General Framework for Frequency Containment Reserve Service by CIPU Technical Units

2019-2021

Version of July 2019

Between

ELIA TRANSMISSION BELGIUM, a limited liability company incorporated under Belgian law, with registered office at Boulevard de l'Empereur 20, 1000 Brussels, Belgium, registered with the Register of Legal Entities (Brussels) under number 0731.852.231, and represented by **Patrick de Leener** and **Chris Peeters**, authorised signatories;

Hereinafter referred to as "ELIA"

and

Company name	
Company Registration Number	
Address Head Office	
V.A.T. Number	
Represented by	
Contract Reference	

Hereinafter referred to as the "BSP",

ELIA and the BSP are referred to as "the Parties".

Disclaimer: This version of the General Framework for Frequency Containment Reserve Service by CIPU Technical Units (Hereinafter referred to as "General Framework FCR CIPU") replaces the previous version of the General Framework for Frequency Containment Reserve Service by CIPU Resources valid between 01/01/2019 and 30/06/2019 between the Parties (Hereinafter referred to "Initial General Framework FCR").

All auctions organized as from 26/06/2019 and the resulting contracted volumes are subject to this General Framework FCR CIPU. All FCR Power contracted before 26/06/2019 is still subject to the Initial General Framework FCR.

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WHEREAS:

ELIA provides for the operation of the Transmission Grid over which it has right of ownership – or, at least, user rights;

With a view thereto ELIA has been appointed as Transmission System Operator (TSO), in accordance with the law of 29 April 1999 concerning the liberalisation of the electricity market and supervises the safety, reliability and efficiency of the Transmission Grid;

ELIA must therefore ensure the provision of the requisite ancillary services – in particular Frequency Containment Reserve – in accordance with Art. 223 et seq of the Federal Grid Code;

In this context ELIA purchases various Service Types that, combined, meet the minimum requirements of Frequency Containment Reserve, such as at the moment of the signature of the General Framework:

- Asymmetric Up or Down FCR: upward or downward regulation when F≤49,900Hz or F≥50,100Hz respectively.
- Symmetric FCR 100mHz and 200mHz: upward regulation and downward regulation when 49,900<F<50,100Hz and respectively 49,800<F<50,200Hz.

These Service Types can be provided by both CIPU and non-CIPU Technical Units. The present General Framework only applies to CIPU Technical Units;

The combination of the above mentioned services is compliant with the rules and recommendations of ENTSO-E OH Policy 1;

The BSP is a CIPU contract holder for resources capable of providing ELIA with the Service;

The Service is procured through an Open Qualification Procedure in which auctions can be organized subject to this General Framework. This General Framework for the Service is a multiannual Framework that can be updated when required;

ELIA has the possibility to procure, depending on the financial optimization results, part of its FCR Power via a Regional Procurement Platform under the condition of having concluded an agreement with other Participating TSO's;

In this sense and prior to each Delivery Period, two sequential auctions will take place in the framework of ELIA's procurement process: the first one on the Local Procurement Platform and the second one in the Regional Procurement Platform. The terms for these auctions are determined in Annex 1 and Annex 2.

BSPs situated within ELIA's Control Area are also able to supply the Service to other Participating TSO's through the Regional Procurement Platform;

This General Framework for the Service applies at all times to all parties having signed it;

The present General Framework for the Service lays down the mutual rights and obligations of ELIA and the BSP in relation to the procurement of Frequency Containment Reserve Service and the eventual provision by the BSP of this Service from within ELIA's Control Area;

IT IS CONSEQUENTLY AGREED AS FOLLOWS:

1 Definitions

Access Point(s)	An Injection Point and/or an Offtake Point to Transmission or Public Distribution Grid;
Analysed Frequency Variation Report	A report drawn up by ELIA relating to the FCR Power Supplied in the case of a Frequency Variation;
Asymmetric Upward or Downward FCR Service Type	The automated and local response to Frequency Deviations in the Ranges of F<49,900Hz and F>50,100Hz resulting respectively in an upward or downward regulation. These Service Types are provided whenever there is a Frequency Deviation of respectively F<49,900Hz or F>50,100Hz and must be fully activated for any Frequency Deviation of respectively F≤49,800Hz or F≥50,200Hz;
Availability Test(s)	Test(s) performed by ELIA aiming to confirm availability of the Service during Delivery Periods. Availability Tests can be Capacity Availability or Energy Availability Tests;
Balancing Rules	A document, validated by the CREG, describing the market operation rules for the compensation of quarter-hourly imbalances, pursuant to Article 200 of the Federal Grid Code;
Balancing Service	As defined in article 2 (3) of the Electricity Balancing Guideline;
Balancing Service Provider or "BSP"	Any natural person or legal entity, as defined in article 2 (6) of the Electricity Balancing Guideline, and with whom ELIA has concluded a Contract to provide Balancing Services;
Base	A Period defined as all hours of the day and all days of the year and that is equivalent to the superposition of the Long Off Peak and Peak Periods;
Bidding Obligations for Capacity Bids	The obligations to be respected by the BSP when submitting Capacity Bids;
BSP-DSO contract	An agreement between the BSP and DSO allowing the BSP to provide the Service to ELIA with the Technical Units listed in this agreement;
Capacity Bid(s)	A number of combinations of offered reserved capacities (in MW) in combination with a price offer (€/MW/h), allowing ELIA to procure the Service for a defined Delivery Period;
Central Clearing System or “CCS”	A system managed by a Participating TSO using an algorithm to determine the optimal selection of Capacity Bids submitted in the Regional Procurement Platform through the different bidding platforms. At the moment of the signature of the General Framework two such CCS’s exist;

CIPU Technical Unit	A production unit that is included in a CIPU contract[1];
Communication Test	A test in which ELIA certifies the BSP's ability to exchange information that are necessary to execute the General Framework;
Confirmed Transfer of Obligation	A quantity of Reserve Power to be made available by a Counterpart BSP to ELIA resulting from a transfer of obligations from the BSP to said Counterpart BSP, declared to ELIA and accepted by ELIA;
Connection TSO	In case of award of FCR Power to a BSP through the Regional Procurement Platform, the TSO in whose Control Area lies the Technical Unit offering the Service;
Contracted FCR Power or "FCR Contracted"	The quantity of the Service (in MW), being Symmetric FCR Power 100mHz, 200mHz and Asymmetric Up or Down FCR Power (in MW), contracted by ELIA with the BSP for a defined Delivery Period. The quantity of Contracted FCR Power is the result of the procurement of the Service on the Local Procurement Platform and the Regional Procurement Platform. Unless mentioned explicitly, the term "Contracted FCR Power" will concern all Service Types in the same manner;
Control Area	The area in which a transmission grid operator controls the permanent balance between demand and offer of electricity, taking into account the exchanges of active power with the control areas of other transmission grid operators;
Core Share	The part of FCR Power that TSO's must procure from Technical Units connected to their own Control Area. At the moment of drawing of the General Framework, the Core Share part is set by ELIA to 30 % of total FCR Power to be bought. It will become a specific constraint set by ENTSO-e once the network code Load Frequency Control & Reserves comes into force;
Counterpart BSP	A party holding a valid Contract for the Service that is allowed to perform Transfers of Obligations;
CREG	The federal regulating body of gas and electricity markets in Belgium;
Delivery Period	The timeframe in which the corresponding reserve power has to be made available and delivered to ELIA;

[1] or any other regulated contract(s) that will replace the CIPU Contract, in accordance with the dispositions of the Federal Grid Code.

Delivery Point	A point on an electricity grid or within the electrical facilities of a Grid User, where a balancing or SDR service is delivered – this point is associated with one or several metering(s) and/or measures (as specified in the Federal Grid Code), according to dispositions of the applicable General Framework, that enable(s) ELIA to control and assess the delivery of the Service;
Droop	The ratio (without dimension, expressed in %) of the steady state change in Frequency to the steady state change in power output. The smaller the droop, the more FCR Power will be supplied for the same frequency deviation;
Elia Control Area	The area in which ELIA controls the permanent balance between demand and offer of electricity, taking into account the exchanges of active power with the control areas of other transmission grid operators;
Energy Management Strategy	A strategy declared by the BSP for each Providing Group with which he proves his ability to deliver the Service;
ENTSO-E	European Network of Transmission System Operators for Electricity;
FCR Missing MW	The difference (in MW) between the upward (respectively downward) FCR power requested in a Capacity Availability Test and upward (respectively downward) FCR Power delivered by the BSP;
FCR Power	A quantity of the Service expressed in MW;
FCR Power Nominated	The FCR Power nominated by the BSP as per procedure in the General Framework;
FCR Power Obligation	The quantity of the Service, being the sum of FCR Contracted (in MW) for different Service Types plus any Transfer of Obligations, that the BSP is expected to deliver at a certain time during a Delivery Period; this can be an obligation in the upwards and/or downwards direction;
FCR Power Required or "P_{req}"	The quantity of FCR Power (in MW) to be supplied by the BSP following a Frequency Deviation in relation to the General Framework;
FCR Power Supplied or "P_{sup}":	The quantity of FCR Power (in MW) supplied by the BSP for a selected Frequency Variation;
FCR Providing Group or "Providing Group"	A conglomeration of Delivery Points that lie within the Control Area of ELIA (not necessarily connected to the ELIA Grid via the same Access Point) having been prequalified together as being capable of supplying one or more FCR Service Types;

FCR Range	The range of Frequency in which FCR Power, depending on the Service Type, is activated: • whenever the Frequency is equal to or greater than 50,000Hz and lower than 50,100Hz (FCR Range F≥50,000Hz) • whenever the Frequency is equal to or greater than 50,100Hz (FCR Range F≥50,100Hz) • whenever the Frequency is lower than 50,000Hz and greater than 49,900Hz (FCR Range F< 50,000Hz) • whenever the Frequency is equal to or lower than 49,900Hz (FCR Range F≤ 49,900Hz);
FCR Service Type	One of the Symmetrical 100mHz, Symmetrical 200mHz or Asymmetrical Up or Asymmetrical Down Service Types;
FCR_{max}	The maximum quantity of FCR Power that a BSP can offer in auctions for a certain Service Type. This value is determined by ELIA for each Service Type on the basis of the Prequalification Tests performed as per Annex 7 and is equal to the sum of FCR_{max_PG} values of each Providing Group. The FCR_{max} volume for each Service Type is represented as FCR_{max_up}, FCR_{max_down}, FCR_{max_100mHz}, FCR_{max_200mHz};
FCR_{max_PG}	The maximum quantity of FCR Power for which a certain Providing Group has been prequalified for a certain Service Type as a result of Prequalification Tests;
FCR_{ref}	The individual contribution (in MW of FCR Power) of each Delivery Point part of a FCR Providing Group to the FCR_{max_PG} for a certain Service Type and/or a certain volume within the Symmetric 200mHz Service Type. This value is declared by the BSP to ELIA;
Federal Grid Code	The provisions of the Royal Decree of 19 December 2002, as amended from time to time, regarding the technical regulations for operating an electricity grid and access thereto;
Follow-Up of Real-Time Frequency Test or "FRF Test"	A test which is part of the prequalification used to determine FCR_{max_PG} for a certain Providing Group and for a certain Service Type;
Forced Outage	An unforeseen and unpredictable (full or partial) outage of Technical Units making it impossible for the BSP to deliver (part of) the Service;
Frequency Containment Reserve or "FCR"	The automated and local increase/decrease of active power in reaction to a frequency deviation from the frequency of 50,00Hz. All Service Types of Frequency Containment Reserve together lead to linear reaction for Frequency Deviations between -200mHz and +200mHz, as described by ENTSO-E;

Frequency Containment Reserve Service by CIPU Technical Units	The Frequency Containment Reserve service supplied by CIPU Technical Units and that is governed by the General Framework for Frequency Containment Reserve, comprising at least the following: - the provision of the FCR Power Obligations; - the activation of this FCR Power Required (Symmetric 200mHz, Symmetric 100mHz, Asymmetric Up or Asymmetric Down) in accordance with the provisions of the General Framework;
Frequency or “F"	The frequency of the Transmission Grid in Hz;
Frequency Deviation	A deviation (positive or negative) in the Frequency compared to 50,000Hz analysed by ELIA;
Frequency Variation	A change of frequency selected by ELIA for the activation control checks;
General Framework	The present General Framework for FCR Service by CIPU Technical Units;
General Terms & Conditions	The General Conditions governing ancillary services at the time that a valid Capacity Bid is made for the applicable Delivery Period. At the moment of the signature of the General Framework, the version published on ELIA’s website dates 13/05/2013. All references in the General Framework are based on this version;
Local Procurement Platform or “Local Platform”	Web-based procurement platform on which ELIA will organize, prior to each Delivery Period, its auction to procure a volume of FCR Power as defined in article 153 of the SOGL;
Long Off Peak or “LOP”	A Period defined as follows : the hours between 08:00 hrs and 20:00 hrs for all 7 the days of the week and the hours between 08:00 hrs and 20:00 hrs on Saturday and Sunday;
Maximum Exchangeable Volume	The maximum FCR Power that can be imported (or exported) from (to) all other TSO Control Areas according to SOGL;
Month	Period starting at 0hrs the 1st of the month until 24hrs the last day of the month;
Monthly Remuneration	The remuneration for the reservation of the Service, as specified in the General Framework, calculated on a monthly basis irrespective of the Delivery Period of the products;
Open Qualification Procedure	A pre-qualification procedure in which prospective BSPs are screened based on criteria set by ELIA in a publication on ted.europe.eu;
Participating TSO	Any TSO having signed an agreement for participation in the Regional Procurement Platform;

Peak or “P”	A Period defined as follows: the hours between 08:00 hrs and 20:00 hrs during weekdays (from Monday till Friday, including holidays);
Period	A tariff period : Peak (P), Long Off-Peak (LOP) hours or Base (BASE) hours;
Prequalification Procedure	The procedure to be completed in order for a Production Unit and/or Delivery Point and/or Providing Group to be pre-qualified by ELIA;
Prequalification Test(s)	Any one or both of the Synthetic Profile Test and Follow-Up of Real-Time Frequency Tests;
Procedure for BSP Acceptance	Procedure for which the BSP must fulfil all conditions in order to participate in the Service;
Procedure For Delivery Point Acceptance	Procedure for which the Delivery Point must fulfil all conditions in order to participate in the Service;
Public Distribution Grid	As defined in art. 1 §2 (62) in the Federal Grid Code;
Public Distribution System Operator Concerned or “DSO”	A natural personal or legal entity appointed by the designated regional regulator or regional authority, who is responsible for the exploitation, the maintenance and, if necessary, the development of the Public Distribution Grid in a certain zone and, where applicable, for its interconnectors with other systems and who is responsible of guaranteeing the long-term ability of the Public Distribution Grid to meet reasonable demands for electricity distribution;
Regelleistung	The bidding platform www.regelleistung.net through which ELIA participates in the Regional Procurement Platform together with other Participating TSO’s;
Regional Procurement Platform or Regional Platform	Procurement platform from which Participating TSO’s can procure necessary FCR volumes from BSPs coming from the Control Areas of Participating TSO’s. ELIA participates in this platform through Regelleistung;
STAR Procedures and User Manual	Document published on the website of Elia with further information on the balancing capacity auctions processes and instructions for bidding in the Local Platform;
System Operation Guideline or “SOGL”	Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

Symmetric 200mHz and 100mHz Service Types	The automated and local response to Frequency Deviations in the range between F=49,800Hz and F=50,200Hz and between F=49,900Hz and F=50,100Hz (respectively for 200mHz and 100mHz Service Types) resulting respectively in an upward or downward regulation. This service is provided whenever there is a Frequency Deviation within these Ranges and must be fully activated in the range of F≤49,800Hz or F≥50,200Hz and F≤49,900Hz or F≥50,100Hz (respectively for 200mHz and 100mHz Service Types;
Synthetic Frequency Profile Test	One of the two Prequalification Tests to determine FCR_{max_PG};
Technical Unit	A facility (part of CIPU Contract or not) connected within the Control Area of ELIA, able to provide balancing services to ELIA;
Transfer of Obligations	Part or all of the quantity of contracted reserve power that the BSP transfers to a Counterpart BSP;
Transmission Grid	The electricity transport system for which ELIA has proprietary rights or at least user or operating rights and for which ELIA is the designated and certified transmission grid operator;
Week	Period starting at 0hrs Monday morning until 24hrs the next Sunday;

2 Application of the General Framework

2.1. The General Framework govern the general agreement between the Parties regarding the procurement of the Service by ELIA from the BSP and the rights and obligations of the Parties with regard to the provision of the Service, in accordance with the terms and specifications hereof.

2.2. The BSP makes best effort (not being unreasonable) by signature of the General Framework to participate in the procurements for the Service throughout the validity period of the General Framework, i.e. from General Framework signature to 31 December 2021, and in case of Contracted FCR Power for a Delivery Period, to make available and provide the Service throughout this Delivery Period.

2.3. The present General Framework will come into force subject to the conditions set forth in Chapter 3.

2.4. This does not limit the BSP in any way to optimize its FCR portfolio and thus add or withdraw such CIPU FCR Providing Groups and/or Delivery Points from Annex 5.

2.5. The clauses of the General Framework will be supplemented by the General Terms & Conditions. If there is a contradiction between the General Framework and the General Terms & Conditions, the General Framework shall take precedence.

2.6. The clauses of the General Framework will be supplemented by the General Terms & Conditions. If there is a contradiction between the General Framework and the General Terms & Conditions, the General Framework shall take precedence.

2.7. In case of combination of the Service with other services on one or more Delivery Points that are part of this General Framework, the BSP declares being aware of the mutual relationships that exist between the present General Framework and the contractual framework of the combined service. The observance of the rules set out in the aforementioned contracts is necessary for the proper implementation of the present General Framework.

2.8. The Parties shall ensure that the proper performance of the General Framework is always based on the existence and proper performance of the requisite contractual agreements with third parties involved.

2.9. The BSP holds ELIA harmless – notwithstanding any other provision of the present General Framework and within the limits of liability described in the General Conditions – from any claim that a third party might institute against ELIA as a direct or indirect consequence of the present General Framework.

3 Conditions for participation in the Service

3.1. BSP Conditions

The present General Framework will come into force subject to the BSP meeting the conditions set forth in the Open Qualification Procedure.

If it is confirmed that the BSP no longer complies with conditions of the Open Prequalification Procedure, ELIA will notify the BSP via a registered letter. If after 15 working days after reception of notification the BSP remains uncompliant with these conditions, the General Framework will be terminated without prior approval by a court of law in accordance with the terms of Article 11 of the General Conditions. This implies, after termination, that if the BSP wants to offer the Service, he must re-apply via the Open Qualification Procedure and sign a new General Framework for the Service with ELIA, subject to compliance with said conditions.

ELIA is entitled to evaluate, at any time during the validity period of the General Framework, whether the BSP complies with the conditions mentioned in the General Framework. For the avoidance of doubt, this does not entail the right for ELIA to physically access BSP's assets but is without prejudice to any other regulation, i.e. the Federal Grid Code, regarding access the BSP's connection installations. If it is confirmed that the BSP no longer complies with these conditions, ELIA will notify the BSP and the General Framework will be suspended.

For the avoidance of doubt, the Parties are aware of the mutual relationships that exist between the General Framework, the CIPU Contract, other ancillary service contracts, the ARP Contract and the Access Contract, as each of them is an essential constituent of the means that ELIA uses to ensure the safety, reliability and efficiency of the Transmission Grid. The observance of the rules set out in the aforementioned contracts is necessary for the proper implementation of the present General Framework.
The BSP allows ELIA to publish aggregated and anonymized information relating to the procurement results on ELIA's website;

Once the General Framework is signed and before submitting a Capacity Bid, the BSP must successfully complete the Procedure for BSP Acceptance as specified in Annex 6. BSPs not in respect with requirements of the Procedure for BSP Acceptance are not allowed to participate in auctions.

3.2. Delivery Points conditions

The BSP and ELIA agree on the list of Delivery Points that are participating in Providing Groups providing the Service. All Delivery Points in this list must meet the technical and organizational requirements as described in Annex 6.
For any CIPU Technical Units participating that are connected to the DSO Grid the BSP and the DSO agree by contract on a list of Units that the BSP declares technically capable of providing the Service.

3.3. Providing Groups Conditions

The BSP declares a list of Providing Groups with which he will be providing the Service in Annex 5. Each Providing Group regroups one or more Delivery Points. This list shall be kept up to date according to dispositions stipulated in Annex 5.

A BSP can group Delivery Points that cannot individually comply with all technical requirements as ELIA verifies the compliancy with the Service's technical and organizational requirements (set forth in Art. 6.1) on the Providing Group.

Before Providing Groups can be included in Annex 5, the BSP must prequalify them as per procedure mentioned in Annex 7.

Each BSP needs to present for each Providing Group a documented Energy Management Strategy (as described in Annex 7) with which he aims to prove his ability to comply with requirements for provision of the Service as these are stipulated in Art. 6.4 before the Providing Group pass a Prequalification Test and become able to be included in the BSP's Annex 5.

Each Providing Group has a FCR_{max_PG} per Service Type prequalified as per procedure described in the same Annex as above. The sum of the volumes prequalified on each Providing Group of the BSP's portfolio (FCR_{max_PG}) is equal to the maximum volume the BSP can offer for each Service Type (FCR_{max}) in auctions.

One Providing Group can be prequalified for different Service Types.

One Delivery Point can only be used in one Providing Group for the delivery of a specific Service Type. In other words a Delivery Point can only be part of different Providing Groups if in each of these Providing Groups it contributes to the delivery of different Service Types.

Non-CIPU Technical Units are not allowed to participate in the provision of the FCR Service by CIPU Technical Units.

Once a Providing Group is prequalified, it cannot be considered as a part of a bigger Providing Group.

3.4. Prequalification test & update of the FCR_{max}

The outcome of the Prequalification Tests, as provided by Annex 7, will determine the maximal FCR Power (FCRmax) that can be offered to ELIA by the BSP in auctions for each Service Type.

The mere addition of a Delivery Point to a FCR Providing Group does not modify the FCRmax_PG for any Service Type that can be offered by the BSP in auctions. To do otherwise for a certain Providing Group, the BSP shall ask new Prequalification Tests in respect with conditions set forth in Annex 7.

If an additional Delivery Point cannot comply alone with prequalification requirements (when Delivery Point only provides a partial FCR reaction), a Prequalification Test must be done on the entire Providing Group (including this new Delivery Point) to increase the BSP's FCR_{max_PG} for the concerned Service Types.

In case of removal of a Delivery Point from a FCR Providing Group, ELIA will reduce the FCR_{max_PG} of each relevant Service Type in the procurement procedure with the concerned FCR_{ref} value(s) as calculated in Annex 3. The BSP will also confirm to ELIA that the declared Energy Management Strategy (as requested in Annex 7) is not altered by the removal of one Delivery Point from a FCR Providing Group

If the Energy Management Strategy is impacted, ELIA can request to re-prequalify the concerned Providing Group.

Prequalification Tests as described in Art. 7.8 are not considered as activations as these are described in Art. 6.1.

All costs linked to the Prequalification Tests are borne by the BSP.

ELIA reserves the right to abort the Prequalification Tests at any moment if it jeopardizes ELIA Grid or any Public Distribution Grid security.

The general liability regime organized by Article 6 of the General Conditions is applicable to the BSP requesting the Prequalification Tests.

4 Procurement of the Service

4.1. Within the framework of this General Framework, ELIA will procure the Service, consisting of the following Service Types :

"Symmetric FCR 100mHz", during Peak and Long Off Peak Hours

"Symmetric FCR200mHz", during Peak and Long Off Peak Hours

"Asymmetric FCR Down " , during Peak and Long Off Peak Hours

"Asymmetric FCR Up" , during Peak and Long Off Peak Hours

4.2. Only BSPs who have a valid General Framework can participate in the procurement procedures.

4.3. As long as the collaboration agreement between Participating TSO's remains valid, ELIA can procure FCR Power from a Local Procurement Platform according to the rules determined in Annex 1, and

a Regional Procurement Platform (only the 200mHz symmetric Service Type) together with other Participating TSO's and according to the rules determined in Annex 2.

4.4. The total volume to be procured by ELIA and availability and activation control principles are determined pursuant article 153 of the SOGL and the Balancing Rules respectively.

4.5. For a certain Delivery Period, the volume to be procured from the Regional Procurement Platform will be determined as a result of the auction held in the Local Procurement Platform for this Delivery Period, in an effort to minimize the total procurement cost for ELIA. ELIA will always at least procure a volume equal to its Core Share on its Control Area via the Local Procurement Platform and the remaining volume in the Regional Procurement Platform, subject to volume restrictions described on Art. 4.6 and additional constraints set in the local legislation. The applied method is explained in the Balancing Rules and validated by the CREG.

4.6. The volumes of FCR Power to be imported from and/or exported to all other Control Areas are dependant of the minimum volume to be procured physically inside the Control Area of ELIA, according to the applicable rule defined in the SOGL.

4.7. In case of procurement from the Regional Procurement Platform the overall procurement procedure will be as follows:

- In each Local Procurement Platform auction for FCR and Secondary Control Power Reserves, ELIA will add a fictional divisible bid (hereinafter "RPP bid") with a granularity of 1MW corresponding to the volume to be procured in the Regional Procurement Platform;
- The volume of the RPP bid will be capped by conditions set forth in Art. 4.6 and will be determined by performing a financial optimization between "local" bids (including Secondary Control Power service) and the "RPP bid";
- For the Local Platform auction, ELIA will estimate the price of the RPP bid using the average FCR Power price of the most recent Regional Platform auctions available at the time as detailed in the STAR Procedures and User Manual;
- Once the FCR Power volume to be procured in the Regional Platform is determined, this will be procured regardless of the price estimation that was previously made;

4.8. BSPs that lie within ELIA's Control Area may also offer the 200mHz Service Type in the Regional Procurement Platform under rules described in Annex 2. The present General Framework will be of application for Capacity Bids from within ELIA's Control Area retained in the Regional Platform as described in Annex 2.

4.9. The quantity of Contracted FCR Power (hereinafter referred to as "Contracted FCR") is the result of the procurement of the Service on the Local Procurement Platform and the Regional Procurement Platform. The volumes that are retained by the Regional Procurement Platform and supplied from ELIA's Control Area will also be part of the BSP's Contracted FCR Power and will be subject to the same conditions as described in Art. 3.2.

4.10. The process, Bidding Obligations for Capacity Bids, consequences of non-respect, rights and rules for procurement are described in Annex 1. Additional rules that only apply for the Regional Procurement Platform are described in Annex 2.

4.11. In both the Local Procurement Platform and Regional Procurement Platform the BSP must not offer more volume of FCR Power for each Service Type than what has been prequalified in respect to dispositions of Annex 7 (FCR_{max}). When offering in the Regional Procurement Platform the volume retained previously

in the Local Procurement Platform needs to be taken into account as mentioned in Annex 2 in order to respect this constraint.

4.12. ELIA has the right to reject Capacity Bids that are not in line with the rules and obligations set forth by ELIA as described in the General Framework.

4.13. Once a Capacity Bid is awarded, it becomes part of the BSP's FCR Contracted Power and thus the BSP undertakes the necessary actions to provide the Service for the entire duration from the start of the applicable Delivery Period (without further action by ELIA).

4.14. Characteristics such as the value of the power/frequency characteristic $\lambda 0$ or λElia mentioned in Annex 4 of the present General Framework might be reviewed at ELIA's request if:

- The rules, recommendations and/or procedures of ENTSO-E are changed during the validity period of the General Framework. The review will be done in accordance with the changed rules, recommendations and procedures of ENTSO-E. ELIA shall consult the BSPs about the introduction of such new rules.

- ELIA has the possibility, during the validity period of the General Framework, to contract FCR Power with other market players, in accordance with Art.229 of the Federal Grid Code;

4.15. If the General Framework be reviewed as per Art. 4.14, the Parties shall take into account and, as the case may be, consult one another on the time the BSP and/or ELIA need to technically arrange the new value of the power/frequency characteristic $\lambda 0$ or λElia, as well as the transfer measures associated therewith. The procedure set out in Articles 10.1-10.4 of the General Conditions ("Review") applies to this clause.

4.16. For the duration of the entire applicable Delivery Period, the provision of the Service is portfolio based, meaning that Capacity Bids are linked to the portfolio of FCR Providing Groups prequalified by the BSP, but not to a specific FCR Providing Group.

4.17. In case of observation of a behaviour that might prejudice market rules and/or fair competition between parties, and after consultation of the CREG, ELIA reserves the right to exclude the BSP from future procurements.

4.18. ELIA can decide, for an objectively justified reason, to limit or cancel the quantity of power contracted for FCR.

5 Transfer of Obligations between the BSP and a Counterpart BSP

5.1. In order to grant the BSP more flexibility and to allow him to optimize the cost of delivering the Service, for instance but not exclusively when having to carry out planned or unplanned maintenance, ELIA gives the BSP the possibility to transfer in day-ahead or in intraday for a certain quarter-hour part or all of his FCR Obligations in the framework of the present General Framework to one or several Counterpart BSP(s) to the date of the performance of the Obligation.

5.2. The BSP should always, even in case of Forced Outage, maintain his Contracted FCR Power available to ELIA either by providing its FCR Obligations by himself or by transferring part or all of them to a Counterpart BSP.

5.3. The BSP may transfer his FCR Obligations to Counterpart BSP(s) providing the Service with CIPU or non-CIPU Technical Units.

5.4. Similarly, the BSP may agree with a Counterpart BSP to make an additional quantity of FCR Power available to ELIA as a result of a Transfer of Obligations from a Counterpart BSP to the BSP.

5.5. The Transfer of Obligations may concern all Service Types.

5.6. The procedure to be followed by the BSP, ELIA and the Counterpart BSP in case of a Transfer of Obligations is described in Annex 3.

5.7. As long as the Transfer of Obligations is not confirmed by ELIA, the FCR Power Obligation remains with the BSP.

5.8. Once a Transfer of Obligations is confirmed, the transferred volume is added to the FCR Obligations and thus the BSP undertakes the necessary actions to provide the Service to be provided for the applicable

quarter hours (without further action by ELIA). Similarly, once the BSP performs a Transfer of Obligations to the Counterpart BSP the transferred volume is added to the Counterpart BSP's FCR obligations.

5.9. Consequently, the record and monitoring of the provision of the Service, the resulting penalties for non-compliance according to Art. 7 among other provisions will be based on the amended FCR Obligation resulting from the Transfer(s) of Obligations validated by ELIA.

5.10. The BSP and Counterpart BSP respectively transferring and undertaking an Obligation should update their Delivery Point and Providing Group nominations, as provided by Art. 7.6 and Art. 7.7, in order to reflect the agreed Transfer of Obligations.

5.11. The remuneration of the Contracted FCR Power remains fixed as per Art.4.9 irrespective of the Transfers of Obligations that the BSP has agreed with Counterpart BSP(s), declared to ELIA and that ELIA has validated.

5.12. Similarly, ELIA will not owe any remuneration to the Counterpart BSP with whom the BSP has agreed a Transfer of Obligations.

5.13. The conditions, financial or otherwise, of the Transfer of Obligations between the BSP and the Counterpart BSP are to be arranged between them. ELIA is not to be informed nor involved in any decision in this respect beyond the observance of the rules laid down in Annex 3.

5.14. Any dispute arising from a failure on the part of the BSP or the Counterpart BSP to comply with his commitments in the framework of the agreement under which they are bound to one another for the Transfer of Obligations is not to be reported to ELIA nor will be arbitrated by ELIA.

5.15. ELIA informs the BSP that CREG may ask to be informed about the financial conditions of the Transfers of Obligations between the BSP and Counterpart BSPs. The BSP and the Counterpart BSP agree to provide the CREG with this information.

5.16. When ELIA updates the Transfer of Obligations principles and/or procedures, these new principles will apply for all FCR Contracted Power, including the FCR Power contracted before an eventual modification of the General Framework.

6 Provision of the Service

6.1. Activation

The BSP must comply with the following requirements:

- In case of a Frequency Deviation, the BSP will activate automatically the FCR Power Required as defined in Annex 4.
- The activation of FCR Power shall not be artificially delayed and begins at latest 2 seconds after the start of a Frequency Deviation within the concerned range of each Service Type;
- For all Service Types, FCR Power to be activated in reaction to a Frequency Deviation rises linearly to reach 50 % of FCR Power Required after 15 seconds and 100 % after 30 seconds.
- All FCR Providing Groups are required to continuously provide FCR Power Required for as long as the Frequency Deviation persists;
- In the event where the entire volume nominated on a Providing Group with limited energy reservoirs (as defined in Annex 7) has been activated for a minimum of 25 minutes continuously, the concerned group is authorized to reconstitute its reserve of energy within a maximal period of 2 hours. ELIA will not perform an Availability Test or activation control on this Providing Group during that period of time.

This specific requirement of 25 minutes can be subject to change in the future depending on the evolution of ENTSO-E System Operation Guidelines. In such an event, ELIA will inform the BSP and will propose a modification of the General Framework.

The FCR Power Supplied is monitored as described in Art 6.10 and in case of non-respect with the power required for the activation (P_{req_act}), the BSP will be penalized for non-compliance according to Art. 9.1;

The frequency measurements must be local, meaning that the equipment measuring the Frequency Deviations must be installed at each site of a Delivery Point listed in Annex 5.

7 Exchange of information, record and monitoring of the Service

7.1. The exchange of information for the performance of the General Framework will be done through real-time communication and on-line communication, as described in Annex 8.

7.2. The exchange of information for the performance of the General Framework will be directed to the respective contact persons of the Parties (list of contact persons exchanged as described in Art. 12).

7.3. Monitoring of delivery of the Service (activation and availability) will be performed based on ELIA's measurements. Should a dispute arise over the measurements taken by ELIA these may be compared with those made by the BSP provided both measurements have comparable time references. If the BSP observes a significant error or difference between both series of measurements, he must inform ELIA hereof within the deadline specified in Art. 10.5 of the present General Framework. In case of discrepancies between data of ELIA and the BSP, the ELIA data prevail unless the BSP can prove that his data are correct.

7.4. ELIA will require individual power measurements of all Delivery Points composing the FCR Providing Group.

7.5. For Providing Groups with limited energy reservoirs (as these are characterized according to Annex 7) the BSP communicates to ELIA the energy content (in kWh) via his real-time connection as described in Annex 8. Moreover, ELIA has the right to request information on the energy content of assets part of a Providing Group without energy limited reservoir for monitoring reasons and as input for Availability Tests.

7.6. Delivery Point nomination

i. The BSP has the obligation to nominate his FCR Power Obligations to ELIA in Day Ahead (D-1), according to the rules set out in Annex 8.

ii. The BSP will decide and inform ELIA in Day Ahead about the combination of Delivery Points that will provide for his FCR Power Obligations (for upward regulating Power this obligation is called "R1up_obligation" and for downward regulating Power this is called "R1down_obligation") among the list of Delivery Points as agreed upon in Art. 3.2, taking into account the procedure and rules set forth in Art. 7.9 and without prejudice to ELIA's right to demand any change in accordance with the CIPU contract.

iii. After checking the validity of the nominations sent on D-1 by the BSP to ELIA and any corrections according to the rules under each contract mentioned in Art. 3.1, the reserve nominations thus obtained will be subject to a cross-check for coherence between other ancillary service contracts concluded between ELIA and the BSP (in particular the "CIPU" contract, the General Framework for Secondary Control and the General Framework for Tertiary Control) .

iv. In any case Delivery Point nominations need to be coherent with the Providing Group nominations in day-ahead.

v. When ELIA updates the nomination principles and/or procedures, these new principles will apply for all FCR Control Power, including the Contracted FCR Power that was contracted before an eventual modification to the General Framework.

7.7. Providing Group nominations

The BSP will send to ELIA at latest at D-1 at 15h information on how its FCR Power Obligation is split between Providing Groups of his portfolio, for each Service Type awarded at the auction, for each quarter-hour of the day and according to described in Annex 8.

The granularity of these nominations is 15 minutes. Nominations can be updated in intraday at latest 45 minutes before the beginning of the first quarter hour concerned by the update.
If a BSP does not foresee changes in his allocation for the Delivery Period, he can nominate its FCR Power Obligation only once before the beginning of the Delivery Period. The BSP is not obliged to send new intraday nomination files.

ELIA considers the last valid nomination file received as input for its Availability Tests as described in Annex 9.

The sum of nominated volumes on all Providing Groups must be equal to the BSP's FCR Power Obligations at all times unless in case of a Forced Outage. If a BSP nominates for a certain quarter-hour of the day a volume inferior to his obligation for a certain Service Type, or neglects to nominate, ELIA will apply a penalty as described in Annex 9. If the sum of nominations on all Providing Groups exceeds FCR Power Obligations the nominations will be considered as void and may not be submitted.

A nomination on one FCR Providing Group cannot exceed its FCR_{max_PG}.

7.8. Availability Controls

Availability will be monitored based on specific Availability Tests performed by ELIA. The Availability Tests procedure is described in Annex 9 and takes into account the last received version of BSP's nominations, and any unavailability resulting from a Forced Outage.

An Availability Test concerns one or several Service Types for a nominated FCR Power Obligation on one or several FCR Providing Groups.

ELIA will verify that the power supplied (P_{sup_test}) in reaction to an Availability Test requested by ELIA is at minimum equal to the BSP's FCR Nominated Power for the Providing Group(s) and Service Type(s) concerned. In case the power supplied (P_{sup_test}) fails to meet at least at the BSP's obligations ELIA will reduce the BSP's remuneration as foreseen in Art 9.1, taking into account the dispute resolutions mechanisms described in Art. 10.4 & 10.5 and without prejudice to any liability of the BSP for the non-fulfillment of his obligations under Art. 4 of the General Conditions.

ELIA can request a Capacity Availability Test maximally 2 times per Delivery Period, Providing Group and Service Type. However, if results of one of the 2 Capacity Availability Tests are negative ELIA has the right to request another one.

ELIA can request an Energy Availability Test for each Providing Group and Service Type maximally:

- 3 times per year (starting from the first Delivery Period in which the Providing Group has offered the Service to ELIA) in each direction for Providing Groups with limited energy reservoirs;
- 1 time per year (starting from the first Delivery Period in which the Providing Group has delivered the Service to ELIA since the entry into force of the General Framework) in each direction for Providing Groups without limited energy reservoirs.

However, if a result of an Energy Availability Test is negative, ELIA has the right to request an additional one.

ELIA provides, at the latest two months after the month M a report for the evaluation of any Availability Tests realized during this month M.

No additional compensation is foreseen for Availability Tests.

7.9. Record and monitoring of the FCR Power Supplied (Activation)

ELIA will check every month that the quantity of FCR Power Supplied by the BSP during the previous month meets the contractual requirements. Said check is performed for a maximum of 6 Frequency Variations for the month for all Service Types contracted during this month, and in the same way a maximum of 2 Frequency Variations per Delivery Period.

ELIA provides, at latest two months after the month when the analyzed Frequency Variation occurred, the analyzed Frequency Variation report for the evaluation and monitoring of the FCR Power Supplied by the BSP.

To evaluate each Frequency Deviation, ELIA compares the power required (P_{req_act}) as calculated in Annex 10, with the FCR Power Supplied (P_{sup_act}) also calculated as per method described in Annex 10.

For this evaluation, ELIA will use its own measurements at the Delivery Point(s) concerned.

For each selected Frequency Variation ELIA will only consider for the activation control the Service Types concerned, meaning the Service Types that should have reacted at the analyzed Frequency Range.

For these Service Types, only Providing Groups on which a FCR Power Obligation was nominated at occurrence of the Frequency Variation will be considered together for the activation control.

The Parties agree that if the power required by an activation (Preq_act) is not reached, penalties will be applied as described in Art.9.2, taking into account the dispute resolutions mechanisms described in Art. 10.4 and Art.10.5.

7.10. Measurement corrections

When determining the FCR Supplied (upwards or downwards) for Prequalification Tests, Availability Tests or activation controls, the measurements will be corrected by ELIA for power changes at the CIPU Technical Unit that cannot be ascribed to FCR (upwards or downwards), such as:

- Program changes:
  - For the cases of a proven program change in a power unit, the FCR reaction shall be evaluated based on the real measures and the programmed change.
  - For the cases where only one power plant is active in the FCR and there is a proven program change at the same time, ELIA shall discard the proposed interval and provide a new interval for analysis.
- Secondary control
  - For the power units participating on Secondary Control, the Secondary Control activation shall be corrected in the FCR reaction based on the available information. For the cases where Secondary Control information is not available per CIPU Technical Unit, the information per power plant shall be split in power unit based on the number of running units during the period of analysis. In the event of an Availability Test, the BSP has the right to

stabilize his Secondary Control reaction as of the moment of the reception of the test signal to limit its effect on the test.

In the event of punctual and manifest measurement errors the BSP may request to ELIA to not take into account the said values for its controls by motivating his proposal.

8 Remuneration

8.1. The remuneration of the Service consists only of remuneration for reservation of the Contracted FCR Power.

8.2. There will be no remuneration for the energy supplied in the framework of the performance of the present General Framework.

8.3. The foreseen remuneration or Monthly Remuneration for the delivery of the Contracted FCR Power will be calculated on a monthly basis, respective of unit prices obtained in the Local and Regional Platforms and of the corresponding Contracted FCR for each Delivery Period.

8.4. The remuneration corresponds to the sum of the remunerations for the various selected Capacity Bids for each Delivery Period where the remuneration is the product of:

- The unit price, in €/MW/h; for the Contracted FCR Power;
- The number of MW of said Contracted FCR Power;
- The number of corresponding hours of the Delivery Period concerned.

For the Capacity Bids awarded in the Regional Platform the remuneration takes into account the price as defined in Annex 2 and the awarded volume for the corresponding Delivery Period of the related Regional Platform auction;

9 Penalties for non-performance of the General Framework

9.1. Penalties in relation to failed Availability Tests

As mentioned in Art.7.8 ELIA will check availability of the Service by performing Availability Tests as per Annex 9; if ELIA established that the BSP has failed to provide the power requested by the test penalties will be applied as defined in Annex 11.

9.2. Penalties in relation to failed activation controls

As mentioned in Art. 7.9, ELIA will check the correct delivery of the Service every Month by performing activation controls as per Annex 10; in case ELIA establishes that the BSP has failed to deliver the power required for the activation (P_{req_act}) foreseen under Annex 10, penalties will be applied as defined in Annex 12.

9.3. Burden of proof

ELIA will apply the penalties based on the information and measurements it has at its disposal. In case the BSP disputes ELIA's calculation of remuneration reductions burden of proof is on the BSP.

9.4. Accumulation of penalties

Penalties for unsuccessful result to an Availability Test can be cumulated with penalties for unsuccessful response to an activation.

9.5. Penalty cap

The sum of the penalties under Art. 9.1 and 9.2 will be subject to a monthly cap, without prejudice to any liability on the part of the BSP for the non-fulfillment of his obligations in accordance with Art. 6 of the General Conditions. The method for calculation of this penalty cap is detailed in Annex 13.

10 Invoicing and payment

10.1. Via a joint validation platform or other channel, ELIA will provide the BSP in accordance with Art. 7.8 with a report, at the latest by the end of each calendar month, relating to the evaluation and monitoring of any Availability Tests realized in month M-2. This report will indicate, among other things, all penalties for month M-2 as calculated by ELIA in accordance with Art. 9.1, showing the method of calculation and all data on which the calculation is based.

10.2. Via a joint validation platform or other channel, ELIA will provide the BSP in accordance with Art. 7.8 with a report, at the latest by the end of each calendar month, relating to the evaluation and monitoring of the FCR Power Supplied provided by the BSP in month M-2. This report will indicate, among other things, all penalties for month M-2 as calculated by ELIA in accordance with Art. 9.2, showing the method of calculation and all data on which the calculation is based.

10.3. If it appears subsequently that the calculated penalty(ies) is (are) incorrect, the first Party to take action will inform the other Party thereof as soon as possible. In case of discrepancies between data of ELIA and the BSP, the ELIA data prevail unless the BSP can prove that the BSP's data are correct. The Parties will try to reach an amicable solution; in the absence thereof, the dispute settlement procedure mentioned in Art. 13.2 of the General Conditions shall apply.

10.4. Disputes from the BSP regarding the report mentioned in Art. 10.1 must be reported within 25 calendar days starting from the day following ELIA's submission of the respective report. Should this occur, the Parties shall enter into negotiations with each other with a view to reaching an agreement.

10.5. If no agreement can be reached:

- The BSP, when drawing up his pro-forma invoice for Month M as specified in Art. 10.6, shall take account of the penalties calculated by ELIA;
- The Parties shall continue their negotiations with a view to reaching an amicable arrangement and, after concluding their agreement, settle this invoice ex-post;
- If no amicable arrangement is reached, the dispute settlement procedure set out in Art. 13.2 of the General Conditions shall apply.

10.6. The BSP shall send ELIA's Settlement department (see list of contact persons exchanged as described in Art. 12) his monthly pro-forma invoice no later than the end of each calendar month M. The pro-forma invoice will include, among other things:

- The Monthly Remuneration for the Contracted FCR Power for Month M, calculated as described in Art. 8.3.
- As the case may be, the penalties for Month M-3 as calculated by ELIA under Articles 9.1 and 9.2. ;
- The BSP's bank account number to which payment must be made.

10.7. ELIA shall either approve or reject the pro-forma invoice within 5 working days of receiving it. In accordance with the pro-forma invoice, the invoice may only be sent to the Invoicing & Payment department after ELIA has approved the pro-forma invoice.

10.8. Annex 14 includes the appropriation structure to be used by the BSP.

11 Modifications to the General Framework

11.1 ELIA has the responsibility to have the same General Framework for the Service for all BSPs.

11.2 Before modifying the General Framework, ELIA will inform all the BSPs who have signed a General Framework for FCR Power. The modifications will then be applicable for the first auction occurring after a period of thirty calendar days following the notification at the soonest.

11.3 When ELIA does not reach an agreement with the BSP, ELIA can, in order to respect Art. 11.1:

- notify the BSP that the General Framework without modifications will apply for the next tender
- exclude the BSP that refuses the addendum from auctions until both Parties agree upon the addendum.

11.4 All contracted FCR Power from the BSP before the contractual update are subject to the General Framework applicable at that time.

11.5 In case of modifications to the General Framework requested by the BSP to ELIA, ELIA will consider these modifications, taking Art. 11.1 into account ant to implement the changes will proceed as described in Art. 11.2.

12 Contact persons

12.1 Both parties shall keep the contact details up to date throughout the validity of the General Framework, by exchanging the filled out template in Annex 15. These exchanges and updates can be done via e-mail.

12.2 All contacts between the BSP and ELIA regarding the General Framework should take place between the persons designated in this list.

Drawn up in Brussels on [date] in duplicate, with each Party declaring having received an original copy.

ELIA TRANSMISSION BELGIUM N.V., represented by:

Patrick De Leener
Chief Officer Customers, Market & System

Chris Peeters
Chief Executive Officer

[BSP] represented by:

Name :
Function :

Name:
Function :

Annex 1. PROCUREMENT OF FCR & R2 IN THE LOCAL PROCUREMENT PLATFORM

CONTENT

A. PROCUREMENT PROCESS
B. AUCTION RULES & BIDDING OBLIGATIONS FOR CAPACITY BIDS
C. AWARD CRITERIA
D. TRANSPARENCY

A. PROCUREMENT PROCESS IN THE LOCAL PROCUREMENT PLATFORM

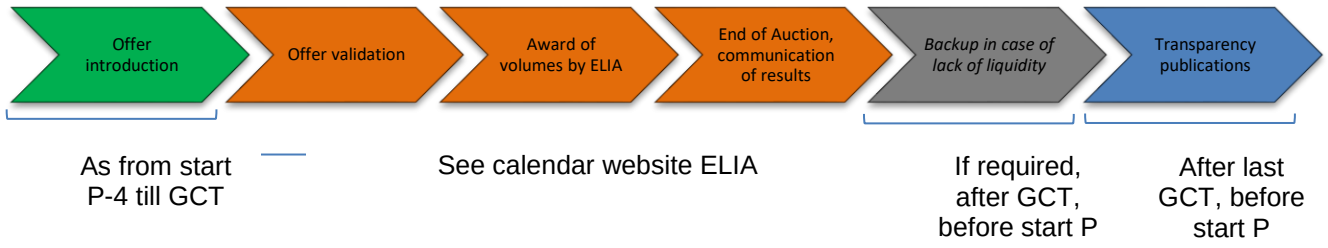
BSPs whose Delivery Points are located within ELIA's Control Area need to have concluded a valid General Framework with ELIA to be allowed to participate in the Local Procurement Platform.

The document called "STAR Auction Rules" that can be found on the ELIA website (www.elia.be) and which the BSP declares to have been informed of and agree with, describes the process and all the steps of the auction in detail. This document contains at least the conditions set forth below.

0. Procurement Calendar

A calendar indicating the Delivery Period and the deadline to submit offer (hereinafter referred to as "gate closure time(s)" or "GCT") is published on the ELIA website.

In case of a change in the calendar, the BSP will be informed via an email to the contact details for auctions & contractual matters, listed as "contact for contractual matters" in respect with Art. 12.



1. Submission of Capacity Bids

When:

As soon as a new Delivery Period starts, the BSP can start to make Capacity Bids for the next 4 Delivery Periods. The Capacity Bids for each Delivery Period have to be introduced before each respective GCT.

What & How:

As soon as the gate is open, new Capacity Bids can be introduced and already created Capacity Bids can be modified or cancelled, regardless of their status.

The minimum size of a Capacity Bid is 1MW. The granularity of the offers is also 1MW (no numbers after the decimal).

When a new Capacity Bid is created it automatically has a 'Received' status.

The complete set of Capacity Bids must be in respect with the Bidding Obligations for Capacity Bids as described in section B of this Annex. When this is not the case, the entire set of Capacity Bids will automatically be rejected at GCT. More details on the validation and the rejection of the bids can be found on the ELIA website (document "STAR Auction Rules").

The BSP can combine FCR 100mHz and FCR 200mHz with R2 in one Capacity Bid.

The BSP cannot combine FCR Asymmetrical Down/FCR Asymmetrical Up Service Types with R2 in one Capacity Bid.

The BSP makes best effort (not being unreasonable) to offer all of its available prequalified capacity.

ELIA may request supplementary information or a justification for certain Capacity Bids via the communication channels described in the auction manual published on the ELIA website.

A log of the communications will be held at all times so that traceability is guaranteed. The log and the key facts are reported by ELIA to the CREG.

Auction participants remain fully responsible for their Capacity Bids.

Bids are a firm commitment at GCT and must remain firm until the end of the auction (step B4). A BSP shall not use the offered capacity in any way until he has been notified of the outcome of the tender or until the deadline for communication has passed.

Capacity Bids are to be made in the tool STAR. The manual for the tool is published on the ELIA website.

Alongside Capacity Bids submitted by BSPs, a fictional divisible Base bid (hereinafter "RPP Bid") will be introduced by ELIA for the selection of the 200mHz Service Type, for a volume equivalent to the maximum that ELIA could procure from the Regional Procurement Platform (thus subject to the conditions in Art.4.6) and for a price equivalent to the most recent average price of the Regional Procurement Platform auctions and available for the full Delivery Period (Base), as detailed in the STAR Procedures and User Manual.

2. Capacity Bid validation

When:

After GCT, no new Capacity Bids can be introduced, nor can existing Capacity Bids be modified or cancelled.

What:

The entire set of Capacity Bids will be evaluated with regard to the respect of the Bidding Obligations for Capacity Bids as described in section B of this annex. In case of non-respect with the Bidding Obligations for Capacity Bids, certain Capacity Bids and/or the entire set of Capacity Bids can automatically be rejected (status "Rejected"). For more information on the Bidding Obligations for Capacity Bids see section B of this Annex. More details on the validation and the rejection of the bids can be found on the ELIA website (document "STAR Auction Rules").

The permitted number of Capacity Bids is unlimited.

ELIA can also reject Capacity Bids manually in case of manifest errors.

How:

More details on the validation and the rejection process of the bids can be found on the ELIA website (document "STAR Auction Rules").

3. Award of Volumes by ELIA

When:

After GCT, no new Capacity Bids can be introduced, nor can existing Capacity Bids be modified or cancelled.

What & How:

ELIA selects the optimal set of Capacity Bids (entirely of partially), amongst the Capacity Bids with the status "Validated", following the award criteria as described in section C.

In case the RPP bid is retained in the award, ELIA will procure the equivalent volume retained in the next Regional Procurement Platform Auction to be held (before delivery).

If, in case of an operational or technical issue with the auction process or ELIA's IT platform that has not been solved up until the last moment when ELIA can introduce its volume to be purchased on the Regional Procurement Platform, ELIA will not procure any volumes on the Regional Platform. A second round will be organized for the remaining volume as soon as the operational or technical issue has been solved.

4. End auction & communication of the auction results

What & How:

When ELIA ends the auction, the status of the retained Capacity Bids changes to "Retained". The status of the other Capacity Bids remains unchanged (Accepted or Rejected).

All Bidders receive an email to inform that the auction ended and can consult if and which volume of his Capacity Bids has been retained in the Auction overview.

ELIA publishes the required information as described in section D "Transparency" of this Annex. In case an RPP volume is retained, ELIA will publish the volume to be procured from the Regional Procurement Platform.

Shortfall procedure in case of insufficient volume

In case insufficient volumes FCR and R2 are offered to ELIA in an auction in the Local Platform, ELIA will retain a maximum volume from the RPP bid and will award the maximum possible offered volume for the remaining volume.

ELIA will organize a second auction for the remaining volume, in which ELIA will request all BSPs to make extra volume available.

Auction participants remain fully responsible for their offers. Bids are firm at GCT of this second round.

5. Transparency publications

When:

Between the end of the auction and the start of Delivery Period P.

What & How:

The aggregated and anonymous results are published on ELIA's website. (http://www.elia.be).

B. AUCTION RULES & BIDDING OBLIGATIONS FOR CAPACITY BIDS FOR THE LOCAL PROCUREMENT PLATFORM

0. Introduction

In order to be able to find a valid combination of Capacity Bids, complying with the volume ELIA procures and in order to guarantee an optimal solution which minimizes overall reservation procurement costs, ELIA should dispose of as many Capacity Bids as likely possible. Not only will this improve ELIA's chances to find an optimal solution and possibly avoid iteration & renegotiation, it will also improve the BSP chances of being selected for a certain Capacity Bid.

Besides the guarantee for ELIA to be able to find the optimal solution, this is important to ensure a level playing field for all BSPs.

To allow ELIA to achieve the latter the BSPs participating in an auction must respect the minimum Bidding Obligations for Capacity Bids and should be aware of how Capacity Bids are treated by ELIA (the auction rules).

Capacity bids with a status "Rejected" will not be considered in the checks for the bidding obligations and the application of the auction rules.

This section describes these obligations, how Capacity Bids are interpreted and how Capacity Bids are attributed.

When submitting Capacity Bid a BSP will have to provide at least the following information in STAR:

Capacity Bid number – unique identifier, automatically assigned

Product/Service Type – Service or other Variant Services

Volume [MW] – the offered volume

Price [€/MW/h] – the unit price for the offered volume

Tariff Period – the Tariff Period in which the Capacity Bid is valid

Divisibility of a Capacity Bid – can an offered volume be divided by ELIA at the same unit price.

Combinability of Capacity Bids via "May not be combined with"

The BSP can submit bids for the Symmetrical 200mHz and 100mHz or Asymmetrical Up or Down Service Types independently.

More information on how to submit the information can be found in the "STAR Auction Rules" document published on the ELIA website.

For the avoidance of doubt, it is clearly stated that these Bidding Obligations for Capacity Bids do not concern procurement through the Regional Procurement Platform.

1. Combinability of Capacity Bids

For all Base Capacity Bids:

All Capacity Bids with tariff period Base are considered as not combinable with other Capacity Bids with the tariff period Base with the same Service Type.

For all Peak/Long-Off peak Capacity Bids:

The BSP is free to set the combinability (or may not be combined with).

Consequently, in Base, a BSP should submit Capacity Bids for an increasing volume.

Example: A BSP wishes to offer 2 blocks of 5MW Base to ELIA.

ELIA expects a Capacity Bid for 5MW and a Capacity Bid for 10MW (2 combinable Capacity Bids for 5MW is not allowed).

It's allowed to submit Capacity Bids for Peak/Long Off Peak that are combinable or not combinable with these Base Capacity Bids.

2. Obligations regarding the volumes to be offered (**obligation 1, 2 and 3**)

The obligations described under obligations 1 and 2 are only applicable to Base (Tariff Period) Capacity Bids and only offers with the same volume R2 Up as R2 Down are considered.

The following obligations are the minimum obligations to be respected for each Service Type. ELIA invites every BSP to submit more Capacity Bids in order to increase the possibility to be retained in the optimal selection.

Obligation 1 – Smallest offered volume: The smallest offered volume should not exceed the volumes defined below in table 1. Capacity Bids for a smaller volume are allowed and encouraged. The obligation applies for individual bids for all FCR Power services and Secondary Control services as well as for combined offers FCR and R2:

Product	Smallest volume / max step [MW]
FCR 200mHz	14
FCR 100mHz	6
FCR Asymmetrical Down	6
FCR Asymmetrical Up	6
R2	24

Table 1

Obligation 2 – Volume increments: When sorting the Capacity Bids in terms of offered volume, the difference in terms of volume between 2 Capacity Bids can be at maximum the volumes defined in Table 1 (maximum delta between 2 Capacity Bids).

The obligation applies for individual bids for all FCR Service Types and Secondary Control Power services as well as for combined offers for FCR and R2.

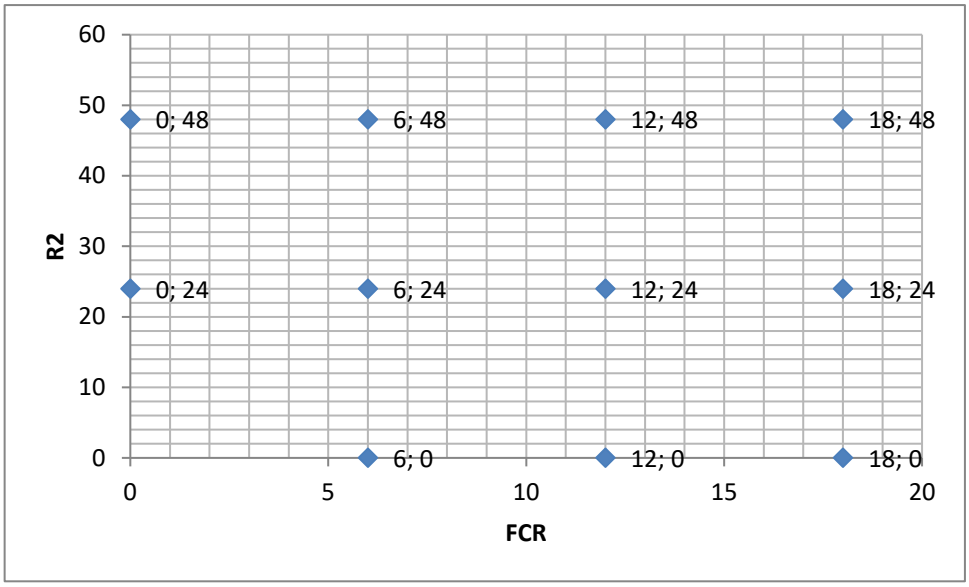
In case of combined offers for FCR and R2, the maximum increments should be respected for one product for all offers with the same amount of the other product:

The difference of R2 volume between 2 Capacity Bids combined with the same volume of FCR (and the same Service Type), can be maximum the volume as defined in Table 1.

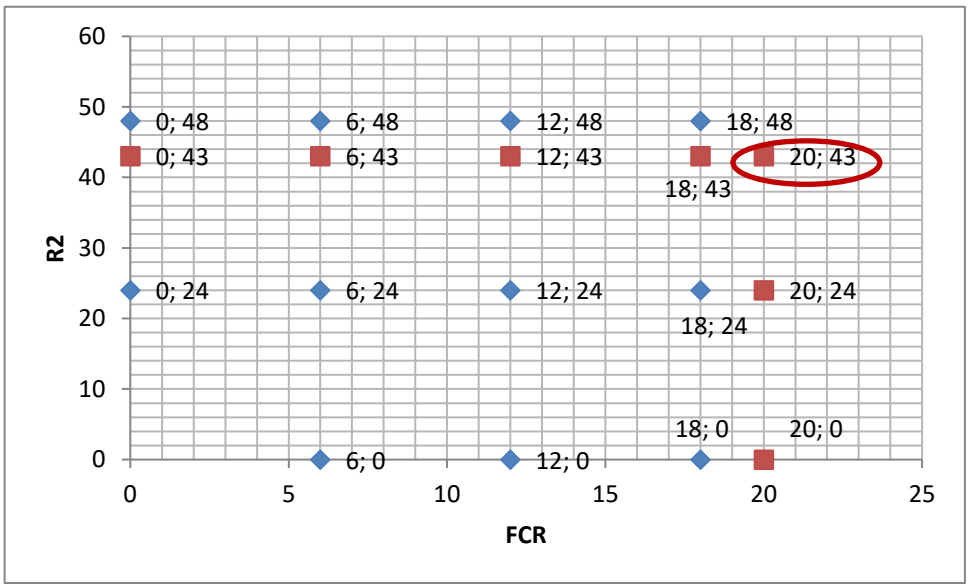
The difference of FCR volume between 2 Capacity Bids with the same Service Type combined with the same volume R2 can be at maximum equal to the volume defined in Table 1.

For combined FCR and R2 offers, the smallest offered volume and volume increments rules must be respected for each combination between FCR and R2 offers. For example if a BSP wishes to offer 18MW of FCR 100 mHz and 48MW of R2 he must at minimum do the following offerset :

FCR 100mHz	R2
18	48
12	48
6	48
0	48
18	24
12	24
6	24
0	24
18	0
12	0
6	0



In the same example, if the BSP also wishes to make an additional offer of 20MW of FCR and 43MW of R2 he will then have to also add necessary offers to be in respect of the Bidding Obligations for Capacity Bids (as displayed hereby under in red).



Obligation 3 – Base offer available: When offering both in Peak and Long Off Peak, the BSP must submit a Base Capacity Bid, while respecting the obligations below, for a volume that is at least minimum of the maximum volume offered in Peak and the maximum volume offered in Long Off Peak.

Consequences of non-respect
In case a BSP does not respect the obligations, all his Capacity Bids for this product type will be rejected at Gate Closure Time.

3. Divisibility of Capacity Bids

All Capacity Bids with Service Type FCR Asymmetrical and with tariff period Base are considered to be divisible between the offered volume and the Capacity Bid with the next smaller volume at the same unit price. The smallest offered volume is indivisible.

The granularity of the divisibility is 1MW.

Example : with 30MW as the minimum volume to be offered:

#	Capacity Bids	Volume selectable *
1	5MW @ 3,00€/MW/h	[5] @ 3,00€/MW/h
2	10MW @ 2,98€/MW/h	[6 – 10] @ 2,98€/MW/h
3	11MW @ 2,07€/MW/h	[11 – 11] @ 2,07€/MW/h
4	15MW @ 4,50€/MW/h	[12 – 15] @ 4,50€/MW/h

* Between brackets: the minimum and maximum volume that can be retained at the considered unit price.

For all Capacity Bids with other Service Types and/or tariff period different than Base:

The BSP can make a Capacity Bid divisible or not. Divisible means that ELIA can retain a volume between 1MW and the offered volume with a granularity of 1MW.

4. Obligations regarding the total costs of Capacity Bids (**obligation 4**)

Obligation 4 – Total cost check: The total cost (unit price x volume) of the smallest volume that can be retained resulting from a Capacity Bid, should never exceed the total cost of the smallest volume that can be retained from a Capacity Bid with a larger offered volume.

The obligation applies for individual Capacity Bids for all FCR Service Types and Secondary Control Power services as well as for combined offers for FCR and R2. In case of combined offers for FCR and R2, the check is performed while keeping the volume of one product constant and varying the volume of the other product.

Consequences of non-respect
All Capacity Bids with a higher total cost than a Capacity Bid with a larger volume will be rejected.
In case this leads to a non-respect of the previous obligations, all Capacity Bids will be rejected.

5. Example of instructions

Example Obligation 1 & 2: A BSP with the technical potential of 30MW FCR 200mHz, 15MW FCR 100mHz and 35MW R2 is expected to submit following minimum offer set in terms of Volumes.

Other alternatives respecting the instructions are of course possible by offering a lower minimum offer or reducing the step between certain offers.

Offer number	FCR [MW]	FCR Type	R2 [MW]
1	6	FCR_100mHz	0
2	12	FCR _100mHz	0
3	15	FCR _100mHz	0
4	6	FCR _100mHz	24
5	12	FCR _100mHz	24
6	15	FCR _100mHz	24

7	6	FCR _100mHz	35
8	12	FCR _100mHz	35
9	15	FCR _100mHz	35
10	14	FCR _200mHz	0
11	28	FCR _200mHz	0
12	30	FCR _200mHz	0
13	14	FCR _200mHz	24
14	28	FCR _200mHz	24
15	30	FCR _200mHz	24
16	14	FCR _200mHz	35
17	28	FCR _200mHz	35
18	30	FCR _200mHz	35

Example Obligation 4: For the offered volumes in the table below, the following should be respected:

The total cost of offer 1 should not exceed the total cost of offer 2, and both offers should not exceed the cost of offer 3.

The total cost of offer 4 should not exceed the total cost of offer 5 and both should not exceed the total cost of offer 6.

The total cost of offer 1 should not exceed the total cost of offer 4.

Offer number	FCR [MW]	R2 [MW]
1	6	24
2	6	46
3	6	69
4	12	24
5	12	46
6	12	69

C. AWARD CRITERIA

When retaining Capacity Bids, ELIA will:

retain the combination of Capacity Bids that leads to a minimal total reservation procurement cost,

while:

- retaining the minimum demanded FCR & R2 Volume, (the contracted FCR [2] and R2 must at all times be at least equal to the demanded volume);
- respecting the volume constraints per Service as described in the Balancing Rules;
- respecting the Bidding Obligations for Capacity Bids (divisibility) set forth in section B of this Annex;
- only considering non-rejected Capacity Bids;
- respecting constraints set by the BSP in terms of combinability and divisibility.

In case an alternative optimum exists the following criteria will successively be applied to determine the solution:

1) maximizing the retained volume

2) maximizing the number of retained bidders

[2] Taking the different Service Types into account

3) maximizing the equal distribution of the volume amongst all retained bidders.

D. TRANSPARENCY

At the moment of the conclusion of the General Framework, ELIA foresees to publish aggregated and anonymous results of the auctions on its website (www.elia.be).

Annex 2. PROCUREMENT OF FCR (200MHZ SERVICE TYPE) IN THE REGIONAL PROCUREMENT PLATFORM

A. PRINCIPLES

As described in Art. 4.2, starting from 1st of August 2016 at earliest, ELIA participates in an international cooperation with other Participating TSO's in order to procure, if economically optimal, a part of its required FCR Power through a Regional Procurement Platform.

Rules and processes governing the Regional Procurement Platform are described in the "Proposal of the establishment of common and harmonised rules and processes for the exchange and procurement of Balancing Capacity for Frequency Containment Reserves (FCR)" dated 18 October 2018 (hereinafter referred to as "RPP rules and processes for FCR").

This international cooperation is, at the moment of drawing this contract and due to constraints set by local legislations, organized around two Central Clearing Systems, coupled together (section D describes cases in which markets can be decoupled).

Locally pre-qualified BSPs use bidding platforms to introduce their bids. ELIA and BSPs from its Control Area participate in the Regional Procurement Platform through the bidding platform www.regelleistung.net.

BSPs whose Delivery Points are located within ELIA's Control Area need to have concluded a valid General Framework with ELIA to be allowed to participate in the Regional Procurement Platform. The procedure for becoming a qualified BSP is described in Annex 6. The only Service Type that can be offered on the Regional Procurement Platform is Base Symmetric FCR 200 mHz. Once the General Framework is concluded with ELIA, ELIA will provide the required accession rights to the Regional Procurement Platform to the BSP.

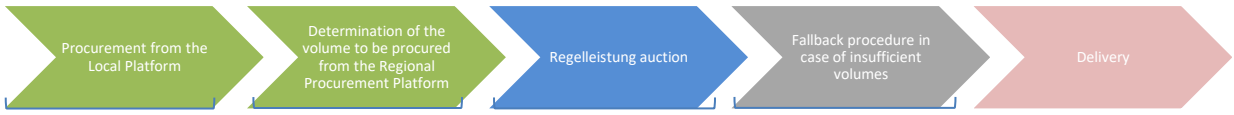
Through the Regional Procurement Platform the BSP will be able to offer volumes of FCR Power to all TSO's who have signed an agreement at the moment of the auction. Offers will be selected so as to minimize the total cost of the overall volume to be procured through the platform and considering constraints set in local legislation.

Once a Capacity Bid is awarded in the Regional Procurement Platform the Contracted FCR Power becomes part of the BSP's FCR Power Obligation as mentioned in Art. 4.9.

B. AUCTION CALENDAR

The auction calendar is described in Article 4 – Auction frequency and auction timing' of the RPP rules and processes for FCR.

Overall, the procurement timeline will be the following:



See STAR calendar	At auction award	See calendar on www.regelleistung.net

C. AUCTION PROCEDURE

The auction procedure is detailed in Article 4 – Auction frequency and auction timing' of the RPP rules and processes for FCR.

D. MARKET DECOUPLING

For technical and/or regulatory reasons, it might be necessary to decouple the common market. It will then be split up into sub-markets. Relevant common sub-markets will be identified on Regelleistung.

If the markets are decoupled, the two relevant auctions are clearly identified on the bidding platform.

E. RULES FOR CAPACITY BIDS

The characteristics of the product are detailed in Article 5 – Product' of the RPP rules and processes for FCR.

The rules applicable to capacity bids submission are described in Article 6 – Bid design possibilities' of the RPP rules and processes for FCR.

-

The maximal volume offered by the BSP must always be equal to or lower than its total pre-qualified FCR_{max}, after having subtracted any FCR Power retained in the Local Platform. The BSP takes this into account when submitting multiple offers, which are always combinable as well as all specific conditions related to his portfolio (congestions, availability,…).

The Capacity Bid price on Regional Procurement Platform is expressed in € / MW while the Capacity Bid price submitted on Local Procurement Platform is expressed in € /MW/h.

F. SELECTION & AWARD CRITERIA

Selection and award criteria are described in Article 7 – Auction Allocation Algorithm' of the RPP rules and processes for FCR.

G. PUBLICATIONS & TRANSPARENCY

Auction results will be published at latest 24 hours after Gate Closure Time on www.regelleistung.net. For reasons of transparency, anonymized retained bids will also be published in the same delay on the Regelleistung website.

H. SETTLEMENT & INVOICING

Settlement of the Capacity Bids awarded in the Regional Procurement Platform is described in Article 8 – TSO-BSP settlement' of the RPP rules and processes for FCR.

Further to that, as mentioned in section A of the present Annex, Capacity Bids awarded in the Regional Procurement Platform become part of the BSP's FCR Power Obligation. In this sense, the same rules as described in article 10 apply.

Annex 3. CONDITIONS, RULES AND PROCEDURE FOR TRANSFER OF OBLIGATIONS

A. PRINCIPLE FOR TRANSFER OF OBLIGATIONS

In accordance with Chapter 5, ELIA allows the BSP to transfer part of or his entire Obligation to one or several Counterpart BSP(s). Similarly, the BSP may agree to make an additional quantity of FCR Power available to ELIA as a result of a Transfer of Obligations from a Counterpart BSP to the BSP.

Since only Confirmed Transfers of Obligation will be considered as valid by ELIA, the present Annex lays down the conditions under which the Transfer of Obligations may occur and defines the rules and procedure that ELIA, the BSP and the Counterpart BSP must respect in order to notify and validate said transfers.

As long as the Transfer of Obligations is not confirmed by ELIA, the FCR Power Obligation remains with the BSP.

BSPs arrange between themselves how, when and at what price a BSP takes over obligations from a Counterpart BSP.

All procedures regarding the Transfer of Obligations and the tools are explained and illustrated with examples on ELIA's website (www.elia.be).

B. OBLIGATIONS THAT CAN BE TRANSFERRED VIA THE SECONDARY MARKET

Following signature of the General Framework, the BSP can transfer Obligations to/from a Counterpart BSP for the Service Types listed below.

Symmetric FCR 100mHz and 200mHz (CIPU and Non-CIPU Technical Units alike)

Asymmetric FCR Down (CIPU and Non-CIPU Technical Units alike)

Asymmetric FCR Up (CIPU and Non-CIPU Technical Units alike)

Transfer of Obligations is applicable in Day-ahead or in Intraday and is managed per Service Type.

ELIA can at any time allow new services to participate. In this case ELIA will inform the BSP.

C. RIGHTS FOR ANNOUNCING (REQUESTING) TRANSFER OF OBLIGATIONS

Any BSP holding a valid General Framework for FCR from CIPU Technical Units or General Framework for FCR from non-CIPU Technical Units to the date of the performance of the FCR Obligations can exchange Obligations with a Counterpart BSP even if his quantity of Contracted FCR Power is 0 (zero) for the concerned Delivery Period;

D. CONSTRAINTS FOR ANNOUNCING (REQUESTING) TRANSFER OF OBLIGATIONS

ELIA verifies and confirms or rejects the Transfer of Obligation requests announced by the BSP. Only requests with matching status "Confirmed" are considered as valid by ELIA.

Day-Ahead Procedure

- Transfer of Obligations requests have to be submitted by both BSPs, before 13.30 hrs on day D-1.
- One BSP can have multiple exchanges with different Counterpart BSPs.
- Consistent Transfer of Obligations requests are blocked at 13.30 hrs on day D-1 and cannot be changed from then onwards. Status for these Transfer of Obligations requests becomes “Confirmed”. As from then on no new requests may be sent in except the counterparty of a Waiting for Counterpart (WFC).
- If a request is inconsistent, BSPs can correct it until 14.00 hrs on day D-1.
- If a request still shows inconsistencies by 14.00 hrs on day D-1, ELIA will reject (both) requests (the BSP’s and the Counterpart BSP’s) completely.
- One BSP can have multiple exchanges with different Counterpart BSPs.
- The Obligations undertaken by a Counterpart BSP summed to the rest of Obligations nominated in day-ahead must be in respect of:
    a. the CIPU Technical Unit’s P_{max} and P_{min} limitations;
    b. Prequalified volume for the corresponding Service Type

Intra-Day Procedure

- Intra-Day Transfer of Obligations process starts after the end of the CIPU nomination check and confirmation (no later than 18:00 on D-1) and ends at midnight (00:00) in intraday.
- The Transfer of Obligations must take place at latest one hour before beginning of the first quarter-hour of Delivery;
- One BSP can have multiple exchanges with different Counterpart BSPs.
- The Obligations undertaken by a Counterpart BSP summed to the rest of Obligations requested in day-ahead must be in respect of:
    a. the CIPU Technical Unit’s P_{max} and P_{min} limitations;
    b. Prequalified volume for the corresponding Service Type
- A Counterpart BSP undertaking an Obligation cannot supply the service with CIPU Units that are situated within a CIPU Red-zone;

E. OVERALL PROCESSING WORKFLOW FOR TRANSFER OF OBLIGATIONS

- BSP(s) are contracted for FCR.
- BSPs that don't have the possibility to offer partially or completely the contracted FCR Power in day-ahead (i.e. for technical or economic reasons) can redistribute partially or entirely their obligation towards one or several Counterpart BSP(s) who will then take over the responsibility to offer these reserves to ELIA in D-1. BSPs arrange between themselves how, when and at what price a BSP takes over obligations from a Counterpart BSP.
- Both BSPs must announce said transfers towards ELIA before 13.30hrs in D-1.

- At 13.30 hrs D-1, Transfer of Obligations requests for the next day with matching status “Balance OK” are blocked and their status will become “Confirmed”. As from then on no new requests may be sent in except the counterparty of a “Waiting for Counterpart (WFC)” request.

- An email is also sent to all BSPs to indicate that the first gate has closed. The BSPs having requests for D+1 with matching status “Waiting For Counterpart (WFC)” and “BalanceError” can still change their requests till 14.00hrs.

- At 14.00 hrs, the second gate is closed; from then on no changes can be made to the requests.

- All consistent requests (“BalanceOK”) are confirmed, inconsistent (“Waiting for Counterpart” or “BalanceError”) requests are rejected. An email is sent to the BSPs and the status of their requests changes to “Confirmed” or "Rejected".

- A BSP can still transfer his obligations in intraday up to 1 hour before the first quarter-hour of delivery.

- The BSP can request a Transfer of Obligations and the Counterpart BSP must confirm the transfer up until 1 hr before delivery. If the Counterpart BSP hasn’t accepted by this time, the Transfer of Obligation will not be taken into account by ELIA.

- Once the Counterpart BSP has accepted the Transfer of Obligations, the transfer receives the status “Accepted by Counterpart”.

- If the Transfer of Obligations request respects aforementioned constraints, ELIA will accept it and the request will receive the status “Accepted by Elia”. At this point the Transfer of Obligations is registered and will be taken into account in ELIA’s settlement.

F. PROCEDURE FOR ANNOUNCING (REQUESTING) TRANSFER OF OBLIGATIONS.

The procedures to be followed for the Transfer of Obligations and the manual for the tools are published on ELIA’s website (www.elia.be).

Annex 4. QUANTITY OF PRIMARY CONTROL POWER REQUIRED

In accordance with Art. 7.9, in case of a Frequency Deviation, the BSP must activate automatically (without intervention) the FCR Power Required as defined in this Annex.

ELIA also authorizes a deadband of 10mHz around 50Hz in which a BSP may not react.

A. DETERMINATION OF THE FCR POWER REQUIRED

$$\mathbf{P_{req} = P_{req1} + P_{req2} + P_{req3} + P_{req4}}$$

With:

P_{req} = The FCR Power (in MW) to be supplied by the BSP following a Frequency Deviation in relation to the present General Framework;

P_{req1} = FCR Power Required for Symmetric FCR 200mHz Service Type

P_{req2} = FCR Power Required for Symmetric FCR 100mHz Service Type

P_{req3} = FCR Power Required for the Asymmetric FCR Down Service Type

P_{req4} = FCR Power Required for the Asymmetric FCR Up Service Type

B. DETERMINATION OF THE FCR POWER REQUIRED FOR SYMMETRIC FCR 200MHZ SERVICE TYPE:

For a specific Period and a specific Frequency Deviation, the quantity of FCR to be supplied (upwards or downwards) will be determined via the power/frequency ratio λ_0 and on the basis of a Frequency Deviation $\Delta f1$ according to the following formula:

$$P_{req1} = - \lambda\ 0 * P_{b1}[BSP, Period] * \Delta f$$

With:

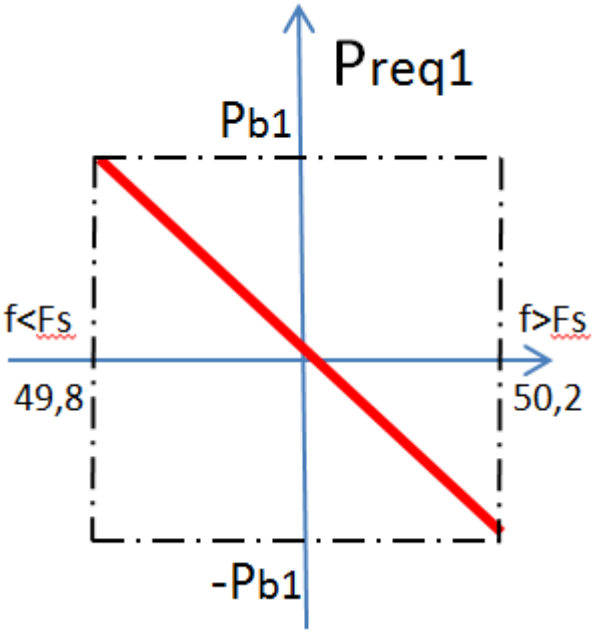
P_{req1} = the FCR in MW to be supplied (upwards or downwards) for Symmetric FCR 200mHz:

$\Delta f = F – 50{,}000Hz$

- $Pb1_{[BSP, Period]} = Pb1_{[BSP, Period]}$ = the Symmetric FCR 200mHz Power Nominated for this quarter-hour;

λ_0 = the power/frequency characteristic of ENTSO-E, equal to 15000 [MW/Hz]/3000 [MW] = 5 [1/Hz].

Graphically, P_{req1} can be represented as follows:



C. DETERMINATION OF THE FCR POWER REQUIRED FOR SYMMETRIC FCR 100MHZ SERVICE TYPE :

For a specific Period and a specific Frequency Deviation, the quantity of FCR to be supplied (upwards or downwards) will be determined via the power/frequency ratio λ_{Elia} and on the basis of a Frequency Deviation Δf according to the following formula:

$$P_{req2} = - \lambda \text{ Elia} * Pb2_{[BSP, Period]} * \Delta f$$

With:

P_{req2} = the FCR in MW to be supplied (upwards or downwards) for Symmetric FCR 100mHz:

Δf = [min(F – 50,000Hz ; +/- 0,100Hz)]

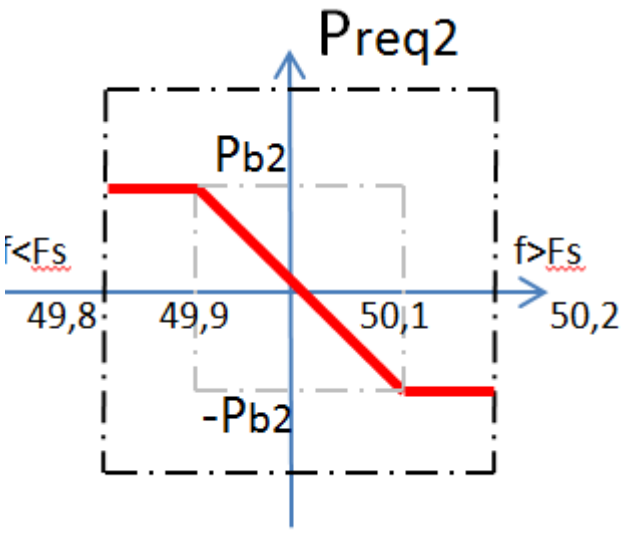
P_{b2}[BSP, Period] = the Symmetric FCR 100mHz Nominated for this quarter-hour;

$\lambda_{Elia} = \lambda_0 * 2$

the parameter 2 translates the requirement that Symmetric FCR 100mHz has to be fully activated at +/- 100mHz (instead of +/-200mHz)

$\lambda 0$ = the power/frequency characteristic of ENTSO-E, equal to 15000 [MW/Hz]/3000 [MW] = 5 [1/Hz].

Graphically, P_{req2} can be represented as follows:



D. DETERMINATION OF THE FCR POWER REQUIRED FOR THE ASYMMETRICAL DOWN SERVICE TYPE:

For BSPs with Asymmetrical Down Obligations, for a specific Period and a specific Frequency Deviation, the additional quantity of FCR to be supplied downwards will be determined via the power/frequency ratio and on the basis of a Frequency Deviation (f according to the following formula):

When F < 50,100Hz:

P_{req3} = 0MW

When 50.100 ≤ F ≤ 50,200Hz:

P_{req3} = - (λ 0 * 2 * (P_{b3}[BSP, Period] * (Δf - 0,100Hz))

When F ≥ 50,200Hz:

P_{req3} = - P_{b3}[BSP, Period]

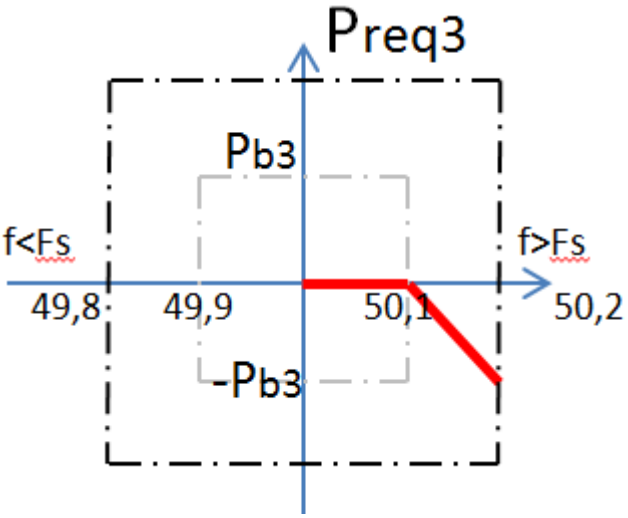
With:

P_{req3} = the additional FCR in MW to be supplied (downwards) for the Asymmetrical Down Service.

Δf = F – 50,000Hz $P_{b3[BSP, Period]}$ = the Asymmetric FCR Down Nominated for this quarter-hour;

λ0 = the power/frequency characteristic of ENTSO-E, equal to 15000 [MW/Hz]/3000 [MW] = 5 [1/Hz].

Graphically, P_{req3} can be represented as follows:



E. DETERMINATION OF THE FCR REQUIRED FOR THE ASYMMETRICAL UP SERVICE

For BSPs with Asymmetrical Up Obligations, for a specific Period and a specific Frequency Deviation, the additional quantity of FCR to be supplied upwards will be determined via the power/frequency ratio and on the basis of a Frequency Deviation (f according to the following formula):

When F > 49,900Hz:

P_{req4} = 0MW

When 49,800 ≤ F ≤ 49,900Hz:

$P_{req4} = -\lambda 0 * 2 * (P_{b4}[BSP, Period] * (\Delta f + 0{,}100Hz))$

When F ≤ 49,800Hz:

$P_{req4} = - P_{b4}[BSP, Period]$

With:

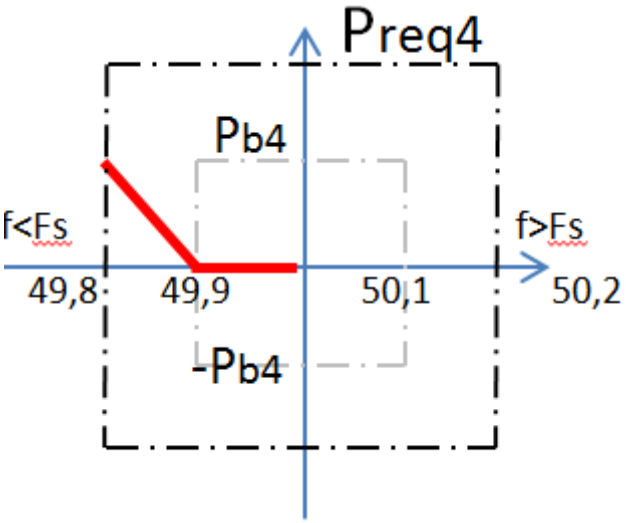
P_{req4} = the additional FCR in MW to be supplied (upwards) for the Asymmetrical Up Service.

$\Delta f = F – 50{,}000Hz$

$P_{b4[BSP, Period]}$ = the Asymmetric Up FCR Nominated for this quarter-hour;

λ_0 = the power/frequency characteristic of ENTSO-E, equal to 15000 [MW/Hz]/3000 [MW] = 5 [1/Hz].

Graphically, P_{req4} can be represented as follows:


Preq4
Pb4
f<Fs
f>Fs
49,8
49,9
50,1
50,2
-Pb4

Annex 5. TEMPLATE FOR THE LIST OF CIPU TECHNICAL UNITS

A. LIST OF DELIVERY POINTS

BSP :
Version:

In accordance with Art. 3.2 the BSP must declare the Delivery Points that are technically capable of making available and supplying the Service, as well as their organization into Providing Groups.

Valid From:	Valid To:	Delivery Point Name	Grid User / DSO	TSO/DSO/CDS	EAN CIPU Technical Unit	Symmetric 200mHz Service Type					Symmetric 100mHz Service Type		Asymmetric Up Service Type		Asymmetric Down Service Type		Regulating Energy (MW/Hz)	PUTM MW output
						$FCR_{ref\_synth\_up}$ [MW]	$FCR_{ref\_synth\_down}$ [MW]	$FCR_{ref\_synth\_100mHz}$ [MW]	$FCR_{ref\_synth\_standalone}$ [MW]	Providing Group	FCR_{ref} [MW]	Providing Group	FCR_{ref} [MW]	Providing Group	FCR_{ref} [MW]	Providing Group		

For the Service Type Symmetric 200mHz the $FCR_{ref\_PG200mHz}$ value is calculated as follows:

$$FCR_{ref\_PG200mHz}=2*\min\left(\sum FCR_{ref\_synth\_up};\ \sum FCR_{ref\_synth\_down};\ \sum FCR_{ref\_synth\_100mHz}\right)+\sum FCR_{ref\_200mHz\_standalone}$$

Example:
If within a certain Providing Group offering the 200mHz Service Type some Delivery Points deliver the 200mHz reaction partially (divided in different Up, Down & 100mHz bands that together compose a full 200mHz reaction) and/or fully as follows:

Delivery Point 1	Up	1 MW
Delivery Point 2	Down	2 MW
Delivery Point 3	100mHz	4 MW
Delivery Point 4	Up	1 MW
Delivery Point 5	100mHz	2 MW
Delivery Point 6	200mHz	1 MW
Delivery Point 7	Down	8 MW

Delivery Point 8	Up	12 MW
Delivery Point 9	Up	3 MW
Delivery Point 10	100mHz	15 MW

Then the $FCR_{ref\_PG200mHz}$ value is calculated as follows:

$$FCR_{ref\_PG200mHz}=2*\min(17; 10; 17) + 1=21MW$$

If any of these Delivery Points be removed from the Providing Group at any time, the $FCR_{ref\_PG200mHz}$ value will evolve as follows:

- If Delivery Point 1 is removed: $FCR_{ref\_PG200mHz}$=11 MW
- If Delivery Point 3 is removed: $FCR_{ref\_PG200mHz}$=11 MW
- If Delivery Point 2 is removed: $FCR_{ref\_PG200mHz}$=9 MW
- If Delivery Point 6 is removed: $FCR_{ref\_PG200mHz}$=10 MW

B. FCR_{MAX}

N° Providing Group	Valid From	Valid To:	With or without limited energy reservoir	FCR_{max_PG} 200mHz	FCR_{max_PG} 100mHz	FCR_{max_PG} Up	FCR_{max_PG} Down

Prequalified FCR_{max}

Asymmetrical Up Service Type	_____MW
Asymmetrical Down Service Type	_____MW
Symmetrical 100mHz Service Type	_____MW
Symmetrical 200mHz Service Type	_____MW

The fact of being listed in the present Annex does not constitute a right of access for the said CIPU Technical Units.

The list of Providing Groups and Delivery Points will be kept up to date by exchanging an updated list based on the template in the present Annex via e-mail to the contracting responsible as indicated in Annex 16 and under the condition of explicit validation of the list by ELIA. The present Annex may be updated during the lifetime of the General Framework if following principles are respected:

- At the moment of the BSP's request to update the present Annex, the Delivery Points and Providing Groups must already be in respect with the applicable conditions set in Chapter 3;
- ELIA will notify the BSP by e-mail of the acceptance of the updated list(s) at the latest 5 working days after reception of the BSP's request by sending a new validated document to the BSP or by validating a document submitted by the BSP.

- The updated list of Delivery Points and their organization in Providing Groups as per section A of the present Annex becomes effective the day after reception of notification of acceptance by ELIA. As of this moment, these Delivery Points will be taken into consideration for settlement of Availability Tests and activation controls.
- ELIA will only consider for Prequalification Tests Delivery Points that are already contained in a valid list of Delivery Points as mentioned in section A of the present Annex.
- ELIA will notify the BSP of the results of Prequalification Tests and resulting FCRmax values within 10 working days after performance of the last test. The updated FCRmax values for each Service Type as per section B of the present Annex become effective at the beginning of the Month following the month of notification of Prequalification Tests results by ELIA. As of this moment the BSP may offer in auctions considering his updated FCRmax value for each Service Type.
- If a certain Delivery Point is already contained in a validated list of FCR Providing Groups and the BSP wishes to re-prequalify a FCR_{max_PG} the modified FCR_{max} value can become effective immediately after notification of acceptance by ELIA.
- The changes must be notified to ELIA by submitting via e-mail to contracting_AS@elia.be :
    - a proposal of an updated Annex 5;

Annex 6. Procedure for BSP Acceptance

Once the General Framework is signed and before submitting a Capacity Bid, the BSP must :

- Successfully complete a Communication Test as stipulated in the present Annex. The general liability regime organized by Article 6 of the General Conditions is applicable to the BSP during the test.
- Successfully complete Prequalification Tests as stipulated in Annex 7 for at least one Providing Group;

The BSP must be in respect of the requirements of the Communication Test at all times during the Delivery Period. If ELIA establishes that the BSP no longer respects these requirements during the Delivery Period, the Service will be considered as unavailable starting from the moment of notification by ELIA and the BSP will not be remunerated for it nor will he be able to participate in procurement. The BSP has to succeed a new Communication Test in order to be considered as available by ELIA and participate in procurement. ELIA will thus notify explicitly the BSP of the end of the non-compliance period.

A. COMMUNICATION TEST

The BSP and ELIA will check together before performing a Prequalification Test the BSP's ability to exchange data with ELIA as required in Annex 8:

- Nomination Communication
  - Nomination procedure: ELIA and the BSP must verify the BSP's ability to correctly exchange nomination files as described in Art.7.7.
- Real-time communication
  - ELIA and the BSP will verify the BSP's ability to correctly exchange real-time data as defined in Annex 8.

In case that the organization requirements are not fulfilled, ELIA and the BSP will make their best effort to identify the source of the failure and the BSP is expected to solve the source of the failure.

Any costs linked to the tests are borne by the BSP.

Annex 7. PREQUALIFICATION OF DELIVERY POINTS AND PROVIDING GROUPS

A. DELIVERY POINTS CONDITIONS

Conditions for all Delivery Points

- In all cases, ELIA reserves the right to refuse a Delivery Point if its participation in the FCR Service jeopardizes the security of the ELIA Grid, the DSO Grid and/or the CDS network.

Conditions specific for the Delivery Points connected to the DSO grid:

- The BSP and the DSO agree, in a contract on a list of Delivery Points connected to the DSO grid that the BSP declares technically capable of providing the Service.

- ELIA must receive a copy of the signed BSP-DSO contract.

- The list of DSO connected Delivery Points is provided by the DSO to ELIA. ELIA will only consider this list. The BSP must keep ELIA informed of the latest list of DSO connected Delivery Points for informative purposes.

Conditions specific for the Delivery Points connected to a CDS network:

- For Delivery Points within a CDS, ELIA must receive a CDSO Declaration document as per template in Annex 16 signed by the CDSO.

For each Delivery Point and Providing Group, the BSP must provide the following **prior to performing a Prequalification Test:**

For each Delivery Point:

- All information required in the Annex 5 template;

For each Providing Group:

- A detailed description of the Energy Management Strategy as required in section B of the present Annex.

B. GENERAL PREQUALIFICATION RULES FOR PROVIDING GROUPS

Providing Groups will be pre-qualified by ELIA for each Service Type and may only provide ELIA with the Service Types for which they're pre-qualified. The validity period of the prequalification is 5 years starting from the notification of the results by ELIA.

In case the BSP wishes to :

- change the repartition of his Delivery Points into different Providing Groups;
- prequalify his Providing Group for a new Service Type;
- increase his already prequalified volume for a certain Service Type,

he will have to undergo Prequalification Tests.

C. REQUIREMENTS FOR PROVIDING GROUP ACCEPTANCE

Energy Management Strategy

Each BSP needs to present for each Providing Group a documented Energy Management Strategy with which he aims to prove his ability to comply with requirements for provision of the Service as these are stipulated in Art. 6.1 before the Providing Group pass a Prequalification Test and become able to be included in the BSP's Annex 5.

In this account, the BSP needs to declare whether his Providing Group has energy constraints or not and needs to demonstrate that his proposed Energy Management Strategy has no impact on a third party (e.g. on another BRP).

Depending on the Energy Management Strategy declared by the BSP, ELIA will determine whether the Providing Group must be considered as having or not any energy limited reservoirs. To do so, ELIA applies the following rule:

- If the Delivery Points that constitute the Providing Group cannot deliver the FCR Service alone for the entire Delivery Period then the Providing Group is considered as "with energy limited reservoirs";
- In the opposite case, the Providing Group is considered **"without energy limited reservoirs"** (in example, if a Technical Unit is part of the group and can guarantee an availability of the Service for the whole Delivery Period).

D. COMMUNICATION AND MONITORING REQUIREMENTS

The BSP and ELIA will control together prior to performing any Prequalification Test the BSP's ability to communicate in real-time data related to this Delivery Point according to dispositions of Annex 8.

E. TECHNICAL REQUIREMENTS

When submitting a Delivery Point and or Providing Group for acceptance, the BSP implicitly acknowledges that these comply with technical and organizational requirements as described in this General Framework.

F. PREQUALIFICATION TESTS - CALCULATION OF FCR_{MAX}

In order to attest a Delivery Point and/or a Providing Group to participate in a specific Service Type it must successfully pass the Prequalification Tests as described below.

ELIA demands that 2 different Prequalification Tests (Synthetic Frequency Profile test & Real Time Frequency test) are succeeded by each Providing Group independently from it being considered as having or not a limited energy reservoir as mentioned in section C of the present Annex.

The outcome of the tests will define the FCR_{max_PG} that the BSP may offer to ELIA for each Service Type and for a certain Providing Group. In addition, the FCR_{max_PG} value must also correspond to the sum of FCR_{ref} values as these are declared by the BSP in Annex 5 for the corresponding Providing Group and Service Type.

Organization of the tests :

- The BSP takes contact with ELIA to inform about his project to prequalify his Providing Groups to offer FCR Power. ELIA and the BSP agree on a timing during which the Prequalification Tests can be organized within 10 working days from the day of the request by the BSP and under the condition that the BSP has provided all necessary information beforehand.
- Within the agreed timing, the BSP will first start following the relevant synthetic frequency profiles detailed hereby under.
- After this test, the BSP may continue with the real time frequency follow up over a period of 4 hours starting at the time of his convenience at latest within 24 hours from the end of the Synthetic Frequency Profile test.
- Once the tests are over, the BSP sends all relevant data to ELIA for the result analysis.
- Any costs linked to the tests are borne by the BSP;

Through these tests, ELIA will certify that the BSP is able to deliver a certain quantity of the Service with the Providing Group(s) concerned while in respect of its requirements.

ELIA has the right to perform consistency checks between the declared potential contribution of each Delivery Point (FCR_{ref}) and the real contribution during the Prequalification Tests.

For a Providing Group that is actively delivering the Service at the moment of the Prequalification Tests ELIA will not perform any Availability Test or activation control for as long as the Prequalification Tests are under way.

Addition of new Delivery Point(s)

When adding new Delivery Point(s) to an existing Providing Group, Prequalification Tests have to be performed to increase the FCR_{max_PG} (and by consequence the FCR_{max}). No test is required if Delivery Point(s) is (are) added without impact on FCR_{max_PG}. The BSP may choose one of the two following solutions:

- new Prequalification Tests on the overall Providing Group, including Delivery Points already pre-qualified;
- Prequalification Tests, only on the sub-pool of new Delivery Points.

If the second solution is chosen then the resulting FCR_{max_PG} of the Prequalification Tests are added to the previous FCR_{max}.

In the following chapters Prequalification Tests referring to Providing Groups concern in the same way sub-pools of additional Delivery Points to be added to Providing Groups as described hereby above.

Synthetic Frequency Profile test

The BSP's Providing Groups that are being tested for each Service Type must simulate a pre-defined reaction profile.

For symmetrical Service Types, ELIA prequalifies the Providing Group in each direction (upward and downward). The tests in the two different directions can take place at different moments in time within a window of 24 hours.

ELIA will consider measurements on each Delivery Point part of the Providing Group requesting prequalification gathered via the real-time connection and apply the following rules:

- The minimal power value at each frequency step of 50 mHz (over a period of 120 seconds) will be taken as reference value for the related step;
- A 5 seconds margin is allowed in addition to the required activation time presented in Art. 6.1 before ELIA considers the measurements to determine the minimal value of the step;

This procedure is further detailed for each Service Type hereby under.

For this test, ELIA will calculate a $P_{sup\_prequal}(t)$ value as follows:

$$P_{sup\_prequal}(t) = P_{measured}(t) - P_{ref\_prequal}$$

Where:

- **$P_{ref\_prequal}$:** The average power measured in the 20 seconds preceding the beginning of the test;

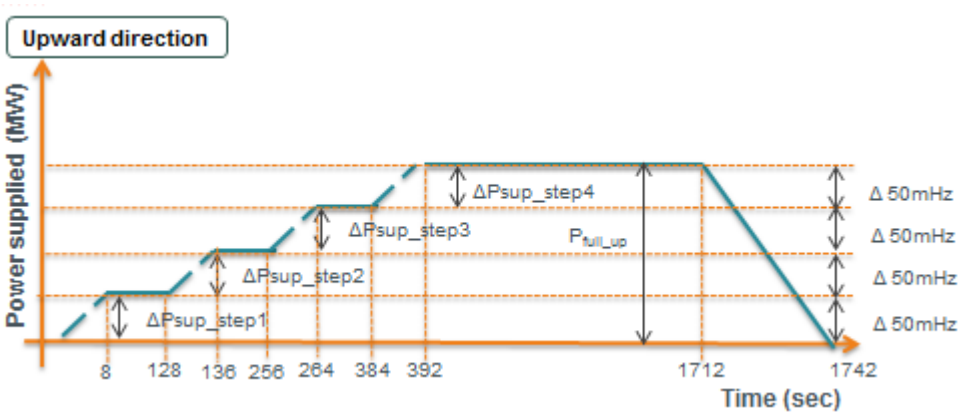
For the purposes of the test, ELIA will calculate 10 seconds average values of $P_{sup\_prequal}(t)$, called **$Av\_P_{sup\_prequal}(t)$**. To take into account the 5 seconds tolerance in the beginning of each step ELIA will calculate a 15 seconds average value at the beginning of each step instead of a 10 second average. Thus ELIA will select for each step the lowest (or highest for the downwards direction) value among:

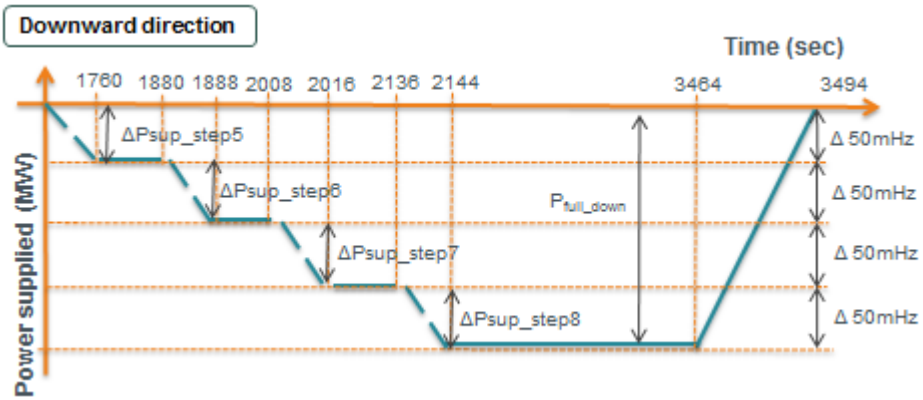
- one average value of $P_{sup\_prequal}(t)$ over the first 15 seconds of the step after the 5 seconds tolerance and
- the remaining number of average values of $P_{sup\_prequal}(t)$ over 10 seconds for each step.

The outcome of this test is the $FCR_{max\_PG\_SFP}$ for each Providing Group value which together with the outcome of the Frequency Real-Time Follow-Up Test will determine the FCR_{max_PG} of the Providing Group tested for the particular Service Type.

200mHz Service Type

The Providing Group must follow the following (indicative) profiles upward and downward following a step-by-step simulated frequency deviation:





Where:

- The Providing Group must in 13 seconds (7,5 seconds of required activation time as per Art. 6.1 and 5 seconds of tolerance) deliver the volume of each step of 50mHz;
- The Providing Group must maintain its reaction for 2 minutes before going to the next step of 50mHz.
- Once the Providing Group has deployed its maximal supplied power, it must maintain its reaction for 22 minutes.
- The same reaction must be performed in the opposite direction as showed hereby above within 24 hours;

The timing of corresponding test steps to be followed is resumed hereby under:

Time series test Service Type 200mHz			
Step	**Δsec**	**From t=**	**To t=**
Upward direction			
Ramp-up	8	0	8
First step up (Min1)	120	8	128
Ramp-up	8	128	136
Second step up (Min2)	120	136	256
Ramp-up	8	256	264
Third step up (Min3)	120	264	384
Ramp-up	8	384	392
Full power up (Min4)	1320	392	1712
Ramp-down to reference	30	1712	1742
Downward direction			
Ramp-down	8	0	8
First step down (Min5)	120	8	128
Ramp-down	8	128	136
Second step down (Min6)	120	136	256
Ramp-down	8	256	264
Third step down (Min7)	120	264	384
Ramp-down	8	384	392
Full power down (Min8)	1320	392	1712
Ramp-up to reference	30	1712	1742

ELIA will calculate a value P_{step_min} as follows:

$$\mathbf{P_{step\_min}}=\min(Min_1; Min_2; Min_3; Min_4; Min_5; Min_6; Min_7; Min_8)$$

Where:

- **Min_1**= 4* $\Delta Psup_{Step\_1}$ from t=13sec to t=128sec
- **Min_2**= 4* $\Delta Psup_{Step\_2}$ from t=141sec to t=256sec
- **Min_3**= 4* $\Delta Psup_{Step\_3}$ from t=269sec to t=384sec
- **Min_4**= 4* $\Delta Psup_{Step\_4}$ from t=397sec to t=1712sec
- **Min_5**= -4* $\Delta Psup_{Step\_5}$ from t=13sec to t=128sec
- **Min_6**= -4* $\Delta Psup_{Step\_6}$ from t=141sec to t=256sec
- **Min_7**= -4* $\Delta Psup_{Step\_7}$ from t=269sec to t=384sec
- **Min_8**= -4* $\Delta Psup_{Step\_8}$ from t=397sec to t=1712sec

Where:

- **$\Delta Psup_{step\_i}$:** The difference between the lowest (or highest for the downwards direction) $Av\_P_{sup\_prequal}(t)$ during the step preceding the step concerned and the lowest (or highest for the downwards direction) $Av\_P_{sup\_prequal}(t)$ value during the concerned step as mentioned hereby above.
- **t=0** is the moment fixed as the beginning of the test for each direction;

The P_{step_min} value will be compared to the minimum power supplied (P_{full_up}; P_{full_down}) during the steps in which the BSP is expected to deliver his full reaction in the upwards and downwards direction as per profile described hereby above.

These values are calculated as follows:

- **P_{full_up} (upwards direction):** The lowest $Av\_P_{sup\_prequal}(t)$ during the "Full Power_up" step (as defined in the table hereby above). If this value is negative then P_{full_up} is considered equal to zero;
- **P_{full_down} (downwards direction):** The highest $Av\_P_{sup\_prequal}(t)$ during the "Full Power_down" step (as defined in the table hereby above). If this value is positive then P_{full_down} is considered equal to zero;

If :

$$P_{step\_min} \geq 0{,}9 * \min(P_{full\_up} ; -P_{full\_down})$$

then :

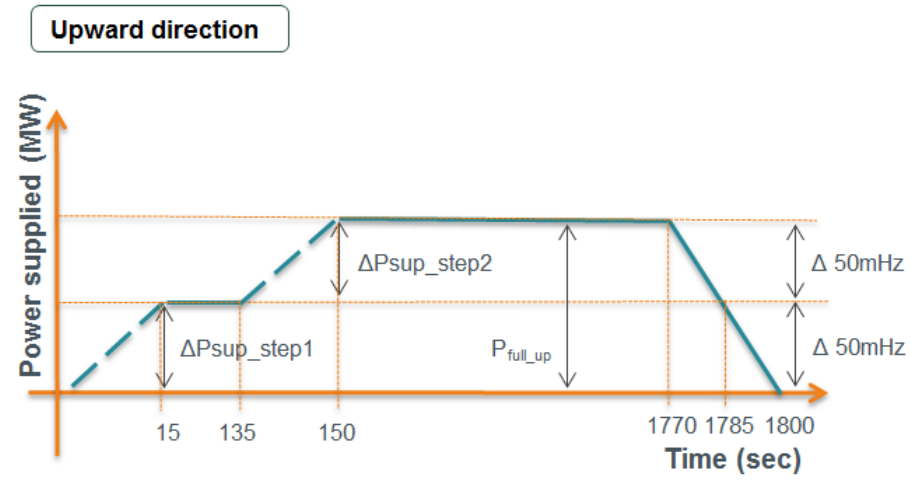
$$FCR_{max\_PG\_SFP} = \min(P_{full\_up} ; -P_{full\_down})$$

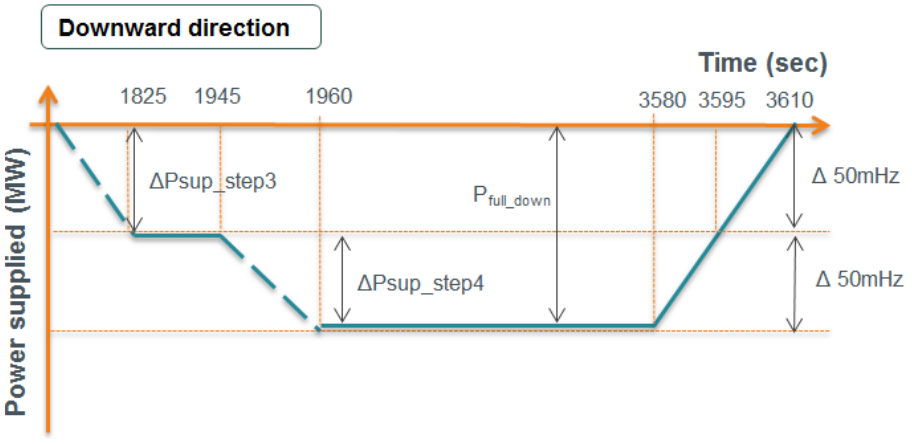
If not :

$$FCR_{max\_PG\_SFP} = P_{step\_min}$$

100mHz Service Type

The Providing Group must follow the following (indicative) profiles upward and downward following a step-by-step simulated frequency deviation:





Where:

- The Providing Group must in 20 seconds (15 seconds of required activation time as per Art. 6.1 and 5 seconds of tolerance) deliver the volume of each step of 50mHz;
- The Providing Group must maintain its reaction for 2 minutes before going to the next step of 50mHz;
- Once the Providing Group has deployed its maximal supplied power, it must maintain its reaction for 27 minutes.
- The same reaction must be performed in the opposite direction as showed hereby above within 24 hours;

The timing of corresponding test steps is resumed hereby under:

Time series test Service Type 100mHz			
Step	**Δsec**	**From t=**	**To t=**
Upward direction			
Ramp-up	15	0	15
First step up (Min1)	120	15	135
Ramp-up	15	135	150
Full power up (Min2)	1620	150	1770
Ramp-down to reference	30	1770	1800
Downward direction			
Ramp-down	15	0	15
First step down (Min3)	120	15	135
Ramp-down	15	135	150
Full power down (Min4)	1620	150	1770
Ramp-up to reference	30	1770	1800

ELIA will calculate a value P_{step_min} as follows:

$$\mathbf{P_{step\_min}} = \min(Min_1; Min_2; Min_3; Min_4)$$

Where:

- $\mathbf{Min_1}$= 2*$\Delta Psup_{Step\_1}$ from t=20sec to t=135sec
- $\mathbf{Min_2}$= 2*$\Delta Psup_{Step\_2}$ from t=155sec to t=1770sec
- $\mathbf{Min_3}$= -2* $\Delta Psup_{Step\_3}$ from t=20sec to t=135sec
- $\mathbf{Min_4}$= -2* $\Delta Psup_{Step\_4}$ from t=155sec to t=1770sec

Where:

- $\mathbf{\Delta Psup_{step\_i}}$: The difference between the lowest (or highest for the downwards direction) $Av\_P_{sup\_prequal}(t)$ value during the step preceding the step concerned and the lowest (or highest for the downwards direction) $Av\_P_{sup\_prequal}(t)$ value during the concerned step as mentioned hereby above. **t=0** at the moment fixed as the beginning of the test for each direction;

The P_{step_min} value will be compared to the minimum power supplied (P_{full_up}; P_{full_down}) during the steps in which the BSP is expected to deliver his full reaction in the upwards and downwards direction as per profile described hereby above. These values are calculated as follows:

- **P_{full_up} (upwards direction):** The lowest $Av\_P_{sup\_prequal}(t)$ value during the "Full Power_up" step (as defined in the table hereby above). If this value is negative then P_{full_up} is considered equal to zero;
- **P_{full_down} (downwards direction):** The highest $Av\_P_{sup\_prequal}(t)$ value during the "Full Power_down" step (as defined in the table hereby above). If this value is positive then P_{full_down} is considered equal to zero;

If :

$$P_{step\_min} \geq 0{,}9 * \min(P_{full\_up} ; -P_{full\_down})$$

then :

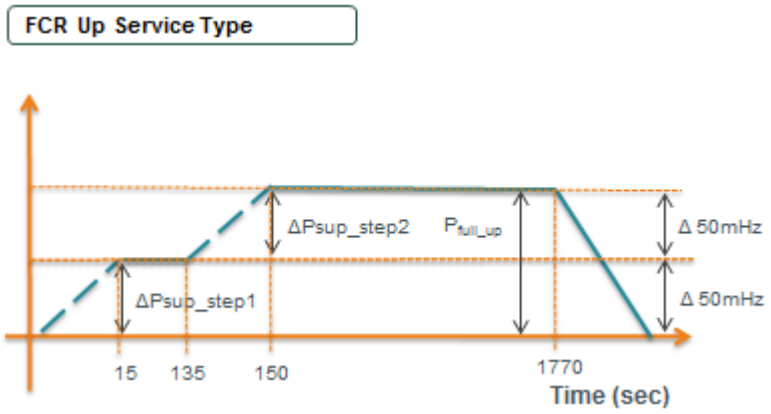
$$FCR_{max\_PG\_SFP} = \min(P_{full\_up} ; -P_{full\_down})$$

If not :

$$FCR_{max\_PG\_SFP} = P_{step\_min}$$

Asymmetric Up Service Type

The Providing Group must follow the following (indicative) profile following a step-by-step simulated frequency deviation:



Where:

- The Providing Group must in 20 seconds (15 seconds of required activation time as per Art. 6.1 and 5 seconds of tolerance) deliver the volume of each step of 50mHz;
- The Providing Group must maintain its reaction for 2 minutes before going to the next step of 50mHz;
- Once the Providing Group has deployed its maximal supplied power, it must maintain its reaction for 27 minutes.

The timing of corresponding test steps is described hereby under:

Time series test Service Type Up			
Step	Δsec	From t=	To t=
Ramp-up	15	0	15
First step up (Min1)	120	15	135
Ramp-up	15	135	150
Full power up (Min2)	1620	150	1770

ELIA will calculate a value P_{step_min} as follows:

$$\mathbf{P_{step\_min}}=\min(Min_1;Min_2)$$

Where:

- **Min_1**= (2* ΔPsupStep_1 from t=20sec to t=135sec)
- **Min_2**= (2* $\Delta Psup_{Step\_2}$ from t=155sec to t=1770sec)

Where:

- **$\Delta Psup_{step\_i}$** : The difference between the lowest $Av\_P_{sup\_prequal}(t)$ value during the step preceding the step concerned and the lowest $Av\_P_{sup\_prequal}(t)$ value during the concerned step as mentioned hereby above.. **t=0** is the moment fixed as the beginning of the test;

The P_{step_min} value will be compared to the minimum power supplied (P_{full_up}) during the step in which the BSP is expected to deliver his full reaction in the upwards direction as per profile described hereby above. This value is calculated as follows:

- **P_{full_up}:** The lowest $Av\_P_{sup\_prequal}(t)$ value during the “Full Power_up” step (as defined in the table hereby above).

Also, if the concerned Providing Group has already undergone a Prequalification Test for the 100mHz Service Type, his $FCR_{max\_PG\_SFP}$ for the 100mHz Service Type will be considered as a minimum also for the Up Service Type.

Thus, taking all the above into account, if:

$$P_{step\_min} \geq 0{,}9 * P_{full\_up}$$

then :

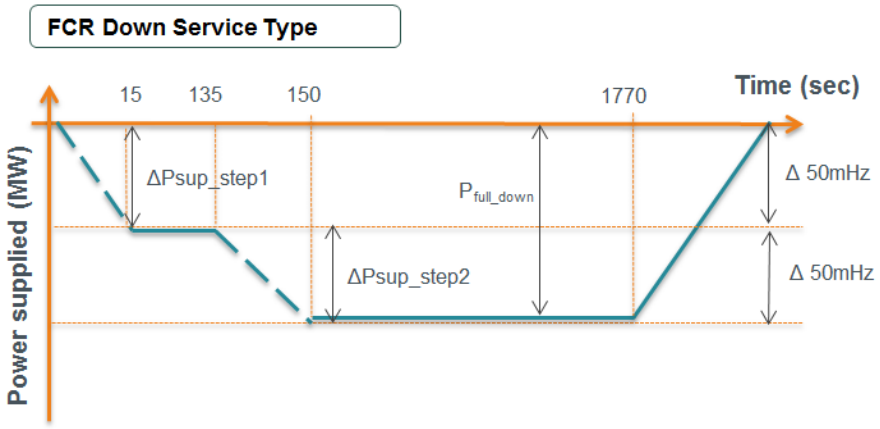
$$FCR_{max\_PG\_SFP} = \max[FCR_{max\_PG\_SFP} \text{ for the 100mHz test}; P_{full\_up}]$$

If not :

$$FCR_{max\_PG\_SFP} = \max(P_{step\_min;}\ FCR_{max\_PG\_SFP} \text{ for the 100mHz test})$$

Asymmetric Down Service Type

The Providing Group must follow the following profile following a step-by-step simulated frequency deviation:



Where:

- The Providing Group must in 20 seconds (15 seconds of required activation time as per Art.6.1 and 5 seconds of tolerance) deliver the volume of each step of 50 mHz;
- The Providing Group must maintain its reaction for 2 minutes before going to the next step of 50mHz;
- Once the Providing Group has deployed its maximal supplied power, it must maintain its reaction for 27 minutes.

The timing of corresponding test steps is described hereby under:

Time series test Service Type Down			
Step	**Δsec**	**From t=**	**To t=**
Ramp-down	15	0	15
First step down (Min1)	120	15	135
Ramp-down	15	135	150
Full power down (Min2)	1620	150	1770

ELIA will calculate a value P_{step_min} as follows:

$$\mathbf{P_{step\_min}} = \min(Min_1; Min_2)$$

Where:

- **Min_1=** (-2* $\Delta Psup_{Step\_1}$ from t=20sec to t=135sec)
- **Min_2=** (-2* $\Delta Psup_{Step\_2}$ from t=155sec to t=1770sec)

Where:

- **$\Delta Psup_{step\_i}$:** The difference between the highest $Av\_P_{sup\_prequal}(t)$ value during the step preceding the step concerned and the highest $Av\_P_{sup\_prequal}(t)$ value during the concerned step as mentioned hereby above.
- **t=0** is the moment fixed as the beginning of the test;

The P_{step_min} value will be compared to the minimum power supplied (P_{full_down}) during the step in which the BSP is expected to deliver his full reaction in the downwards direction as per profile described hereby above. This value is calculated as follows:

P_{full_down} (downwards direction): The highest $Av\_P_{sup\_prequal}(t)$ value during the "Full Power_down" step (as defined in the table hereby above).Also, if the concerned Providing Group has already undergone a Prequalification Test for the 100mHz Service Type, his $FCR_{max\_PG\_SFP}$ for the 100mHz Service Type will be considered as a minimum also for the Down Service Type.

Thus, taking all the above into account, if:

$$P_{step\_min} \geq 0{,}9^{*} (-P_{full\_down})$$

then :

$$FCR_{max\_PG\_SFP} = \max[FCR_{max\_PG\_SFP} \text{ for the 100mHz test}; -P_{full\_down}]$$

If not :

$$FCR_{max\_PG\_SFP} = \max(P_{step\_min}; FCR_{max\_PG\_SFP} \text{ for the 100mHz test})$$

Follow-up of Real-time Frequency Test

The BSP will follow the frequency for 4 consecutive hours, as if he was selected for Service delivery after an auction.

The BSP can set the start time of the test at his convenience and communicates it to ELIA before the beginning of the test.

If during this interval one or several Frequency Variations superior to 40mHz and relative to the concerned Service Type occur, ELIA will check the largest of these Variations as per Annex 10 to see if the BSP has replied accordingly.

In case of a positive difference between the P_{req_act} for the test and P_{sup_act} for the said Frequency Deviation, ELIA will calculate a value as follows:

$$\Delta FCR\max\_PG\_FRF = \min(\frac{Psup\_act}{Preq\_act}; 1)$$

Where:

- P_{req_act}: as calculated in Annex 10;
- P_{sup_act}: as calculated in Annex 10;

Calculation of FCR_{max_PG}

The FCR_{max_PG} value that a BSP can deliver to ELIA with the Providing Group i for the Service Type concerned is calculated as follows:

For the 200mHz Symmetric Service Type:

$$FCR\max\_PG = \min[FCRref\_200mHzPG; FCRmax\_PG\_SFP * \Delta FCRmax\_PG\_FRF] * Emax$$

For all other Service Types:

$$FCR\max\_PG = \min[\sum_{i}^{n} FCRref_i ; FCRmax\_PG\_SFP * \Delta FCRmax\_PG\_FRF]$$

Where:

- $FCR_{ref\_200mHzPG}$: As calculated in Annex 5 for the 200mHz Service Type;
- FCR_{Refi} : The FCR_{Ref} value declared by the BSP for Delivery Point i in Annex 5, that is part of the tested Providing Group and with which he offers the concerned Service Type;
- n: the number of Delivery Points within the Providing Group with which the BSP is delivering FCR Power for the Service Type concerned;
- $FCR_{max\_PG\_SFP}$: Value calculated as mentioned hereby above for each Providing Group and each Service Type as a result of the Synthetic Profile Test;

- $\Delta FCR_{max\_PG\_FRF}$: Value calculated as mentioned hereby above for each Providing Group and each Service Type as a result of the Follow-up of Real-Time Frequency test;

The overall FCR_{max} that the BSP can offer to ELIA for a certain Service Type is determined by the sum of the FCR_{max_PG} values of all of the BSP's Providing Groups for the Service Type concerned.

Annex 8. RULES FOR THE EXCHANGE OF INFORMATION BETWEEN THE PARTIES

A. REAL TIME COMMUNICATION

The BSP shall communicate the following information in real time:

For each CIPU Technical Unit (or if applicable Power Plant) as agreed and kept up to date between both parties as described in Art. 7.2 :

"Avail_prim" = logical signal (0 or 1) that indicates whether the CIPU Technical Unit (or if applicable Power Plant) is actually participating in the Service.

- 0: The CIPU Technical Unit is unavailable or cannot supply FCR Power.
- 1: The CIPU Technical Unit is available and can supply FCR Power.

Availability tests:

ELIA emits a test request each time a test should be performed. The signal contains the following information:

- Providing Group concerned by the test;
- Service Type concerned by the test;
- Type of test (capacity or energy);
- Direction of the test (in case of an Energy Test)
- Each BSP will return an acknowledgement signal to ELIA so that it can be verified if its test request has been received correctly. The value is the mirror of the received signal.

Energy content (following obligations described in Art. 7.5 for Providing Groups with limited energy reservoirs)

This real-time communication will be done with following IT solutions and responsibilities:

Based on the importance of FCR, in terms of a technical solution ELIA recommends conducting the real time exchanges using the TASE2 protocol between SCADA systems.

TASE 2 means: the IEC 60870-6 or ICCP standard.

A change of protocol may only be done after coordination and mutual agreement between the two parties.

The entire real-time communication system and its processes must be redundant.

In view of the level of quality and reliability that the process demands, ELIA and the BSP share responsibilities, for the purpose of:

- Installing 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.

Measures to be taken in case of problems with the standard solutions:

- The BSP and ELIA: Based on the controls introduced, they will contact their respective contact persons to report the existence of a problem;
- The BSP and ELIA: Make every effort to install the back-up solution as quickly and effectively as possible;
- The BSP and ELIA: Make every effort to collaborate on solving the problem and making the standard solution operational again as fast as possible.

On-line exchanges:

- Nominations: the BSP submits nomination files as stipulated in Art. 7.7. The BSP will use a pre-defined nominations template file indicated by ELIA. The submission of files will be done via a dedicated online platform that will be put in place by ELIA or by email as a backup solution to be used only in case of unavailability of the platform.

- Forced Outages: In the event of a Forced Outage, the BSP immediately notifies ELIA via email to ELIA's Real-Time Operations and Contractual contact persons as perAnnex 15. Additionally, the BSP submits a consequently modified intra-day nomination for his Providing Groups as described hereby above.

Because most of the information exchanged between the Parties in the context of this General Framework may have an effect in one way or another on ELIA's operation of the ELIA Grid, it is of essential importance for ELIA, including for the safety/security of the ELIA Grid, that the information provided by the BSP to ELIA, is verified extremely carefully by the BSP before being given to ELIA.

In this context, and in order to provide additional protection for the exchange of verbal information between the Parties and/or between their representatives, including employees, both Parties hereby accept that verbal communication, including telecommunication, is recorded. The Parties will inform their representatives and all of their employees who need to be in communication with the other Party of these recordings before such communication is made. The Parties will take appropriate steps to ensure that these recordings are kept safe and that access to such recordings is restricted exclusively to those persons who have a justified need to have access to the recordings. These recordings may not be used in any claim made against a natural person.

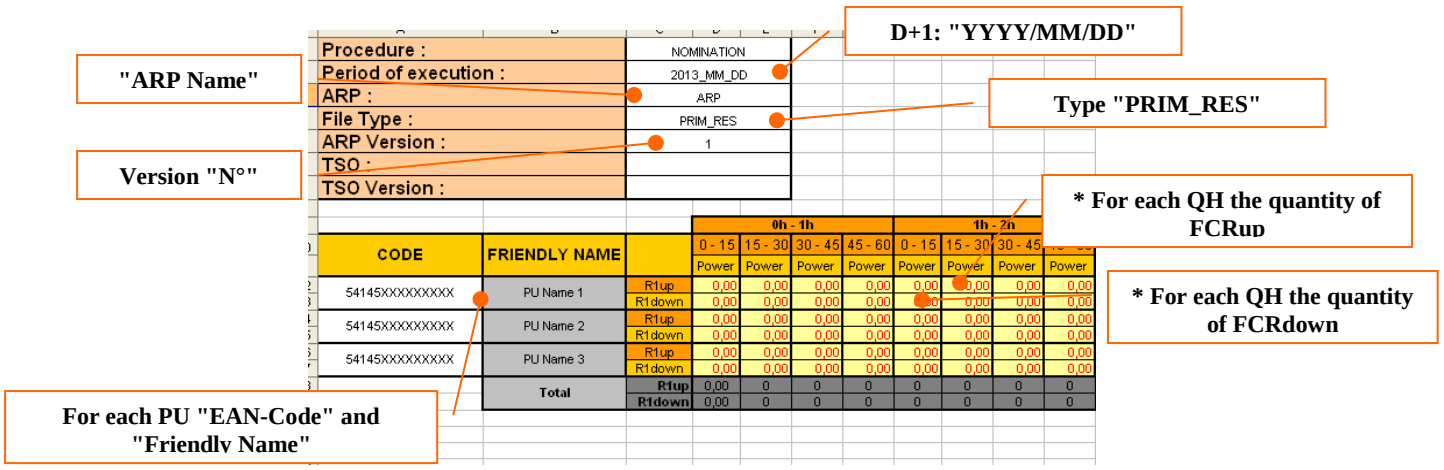
B. OFF-LINE COMMUNICATION

Off-Line Communication will take place or be confirmed by electronic message according to formats and software specified by ELIA.

Day Ahead Off-line communication

In the framework of his obligation to nominate repartition of his FCR Power Obligation among his Delivery Points as described in Art.7.6, the BSP shall provide the following information off-line day ahead:

- No later than 15:00 hrs on D-1, The BSP will decide and inform ELIA in Day Ahead about the combination of CIPU Technical Units that will provide for his FCR Power Obligations (for upward FCR Power this obligation is called "R1up_obligation" and for downward FCR Power this is called "R1down_obligation") among the list of CIPU Technical Units as agreed upon in Art. 3.2, taking into account the procedure and rules set forth in Art. 7.6 and without prejudice to ELIA's right to demand any change in accordance with the CIPU contract. Said nominations will indicate, quarter-hour by quarter-hour, the quantity of FCR upwards and the quantity of FCR downwards made available on each of those CIPU Technical Units.



Example (informative) of a D-1 .xls nomination sheet for FCR

* Important to note that nominations of FCR on one single CIPU Technical Unit may be asymmetric, meaning that FCRup doesn't need to be equal to FCRdown.

The Transfer of Obligations as described in Annex 4.

ELIA will check above mentioned nominations for coherence with other ancillary service contracts concluded between ELIA and the BSP. ELIA will inform the BSP of the results of these checks no later than at 18:00 hrs on D-1.

Ex-post Off-line communication

The BSP shall provide the following information off-line ex-post:

- Every day (on Day D+1 for Day D) before 06:00 the BSP shall send an e-mail to ELIA containing an Excel (or csv) file. This file contains per 10 sec (or less than 10 sec if available):
  the timestamp* (dd/mm/yyyy hh:mm:ss)
  the frequency
  as well as for each CIPU Technical Unit separately:
  Avail prim = logical signal (0 or 1) which indicates whether the CIPU Technical Unit was actually participating in the Primary Control

ELIA shall provide the following information off-line ex-post :

- For every Analyzed Frequency Variation report ELIA will inform the BSP of the technical characteristics of the Frequency Variation for each Analyzed Frequency Variation. For the application of this article, the term 'technical characteristics' means:
  the precise time of the Variation;
  frequency time diagram during the minutes before and after the frequency deviation;
  one sample every 10 seconds.

* synchronised with an official clock

Annex 9. PROCEDURE FOR THE DETERMINATION OF FCR AVAILABILITY

A. AVAILABILITY TESTS

As stipulated in Art.7.8 ELIA will perform two kinds of tests to ensure availability of the contracted Service:

- The Capacity Availability Test, aiming at verifying that the BSP can effectively deliver at least its entire nominated FCR Power on one or more Providing Group(s) for certain Service Type(s), in all directions concerned.
- The Energy Availability Test, aiming at verifying that the energy requirements mentioned in Art.6.1 can be respected at all time.

The requested volume for each interval during the tests (P_{req_test}) is equal to the BSP's absolute nominated FCR Power (at latest in intraday as per Art. 7.7) for the Service Type(s) and Providing Group(s) concerned by the test.

If for one or more quarter-hours during a day of the Delivery Period the sum of the nominated volume in concerned Providing Groups is inferior to his FCR Power Obligation (unless in case of a Forced Outage) for the concerned Service Type, ELIA will apply a penalty as follows:

Reduction_5=1/7*Weekly remuneration*Missing_nomination

Where:

- Weekly remuneration: The BSP's remuneration for the concerned Delivery Period for the concerned Service Type;
- Missing_nomination: The maximum difference between the BSP's FCR Power Obligation and FCR Power Nominations among all quarter-hours of the concerned day.

ELIA can perform Availability Tests on several Providing Groups simultaneously. Capacity Availability Tests can be performed for more than one Service Type per Providing Group, whereas Energy Availability Tests are only performed on one Service Type each time.

ELIA will perform Availability Test for the entire Service Type obligation (whether it be nominated in one or more Providing Groups) unless if the obligation exceeds 25 MW for a certain Service Type in which case ELIA reserves the right to test part of the Service Type obligation.

In case a BSP nominates more than 25 MW for a certain Service Type (summing nominated power for all Providing Groups) ELIA can activate a volume that corresponds to a part of the BSP's FCR Power Obligation by only selecting the FCR Power volumes nominated on some FCR Providing Groups. This means that in this case ELIA will not necessarily verify with one Availability Test the BSP's entire FCR Power Obligation for a certain Service Type.

ELIA will only consider measures of Delivery Points from the Providing Groups that were selected by ELIA for an Availability Test.

ELIA will always use for the monitoring of Availability Tests measurements of all Delivery Points registered as part of the concerned Providing Group.

ELIA will use its SCADA connection with the BSP to automatically trigger an Availability Test as mentioned in Annex 8. ELIA will send to the BSP, via the SCADA connection :

- The kind of test launched (Capacity or Energy Availability Tests);

- The Providing Group(s) concerned;
- The Service Type(s) concerned;

The configuration and identification of test signals per Providing Groups and Service Types happens during the prequalification process; when receiving this signal, the BSP activates the full nominated volume for the given Providing Group and the given Service Type, following the test profile provided by ELIA in the present Annex. In order to cancel the effects of his R2 reaction and own regulation, the BSP may dispose of a delay at the beginning of the test. During this period, he must cancel his reaction to R2 (stop regulating in function of received setpoints) and bring his injection to the level of his average consumption in the 20 seconds preceding the test. If the BSP wishes to benefit from this delay he should make a request simply by email. Requests cannot be made for a certain test ex-post.

After the realization of an Energy Availability Test on FCR Providing Group with energy limited reservoirs, the BSP has the right to reconstitute its energy reservoir over a maximal duration of 2 hours. ELIA will not consider this interval of 2 hours for its activation or availability controls.

For a Providing Group actively delivering the Service at the moment of Prequalification Tests, ELIA will not perform Availability Controls or activation controls for as long as the tests are under way.

ELIA reserves the right to request from the BSP ex-post the repartition of the power delivered per Delivery Point within a Providing Group.

In the following test profiles, the stabilization is optional; if the BSP has requested that Elia doesn't apply this period, profiles commence directly with the ramp-up or ramp-down phase.

Capacity Availability Test

Symmetric 200mHz and Symmetric 100mHz Service Types

As of the reception of the test signal, the BSP:

1) Cancels his reaction to R2 signals and stabilizes his injection to the same level as was during the reference period for the test (20 seconds preceding the reception of the test signal) within a delay of 120 seconds;
2) Activates the full requested power in the upward direction within a delay of 60 seconds starting immediately after the end of the stabilization phase;
3) Maintains this reaction for 120 seconds;
4) Activates his full requested power in the downward direction, within a delay of 300 seconds, starting from the moment of the reception of the signal + 180 seconds;
5) Maintains this power for 120 seconds;
6) Stops the reaction.

The timing of these steps is resumed hereby under:

Time series Capacity test Service Type 200mHz & 100mHz			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power upward direction	120	180	300
Ramp down	120	300	420
Full power downwards direction	120	420	540

Asymmetric Up and Asymmetric Down Service Types

As of the reception of the test signal, the BSP:

1) Cancels his reaction to R2 signals and stabilizes his injection to the same level as was during the reference period for the test (20 seconds preceding the reception of the test signal) within a delay of 120 seconds;
2) Activates the full requested power in the upward (or downward for the Down Service Type) direction within a delay of 60 seconds starting immediately after the end of the stabilization phase;
3) Maintains this power for 120 seconds;
4) Stops the reaction.

The timing of these steps is resumed hereby under:

Time series Capacity test Service Type Up			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power up	120	180	300

Time series Capacity test Service Type Down			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-down	60	120	180
Full power down	120	180	300

Combination of Symmetric with Asymmetric Service Types on the same Delivery Point(s)

In the event where a BSP uses the same Delivery Point(s) to deliver a symmetric (100mHz or 200mHz) Service Type simultaneously with an asymmetric Service Type (Up or Down), on the moment of the Capacity Availability Test, he must activate the corresponding Service Types for each direction together.

In the event where a BSP uses the same Delivery Point(s) to deliver two different asymmetric Service Types simultaneously (Up & Down), on the moment of the Capacity Availability Test, he must activate the corresponding Service Types one after the other (first Up and then Down).

Example 1:
Delivery Point A has been declared as:

- participating in Providing Group n°1 that has been nominated as providing 5MW for the Service Type 200mHz for a certain quarter-hour;
- participating in Providing Group n°2 that has been nominated as providing 2MW for the Service Type Down for the same quarter-hour;

In this case, if the BSP receives a Capacity Test activation signal for both Service Types at this precise moment he should activate in the following order:

Time series Capacity test Service Type 200mHz + Down			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power 200mHz upward direction (5MW)	120	180	300
Ramp down	120	300	420
Full power 200mHz downwards direction + Down (7MW)	120	420	540

Example 2:

Delivery Point A has been declared as:

- participating in Providing Group n°1 that has been nominated as providing 2MW for the Service Type 100mHz for a certain quarter-hour;
- participating in Providing Group n°2 that has been nominated as providing 1MW for the Service Type Up for the same quarter-hour;

In this case, if the BSP receives a Capacity Test activation signal for both Service Types at this precise moment he should activate in the following order:

Time series Capacity test Service Type 100mHz + Up			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power 100mHz upward direction + Up (3MW)	120	180	300
Ramp down	120	300	420
Full power 100mHz downwards direction (2MW)	120	420	540

Example 3:

Delivery Point A has been declared as:

- participating in Providing Group n°1 that has been nominated as providing 7MW for the Service Type Up for a certain quarter-hour;
- participating in Providing Group n°2 that has been nominated as providing 2MW for the Service Type Down for the same quarter-hour;

In this case, if the BSP receives a Capacity Availability Test activation signal for both Service Types at this precise moment he should activate in the following order:

Time series Capacity test Service Type Up + Down			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power Up (7MW)	120	180	300
Ramp down	120	300	420
Full power Down (2MW)	120	420	540

Energy Availability Test

The BSP will be informed of the triggering of an Energy Availability Test through the real-time communication channel as explained in Annex 8.

Symmetric 100mHz Service Type

As of the reception of the test signal, the BSP:

1) Cancels his reaction to R2 signals and stabilizes his injection to the same level as was during the reference period for the test (20 seconds preceding the reception of the test signal) within a delay of 120 seconds;
2) Activates the full requested volume in the upward direction or downward direction (depending on ELIA's request) within a delay of 60 seconds starting immediately after the end of the stabilization phase;
3) Maintains this power for 1800 seconds;
4) Stops the reaction.

The timing of these steps is resumed hereby under:

Time series energy test Service Type 100mHz			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up (or Ramp-down)	60	120	180
Full power up (or down)	1800	180	1980

Symmetric 200mHz, Asymmetric Up and Asymmetric Down Service Types

As of the reception of the test signal, the BSP:

1) Cancels his reaction to R2 signals and stabilizes his injection to the same level as was during the reference period for the test (20 seconds preceding the reception of the test signal) within a delay of 120 seconds;
2) Activates the full requested volume in the upward (or downward for the Down Service Type or for the 200mHz Service Type if requested by ELIA) direction within a delay of 60 seconds starting immediately after the end of the stabilization phase;
3) Maintains this power for 1500 seconds;
4) Stops the reaction.

The timing of these steps is resumed hereby under:

Time series Energy test Service Type 200mHz			
Step	**Δsec**	**From t=**	**To t=**
Stabilization	120	0	120
Ramp-up (or Ramp-down)	60	120	180
Full power up (or down)	1500	180	1680

Time series energy test Service Type Up			
Step	**Δsec**	**From**	**To**
Stabilization	120	0	120
Ramp-up	60	120	180
Full power up	1500	180	1680

Time series energy test Service Type Down			
Step	Δsec	From	To
Stabilization	120	0	120
Ramp-down	60	120	180
Full power down	1500	180	1680

B. AVAILABILITY TEST MONITORING

ELIA will verify if the requested volume was effectively available using the results of the tests in section A.

For Availability Tests, ELIA will use as a reference (P_{ref_test}) the average power measured on the last 20 seconds before the test signal is sent.

The power supplied during the test ($P_{sup\_test}(t)$) corresponds to the difference between the reference value (P_{ref_test}) and the power measured at a given interval.

For a reaction required in the upward direction:

$$Psup\_test(t) = Pmeasured(t) - Pref_{test}$$

For a reaction required in the downward direction:

$$Psup\_test(t) = Pref_{test} - Pmeasured(t)$$

As a general principle for both Capacity and Energy Availability Tests, ELIA will consider a test as failed only if more than 15% of 10 seconds average $P_{sup\_test}(t)$ values are beneath the required volume.

Capacity Availability Tests

In order to determine if a BSP has succeeded a Capacity Availability Test ELIA will calculate the 10 seconds average values of $P_{sup\_test}(t)$ (or $Av\_P_{sup\_test}$) for the whole duration of the window(s) in which the BSP is expected to deliver. The Capacity Test is considered as failed if more than 15% (in number) of these values are below $P_{req\_test.}$ for each delivery window.

In practice, this means that a Capacity Test is failed for each Service Type (or combination of Service Types) if $Av\_P_{sup\_test}$ values are below P_{req_test} for:

- More than 2 times for Asymmetric Up & Asymmetric Down Service Types;
- More than 2 times per direction (upwards & downwards) for Symmetric 200mHz and Symmetric 100mHz Service Types or their combination with Asymmetric Service Types.

Example 1: ELIA requests an Availaibility Test for the Symmetric 200mHz Service Type from a BSP. Only two calculated $Av\_P_{sup\_test}$ value are lower than P_{req_test} in the upwards activation window of the test and one in the downwards direction ==> The test is considered successful and the BSP is not penalized.

Example 2: ELIA requests an Availaibility Test for the Symmetric 200mHz Service Type from a BSP. Only one calculated $Av\_P_{sup\_test}$ value is lower than P_{req_test} in the upwards activation window of the test but three $Av\_P_{sup\_test}$ values are lower than P_{req_test} in the downwards activation window ==> the test is considered failed and ELIA will calculate a FCR Missing MW as stipulated hereunder.

Example 3: ELIA requests a combined Availaibility Test for the Symmetric 200mHz and Asymmetric Up Service Types from a BSP. Three Av_P_{sup_test} values are lower than P_{req_test} in the downwards activation window ==> the test is considered failed and ELIA will calculate a FCR Missing MW as stipulated hereunder.

If a Capacity Test is considered as failed, ELIA will calculate a FCR Missing MW value (in MW) as follows. The FCR Missing MW will be used to calculate any eventual remuneration reductions as per Annex 11.

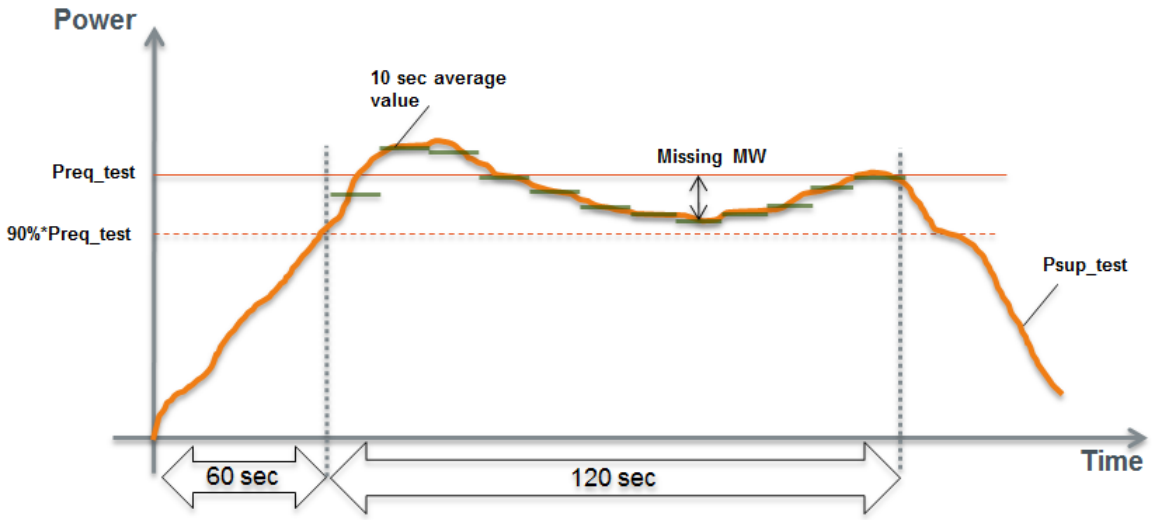
The **FCR Missing MW** value during a Capacity Availability Test corresponds to **the greatest difference between P_{req_test} and the resulting 10 seconds average P_{sup_test}(i) value within the time window(s) in which the BSP is expected to deliver the requested volume.**

$$\text{FCR Missing MW} = \max(\min(\text{Preq\_test(i)};\ \text{Preq\_test(i)} - \text{Av\_Psup\_test(i)});\ 0)$$

Where:

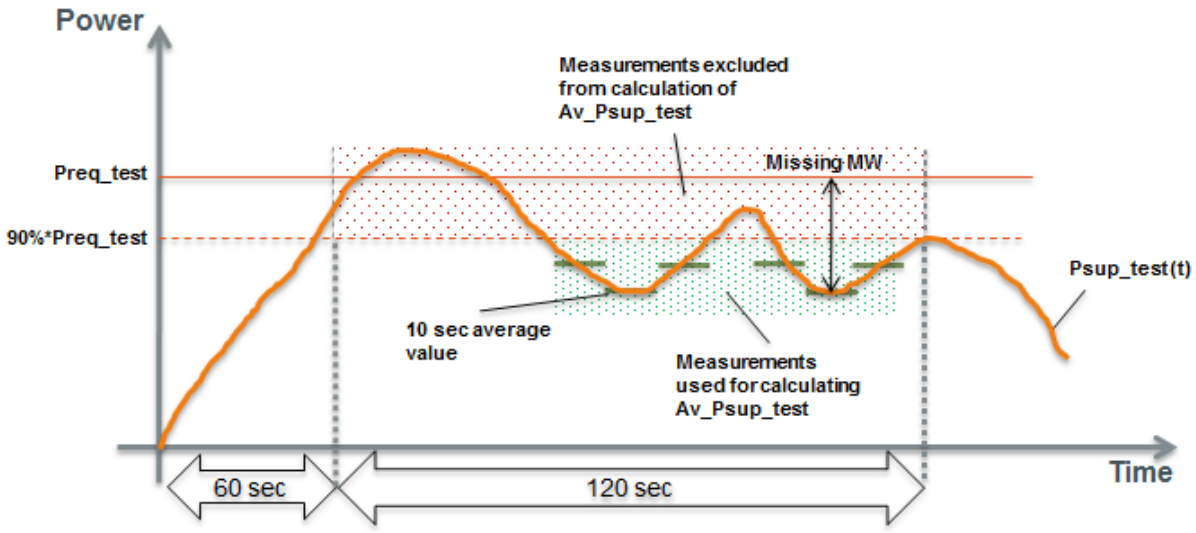
- i: 10 seconds interval within the time window in which the BSP is expected to deliver the requested volume as per profiles described in section A;
- P_{req_test} (i): The requested volume for interval i that is equal to the BSP's absolute nominated FCR Power (at latest in intraday as per Annex 8) for the Service Type(s) and Providing Group(s) concerned by the test;;
- Av_P_{sup_test} (i): The average P_{sup_test}(t) volume as determined hereby above for interval i;

The calculation can be represented graphically as follows:



If the P_{sup_test}(t) value drops below the level of 90% of P_{req_test}(i) at any time during the test's delivery timeframe(s), ELIA will calculate the Av_P_{sup_test}(i) values (as figuring in the above formula) using exclusively the P_{sup_test} values that are lower than 90% of P_{req_test}(i).

This rule can be represented graphically as follows:



Energy Availability Test

In order to determine if a BSP has succeeded an Energy Availability Test ELIA will calculate the 10 seconds average values of P_{sup_test} (t) (or $Av\_P_{sup\_test}$) for the whole duration of the window in which the BSP is expected to deliver. The Capacity Test is considered as failed if more than 15% (in number) of these values are below P_{req_test} for each delivery window.

In practice, this means that an Energy Test is failed for each Service Type if $Av\_P_{sup\_test}$ values are below P_{req_test} for:

- More than 23 times for Symmetric 200mHz, Asymmetric Up & Asymmetric Down Service Types (according to profiles in section A of the present Annex);
- More than 27 times for Symmetric 100mHz Service Type (according to profile in section A of the present Annex);

If a Capacity Test is considered as failed, ELIA will calculate a Missing Time value (in seconds) as follows. The Missing Time will be used to calculate any eventual remuneration reductions as per Annex 11.

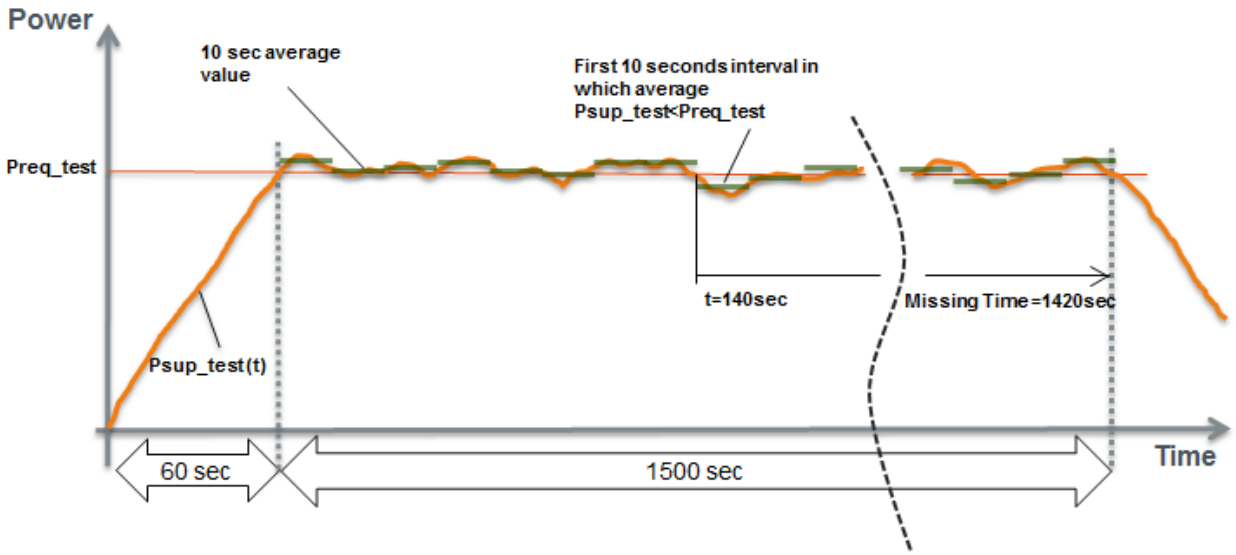
The **Missing Time** value for a certain Energy Availability Test corresponds to **the absolute difference between the activation duration required by the test (in seconds) and the first second of the 10 seconds interval in which the 10 seconds average measured power becomes inferior to P_{req_test} (i).**

$$\text{Missing Time} = \text{Test\_duration} - (\text{Failure\_time} - \text{Ramping\_duration})$$

Where:

- Test_duration: The duration required by the Energy Availability Test as per profiles described in section A.
- Failure_time: The first second of the 10 seconds interval in which the average measured power is inferior to P_{req_test};
- Ramping_duration: The time between the beginning of the ramp-up or ramp-down phase (after the end of the stabilization phase) and the moment the BSP is expected to start delivering his full requested volume as per profiles described in sectionA, equal to 60 seconds.

This calculation can be represented in a graphical example for a 200mHz Energy Availability Test:



In the example displayed hereby above, the 10-seconds average value of $P_{sup\_test}(t)$ becomes inferior to $P_{req\_test}(i)$ for the first time at the interval starting at t=140 sec.

In this case:

$$\text{Missing Time} = 1500 - (140 - 60) = 1420\text{sec}$$

Annex 10. EX-POST ACTIVATION CONTROL

In accordance with Art. 7.9, ELIA will check every Month, for a maximum of 6 Frequency Variations per Month and maximum 2 Frequency Variations per Delivery Period, that the quantity of FCR Power Supplied upwards and/or downwards by the BSP during Month M meets the contractual requirements.

ELIA will select the same Frequency Variations for all BSPs, choosing the most representative ones among all.

For each selected Frequency Variation(s), ELIA will only consider as input for its evaluation the FCR Providing Groups on which a FCR Power Obligation for the relevant Service Types (Service Types concerned by the selected Frequency Variation) was nominated for that time.

ELIA will always use for its activation controls measurements of all Delivery Points registered as part of the concerned Providing Group.

Said check is performed by comparing the FCR Power Supplied or P_{sup_act} (measured as per the method described in this Annex) with the P_{req_act} (calculated based on the requirements described in Annex 4 and the present Annex). In case the BSP fails to meet the requirements, penalties will be applied as described in Annex 12.

A. DETERMINATION OF THE P_{SUP_ACT}

The determination of the P_{sup_act}, for the analyzed Frequency Variation will be made by calculating as follows.

For a reaction required in the upward direction:

$$Psup\_act = \max(Psup\_after - Psup\_before; 0)$$

Where:

- P_{sup_before}: the average value of the summed power measurements (MW) of the Delivery Points of the concerned Providing Group(s) over a period of 20 seconds starting exactly 20 seconds before the beginning of the Frequency Variation (as communicated by ELIA for the selected Frequency Variation) or, in case the BSP delivers the Asymmetric Up Service Type **only**[3], before the frequency becomes for the first time in a period of 300 seconds, smaller than 49,900Hz;
- P_{sup_after}: the highest value of the summed power measurements (MW) of the Delivery Points of the concerned Providing Group(s), in a period of 30 seconds starting at the moment when the Frequency Variation reaches its maximum value.

For a reaction required in the downward direction:

$$Psup\_act = \max(Psup\_before - Psup\_after; 0)$$

Where:

[3] In case the BSP combines a Symmetric Service Type and Asymmetric Service Type for the said Variation, the calculation is made as foreseen for the symmetric Service Types

- P_{sup_before}: the average value of the summed power measurements (MW) of the Delivery Points of the concerned Providing Group(s) over a period of 20 seconds starting exactly 20 seconds before the beginning of the Frequency Variation (as communicated by ELIA for the selected Frequency Variation) or, in case the BSP delivers the Asymmetric Down Service Type **only**[4], before the frequency becomes for the first time in a period of 300 seconds, higher than 50,100Hz;
- P_{sup_after}: the lowest value of the summed power measurements (MW) of the Delivery Points of the concerned Providing Group(s), in a period of 30 seconds starting at the moment when the Frequency Deviation reaches its maximum value.

If P_{sup_act} suffices to meet the P_{req_act} , then the BSP will have fulfilled his obligations.

Determination of the P_{req_act}

The determination of the FCR Power Required for the analyzed Frequency Variation will be made by calculating the **absolute** difference between P_{req_before} and P_{req_after}:

$$\text{Preq\_act} = \text{Abs}(\text{Preq}_{\text{before}} - \text{Preq}_{\text{after}})$$

- P_{req_before} : the value of P_{req} calculated as described in Annex 4 by substituting F in said formulas with f_{before}:
  f_{before} = the average value of the frequency (Hz) during a period of 20 seconds before the Frequency Variation starts (as communicated by ELIA for the selected Frequency Variation) for Symmetric Service Types or 49,900Hz for the Upward Asymmetrical Service Type (50,100Hz respectively for the Downward Asymmetrical Service Type);
- P_{req_after}: the value of P_{req} calculated as described in Annex 4 by substituting F in said formulas with f_{after} :
  - f_{after} = the average value of the frequency (Hz) during a period of 5 seconds for Asymmetric Service Types and 20 seconds for Symmetric Service Types from the time that the Frequency Variation reaches its maximum value;

In the evaluation by ELIA of P_{req_act} and if a Frequency Variation occurs spanning two different Periods and in case the BSP is offering the concerned Service Type with the same Providing Groups in the two Periods, the maximum value for the two Periods will be retained as the quantity required.

If the Frequency Variation occurs spanning two periods in which the BSP offers the concerned Service Type(s) using different Providing Groups the Frequency Variation will be disregarded by ELIA.

[4] In case the BSP combines a Symmetric Service Type and Asymmetric Service Type for the said Variation, the calculation is made as foreseen for the symmetric Service Types

For the evaluation of the Service provided by the BSP, ELIA will take into account the entire FCR Supplied (upwards or downwards) by each CIPU Technical Unit that is part of a nominated Providing Group.

The calculation of the above values that are being used to calculate the Preq_act and Psup_act can be resumed as follows:

Service Type	P_{req_act}		P_{sup_act}	
	f before	f after	P_{sup_before}	P_{sup_after}
200mHZ Service Type	20 sec average(1)	20 sec average(2)	20 sec average(1)	Max/Min within 30sec(6)
100mHZ Service Type	20 sec average(1)	20 sec average(2)	20 sec average(1)	Max/Min within 30sec(6)
Up Service Type	49,9 Hz	5 sec average(3)	20 sec average(4)	Min within 30sec(6)
Down Service Type	50,1 Hz	5 sec average(3)	20 sec average(5)	Max within 30sec(6)

(1)Before beginning of Frequency Variation

(2)Starting from the time the Frequency Variation reaches its maximal value

(3)Unless if combined with Symmetric 100mHz or 200mHz Service Type for the moment of the Frequency Variation

(4)Before the frequency becomes for the first time in a period of 300sec lower than 49,9Hz

(5)Before the frequency becomes for the first time in a period of 300sec higher than 50,1Hz

(6)Starting from the moment the Frequency Variation reaches its maximum value

Annex 11. Calculation of the remuneration reductions in case of failure of an Availability Test

ELIA will check whether the BSP has met the Contracted FCR Power (for each Service Type) on a monthly basis through the Availability Tests described in Annex 9.

FCR Missing MW and Missing Time values resulting from Availability Tests as calculated in Annex 9 will be used to determine the BSP's remuneration reduction for each test.

Capacity Availability Test

$$\text{Failed Obligation \%} = \frac{\text{FCR Missing MW}}{\text{Preq\_test}}$$

Where:

- FCR Missing MW: As calculated in Annex 9
- P_{req_test}: The FCR Power requested in the Availability Test as stipulated in Annex 9.

The monthly remuneration reduction resulting from a failed Capacity Availability Test will be equal to:

$$\text{Reduction1} = \text{Failed Obligation \%} * \beta * \text{MRSTC}^{*}\Delta$$

Where:

- Failed obligation %: as described hereby above
- β: Multiplication factor proportional to Failed Obligation %:
  - If Failed Obligation %≤20%, then β=1,3
  - If Failed Obligation %>20% and ≤50%, then β=1,6
  - If Failed Obligation %>50%, then β=2
- MRSTC: The total monthly remuneration perceived by the BSP for the Service Types concerned by the test.
- Δ : Multiplication factor taking into consideration the last 2 Availability Test results:
  - If, considering the last 2 test results (including the test being evaluated), 1 test out of the 2 has failed ; then Δ = 50 %
  - If, considering the last 2 test results (including the test being evaluated), 2 tests out of the 2 have failed: then Δ = 100 %.

To avoid any doubt: if ELIA has requested an Availability Test combining a Symmetric (200mHz or 100 mHz) with an Asymmetric (Up or Down) Service Types and fails, the Service Types concerned by the remuneration reduction are the ones in the direction for which the BSP has failed to meet his obligation.

Example 1:
If a BSP undergoes an Availability Test combining the Symmetric 200mHz and Asymmetric Up Service Types but fails only in the downwards direction (FCR Missing MW is higher than 0), only the 200mHz Service Type is concerned by the remuneration reduction.

Example 2:
If a BSP undergoes an Availability Test combining the Symmetric 200mHz and Asymmetric Up Service Types and fails in both directions (FCR Missing MW is higher than 0), both Service Types are concerned by the remuneration reduction regardless of where the highest FCR Missing MW value occurs.

Energy Availability Test

$$\text{Failed Obligation \%} = \frac{\text{Missing Time}}{\text{Time\_req}}$$

Where:

- Missing Time: As calculated in Annex 9;
- Test_duration: As stipulated in Annex 9;

The monthly remuneration reduction resulting from a failed Energy Availability Test will be equal to:

$$Reduction2 = Failed\ Obligation\ \% * \beta * MRSTC * \Delta$$

Where:

- Failed obligation %: as described hereby above
- β: Multiplication factor proportional to Failed Obligation %:
  - If Failed Obligation %≤20%, then β=1,3
  - If Failed Obligation %>20% and ≤50%, then β=1,6
  - If Failed Obligation %>50%, then β=2
- MRSTC: The total monthly remuneration perceived by the BSP for the Service Types concerned by the test.
- Δ : Multiplication factor taking into consideration the last 2 Availability Tests (whether they be Capacity or Energy Availability Tests) results:
  - If, considering the last 2 test results (including the test being evaluated), 1 test out of the 2 has failed then Δ = 50 %
  - If, considering the last 2 test results (including the test being evaluated), 2 tests out of the 2 have failed: then Δ = 100 %

In general:

ELIA has the right to trigger a Capacity Availability Test on the same Providing Group maximally 2 times per Delivery Period.

If ELIA effectively realizes more than one Capacity Availability Test on the same Providing Group for the same Service Type within the same Month, ELIA will not apply the financial penalty twice but only calculates it based on the highest calculated FCR Missing MW value.

An incomplete answer to an Availability Test, if exceptional, could be justified by technical reasons. However, ELIA will specifically monitor multiple and repetitive failures as this means that the assets delivering the Service cannot comply with the Service's requirements.

ELIA will therefore monitor Availability Test results over several Delivery Periods and apply the following, in addition to the penalty calculated hereby above:

- If, over a period of 3 months (starting from the first failed Availability Test) two Availability Tests on the same Providing Group are failed for the same Service Type ELIA will lower the BSP's FCR_{max} for the concerned Service Type of this Providing Group by the minimal volume of FCR Missing MW resulting from each Availability Test;
- If, over a period of 3 months (starting from the first failed Availability Test) 3 availability tests are failed, ELIA will temporarily exclude the BSP from the local and regional auctions, for a period of 1 month.

Annex 12. Calculation of the remuneration reductions in case of failure of an activation control

If, for an analyzed Frequency Variation, the P_{sup_act} calculated under Annex 10 does not meet the P_{req_act}, then the ratio α (alpha) will be calculated, with:

$$\alpha = \max((P_{req\_act}-P_{sup\_act})/P_{req\_act};0)$$

The BSP will grant ELIA a remuneration reduction Reduction3 amounting to:

$$Reduction3 = 0,2 * MRSTC * \alpha$$

Where:

- MRSTC: The total monthly remuneration received by the BSP for the Service Types concerned by the Variation that are contracted by the BSP at the time of the analysed Frequency Variation.

Example 1:

- For a given Delivery Period (week 1) the BSP contracted respectively **7MW** and **5MW** for Service Types Up & 100mHz,
- For all other Delivery Periods within the same Month (weeks 2,3 and 4) the BSP has contracted FCR 100mHz, FCR Up and FCR Down Service Types for different volumes.
- For the whole given Month the BSP receives :
  - **5.000€** for the FCR Up Service Type,
  - **10.000€** for the FCR 100mHz Service Type and
  - **3.000€** for the FCR Down Service Type
- ELIA analyses a Frequency Variation in week 1 for which the BSP is required to deliver all of his downwards obligation (meaning thus only power for the FCR 100mHz Service Type).
- The BSP delivers only **4,5MW out of 5MW** that was his obligation.
- Activation**:**
  - **Preq_act= 5 MW**
  - **Psup_act =4,5 MW**
- Remuneration reduction**:**
  - **α = (5-4,5)/5=0,1**
  - **Reduction3= 0,2 * 10.000€ * 0.1 = 200 €**

Example 2:

- For a given Delivery Period (week 1) the BSP has contracted respectively **7MW** and **5MW** for Service Types Down & 100mHz,
- For all other Delivery Periods within the same Month (weeks 2,3 and 4) the BSP has contracted FCR 100mHz, FCRUp and FCR Down Service Types for different volumes.
- For the whole given Month the BSP receives in total :
  - **5.000€** for the FCR Up Service Type,
  - **10.000€** for the FCR 100mHz Service Type and
  - **3.000€** for the FCR Down Service Type
- ELIA analyses a Frequency Variation in week 1 for which the BSP is required to deliver all of his downwards obligation (meaning thus all power for the FCR 100mHz and FCR Down Service Types).
- The BSP delivers only **10MW out of 12MW** that was his obligation.
- Activation**:**
  - **Preq_act = 12 MW**
  - **Psup_act =10 MW**
- Remuneration reduction**:**
  - **α = (12-10)/12=0,17**
  - **Reduction3= 0,2 * 13.000€ * 0.17 = 442 €**

Annex 13. PENALTY CAP

Availability

In case of the BSP's penalization for failing an Availability Test as per Annex 9, ELIA will cap penalties to the monthly remuneration of the concerned Service Types as per Annex 11 (MRSTC).

Example 1 :

- In different Delivery Periods within the same Month the BSP has contracted FCR 100mHz, FCR Up and FCR Down Service Types for different volumes.
- For the whole given Month the BSP receives :
  - **5.000€** for the FCR Up Service Type,
  - **10.000€** for the FCR 100mHz Service Type and
  - **3.000€** for the FCR Down Service Type
- The BSP fails an Availability Test, concerning the FCR Down Service Type and the FCR 100mHz Service Type.
- Penalty Cap: **15.000€**

Activation

- In case of the BSP's penalization for an insufficient reaction to a Frequency Variation as per Annex 10 ELIA will cap penalties to the monthly remuneration of the concerned Service Types as per Annex 13 (MRSTC).

Example 2 :

- In different Delivery Periods within the same Month the BSP has contracted FCR 100mHz, FCR Up and FCR Down Service Types for different volumes.
- For the whole given Month the BSP receives :
  - **5.000€** for the FCR Up Service Type,
  - **10.000€** for the FCR 100mHz Service Type and
  - **3.000€** for the FCR Down Service Type
- The BSP is controlled for two Frequency Variations, one of which only concerns the FCR Up Service Type and another only concerning the FCR 100mHz Service Type in different Delivery Periods, failing them both.
- Penalty Cap: **15.000€**

Caps for availability and activation are cumulated in case they concern different Service Types from one another. In whole, the remuneration reduction a BSP can receive as per Annex 11 and Annex 12 (including any penalties for not nominating equal to his FCR Power Obligations) cannot exceed his Monthly Remuneration for all Service Types.

Annex 14. APPROPRIATION STRUCTURE

Ancillary service	Appropriation	Remuneration
Reservation FCR CIPU Local Platform	911081	Remuneration for volumes awarded on the Local Platform
Reservation FCR CIPU Regional Platform	911082	Remuneration for volumes awarded on the Regional Platform
FCR - penalties	907194	Reduction of the remuneration minor frequency variation (a<=0.3)
FCR - penalties	907195	Penalty for non-activation of the reserve - major frequency variation (a>0.3)
FCR - penalties	908440	Reduction of the remuneration for non-availability of the reserve

Annex 15. TEMPLATE - CONTACT PERSONS

For ELIA:

Contractual matters:
Delivery Control
Invoicing matters
Real-time Operations
Off-line Operations (Duty)

For the BSP:

Contractual matters
Invoicing matters
Real-time (24/7)
Off-line Operations
Analysis of Frequency Deviations

Updates of this list must be exchanged via email (both the contracting responsible and contracting_AS@elia.be)

Annex 16. Template for CDSO Declaration

For CDS Delivery Points, ELIA must receive the following document signed as stipulated in Annex 7:

Declaration by a CDS Operator

With this declaration, **[••••]**, a company incorporated under **[••••]** law, enterprise number **[••••]**, with registered office at **[••••]**, validly represented by Mr **[••••]** and Mr **[••••]**, respectively in their capacity as **[••••]** and **[••••]**, identified for the purposes hereof as '**the CDS Operator**', hereby grants

permission for the Delivery Point identified below, which is part of its CDS, **to participate** in the service for the delivery of Frequency Containment Reserve by non-CIPU Technical Units (hereinafter 'the Service') for the period **[••••]**, organised by ELIA, as defined in the General Framework for Frequency Containment Reserve by non-CIPU Technical Units published on the ELIA website,

In the knowledge that the power measured at this Delivery Point under specific circumstances and under specific conditions can be reduced, increased and/or interrupted in order to deliver the Service,

In the knowledge that this Delivery Point corresponds fully or partly with the CDS Access Point of **[••••]**, a company incorporated under **[••••]** law, enterprise number **[••••]**, with registered office at **[••••]**, recognised as a User of the CDS that is managed by the CDS Operator,

And

Informs ELIA whether there is a risk of full or partial load transfer from the Delivery Point that is part of the CDS, as detailed below.

Details of the Delivery Point

CDS User	CDS Access Point	Delivery Point Identification (EAN)

Risk of full or partial load transfer (to be described by the CDS Operator):

.....
.....

The BSP sends this declaration by ordinary e-mail to the address contracting_AS@elia.be, with a copy to the CDS Operator. The Delivery Point is only integrated into the FCR Service upon signature of this declaration.

Done in _____, on___/___/

Signature of the CDS Operator:

Name:

Title:

Signature:

Annex 17. Communication of a Forced Outage

Within the hour after the occurrence of a Forced Outage that impacts the BSP's ability to provide the Service, the BSP quantifies the loss of FCR Power available and communicates it to ELIA according to procedure set forth in the CIPU contract.

In parallel, the BSP adapts its intraday Providing Group nomination for the first possible quarter-hour as per procedure described in Annex 8.

ELIA authorizes a reconstitution time of 6 hours starting from the occurrence of the Forced Outage (as notified by email) to give the BSP time to find a back-up solution in its portfolio.

As soon as the intraday Providing Group nomination has been updated accordingly and during the reconstitution period, ELIA can only trigger an Availability Test on the remaining power obligation available. The BSP will not be remunerated for the MW missing during the Forced Outage.

If an Availability Test is triggered during the neutralization time of the intraday nomination file (after the email), it will not be considered valid by ELIA in the ex-post verification.

If, by the end of these 6 hours, no solution has been found by the BSP, ELIA will be able again to request an Availability Test and perform activation controls.

If a solution has been found in the meantime the BSP must adapt his information sent for the intraday Providing Group nomination process.

The BSP will provide as soon as possible an explanation of the Forced Outage reason and details remedial actions – if applicable – foreseen to avoid occurrence in the future.