

Public

P407 'Project MARI' including GC0145

Workgroup meeting 2

7 July 2020
Nathan Flood

ELEXON

Agenda

Agenda item	Lead
1. Welcome and meeting objectives	Douglas Alexander (Chair)
2. First Workgroup meeting summary and actions update	Nathan Flood (Lead Analyst)
3. Submission and Acceptance <ul style="list-style-type: none">• Gate Closure• How the platform works• Submission of Data• Accepting the Bids• Ramping• Scheduled and Direct Activations	Louise Trodden (National Grid ESO) and Workgroup
4. Next steps	Nathan Flood
5. Meeting close	Douglas Alexander

Meeting Objectives

- Consider outcomes of actions taken at the last meeting;
- Assess the options for P407/GC0145 and agree the way forward.



Summary of Workgroup meeting 1

P407: Workgroup 1 Summary

- Overview provided of Grid Code and BSC solutions
- Key questions around:
 - The difference between Scheduled and Direct activation
 - If scheduling aspects for interconnectors would be included within the Grid Code/BSC solution or left in the bilateral agreements
 - If Interconnector BM Units can participate in MARI
 - The format of the data files that will be sent to NGESO and Elexon
 - How the settlement processes will work for interconnectors.
- The workgroup considered that the workgroup could benefit from having a broader representation from service providers, aggregators, demand side response and smaller players
- Several additions made to the Grid Code Terms of Reference.

P407: Actions and updates

Action	Owner	Action	Due by	Status
1	JG	Arrange code modification process walk through session JM, CA & MJ	WG2	Open
2	LT	Share Excel spreadsheet showing timelines for Scheduled and Direct Activation	WG2	Open
3	LT / MR	Confirm the files/format in which the data will be sent to Elexon and NGESO	Ongoing	Open
4	LT / AJ / SM	Confirm whether Interconnector BM Units can participate in MARI	Ongoing	Open
5	JG	Schedule time for the workgroup to consider existing interconnector settlement processes and how project MARI will interact with them	TBC	Open
6	LT / MR	Agree the scope for a separate issue group for interconnectors – with aim to prevent discussions had on MARI being duplicated in bilateral agreements	TBC	Open
7	JG	Appeal for more representation on the workgroup – service providers, smaller players, aggregators, DSR	WG2	Open
8	JG	Circulate updated Terms of Reference to Workgroup to Review – aim to get them to July Panel	30 Jul 20	Open



Submission and Acceptance

Louise Trodden



GC0145- Work Group 2 Submission and Acceptance

Updating the Grid Code to include the
Manually Activated Reserve Initiative (MARI)

Louise Trodden and Tony Johnson

nationalgridESO

Agenda

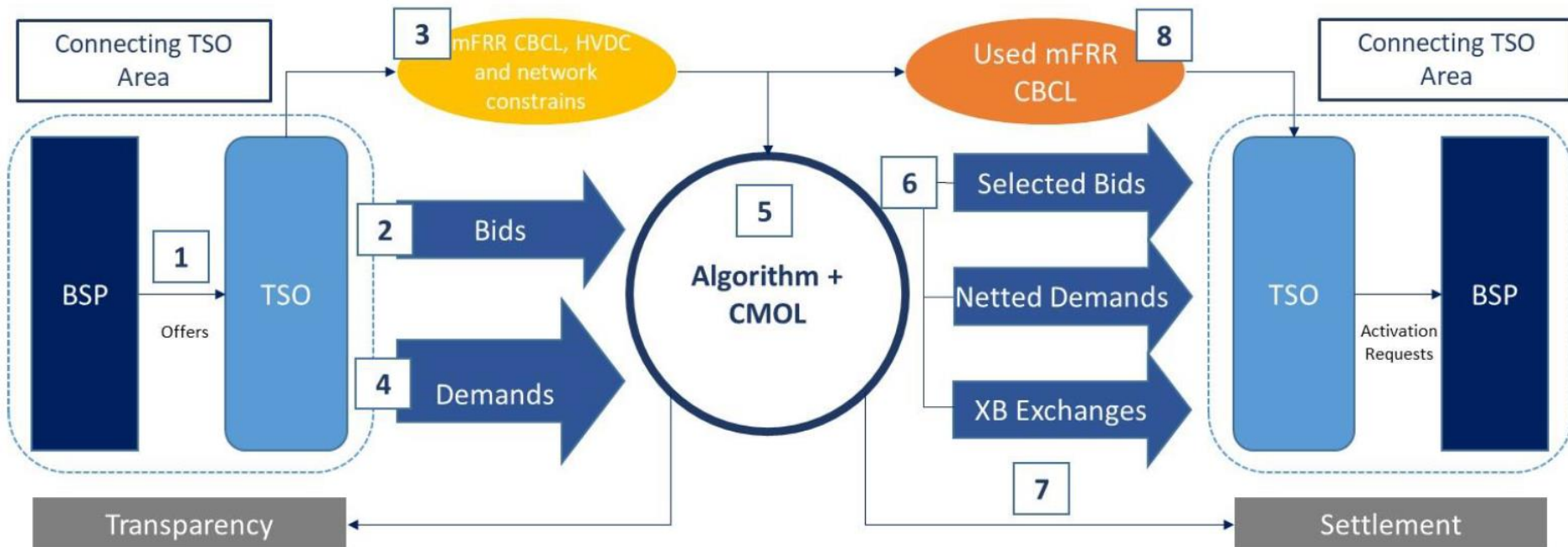
- Assumptions
- How the platform works
- Submission of Data and Gate Closure
- Accepting the Bids
- Ramping
- Scheduled and Direct Activations

Assumptions

- MARL is based on principles of TERRE (this was endorsed by GCRP)
- Participants will be treated as they are for TERRE
- Wider issues- e.g.: How Interconnectors are treated in the wider market are not in scope
- Purpose of this modification is to ensure that MARL can be implemented into the codes and appropriate software and systems can be developed for Go-Live

How the platform will work

(Not shown explicitly are the GB Interconnectors (I/Cs))



1. BSP provides bids to local TSO
2. TSO sends bids to central platform
3. Network constraints are provided to central platform
4. TSO sends needs to central platform
5. Algorithm computes optimal solution
6. Central platform informs TSOs of bids that are to be activated
7. Central platform informs TSOs of cross-border exchanges
8. Network constraints are updated ready for next algorithm 'run'
9. TSOs inform BSPs of their activation

Submission of Data

BC6.5

SUBMISSION OF ~~TERRE-MARI~~ RELATED DATA BY BM Participants

BC6.5.1

Communication from BM Participants to The Company

- (a) Submission of data specified in ~~BC4.5.2~~ **BC6.5.2** will be by use of electronic data communications facilities, as provided for in CC.6.5.8
- (b) In the event of a failure of the electronic data communication facilities the data used in the ~~TERRE-MARI~~ auction will be based on the most recent data received and acknowledged by **The Company**. In the event of missing data it will be assumed the **BM Participant** did not wish to submit data for the relevant ~~TERRE-MARI~~ **Auction Period**.
- (c) **Planned Maintenance Outages** will normally be arranged to take place during periods of low data transfer activity.
- (d) Upon any **Planned Maintenance Outage**, or following an unplanned outage described in BC4.5.1(b) **BC6.5.1(b)** (where it is termed a "failure") in relation to a pre-~~TERRE-MARI~~ **Gate Closure**:
 - (i) If a **BM Participant** has submitted **Physical Notifications** and a **TERRE-MARI Bid** for a ~~TERRE-MARI~~ **Auction Period** the **BM Participant** should continue to act in relation to any period of time in accordance with the **Physical Notifications** current at the time of the start of the **Planned Maintenance Outage** or the computer system failure in relation to each such period of time subject to the provisions of BC2.5.1. Depending on when in relation to ~~TERRE-MARI~~ **Gate Closure** the planned or unplanned maintenance outage arises such operation will either be operation in preparation for the relevant output in real time, or will be operation in real time. No further submissions of **BM Participants** data should be

We will follow the same rules outlined for TERRE for MARI submission of Data

Bids to come into the platform electronically as specified in Grid Code BC4.5 (To be updated for MARI)

attempted. **Plant** failure or similar problems causing significant deviation from **Physical Notification** should be notified to **The Company** by the submission of a revision to **Export and Import Limits** in relation to the ~~RR mFRR~~ **Provider** so affected;

- (ii) no data will be transferred from **The Company** to the **BMRA** until the communication facilities are re-established.

Submission Before Gate Closure

BC6.5.2

~~RR mFRR~~ Provider Data submissions before ~~TERRE-MARI~~ Gate Closure

To participate in a ~~TERRE-MARI~~ auction a **BM Participant** must have prequalified and must submit a ~~TERRE-MARI~~ Bid covering at least one of the ~~TERRE-MARI~~ Activation Periods within the ~~TERRE-MARI~~ Auction Period.

In addition to a valid ~~TERRE-MARI~~ Bid a sub-set of **Balancing Mechanism** parameters are also required covering the ~~TERRE-MARI~~ Auction Period and the **Settlement Periods** immediately before and after the ~~TERRE-MARI~~ Auction Period (to allow ramping before and after).

If a **BM Participant** is active in the **Balancing Mechanism** the only additional data needed to participate in a ~~TERRE-MARI~~ auction is a valid ~~TERRE-MARI~~ Bid covering the relevant times.

For a **BM Participant** that is not active in the **Balancing Mechanism** the following subset of parameters are required with exceptions as noted below:

(a) Physical Notifications

Physical Notifications follow the same format and rules as covered in **BC1** and **BC2** with the following exceptions;

- (1) A **BM Participant** that is not active in the **Balancing Mechanism** but wishes to participate in ~~TERRE-MARI~~ is only required to have submitted **Physical Notifications** covering the ~~TERRE-MARI~~ Auction Period and the **Settlement Periods** immediately before and after the ~~TERRE-MARI~~ Auction Period for which they have submitted a ~~TERRE-MARI~~ Bid.
- (2) Defaulting rules as described in the **Data Validation, Consistency and Defaulting Rules** will only apply to **Settlement Periods** for which the **BM Participant** previously submitted **Physical Notifications** for the previous Operational Day.

(b) Export and Import Limits

For a **BM Participant** that is not active in the **Balancing Mechanism** but wishes to participate in ~~TERRE-MARI~~ these are the same as described in **BC1** and **BC2**

(c) Run Up Rate and Run Down Rates

For a **BM Participant** that is not active in the **Balancing Mechanism** but wishes to participate in ~~TERRE-MARI~~ these are the same as described in **BC1** and **BC2**

- (d) For a **BM Participant** that is not active in the **Balancing Mechanism** but wishes to participate in ~~TERRE-MARI~~ the other **Dynamic Parameters** listed in **BC1.A.1.5** are not required

~~TERRE-MARI~~ Bids must follow the formats and rules in the ~~TERRE-MARI~~ Data Validation and Consistency Rules

Gate Close is covered in Article 8 and 9 of the ACER Decision for MARI Implementation Framework ([Found here](#))

The Balancing Gate Close is T-25
(25 minutes before the start of the mFRR MTU)

The TSO bid submission close is T-12
(12 minutes before the beginning of the mFRR MTU)

Submission Before Gate Closure

BC6.5.3

Re-submission of parameters by BM Participants before ~~TERRE-MARI~~ Gate Closure

The rules outlined in BC1 and BC2 for the revision of **Physical Notifications, Export and Import Limits, Run Up Rates and Run Down Rates** also apply for ~~TERRE-MARI~~.

~~TERRE-MARI~~ Bids can be revised up to ~~TERRE-MARI~~ Gate Closure in order to be used in the ~~TERRE-MARI~~ auction (as described in the ~~TERRE-MARI~~ Data Validation and Consistency Rules).

Defaulting rules for ~~TERRE-MARI~~ Bids

~~TERRE-MARI~~ Bids will not be defaulted using previously submitted values. This is due to the ability to link ~~TERRE-MARI~~ Bids and the re-use of sequence numbers. Hence a **BM Participant** wishing to participate in a particular ~~TERRE-MARI~~ auction must submit ~~RR mFRR~~ Bids specifically covering the relevant ~~TERRE-MARI~~ Activation Periods.

Issue 5 Revision 35

BC4
4 of 6

23 May 2019

Types of Bids	
(Full) Divisible bids Invisible bids	Simple bids- one bid
Exclusive bids Multipart bids	Complex bids Combination of simple bids
Linked	Technical Links Conditional Links

BSP to TSO bidding process in the mFRR platform

Submit Electronically.

Every TSO has to submit the energy bids received from BSPs to the mFRR-Platform.

All bids are entered as Scheduled (SA) bid.

A BSP can further choose if a bid is additionally available for direct activation (DA)

DA bids must be fulfilled.

When submitting a **bid available for DA** that the activation of a bid in the DA optimization results in a **delivery extending into the next quarter hour.**

Accepting Bids

There is a process of validating TERRE bids – so as not to cause any transmission or distribution constraints- this will be adopted for MARI

Action: Mod GCD144 is running currently- we need to consider market suspension in terms of any issues with the TERRE market or if there are failures how will this be managed. Build this into MARI drafting.

BC6.6

Processing of ~~TERRE-MARI~~ Bids before passing to the ~~TERRE-MARI~~ Central Platform

BC6.6.1

Cases where a ~~TERRE-MARI~~ Bid will be Restricted

~~TERRE-MARI~~ Bids will be passed to the ~~TERRE-MARI~~ Central Platform but will be flagged as **Restricted** under the following cases

- (a) Data within the submission does not conform to formats required as detailed in the ~~TERRE-MARI~~ Data Validation and Consistency Rules (e.g. missing or incorrect keywords, data in the wrong order, corrupted files etc.)
- (b) If a ~~TERRE-MARI~~ Bid does not have a corresponding **Physical Notification** the ~~TERRE~~ Bid will be flagged as **Restricted**
- (c) If a ~~TERRE-MARI~~ Bid will result in violating a **System Constraint** it will be flagged as **Restricted**
- (d) If a **BM Participant** has already been instructed for an **Ancillary Service** or for **Reserve** a ~~TERRE-MARI~~ Bid may need to be flagged as **Restricted**. For the avoidance of doubt – participation in ~~TERRE-MARI~~ does not exclude an **BM Participant** from offering other services to **The Company** but on occasions if there are conflicts between services **The Company** may have to flag these ~~TERRE-MARI~~ Bids as **Restricted**

Ramping

Design constraints for mFRR product timings

Time To Restore Frequency (TTRF): 15 mins

Period of time to restore system frequency and energy exchange after a unplanned or planned event. Measured point of request by TSO to start of full delivery across border.



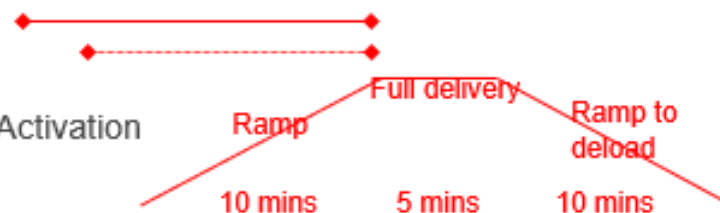
Full Activation Time (FAT): 12.5 mins max

Period of time between the activation request by the connecting TSO in case of TSO-TSO model or by the contracting TSO in case of TSO-BSP model and the corresponding start of full delivery of requested MW power of the concerned balancing energy bid.



TSO-TSO exchanged shape

- Linear ramp of 10 minutes
- Full delivery of 5 minutes for Scheduled Activation
- Longer for Direct Activation (see later)
- Linear ramp of 10 minutes to deload.



Balancing Service Provider (BSP) delivered shape

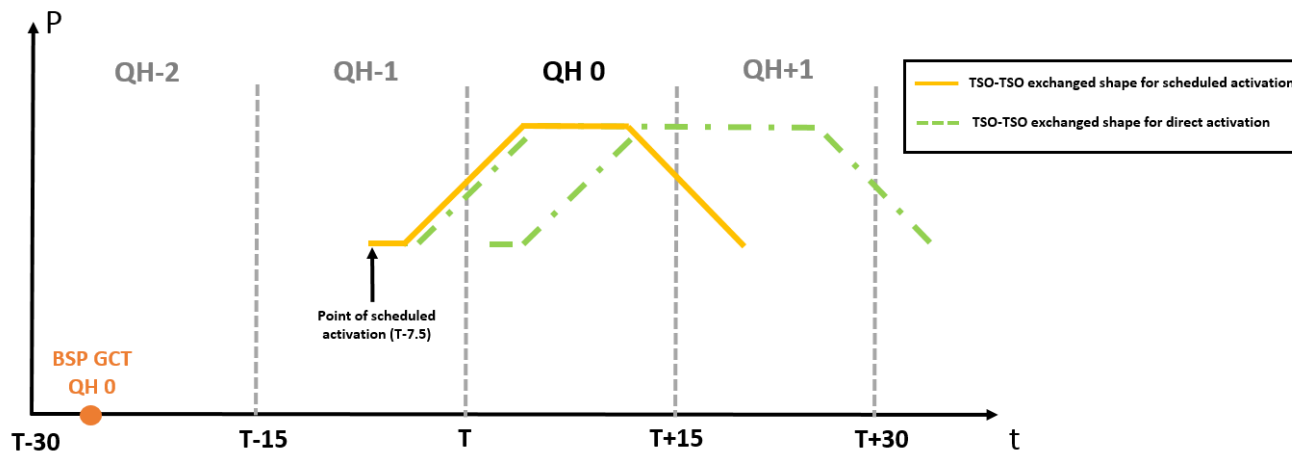
Shape to be defined in national terms and conditions.



Thought it useful to show this slide as it is a good visual for the review of the timescales for the activations to take place

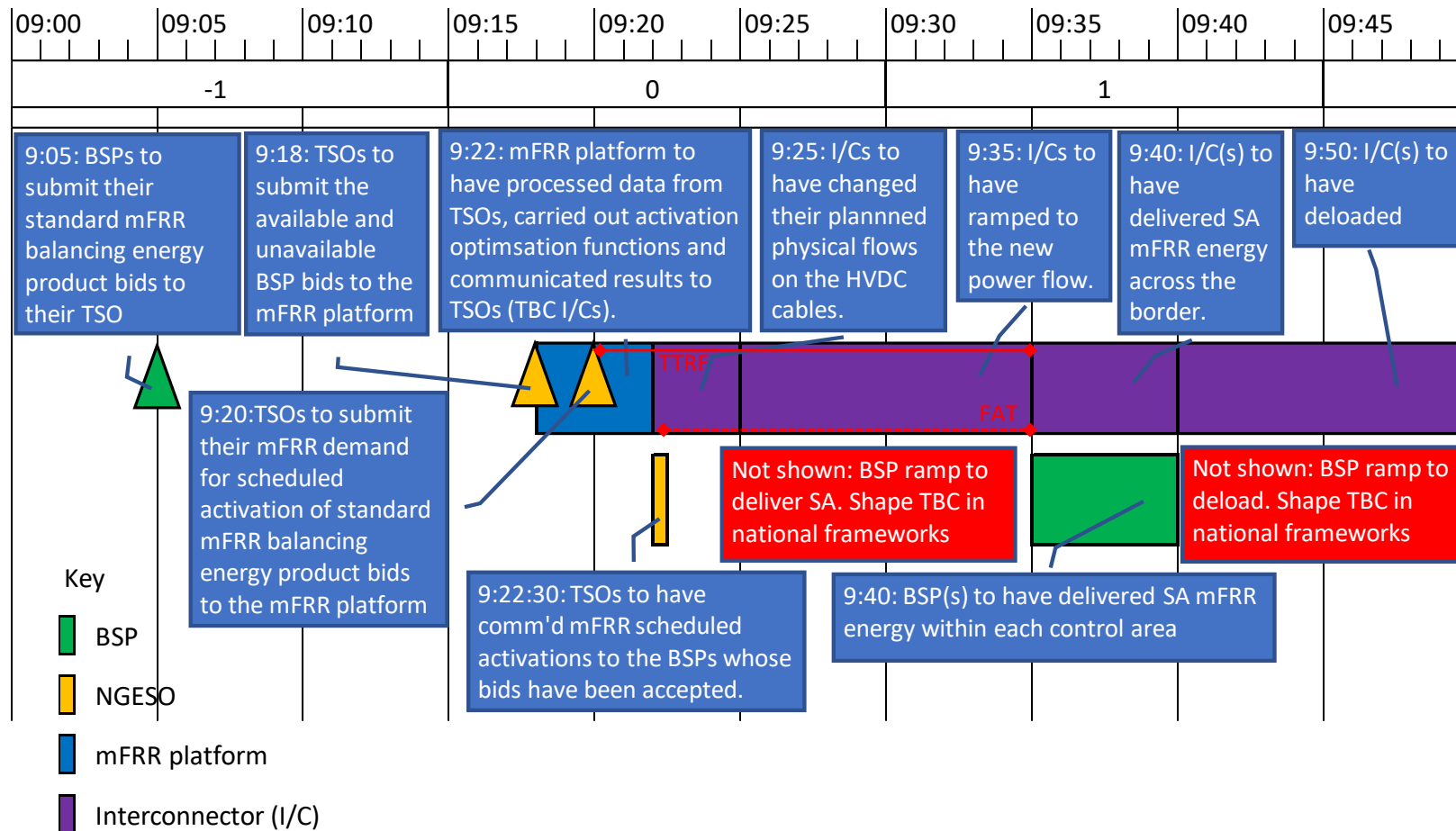
Scheduled and Direct Activations

SA Scheduled Activation	DA Direct Activation
4 x Per Hour (for the next full quarter hour)	Between SA cycles (on demand from the remaining quarter to the end of the subsequent quarter)
12.5 minute Full Activation Time	12.5 minute Full Activation Time
Minimum quantity is IMW	Minimum quantity is IMW
15 minute cycle	BSP can choose if bids are available for DA

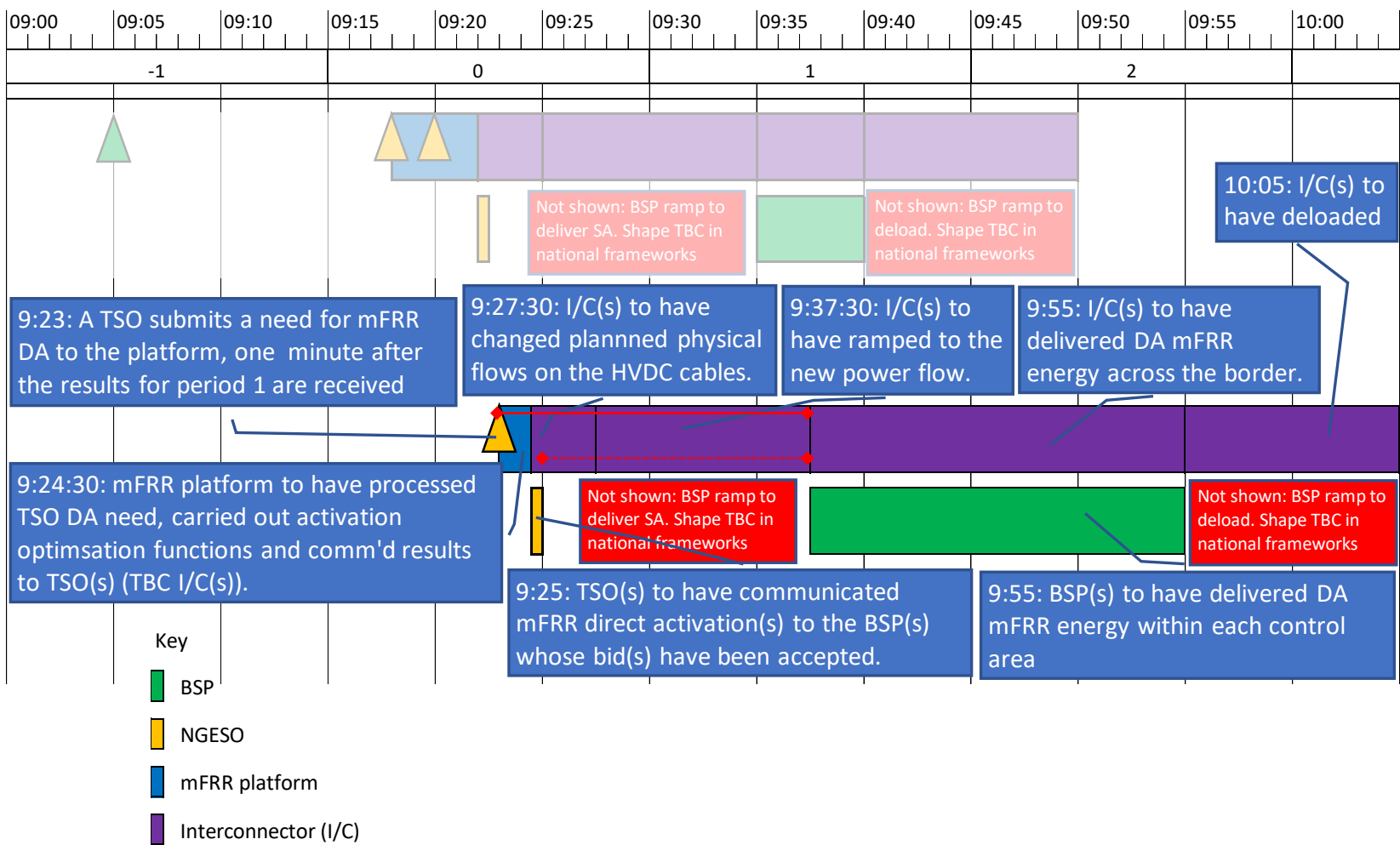


- *Scheduled Activation*
- TSO – TSO delivery shape*:
 - 12.5 minutes Full Activation Time, consisting of
 - 2.5 minutes preparation time (from T-7.5 to T-5)
 - 10 minutes start ramping (T-5 to T+5)
 - **5 minutes full delivery (from T+5 to T+10)**
 - 10 minutes end ramping (from T+10 to T+20)
- *Direct Activation*
- TSO – TSO delivery shape* (*Direct Activation* in QH0):
 - 12.5 minutes Full Activation Time, consisting of
 - 2.5 minutes preparation time
 - 10 minutes start ramping
 - **5 – 20 minutes full delivery (from T+X to T+25)**
 - 10 minutes end ramping (around the end of QH+1, i.e. from T+25 to T+35)

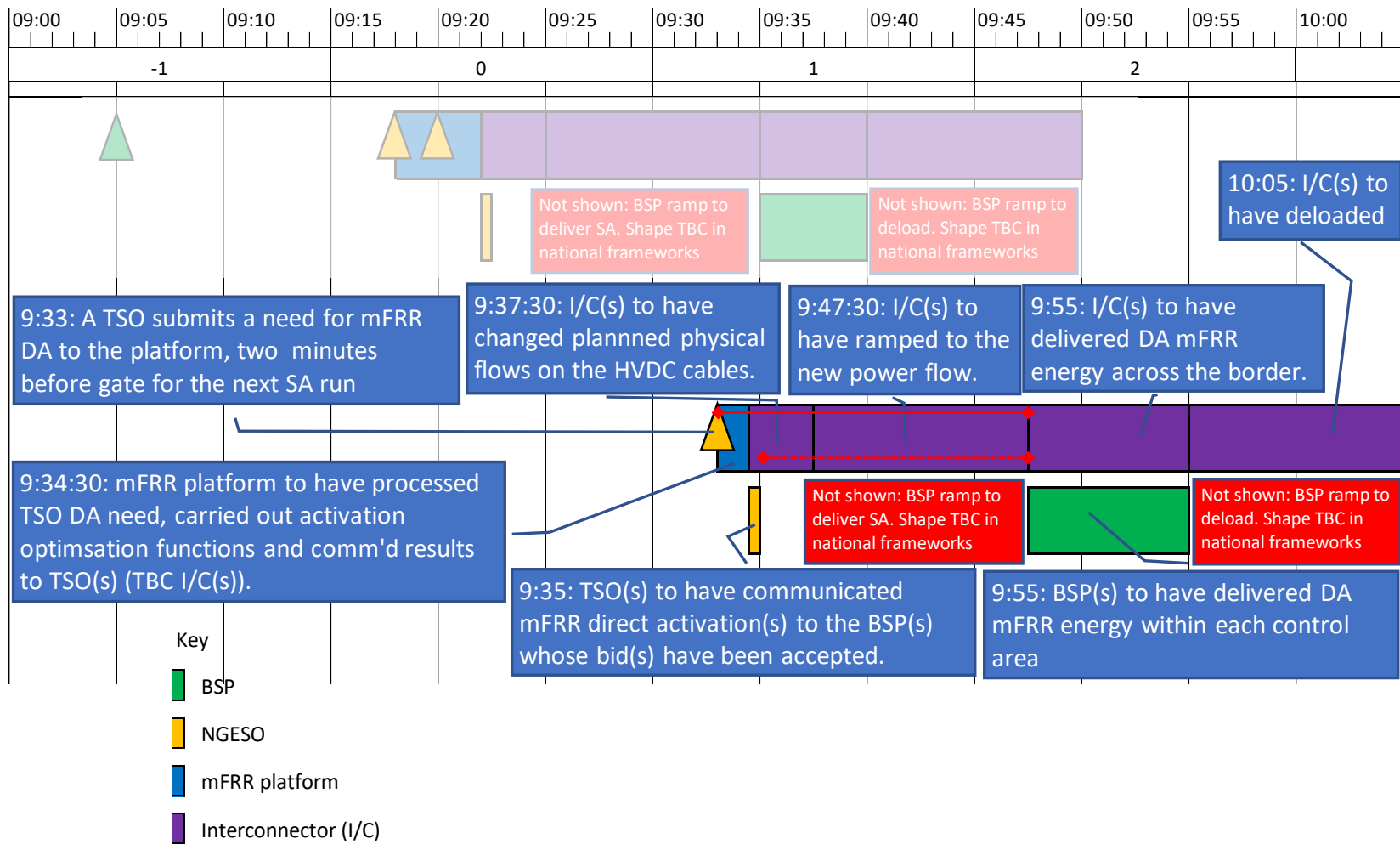
Scheduled Activation (SA) timeline: one run



Direct Activation (DA) timeline: one need just after previous SA run



Direct Activation (DA) timeline: one need just before next SA run



Questions ?



Next steps

Next Steps

- Week commencing 20 July 2020 – Workgroup 3 - Dispatch and Settlement Processes
 - Part 1
 - Agree meeting dates

