

DH API documentation for aggregator

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1 Documentation version history

The table below provides information on document version history:

Version	Date	Description
0.0.1	2023-10-04	Initial document version.
0.0.2	2024-01-12	The list is constructed (response) from the powerPlantObjectNumber, powerPlantType, generatingPower fields in method: <ul style="list-style-type: none">• POST /gateway/independent-aggregator/access-right/list
0.0.3	2024-04-05	In method GET /gateway/independent-aggregator/order/{orderId}/report-obj-acr: <ul style="list-style-type: none">• Moved attributes (generatingObjectType, generatingObjectTypeFrom, generatingObjectTypeTo) to powerPlantObjects list;• Renamed generatingObjectTypeFrom → powerPlantValidFrom;• Renamed generatingObjectTypeTo → powerPlantValidTo;• Removed generatingObjectPower;• Added attribute generatingPower in powerPlantObject list. In method POST /gateway/independent-aggregator/object/all/active/list: <ul style="list-style-type: none">• Moved attribute generatingObjectType to powerPlantObjects list;• Removed generatingObjectPower.
0.0.4	2024-04-26	Updated rule message with error code 1008 in methods: <ul style="list-style-type: none">• POST /gateway/independent-aggregator/order/data-hr-15min-obj-lvl-acr• POST /gateway/independent-aggregator/order/data-sum-obj-lvl-acr
0.0.5	2024-05-09	In method POST /gateway/independent-aggregator/order/report-obj-acr: <ul style="list-style-type: none">• added new rule with error code 2031
0.0.6	2024-09-12	Added new values of powerPlantType in methods: <ul style="list-style-type: none">• POST /gateway/independent-aggregator/object/all/active/list• POST /gateway/independent-aggregator/access-right/list• GET /gateway/independent-aggregator/order/{orderId}/report-obj-acr

0.0.7	2024-10-09	<p>Added new attribute powerPlantObjectType in methods:</p> <ul style="list-style-type: none"> • POST /gateway/independent-aggregator/object/all/active/list (JSON response) • POST /gateway/independent-aggregator/access-right/list (JSON request/response)
0.0.8	2024-10-09	<p>Added powerPlantObject information and installedGeneratingPower attributes in method:</p> <ul style="list-style-type: none"> • GET /gateway/independent-aggregato/order/{orderId}/report-obj-acr
0.0.9	2024-10-23	<p>powerPlantObjects renamed to usedPowerPlants in methods:</p> <ul style="list-style-type: none"> • POST /gateway/independent-aggregator/access-right/list • POST /gateway/independent-aggregator/object/all/active/list • GET /gateway/independent-aggregator/order/{orderId}/report-obj-acr

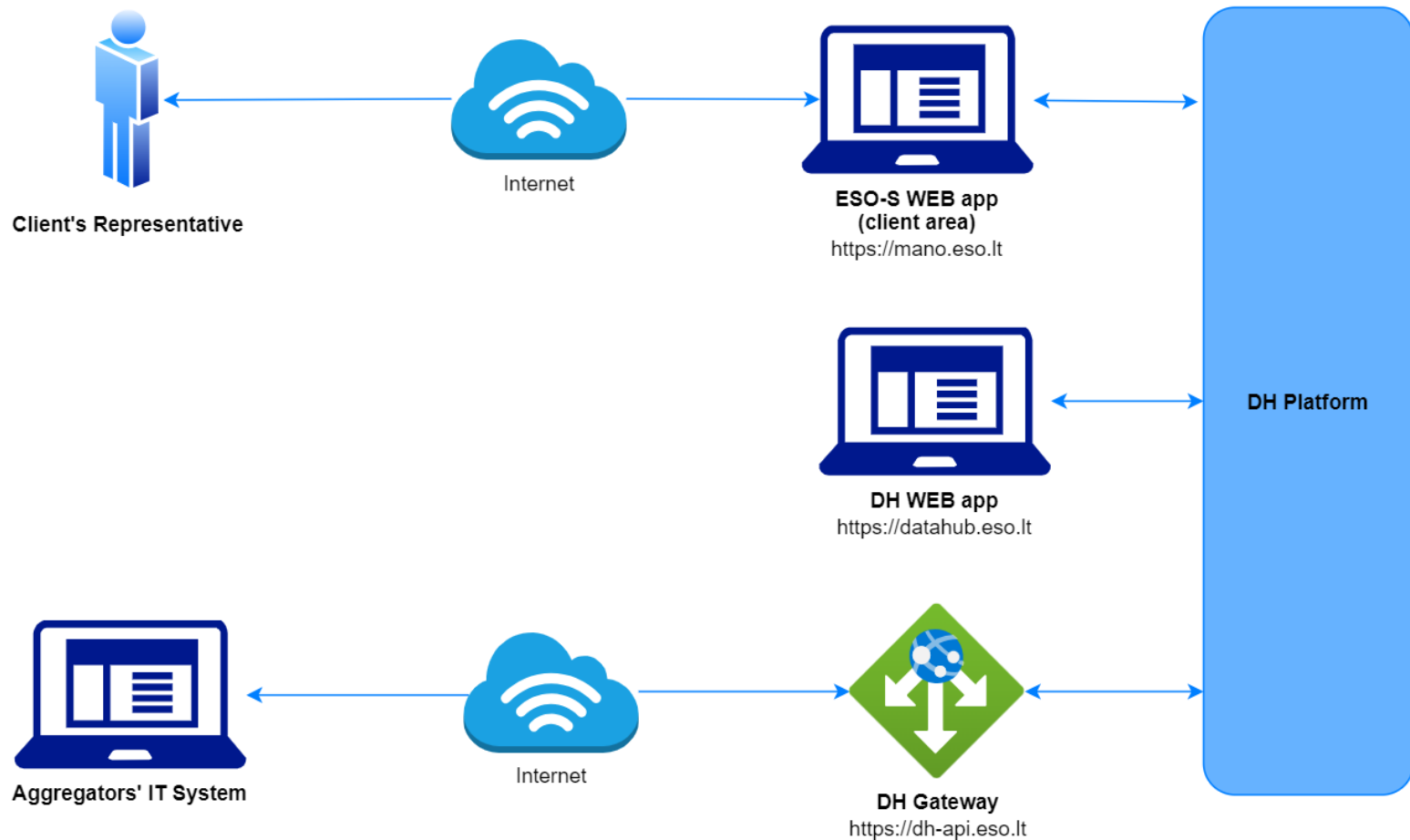
Note: Changes in table marked in white are already deployed, marked in green will be deployed in near future.

2 Preface

The Common Data Exchange Platform (hereinafter referred as DH Platform) Gateway is a component enabling independent aggregator to directly access DH Platform from within their IT systems and thus helps perform their activities more efficiently.

DH Gateway provides open standards-based interfaces allowing independent aggregators themselves (or with outside assistance) integrate their IT systems with DH Platform.

This document provides technical information on DH Gateway interfaces which is needed to integrate aggregators' information systems with DH Platform.



3 Definitions and abbreviations

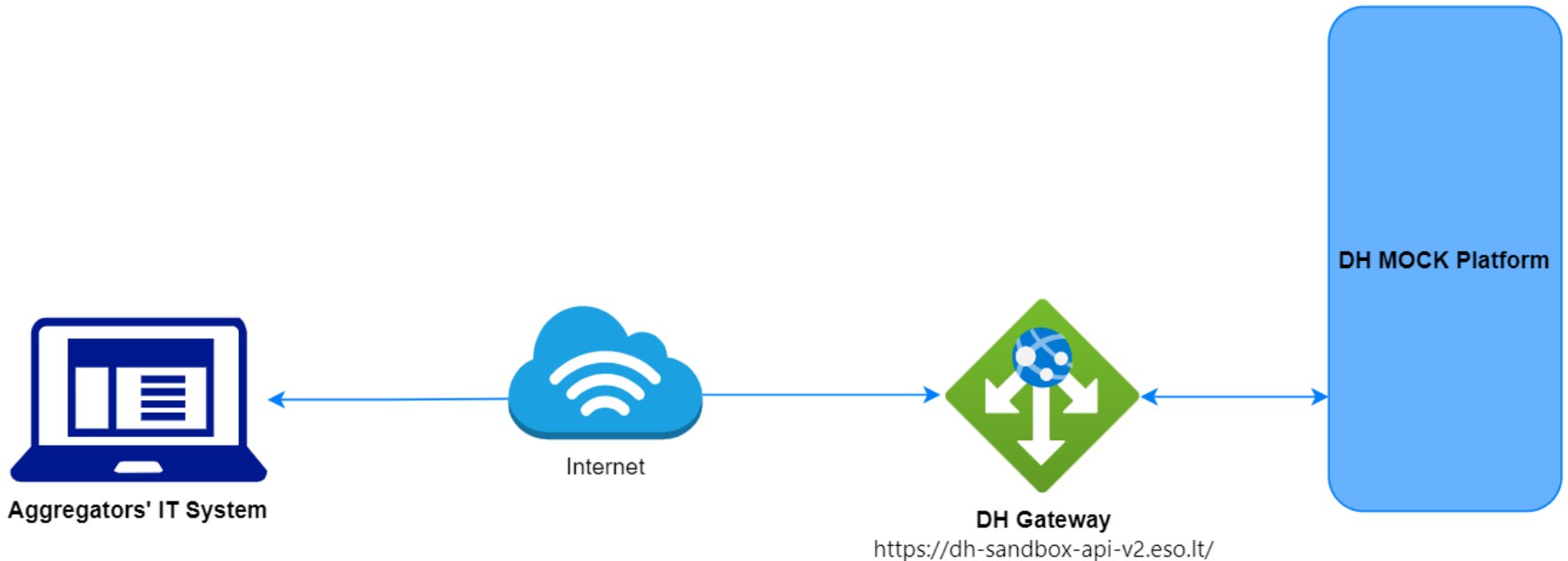
Definition / abbreviation	Description
DH Gateway	DH Platform component enabling independent aggregator IT systems to directly access the platform and achieve a higher-level degree of process automation.
DH, DH Platform	Common Data Exchange Platform.
Client	A household or legal person using electricity for the needs of the holding or business.
Client's representative	A household person or his representative. Representative of a legal entity (i.e. employee of a legal entity).
DSO, ESO	Energy distribution system operator – AB „Energijos skirstymo operatorius“.
Object	A site where electricity consumption takes place.
Aggregator	Independent electricity aggregator.
DH WEB app	It is a web application that provides a graphical user interface (GUI) for working with the DataHub system.
ESO-S WEB app	It is a web application that provides a graphical user interface (GUI) for working with the ESO-S system.

4 Environments

There are two DH Gateway environments the aggregator might access:

- “Sandbox” environment
- Production environment

DH Sandbox environment made of Mock API Gateway with mock requests and responses (scenarios). There is no connection to database or any data source, all possible requests and answers are hard coded into mock API source code and has no data selection logic or rules. This data is real depersonalized data from DSO customers. Sandbox requests and responses scenarios will be provided in additional document, and it should be used just for preparation to integrate with DH production API environment or testing purposes.



DH Platform also has WEB interface, which is connected to DH Production Gateway. All environments are provided in the table:

Environment	Swagger Link	WEB Interface
Production	https://dh-api.eso.lt/swagger-ui.html	https://datahub.eso.lt/
Sandbox	https://dh-sandbox-api-v2.eso.lt/swagger-ui.html#/	-

5 Digital certificates

In both the testing and production environments of the DH Gateway component, the identity of the independent aggregator is established using a TOKEN, which the independent aggregator's information system must provide each time the DH Gateway network service is called.

To get started:

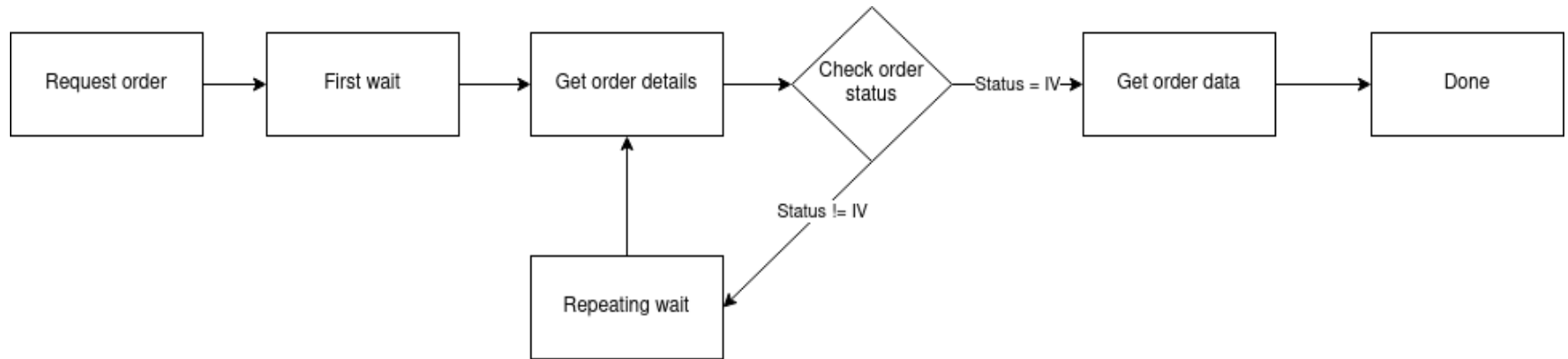
1. The DSO responsible person sends the JWT key (JSON Web Token) to be used with each request to the DH API.
2. To make requests to the DH Gateway API - the TOKEN submission in the case of curl takes place.

6 Recommendation for API client

6.1 ASYNC

Async pattern is mainly used for data orders: <https://dh-api.eso.lt/swagger-ui/index.html?urls.primaryName=independent-aggregator#/independent-aggregator-order-controller> (will be deployed in 2023-12-12)

Client side should implement following process with steps:



Step descriptions

Step name	Description	Endpoint	Request example	Response example
Request order	Submit new data order. Request will return order id which will be used in other steps for getting order details and order data.	POST /gateway/independent-aggregator/order/ yyyyyyyyyy where yyyyyyyyyy is order type: <ul style="list-style-type: none"> data-hr-15min-obj-lvl-acr data-sum-obj-lvl-acr report-obj-acr 	POST /gateway/independent-aggregator/order/report-obj-acr Body: { "objectNumbers": ["111111111111", "2222222222"] }	HTTP status 201 { "orderId": 10000001 }

<p>First wait</p>	<p>Wait for some period of time after order submission.</p> <p>This step is needed because after order request it takes some time to process it and there is no reason to try get status immediately after order submission.</p> <p>First wait duration depends on order type and parameters. If order collects more data, it can take minutes to prepare data.</p> <p>For duration recommendations look at Recommendations.</p>			
<p>Get order details</p>	<p>Request to get order details. This request is needed to get order latest status which is stored in field "latestStatus".</p> <p>Possible values for "latestStatus":</p> <ul style="list-style-type: none"> • P - Submitted order • V - Order in progress • IV - Order is finished and data are prepared. • K - Order has errors 	<p>POST /gateway/independent-aggregator/order/list</p>	<pre>POST /gateway/independent-aggregator/order/list { "orderId": 10000001 }</pre>	<p>HTTP status 200</p> <pre>[{ "orderId": 10000001, "dateFrom": "2023-04-17", "dateTo": "2023-04-17", "expireDate": "2023-04-18T14:31:27.990Z", "latestStatus": "V", "orderParametersSearch": "{\\"objectNumbers\\":[\\"1111111111111\\",\\"2222222222\\"]}", "orderType": "report-object", "statusDate": "2023-04-17T14:31:27.990Z", "submittedDate": "2023-04-17T14:31:27.990Z" }]</pre>

<p>Check order status</p>	<p>Logic operation to check order "latestStatus" field value. If value equals to "IV" it means that order data is prepared. Otherwise order data is not ready algorithm should go to step "Repeating wait".</p>			
<p>Repeating wait</p>	<p>Wait for some period of time after order status check when status was not equal to "IV". This step is needed because repetitive status check without wait can do unneeded load to DH system.</p> <p>For duration recommendations look at Recommendations.</p>			
<p>Get order data</p>	<p>Get order data.</p> <p>Note: If order has too many data, then pagination should be used. Default and max page size is 10 000 records (usually it's objects).</p>	<p>GET /gateway/independent-aggregator/order/zzzzzzzz/yyy yyyyyyy?first=oooooo&count=ssssss</p> <p>where:</p> <ul style="list-style-type: none"> • zzzzzzzz is order Id • oooooo is offset position • ssssss is page size <p>yyyyyyyyyy is order type:</p> <ul style="list-style-type: none"> • data-hr-15min-obj-lvl-acr • data-sum-obj-lvl-acr • report-obj-acr 	<p>GET /gateway/independent-aggregator/order/10000001/report-obj-acr?first=0&count=10000</p>	<p>HTTP status 200 with order data in JSON format.</p> <p>If order content is empty get method will return HTTP status 400 with message</p> <pre>{ "code": 2018, "text": "There is no data for the selected search parameters, the response is empty." }</pre>

6.1.1 DataHub order processing retry policy

If any issues appear during order data processing stage the process stops, and order gets status K. DH uses retry policy for all orders with status K.

- Retries order process after 5 minutes.
- Retries order process 300 times.
- For failed orders retry policy will be working in total 25 hours (5 min * 300).
- Retry policy will stop work after 25 hours and order will be left with status K.

This is needed because issues can appear in data preparation stage of couple reasons:

- DH technical problem - for example one of DH integrations was down or contract was changed, data integrity violations and etc.
- Incompatible business logic - for example order got into not defined use case and use case should be adopted to order.

In most cases order processing retry will solve problem. But there are cases like "Incompatible business logic" when additional human interaction is needed to finish order job. We are tracking such an order and fixing them, but fixing might take some hours or even days. So, some orders might not be completed and left in status K.

6.1.2 Order status flows

There are three possible order status flows:

Flow	Description
P → V → IV	This is normal status flow.
P → V → K → IV	This is flow when issues appear during data preparation, but later problem was fixed.
P → V → K	This is flow when issues appear during data preparation and problem was not fixed during DH retry policy time.

Order execution duration depends on multiply factors:

- Order type - different order types use different integration services some of them are faster some of them are slower.
- Order parameters - order parameters describe how much data will be generated. Bigger order periods and bigger object quantity will be generated longer.
- Order quantity in queue. If independent aggregator creates too many orders, they will be generated parallely and will take more time to finish them all.
- Failures - Errors during order data preparation will trigger retry policy so order generation will take more time as usually. Sometimes it will be not generated at all.

6.1.3 Recommendations

1. For better performance "Request order" can be implemented as separate process which is able to create multiple orders.
2. For better performance "Get order details" can be implemented as separate process which is able to get details of multiple orders.
3. For better performance "Get order data" can be implemented as separate process which is able to get order data of multiple orders.
4. For better performance process parallelization could be used but with max 3 threads.
5. Any HTTP request which returns 5xx status can be retried.
6. Any HTTP request which returns 4xx status should stop process because where are business error and manual handling should be used. Except for the step "Get order data" and error "code": 2018, "text": "There is no data for the selected search parameters, the response is empty." It means that order data preparation is finished, and order is empty.
7. Step "Request order" and other steps should have separate retries. Get order data on failure should not trigger Request order one more time.
8. It's up to client to decide how long the "First wait" duration can be but it shouldn't be less than 1 second.
9. It's up to client to decide how long the "Repeating wait" duration can be but it shouldn't be less than 1 second.
10. Use fixed number of times for status check. After 25 hours DH order retry policy will stop working and order will be left in status K. So, it reasonable to have number of times equal $((25 \text{ hours}) / (\text{"Repeating wait"} \text{ duration in hours}))$.
11. Do not recreate orders when orders got status K. DH retry policy will try to generate it later or DH team member interaction is needed to finish order. Client-side solutions will not help to solve status K.

6.2 JSON request logic

JSON field usage in requests by type:

Type	Example	Is value provided	Request result
Integer	accessRightId: null	No	All access rights.
Integer	accessRightId: 4587125	Yes	Access right with ID 4587125.
DateTime	submittedDateFrom: null	No	All orders.
DateTime	submittedDateFrom: ""	Yes	Framework validation error because provided value is not matching date format.
DateTime	submittedDateFrom: "2023-01-01"	Yes	All orders with were submitted date greater than 2023-01-01.
String	personCode: null	No	All objects.

Type	Example	Is value provided	Request result
String	personCode: ""	Yes	Empty list because person with empty person code does not exist.
String	personCode: "37878787878"	Yes	Objects which owner is person with code 37878787878.
List	objectNumbers: null	No	All objects.
List	objectNumbers: []	Yes	Empty list because provided objectNumbers list is not matching any object number.
List	objectNumbers: [""] arba objectNumbers: ["", ""]	Yes	Empty list because provided objectNumbers list is not matching any object number.
List	objectNumbers: [null] arba objectNumbers: [null, null]	Yes	Empty list because provided objectNumbers list is not matching any object number.
List	objectNumbers: ["56545654"] or objectNumbers: ["56545654", "76545654"]	Yes	Objects with numbers 56545654 or 76545654.

If field value is not provided, then field criteria shouldn't be added to query and all lists should be returned.

7 DataHub Gateway API documentation

7.1 Object controller

7.1.1 POST /gateway/independent-aggregator/object/all/active/list

URL	POST /gateway/independent-aggregator/object/all/active/list		
Description	The method is designed to obtain a list of objects before assigning rights to the objects.		
Parameter	<p>URL parameters:</p> <ul style="list-style-type: none">• first - index (starting from 0) of the object that must be presented first in the return list. Optional. The default value is 0.• count - number of objects in the return list. Optional. The default value is 30.• sort - possible values ASC, DSC.<ul style="list-style-type: none">• By default, the all active list must be sorted by the personCode. <p>The data of the JSON form request are presented in the HTTP request body (BODY) (Query JSON structure, below).</p>		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request	<pre>{ "personCode": "string", "objectNumber": "string", "meterNumber": "string", "objectDataConsentSign": "boolean" }</pre>		
HTTP Response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No Content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format. (Error response of the JSON structure below).

	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>[{ "personName": "string", "personSurname": "string", "personCode": "string", "objectNumber": "string", "objectAddress": "string", "powerPlantObjectType": "string", "automationLevel": "string", "metersAmount": "integer", "autoMetersAmount": "integer", "smartMeterInstallationDate": "date", "meters": [{ "meterNumber": "string", "meterAutomated": "boolean", "automationSystem": "string" }], "contractType": "string", "voltage": "double", "usedPowerPlants": [{ "powerPlantObjectNumber": "string", "powerPlantType": "string", "generatingObjectType": "string", "generatingPower": "double" }] }]</pre>		

```

    ],
    "objectPowers": [
      {
        "powerType": "string",
        "power": "double",
        "powerValidFrom": "date",
        "powerValidTo": "date"
      }
    ],
    "objectStates": [
      {
        "stateType": "string",
        "state": "string",
        "stateValidFrom": "date",
        "stateValidTo": "date"
      }
    ]
  ]
}
]

```

**JSON error r
esponse**

```

{
  "errorMessages": [
    {
      "code": "integer",
      "text": "string"
    }
  ]
}

```

Rules	No.	Rule description	Error code	Error message	Attributes
-------	-----	------------------	------------	---------------	------------

	1.	If an attribute has defined possible values, the value index can be specified by specifying the value of the attribute in the request. Indices of all possible values start from 0.	-	-	All attributes with specified values.
	2.	One or more request parameters are required.	1001	One or more request parameters are required.	personCode, consumerCode, objectNumber, meterNumber
	3.	The involved party will be identified by the authentication key.	1003	The involved party cannot be found in the system or involved party is not active.	involved_party_id
	4.	The request parameter [objectDataConsentSign] is true is required.	1020	It is mandatory to specify a request parameter in order to obtain consent to see object information.	objectDataConsentSign

7.1.1.1 JSON Request structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
personCode	string (20)	not required	Person / company code.
objectNumber	string	not required	Object number.
meterNumber	string (20)	not required	Meter number.
objectDataConsentSign	boolean	not required	Object data consent sing. True or False.

7.1.1.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
personName	string (200)	required	Person / company code.
personSurname	string (50)	not required	Person surname.
personCode	string (20)	not required	Person / company code. If the subject is individual, that person code must be encrypted: [*****] [person code's 3 last symbols].
objectNumber	string (20)	required	Object number.
objectAddress	string (4000)	required	Full title of the object address.
powerPlantObjectType	string (1)	not required	The object's power plant type. Possible meanings: <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar • T – TEC • V – Wind • P – Storage device • I – Fossil • D – Biogas • R – Hybrid generation
automationLevel	string	not required	Automation level. Possible meanings: <ul style="list-style-type: none"> • FULL – fully automated • PARTIAL – partially automated • NONE – no automation
metersAmount	integer	not required	The number of meters is calculated at the object level.
autoMetersAmount	integer	not required	The number of automated meters is calculated at the object level.

Attribute	Type	Obligation	Description
smartMeterInstallationDate	date	not required	Date of installation of the object's smart meter.
meters: []			
meterNumber	string (20)	required	Number of the object meter.
meterAutomated	boolean	required	An indication of whether the meter has automated accounting.
automationSystem	string (20)	not required	Automated meter system. Possible values: <ul style="list-style-type: none"> MDM (new MDM system, smart meters) EMCOS (existing EMCOS system, automated meters)
contractType	string (10)	required	Contract type of the current object. Possible meanings: <ul style="list-style-type: none"> SBTS - Household customer SKMS - Commercial customer
voltage	double (5,2)	not required	Object voltage, kW.
usedPowerPlants: []			
powerPlantObjectNumber	string (20)	not required	Object number of used power plant.
powerPlantType	string (1)	not required	Type of used power plant. Possible meanings: <ul style="list-style-type: none"> A – Waste fuel B – Biomass H – Hydroelectric K – Other S – Solar T – TEC V – Wind P – Storage device

Attribute	Type	Obligation	Description
			<ul style="list-style-type: none"> I – Fossil D – Biogas R – Hybrid generation
generatingObjectType	string	not required	Generating object type. Possible meanings: <ul style="list-style-type: none"> G – GV (Generating consumer) N – NGV (Distant generating consumer)
generatingPower	double (10,3)	not required	The power generated by assigned power plant.
objectPowers: []			
powerType	string (3)	not required	Object power type. Possible meanings: <ul style="list-style-type: none"> LOG - Permissible power consumption LGG - Permissible power generation
power	double (10,3)	not required	Object power.
powerValidFrom	date	not required	Object power valid from.
powerValidTo	date	not required	Object power valid to.
objectStates: []			
stateType	String	not required	Object state type. Possible meanings: <ul style="list-style-type: none"> ETB - Supply state VBS - Consumption state
state	string	not required	Power supply state of the object. Possible meanings: <ul style="list-style-type: none"> T – Supply P - Disconnected on request A - Disconnected under sanction

Attribute	Type	Obligation	Description
			<ul style="list-style-type: none"> R - Limited by sanction Power consumption state of the object. Possible meanings: <ul style="list-style-type: none"> N – Temporarily inactive V – Consuming A - Alleged
stateValidFrom	date	not required	Object state valid from.
stateValidTo	date	not required	Object state valid to.

7.1.1.3 Error Response structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.2 Access right controller

7.2.1 POST /gateway/independent-aggregator/access-right/list

URL	POST /gateway/independent-aggregator/access-right/list
Description	The method to obtain information and a list of granted rights.
Parameter	URL parameters:

	<ul style="list-style-type: none"> • first - index (starting from 0) of accessRightId that must be presented first in the return list. Optional. The default value is 0. • count - number of accesRightId in the return list. Optional. The default value is 30. • sort - optional. The default value is accessRightId • sortOrder - possible values ASD, DSC. Optional. The default value is ASD. <p>The data of the JSON form request are presented in the HTTP request body (BODY) (Query JSON structure, below).</p>		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request	<pre> { "accessRightId": "integer", "personCode": "string", "objectNumber": "string", "objectAddressSearch": "string", "powerPlantObjectType": "string", "accessRightValidFrom": "dateTime", "accessRightValidTo": "dateTime", "generatingObjectType": "string", "contractType": "string", "powerPlantType": "string" } </pre>		
HTTP response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No Content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.

	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>[{ "accessRightId": "integer", "accessRightValidFrom": "dateTime", "accessRightValidTo": "dateTime", "daysLeft": "number", "objectNumber": "string", "generatingObjectType": "string", "objectAddress": "string", "powerPlantObjectType": "string", "usedPowerPlants": [{ "powerPlantObjectNumber": "string", "powerPlantType": "string", "generatingPower": "double" }], "automationLevel": "string", "contractType": "string", "personName": "string", "personSurname": "string", "personCode": "string", "accessRightPhoneNo": "string", "accessRightEmailAddress": "string", "accessRightNote": "string" }]</pre>		

JSON error response	<pre> { "errorMessages": [{ "code": "integer", "text": "string" }] } </pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	Only valid, irrevocable access rights granted must be included in the list.	-	-	-
	2.	The date from cannot be later than the date to but can be equal.	1002	Date from cannot be later than date to.	accessRightValidFrom
	3.	The value of the count parameter must be less or equal to 10000.	1007	The value of the count parameter must be less or equal to [10000] .	count

7.2.1.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
accessRightId	integer	not required	Access right number (ID).
personCode	string (20)	not required	Person / company code.
objectNumber	string (20)	not required	Object number.

Attribute	Type	Obligation	Description
objectAddressSearch	string (4000)	not required	Object address search.
powerPlantObjectType	string (1)	not required	<p>The object's power plant type. Possible meanings:</p> <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar • T – TEC • V – Wind • P – Storage device • I – Fossil • D – Biogas • R – Hybrid generation
accessRightValidFrom	datetime	not required	Access right valid date from.
accessRightValidTo	datetime	not required	Access right valid date to.
generatingObjectType	string (1)	not required	<p>Generating consumer type. Possible meanings:</p> <ul style="list-style-type: none"> • G – GV (Generating consumer) • N – NGV (Distant generating consumer)
contractType	string (10)	not required	<p>Contract type. Possible meanings:</p> <ul style="list-style-type: none"> • SBTS - Household contract • SKMS - Commercial contract
powerPlantType	string (1)	not required	<p>Type of the used power plant. Possible meanings:</p> <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar • T – TEC • V – Wind

Attribute	Type	Obligation	Description
			<ul style="list-style-type: none"> • P – Storage device • I – Fossil • D – Biogas • R – Hybrid generation

7.2.1.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
accessRightId	integer	required	Access right number (ID).
accessRightValidFrom	datetime	required	Access right valid date from.
accessRightValidTo	datetime	required	Access right valid date to.
daysLeft	number	required	Number of days, how long the access right is still valid.
objectNumber	string (20)	required	Object number.
generatingObjectType	string (1)	not required	Generating consumer type. Possible meanings: <ul style="list-style-type: none"> • G – GV (Generating consumer) • N – NGV (Distant generating consumer)
objectAddress	string (4000)	required	Object address.
powerPlantObjectType	string (1)	not required	The object's power plant type. Possible meanings: <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar

Attribute	Type	Obligation	Description
			<ul style="list-style-type: none"> • T – TEC • V – Wind • P – Storage device • I – Fossil • D – Biogas • R – Hybrid generation
usedPowerPlants: []			
powerPlantObjectNumber	string (20)	not required	Object number of used power plant.
powerPlantType	string (1)	not required	<p>Type of used power plant. Possible meanings:</p> <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar • T – TEC • V – Wind • P – Storage device • I – Fossil • D – Biogas • R – Hybrid generation
generatingPower	double (10,3)	not required	The power generated by assigned power plant.
automationLevel	string (1)	required	<p>Automation level. Possible meanings:</p> <ul style="list-style-type: none"> • FULL – fully automated • PARTIAL – partially automated • NONE – no automation
contractType	string (10)	required	<p>Contract type. Possible meanings:</p> <ul style="list-style-type: none"> • SBTS - Household contract • SKMS - Commercial contract

Attribute	Type	Obligation	Description
personName	string (200)	required	Person / company name.
personSurname	string (50)	not required	Person surname.
personCode	string (20)	required	Person / company code. If the subject is individual, that person code must be encrypted: [*****] [person code's 3 last symbols].
accessRightPhoneNo	string (12)	not required	Access right phone number.
accessRightEmailAddress	string (100)	not required	Access right phone email address.
accessRightNote	string (4000)	not required	Notes.

7.2.1.3 Error Response structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.2.2 POST /gateway/independent-aggregator/access-right

URL	POST /gateway/independent-aggregator/access-right
Description	The aggregator can grant rights by himself to access clients' historical data if has client agreement.

	<p>Using this API method, the aggregator grants itself the right to access the historical data of the client objects on behalf of the customer. Once the rights have been granted, the aggregator can download the customer's historical data for a certain period of time and, on that basis, offer the customer a contract.</p>		
Parameter	<p>URL parameters:</p> <p>The data of the JSON form request are presented in the HTTP request body (BODY) (Query JSON structure, below).</p>		
Header	<p>After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.</p>		
JSON request	<pre>{ "consentSign": "boolean", "personName": "string", "personSurname": "string", "personCode": "string", "personBirthDate": "date", "accessRightInformation": [{ "objectNumber": "string", "accessRightValidTo": "date", "accessRightPhoneNo": "string", "accessRightEmailAddress": "string", "accessRightNote": "string" }] }</pre>		
HTTP Response code	HTTP status code	Reason	Description
	201	Created	Request completed successfully.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.

	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.		
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.		
JSON response	<pre>[{ "accessRightId": "integer" }]</pre>				
JSON error response	<pre>{ "errorMessages": [{ "code": "integer", "text": "string" }] }</pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	The meaning of the [objectNumber] cannot be repeated.	7	The object: [objectNumber (if there is more than one object, objects must be separated by the semicolon)] is repeating.	objectNumber
	2.	Must be specified valid object.	8	The object: [objectNumber (if there is more than one object, objects must be separated by the semicolon)] is not valid.	objectNumber
	3.	The types of existing contracts for the objects must be the same.	3001	Access right assign is not possible. Different contract types of objects.	objectNumber

4.	The attribute [accessRightValidTo] cannot be equal to the past date.	3003	Access right expire date cannot be equal to the past date.	accessRightValidTo
5.	If the object of the existing contract type is SBTS , then the maximum access right can be granted for one year, calculated from the current inclusive.	3004	If the contract type is SBTS, the maximum access right can be granted for one year.	accessRightValidTo
6.	The format of the attribute [accessRightPhoneNo] must be: +370XXXXXXXX, X- an integer (0 must be included).	3005	Phone no. incorrect format.	accessRightPhoneNo
7.	The format of the attribute [accessRightEmailAddress] must be [text]@[text].[domain] , letters in the text must be Latin. Can be at most 64 characters up to @ symbol and cannot begin/end with a dot or special character.	3006	Email address incorrect format.	accessRightEmailAddress
8.	All objects specified in the request must belong to the owner specified in the request, the owner's contract must be valid and signed.	3007	The object: [objectNumber (if there is more than one object, objects must be separated by the semicolon)] does not belong to the specified owner / object does not have a valid contract.	personCode, personSurname, personName, personBirthDate, objectNumber
9.	The attributes [personSurname] and [personCode] or [personBirthDate] are mandatory if the object's existing contract type is SBTS.	3008	Person surname and personal code or date of birth are required if the contract type is SBTS.	personSurname, personCode, personBirthDate
10.	The attribute [personCode] is required if the object's existing contract type is SKMS.	3009	The company code must be provided if the contract type is SKMS.	personCode
11.	If the attribute [consentSign] = False , then the creation must be disabled.	3010	It is necessary to confirm that the data provided is correct and the consent of	consentSign

				the owner of the object has been obtained.	
	12.	If the object of the existing contract type is SKMS , then the access right can be granted without restriction to the future.	-	-	accessRightValidTo

7.2.2.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
consentSign	boolean	required	Consent sign. I confirm that the consent of the specified person / company and / or legal basis to receive and process personal / company data has been obtained (person's name, surname / company name, person / company code, address, contact details, facility and electricity consumption data).
personName	string (200)	required	Person / company name.
personSurname	string (50)	not required	Person surname.
personCode	string (20)	not required	Person / company code.
personBirthDate	date	not required	Person birth date.
accessRightInformation: []			
objectNumber	string (20)	required	Object number.

Attribute	Type	Obligation	Description
accessRightValidTo	date	required	Access right valid date To.
accessRightPhoneNo	string (12)	not required	Access right phone number.
accessRightEmailAddress	string (100)	not required	Access right phone email address.
accessRightNote	string (4000)	not required	Notes.

7.2.2.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
accessRightId	integer	required	Access right number (ID).

7.2.2.3 Error Response structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.2.3 POST /gateway/independent-aggregator/access-right/{accessRightId}/cancel

URL	POST /gateway/independent-aggregator/access-right/{accessRightId}/cancel		
Description	The aggregator can remove on rights which was granted by himself.		
Parameter	URL parameters: <ul style="list-style-type: none"> accessRightId - access right number (ID). Required. 		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request			
HTTP Response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No Content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response			
JSON error response	<pre>{ "errorMessages": [{ "code": "integer", "text": "string" }] }</pre>		

	<pre>] } </pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	It must be checked that the access right according to the provided accessRightId exists, is valid at the moment and is not revoked.	3011	The access right was not found in the system / it is not valid / is revoked / the right does not belong to the user initiating the action.	accessRightId
	2.	Upon successful revocation, a revocation sign must be affixed.	-	-	-

7.2.3.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description

7.2.3.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description

7.2.3.3 Error Response structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3 Order controller

7.3.1 POST /gateway/independent-aggregator/order/list

URL	POST /gateway/independent-aggregator/order/list
Description	Method will return list of the orders.
Parameter	URL parameters: <ul style="list-style-type: none">• first - the index of the report line, which must be the first in the return list (starting from 0). Optional. The default value is 0.• count - the number of order's rows in the return list. Optional. The default value is 30. If no count value is given, the default value count will be 30.• sort – ASC, DSC sorting:<ul style="list-style-type: none">• By default, the orders list must be sorted by the orderId.
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.
JSON request	<pre>{ "orderId": "integer", "orderTypes": ["string"], "submittedDateFrom": "dateTime", "submittedDateTo": "dateTime",</pre>

	<pre> "dateFrom": "date", "dateTo": "date", "latestStatuses": ["string"], "orderParametersSearch": "string" } </pre>		
HTTP Response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No Content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON Response	<pre> [{ "orderId": "integer", "orderType": "string", "submittedDate": "datetime", "dateFrom": "date", "dateTo": "date", "orderParameters": "string", "latestStatus": "string", "statusDate": "datetime", "expireDate": "datetime" }] </pre>		

JSON error response	<pre> { "errorMessages": [{ "code": "integer", "text": "string" }] } </pre>				
Rule	No.	Rule description	Error code	Error message	Attributes
	1.	If an attribute has defined possible values, the value index can be specified by specifying the value of the attribute in the request. Indices of all possible values start from 0.	-	-	All attributes with specified values.
	2.	The date from cannot be later than the date to but can be equal.	1002	Date from cannot be later than date to.	dateFrom, dateTo, submittedDateFrom, submittedDateTo
	3.	Submitted date cannot be later than the current date but can be equal.	1010	Submitted date cannot be later than the current date.	SubmittedDateFrom, SubmittedDateTo

7.3.1.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
orderId	integer	not required	The report ordering primary surrogate key.
orderTypes	string	not required	The short name of the order type. Possible meanings:

			<ul style="list-style-type: none"> • data-hr-15min-obj-lvl-acr - automated quantities at the object level according to the rights granted; • data-sum-obj-lvl-acr – report of total quantities according to the granted rights; • report-obj-acr – object report according to the granted rights.
submittedDateFrom	datetime	not required	Order's submission date from.
submittedDateTo	datetime	not required	Order's submission date to.
dateFrom	date	not required	The beginning of the reporting period: <ul style="list-style-type: none"> • The format: YYYY-MM-DD.
dateTo	date	not required	The end of the reporting period: <ul style="list-style-type: none"> • The format: YYYY-MM-DD.
latestStatuses	[string]	not required	The status of the order. Possible meanings: <ul style="list-style-type: none"> • IV – Completed; • V – In progress; • P – Submitted; • K – Error. Multi choice available.
orderParametersSearch	string	not required	The order parameters.

7.3.1.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
orderId	integer	required	The report ordering primary surrogate key.
orderType	string (100)	required	The short name of the order type. Possible meanings: <ul style="list-style-type: none"> • data-hr-15min-obj-lvl-acr - automated quantities at the object level according to the rights granted; • data-sum-obj-lvl-acr – report of total quantities according to the granted rights; • report-obj-acr – object report according to the granted rights.
submittedDate	Datetime	required	The date of the order submission.
dateFrom	Date	required	The beginning of the reporting period: <ul style="list-style-type: none"> • The format: YYYY-MM-DD.
dateTo	Date	required	The end of the reporting period: <ul style="list-style-type: none"> • The format: YYYY-MM-DD.
orderParameters	string (4000)	required	The search parameters by which the data in the ordered order was filtered.
latestStatus	string (20)	required	The current status of the order.
statusDate	dateTime	required	The latest status date.
expireDate	dateTime	required	Date of validity of the order. <ul style="list-style-type: none"> • The ordered report with status = Completed by default, is available only for 24 hours.

7.3.1.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.2 POST /gateway/independent-aggregator/order/data-hr-15min-obj-lvl-acr

URL	POST /gateway/independent-aggregator/order/data-hr-15min-obj-lvl-acr		
Description	The method is designed for ordering data for automated quantities at the object level according to the rights granted.		
Parameter	<p>URL parameters:</p> <p>The JSON data is contained in the HTTP request (BODY) (see <i>JSON structure, below</i>).</p>		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request	<pre>{ "dateFrom": "date", "dateTo": "date", "consumptionCategories": ["string", "string"], "objectNumbers": ["string", "string"], "interval": "string" }</pre>		
HTTP Response code	HTTP status code	Reason	Description
	201	Created	Request completed successfully.

	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.		
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.		
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.		
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.		
JSON response	<pre>{ "orderId": "integer" }</pre>				
JSON error response	<pre>{ "errorMessages": [{ "code": "integer", "text": "string" }] }</pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	If an attribute has defined possible values, the value index can be specified by specifying the value of the attribute in the request. Indices of all possible values start from 0.	-	-	All attributes with specified values.
	2.	The date from cannot be later than the date to but can be equal.	1002	Date from cannot be later than date to.	dateFrom, dateTo
	3.	The date from and / or date to cannot be later than the current date but can be equal.	1008	Date from and / or date to cannot be later than the current date.	dateFrom, dateTo

	4.	Object meter must be automated.	2007	The submitted object number: [objectNumber (if there is more than one object, objects must be separated by the semicolon)] , was not found or the meter of object is not automated.	objectNumbers
	5.	Data cannot be older than 36 months old.	2012	Date from cannot be older than 36 months old.	dateFrom
	6.	Report can be ordered maximum for 12 months.	2013	The report can only be ordered for 12 months or less.	dateFrom, dateTo
	7.	A maximum of 500 objects can be submitted in a report order.	2021	A maximum of 500 objects can be submitted in a report order.	objectNumbers
	8.	The object must have a valid access right.	2020	Object [objectNumber (if there is more than one object, objects must be separated by the semicolon)] does not have an access right or access right is expired.	objectNumbers
	9.	If objectNumbers [null], then the report can be ordered for a maximum of 1 month period.	2023	The report without specifying the objects can only be ordered for 1 month or less.	objectNumbers, dateFrom, dateTo

7.3.2.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
dateFrom	date	required	The beginning of the reporting period: <ul style="list-style-type: none"> The format: YYYY-MM-DD.
dateTo	date	required	The end of the reporting period: <ul style="list-style-type: none"> The format: YYYY-MM-DD.

consumptionCategory	[string (20)]	required	The consumption category. Possible meanings: <ul style="list-style-type: none"> • P+ (active P+ electricity); • P- (active P- electricity); • Q+ (reactive Q+ electricity); • Q- (reactive Q+ electricity).
objectNumbers	[string]	required	Object numbers.
interval	string	required	Consumption interval. Possible meanings: <ul style="list-style-type: none"> • HOUR • QUARTER

7.3.2.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
orderId	integer	required	The report ordering primary surrogate key.

7.3.2.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.1 GET /gateway/independent-aggregator/order/{orderId}/data-hr-15min-obj-lvl-acr

URL	GET /gateway/independent-aggregator/order/{orderId}/data-hr-15min-obj-lvl-acr?first={integer}&count={integer}		
Description	The method for receive the order report "Automated quantities at the object level according to the granted rights".		
Parameter	URL parameters: <ul style="list-style-type: none"> • orderId – order identification number. • first - the index of the object, which must be the first in the return list (starting from 0). Optional. The default value is 0. • count - the number of objects in the return list. Optional. The default value is 10000. If no count value is given, the default value count will be 10000. 		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request			
HTTP Response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>{ "personCode": "string", "personName": "string", "personSurname": "string", "objectNumber": "string", "consumptionCategories": [</pre>		

```

{
  "consumptionCategory": "string",
  "consumptions": [
    {
      "consumptionTime": "datetime with timeZone",
      "amount": "integer",
      "valueType": "string"
    }
  ]
}

```

JSON error response

```

{
  "errorMessages": [
    {
      "code": "integer",
      "text": "string"
    }
  ]
}

```

Rules

No.	Rule description	Error code	Error message	Attributes
1.	The order status must be Completed.	2010	Invalid report order status.	orderId
2.	According to the submitted order number: [orderId] , the order does not exist.	2016	Report order doesn't exist in the system.	orderId
3.	Invalid method selected or parameter specified incorrectly. According to the submitted order number: [orderId] report type is: [orderType] .	2017	Invalid method selected for report data or incorrect parameter.	orderId, orderType
4.	No data found based on the search parameters submitted in the POST method.	2018	There is no data for the selected search parameters, the response is empty.	orderId

	5.	The number of objects in the return list must be less than or equal to 10000.	2022	The number of objects in the return list must be less than or equal to [10000] .	count
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7.3.1.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description

7.3.1.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
personCode	string (20)	required	Person / company code.
personName	dtring (200)	required	Person / company name.
personSurname	string (50)	required	Person surname.
objectNumber	string (20)	required	Object number.
consumptionCategories: []			
consumptionCategory	string (2)	required	Consumption category. Possible meanings: <ul style="list-style-type: none"> • P+ (active P+ electricity); • P- (active P- electricity); • Q+ (reactive Q+ electricity); • Q- (reactive Q+ electricity).

consumptions: []			
consumptionTime	datetime with timeZone	required	Consumption time.
amount	number	required	Consumption amount in kWh/kVArh.
valueType	string (3)	required	Consumption value type. Possible meanings: <ul style="list-style-type: none"> • EST – estimated; • VAL – validated.

7.3.1.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.2 POST /gateway/independent-aggregator/order/data-sum-obj-lvl-acr

URL	POST /gateway/independent-aggregator/order/data-sum-obj-lvl-acr
Description	The method is for order a report of total quantities according to the granted rights.
Parameter	<p>URL parameters:</p> <p>The JSON data is contained in the HTTP request (BODY) (<i>see JSON structure, below</i>).</p>
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.

JSON request	<pre>{ "dateFrom": "date", "dateTo": "date", "objectNumbers": ["string"] }</pre>		
HTTP Response code	HTTP status code	Reason	Description
	201	Created	Request completed successfully.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>{ "orderId": "integer" }</pre>		
JSON error response	<pre>{ "errorMessages": [{ "code": "integer", "text": "string" }] }</pre>		

Rules	No.	Rule description	Error code	Error message	Attributes
	1.	The date from cannot be later than the date to but can be equal.	1002	Date from cannot be later than date to.	dateFrom, dateTo
	2.	The date from and / or date to cannot be later than the current date but can be equal.	1008	Date from and / or date to cannot be later than the current date.	dateFrom, dateTo
	3.	Data cannot be older than 36 months old.	2012	Date from cannot be older than 36 months old.	dateFrom
	4.	The object must have a valid access right.	2020	Object [objectNumber (if there is more than one object, objects must be separated by the semicolon)] does not have an access right or access right is expired.	objectNumbers
	5.	A maximum of 500 objects can be submitted in a report order.	2021	A maximum of 500 objects can be submitted in a report order.	objectNumbers
	6.	dateFrom - must be the first day of the month; dateTo - must be the last day of the month, unless dateTo coincides with the current month, then must be currentDate.	2009	Date from must be the first day of the month. Date to must be the last day of the month unless date to coincides with the current day.	dateFrom, dateTo

7.3.2.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
dateFrom	date	required	The beginning of the reporting period: <ul style="list-style-type: none"> The format: YYYY-MM-DD.

			<ul style="list-style-type: none"> The reporting period start date is the first day of the month.
dateTo	date	required	The end of the reporting period: <ul style="list-style-type: none"> The format: YYYY-MM-DD. The reporting period end date is the last day of the month.
objectNumbers	[string]	required	Object numbers.

7.3.2.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
orderId	integer	required	The report ordering primary surrogate key.

7.3.2.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.3 GET /gateway/independent-aggregator/order/{orderId}/data-sum-obj-lvl-acr

URL	GET /gateway/independent-aggregator/order/{orderId}/data-sum-obj-lvl-acr?first={integer}&count={integer}		
Description	The method for receive the order report "Aggregate quantities according to the granted rights".		
Parameter	<p>URL parameters:</p> <ul style="list-style-type: none"> • orderId – order identification number. • first - the index of the object, which must be the first in the return list (starting from 0). Optional. The default value is 0. • count - the number of objects in the return list. Optional. The default value is 10000. If no count value is given, the default value count will be 10000. 		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request			
HTTP Response code	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>[{ "personCode": "string", "personName": "string",</pre>		

```
"personSurname": "string"
"objectNumber": "string",
"products": [
  {
    "productCode": "string",
    "productName": "string",
    "productType": "string",
    "unit": "string",
    "consumptionCategories": [
      {
        "category": "string",
        "consumptions": [
          {
            "billingPeriod": "date",
            "consumptionAmount": "number",
            "productConsumptionType": "string"
          }
        ]
      }
    ]
  }
]
```

**JSON error
response**

```
{
  "errorMessages":
  [
    {
      "code": "integer",
      "text": "string"
    }
  ]
}
```

Rules	No.	Rule description	Error code	Error message	Attributes
	1.	The order status must be Completed.	2010	Invalid report order status.	orderId
	2.	According to the submitted order number: [orderId] , the order does not exist.	2016	Report order doesn't exist in the system.	orderId
	3.	Invalid method selected or parameter specified incorrectly. According to the submitted order number: [orderId] report type is: [orderType] .	2017	Invalid method selected for report data or incorrect parameter.	orderId, orderType
	4.	No data found based on the search parameters submitted in the POST method.	2018	There is no data for the selected search parameters, the response is empty.	orderId
	5.	The number of objects in the return list must be less than or equal to 10000.	2022	The number of objects in the return list must be less than or equal to [10000] .	count

7.3.3.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description

7.3.3.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
personCode	string (20)	required	Person / company code.
personName	string (20)	required	Person / company name.
personSurname	string (50)	not required	Person surname.
objectNumber	string	required	Object number.
products: []			
productCode	string (20)	not required	Product code.
productName	string (4000)	not required	Product name.
productType	string (5)	not required	Product type.
unit	string (255)	not required	The unit of the product.
consumptionCategories: []			
category	string (2)	required	Consumption category. Possible meanings: <ul style="list-style-type: none">• P+ (active P+ electricity);• P- (active P- electricity).
consumptions: []			
billingPeriod	dateTime	required	Month in which electricity consumption is recorded.

consumptionAmount	number	required	The amount of the consumption.
productConsumptionType	string (20)	not required	Type of the product consumption. Possible meanings: <ul style="list-style-type: none"> • AMS - Subscription fee; • FGS - Contractual fixed power consumption parameters; • GGS - Generated power; • LGS - Permissible power; • REPS - Contractual reactive electricity parameters; • SPA - According to the act; • SPR - According to readings; • STA - According to rules; • TSPTS - Contractual technological cost parameters; • VAP - VIAP accounting parameters; • SPP - According to parameters.

7.3.3.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.4 POST /gateway/independent-aggregator/order/report-obj-acr

URL	POST /gateway/independent-aggregator/order/report-obj-acr
Description	The method is for order a report of objects according to the granted rights.

Parameter	URL parameters:		
	The JSON data is contained in the HTTP request (BODY) (<i>see JSON structure, below</i>).		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request	<pre>{ "objectNumbers": ["string"] }</pre>		
HTTP Response code	HTTP status code	Reason	Description
	201	Created	Request completed successfully.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>{ "orderId": "integer" }</pre>		
JSON error response	<pre>{ "errorMessages": [{ "code": "integer",</pre>		

	<pre> "text": "string" }] } </pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	The object must have a valid access right.	2020	Object [objectNumbers (if there is more than one object, objects must be separated by the semicolon)] does not have an access right or access right is expired.	objectNumbers
	2.	A maximum of 500 objects can be submitted in a report order.	2021	A maximum of 500 objects can be submitted in a report order.	objectNumbers
	3.	Data for selected report can be ordered if report is not locked.	2031	Data is not currently available for the selected report.	

7.3.4.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description
objectNumbers	[string]	required	Object numbers.

7.3.4.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
orderId	integer	required	The report ordering primary surrogate key.

7.3.4.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.5 GET /gateway/independent-aggregator/order/{orderId}/report-obj-acr

URL	GET /gateway/independent-aggregator/order/{orderId}/report-obj-acr		
Description	The method for used to the order report "Report of objects by granted rights".		
Parameter	URL parameters: <ul style="list-style-type: none"> • orderId – order identification number. • first - the index of the object, which must be the first in the return list (starting from 0). Optional. The default value is 0. • count - the number of objects in the return list. Optional. The default value is 10000. If no count value is given, the default value count will be 10000. 		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request			
HTTP Response code	HTTP status code	Reason	Description

	200	OK	Request completed successfully
	204	No content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON response	<pre>[{ "personCode": "string", "personName": "string", "personSurname": "string", "objectNumber": "string", "objectAddress": "string", "contractType": "string", "permissiblePowerConsumption": "integer", "permissiblePowerGeneration": "integer", "installedGeneratingPower": "integer", "powerPlantObject": { "powerPlantValidFrom": "date", "powerPlantValidTo": "date", "powerPlantObjectType": "string" }, "metersAmount": "integer", "autoMetersAmount": "integer", "smartMeterInstallationDate": "date", "supplyState": "string", "supplyStateFrom": "date", "supplyStateTo": "date", "consumptionState": "string", "consumptionStateFrom": "date", "consumptionStateTo": "date", "usedPowerPlants": [{</pre>		

	<pre> "powerPlantObjectNumber": "string", "powerPlantType": "string", "powerPlantValidFrom": "date", "powerPlantValidTo": "date", "generatingPower": "number" }], "voltage": "integer", "consumptionAverage": "double", "consumptionAverageCalculationDate": "datetime", "consumptionAverageCalculationMonthsCount": "integer" }] </pre>				
JSON error response	<pre> { "errorMessages": [{ "code": "integer", "text": "string" }] } </pre>				
Rules	No.	Rule description	Error code	Rule message	Attributes
	1.	The order status must be Completed.	2010	Invalid report order status.	orderId
	2.	According to the submitted order number: [orderId] , the order does not exist.	2016	Report order doesn't exist in the system.	orderId
	3.	Invalid method selected or parameter specified incorrectly. According to the submitted order number: [orderId] report type is: [orderType] .	2017	Invalid method selected for report data or incorrect parameter.	orderId, orderType
	4.	No data found based on the search parameters submitted in the POST method.	2018	There is no data for the selected search parameters, the response is empty.	orderId

	5.	The number of objects in the return list must be less than or equal to 10000.	2022	The number of objects in the return list must be less than or equal to [10000] .	count
--	----	---	------	---	-------

7.3.5.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description

7.3.5.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
personCode	string	required	Person / company code.
personName	string	required	Person / company name.
personSurname	string	required	Person surname.
objectNumber	string	required	Object number.
objectAddress	string	required	Full address of the object.
contractType	string	required	Contract type. Possible meanings: <ul style="list-style-type: none"> SBTS - Household contract

			<ul style="list-style-type: none"> SKMS - Commercial contract
permissiblePowerConsumption	double (10,3)	not required	Permissible power consumption in the object, kW.
permissiblePowerGeneration	double (10,3)	not required	Permissible power generation in the object, kW. The value of the permissible power generation is filled in according to the generating powers of the object's power plants.
installedGeneratingPower	double	not required	Installed generating power in the object, kW.
powerPlantObject: {}			
powerPlantValidFrom	date	not required	The object's power plant valid from date.
powerPlantValidTo	date	not required	The object's power plant valid to date.
powerPlantObjectType	string (1)	not required	<p>The object's power plant type. Possible meanings:</p> <ul style="list-style-type: none"> A – Waste fuel B – Biomass H – Hydroelectric K – Other S – Solar T – TEC V – Wind P – Storage device I – Fossil D – Biogas R – Hybrid generation
metersAmount	integer	not required	Meters' amounts are counted at the level of the object.
autoMetersAmount	integer	not required	Total number of remotely readable or smart metering devices installed at the object.

smartMeterInstallationDate	date	not required	Date of installation of the object's smart meter.
supplyState	string	not required	Power supply state of the object. Possible meanings: <ul style="list-style-type: none"> • T – Supply • P – Disconnected on request • A – Disconnected under sanction • R – Limited by sanction
supplyStateFrom	date	not required	Object state valid from.
supplyStateTo	date	not required	Object state valid to.
consumptionState	string	not required	Object power consumption status code. Possible values: <ul style="list-style-type: none"> • N - Temporarily not used • V – Consuming • A – Alleged
consumptionStateFrom	date	not required	The date from which consumption is valid.
consumptionStateTo	date	not required	The date of expiration of Client's consumption status.
usedPowerPlants: []			
powerPlantObjectNumber	string	not required	Power plant object number.
powerPlantType	string	not required	Type of the power plant. Possible meanings: <ul style="list-style-type: none"> • A – Waste fuel • B – Biomass • H – Hydroelectric • K – Other • S – Solar • T – TEC • V – Wind • P – Storage device • I – Fossil

			<ul style="list-style-type: none"> • D – Biogas • R – Hybrid generation
generatingObjectType	string	not required	Generating consumer type. Possible meanings: <ul style="list-style-type: none"> • G – GV (Generating consumer) • N – NGV (Distant generating consumer)
powerPlantValidFrom	date	not required	Generating consumer type valid from.
powerPlantValidTo	date	not required	Generating consumer type valid to.
generatingPower	double (10,3)	not required	The power generated by assigned power plant.
voltage	double (5,2)	not required	Object voltage, kW.
consumptionAverage	double (15,2)	not required	Consumption average.
consumptionAverageCalculationDate	dateTime	not required	Date of consumption average calculation.
consumptionAverageCalculationCount	integer	not required	Months count of consumption average calculation.

7.3.5.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.

7.3.6 GET /gateway/independent-aggregator/order/{orderId}/count

URL	GET /gateway/independent-aggregator/order/{orderId}/count		
Description	Method which will return count (number), how many items independent aggregator will get in ordered report (reports could have more than 1 item, so it is List). It should be used when independent aggregator needs to split data in few portions. This response should be used in reports' GET methods request, where independent aggregator can provide method parameters information.		
Parameters	URL parameters: <ul style="list-style-type: none"> orderId – order identification number. Required. 		
Header	After decrypting the independent aggregator authentication key, the independent aggregator ID is used to select the data.		
JSON request	GET request does not have the BODY part.		
Response	HTTP status code	Reason	Description
	200	OK	Request completed successfully.
	204	No content	No data found according to the given parameters.
	400	Bad Request	Request error. The HTTP response body provides a list of errors in JSON format.
	401	Unauthorized	An attempt was made to connect to a non-public method that requires authentication, but no user credentials were provided.
	403	Forbidden	According to the access control policy, the current user does not have access to perform the requested action.
	404	Not Found	Either there is no API method associated with the request URL path, or the request contains one or more parameters that did not return the data.
JSON Response	<pre>{ "count": "integer" }</pre>		
JSON error response	<pre>{ "errorMessages": [{</pre>		

	<pre> "code": "integer", "text": "string" }] } </pre>				
Rules	No.	Rule description	Error code	Error message	Attributes
	1.	Counts report list items and return SUM of all report lines.	-	-	-
	2.	The order status must be Completed .	2010	Invalid report order status.	orderId
	3.	Report order doesn't exist in the system.	2016	According to the submitted order number: [orderId] , the order does not exist.	orderId
	4.	Invalid method selected for report data or incorrect parameter.	2017	Invalid method selected or parameter specified incorrectly. According to the submitted order number: [orderId] report type is: [orderType] .	orderId, orderType
	5.	No data found based on the search parameters submitted in the POST method.	2018	There is no data for the selected search parameters, the response is empty.	orderId

7.3.6.1 JSON Request structure

The table below describes the structure of the JSON request:

Attribute	Type	Obligation	Description

7.3.6.2 JSON Response structure

The table below describes the structure of the JSON response:

Attribute	Type	Obligation	Description
count	integer	required	Number of rows, objects, accounts, depending on the selected report.

7.3.6.3 Error Response Structure

The following table describes the JSON structure in the event of a response error:

Attribute	Type	Obligation	Description
code	integer	required	Error code.
text	string (4000)	required	Error message.