USER GUIDE
BACK OFFICE BALANCING API

Version V1.0

Effective date: DD MM 2020

Version	Date	Amendments
0.1	07/08/2018	First version
0.2	16/11/2018	Addition of startup-related settings
0.3	01/04/2019	Upgrade
0.4	21/11/2019	Addition of monthly balance and detailed monthly balance Modification of Trace RTE as PM effective
0.5	21/01/2020	Addition of control rules Addition of return codes for activation resources and activated offers Correction of URLs Modification of maximum values of items retrieved by calls
1.0	15/05/2020	Modification of examples for application of "case sensitive" fields Activated_offers resource: addition of description of 'technical_id' field and correction to name 'effective_prices_chronical' Description of control rules Modification of return codes Activated_offers/id resource: correction of URL

CONTENTS

1 Introduction

1.1 Object of the document

This document is intended for users of private back-office data published by RTE via the Back Office Balancing API (or BOB API) on the Adjustment Mechanism. It is intended for all Balancing Service Providers.

The Back Office Balancing tool allows the establishment of the valuation components necessary for the billing of each Balancing Service Provider for all offers participating in the Adjustment Mechanism: remuneration of activated offers, valuation of balancing imbalances, penalties in case of infringement.

This document is an integral part of the IS Rules and:

- describes the Back Office Balancing API and the resources made available by RTE (access, parameters, control rules, reply structure);
- presents the technical procedures implemented for using the Back Office Balancing API.

1.2 Reference documents

Short reference	Document title	Complete reference
[R1]	Terms of use for RTE's APIs	http://clients.rte-france.com/lang/fr/visiteurs/accueil/portail.jsp
[R2]	User's manual PKI software certificate	http://clients.rte-france.com/lang/fr/visiteurs/accueil/portail.jsp

In the event of inconsistencies between this Implementation Guide and the reference documents cited above, the indications of the present guide shall prevail.

1.3 Definitions

The terms used in this User Guide (the first letters of which are always capitalised) are defined below. Otherwise, their definitions are given in the General Conditions of Use **[R1]**:

API	Application Programming Interface
Authentication	Protection Mode for ensuring that the identity of the Sender or Receiver has been verified by RTE, and that they are authorised to access the IT system and use the Applications.
EIC	"Energy Identification Code" – a system for uniquely identifying stakeholders and objects on the energy market (e.g.: entities, zones, measuring points, electrical interconnection links), defined by the ENTSO-E.
Sender	Party which sends a Message
Message	Set of computer data used to transmit information, structured in accordance with a particular order that is specified in the User Guide. A Message can be sent by the User or by RTE.

Method	A method is the way in which the client interacts with the API's resource. It is an http verb (for example: GET for reading)
Party or Parties	Within the framework of the User Guide, these terms refer to either RTE or the User individually, or to both RTE and the User collectively.
Receiver	Party which receives the Sender's Message.
Resource	A resource is the data in relation to which the client application interacts.
URL	Uniform Resource Locator: character string based on a specific format used to locate a resource on a network and specify what protocol should be used on this resource.
User(s)	Legal entity which has agreed to RTE's General Terms and Conditions for Using APIs and which has been granted access to RTE's IT system for the purposes of using the APIs it has made available.

1.4 Changes in technical specifications

Each of the technical specifications in this Implementation Guide may be reviewed at the initiative of RTE. Unless alternative time limits are given, Users must be notified of these revisions at least six (6) months before they become operational.

2 Access to RTE IS

The general conditions of access to the RTE IS are defined by the rules of access to the information system and the use of RTE applications.

(http://clients.rte-france.com/lang/fr/visiteurs/accueil/portail.jsp).

2.1 Back Office Balancing API

Requests for access to generic applications (e.g. BOB) are made using a form.

(https://clients.rte-france.com/secure/fr/visiteurs/accueil/portail_adhesion.jsp).

2.2 Requirements

To access the BOB application, Balancing Service Provider must:

- hold a valid PKI certificate recognized by the BOB application;

- hold a valid AA or PR participation agreement.

One PKI certificate will be required for testing and another for

generation.

2.3 Getting a PKI certificate

To be able to use the BOB API, Balancing Service Providers must place a request with their CRM (Customer Relationship Manager).

Once their request has been processed, Balancing Service Providers are issued with an electronic key (PKI certificate) for connecting to the RTE IS. This key must be implemented in accordance with the procedures described in reference document [R2] 1.2.

2.4 Technical support

In the event of difficulties accessing or using an API, users can contact the telephone support services provided by RTE in accordance with the technical conditions detailed in the General Terms and Conditions of Use.

3 Functional description of the Back Office Balancing API

The API provides access to various resources:

- Activations
- Active offers
- Programmes
- Balancing Imbalance settlement price
- Monthly statement for billing - **Not currently available**
- Detailed monthly statement for billing - **Not currently available**

These four resources are available in read-only mode, via a **GET**-type operation.

3.1 "Activations" resource

This resource provides access to data defined in the EDA grid.

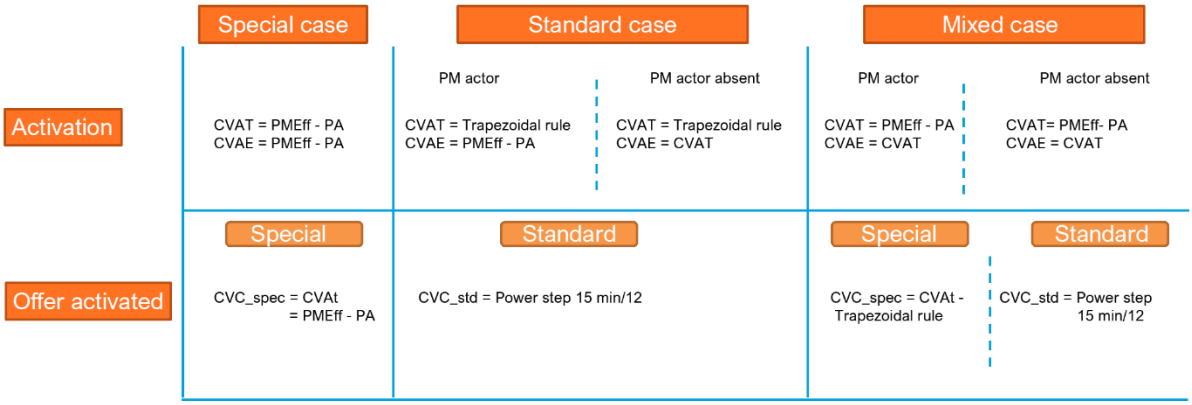
No later than 15 minutes after the end of each difference settlement period, RTE shall make available to the Balancing Service Provider, for each of the EDAs in its Adjustment Perimeter, and at intervals of 5 minutes:

- List of activated offers;
- Expected Theoretical Volume, downward and upward;
- Expected Actual Volume, downward and upward;
- For thermal EDAs, if applicable, start-up information:
  - Start Index
  - Start and end time
  - Start power
  - Start cost
- The list of activated offer types (standard or specific) at intervals of 5 minutes

No later than the end of month M+1 and subject to the availability of data necessary for the calculation of the volumes realized, RTE makes available to the Balancing Service Provider, for each of the EDAs in its Adjustment Perimeter and at intervals of 5 minutes:

- Volume realized, downward and upward;
- Volume of Balancing Imbalances, positive and negative;
- Valuation of Balancing Imbalances, positive and negative;
- Failure Volume;
- Penalties for failure.

Depending on the type of offers activated in the 5-minute interval, Theoretical Expected Volumes and Effective Expected Volumes values are calculated as follows:



The "activations" resource is technically described in 5.1 of this document.

3.2 "Activated offers" resource

This resource provides access to data defined in the activated offer grid.

No later than 15 minutes after the end of each difference settlement period, RTE shall make available to the Balancing Service Provider, for each of its activated offers and at intervals of 5 minutes:

- Commercial volume, accompanied by a reason;
- The remuneration price;
- The remuneration amount;
- For specific offers relating to thermal generation assets, in the case of startups, the actual price and associated remuneration.

The "activated_offers" resource is technically described in 5.2 of this document.

3.3 "Activated offers" resource

For an activated offer identified as a parameter, this resource provides access to detailed data.

This resource is used with the "Activations" resource. The "Activations" resource returns the list of Activated Offers related to Activation, as well as the URL for detailed information.

No later than 15 minutes after the end of each difference settlement period, RTE shall make available to the Balancing Service Provider, for each of its activated offers and at intervals of 5 minutes:

- Commercial volume, accompanied by a reason;
- The remuneration price;
- The remuneration amount;
- For specific offers relating to thermal generation assets, in the case of startups, the actual price and associated remuneration.

The "activated_offer" resource is technically described in 5.3 of this document.

3.4 "Programs" resource

This resource provides access to the program data that was used to establish back-office volumes and valuations. The data are in the EDA or EDP grid according to the constitution of the EDA.

No later than 15 minutes after the end of each imbalance settlement period, RTE shall make available to the Balancing Service Provider, for each EDA/EDP in its Adjustment Perimeter, in the form of chronicles:

- The Call Program;
- The running schedule transmitted by the Balancing Service Provider;
- the Effective Program: The running schedule outlined by RTE for the Specific and Standard offers.

The Schedules resource is technically described in section 5.4 of this document.

3.5 "Balancing Imbalances settlement price" resource

This resource makes available to Balancing Service Providers the balancing imbalance settlement prices that are used in valuing balancing imbalances.

This data is calculated for a day D at the end of day D+3, and cannot be changed after that date.

The " imbalance settlement price" resource is technically described in section **Erreur ! Source du renvoi introuvable.** of this document.

3.6 "Monthly statement for billing" resource - Not currently available

This resource allows the Balancing Service Providers at the end of month M+1 to be provided with the valuation components used for purposes of billing for month M, both for the amounts due by the Balancing Service Providers to RTE and for the amounts due by RTE to the Balancing Service Provider.

The data are aggregated by the billing month and the adjustment month specified in the parameter.

The "monthly_balance_report" resource is technically described in section 5.6 of this document.

3.7 "Detailed monthly balance for billing" resource - Not currently available

This resource allows the Balancing Service Providers at the end of month M+1 to be provided with the valuation components used for purposes of billing for month M, both for the amounts due by the Balancing Service Provider to RTE and for the amounts due by RTE to the Balancing Service Provider.

The data are broken down by day, for one or all of the EDAs within the perimeter of the Balancing Service Provider, for the billing month and the specified adjustment month.

The "detailed_monthly_balance_report" resource is technically described in section 5.7 of this document.

4 Access to the Back Office Balancing API

As is the case for all of the APIs provided by RTE, accessing and using them are subject to the provisions of the General Terms and Conditions of Use **[R1]**.

The method used to authorise access to the API is certificate-based authentication. A certificate can be obtained from RTE, as described in the FAQ – Obtaining a certificate.

It should be remembered that the company's EIC (French company ID number) is required for accessing these APIs.
In order to get an EIC code, complete the form available at the following URL:

https://clients.rte-france.com/lang/fr/clients_producteurs/services_clients/bureau_form.jsp

4.1 Data confidentiality

The information contained in messages may not be used for any purposes other than those described in the General Terms and Conditions **[R1]**.

4.2 Termination

A subscription to an API is automatically terminated when the user deletes their account on RTE's digital portal.

Should the User wish to cease using an API without terminating their subscription, they simply need to stop sending calls to it.

5 Resources exposed by the Back Office Balancing API

5.1 ressource/activations

5.1.1 GET /activations

5.1.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/pki/bob/v1/activations/{eic_code}?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING
Sandbox URL (*)	https://digital.iservices.rte-france.com/pki/bob/v1/activations/sandbox/data

(*) The sandbox allows you to test the accessibility of the API and view the data format returned from the DATA portal. The call to the resource is parameter-sensitive and returns different results accordingly.

5.1.1.2 Inputs

The retrieval of information about activations with history via the BOB API is processed via a single request (**GET-activations method**) to the web service:

- The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.

The **GET-activations** method must be called with the following **parameters**:

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
start_date	Start date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
end_date	End date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
date_type	The resource can be queried by two types of date: - The adjustment date - The update date	Query	String	**UPDATED** =update date **BALANCING** = adjustment date	***YES***
eda_code	EDA code	Query	String	e.g.: EDACODE1	***NO***
retrieve_history	If equal to NO, returns the latest version of the data If equal to YES, returns the replay history Default is NO	Query	String	YES, NO Default = NO	***NO***

range	This field enables the service user to manage the page layout. It designates the interval of elements retrieved per call. The maximum number of elements retrieved in a single call is 100.	Query	String	In format: X-Y **X** is the index of the first element that the consumer of the service wishes to recover. **Y** is the index of the last element that the consumer of the service wishes to recover.	***NO***

Comments
The call to the method returns structured information detailed in the reply section 5.1.1.3.

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/activations/{eic_code}?start_date=2019-12-29T23:00:00Z&end_date=2019-12-
30T23:00:00Z&date_type=BALANCING
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

With all parameters:

```
URL:
GET [HOST]/activations/{eic_code}?start_date=2019-12-29T23:00:00Z&end_date=2019-12-
30T23:00:00Z&eda_code=EDA_CODE&date_type=BALANCING&retrieve_history=YES&range=1-100
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

5.1.1.3 Reply (output)

5.1.1.3.1. HTTP headers (reply):

NAME	DESCRIPTION	DATA TYPE	VALUES / FORMAT
Accept_Range	Maximum number of elements that can be returned by the resource	String	Example: 100

Content_Range	Range of elements returned by the resource	String	X-Y/Z where X represents the number of the first point returned, Y the last, and Z the total of existing points Example: 1-100/1080

5.1.1.3.2. Reply

Depending on the parameters sent in the request, the BOB API returns NULL, activation, or a list of activations.

Reply structure table

Back office balancing "Activations"	**Table of values {JSON} structured as follows:**					
	Field	**Cardinality**	**Type**		**Description**	**Values / Format**
[1..n]	activation_id	[1..1]	Alphanumerical		Functional identifier of the activation. It is unique and built as follows: [EDA-CODE]_[YYYY-MM-DD]	Example: EDACODE1_2019-01-24
	start_date	[1..1]	Date		The activation start date: [D 00:00:00	YYYY-MM-DDTHH:mm:ssZ in UTC time
	end_date	[1..1]	Date		The activation end date D+1 00:00:00 [	YYYY-MM-DDTHH:mm:ssZ in UTC time
	eda_code	[1..1]	Alphanumerical		EDA code	EDACODE1
	revision_number	[1..1]	Integer		The activation version	[1...N]
	updated_date	[1..1]	Date		The update date of the Activation object	YYYY-MM-DDTHH:mm:ssZ in UTC time
	vat_up_ chronical		**Table of objects**		**Chronicle of expected theoretical upward volumes**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	with a precision of 3 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	vat_down_ chronical		**Table of objects**		**Chronicle of expected theoretical downward volumes**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places

					and ". " (point) as a separator.
	revision_ number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
vae_up_ chronical		**Table of objects**		**Chronicle of expected effective upward volumes**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
	revision_ number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
vae_down_ chronical		**Table of objects**		**Chronicle of expected effective downward volumes**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
	revision_ number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
vr_up_ chronical		**Table of objects**		**Chronicle of realized upward volumes**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
	revision_ number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
vr_down_ chronical		**Table of objects**		**Chronicle of realized downward volumes**	**[{},{},...]**

	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	eap_chronical		**Table of objects**		**Chronicle of positive Balancing Imbalances**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	ean_chronical		**Table of objects**		**Chronicle of negative Balancing Imbalances**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	valo_eap_ chronical		**Table of objects**		**Chronicle of positive Balancing Imbalance valuations**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in €	With a precision of 2 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	valo_ean_ chronical		**Table of objects**		**Chronicle of negative balancing imbalance valuations**	**[{},{},...]**

	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in €	With a precision of 2 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	vdef_chronical		**Table of objects**		**Chronicle of defective volumes**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in MWh	With a precision of 3 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	penalty_ chronical		**Table of objects**		**Chronicles of penalties**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in €	with a precision of 2 decimal places and ". " (point) as a separator.
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	Startingup_ chronical		**Table of objects**		**Startup chronicle**	**[{},{},...]**
	[0..n]	start_date	[1..1]	Date	Startup start date	YYYY-MM-DDTHH:mm:ssZ in UTC time
		end_date	[1..1]	Date	Startup end date	YYYY-MM-DDTHH:mm:ssZ in UTC time
		start_offer_ index	[1..1]	Integer	Index of the N^{th} EDA start in the day.	[1..N]
		energy	[1..1]	Integer	start energy in MWh	with a precision of 3 decimal places and ". " (point) as a separator.
		startingup_ fee	[1..1]	numeric	startup cost in €	with a precision of 2 decimal places and ". " (point) as a separator.

		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	Date of data update	YYYY-MM-DDTHH:mm:ssZ in UTC time
	activated_offer_chronical		Table of objects		**List of activated offer types**	**[{},{},...]**
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	type of activated offers in 5-minute interval 0 for special 1 for standard RR 2 for standard RR and special	[0..2]
		revision_ number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]		Date of data update	The update date
	list_activated_offers		Table of objects		**List of activated Offers**	**[{},{},...]**
	[0..n]	technical_id	[1..1]	Integer	Activated offer technical identifier related to activation	exp: 1235
		href	[1..1]	alphanumeric	indicates the path for accessing the activated offer using its unique identifier	link: exp:[HOST]/activated_offers/eic_code/[technical_id]

Table 1: details of activation attributes

Example of the reply format for an activation called by an actor identified by its EIC code provided as an attachment.

5.1.1.4 Control rules

Control rules for different input parameters:

Input parameters affected by the control rule	Description	Number
eic_code	The actor's EIC code (eic_code) must be included in the parameters of the request (PATH), allowing the caller to be identified and the requested data to be sent to it.	**RG_E_01**
start_date **end_date** **date_type**	Mandatory parameters	**RG_E_02**
start_date **end_date**	The date format must be ISO 8601: YYYY-MM-DDThh:mm:ssZ	**RG_E_03**
start_date **end_date** **date_type**	If date_type = BALANCING, the period between the **start_date** and **end_date** parameters must be 24 hours	**RG_E_04**
start_date **end_date** **date_type**	If date_type = UPDATED, the period between the **start_date** and **end_date** parameters must not exceed 7 days	**RG_E_05**
start_date **end_date**	The **start_date** parameter must be lower than the **end_date** parameter	**RG_E_06**
date_type	The **date_type** parameter must be included in the list: UPDATED / BALANCING	**RG_E_07**
retrieve_history	The **retrieve_history** parameter is optional. When specified, it must be included in the list: YES / NO If it is not specified, the default value is NO. For NO, the sender will receive the latest version of the published data If the value is YES, the sender will receive the history of the published data	**RG_E_08**
range	The **range** parameter must be in the form X-Y (numeric value). Example for a first call: 1-1000 The X value is the first requested element, and Y is the last element. This parameter is used to manage page layout. In the event of a partial reply, return code 206 is returned When querying the last page, code 200 is returned	**RG_E_09**

Output control rules applied:

Number	Description
RG_S_01	Results will be ordered by EDA and adjustment date.

Number	Description
RG_S_02	Results will be ordered by EDA and date of update.
RG_S_03	Chronicles are at intervals of 5 minutes
RG_S_04	Only points explicitly present in the chronicles are associated with volumes or valuations.
RG_S_05	In the chronicles, the **position** field corresponds to the position number of the 5-minute interval during the day. For example, for an adjustment on 08/04/2020, from 01:00 to 01:05 in FR time This is position 13 - This is translated into UTC time as 07/04/2020 11:00Z to 07/04/2020 23:05Z
RG_S_06	All energy values are expressed in MWh, to a precision of 3 digits after the separator
RG_S_07	All amounts are expressed in euros, to a precision of 2 digits after the separator
RG_S_08	The Activation object is created over the period [00h00, D+1 00h00[, it is an aggregate view of the EDA grid of the volumes activated on the day, regardless of the activated offers.
RG_S_09	The **activation_id** field is a functional identifier of the activation. It is unique for a one-day EDA, and is built as follows: [EDA-CODE]_[YYYY-MM-DD]
RG_S_10	On the current day, the Activation object is created as version 1. It is not versioned in the current day but rather updated, it concerns the object and all of its chronicles. The version remains at 1, with modifications indicated in the **updated_date** field.
RG_S_11	At the beginning of the current day, the Activation object is versioned. The **revision_number** attribute is incremented with each published version, and **the updated_date** is updated.
RG_S_12	For a query with the parameter **date_type** = UPDATED, all chronicles that make up the ACTIVATION object are returned, including unchanged chronicles
RG_S_13	The **activated_offer_typology_chronical** chronicle identifies the type of offers associated with each 5 min. interval. If it is a standard TERRE offer, a specific offer, or if the 2 offers are activated in the same 5 min. interval. For intervals not included in this chronicle (see **RG04**), no offers are activated.
RG_S_14	The **startingup-chronical** parameter lists the startups associated with an EDA over the day, with the following given for each startup: its index, the total energy volume concerned, the cost, the period
RG_S_15	The list of activated offers associated with an activation is returned in the table The table contains each activated offer's unique identifier and the URL to access the details of the offer via the **activated_offers/id** resource

Number	Description
RG_S_16	Beyond 100 returned elements, a new page is put in place and return code 206 is returned The resource returns elements based on the value of the "range" field The **content_range** field shows the number of objects returned, and the total number of objects corresponding to the request. The **accept_range** field indicates the maximum number of elements returned by the resource. It is positioned at 100. The page layout must be implemented to ensure results are complete. When querying the last page, code 200 is returned When querying with a **range** value greater than the **accept_range** value, code 400 is returned

5.1.1.5 Returncodes

The following table lists the return codes that can be returned when the resource is called.

Error type	Error code	Details
Functional	**BALANCING_COMMON_F01**	§6.1
Functional	**BALANCING_COMMON_F02**	§6.1
Functional	**BALANCING_COMMON_F03**	§6.1
Functional	**BALANCING_COMMON_F04**	§6.1
Functional	**BALANCING_COMMON_F05**	§6.1
Functional	**BALANCING_COMMON_F06**	§6.1
Functional	**BALANCING_COMMON_F07**	§6.1
Functional	**BALANCING_COMMON_F08**	§6.1
Functional	**BALANCING_COMMON_F09**	§6.1
Functional	**BALANCING_COMMON_F10**	§6.1
Functional	**BALANCING_COMMON_F11**	§6.1
Functional	**BALANCING_COMMON_F12**	§6.1
Functional	**BALANCING_COMMON_F13**	§6.1
Functional	**BALANCING_COMMON_F14**	§6.1
Technical	**401**	§6.2
Technical	**403**	§6.2
Technical	**404**	§6.2
Technical	**408**	§6.2
Technical	**413**	§6.2
Technical	**414**	§6.2
Technical	**429**	§6.2
Technical	**500**	§6.2
Technical	**503**	§6.2
Technical	**509**	§6.2

5.2 /activated_offers resource

5.2.1 GET /activated_offers

5.2.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/pki/bob/v1/activated_offers/{eic_code}?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING
Sandbox URL (*)	https://digital.iservices.rte-france.com/pki/bob/v1/activated_offers/sandbox/data

(*) The sandbox can be used to test the API's accessibility and view the format of returned data.

5.2.1.2 Inputs

Retrieval of activated offer data via the BOB API is done through a single request (**the GET-activated_offers method**) to the web service:

- The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
start_date	Start date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
end_date	End date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
date_type	The resource can be queried by two types of date: The adjustment date The update date	Query	String	**UPDATED** =update date **BALANCING** = adjustment date	***YES***
offer_type	Specifies the type of offer	Query	String	"STDRR" for standard RR offers SPECIFIC for specific offers	***NO***
eda_code	EDA code	Query	String	example: EDACODE1	***NO***
retrieve_history	If equal to NO, returns the latest version of the data If equal to YES, returns all versions Default is NO	Query	String	YES; NO	***NO***

range	This field enables the service user to manage the page layout. It designates the interval of elements retrieved per call. The maximum number of elements retrieved in a single call is 100.	Query	Integer	In format: X-Y **X** is the index of the first element that the consumer of the service wishes to recover. **Y** is the index of the last element that the consumer of the service wishes to recover.	***NO***

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/activated_offers/{eic_code}?start_date=2019-12-29T23:00:00Z&end_date=2019-12-29T23:00Z&date_type=balancing
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

With all parameters:

```
URL:
GET [HOST]/activated_offers/{eic_code}?start_date=2019-12-29T23:00:00Z&end_date=2019-12-29T23:00Z&eda_code=edaCode&
date_type=BALANCING&offer_type=SPECIFIC&retrieve_history=NO&range=1-50
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

5.2.1.3 Reply (output)

5.2.1.3.1. HTTP headers (reply):

NAME	DESCRIPTION	DATA TYPE	VALUES / FORMAT
Accept_Range	Maximum number of elements that can be returned by the resource	String	Example: 100
Content_Range	Range of elements returned by the resource	String	X-Y/Z where X represents the number of the first point returned, Y the last, and Z the total of existing points Example: 1-100/1080

5.2.1.3.2. Reply

Depending on the parameters sent in the request, the BOB API returns an empty table, an activated offer, or a list of activated offers.

Reply structure table

Back office balancing	Table of values {JSON} structured as follows:				
[1..n]	**Field**	**Cardinality**	**Type**	**Description**	**Values / Format**
	activated_offer_id	[1..1]	numeric	Activated offer identifier - same for all versions of the activated offer • For specific: SyGA identifier • For standard: The MRID • Prefixed by BO for other offers (RG_S_11)	
	eda_code	[1..1]	alphanumeric	EDA code	exp: EDACODE1
	start_date	[1..1]	Date	the start date of the processed offer	YYYY-MM-DDTHH:mm:ssZ in UTC time
	end_date	[1..1]	Date	the end date of the processed offer	YYYY-MM-DDTHH:mm:ssZ in UTC time
	offer_type	[1..1]	String	Type of offer	SPECIFIC; STDRR
	is_start_offer	[1..1]	boolean	If the activated offer is linked to a startup	true/false
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	offer_flow_direction	[1..1]	String	supply direction	UP, DOWN
	technical_id	[1..1]	numeric	Unique technical identifier, changes with each version of the activated offer	
	offer_reference	[1..1]	String	Reference of the offer sent by the actor	18322_1_5

vc_chronical		**Table of objects**		**Commercial volume chronicle**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
	reason	[1..1]	alphanumeric	reason	"P=C", "RSO", "MAR", "SSY"
	value	[1..1]	Integer	interval value in MWh	with a precision of 3 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
prices_chronical			**Table of objects**	**Chronicle of prices**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
	remuneration_price_value	[1..1]	Integer	This is the price of the offer or the clearing price. Expressed in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
effective_prices_chronical Price with breakdown of startup costs			**Table of objects**	**Chronicle of effective prices**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
	effective_price_value	[1..1]	Integer	For specific offers associated with a startup, this is the price of the offer including startup costs. Expressed in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
remuneration_chronical Price (no startup)*volumes		**Table of objects**		**Chronicles of remunerations**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
	value	[1..1]	Integer	interval value in €	with a precision of 2 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
remuneration_startingup_chronical		**[1..n]**	**Object**	**Start-up remuneration chronicle**	**[{},{},...]**

					Price (with startup)*volumes	
	[0..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		value	[1..1]	Integer	interval value in €	with a precision of 2 decimal places and ". " (point) as a separator.
		revision_number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time

Table 2: details of attributes of activated offer object

Example of the reply format for an activated offer called by the actor identified by its EIC code, provided as an attachment

5.2.1.4 Control rules

Control rules for different input parameters:

Input parameters affected by the control rule	Description	Number
eic_code	The actor's EIC code (eic_code) must be included in the parameters of the request (PATH), allowing the caller to be identified and the requested data to be sent to it.	**RG_E_01**
start_date **end_date** **date_type**	Mandatory parameters	**RG_E_02**
start_date **end_date**	The date format must be ISO 8601: YYYY-MM-DDThh:mm:ssZ	**RG_E_03**
start_date **end_date** **date_type**	If date_type = BALANCING, the period between the **start_date** and **end_date** parameters must be 24 hours	**RG_E_04**
start_date **end_date** **date_type**	If date_type = UPDATED, the period between the **start_date** and **end_date** parameters must not exceed 7 days	**RG_E_05**
start_date **end_date**	The **start_date** parameter must be lower than the **end_date** parameter	**RG_E_06**
date_type	The **date_type** parameter must be included in the list: UPDATED / BALANCING	**RG_E_07**
offer_type	The **offer_type** parameter must be in the list: STDRR / SPECIFIC If the **offer_type** parameter is not indicated, the resource returns all data	**RG_E_08**
retrieve_history	The **retrieve_history** parameter is optional. When specified, it must be included in the list: YES / NO	**RG_E_09**

	If it is not specified, the default value is NO. For NO, the sender will receive the latest version of the published data If the value is YES, the sender will receive the history of the published data	
range	The **range** parameter must be in the form X-Y (numeric value). Example for a first call: 1-1000 The X value is the first requested element, and Y is the last element. This parameter is used to manage page layout. In the event of a partial reply, return code 206 is returned When querying the last page, code 200 is returned	**RG_E_10**

Output control rules applied:

Number	Description
RG_S_01	Results will be ordered by EDA and adjustment date

Number	Description
RG_S_02	Results will be ordered by EDA and date of update.
RG_S_03	Chronicles are at intervals of 5 minutes, no breakpoints
RG_S_04	Only points explicitly present in the chronicles are associated with volumes or valuations.
RG_S_05	In the chronicles, the position field corresponds to the position number of the 5-minute interval during the day. For example, for an adjustment on 08/04/2020, from 01:00 to 01:05 in FR time This is position 13 - This is translated into UTC time as 07/04/2020 11:00Z to 07/04/2020 23:05Z
RG_S_06	All energy values are expressed in MWh, to a precision of 3 digits after the separator
RG_S_07	All amounts are expressed in euros, to a precision of 2 digits after the separator
RG_S_08	The activated offer is not updated when Realized is checked. Volume changes are at the activation level.
RG_S_09	The **start_date** and **end_date** associated with the activated offer correspond to the window for which the offer is posted
RG_S_10	The **technical_id** field is a unique identifier (for an offer, a day and a version)
RG_S_11	The **activated_offer_id** is the identifier of the submitted offer that has been activated: - The technical id created by SyGA for specific submitted offers - TOPASE MRID for STD offers - An identifier prefixed by BO for additional or exceptional offers
RG_S_12	The offer_reference field takes the following values: For specific offers: identifier transmitted by the Balancing Service Provider For STD offers: this field contains the "mrid" of the standard offer (identical to activated_offer_id) Specific offers created manually (not received via SyGA) are prefixed "BO"
RG_S_13	Offers created manually by RTE are offers sent by telephone or fax. To identify them, the "offer_reference" field is prefixed "BO" No RTE reference is transmitted by the actor.
RG_S_14	An activated offer is associated with a single offer: specific or standard.

	The activated offer is not a starting offer, but is associated with the starting offer. When a specific offer is activated - if a startup is detected - it is the specific offer that enables the activated offer to be created. The start-up cost and associated volumes enable the chronicles **remuneration_startingup_chronical** and **effective_prices_chronical** to be created The "**remuneration_startingup_chronical**" chronicle will contain as many points as the "**remuneration_chronical**" chronicle. It is the price including the startup cost * the volume in the 5-min interval. The flat-rate start-up cost is allocated to all activated points, weighted by the volume of energy.
RG_S_15	If the activated offer is associated with a starting offer, "**effective_prices_chronical**" takes into account the startup cost broken down over the 5-min interval. The startup cost is broken down in terms of the total volume activated during startup. **effective_price** = offer_price + (startup_cost/startup_energy)
RG_S_16	If the activated offer is associated with a startup, all chronicles are present. If **remuneration_startingup_chronical** is assigned a value, compensation_chronical is also assigned a value. If the activated offer is not associated with a startup, all chronicles are present except "**effective_price_chronical**" and "**remuneration_startingup_chronical**"
RG_S_17	Beyond 100 returned elements, a new page is put in place and return code 206 is returned The resource returns elements based on the value of the "range" field The **content_range** field shows the number of objects returned, and the total number of objects corresponding to the request. The **accept_range** field indicates the maximum number of elements returned by the resource. It is positioned at 100. The page layout must be implemented to ensure results are complete. When querying the last page, code 200 is returned When querying with a **range** value greater than the **accept_range** value, code 400 is returned

5.2.1.5 Return codes

The following table lists the return codes that can be returned when the resource is called.

Error type	Error code	Details
Functional	**BALANCING_ACTIVATED_OFFERS_01**	following table
Functional	**BALANCING_COMMON_F01**	§6.1
Functional	**BALANCING_COMMON_F02**	§6.1
Functional	**BALANCING_COMMON_F03**	§6.1
Functional	**BALANCING_COMMON_F04**	§6.1
Functional	**BALANCING_COMMON_F05**	§6.1
Functional	**BALANCING_COMMON_F06**	§6.1
Functional	**BALANCING_COMMON_F07**	§6.1
Functional	**BALANCING_COMMON_F08**	§6.1
Functional	**BALANCING_COMMON_F09**	§6.1
Functional	**BALANCING_COMMON_F10**	§6.1
Functional	**BALANCING_COMMON_F11**	§6.1
Functional	**BALANCING_COMMON_F12**	§6.1
Functional	**BALANCING_COMMON_F13**	§6.1

Functional	**BALANCING_COMMON_F14**	§6.1
Technical	**401**	§6.2
Technical	**403**	§6.2
Technical	**404**	§6.2
Technical	**408**	§6.2
Technical	**413**	§6.2
Technical	**414**	§6.2
Technical	**429**	§6.2
Technical	**500**	§6.2
Technical	**503**	§6.2
Technical	**509**	§6.2

BALANCING_ACTIVATED_OFFERS_01 (http code 400)	
Control Rule	If the 'offer_type' parameter is unknown, the service generates this error.
Message	Unknown value of the parameter: offer_type. Example: STDRR or SPECIFIC
Example of a call	GET /activated_offers/17X123456789?start_date=2019-12-03T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&offer_type=UNKNOWN

5.3 Resource /activated_offers/id

5.3.1 GET /activated_offers/id

5.3.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/pki/bob/v1/activated_offers/id/{eic_code}/{technical_id}
Sandbox URL (*)	https://digital.iservices.rte-france.com/pki/bob/v1/activated_offers/id/sandbox/data

(*) The sandbox can be used to test the API's accessibility and view the format of returned data.

5.3.1.2 Inputs

Retrieval of activated offer data via the BOB API is done through a single request (**the GET-activated_offers method**) to the web service:

- The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.
- The technical identifier of the activated offer must be included in the parameters of the request

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/activated_offers/id/{eic_code}/39930
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

5.3.1.3 Reply (output)

5.3.1.3.1. Reply

Depending on the parameters sent in the request, the BOB API returns an empty table, an activated offer, or a list of activated offers.

Reply structure table

Back office balancing		Table of values {JSON} structured as follows:			
	Field	**Cardinality**	**Type**	**Description**	**Values / Format**
[1..n]	activated_offer_id	[1..1]	alphanumeric	Activated offer identifier - same for all versions of the activated offer • For specific: SyGA identifier • For standard: The MRID • Prefixed by BO for other offers (RG_S_10)	
	eda_code	[1..1]	alphanumeric	EDA code	exp: EDACODE1
	start_date	[1..1]	Date	the start date of the processed offer	YYYY-MM-DDTHH:mm:ssZ in UTC time
	end_date	[1..1]	Date	the end date of the processed offer	YYYY-MM-DDTHH:mm:ssZ in UTC time
	offer_type	[1..1]	String	Type of offer	SPECIFIC; STDRR
	is_start_offer	[1..1]	boolean	If the activated offer is linked to a startup	true/false
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	offer_flow_direction	[1..1]	String	supply direction	UP, DOWN
	technical_id	[1..1]	numeric	Unique technical identifier, changes with each version of the activated offer	
	offer_reference	[1..1]	String	Reference of the offer sent by the actor	18322_1_5
	vc_chronical	**Table of objects**		**Commercial volume chronicle**	**[{},{},...]**
	[1..n] position	[1..1]	Integer	5-minute interval position	[1…300]
	[1..n] reason	[1..1]	alphanumeric	reason	"P=C", "RSO", "MAR", "SSY"

	value	[1..1]	Integer	interval value in MWh	with a precision of 3 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
prices_chronical			**Table of objects**	**Chronicle of prices**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	remuneration_price_value	[1..1]	Integer	This is the price of the offer or the clearing price. Expressed in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
effective_prices_chronical Price with startup cost breakdown			**Table of objects**	**Chronicle of effective prices**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	effective_price_value	[1..1]	Integer	For specific offers associated with a startup, this is the price of the offer including startup costs. Expressed in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	starting_cost_updated_time	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
remuneration_chronical Price (no startup)*volumes		**Table of objects**		**Chronicles of remunerations**	**[{},{},...]**
[1..n]	position	[1..1]	Integer	5-minute interval position	[1...300]
	value	[1..1]	Integer	interval value in €	with a precision of 2 decimal places and ". " (point) as a separator.
	revision_number	[1..1]	Integer	The data version	[1...N]
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
remuneration_startingup_chronical		**[1..n]**	**Object**	**Start-up remuneration chronicle** Price (with startup)*volumes	**[{},{},...]**
	position	[1..1]	Integer	5-minute interval position	[1...300]

		value	[1..1]	Integer	interval value in €	with a precision of 2 decimal places and ". " (point) as a separator.
		revision_number	[1..1]	Integer	The data version	[1...N]
		updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time

Table 3: details of attributes of activated offer object

Example of the reply format for an activated offer called by the actor identified by its EIC code, provided as an attachment

5.3.1.4 Control rules

Control rules for different input parameters:

Input parameters affected by the control rule	Description	Number
eic_code	The actor's EIC code (eic_code) must be included in the parameters of the request (PATH), allowing the caller to be identified and the requested data to be sent to it.	**RG_E_01**
technical_id	The actor's technical_id must be included in the parameters of the request (PATH).	**RG_E_02**

Output control rules applied:

Number	Description
RG_S_01	Results will be ordered by EDA and date of update.
RG_S_02	Chronicles are at intervals of 5 minutes, no breakpoints
RG_S_03	Only points explicitly present in the chronicles are associated with volumes or valuations.
RG_S_04	In the chronicles, the position field corresponds to the position number of the 5-minute interval during the day. For example, for an adjustment on 08/04/2020, from 01:00 to 01:05 in FR time This is position 13 - This is translated into UTC time as 07/04/2020 11:00Z to 07/04/2020 23:05Z
RG_S_05	All energy values are expressed in MWh, to a precision of 3 digits after the separator
RG_S_06	All amounts are expressed in euros, to a precision of 2 digits after the separator
RG_S_07	The activated offer is not updated when Realized is checked. Volume changes are at the activation level.
RG_S_08	The **start_date** and **end_date** associated with the activated offer correspond to the window for which the offer is posted
RG_S_09	The **technical_id** field is a unique identifier (for an offer, a day and a version)
RG_S_10	The **activated_offer_id** is the identifier of the submitted offer that has been activated:

	- The technical id created by SyGA for specific submitted offers - TOPASE MRID for STD offers - An identifier prefixed by BO for additional or exceptional offers
RG_S_11	The offer_reference field takes the following values: For specific offers: identifier transmitted by the Balancing Service Provider For STD offers: this field contains the "mrid" of the standard offer (identical to activated_offer_id) Specific offers created manually (not received via SyGA) are prefixed "BO"
RG_S_12	Offers created manually by RTE are offers sent by telephone or fax. To identify them, the "offer_reference" field is prefixed "BO" No RTE reference is transmitted by the actor.
RG_S_13	An activated offer is associated with a single offer: specific or standard. The activated offer is not a starting offer, but is associated with the starting offer. When a specific offer is activated - if a startup is detected - it is the specific offer that enables the activated offer to be created. The start-up cost and associated volumes enable the chronicles **remuneration_startingup_chronical** and **effective_prices_chronical** to be created The "**remuneration_startingup_chronical**" chronicle will contain as many points as the "**remuneration_chronical**" chronicle. It is the price including the startup cost * the volume in the 5-min interval. The flat-rate start-up cost is allocated to all activated points, weighted by the volume of energy.
RG_S_14	If the activated offer is associated with a starting offer, "**effective_prices_chronical**" takes into account the starting cost broken down over the 5-min interval. The startup cost is broken down in terms of the total volume activated during startup. **effective_price** = offer_price + (startup_cost/startup_energy)
RG_S_15	If the activated offer is associated with a startup, all chronicles are present. If **remuneration_startingup_chronical** is assigned a value, compensation_chronical is also assigned a value. If the activated offer is not associated with a startup, all chronicles are present except "**effective_price_chronical**" and "**remuneration_startingup_chronical**"

5.3.1.5 Error codes

The following table lists the error codes which may be returned when the resource is called.

Error type	Error code	Details
Functional	**BALANCING_ACTIVATED_OFFERS_ID_01**	following table
Functional	**BALANCING_ACTIVATED_OFFERS_ID_02**	following table
Functional	**BALANCING_COMMON_F05**	§6.1
Functional	**BALANCING_COMMON_F14**	§6.1
Technical	**401**	§6.2
Technical	**403**	§6.2
Technical	**404**	§6.2
Technical	**408**	§6.2
Technical	**413**	§6.2
Technical	**414**	§6.2
Technical	**429**	§6.2
Technical	**500**	§6.2
Technical	**503**	§6.2
Technical	**509**	§6.2

BALANCING_ACTIVATED_OFFERS_ID_01 (http code 400)	
Control Rule	If the "technical_id" parameter does not match the expected format, the service generates this error.
Message	technical_id in the API input does not follow the format described in the user guide. Please check compliance with the format for each field.
Example of a call	GET /activated_offers/17X123456789/XXXXX
BALANCING_ACTIVATED_OFFERS_ID_02 (http code 400)	
Control Rule	If the "technical_id" parameter does not exist, the service generates this error.
Message	technical_id {technical_id} in the API input {technical_id} doesn't exist
Example of a call	GET /activated_offers/17X123456789/000000

5.4 Resource /schedules

5.4.1 GET /schedules

5.4.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/pki/bob/v1/schedules/{eic_code}?date_type=SCHEDULE&start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&schedule_type=PA
Sandbox URL (*)	https://digital.iservices.rte-france.com/pki/bob/v1/schedules/sandbox/data

(*) The sandbox allows you to test the accessibility of the API and view the data format returned from the DATA portal. The call to the resource can be parameterized and returns different results depending on the input parameters.

5.4.1.2 Inputs

The retrieval of data in programs with history via the BOB API is done through a single request (**the GET- schedules method**) to the web service:

- The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
start_date	Start date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
end_date	End date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
date_type	Resource can be queried by two date types - adjustment/scheduling date - update date, allowing retrieval of data modified in the period start_date/end_date.	Query	String	UPDATED =update date SCHEDULE = scheduling/adjustment date	***YES***
eda_code	EDA code	Query	String	Exp: EDACODE1	***NO***
edp_code	EDP code	Query	String	Exp: EDPCODE1	***NO***
schedule_type	Type of program desired	Query	String	PM=PM actor PM_EFFECTIVE = PM plotted by RTE PA=Program Call	***YES***
retrieve_history	If equal to NO, returns the latest version of the data If equal to YES, returns all versions Default is NO	Query	String	YES, NO	***NO***
range	This field enables the service user to manage the page layout. It designates the interval of elements retrieved per call.	Query	String	In format: X-Y **X** is the index of the first element that the consumer of the service wishes to recover.	***NO***

	The maximum number of elements retrieved in a single call is 100.			**Y** is the index of the last element that the consumer of the service wishes to recover.	

(1) Input dates are expressed in UTC.

Comments

If the EDA is not an EDP, the call to this resource can be made by entering the EDA code.

If not, the call to this resource can be made by entering the EDA, EDP or both codes.

The call returns detailed structured information in the reply section 5.4.1.3

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/schedules/{eic_code}?start_date=2018-09-01T22:00:00Z&end_date=2018-09-
02T22:00:00Z&schedule_type=PA&date_type=SCHEDULE
Headers:
Host: [HOST]
Authorisation:
```

With all parameters:

```
URL:
GET [HOST]/schedules/{eic_code}?start_date=2018-09-01T12:00:00Z&end_date=2018-
0902T12:30:00Z&date_type=SCHEDULE&retrieve_history=YES&range=1-50&eda_code=edacode&
edp_code=edpcode&schedule_type=PA
HTTP/1.1
Headers:
Host: [HOST]
Authorisation:
```

5.4.1.3 Reply (output)

Depending on the parameters sent in the request, and the "**schedule_type**" parameter in particular, the API returns an empty table ([]) or a list of programs. Below is an example of the reply format for programs called by an actor identified by its EIC code.

The replies below represent a Call Program, an Actor running schedule and an effective running schedule with associated chronicles.

5.4.1.3.1. HTTP headers (reply):

NAME	DESCRIPTION	DATA TYPE	VALUES / FORMAT
Accept_Range	Maximum number of elements that can be returned by the resource	String	Example: 100
Content_Range	Range of elements returned by the resource	String	X-Y/Z where X represents the number of the first point returned, Y the last, and Z the total of existing points Example: 1-100/1080

5.4.1.3.2. Reply

Back office balancing "Call Program"	Table of values {JSON} structured as follows:				
	Field	**Cardinality**	**Type**	**Description**	**Values / Format**
[1..n]	start_date	[1..1]	Date	The program start date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	end_date	[1..1]	Date	The program end date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	revision_number	[1..1]	Integer	The data version	[1...N]
	business_type	[1..1]	String	power type	P0
	schedule_type	[1..1]	String	program type	PA or PM or PM_EFFECTIVE
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
	registered_resource	[1..1]	alphanumeric	EDP or EDA code	Example: EDPCODE1
	schedule_level	[1..1]	String	EDA or EDP	Example: EDA
	sender_eic	[1..1]	Alphanumerical	Balancing Service Provider 's EIC code	Example: 99X999A999999999
	sender_name	[1..1]	Alphanumerical	Actor code: Name of adjustment actor	Example: ACTOR1
	resolution	[1..1]	alphanumeric	no PA, PM or PM scheduling EFFECTIVE	PT5M

	POINTS			**table of objects**	**Program points chronicle**	**[{},{},...]**
	[1..n]	position	[1..1]	Integer	5-minute interval position	[1…300]
		quantity	[1..1]	Integer	interval value in MW.	with a precision of 3 decimal places and ". " (point) as a separator.

Table 3: details of program attributes

Example of a "PA" call program object:

```
[
    {
        "start_date": "2019-12-29T23:00:00Z",
        "end_date": "2019-12-30T23:00:00Z",
        "revision_number": 1,
        "business_type": "P0",
        "schedule_type": "PA",
        "updated_date": "2020-02-17T09:29:20Z",
        "registered_resource" "EDA_CODE",
        "schedule_level": "EDP",
        "sender_eic": "00X0123456789",
        "sender_name": "TOTO",
        "resolution": "PT5M",
        "points": [
            {
                "position": 1,
                "quantity": 0.000
            }
        ]
    }
]
```

Example of an effective PM object "PM_EFFECTIVE":


```
[
    {
        "start_date": "2019-12-29T23:00:00Z",
        "end_date": "2019-12-30T23:00:00Z",
        "revision_number": 1,
        "business_type": "P0",
        "schedule_type": "PM_EFFECTIVE",
        "updated_date": "2020-02-17T09:29:20Z",
        "registered_resource" "EDACODE",
        "schedule_level": "EDP",
        "sender_eic": "00X0123456789",
        "sender_name": "TOTO",
        "resolution": "PT5M",
        "points": [
            {
                "position": 1,
                "quantity": 40.000
            },
            {
                "position": 8,
                "quantity": 0.000
            }
        ]
    }
]
```


Example of an object of type running schedule "PM actor":


```
[
  {
    "start_date": "2019-01-23T23:00:00Z",
    "end_date": "2019-01-24T23:00:00Z",
    "revision_number": 1,
    "business_type": "P0",
    "schedule_type": "PM",
    "registered_resource" "EDP_CODE or EDA_CODE",
    "schedule_level": "EDP",
    "sender_eic": "17X9999999999999",
    "sender_name": "AA/RP",
    "resolution": "PT5M",
    "updated_date": "2019-03-21T15:29:15Z",
    "points": [
      {
        "position": 1,
        "quantity": 0
      },
      {
```

```
        "position": 79,
        "quantity": 89
      },
      {
        "position": 193,
        "quantity": 0
      }
    ]
  }
]
```

5.4.1.4 Control rules

Control rules for different input parameters:

Input parameters affected by the control rule	Description	Number
eic_code	The actor's EIC code (eic_code) must be included in the parameters of the request (PATH), allowing the caller to be identified and the requested data to be sent to it.	**RG_E_01**
start_date **end_date** **date_type** **schedule_type**	Mandatory parameters	**RG_E_02**
start_date **end_date**	The date format must be ISO 8601: YYYY-MM-DDThh:mm:ssZ	**RG_E_03**
start_date **end_date** **date_type**	If date_type = SCHEDULE, the period between the **start_date** and **end_date** parameters must be 24 hours	**RG_E_04**
start_date **end_date** **date_type**	If date_type = UPDATED, the period between the **start_date** and **end_date** parameters must not exceed 7 days	**RG_E_05**
start_date **end_date**	The **start_date** parameter must be lower than the **end_date** parameter	**RG_E_06**
date_type	The **date_type** parameter must be included in the list: UPDATED / SCHEDULE	**RG_E_07**
schedule_type	The **schedule_type** parameter must be in the list: PM / PM_EFFECTIVE / PA	**RG_E_08**
eda_code **edp_code**	If the eda_code and edp_code parameters are not specified, the resource returns all programs for the actor over the period. Programs are prioritized for publication in the EDP grid, where appropriate in the EDA grid.	
retrieve_history	The **retrieve_history** parameter is optional. When specified, it must be included in the list: YES / NO If it is not specified, the default value is NO. For NO, the sender will receive the latest version of the published data If the value is YES, the sender will receive the history of the published data	**RG_E_09**
range	The **range** parameter must be in the form X-Y (numeric value). Example for a first call: 1-1000 The X value is the first requested element, and Y is the last element. This parameter is used to manage page layout. In the event of a partial reply, return code 206 is returned When querying the last page, code 200 is returned	**RG_E_10**

Output control rules applied:

Number	Description
RG_S_01	Results will be ordered by EDA and adjustment date

Number	Description
RG_S_02	Results will be ordered by EDA and update date

Number	Description
RG_S_03	The returned programs will be ordered by EDA and EDP code if they exist.
RG_S_04	Positions are at breakpoint; the convention is the start point. The first value is the first point of the day. **Position** 1 (corresponding to 23:00 UTC or 22:00 UTC)must always be completed.

Number	Description
RG_S_05	There are no call programs for an EDA without EDP. The resource returns an empty table.
RG_S_06	No PAs are sent for extraction EDAs, the resource returns an empty table.
RG_S_07	If there is no adjustment, the effective PM is equal to the call program
RG_S_08	The program grid is specified in schedule_**level.** If the return value is "EDA", the program is in the EDA grid, otherwise "EDP" means it is in the EDP grid.
RG_S_09	Beyond 100 returned elements, a new page is put in place and return code 206 is returned The resource returns elements based on the value of the "range" field The **content_range** field shows the number of objects returned, and the total number of objects corresponding to the request. The **accept_range** field indicates the maximum number of elements returned by the resource. It is positioned at 100. The page layout must be implemented to ensure results are complete. When querying the last page, code 200 is returned When querying with a **range** value greater than the **accept_range** value, code 400 is returned

5.4.1.5 Return codes

The following table lists the error codes which may be returned when the resource is called.

Error type	Error code	Details
Functional	**BALANCING_SCHEDULES_01**	following table
Functional	**BALANCING_SCHEDULES_02**	following table
Functional	**BALANCING_SCHEDULES_03**	following table
Functional	**BALANCING_SCHEDULES_04**	following table
Functional	**BALANCING_COMMON_F01**	§6.1
Functional	**BALANCING_COMMON_F02**	§6.1
Functional	**BALANCING_COMMON_F03**	§6.1
Functional	**BALANCING_COMMON_F04**	§6.1
Functional	**BALANCING_COMMON_F05**	§6.1

Functional	**BALANCING_COMMON_F06**	§6.1
Functional	**BALANCING_COMMON_F08**	§6.1
Functional	**BALANCING_COMMON_F09**	§6.1
Functional	**BALANCING_COMMON_F10**	§6.1
Functional	**BALANCING_COMMON_F11**	§6.1
Functional	**BALANCING_COMMON_F12**	§6.1
Functional	**BALANCING_COMMON_F13**	§6.1
Functional	**BALANCING_COMMON_F14**	§6.1
Technical	**401**	§6.2
Technical	**403**	§6.2
Technical	**404**	§6.2
Technical	**408**	§6.2
Technical	**413**	§6.2
Technical	**414**	§6.2
Technical	**429**	§6.2
Technical	**500**	§6.2
Technical	**503**	§6.2
Technical	**509**	§6.2

BALANCING_SCHEDULES_01 (http code 400)	
Control Rule	If the parameter 'date_type' is unknown, the service generates this error.
Message	Unknown value of the parameter: date_type. Example: UPDATED or SCHEDULE
Example of a call	GET /schedules/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UNKNOWN&schedule_type=PA
BALANCING_SCHEDULES_02 (http code 400)	
Control Rule	If the parameter 'schedule_type' is unknown, the service generates this error.
Message	Unknown value of the parameter: schedule_type. Example: PA or PM or PM_EFFECTIVE
Example of a call	GET /schedules/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UPDATED&schedule_type=UNKNOWN
BALANCING_SCHEDULES_03 (http code 400)	
Control Rule	If the parameter 'edp_code' is unknown, the service generates this error.
Message	Programming entity [{0}] in the API input does not exist
Example of a call	GET /schedules/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UPDATED&schedule_type=PA&edp_code=EDPCODEUNKNOWN
BALANCING_SCHEDULES_04 (http code 400)	
Control Rule	If the 'edp_code' is not associated with 'eda_code' or is not within the actor's perimeter, the service generates this error
Message	Programming entity [{0}] is not in the perimeter of the actor or associated balancing entity
Example of a call	GET /schedules/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UPDATED&schedule_type=PA&edp_code=EDPCODE1& eda_code=EDACODE99

5.5 Resource /prea

5.5.1 GET /prea

5.5.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/pki/bob/v1/prea/{eic_code}?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z
Sandbox URL (*)	https://digital.iservices.rte-france.com/pki/bob/v1/prea/sandbox/data

(*) The sandbox allows you to test the accessibility of the API and view the data format returned from the DATA portal. The call to the resource can be parameterized and returns different results depending on the input parameters.

5.5.1.2 Inputs

The retrieval of the "Balancing Imbalance Settlement Price" data via the BOB API is done through a single request (**GET - prea method**) to the web service

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
start_date	Start date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***
end_date	End date	Query	date	YYYY-MM-DDTHH:mm:ssZ in UTC time	***YES***

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/prea/{eic_code}?start_date=2018-09-01T22:00:00Z&end_date=2018-09-02T22:00:00Z
Headers:
Host: [HOST]
Authorisation:
```

5.5.1.3 Reply (output)

Depending on the parameters sent in the request, the BOB API returns an empty table, or price chronicles.

Reply structure table

Back office balancing "PREa"	Table of values {JSON} structured as follows:				
start_date	[1..1]	Date		is the start date	YYYY-MM-DDTHH:mm:ssZ in UTC time
end_date	[1..1]	Date		is the end date	YYYY-MM-DDTHH:mm:ssZ in UTC time
preap_chronical		**Table of objects**		**Positive balancing imbalance settlement price chronicle**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	position of 30 minute interval	[1…50]
	value	[1..1]	Integer	interval value in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time
prean_chronical		**Table of objects**		**Negative balancing imbalance settlement price chronicle**	**[{},{},...]**
[0..n]	position	[1..1]	Integer	position of 30 minute interval	[1…50]
	value	[1..1]	Integer	interval value in €/MWh	with a precision of 2 decimal places and ". " (point) as a separator.
	updated_date	[1..1]	Date	The update date	YYYY-MM-DDTHH:mm:ssZ in UTC time

Example of "PREA" balancing imbalance settlement price object:


```
{
        "start_date": "2019-12-07T23:00:00Z",
        "end_date": "2019-12-08T23:00:00Z",
    "preap_chronical": [
        {
            "position": 48,
            "value": 27.53,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 47,
```

```
            "value": 29.04,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 46,
            "value": 24.02,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 45,
            "value": 18.45,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 44,
            "value": 29.34,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 43,
            "value": 51.24,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 42,
            "value": 50.58,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 41,
            "value": 59.05,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 40,
            "value": 56.04,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 39,
            "value": 52.42,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 38,
            "value": 33.79,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 37,
            "value": 43.11
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 36,
            "value": 39.95,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 35,
            "value": 44.17,
            "updated_date": "2020-02-17T09:29:20Z"
```

```
        },
        {
            "position": 34,
            "value": 36.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 33,
            "value": 43.17,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 32,
            "value": 31.39,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 31,
            "value": 31.65,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 30,
            "value": 31.98,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 29,
            "value": 31.31,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 28,
            "value": 36.51,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 27,
            "value": 37.47,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 26
            "value": 39.25,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 25,
            "value": 38.4,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 24,
            "value": 41.02,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 23,
            "value": 41.68,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
```

```
            "position": 22,
            "value": 107.49,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 21,
            "value": 80.27,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 20,
            "value": 106.57,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 19,
            "value": 97.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 18,
            "value": 59.72,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 17,
            "value": 59.53,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 16,
            "value": 33.94,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 15,
            "value": 35.03,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 14,
            "value": 31.93,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 13,
            "value": 35.09,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 12,
            "value": 27.25,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 11,
            "value": 30.36,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 10,
            "value": 47.99,
```

```
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 9,
            "value": 51.18,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 8,
            "value": 26.02,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 7,
            "value": 25.45,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 6,
            "value": 26.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 5,
            "value": 47.64,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 4,
            "value": 58.01,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 3,
            "value": 50.47,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 2,
            "value": 65.54,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 1,
            "value": 55.05,
            "updated_date": "2020-02-17T09:29:20Z"
        }
    ],
    "prean_chronical": [
        {
            "position": 48,
            "value": 27.53,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 47,
            "value": 29.04,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 46,
            "value": 24.02,
```

```
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 45,
            "value": 18.45,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 44,
            "value": 29.34,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 43,
            "value": 51.24,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 42,
            "value": 50.58,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 41,
            "value": 59.05,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 40,
            "value": 56.04,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 39,
            "value": 52.42,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 38,
            "value": 33.79,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 37,
            "value": 43.11
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 36,
            "value": 39.95,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 35,
            "value": 44.17,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 34,
            "value": 36.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
```

```
        {
            "position": 33,
            "value": 43.17,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 32,
            "value": 31.39,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 31,
            "value": 31.65,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 30,
            "value": 31.98,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 29,
            "value": 31.31,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 28,
            "value": 36.51,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 27,
            "value": 37.47,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 26
            "value": 39.25,
            "updated date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 25,
            "value": 38.4,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 24,
            "value": 41.02,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 23,
            "value": 41.68,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 22,
            "value": 107.49,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 21,
```

```
            "value": 80.27,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 20,
            "value": 106.57,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 19,
            "value": 97.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 18,
            "value": 59.72,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 17,
            "value": 59.53,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 16,
            "value": 33.94,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 15,
            "value": 35.03,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 14,
            "value": 31.93,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 13,
            "value": 35.09,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 12,
            "value": 27.25,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 11,
            "value": 30.36,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 10,
            "value": 47.99,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 9,
            "value": 51.18,
            "updated_date": "2020-02-17T09:29:20Z"
```

```
        },
        {
            "position": 8,
            "value": 26.02,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 7,
            "value": 25.45,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 6,
            "value": 26.91,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 5,
            "value": 47.64,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 4,
            "value": 58.01,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 3,
            "value": 50.47,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 2,
            "value": 65.54,
            "updated_date": "2020-02-17T09:29:20Z"
        },
        {
            "position": 1,
            "value": 60.57,
            "updated_date": "2020-02-17T09:29:20Z"
        }
    ]
}
```

5.5.1.4 Control rules

Control rules for different input parameters:

Input parameters affected by the control rule	Description	Number
eic_code	The actor's EIC code (eic_code) must be included in the parameters of the request (PATH), allowing the caller to be identified and the requested data to be sent to it.	**RG_E_01**
start_date **end_date**	Mandatory parameters	**RG_E_02**
start_date **end_date**	The date format must be ISO 8601: YYYY-MM-DDThh:mm:ssZ	**RG_E_03**
start_date **end_date**	The period between the **start_date** and **end_date** parameters must be less than 24 hours	**RG_E_04**
start_date **end_date**	The **start_date** parameter must be lower than the **end_date** parameter	**RG_E_05**

Output control rules applied:

Number	Description
RG_S_01	Chronicles cover intervals of 30 minutes
RG_S_02	The data is calculated at the beginning of day D+4 and is no longer updated after this point.

5.5.1.5 Return codes

The following table lists the error codes which may be returned when the resource is called.

Error type	Error code	Details
Functional	**BALANCING_COMMON_F01**	§6.1
Functional	**BALANCING_COMMON_F03**	§6.1
Functional	**BALANCING_COMMON_F04**	§6.1
Functional	**BALANCING_COMMON_F06**	§6.1
Functional	**BALANCING_COMMON_F09**	§6.1
Functional	**BALANCING_COMMON_F14**	§6.1
Technical	**401**	§6.2
Technical	**403**	§6.2

Technical	**404**	§6.2
Technical	**408**	§6.2
Technical	**413**	§6.2
Technical	**414**	§6.2
Technical	**429**	§6.2
Technical	**500**	§6.2
Technical	**503**	§6.2
Technical	**509**	§6.2

5.6 Resource /Monthly_balance_report - Not currently available

5.6.1 GET /monthly_balance_report

5.6.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	[HOST]/monthly_balance_report/{eic_code}
Sandbox URL(*)	[HOST]/monthly_balance_report/sandbox

(*) The sandbox allows you to test the accessibility of the API and view the data format returned from the DATA portal. The call to the resource can be parameterized and returns different results depending on the input parameters.

5.6.1.2 Inputs

The retrieval of "monthly balance" data via the BOB API is done by means of a single request (**the GET method - monthly_balance_report**) to the web service.

The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.

The **GET- monthly_balance_report** method should be called with the following **parameters**:

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
billing_month	Billing month	Query	date	YYYYY-MM-DD	***YES***
balancing_month	Adjustment month	Query	date	YYYYY-MM-DD	***YES***

Call examples:

All parameters are mandatory:

URL:

GET [HOST]/monthly_balance_report/{eic_code}? billing_month=2018-09-01& balancing_month=2018-09-02

Headers:

Host: [HOST]

Authorisation:

5.6.1.3 Reply (output)

Depending on the parameters sent in the query, the BOB API returns an empty table, a monthly balance sheet, or an error.

5.6.1.3.1. HTTP headers (reply):

NAME	DESCRIPTION	DATA TYPE	VALUES / FORMAT
Accept_Range	Maximum number of elements that can be returned by the resource	String	Example: 100
Content_Range	Range of elements returned by the resource	String	X-Y/Z where X represents the number of the first point returned, Y the last, and Z the total of existing points Example: 1-100/1080

5.6.1.3.2. Reply

Reply structure table

Back office balancing	Table of values {JSON} structured as follows:				
	Field	**Cardinality**	**Type**	**Description**	**Values / Format**
[1..1]	billing_month	[1..1]	Date	Billing month	YYYYY-MM-DD
	balancing_month	[1..1]	Date	Adjustment month	YYYYY-MM-DD
	upward_commercial_volume	[1..1]	numeric	Upward activated business volumes (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
	downward_commercial_volume	[1..1]	numeric	Downward activated business volumes (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
	upward_cv_remuneration	[1..1]	numeric	Reimbursement of commercial volumes for upward activated offers (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.

	downward_cv_remuneration	[1..1]	numeric	Reimbursement of commercial volumes for downward activated offers (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.
	startingup_remuneration	[1..1]	numeric	Starting remuneration (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
	eap_volume	[1..1]	numeric	Volume of positive balancing imbalance (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
	ean_volume	[1..1]	numeric	Volume of negative balancing imbalance (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
	eap_value	[1..1]	numeric	Valuation of positive balancing imbalance (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
	ean_value	[1..1]	numeric	Valuation of negative balancing imbalance (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
	def_volume	[1..1]	numeric	Failure volume (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
	penalties	[1..1]	numeric	Penalties (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.
	bill_list		**Table of objects**	**list of invoices**	**[{},{},...]**

	[0..n]	bill_number	[1..1]	alphanumeric	Invoice or RTE asset number	E.g.: FAC2
		bill_amount	[1..1]	Integer	Amount charged by RTE to AA (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
	order_list		**Table of objects**	**list of commands**		**[{},{},...]**
	[0..n]	order_number	[1..1]	alphanumeric	RTE purchase order number	E.g.: CA123
		order_amount	[1..1]	Integer	Amounts billed by AA to RTE (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
	penalty_bill_list		**Table of objects**	**list of penalty invoices**		**[{},{},...]**
	[0..n]	penalty_bill_number	0..1	alphanumeric	Invoice or RTE asset number for penalties	E.g.: FAC2
		penalty_bill_amount	0..1	Integer	Amounts charged for penalties per RTE to AA (euros)	with a precision of 2 decimal places and ". " (point) as a separator.

Below is an example of the reply format for a monthly reporting called by an actor identified by its EIC code.

```
[
]
```

5.6.1.7 Control rules

Control rules for different input parameters:

Number	Description
RG01	Billing month is mandatory. Only one month is indicated in the call to the resource
RG02	The adjustment month is mandatory. Only one month is indicated in the call to the resource

RG03	The billing month entered must be after the adjustment month

Output control rules applied:

Number	Description
RG01	Output data is aggregated by billing month and adjustment month

5.6.1.12 Error code - Error codes will be implemented in future versions of the guide

The following table lists the error codes which may be returned when the resource is called.

5.7 Resource / Detailed_monthly_balance_report - Not currently available

5.7.1 GET /detailed_monthly_balance_report

5.7.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	[HOST]/detailed_monthly_balance_report
Sandbox URL (*)	[HOST]/detailed_monthly_balance_report/sandbox

(*) The sandbox allows you to test the accessibility of the API and view the data format returned from the DATA portal. The call to the resource can be parameterized and returns different results depending on the input parameters.

5.7.1.2 Inputs

The retrieval of the "detailed monthly balance for billing" data via the BOB API is done via a single request (**GET method - detailed_monthly_balance_report**) to the web service.

The actor's EIC code must be included in the parameters of the request, allowing the caller to whom the requested data is to be sent to be identified.

The **GET- detailed_monthly_balance_report** method must be called with the following **parameters**:

NAME	DESCRIPTION	PARAMETER TYPE	DATA TYPE	VALUES / FORMAT	MANDATORY
billing_month	Billing month	Query	date	YYYYY-MM-DD	***YES***
balancing_month	Adjustment month	Query	date	YYYYY-MM-DD	***YES***

EDA_CODE	EDA code	Query	alphanumeric	EDA1	***NO***
balancing_day	Adjustment day	Query	date	YYYYY-MM-DD	***NO***

Call examples:

With the obligatory parameters:

```
URL:
GET [HOST]/detailed_monthly_balance_report/{eic_code}? billing_month=2018-09-01&
balancing_month=2018-09-02
Headers:
Host: [HOST]
Authorisation:
```

With all parameters:

```
URL:
GET [HOST]/detailed_monthly_balance_report/{eic_code}? billing_month=2018-09-01&
balancing_month=2018-09-01&eda_code=eda_Code&balancing_day=2018-09-02
Headers:
Host: [HOST]
Authorisation:
```

5.7.1.3 Reply (output)

Depending on the parameters sent in the request, the BOB API returns an empty table, daily balance or monthly balance.

5.7.1.3.1. HTTP headers (reply):

NAME	DESCRIPTION	DATA TYPE	VALUES / FORMAT
Accept_Range	Maximum number of elements that can be returned by the resource	String	Example: 100
Content_Range	Range of elements returned by the resource	String	X-Y/Z where X represents the number of the first point returned, Y the last, and Z the total of existing points Example: 1-100/1080

5.7.1.3.2. Reply

Reply structure table

Back office balancing			Table of values {JSON} structured as follows:			
	Field		Cardinality	Type	Description	Values / Format
	billing_month		[1..1]	Date	Billing month	YYYYY-MM-DD
	balancing_month		[1..1]	Date	Adjustment month	YYYYY-MM-DD
	eda_day_chronicals		Table of values [1..n]			
[1..n]	[1..n]	eda_code	[1..1]	alphanumeric	EDA code	e.g.: EDACODE1
		balancing_day	[1..1]	Date	Adjustment day	YYYYY-MM-DD
		upward_commercial_volume	[1..1]	Integer	Upward activated business volumes (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
		downward_commercial_volume	[1..1]	Integer	Downward activated business volumes (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
		upward_cv_remuneration	[1..1]	Integer	Reimbursement of commercial volumes for upward activated offers (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.

		downward_cv_remuneration	[1..1]	Integer	Reimbursement of commercial volumes for downward activated offers (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.
		startingup_remuneration	[1..1]	Integer	Starting remuneration (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
		eap_volume	[1..1]	Integer	Volume of positive balancing imbalances (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
		ean_volume	[1..1]	Integer	Volume of negative balancing imbalances (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
		eap_value	[1..1]	Integer	Valuation of positive balancing imbalances (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
		ean_value	[1..1]	Integer	Valuation of negative balancing imbalances (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
		def_volume	[1..1]	Integer	Failure volume (MWh)	with a precision of 3 decimal places and ". " (point) as a separator.
		penalties	[1..1]	Integer	Penalties (EUR)	with a precision of 2 decimal places and ". " (point) as a separator.
		bill_list	**Table of objects**		**list of invoices**	**[{},{},...]**
		bill_numbers	[1..1]	alphanumeric	Invoice or RTE asset numbers	E.g.: FAC2
		bill_amount	[1..1]	Integer	Amount charged by RTE to AA (euros)	with a precision of 2 decimal places and ". " (point) as a separator.
		order_list	**Table of objects**		**list of commands**	**[{},{},...]**
		order_numbers	[1..1]	alphanumeric	RTE purchase order numbers	E.g.: CA123

			order_amount	[1..1]	Integer	Amounts billed by AA to RTE (euros) (orders)	with a precision of 2 decimal places and ". " (point) as a separator
		penalty_bill_list		**Table of objects**		**list of penalty invoices**	**[{},{},...]**
			penalty_bill_numbers	[1..1]	alphanumeric	Invoice or RTE asset numbers for penalties	E.g.: FAC2
			penalty_bill_amount	[1..1]	Integer	Amounts charged for penalties per RTE to AA (euros)	with a precision of 2 decimal places and ". " (point) as a separator

Below is an example of the reply format for a monthly reporting with daily detail, called by an actor identified by its EIC code.

```
[

]
```

5.7.1.4 Control rules

Control rules for different input parameters:

Number	Description
RG01	The billing month filter is mandatory. Only one month is indicated in the call to the resource
RG02	The adjustment month filter is mandatory. Only one month is indicated in the call to the resource
RG03	The billing month entered must be after the adjustment month
RG04	EDA code and adjustment day filters are optional. If they are given, only one value is entered in the call to the resource.
RG05	By default, the resource returns data for all EDAs, per day for the billing and adjustment months indicated

Output control rules applied:

Number	Description
RG01	Output data is aggregated by EDA and by day

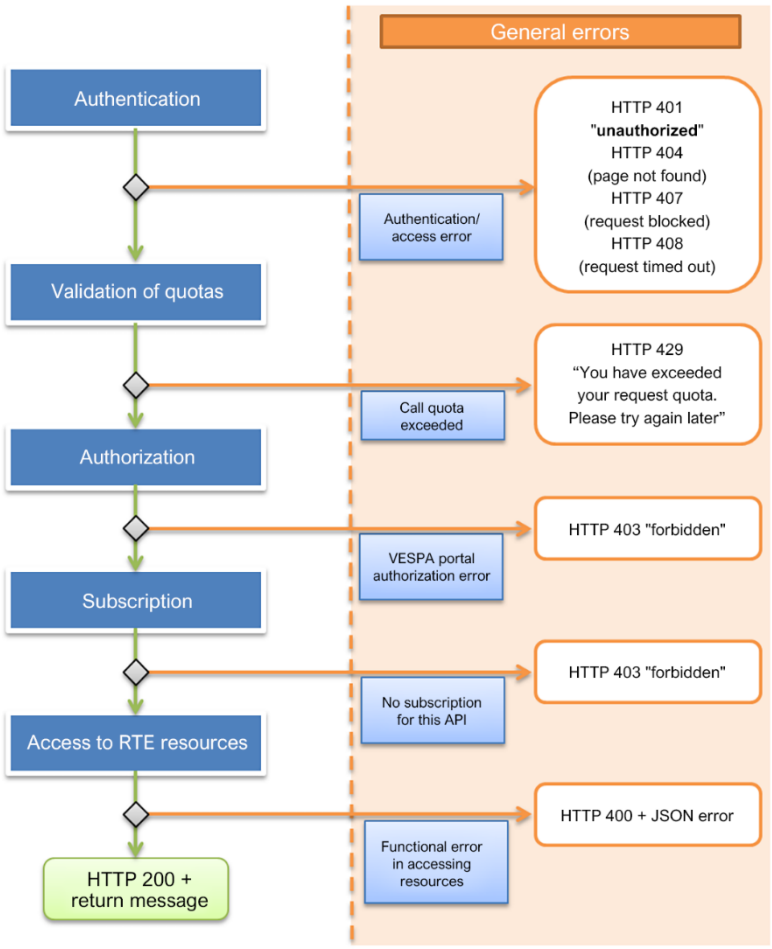
5.7.1.5 Error codes - Error codes will be implemented in future versions of the guide

The following table lists the error codes which may be returned when the resource is called.

6 Details of errors

The diagram below shows the codes returned to the API's User depending on the sequencing of calls.

This paragraph details the generic errors that are common to all of the API's resources. As such, it does not describe request errors (http code 400). These errors are described resource by resource in the corresponding paragraph.



In the event of an error encountered during the authentication phase (while validating the username and password), an HTTP 401 "unauthorised" code is returned to the caller.

The second stage involves checking that the user has not exceeded the maximum number of calls authorised for the organisation. In the event of the number being exceeded, the caller is informed with an HTTP 429 code. In such cases, the response from the server will contain a "Retry-After:" header giving the time (in seconds) that the client will need to wait before resubmitting their request.

The third stage is to verify that the application is fit and authorized to access the VESPA technical platform. If this is not the case, the caller is informed by HTTP code 403 "forbidden".

The fourth stage involves checking that the application has actually subscribed to the API. Otherwise, the caller is informed by an HTTP 403 "forbidden" code.

The fifth stage is to access RTE resources. Various functional errors can occur. These are communicated to the User as JSON errors with an HTTP 400 code.

In the event of a technical incident occurring while processing the request at any of the stages, the caller will be informed by an HTTP 500 code.

JSON structure:

```
{
  "error": "short_name, error's explicit description",
  "error_description": “long name, readable by a user",
  "error_uri": "URI to user's guide available from VESPA technical platform or FAQ/documentation on VESPA portal"
   "error_details" : {
        "transaction_id" : "unique call id, useful in the event of incidents"
   }
}
```

- The short description ("error") is a code which enables the calling application to automatically process error messages. It is represented by a series of words separated by “_”.
- The long description ("error description") is a description enabling users to understand the source of the error more precisely.
- The URI to the user guide is present so as to provide more explanations depending on the API called.
- The transaction_id field: provides a unique call identifier. This identifier can be communicated with RTE’s support services if there is an incident.

6.1 Functional errors

These tables summarize the functional errors returned by the resources (http code 400 or 403).

BALANCING_COMMON_F01 (http code 400)	
Control Rule	The period between the start_date and end_date parameters for a request regarding adjustment dates must not be greater than 24 hours, otherwise the service generates this error.
Message	The API does not provide feedback on a period greater than 1 day, in one call. To retrieve all the data, please do so by making several calls to the API.
Example of a call	GET /activations/17X123456789?start_date=2019-12-03T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING
BALANCING_COMMON_F02 (http code 400)	
Control Rule	The period between the start_date and end_date parameters for a query on update dates must not be greater than 7 days, otherwise the service generates this error.
Message	The API does not provide feedback on a period greater than 7 days, in one call. To retrieve all the data, please do so by making several calls to the API.
Example of a call	GET /activations/17X123456789?start_date=2019-12-03T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UPDATED
BALANCING_COMMON_F03 (http code 400)	
Control Rule	If the start_date or end_date parameters are not in the format "YYYY-MM-DDTHH:mm:ssZ", the service generates this error, accompanied by a message

Message	Start_date [{0}] in the API input does not follow the format described in the user guide. Please check compliance with the format for each field.
Example of a call	GET /activations/17X123456789?start_date=2019-12-4T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING
BALANCING_COMMON_F04 (http code 400)	
Control Rule	If the start_date parameter is greater than end_date, the service generates this error, accompanied by a message
Message	The 'start_date' field [{0}] in the API input is more recent than the 'end_date' field [{1}]. Please correct the values of these fields.
Example of a call	GET /activations/17X123456789?start_date=2019-12-05T23-00-00Z&end_date=2019-12-04T23-00-00Z&date_type=BALANCING
BALANCING_COMMON_F05 (http code 403)	
Control Rule	If the {eic_code} parameter is missing from the path, the service generates this error, accompanied by a message
Message	Access is denied
Example of a call	GET /activations?start_date=2019-12-05T23-00-00Z&end_date=2019-12-04T23-00-00Z&date_type=BALANCING
BALANCING_COMMON_F06 (http code 400)	
Control Rule	If the value of the {eic_code} parameter is unknown, the service generates this error, accompanied by a message
Message	Unknown value of the parameter: {eic_code}
Example of a call	GET /activations/EIC-CODE?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING
BALANCING_COMMON_F07 (http code 400)	
Control Rule	If the value of the date_type parameter is unknown, the service generates this error, accompanied by a message
Message	Unknown value of the parameter: date_type. Example: UPDATED or BALANCING
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=UNKNOWN
BALANCING_COMMON_F08 (http code 400)	
Control Rule	If the value of the retrieve_history parameter is unknown, the service generates this error.
Message	Unknown value of the parameter: retrieve_history. Example: 'YES' or 'NO'
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&retrieve_history=UNKNOWN
BALANCING_COMMON_F09 (http code 400)	
Control Rule	If one of the required parameters is missing, the service generates an error accompanied by a message.
Message	Missing mandatory parameter: {parameter_name}
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z
BALANCING_COMMON_F10 (http code 400)	
Control Rule	If the value of the "range" field is not valid, the service generates this error.
Message	Unknown value of the parameter: range. Example: 1-100
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&range=a
BALANCING_COMMON_F11 (http code 400)	
Control Rule	If the maximum value of the "range" field is lower than the minimum value, the service generates this error.
Message	Incorrect value [{range}] - second value must be greater than first value
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&range=99-1
BALANCING_COMMON_F12 (http code 400)	
Control Rule	If the number of items called on the page is greater than the maximum value set, the service generates this error.

Message	more items called than the default value: [{default_value}]
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&range=1-99999
BALANCING_COMMON_F13 (http code 400)	
Control Rule	If the value of the "eda_code" field is not valid, the service generates this error.
Message	Balancing Entity EDA [{0}] in the API input does not exist
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING&eda_code=EDACODE
BALANCING_COMMON_F14 (http code 403)	
Control Rule	If the company does not have authorization to access the service, the service generates this error.
Message	The company does not have sufficient authorization to access this service. Please contact RTE Market services
Example of a call	GET /activations/17X123456789?start_date=2019-12-04T23-00-00Z&end_date=2019-12-05T23-00-00Z&date_type=BALANCING

6.2 Technical errors

401	
HTTP code	401
Message	Unauthorised
Description	Error generated when authentication has failed
403	
HTTP code	403
Message	Forbidden
Description	Error generated if the caller is not authorised to call the resource
404	
HTTP code	404
Message	Not Found
Description	The resource called does not exist or no page was found
408	
HTTP code	408
Message	Request Time-out
Description	Error generated when the service called does not reply or when the service called times out (HTTP 408).
413	
HTTP code	413
Message	Request Entity Too Large
Description	The size of the response to the request is greater than 2 MB (maximum reached for calls to 3 metering points and over a maximum of one month)
414	
HTTP code	414
Message	Request-URL Too Long
Description	The URI sent by the caller is longer than 2048 characters.

416	
HTTP code	416
Message	Requested range not satisfiable
Description	Error sent when at least one resource cannot be found on page
429	
HTTP code	429
Message	Too Many Requests
Description	The maximum number of calls has been made in a given period of time.
500	
HTTP code	500
Message	Internal Server Error
Description	All other technical errors. (This error is accompanied by a JSON message error_code and error_description fields)
503	
HTTP code	503
Message	Service Unavailable
Description	Error generated during maintenance (HTTP 503).
509	
HTTP code	509
Message	Bandwidth Limit Exceeded.
Description	The total number of client requests has reached the maximum limit.

7 Appendices

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