData>
        </Trade>
        <!--Block orders, purchase, Off-peak-->
        <Trade trade-day="2016-07-14" trade-type="N" block-order="A" block-type="OP" market-area="UA_IPS" sett-curr="UAH"
market="IDM">
          <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
          <ProfileData profile-role="BC01">
              <Data value="1" unit="MW" seq-num="1"/>
          </ProfileData>
          <ProfileData profile-role="BP01">
              <Data value="360" unit="UAH" seq-num="1"/>
          </ProfileData>
        </Trade>
        <!--Block orders sale, Off-peak-->
        <Trade trade-day="2016-07-14" trade-type="P" block-order="A" block-type="OP" market-area="UA_IPS" sett-curr="UAH"
market="IDM">
          <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
          <ProfileData profile-role="BC01">
              <Data value="3" unit="MW" seq-num="1"/>
          </ProfileData>
          <ProfileData profile-role="BP01">
              <Data value="363" unit="UAH" seq-num="1"/>
          </ProfileData>
          <ProfileData profile-role="BC01">
              <Data value="3" unit="MW" seq-num="2"/>
          </ProfileData>
          <ProfileData profile-role="BP01">
              <Data value="365" unit="UAH" seq-num="2"/>
          </ProfileData>
        </Trade>
        <!--Block orders, purchase, user-defined-->
        <Trade trade-day="2016-07-13" trade-type="N" block-order="A" block-type="V" market-area="UA_IPS" sett-curr="UAH" market="IDM">
          <TimeData datetime="2016-07-13T09:30:10.123Z" datetime-type="DTO"/>
          <ProfileData profile-role="BC01" trade-id="2920CAF91042B1841B32D9E3E63E7C75">
              <Data period-from="16" period-to="19" value="1" unit="MW"/>
          </ProfileData>
          <ProfileData profile-role="BP01" trade-id="2920CAF91042B1841B32D9E3E63E7C75">
              <Data period-from="16" period-to="19" value="360" unit="UAH"/>
          </ProfileData>
        </Trade>
</ISOTEDATA>
```

Example 24 Response with description of two available orders

4.5 DAM results and evaluations

Results and evaluations of day-ahead market are available for market participants via operations for DAM results and evaluation retrieval for every hour or a whole day.

4.5.1 Processing level

Results of day-ahead market are available immediately after order matching and contain accepted amount and final marginal price (system or area price). Market participant is notified about results availability via PXS system.

Evaluations of day-ahead market are available immediately after clearing of day-ahead market in the form of summary day-ahead evaluation as well as detailed evaluation per hours. Evaluations contain market organizer liabilities and receivables towards a market participant (receivables are stated with a negative sign). Market participant is notified about evaluations availability via PXS system. Results of day-ahead market are made available in PXS system on D-1 by 11:45 am.

4.5.2 Notification of results for entities (E-03_02)

Notification of results for entities is carried out by request in *CDSREQ.941* structure (message-code=941) and response with data in *RESPONSE.942* and *ISOTEDATA.943* structure.

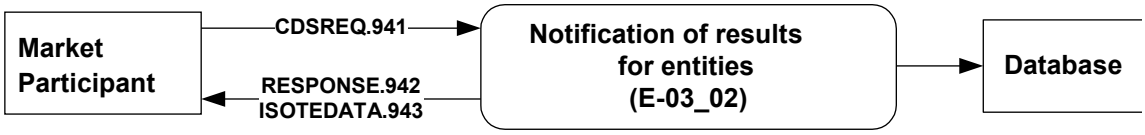

Figure 19 Notification schema of DAM results for market participant

CDSREQ.941

Request is formulated for specific trading day (trade-day) and is filled out in accordance with the specification of CDSREQ structure.

```
<CDSREQ id="45t" message-code="941" date-time="2014-09-19T01:18:33"
        dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Trade trade-day="2009-09-21"/>
</CDSREQ>
```

Example 25 Request for retrieval of results per market participant for specific day

RESPONSE.942

In case of successful or failed request processing, response is returned in accordance with specification of RESPONSE structure, where message-code=942 can be found in the header.

```
<RESPONSE id="bd12362f-361b-4085-ade0-9ed678efff1" message-code="942"
        date-time="2009-07-03T14:11:43Z" dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 26 Response on successful results retrieval for market participant for a specific day

ISOTEDATA.943

In case of successful request processing, the structure of DAM results is returned as it was registered in the system, where message-code=943 can be found in the header.

SC19 (amount of purchased electricity), *SC20* (amount of sold electricity) and *SP20* (original price) type is used in *ProfileData/@profile-role* attribute for description of returned data.

```
<ISOTEDATA id="ec1b50c0-afe1-4f5e-b6a1-d94c365099e" message-code="943"
       date-time="2009-07-03T14:11:43Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Trade trade-day="2009-09-21" market-area="UA-IPS">
    <ProfileData profile-role="SC19">
      <Data period="1" value="50" unit="MWH"/>
      <Data period="2" value="23" unit="MWH"/>
      <Data period="3" value="65" unit="MWH"/>
      <Data period="4" value="45" unit="MWH"/>
      <Data period="5" value="12.6" unit="MWH"/>
      <Data period="6" value="65" unit="MWH"/>
      <Data period="7" value="98" unit="MWH"/>
      <Data period="8" value="78" unit="MWH"/>
      <Data period="9" value="45" unit="MWH"/>
      <Data period="10" value="41" unit="MWH"/>
      <Data period="11" value="42" unit="MWH"/>
      <Data period="12" value="12" unit="MWH"/>
      <Data period="13" value="65" unit="MWH"/>
      <Data period="14" value="31.1" unit="MWH"/>
      <Data period="15" value="32.5" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SC20">
      <Data period="1" value="0" unit="MWH"/>
      <Data period="2" value="64.3" unit="MWH"/>
      <Data period="3" value="0" unit="MWH"/>
      <Data period="4" value="0" unit="MWH"/>
      <Data period="5" value="0" unit="MWH"/>
      <Data period="6" value="23.4" unit="MWH"/>
      <Data period="7" value="78.9" unit="MWH"/>
      <Data period="8" value="0" unit="MWH"/>
      <Data period="9" value="0" unit="MWH"/>
      <Data period="10" value="30.1" unit="MWH"/>
      <Data period="11" value="0" unit="MWH"/>
      <Data period="12" value="0" unit="MWH"/>
      <Data period="13" value="0" unit="MWH"/>
      <Data period="14" value="50" unit="MWH"/>
      <Data period="15" value="40" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SP20">
      <Data period="1" value="620.45" unit="UAH"/>
      <Data period="2" value="932.45" unit="UAH"/>
      <Data period="3" value="620" unit="UAH"/>
      <Data period="4" value="620" unit="UAH"/>
      <Data period="5" value="621.65" unit="UAH"/>
      <Data period="6" value="624.95" unit="UAH"/>
      <Data period="7" value="624.35" unit="UAH"/>
      <Data period="8" value="932.65" unit="UAH"/>
      <Data period="9" value="317.65" unit="UAH"/>
      <Data period="10" value="624.87" unit="UAH"/>
      <Data period="11" value="623.98" unit="UAH"/>
      <Data period="12" value="415.45" unit="UAH"/>
      <Data period="13" value="519.87" unit="UAH"/>
      <Data period="14" value="933.54" unit="UAH"/>
      <Data period="15" value="417.65" unit="UAH"/>
    </ProfileData>
    <Party id="24XDSO---------Q" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 27 Response containing requested results

4.5.3 Notification of evaluations per hours (E-05_01)

Notification of evaluations per hours is carried out by sending a request in *CDSREQ.951* structure (message-code=951) and response with data in *RESPONSE.952* and *ISOTEDATA.953* structures.

Figure 20 Notification schema of evaluations per hours for market participant

CDSREQ.951

To be filled out in accordance with specification of CDSREQ structure. Request is formulated for specific trading day (trade-day).

```
<CDSREQ id="45t" message-code="951" date-time="2014-09-19T01:18:33"
        dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Trade trade-day="2009-09-21" />
</CDSREQ>
```

Example 28 Request for retrieval of evaluations per hours for specific day

RESPONSE.952

In case of successful or failed request processing, response is returned in accordance with specification of RESPONSE structure, where message-code=952 can be found in the header.

```
<RESPONSE id="7cdd21c0-e21f-4e70-a617-2d55db510e8" message-code="952"
        date-time="2009-07-03T14:16:54Z" dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 29 Response on success of evaluations retrieval per hours for a specific day

ISOTEDATA.953

In the event of successful request processing, the structure of trading results is returned as it was registered in the system, where message-code=953 can be found in the header.

The following result types are used in *ProfileData/@profile-role* attribute:

SP02 – clearing/payment for purchased electricity,
SC02 – amount of purchased electricity,
SP03 – clearing/payment for sold electricity,
SC03 – amount of sold electricity,
SP05 – fee for traded electricity,
SC05 – amount of traded electricity (the sum of sold and purchased electricity),
SP90 – fee for trading transactions relating to data manipulation,
SC90 – amount of trading transactions relating to data manipulation,
SP91 – fee for trading transactions relating to use of automated interfaces,
SC91 – amount of trading transactions relating to use of automated interfaces.

```
<ISOTEDATA id="9d1bd4cd-5c92-4f51-adde-6253a08cfbb" message-code="953"
       date-time="2009-07-03T14:16:54Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Trade trade-day="2009-09-21" market-area="UA-IPS">
    <ProfileData profile-role="SP02">
      <Data period="1" value="30022.5" unit="UAH"/>
      <Data period="2" value="2146.35" unit="UAH"/>
      <Data period="3" value="30300" unit="UAH"/>
      <Data period="4" value="2700" unit="UAH"/>
      <Data period="5" value="6072.79" unit="UAH"/>
      <Data period="6" value="30621.75" unit="UAH"/>
      <Data period="7" value="60386.3" unit="UAH"/>
      <Data period="8" value="60546.7" unit="UAH"/>
      <Data period="9" value="2194.25" unit="UAH"/>
      <Data period="10" value="30019.67" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC02">
      <Data period="1" value="50" unit="MWH"/>
      <Data period="2" value="23" unit="MWH"/>
      <Data period="3" value="65" unit="MWH"/>
      <Data period="4" value="45" unit="MWH"/>
      <Data period="5" value="12.6" unit="MWH"/>
      <Data period="6" value="65" unit="MWH"/>
      <Data period="7" value="98" unit="MWH"/>
      <Data period="8" value="78" unit="MWH"/>
      <Data period="9" value="45" unit="MWH"/>
      <Data period="10" value="41" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SP03">
      <Data period="1" value="0" unit="UAH"/>
      <Data period="2" value="60086.53" unit="UAH"/>
      <Data period="3" value="0" unit="UAH"/>
      <Data period="4" value="0" unit="UAH"/>
      <Data period="5" value="0" unit="UAH"/>
      <Data period="6" value="1583.83" unit="UAH"/>
      <Data period="7" value="30921.21" unit="UAH"/>
      <Data period="8" value="0" unit="UAH"/>
      <Data period="9" value="0" unit="UAH"/>
      <Data period="10" value="2148.58" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC03">
      <Data period="1" value="0" unit="MWH"/>
      <Data period="2" value="64.3" unit="MWH"/>
      <Data period="3" value="0" unit="MWH"/>
      <Data period="4" value="0" unit="MWH"/>
      <Data period="5" value="0" unit="MWH"/>
      <Data period="6" value="23.4" unit="MWH"/>
      <Data period="7" value="78.9" unit="MWH"/>
      <Data period="8" value="0" unit="MWH"/>
      <Data period="9" value="0" unit="MWH"/>
      <Data period="10" value="30.1" unit="MWH"/>
    </ProfileData>
    <Party id="24XDSO---------Q" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 30 Response containing request evaluations per hours

4.5.4 Notification of evaluation for a day (E-05_02)

Notification of evaluations for day is carried out by sending a request in *CDSREQ.961* structure (message-code=961) and response with data in *RESPONSE.962* and *ISOTEDATA.963* structure.

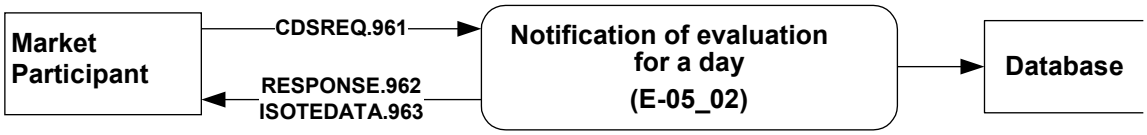

Figure 21 Notification schema of evaluations for day for market participant

CDSREQ.961

Request is formulated for specific trading day (trade-day) and is filled out according to the specification of CDSREQ structure.

```
<CDSREQ id="45t" message-code="961" date-time="2014-09-19T01:18:33"
        dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Trade trade-day="2009-09-21"/>
</CDSREQ>
```

Example 31 Request for retrieval of evaluations cumulatively for day

RESPONSE.962

In case of successful or failed request processing, response is returned according to specification of RESPONSE structure, where message-code=962 can be found in the header.

```
<RESPONSE id="8a848bad-46c2-4e3d-ab78-2c7c4545a21" message-code="962"
        date-time="2009-07-03T14:20:40Z" dtd-version="1" dtd-release="1"
        xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 32 Response on success of evaluations retrieval cumulatively for day

ISOTEDATA.963

In case of successful request processing, the structure of trading results is returned as it was registered in the system, where message-code=963 can be found in the header.

The following result types are used in *ProfileData /@profile-role* attribute:

SP02 – clearing/payment for purchased electricity,
SC02 – amount of purchased electricity,
SP03 – clearing/payment for sold electricity,
SC03 – amount of sold electricity,
SP05 – fee for traded electricity,
SC05 – amount of traded electricity (the sum of sold and purchased electricity),
ST16 – monthly fee for access on day-ahead market; the last day of month is specified,
SP90 – fee for trading transactions relating to data manipulation,
SC90 – amount of trading transactions relating to data manipulation,
SP91 – fee for trading transactions relating to use of automated interfaces,
SC91 – amount of trading transactions relating to use of automated interfaces.

```
<ISOTEDATA id="526539ee-9bb7-465b-8e5c-0b660674f0f" message-code="963"
       date-time="2009-07-03T14:20:40Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/types/2009/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24XDSO---------Q" coding-scheme="15"/>
  <Reference id="45t"/>
  <Trade trade-day="2009-09-21" market-area="UA-IPS">
    <ProfileData profile-role="SP02">
      <Data period="0" value="550875.98" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC02">
      <Data period="0" value="1146.7" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SP03">
      <Data period="0" value="46278.83" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC03">
      <Data period="0" value="639.3" unit="MWH"/>
    </ProfileData>
    <Party id="24XDSO---------Q" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 33 Response containing requested results cumulatively for day

4.6 IDM Evaluation

Evaluations of intraday market are available for market participants via operations evaluation for a day or for a whole month retrieval.

4.6.1 Processing level

Results of intraday market are available anytime during a day. Summary results for a day or a month are completed when all periods are closed. Information about traded amount, invoices and debts of market organizer to market participant (debts with minus sign) are in summary result.

4.6.2 Notice of an evaluation for a day (E-07_01)

Notice of an evaluation for a day is carried out by request CDSREQ-VDT.961 structure (message-code=961) and by a response RESPONSE-VDT.962 structure and ISOTEDATA-VDT.963 structure with data.

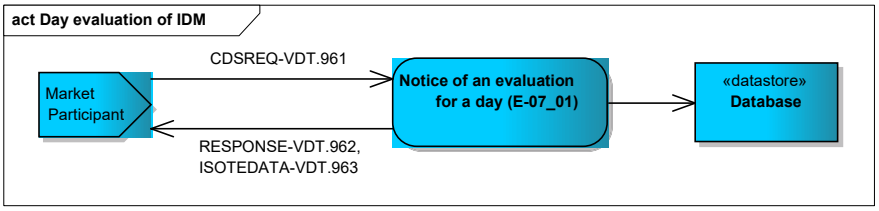

Figure 22 Notice of an evaluation for a day scheme

CDSREQ-VDT.961

The structure contains message-code=961 attribute in the header and is filled out in accordance with CDSREQ-VDT.961 structure. Request is formulated for a specific trade day.

Example 34 Request for a summary evaluation of a day

```
<CDSREQ id="45t" message-code="961" date-time="2016-09-19T01:18:33"
       dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2016/04/01">
<SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
<ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
<Trade trade-day="2016-09-21" />
</CDSREQ>
```

RESPONSE-VDT.962

In accordance with specification of RESPONSE-VDT structure response is given in case of successful or unsuccessful order processing. In this case message-code=802 can be found in the header.

```
<RESPONSE id="8a848bad-46c2-4e3d-ab78-2c7c4545a21" message-code="962"
       date-time="2016-07-03T14:20:40Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2016/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 35 Response about successful retrieval of day evaluation

ISOTEDATA-VDT.963

In case of successful order processing, the trading results structure is returned with a message-code=963 in the header.

In attribute ProfileData/@profile-role following results can be found:

SP08 – clearing/payment for purchased electricity for a positive price,

SC08 – amount of purchased electricity for a positive price,

SP09 – clearing/payment for a sold electricity for a positive price,

SC09 – amount of sold electricity for a positive price,

```
<ISOTEDATA id="526539ee-9bb7-465b-8e5c-0b660674f0f" message-code="963"
       date-time="2016-07-03T14:20:40Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/types/2016/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <Reference id="45t"/>
  <Trade trade-day="2009-09-21" market-area="UA-IPS">
    <ProfileData profile-role="SP08">
      <Data value="550875.98" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC08">
      <Data value="1146.7" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SP09">
      <Data value="460278.83" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC09">
      <Data value="639.3" unit="MWH"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 36 Response with day evaluation results

4.6.3 Notice of an evaluation for a month (E-07_02)

Notice of an evaluation for a month is carried out by request CDSREQ-VDT.571 structure (message-code=571) and by a response RESPONSE-VDT.572 structure and ISOTEDATA-VDT.573 structure with data.

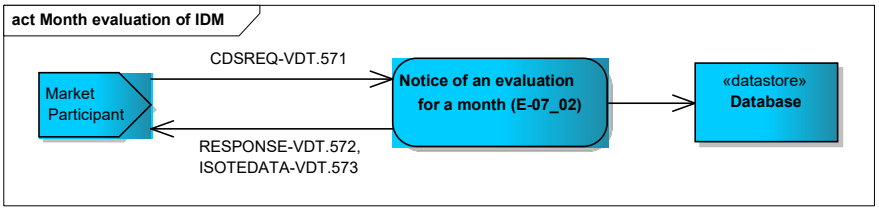

Figure 23 Notice of an evaluation for a month scheme

CDSREQ-VDT.571

The structure contains message-code=571 attribute in the header and is filled out in accordance with CDSREQ-VDT structure. Request is formulated for a concrete trade month.

```
<CDSREQ id="45t" message-code="571" date-time="2016-09-19T01:18:33"
       dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2016/04/01">
  <SenderIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <ReceiverIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <Trade trade-month="2016-09" />
</CDSREQ>
```

Example 37 Request for a summary evaluation of a month

RESPONSE-VDT.572

According to specification of RESPONSE-VDT structure response is given in case of successful or unsuccessful order processing. In this case message-code=572 can be found in the header.

```
<RESPONSE id="8a848bad-46c2-4e3d-ab78-2c7c4545a21" message-code="572"
       date-time="2016-07-03T14:20:40Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2016/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 38 Response about successful retrieval of month evaluation

ISOTEDATA-VDT.573

In case of successful order processing, the trading results structure is returned with a message-code=573 in the header.

In attribute ProfileData/@profile-role following results can be found:

SP08 – clearing/payment for purchased electricity for a positive price,

SC08 – amount of purchased electricity for a positive price,

SP09 – clearing/payment for a sold electricity for a positive price,

SC09 – amount of sold electricity for a positive price,

SP10 – fee for traded electricity,

SC10 – amount of traded electricity (sum of sold and purchased).

```
<ISOTEDATA id="526539ee-9bb7-465b-8e5c-0b660674f0f" message-code="573"
       date-time="2016-07-03T14:20:40Z" dtd-version="1" dtd-release="1" answer-
required="false"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/evaluations/types/2016/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15" />
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <Reference id="45t"/>
  <Trade trade-month="2016-09" market-area="UA-IPS">
    <ProfileData profile-role="SP08">
      <Data value="550875.98" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC08">
      <Data value="1146.7" unit="MWH"/>
    </ProfileData>
    <ProfileData profile-role="SP09">
      <Data value="460278.83" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SC09">
      <Data value="639.3" unit="MWH"/>
    <ProfileData profile-role="SP10">
      <Data value="8930" unit="UAH"/>
    </ProfileData>
    <ProfileData profile-role="SP10">
      <Data value="1786" unit="MWH"/>
    </ProfileData>
    <Party id="24X--YOUR-EIC--B" role="TO"/>
  </Trade>
</ISOTEDATA>
```

Example 39 Response with month evaluation results

4.6.4 Notice of evaluation for time periods (E-07_03)

Notice of an evaluation for time periods is carried out by request CDSREQ-VDT.951 structure (message-code=951) and by a response RESPONSE-VDT.952 structure and ISOTEDATA-VDT.953 structure with data.

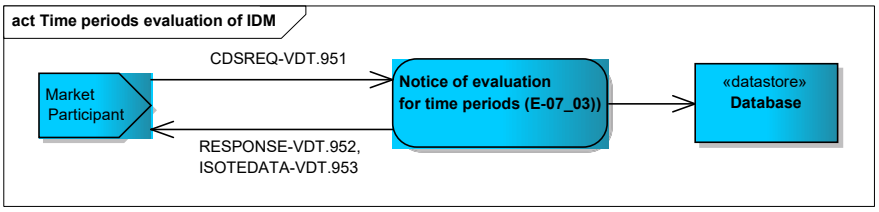

Figure 24 Notice of an evaluation for time periods scheme

CDSREQ-VDT.951

The structure contains message-code=951 attribute in the header and is filled out in accordance with CDSREQ-VDT structure. Request is formulated for a concrete trade day or a concrete day can be specified with period-from, period-to.

```
<CDSREQ date-time="2017-04-11T07:00:00" dtd-release="1" dtd-version="1"  id="45t" message-
code="951" xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
   <SenderIdentification coding-scheme="15" id="24X--YOUR-EIC--B"/>
   <ReceiverIdentification coding-scheme="15" id="10X1001A1001A620"/>
   <Trade trade-day="2017-02-12"/>
</CDSREQ>
```

Example 40 Request for an evaluation of time periods for whole day

```
<CDSREQ date-time="2017-04-11T07:00:00" dtd-release="1" dtd-version="1"  id="45t" message-
code="951" xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2009/04/01">
   <SenderIdentification coding-scheme="15" id="24X--YOUR-EIC--B"/>
   <ReceiverIdentification coding-scheme="15" id="10X1001A1001A620"/>
   <Trade trade-day="2017-02-12" period-from="8" period-to="20"/>
</CDSREQ>
```

Example 41 Request for an evaluation of time periods for specific period

RESPONSE-VDT.952

In accordance with RESPONSE-VDT structure response is given in case of successful or unsuccessful order processing. In this case message-code=952 can be found in the header.

```
<RESPONSE id="8a848bad-46c2-4e3d-ab78-2c7c4545a21" message-code="952"
       date-time="2016-07-03T14:20:40Z" dtd-version="1" dtd-release="1"
       xmlns="http://sfera.sk/ws/xmtrade/isot/interfaces/ut/types/2016/04/01">
  <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
  <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
  <Reference id="45t"/>
  <Reason code="0" type="A03"/>
</RESPONSE>
```

Example 42 Response about successful retrieval of time periods evaluation

ISOTEDATA-VDT.953

In case of successful order processing, the trading results structure is returned with a message-code=953 in the header. In attributes Trade/ProfileData/Data/@period-from and Trade/ProfileData/Data/@period-to can be found specified interval of delivery. These intervals represents order of time periods in a specific day.

In attribute ProfileData/@profile-role following results can be found:

SP08 – clearing/payment for purchased electricity for a positive price,

SC08 – amount of purchased electricity for a positive price,

SP09 – reckoning/payment for a sold electricity for a positive price,

SC09 – amount of sold electricity for a positive price.

```
<ISOTEDATA id="917de340469d45ab9cc14ec18797c31f" message-code="963" date-time="2017-04-
11T12:17:50Z" dtd-version="1" dtd-release="1" answer-required="false"
xmlns="http://sfera.sk/xmtrade/isot/types/IDM/2016/04">
   <SenderIdentification id="10X1001A1001A620" coding-scheme="15"/>
   <ReceiverIdentification id="24X--YOUR-EIC--B" coding-scheme="15"/>
   <Reference id="45t"/>
   <Trade trade-day="2017-02-12" market-area="UA-IPS">
      <ProfileData profile-role="SP08">
         <Data period-from="0" period-to="1" value="10.0" unit="UAH"/>
      </ProfileData>
      <ProfileData profile-role="SC08">
         <Data period-from="0" period-to="1" value="1.0" unit="MWH"/>
      </ProfileData>

      <ProfileData profile-role="SP09">
         <Data period-from="0" period-to="1" value="50.0" unit="UAH"/>
      </ProfileData>
      <ProfileData profile-role="SC09">
         <Data period-from="0" period-to="1" value="2.0" unit="MWH"/>
      </ProfileData>
      <ProfileData profile-role="SP08">
         <Data period-from="1" period-to="2" value="10.0" unit="UAH"/>
      </ProfileData>
      <ProfileData profile-role="SC08">
         <Data period-from="1" period-to="2" value="0.5" unit="MWH"/>
      </ProfileData>
      <ProfileData profile-role="SP09">
         <Data period-from="1" period-to="2" value="100.0" unit="UAH"/>
      </ProfileData>
      <ProfileData profile-role="SC09">
         <Data period-from="1" period-to="2" value="5.0" unit="MWH"/>
      </ProfileData>
      <Party id="24X--YOUR-EIC--B" role="TO"/>
   </Trade>
</ISOTEDATA>
```

Example 43 Response with time periods evaluation results (2 periods)

5 LIST OF FIGURES

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7 LIST OF EXAMPLES