



MARI Stakeholder Workshop

Q&A Document

02/12/2021

Webinar

Legend

Black: question from Webinar participant

Orange: response from MARI TSOs

Questions and Answers

Recap on MARI Platform Design

Could you rapidly summarize the differences with the Terre platform ?

In principle, the process of TERRE looks the same. The main difference is the timeline of clearing, which in MARI is around 15 min before realtime and in TERRE activation takes place around 30 min before realtime. Second is the direct activation available in MARI which can trigger a component in realtime for activation. Another difference is the single period optimisation (15 min) in MARI whereas in TERRE there is multi-period optimisation (4x15 min). To summarize, in terms of exchange and the interface, both platforms are the same at high level, however there are changes on the technical details.

Is any X-border capacity reserved for MARI?

The standard envisaged process will always use the remaining cross border capacity from the previous processes (e.g. intraday or previous balancing processes). For example the countries and borders involved in TERRE, the remaining capacity from intraday will first be available in TERRE and then what is left it will become available in MARI. TSOs using one of the methodology for Cross Zonal Capacity Allocation for exchange of balancing capacity may reserve capacity for the exchange of mFRR. This reserved cross-zonal capacity is made available in MARI and forwarded to PICASSO if not used.

From the perspective of BSP, will 15 minutes activation period be allowed or 12,5 minutes?

The TSO-TSO delivery shape must follow the FAT of 12.5 minutes, full activation time is also part of the standard product. What TSOs subsequently agree with their BSPs is to be established under the national T&C.

On the TSO-BSP profile: is this list exhaustive? Or is also the 15min block (ISP length) part of the optional profiles?

The list is not exhaustive and possible BSP-TSO delivered shapes are illustrated in the related slide. It is up to TSOs.

Is the webinar being recorded?

No, it is not recorded, but Q&As together with the presentation will be provided to participants.



How is the ramping for direct activation? Also always +/- 5 min to the 1/4 h change?

According to the TSO-TSO mFRR standard profile (10 minutes upward/downwards) for the exchange of balancing energy the ramping for DA depends on the time of the request of activation from the TSO and does not have to be at the quarter hour change. The ramping down of a direct activation is always 5 min around the second quarter hour after the request for activation. The delivery profile accepted by the connecting TSO is subject to local Terms and Conditions.

Bidding Design

Can we assume that activated bids can be kept activated for more than one market interval?

No, this is not possible. For Scheduled Activation each quarter hour (MTU) is cleared separately and the algorithm does not clear more than one MTU at the time.

Could you indicate what is MTU for you for the exclusive bid? Is it the same as validity period?

An MTU is the 15 minute period. The validity of a bid covers basically an MTU, which is the 15 minute interval.

In all countries is it [MTU] the same?

Yes, all countries use the same definition of MTU.

Did you effectively experience issues with the AOF related with a specific number of exclusive bids in some sort of run? How come it is discovered now?

The issue is linked to the nature of exclusive bids which (together with other MARI bidding features) poses some challenges to the optimization algorithm. The algorithm has to use mixed integer programming. Therefore the issue was analysed during a performance study by our software provider. Depending on the number of exclusive groups the amount of the binary variables is different and limitations can be encountered. Currently our service provider proposes different solutions (software and hardware approach). Software approach involves optimization of parameters and new development of software. The hardware approach is to improve data process and improve numerical stability.

How to reject bids will be an interesting question?

This is currently under discussion among TSOs.

What is the timing of this AOF study? When will you decide if additional limits will be applied? How do you make sure that BSPs are not submitting excessive bids to force a hard cap?

The application of additional limits will only take place after all mitigations have been used up and will be communicated to the BSP.

What is the timing of the solution for exclusive bid, how do you secure that BSPs do not submit too many exclusive bids?

TSOs will start with providing guidance, via TSOs to BSPs on the number of exclusive bids that could be handled. In case the guidance does not result in manageable amounts of exclusive bids, a hard cap will be applied. The three conditions mentioned in the presentation will be followed; i.e., no further AOF improvement is possible in due time, gap from optimal solution due to the high number of exclusive bids is above 10 % and occurrence of above-mentioned gap is more than 4 times per day during period of 7 consecutive days. Since the discussions are still ongoing, exact timeline of the study cannot be declared, but it will be done during v3 phase.



As the AOF must perform 100% right from the start, are there any emergency procedures in case the AOF is not working correctly? or are any such procedures only implemented within the AOF?

The risk related to exclusive bids is considered low for the starting period, since not all TSOs will connect to the platform from the beginning of go-live. Monitoring and mitigations have been put in place to ensure the performance of the platform.

What does the hard cap mean? Does it mean some providers will submit bids, but won't be present in optimization?

The hard cap means that each TSO is allocated a number of exclusive bids it is allowed to submit to the platform. TSOs will have to decide how to treat the bids beyond the hard cap. The hard cap will only be applied when the performance of the algorithm drops too significantly, and optimality gap frequently exceeds 10% and other measures do not have sufficient effect.

This limitation on exclusive bid could be at the cost of liquidity, exposing TSOs and BRPs to high Cross Border Marginal Prices. This should also make part of the assessment?

The usage of hard cap is basically a last resort measure and will be applied only if it is required to do so. The solution will be monitored and the project team will work on improvements. The MARI project team understands the risk of liquidity and shall have a look into this.

What runtime increase is deemed acceptable for the AOF including exclusive bids, compared to clearing without exclusive bids? Is such a threshold included in a decision on if or how to restrict exclusive bid usage?

The runtime of the algorithm is fixed and cannot be extended. The key metric is the optimality gap. The algorithm takes all bids and make optimization at one step, but the TSOs will monitor the optimization level. TSOs are currently investigating various means to improve the performance, in order to mitigate the potential risks and to finally evaluate the need to impose any kind of cap, hard or soft.

Is it possible to have technical linking with future Qhs to offer energy blocks on more than 15min : for example a bid is made on Qh+1 and Qh+2 and bid(Qh+1) is accepted only if bid(Qh+2) is also accepted?

When clearing QH1 the platform does not know the QH2 situation. It can look back, and so activate in QH2 based upon the outcomes of QH1. However vice versa is not possible.

Are the exclusive bids also an issue within Terre?

In TERRE (due to the different timing of the process) there is more time available for the algorithm to be solved and therefore allows a higher complexity. MARI is more time critical than TERRE and hence requires a reduced complexity.

How often AOF runs? For example every minute?

For SA the AOF runs once every 15 minutes. DA demands submitted to the platform will trigger DA runs, and this can be any time, considering the time needed to run the algorithm.

If excessive prices are reached due to exclusive bids, is it a reason the limit of exclusive bids ?

Prices do not effect whether AOF result is satisfactory or not. Optimality gap and certain criteria on optimization are analysed for the limitation of exclusive bids. Therefore, limitation of exclusive bids has nothing to do with pricing, and only on optimisation related technical limitations.

You said that each MTU is cleared separately and that the algorithm "does not look into the future".

If I have an asset with startup-cost of X €/start and I could provide energy for 4 MTUs, I cannot link the 4 MTUs in my bid in order to distribute the startup-cost across all MTUs? So I have to bid in the startup-cost for each bid in each MTUs separately? Correct?



The design of the MARI platform foresees in the possibility that bids can be linked between different MTU periods (also for economical reasons). The bidding strategy is up to the BSP and can effectively distribute equally the start-up cost across 4 MTUs, if the risk of not being activated for less than 4 MTUs.

The limit in exclusive bids is in number or in volume in MW?

The limit is a number.

How would you be able to calculate the 10% optimality gap if the AOF cannot find a solution with all exclusive bid considered ?

The gap is computed as the relative difference between the current solution and the best known bound of MILP problem (information returned by optimization solvers for MILP problem). When an instance is very complicated, like a situation with a lot of exclusive bids, it may happen that the solution returned by AOF has a gap above 10 %, meaning that, in the allocated time, AOF was only able to compute a solution with a gap above 10% to the current best bound.

When you say exclusive bids will be rejected in case of hard cap - then you are losing whole exclusive group, right? If a TSO submits a number of exclusive bids exceeds its cap, one of the options is that all exclusive bids will be rejected; the exact solution is still under discussion in the MARI platform. Other process and rules may apply when BSPs are submitted exclusive bids to their TSO.

How will the stakeholders be involved in the further discussions still to be held to set up this hard cap?

The MARI project will inform the stakeholders via the existing communication channels in due time

Is it possible to have more than one type of links/complexity on a single bid (for example to combine exclusivity in the same Qh with conditional linking with Qh-1 for the same bid)?

Following combinations will be allowed or not allowed on mFRR platform (as presented during the Stakeholder Workshop on 18th December 2020):

- It is permitted to have technical links between exclusive and multipart bids in different MTU periods.
- It is permitted to have both technical and conditional links between simple bids (i.e. technical and conditional links between two bids are permitted however in such case both must be simple bids)
- Within a QHO, there may not be more than one bid having the same technical link to bids in QH-1.
- No technical links are allowed within one MTU.
- No conditional links are allowed within one MTU.

Who is liable on the (oppty) cost incurred by a suboptimal bid selection?

The results from the platform are considered as optimal and valid results that TSOs need to implement. That is the reason why in principle the TSOs aim to keep the optimality gap is smaller than 10%. In other words if offers are activated and results are communicated, the results are considered as optimal and therefore in principle the liability issue does not come into play.

Accession Roadmap

What would be the impact of derogations and TSOs not joining the platform? Do you need a 'critical mass' of TSO and BSPs for liquidity purposes?

More liquidity would always be better but there is no minimum. Technically the platform will be ready to connect TSOs and TSOs connected will be able to perform their market process, realising that the liquidity will improve when more TSOs are connected to the platform. TSOs have various reasons to derogate and it depends on local implementation of BSPs and TSOs. Concrete questions might be directed to the local TSOs and/or NRAs.

Where we can learn technical details needed for TSO's SW tools design - communication protocols , data formats Specifications for the national market implementation can be obtained from the your local TSO.

Transparency and Reporting (Common session with PICASSO)

Will the data be available on some test platform as well? To prepare the data flows for analysis before the go-live?



There is no dedicated test platform. However, the additional data will be provided using similar format and interfaces (the only difference is the elastic demands data) which are already used for the existing IGCC publications on Transparency platform, so these can be used as a blueprint.

Does MARI incorporate only activation price algorithm, or does it also aim to optimize the reservation?

MARI is a platform for the exchange of mFRR balancing energy. Capacity reservation is no part of the platform. According to the Clean Energy Package, energy cannot be linked to capacity.

Will also the merit orders of each TSO's area be published, meaning also the NOT accepted offers?

Yes, all the offers are published on ENTSO-E Transparency Platform in accordance with EBGL.

Will excluding blocks (so also the not accepted) of MARI be published?

It is not foreseen to publish all of the information related to exclusive groups on Transparency Platform

The net positions are not equivalent to volumes exchanged; their sum is the same, but the information provided is not the same. The net positions are ok as a first step towards the publication of the exchanged volumes.

At present, publication of net positions are being prepared. The topic will be discussed by TSOs and they will come back with a proposal on how to accommodate the target phase.

Is it planned to have limitation in capacity between countries or inside countries (in Germany) for the first month of the go live ? Will this be limited in Time?

There is no plan to have permanent limitations inside Germany. However, there is possibility to have limitations in case of severe operational platform problems between the TSOs. It is not intended to permanently set limit after Go-Live. In addition, in order to be able to assess the platforms impact on the operational security a transitional period shall be implemented during which the remaining CZC available after the ID shall be limited and not provided entirely to platforms.

Will the total activated volume per country (or control demand established by the platform) will be published for each platform, regardless of the exchanges?

Yes. Please see EBGL Article 20 - 3 (e).

What "bid conversion" means please?

This relate to the process for the conversion of balancing energy bids from specific products into balancing energy bids from standard products. see Article 26.1.e of the GLEB. Also the IF there is a possibility to convert from integrated scheduling process.

In the context of transparency and monitoring indicators, how would market surveillance be performed on the platform?

Since this is a topic that could be discussed with ACER and NRAs, it is proposed not to focus on it, during this workshop.

Do all of the described platforms base on interconnectors' capacities?

In principle all of the transmission capacity is determined based on the interconnector capacities (according to the principles which are already in EBGL).

Which website to find FAQ and slides later?

The material can be found on the ENTSO-E website.