GUIDE COMMUNICATION REQUIREMENTS

BSP Contract mFRR, BSP Contract aFRR, BSP Contract FCR

Version 1.0

Disclaimer

This is a technical document drafted to facilitate the implementations of the communications needed in the framework of the BSP Contract (mFRR, aFRR and FCR). As such the mutual rights and obligations of Elia and the BSP specified in the regulated BSP Contract prevail over the provided technical documents in case of inconsistencies.

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1 Document Version and contact person

1.1 Document version

Version	Date	Changes
1.0	01/07/2025	

1.2 Contact person

For any question, please contact contracting_AS@elia.be

2 Introduction

This guide contains specific information on the communication required by each market role in the context of the T&Cs BSP. It provides all the information that they need to communicate with Elia.

This document is directed to BSPs mFRR, aFRR & FCR.

The main topics covered by this document are:

- Overview of communication flows for each Market Party role (i.e., BSP mFRR & BSP aFRR & BSP FCR).
- Description of all communication flows.

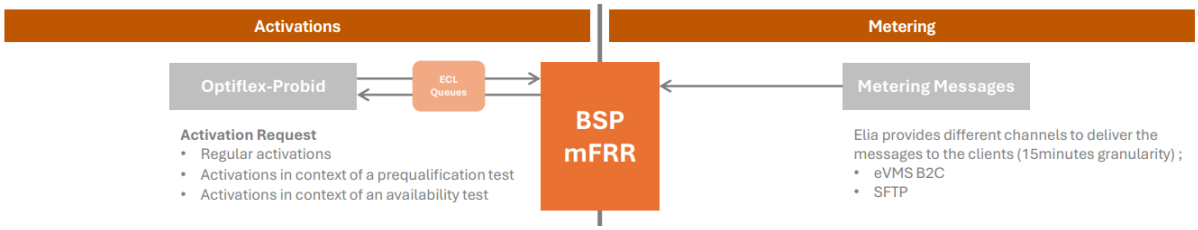
For the communication flows, there is a distinction between:

- Activations, where the BSP should be able to receive and acknowledge the activation messages.
- Metering, where the BSP should be able to send the relevant measurement messages.

3 Overview of communication flows

The present section describes the communication channels used by Elia to communicate and receive information to and from the different market parties.

3.1 Requirements for Balancing Service Providers mFRR



Metering Messages

In case of Delivery Point on the **Elia Grid**, the BSP doesn't need to send the measurement data, since there will be Elia meter or datalogger that directly connects to the Elia Metering Database. These 15 minutes values are made available on D+1 via eVMS and on a sFTP folder. More information can be found in the detailed section 4.1 below.In case of Delivery Point within a **CDS network**, the CDSO should send the measurement data towards Elia. These 15 minutes values are made available on D+1 via eVMS and on a sFTP folder. More information can be found in the detailed section 4.1 below.

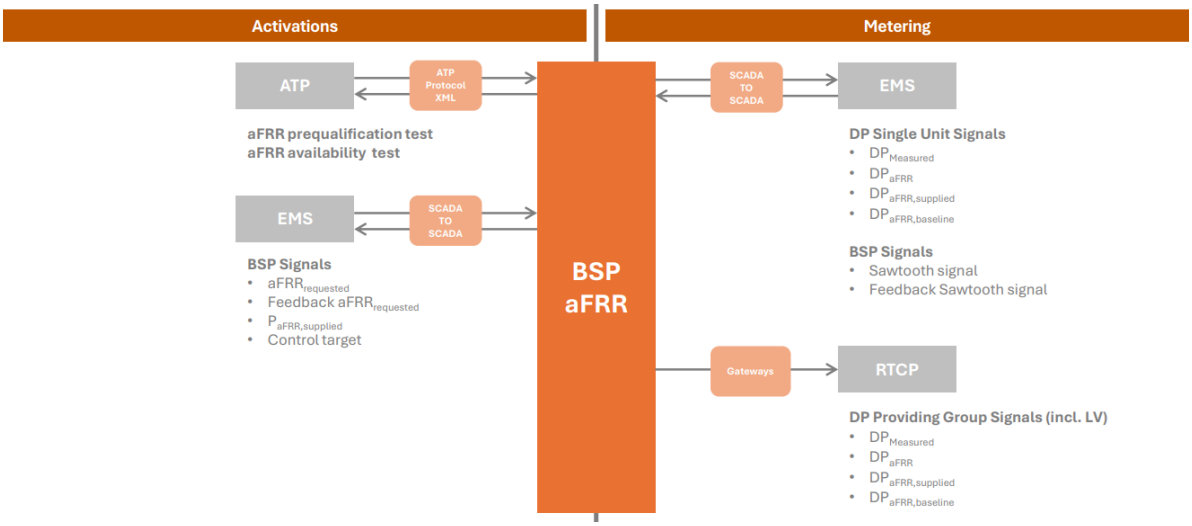
In case of Delivery Point on **DSO Grid**, the DSO should send the relevant measurement data towards Elia. All the requirements are described in annex 3 of the T&C BSP mFRR.

Optiflex-Probid

The activation messages are send via an electronic message (.json format):

- Regular activations are described in annex 10 of the T&C BSP mFRR.
- Activations in context of a prequalification test are described in annex 6 of the T&C BSP mFRR.
- Activations in context of an availability test are described in annex 11 of the T&C BSP mFRR.

3.2 Requirements for Balancing Service Providers aFRR



ATP

The prequalification & availability tests are sent via an electronic message (XML data format).

Real Time Communication Platform (RTCP)

For the Delivery Point Providing Group (DP_{PG}) all the required data (described in annex 9.G of the T&C BSP aFRR) should be sent over gateways via the Real Time Communication Platform (RTCP).

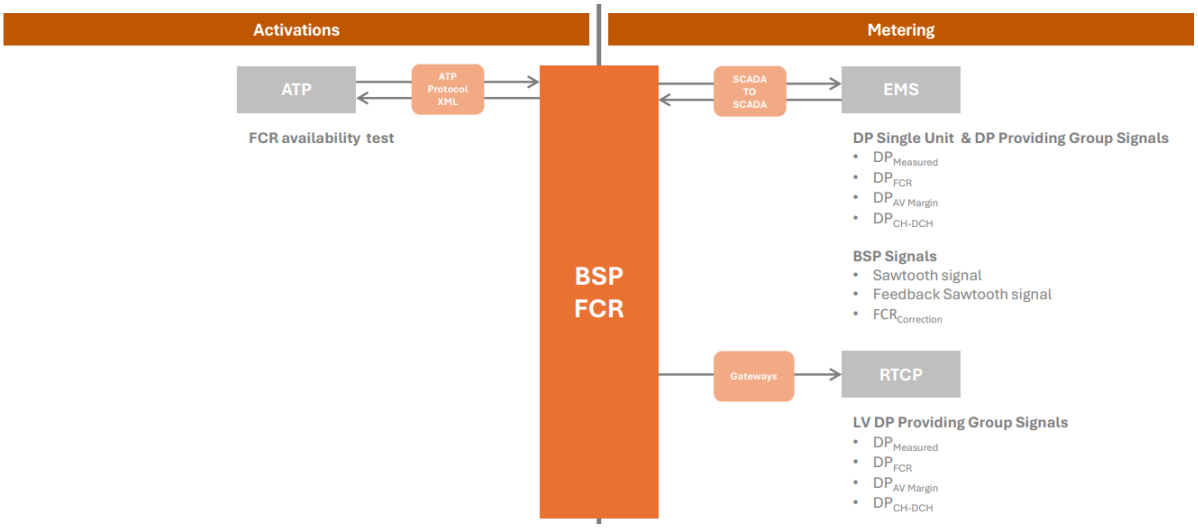
EMS

For the Delivery Point Single Unit (DP_{SU}) all the required data (described in annex 9.G of the T&C BSP aFRR) should be sent over a SCADATOSCADA connection towards the EMS of Elia.

The BSP should be able to send and receive general signals:

- In order to analyze the availability of the connection, Elia will send in real-time a fast changing ***sawtooth signal***, the BSP should mirror the sawtooth signal (***feedback sawtooth signal)***, so the lack of connection can be detected.
- In order to activate aFRR, Elia will send an $\boldsymbol{aFRR_{Requested}}$ signalthat the BSP should follow without any delay (as described in annex 10.C of the T&C BSP aFRR). The BSP will have to acknowledge Elia's request by sending a ***feedback signal of the*** $\boldsymbol{aFRR_{Requested}}$ before it forwards the signal to the physical assets (i.e., to the Grid User).
- Via the $\boldsymbol{P_{aFRR,supplied}}$, the BSP declares the aFRR volume that it physically supplied during the aFRR activations (as described in annex 10.C of the T&C BSP aFRR).
- In the ***Control target*** (multiple control target can be requested) shares the total volume of the bids selected based on merit order selection. Based on this, the BSP can easily derive in real-time which bids have been selected by Elia.

3.3 Requirements for Balancing Service Providers FCR



ATP

The availability tests are sent via an electronic message (XML data format).

Real Time Communication Platform (RTCP)

For each Low-Voltage Delivery Point within a Low-Voltage Delivery Point Group, all the required data (described in annex 10.C of the T&C BSP FCR) should be sent over gateways via the Real Time Communication Platform (RTCP). For each individual Delivery Point belonging to a Virtual Delivery Point, the active power measurements (DP_measured) should be sent over gateways via the Real Time Communication Platform (RTCP).

EMS

For the Delivery Point Single Unit (DP_{SU}) & Delivery Point Providing Group (DP_{PG}) all the required data (described in annex 10.C of the T&C BSP FCR) should be sent over a SCADATOSCADA connection towards the EMS of Elia.

The BSP should be able to send and receive general signals:

- In order to analyze the availability of the connection, Elia will send in real-time a fast changing ***sawtooth signal***, the BSP should mirror the sawtooth signal (***feedback sawtooth signal***), so the lack of connection can be detected.**$FCR_{Correction}$** (only relevant when also participating towards the aFRR service) representing the FCR power delivered by the Delivery Points participating to the provision of the aFRR Service, i.e. with a DP_{aFRR} equal to 1 (as described in annex 10.C of the T&C BSP aFRR).

4 Description of communication flows

4.1 eVMS & SFTP 'Metering Messages'

More information is described in the following document: "Metering Manual"

4.1.1 eVMS

eVMS is on a dedicated metering webpage, where the metering message can be manually downloaded.

4.1.2 SFTP

SFTP (Secure File Transfer Protocol) is a standard network protocol used to exchange files over a network.

4.2 ECL Queues 'Optiflex-Probid'

More information is described in the following document: "Technical Guide"

4.3 SCADA to SCADA 'EMS'

The BSP should be able to receive and interpret the signals via a secure and redundant communication channel via a communication protocol determined by Elia. The BSP should continually guarantee and maintain in real time the accuracy of the information sent to ELIA and received from Elia (without any delay).

4.3.1 IP VPN/ IP SEC (secured VPN)

The physical connection must be implemented on a leased & private line with one of our supported partners. Under no circumstances the traffic can cross public internet links. Our partners are also present in cloud environments such as Azure so connectivity can also be foreseen there.

An IPSEC VPN tunnel will be established over this private line. This tunnel must be terminated on your own equipment, be it physical or virtual onsite or in the cloud. The tunnel can't be terminated on a machine that is under the cloud providers control. More technical details and contact information will be provided during a kick-off meeting set up by Elia.

AAfter the successful implementation of the VPN connection, we will adapt our firewall policy to allow the ICCP/TASE2 communication.

4.3.2 ICCP/TASE2

The TASE2/ICCP software of the BSP must be set up in conformity with the IEC 60870-6 TASE2 standard. Version 2000 of TASE2/ICCP (IEC 60870-6) is required.

In case the system of the BSP does not support this protocol then the BSP must install a protocol convertor. A change of protocol may only be done after coordination and mutual agreement between Elia and the BSP.

The entire real-time communication system and its processes must be redundant. This means that the BSP need separated physical communication links and separated UPS (with an autonomy of at least 8 hours) per physical link.

New partners must sign up in time since depending on the provider of the TASE2/ICCP software it could take several months to configure it on both systems to achieve a stable communication channel.

Before starting the configuration, Elia will draft a proposal for the "ICCP bilateral agreement": this is a document that includes all the detailed technical parameters of the TASE2/ICCP link.

It is advisable to define a bidirectional link (in which case ELIA will be the initiator of the link) in TASE2/ICCP instead of defining 2 unidirectional links. However if the ICCP/TASE2 provider is not able to provide the bidirectional link, 2 unidirectional links are acceptable.

All data points (included aggregated data points) sent by both Elia and the BSP must contain a timestamp (precision of at least 1 second) and a quality bit (valid, invalid, manual)

For accelerating the setup of the TASE2/ICCP connection and for analyzing the availability of the connection during operation, Elia will send in real-time a fast changing measurement (triangle or sawtooth signal) to the partner. This signal must be read by the partner at least every 10 seconds and it must be made available again (loop back) to allow Elia to read the signal in real-time. It is advisable that the partner generates another fast changing measurement that Elia can loop back to the partner. Our experience is that it can be helpful for troubleshooting during operation.

Elia reserves the right to transmit the activation signals (i.e. the aFRR Requested) as a measurement data type in TASE2/ICCP.

4.3.3 Responsibilities

With regard to the level of quality and reliability that the process demands, Elia and the BSP share common & individual responsibilities, for the purpose of:

- Setting up dedicated physical links between their own systems;
- Deploying all available means to ensure duplication of the system throughout the communication chain;
- Deploying all available means to ensure the reliability of their own systems;
- The BSP should assure a minimum availability of 95% for the real-time data transfer on monthly basis.

4.3.4 Back-up solution

In the event of problems regarding the availability of aFRR requests (among others due to ICCP/TASE2 unavailability) Elia may determine the set-point for aFRR to be followed and communicate this with each BSP by telephone. The BSP is obliged to use all the means available in order to set up and guarantee the duplication of the telephone connections linking it to Elia (of which one must be dedicated, direct with Elia).

Any other exchange of information in real time shall take the form of an electronic message, according to the protocols defined by Elia, and shall be confirmed by telephone if needed.

4.4 Gateway Management 'Real Time Communication Platform (RTCP)'

In order to send the required data, as described in annex 9.G of the T&C BSP aFRR, the BSP must implement the necessary gateways on the Real Time Communication Platform.

The technical requirements are described in the following documents:

- Technical Guide for Gateway Management
- Explanatory Note Gateway Management

Besides the technical documentation, there is also an existing "RTCP User Manual".

Real-time communication cannot always be guaranteed due to network latency, power outage, connection issues, etc. Therefore, Elia will work with the following distribution to determine latency compliance:

- 95% of the data must be received with t ≤60s
- 90% of the data must be received with t ≤ 15s
- 80% of the data must be received with t ≤ 2s

With t equal to the difference between the snapshot timestamp taken during the power measurement (by measurement device or gateway) and the timestamp of the message reception by the Real-Time Communication Platform (in seconds).

4.5 ATP Protocol 'ATP'

In order to launch an aFRR prequalification test and an aFRR/FCR availability test, the BSP is triggered by Elia via an electronic message (XML data format), as described in annex 6.F & 12.F of the T&C BSP aFRR and annex 11.G of the T&C BSP FCR. The BSP should be able to receive the XML message and be able to understand its content.

The technical requirements are described in the following document: "Technical Guide ATP"