Overview of real-time data exchange for FCR

Within the design of the FCR service, real-time data exchange is essential for three processes namely for:

1) The evaluation of the prequalification test, a prequalification test will only be evaluated with **real-time measurement data at delivery point level** received within Elia's Energy Management System (EMS).

2) The settlement of the delivered service, for activation and availability control of the FCR service, only real-time measurement data at delivery point level and in some cases at providing group level* received within Elia's EMS are used for evaluation and calculation of the different control mechanisms.

3) The automated execution of the availability test, the new FCR design describes a new control mechanism to check the availability of the contracted FCR service. For a correct execution of this availability test real-time data exchange is needed to automate this process using M2M (machine-to-machine) communication. This communication will happen at Providing Group and Service Type level

Configuration of datapoints needed for prequalification and settlement – DP measurements

Elia needs to configure and receive information via ICCP of one datapoint per Delivery Point in its EMS in order to accept/validate the delivery points' use for participation to the FCR-service.

To be able to precisely configure and receive the measurements Elia also needs to know the possible maximum and minimum value per datapoint (and thus per Delivery Point).

Datapoint to be configured per Delivery Point (DP):
The measured active power in MW with Quality flag (see definition of quality flag).

This information needs to be sent from the BSP to Elia's EMS. The only exception to this general rule are Delivery Points where the meter is managed by Elia, in this case Elia already receives the real-time measurement data).

Realtime data exchange scheme for prequalification & settlement
(datapoints to be configured per Delivery Point)
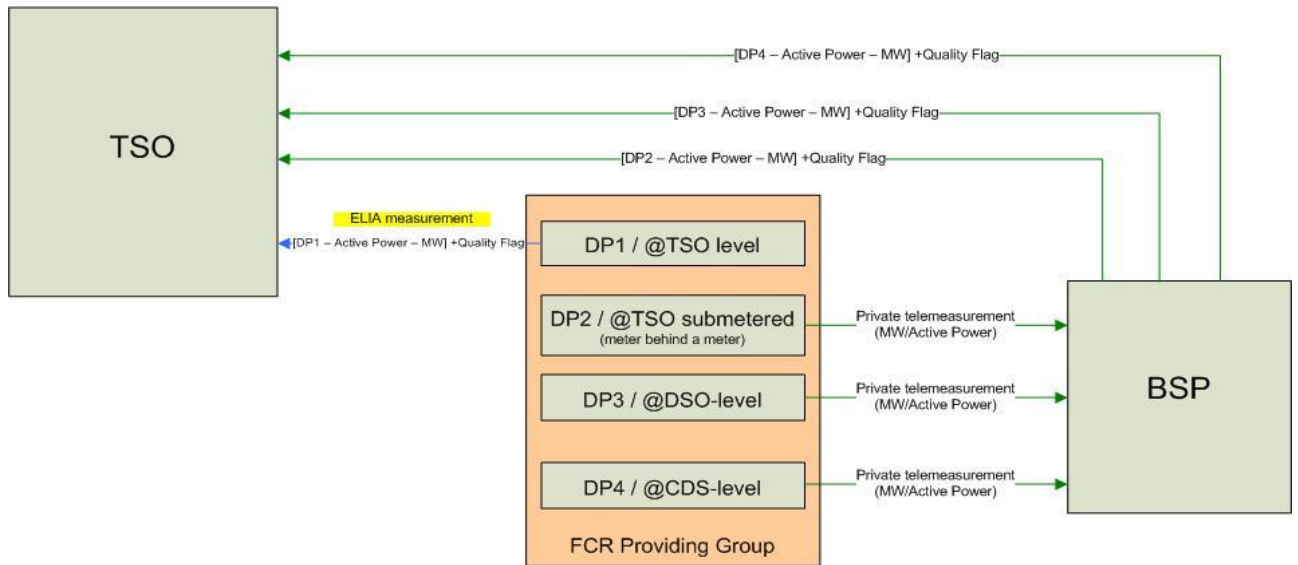
If the BSP wants to receive real-time measurement data from ELIA, he should consult the commercial metering contract to check the possible options.

Configuration of datapoints needed for settlement – PG measurements

Only for FCR Providing Groups with Limited Energy!

In case the BSP has defined an FCR providing group with limited energy, he needs to configure one additional datapoint: per providing group with limited energy, ELIA needs to receive in real-time from the BSP the measurement of the **energy content** of the group.

Datapoint to be configured per Providing Group with Limited Energy:
The measured available energy content in MWh with Quality flag (see definition of quality flag)

Realtime data exchange scheme for prequalification & settlement
(datapoints to be configured per Providing Group-Limited Energy)

The quality bit can have following values:

- "valid" value (VAL)

- "substituted" value (SUB)

- "invalid" value (INV)

For the execution of the availability test ELIA will configure two datapoints per valid Providing Group and Service Type combination. For each combination the following datapoints will be configured:

1) The availability test setpoint value, it is a integer value that will be sent to the BSP with information about the (a)test type and (b) the test profile (see below possible values for test setpoint)

2) The availability test feedback value, it is the mirrored value of the test value sent back to ELIA and used to acknowledge the correct reception of the setpoint value. The timestamp of test feedback value is used to indicate the start time of the test.

Elia triggers an availability test by modifying the default value of zero to the corresponding test code (from 1-8) during 120 seconds. The Test availability setpoint is sent by Elia.

The partner should be able to retrieve this setpoint by ICCP in mode "On change" and by "time interval" e.g. every 10 seconds.

Realtime data exchange scheme for availability test
(datapoints to be configured per valid Providing Group & Service Type combination)
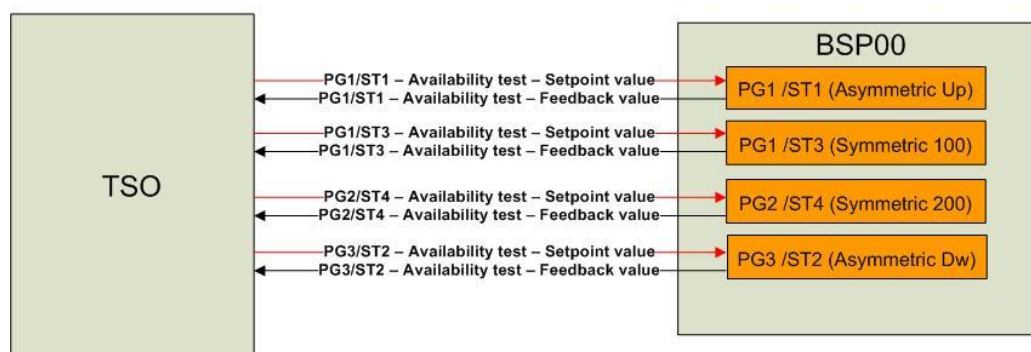
Elia triggers an availability test by modifying the default value of zero to the corresponding setpoint value (from 1-8) during 120 seconds.

Hereunder a table with all possible setpoint values:

Type of test	Test profile (as described in GFA)	Setpoint value
No test - default value	-	0
Capacity test	FCR 200mHz symmetric	1
	FCR 100mHz symmetric	2
	FCR Upward	3
	FCR Downward	4
Energy test	FCR 200mHz upward	5
	FCR 200mHz downward	6
	FCR 100mHz upward	7
	FCR 100mHz downward	8

Note: Depending on the Providing Group & Service Type combination some setpoint values may not be relevant for the supplier.