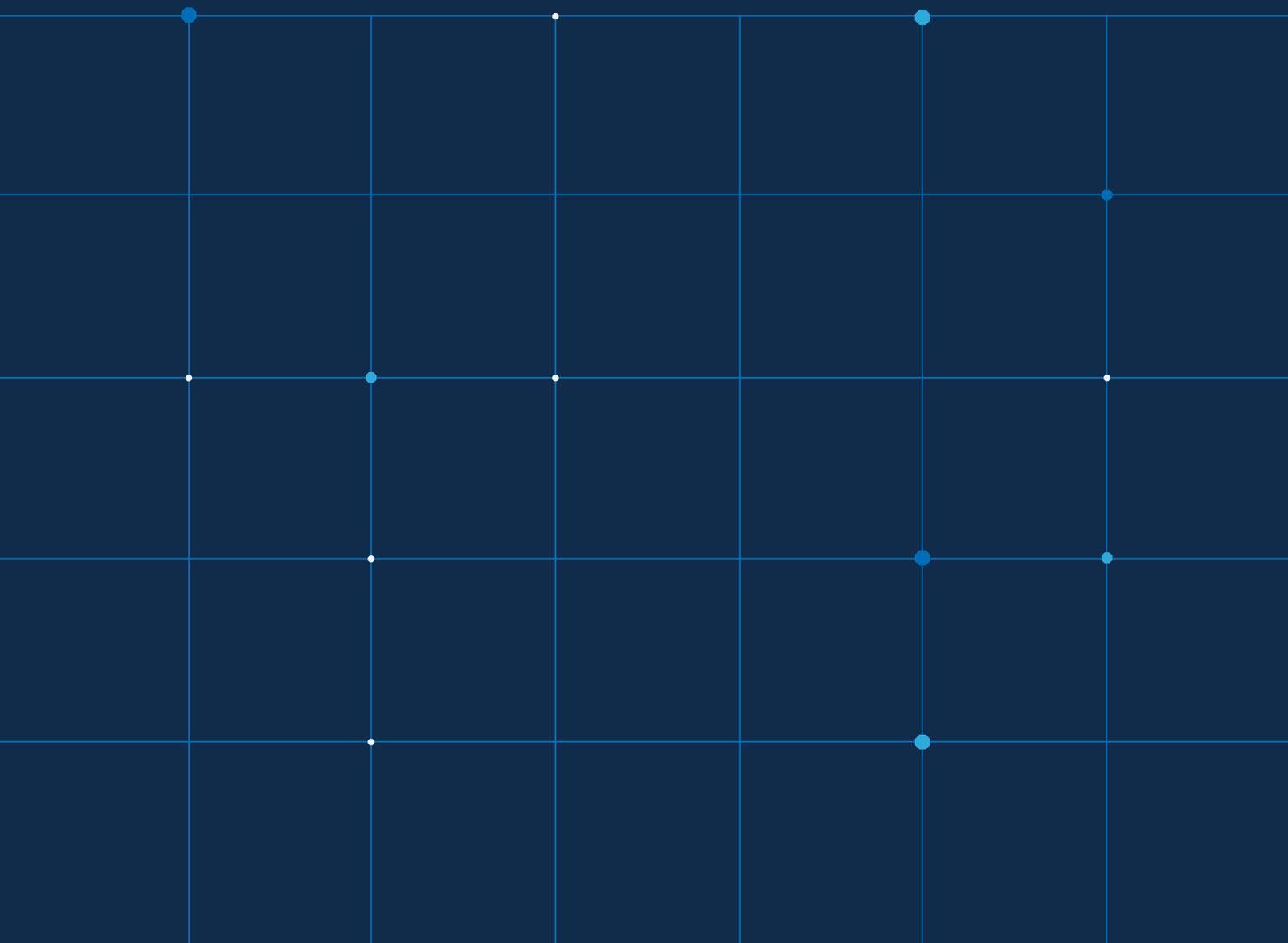
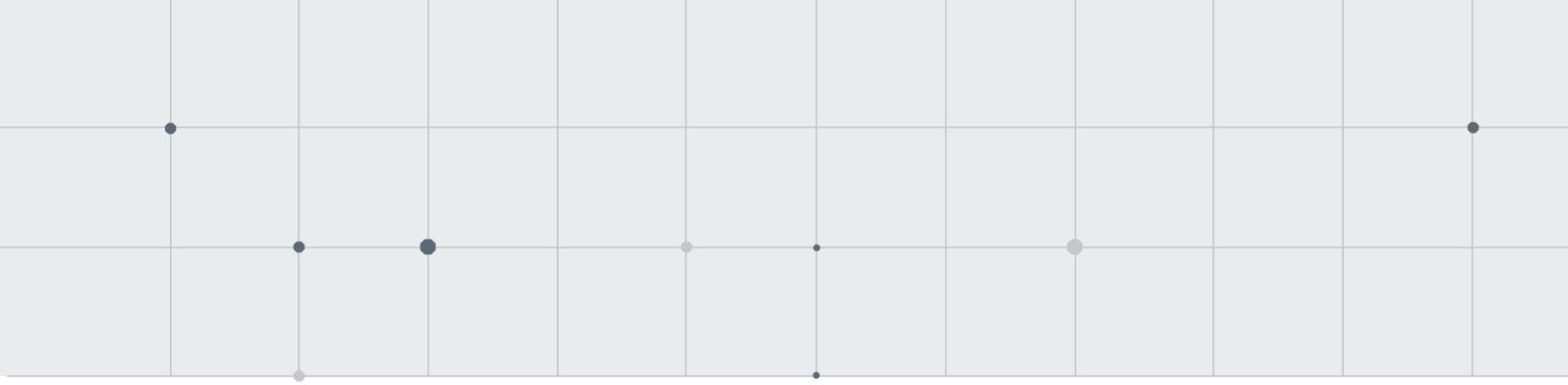


triBalance Rates





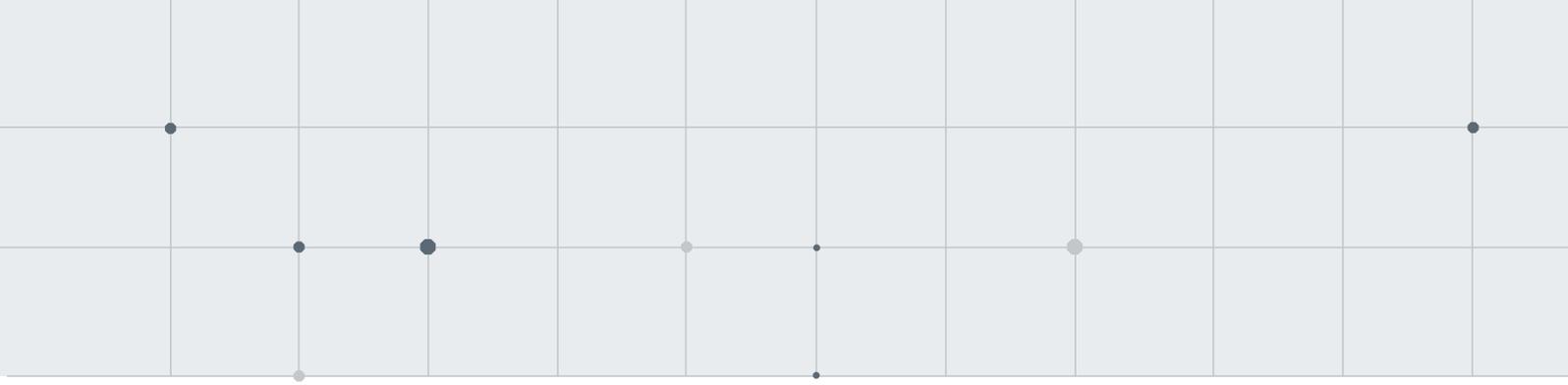
triBalance is a risk mitigation service offered by TriOptima that reduces outstanding Initial Margin (IM) exposures and, as a result, the cost of funding. Bilateral counterparty risk exposures and IM requirements (SIMM¹) are optimized by adding new risk mitigating transactions that offset outstanding risk. In addition to reducing the cost of funding, optimized bilateral risk exposures will also reduce market contagion and mitigate systemic risk.



triBalance Rates in short

- Bilateral (SIMM) IM is reduced by adding swaptions that address delta, vega and curvature.
- Unnecessary aggregation of outstanding transactions and notional is minimized by scheduling the compression of outstanding swaptions with the following optimization run.
- Enables reduction of bilateral IM exposures facing all major dealers.
- Automatic data feed from AcadiaSoft for uncleared IM risk exposures.
- Trade booking is completed via MarkitWire, at the click of a button.
- Monthly cycles.

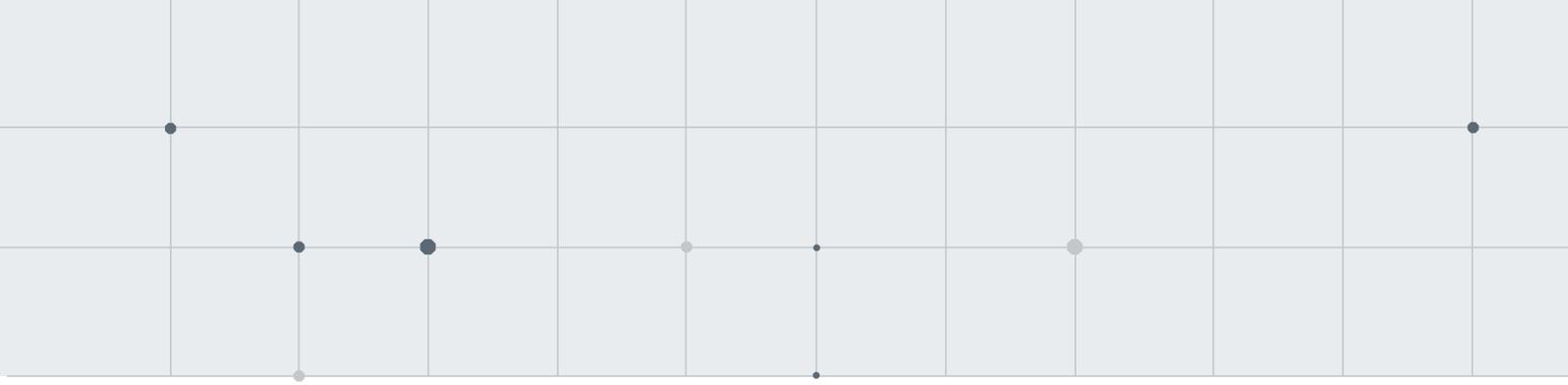
¹ Licensed from International Swaps and Derivatives Association, Inc., All Rights Reserved



Taking part in triBalance

A streamlined process minimizes the effort of participation by utilizing an automatic input data feed and offering STP for trade booking.

1. Sign up to a triBalance cycle or automatically sign up for future cycles.
2. Submit tolerances in a spreadsheet that can be adjusted and reused between cycles.
3. Exposure data is pulled automatically from AcadiaSoft at 11 am GMT.
4. TriOptima generates a triBalance proposal which is published on the secure triBalance website at 1 pm GMT.
5. The proposal is accepted and transactions executed bilaterally directly between counterparties - typically by 3pm GMT. Following execution, these transactions will reduce firms' IM exposure and the cost of trading.
6. Firms request STP trade booking of triBalance transactions on the STP portal.

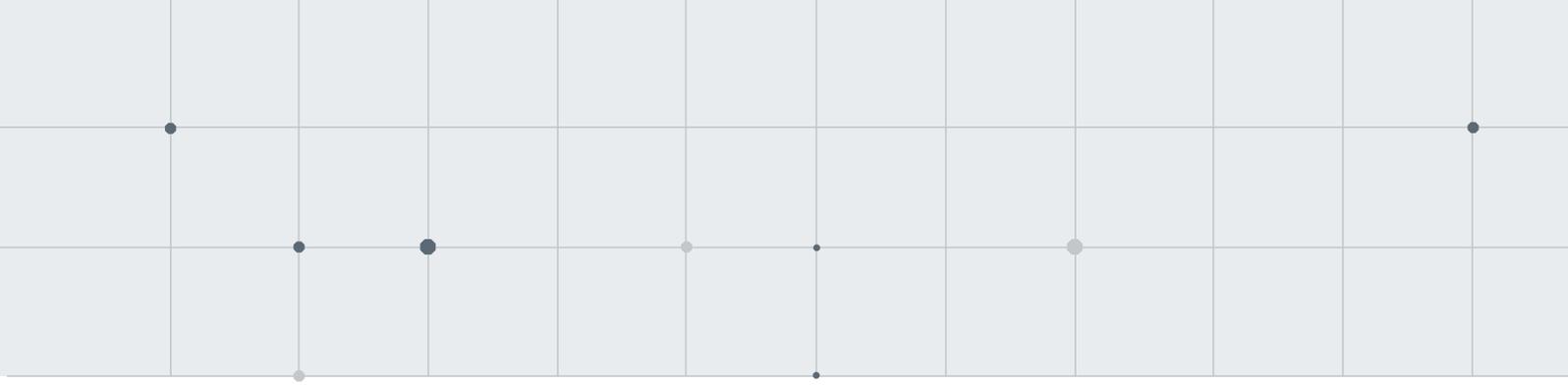


Getting ready

To join the triBalance network, complete a service agreement, test connectivity and you're ready to go.

- Execute the triBalance service agreement.
- Ensure that you submit risk expiry date in your daily data upload to AcadiaSoft.
- Discuss how trades will be booked internally with your Rates middle office teams.
- Discuss with traders for respective currencies how trades will flow into their books and how they will segregate them.
- Consider setting up a separate trading book to house new risk mitigating triBalance transactions.
- Ensure your systems can handle swaptions with mandatory early termination.
- Execute the STP agreement and set up your MW connectivity with TriOptima.
- Test the MW connectivity in UAT and production.

[REDUCE YOUR COST OF TRADING >](#)



Methodology

The triBalance algorithm uses the SIMM formula as objective function to optimize the bilateral IM exposure, while keeping each participant's market risk untouched.

Data that has been submitted to AcadiaSoft is pulled by triBalance and a net exposure per qualifier, risk type and counterparty as of the following day is calculated. Projected next day net exposures are used as input for the optimization because the new transactions will not impact today's IM calls, but tomorrow's. The benefit of participating in a triBalance run will materialize in the morning following the cycle, when IM calls are calculated and exchanged.

triBalance optimizes secured IM exposures across all participants to achieve the most efficient result. All participants are interested in reducing the amount of IM that they expect to pledge, but it is indeed more efficient to reduce counterparties' secured IM as this is what the actual margin call will be based on.

To maintain an efficient ratio between IM reduction and notional/number of trades added, the triBalance algorithm incorporates a "cost of notional". This ensures that only the most effective offsetting transactions from a balance sheet and operational standpoint are added.

Regulation typically requires counterparties to exchange margin for exposures with an individual counterparty over a certain threshold. For instance, assuming a threshold of 50mm (EUR or USD) and reducing a bilateral IM exposure from 80mm to 60mm may be considered differently, from a benefit case, versus reducing an IM exposure from 40mm to 20mm. Staying well below the 50mm threshold over time will enable firms to continue trading without having to worry about the IM impact. Applicable thresholds can be specified by each participant and will be considered when optimizing the outstanding IM exposure.

Risk mitigating triBalance transactions

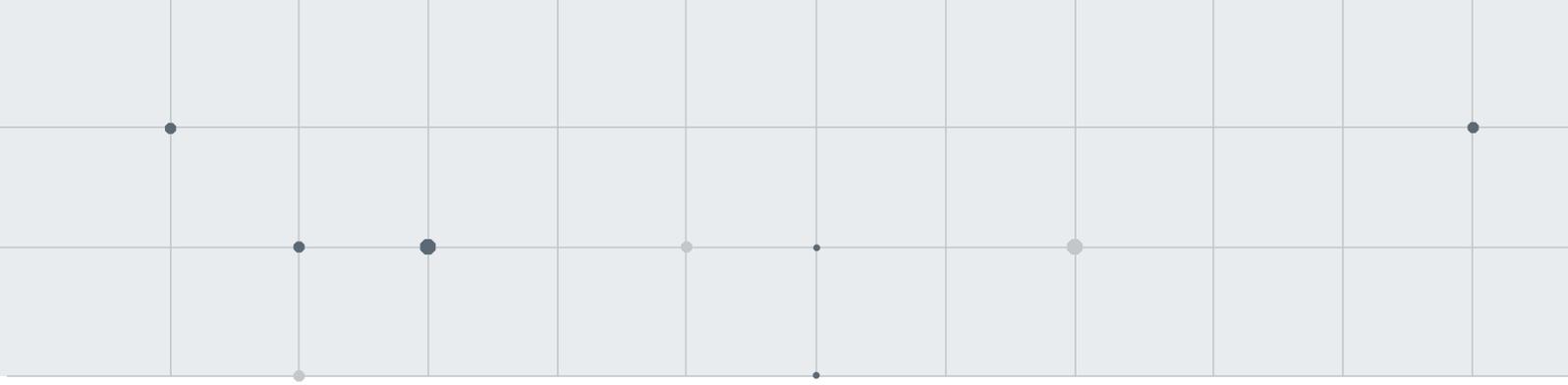
USD, EUR, GBP and JPY interest rates exposures are the significant contributors to the interest rates risk component of bilateral IM. Due to the clearing mandate, interest rate swaps cannot be used to manage outstanding exposures in bilateral netting sets.

European style swaptions denominated in USD, EUR, GBP and JPY are therefore added to offset delta, curvature and vega exposures in the respective currency. Swaptions introduced will have an options expiry of three months or one year and the underlying swap will have a maturity of one to 30 years. The exact configuration may vary based on the most efficient permutation of trades given the participants, the risk being mitigated, and the ratio of gross notional introduced versus IM reduction.

To ensure that the swaptions introduced never reach expiry, a compression event to terminate all outstanding swaptions (with no termination payment to be made or received) is scheduled for the day of the next triBalance Rates cycle. The risk removed as a result of the compression will be considered in the simultaneous triBalance Rates cycle, and risk will be rolled where appropriate. For the compression to be successful all participants from the previous cycle need to take part. The recurring compression events prevent unnecessary trade volume from building up over time.

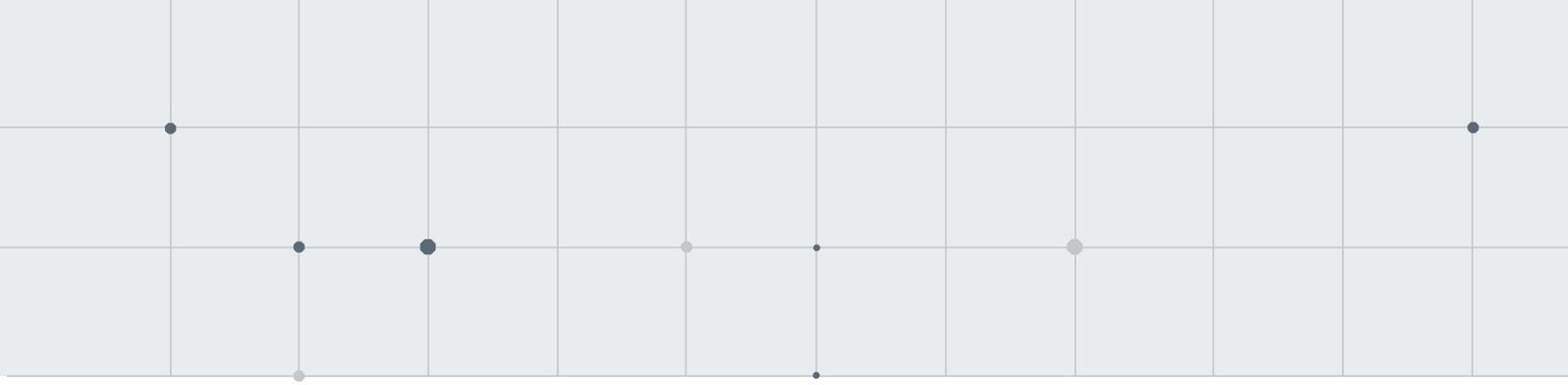
As a fallback, in order to ensure that option expiry will never be reached in the case of compression not taking place, all swaptions will feature a mandatory break. The mandatory break is scheduled to take place as close as possible before the third cycle following the date when swaptions were added (and before the option expiry) to reduce bilateral risk exposures. This will allow two attempts to compress transactions, should the first fail, and will also minimize the period between the mandatory break and the next cycle when an IM spike will arise, should compression fail also on the second attempt. The combination of compression and the mandatory break eliminate the pin risk associated with the option expiry. See below.





Tolerances

To enable each participant to control the outcome of the optimization, TriOptima supports an array of tolerances. These include an IM tolerance to control the IM impact, a delta tolerance to control the delta impact in a specific combination of currency and counterparty, and trading restrictions that are used to prevent new transactions from being proposed in certain currencies or facing certain counterparties. Please contact the TriOptima team for any specific considerations.

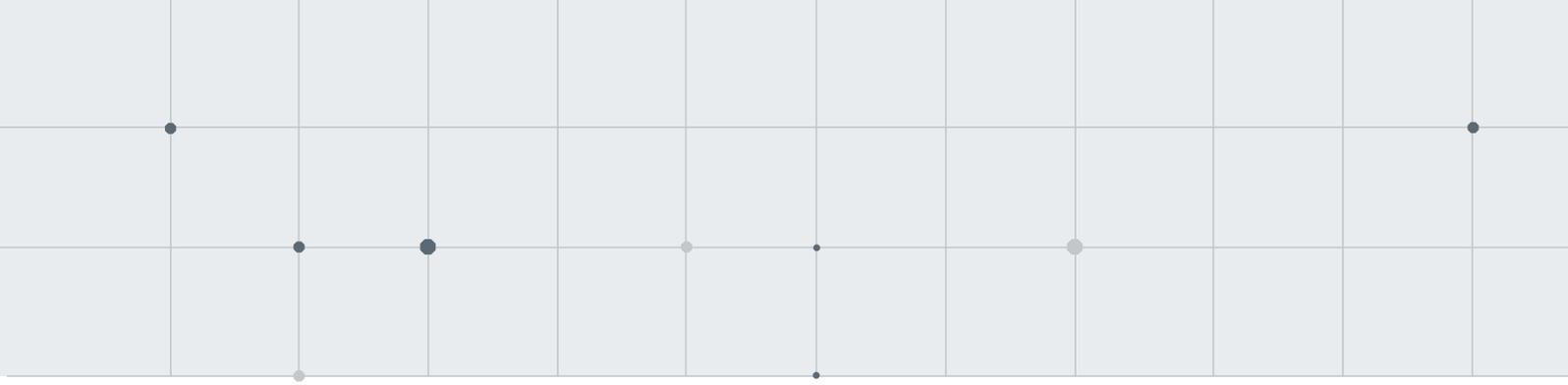


triBalance proposal

The triBalance proposal is a .csv file that contains one row per new transaction proposed. All the primary economic terms, such as currency, counterparty, expiry date, rate index, etc., are specified for each transaction. This is the file that should be used for primary verification of the proposal before agreeing to execute the transactions with the other counterparties.

Four additional proposal annex files are also published to help verify and analyze the results.

1. A **.pdf summary report** containing the high-level IM reduction numbers per counterparty and overall.
2. A **.csv IM impact report** containing IM before and after optimization in each of the nodes in the SIMM tree.
3. A **.csv sensitivities report in CRIF** providing the risk sensitivities for all the new transactions proposed in the triBalance proposal.
4. A **.pdf annex** containing additional information about the mandatory break and TriOptima's role as calculation agent.



Acceptance

The e-mail notification each participant receives when a triBalance proposal is available includes Annexes to communicate proposal acceptance status.²

Annex A: Proposal accepted by participant

Annex B: Additional time requested by participant for verification

Annex C: Proposal rejected by participant

Annex D: Agreement to compress transactions from previous cycle

A list of participants' e-mail addresses is included next to Annex A, B, C and D. When all participants have sent Annex A to each other, the triBalance transactions are considered executed. The e-mails and the main triBalance proposal .csv file together constitute the trade confirmation.

When Annex D is used to compress outstanding risk mitigating triBalance transactions from previous triBalance Rates cycle(s), all participants from the previous cycle(s) must agree to this, or none of the transactions will be compressed. Compression of a subset of the transactions would result in non-zero market risk impacts and is therefore undesirable.

² *TriOptima is prevented from administering the acceptance process due to regulation.*

Trade booking

TriOptima supports double sided STP trade booking via MarkitWire. Routing information, including BIC, MW id, traders' details, MW user address etc., must be provided to TriOptima before it is possible to go live. Testing the connection is also required, typically first in UAT followed by Production.

Alternatively, the triBalance proposal .csv file can be used as input to book the transactions manually or using an internal bulk tool.

When the transactions are compressed in connection with the next triBalance Rates cycle the STP functionality can again be leveraged. Firms can implement the terminations using the MW termination process supported by TriOptima.

Security above all

Data security	ISO 27001 certified since 2009
Legal certainty	Robust legal framework
24/5 Service	Our triReduce/triBalance team is working for you around the clock in Tokyo, Singapore, Stockholm, London and New York
Control	Stringent controls to protect all participants in compression and optimization runs
Integrity	16 years of experience in delivering fair and impartial compression results for more than 260 regular clients



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