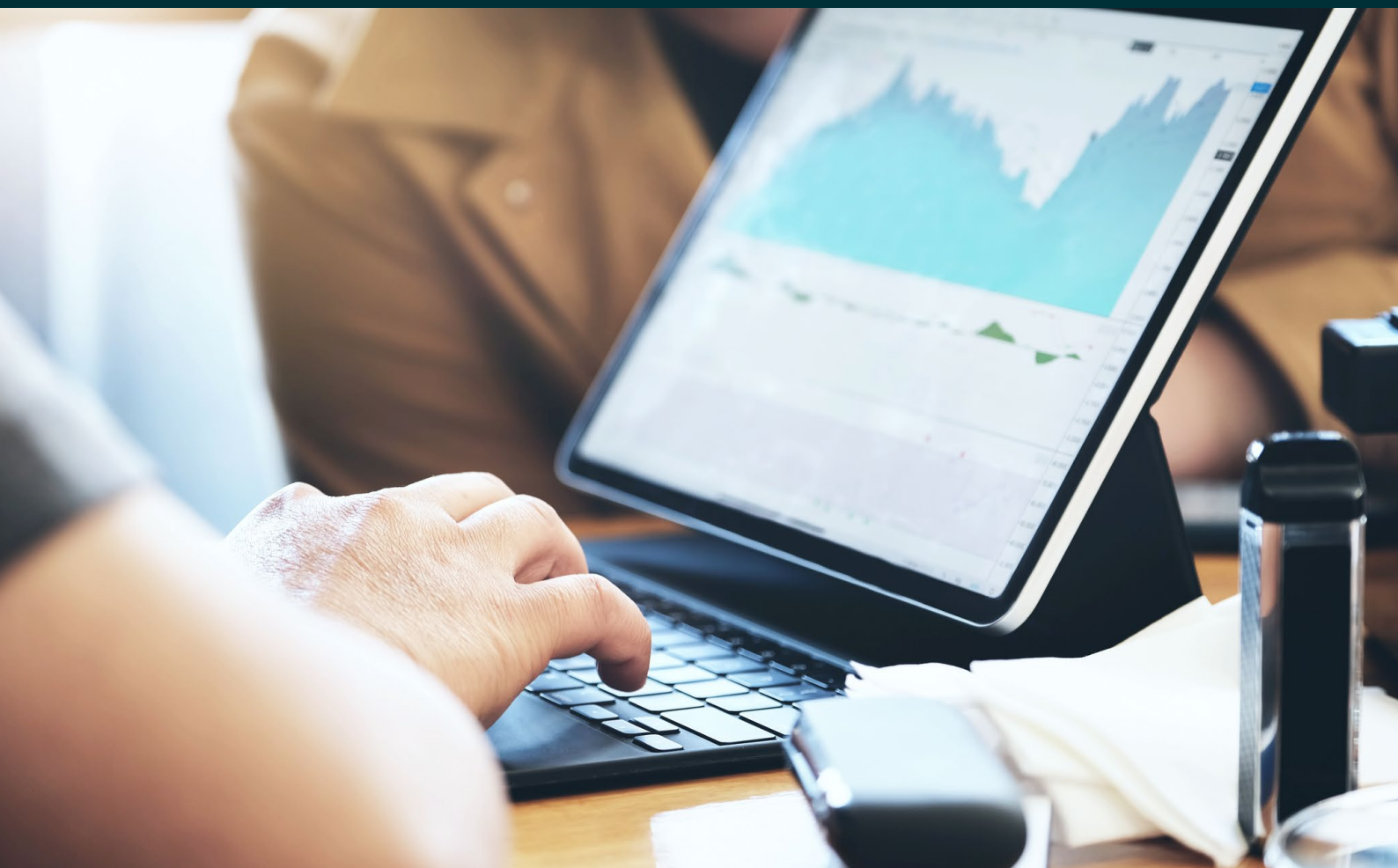
volue

Volue Ancitra

Unlock the value of flexibility in your assets with Volue Ancitra - an automated bidding support tool for reserve auctions and activation markets in Europe.



Support you in automation of bidding in balancing market. The solution gives you a full overview of bids, both sent, accepted and activated. Ancitra supports the European market design as introduced through the EU harmonisation platforms of MARI and PICASSO and is provided as Software as a Service (SaaS).

Key Benefits:

01

Automated bidding
Take advantage of the balancing markets by bidding in the energy balancing market for every quarter-hourly product (96 products per day). Automate the bidding process by setting up automatic schedules and recurrent jobs. Reduce operational risks with the automated updates of the reserve market obligations and options.

02

Monetise flexibility
Participate in all balancing markets and unlock the value of your flexible assets. Get an intuitive overview of your flexibilities, obligations and limits, and efficiently bid available flexibility in the different balancing markets – including primary, secondary and tertiary (FCR, aFRR, mFRR).

03

Integration with optimisation solutions
Open and modular, integrate Ancitra with any production planning or optimisation solution. Import bid suggestions from optimisation solutions as a starting point for bidding in capacity or energy activation markets. Bid available energy at optimal, profitable prices and increase revenue by creating or updating bids close to real-time.

04

SaaS solution
Delivered as a SaaS solution, Ancitra is up and running instantly. With useful documentation and help function, start using Volue's Ancitra right away.

Summary:

- Bid in both balance capacity auctions and energy activation markets – either with automatic or manual bid generation in Volue Ancitra or based on import of bid suggestions from decision-making tools from Volue or third-party solutions.
- Bid validation to ensure that you as a market player are confident that your bids are valid. This is in line with the market rules and with acceptance by the system operator.
- Dashboards that show available capacity that can be offered in the various balance markets, so that you can make optimal bids in the market.
- Overviews of your obligations in the capacity markets so that you can ensure that you deliver according to your obligations.
- Support of the full communication with the TSO through the supported connections with the relevant TSOs for the different markets.
- API – delivered with standard APIs to allow for integration in system landscape.

Ancitra enables power producers, asset-backed traders and aggregators to participate in the power balancing markets by providing automated bidding support for capacity auctions and energy activation markets. Ancitra has a direct interface with the TSOs to send bids, as well as receive and process results. It supports the European market design as introduced through the EU harmonisation platforms of MARI and PICASSO.

A major advantage with Ancitra is that it is prepared to support all balancing markets in the countries where Ancitra is launched – both energy activation markets and capacity markets. This allows one single system to keep track of all your reserve market obligations and bids. Ancitra visualizes this together with available reserve volumes in your generation portfolio. This offers a complete overview, flexibility and efficiency that enables you to take full benefits from the various reserve market opportunities.

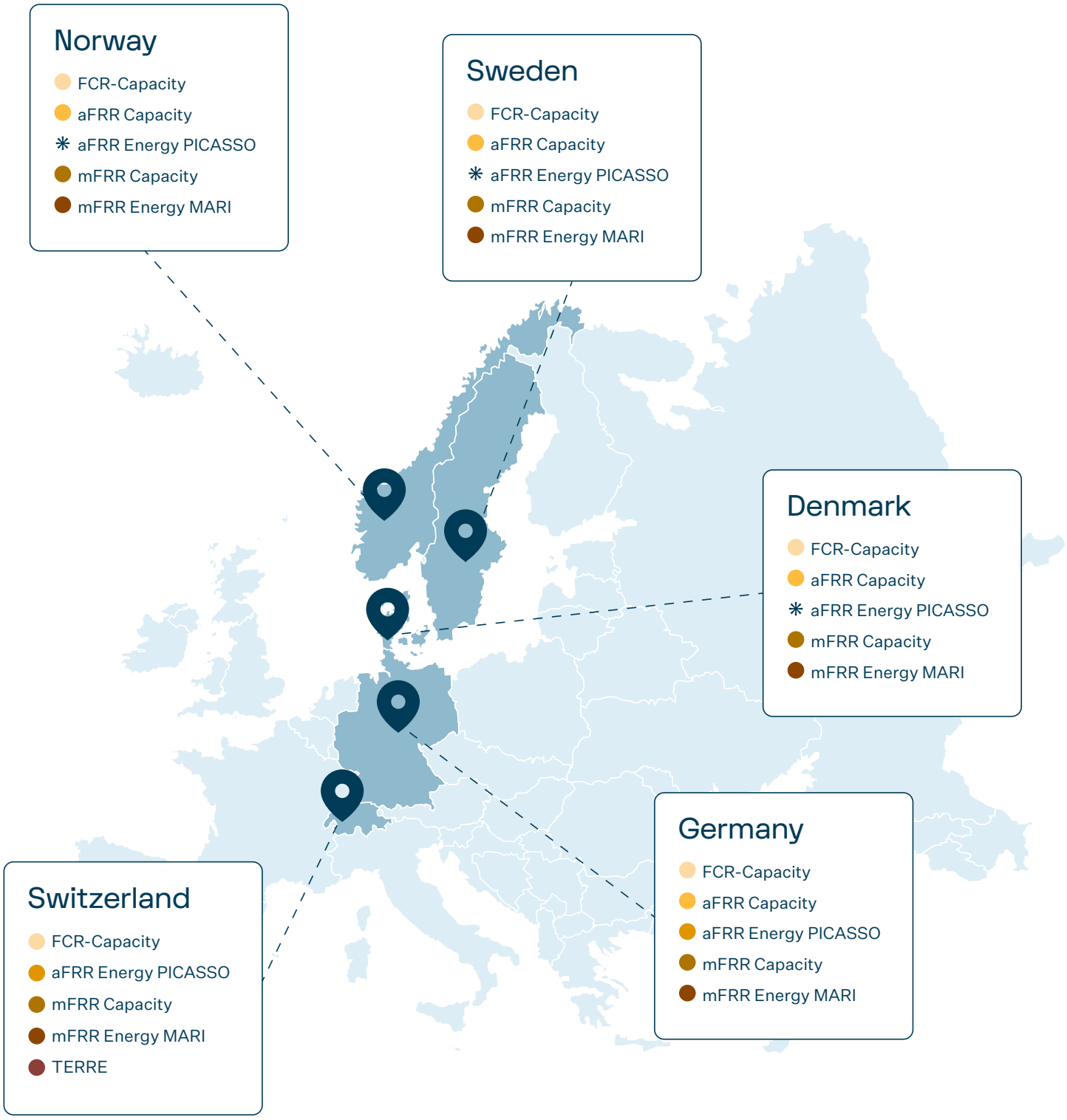
Ancitra can be used as standalone application but it can also be integrated with any production planning and optimisation tool based on a standard API. To import and set up the synchronisation of the planned production per asset, minimum production, maximum production and other limits allows you, for instance, to adapt the bids when the planned production of your assets changes. Bid suggestions for the different assets in the portfolio can be imported and used as input for bidding in the different reserve markets. Market results are received in Ancitra which further on are published for subscribers, e.g. planning tool for re-optimisation.

Furthermore, Volue Ancitra can be used seamlessly with Volue's optimisation solutions.

- Integration with the Volue Smart Generation (SmG) Portfolio is available. Time series data is then received from the SmG database, and SmG receives market results such as bids and accepted contracts to be used in further optimisations. Timeseries data received from SmG could be for instance current generation plans, max available, minimum running, and obligations from capacity markets. Bid suggestions can be imported from the Marginal Cost module.
- Integration with Volue BoFiT is available based on the flexible scripting possibilities in Volue BoFiT.

Ancitra is delivered as cloud-based Software as a Service (SaaS) which is accessed through the web. As part of the SaaS Volue takes care of hosting, deployment, backup and disaster recovery of the application. In addition, releases and upgrades become regularly available for the users.

Balancing markets available in Ancitra



✳ Will be launched according to national TSO timeline

1. Ancitra Functionality

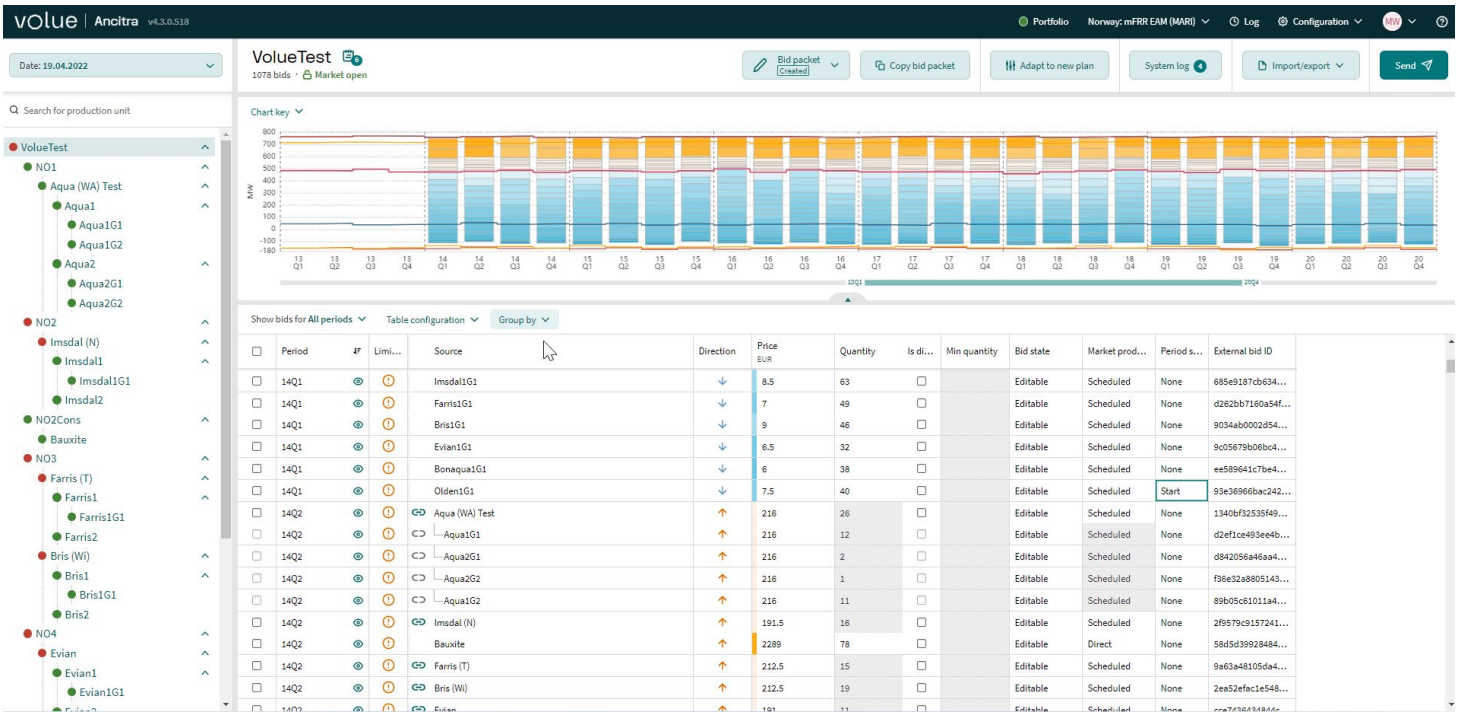
Volue Ancitra functionality offers:

- Flexible portfolio configuration which allows to configure a portfolio with assets and grouping of assets
- Manual bid creation or manual adaption of existing bids
- Program Assisted Correction (PAC) which is a collection of functions made available to create, update or delete bids based on given inputs
- Automated Schedules which allows automation of bid generation and bid adaption

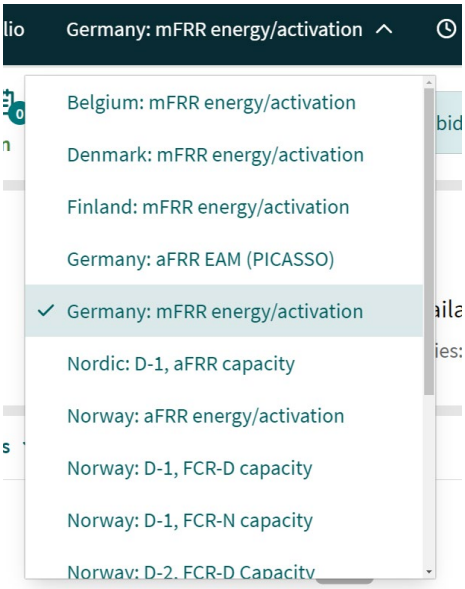
1.1 Main Ancitra workspace

The left pane shows the configured portfolio that is available for participation in the chosen market. The structure supports regulation objects, plants and units, and allows for configuration of different types of generation portfolios. This tree structure allows drill-down in multiple levels down to generator level. The chart in the main graphical view will be updated accordingly, showing current generation schedule, available up- and down regulation reserves etc.

The bid table shows bids for the chosen object or aggregation level. In this table you can also show and edit imported bids or create bids manually. Bids that are sent to the TSO can only reference the regulation object level. However, after you have defined a structure with regulation objects, plants and units, in Ancitra you can create bids on all these levels. The lower-level bids are automatically collected into bid packets at regulation object level by Ancitra.

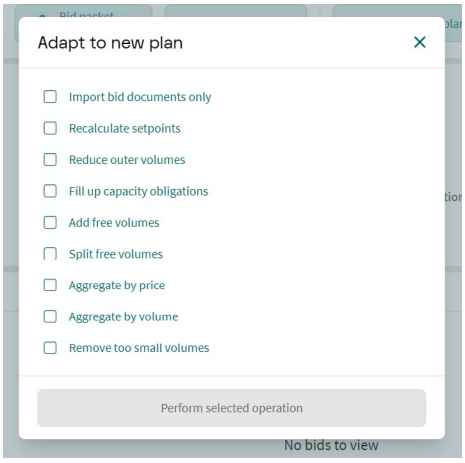


Main Ancitra workspace



1.2 Market selector
Ancitra supports several control areas and reserve markets, and you select which market you want to work with in the market selector.

For each market, you can configure which time series are shown in the graphical view. Up to 12 time series can be shown in the graphical view.
The layout of the Date Selector and the Bid Table will also be different for different markets to support the specific bid structure and bidding rules for each individual market.

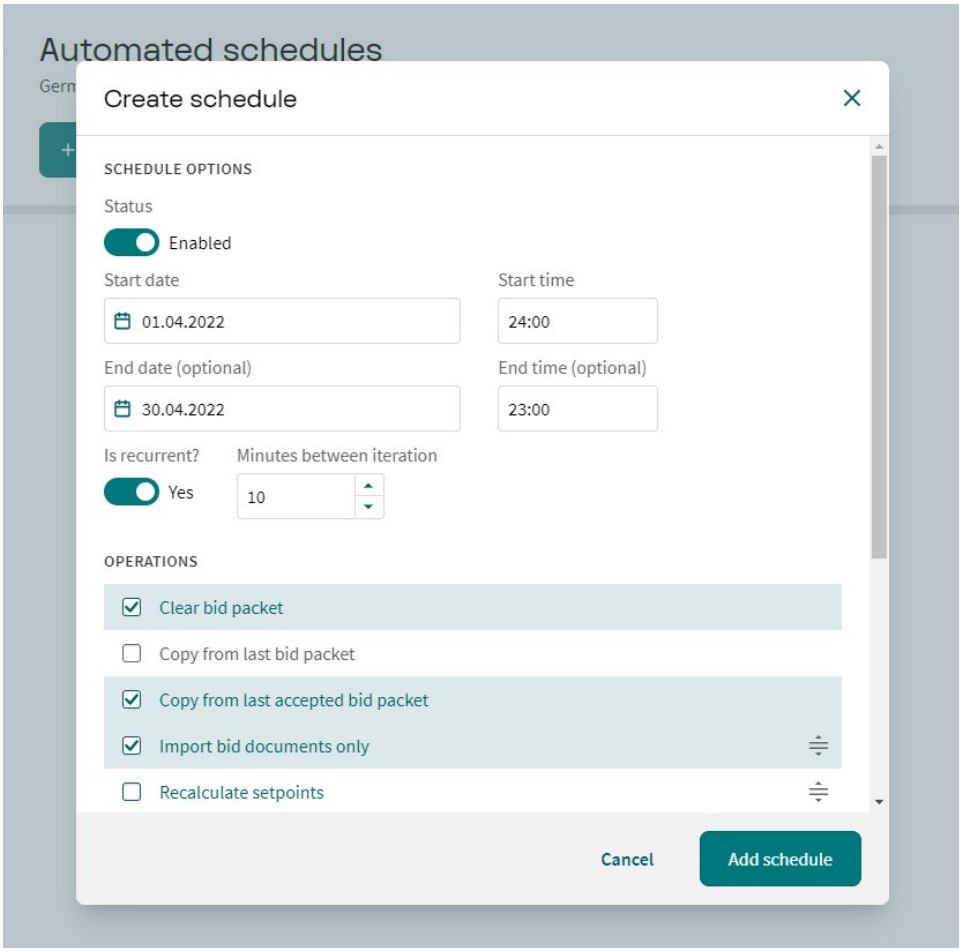


1.2.1 Program Assisted Correction (PAC) for bid generation
Program Assisted Correction (PAC) is a collection of functions made available which allows to create, update or delete bids based on given inputs.

PAC functions can be used to:

- create bids based on limits and starting prices imported as time series. This can be combined with the automation functionality to automate the bid generation process in Ancitra
- Verify and correct bids that are imported from an external source

The features available will to some extent vary from market to market to reflect the market bidding rules.



1.3 Automation of Balancing Market Bidding
Ancitra includes Automated Schedules which allows configuration of time triggered automation of functionality in Ancitra. This feature allows new or changed bids to be imported, verified, corrected and automatically sent by Ancitra with a configurable iteration frequency (down to 1 minute).

Automation is of particular importance in the energy activation markets with market changes resulting in a gate closure time closer to delivery and bidding timesteps of 15 minutes. This results in a need for the bidding system to support frequent intraday bidding. Whenever market prices as well as your market positions and/or available reserves change, new opportunities will occur in the various reserve markets.

The functions available in Automated Schedules are:

- Import of bids
- Functions available as part of Program Assisted Correction (PAC) that can be used to create or adapt bids based on different inputs
- Sending of bids

2 Activation Request for mFRR – optional application

Activation Request handles the electronic activation process for mFRR activation orders received from the TSO. Incoming activation orders are received, acknowledgement and response documents are sent to the TSO, and the volume is allocated to the correct asset/generator. The activation orders are made available such that these can be passed on to other solutions such as the SCADA system and the settlement system.

Activation Request is available in Norway, Sweden and Switzerland. Activation Request enables configuration of full automation of the handling of the activation orders for mFRR by:

- Allocating the activation order to the asset/generator. This is done by linking the activation to the outgoing mFRR energy activation bid.
- Automatically sending a response document to the TSO accepting the activation order.
- Calculating how the activation should be run with correct ramp rates based on the mFRR product.
- Making the activation available such that this can be fetched and sent to the SCADA system for direct execution.
- Supports response process for TSO heart beat function. Heart beat messages are messages the TSO use to verify that the communication with the participant is up and running and that the participant technically can receive real activations.

Automation of the activation request process is important with the MARI market design allowing for maximum 2.5 minutes between receiving the activation order and starting the ramping towards the fully activated volume.

Activation Request provides an overview of the activated volume, price and time period.

Activation requests

01.04.2022 – 19.04.2022 Area: Norway Receiver: All Show only active

Created time	Status	Direction	Station	Receiver	Price €	Volume MW	Start	Stop	Rev
11.04.2022 19:37	✓	↑	Aqua (WA) Test	VolueTest		10	19:45	20:00	1
11.04.2022 18:38	Waiting f...	↑	Aqua (WA) Test	VolueTest		10	20:30	20:45	1
11.04.2022 18:38	✓	↑	Aqua (WA) Test	VolueTest		10	20:45	21:00	1
11.04.2022 18:38	Waiting f...	↑	Aqua (WA) Test	VolueTest		10	21:00	21:15	1
11.04.2022 18:38	✓	↑	Aqua (WA) Test	VolueTest		10	21:30	21:45	1
11.04.2022 18:38	Waiting f...	↑	Aqua (WA) Test	VolueTest		10	21:15	21:30	1
11.04.2022 18:38	✓	↑	Aqua (WA) Test	VolueTest		10	20:00	20:15	1
11.04.2022 18:38	Waiting f...	↑	Aqua (WA) Test	VolueTest		10	20:15	20:30	1
11.04.2022 18:36	Waiting f...	↑	Aqua (WA) Test	VolueTest		10	20:00	20:15	1
11.04.2022 15:37	✗ Waiting f...	↑	Aqua (WA) Test	VolueTest		10	15:45	16:00	1

Activation Request supports the required market format and communication channel of the TSO.

3 APIs and communication

3.1 Delivered with standard APIs to support integration
Volue Ancitra is delivered with standard APIs to allow for integration with other systems in the system landscape. Typical integrations is with production planning solutions, other trading solutions or a settlement solution.

Import of data
Import is based on the available JSON formats:

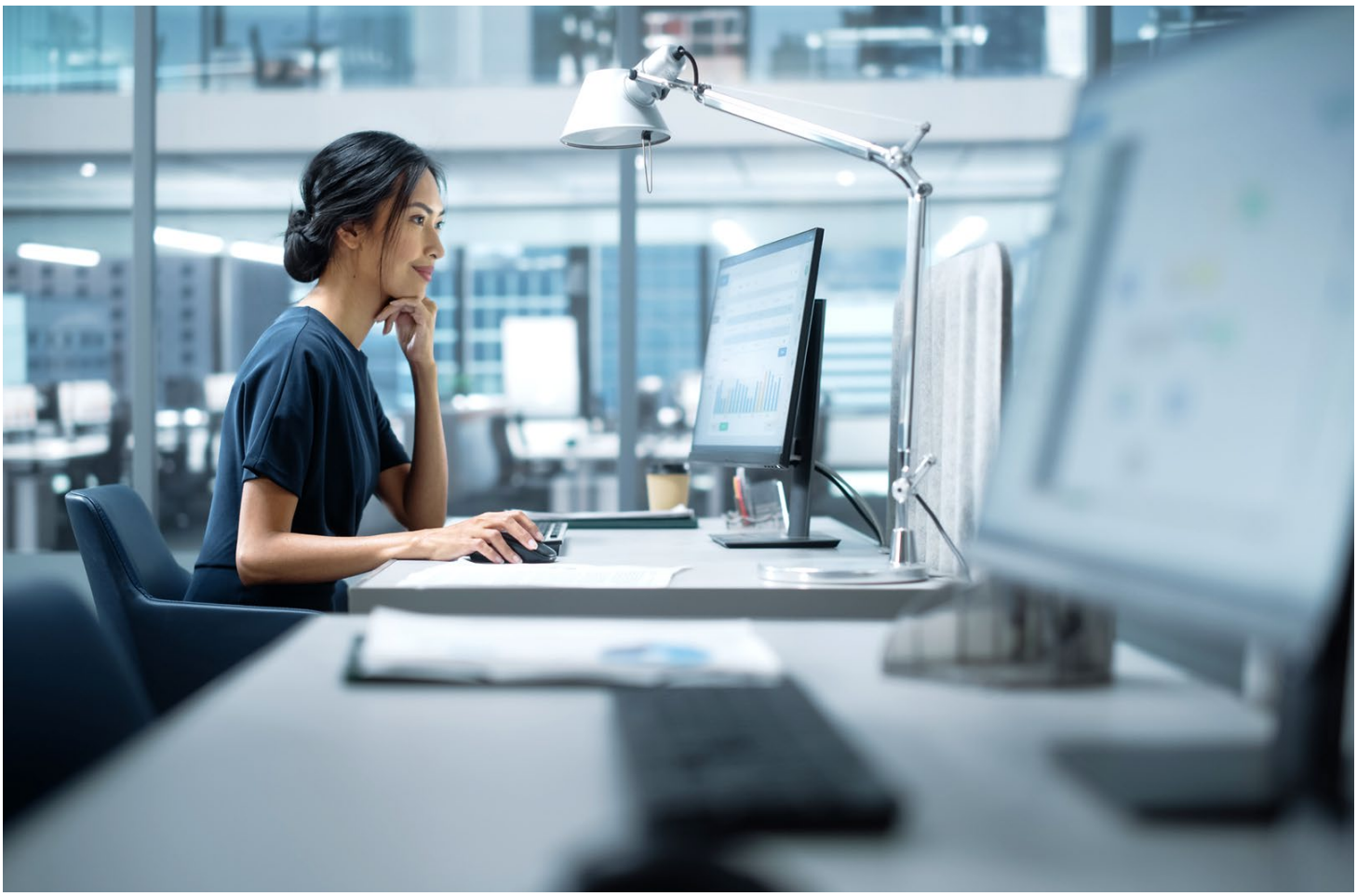
Timeseries import	Used to import timeseries values such as for instance planned production, minimum production, maximum production, starting price for bids up/down for different objects as part of the portfolio.
Bid document import	The bid document is used to import bid suggestions which is built up of price-volume pairs for a given market.

Export of data
Volue Ancitra makes market results available such that these can be fetched and imported into down-stream systems.

The API is made available as a REST API and optionally also by using queues based on RabbitMQ.

Authorisation to the API is done using Volue ID based on a standard client flow according to the OAuth2 protocol.

3.2 Communication with TSO
Volue Ancitra handles the communication of bids and acceptance of bids through the available TSO communication channel for the given market.



Do you want to know more about Volue Ancitra?

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