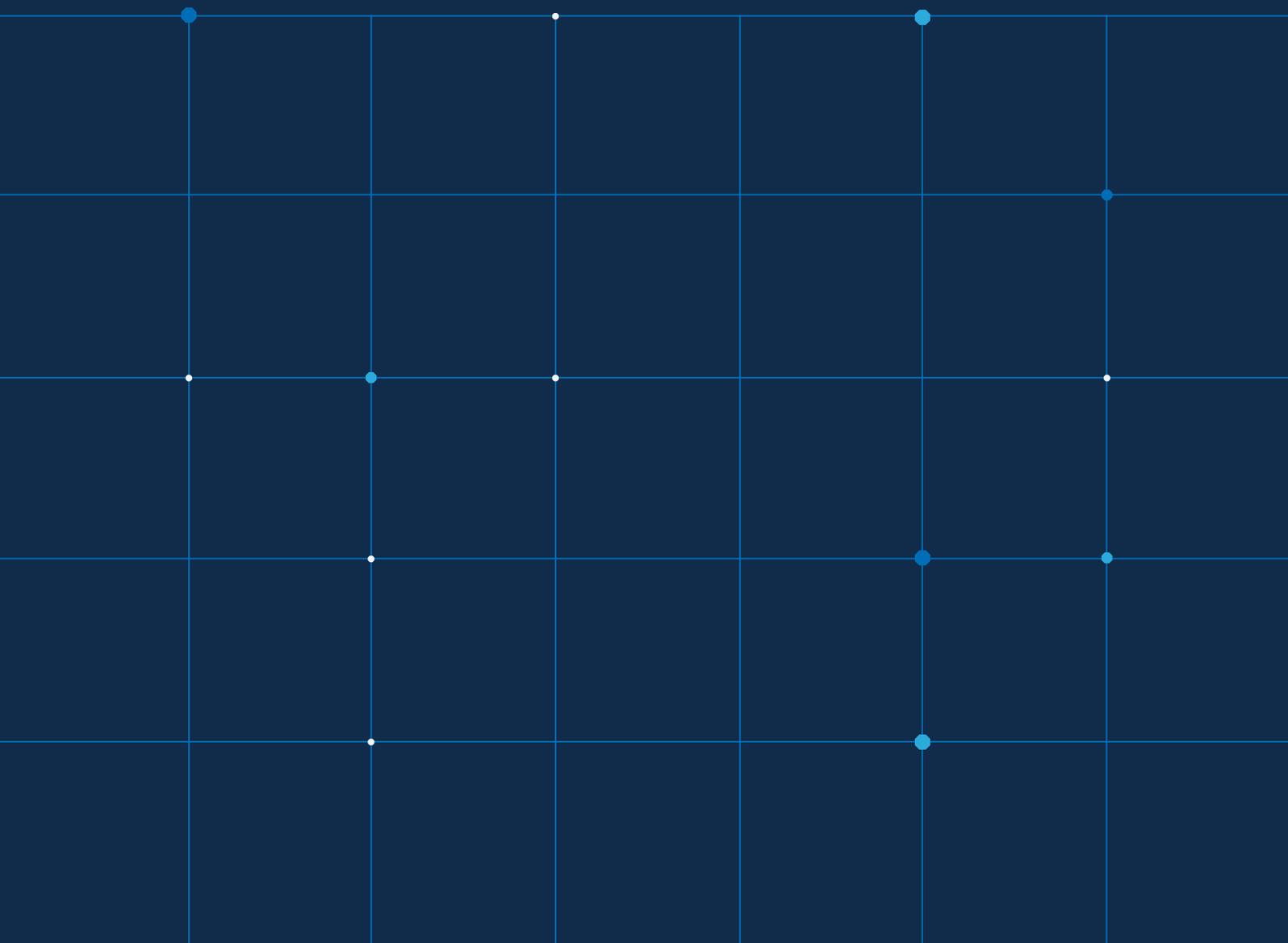


TriOptima

 CME Group

triBalance

FX

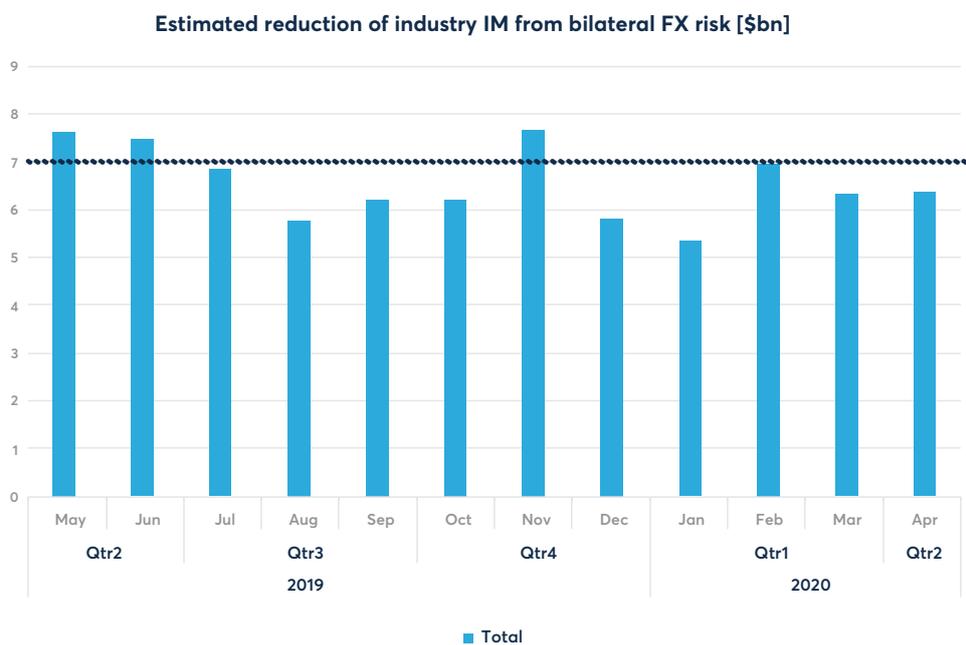




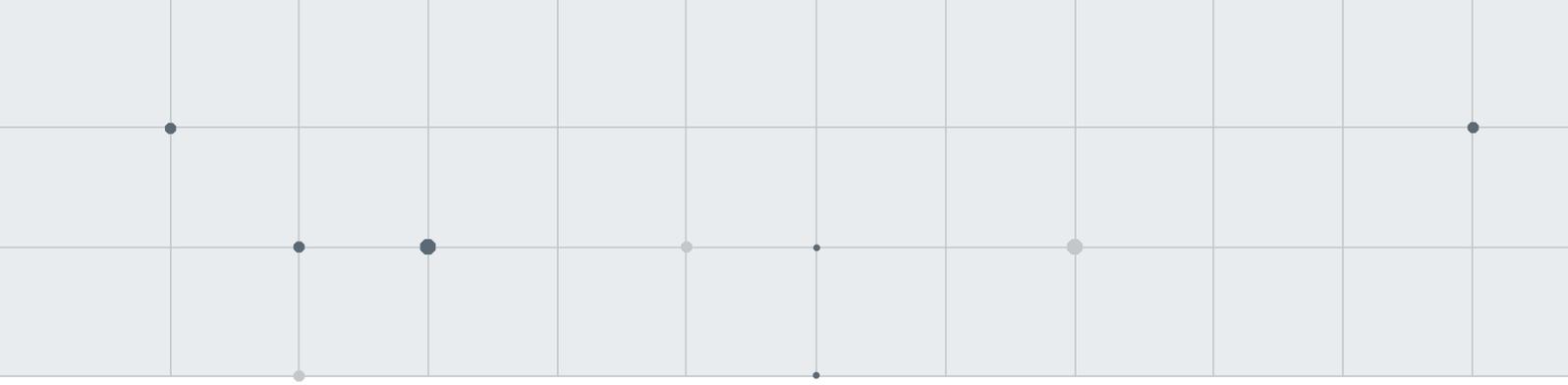
triBalance is a risk mitigation service offered by TriOptima that reduces outstanding Initial Margin (IM) exposures and, as a result, the cost of funding. Counterparty risk exposures and IM requirements facing both bilateral counterparties (SIMM) and clearinghouses (CCPs) are reduced by adding new risk mitigating transactions that offset outstanding risk. In addition to reducing the cost of funding, reduced bilateral risk exposures will also reduce market contagion and mitigate systemic risk.

triBalance FX in short

- Bilateral (SIMM) IM is reduced by injecting FX NDFs (delta) and FX Options (vega/curvature).
- Cleared risk exposures are also included as part of the overall optimization.
- Enables reduction of bilateral IM exposures facing all major dealers.
- Automatic data feed from AcadiaSoft.
- Trade booking is completed via TRTN, by the click of a button.
- Delivering significant IM reduction in weekly cycles since 2017.



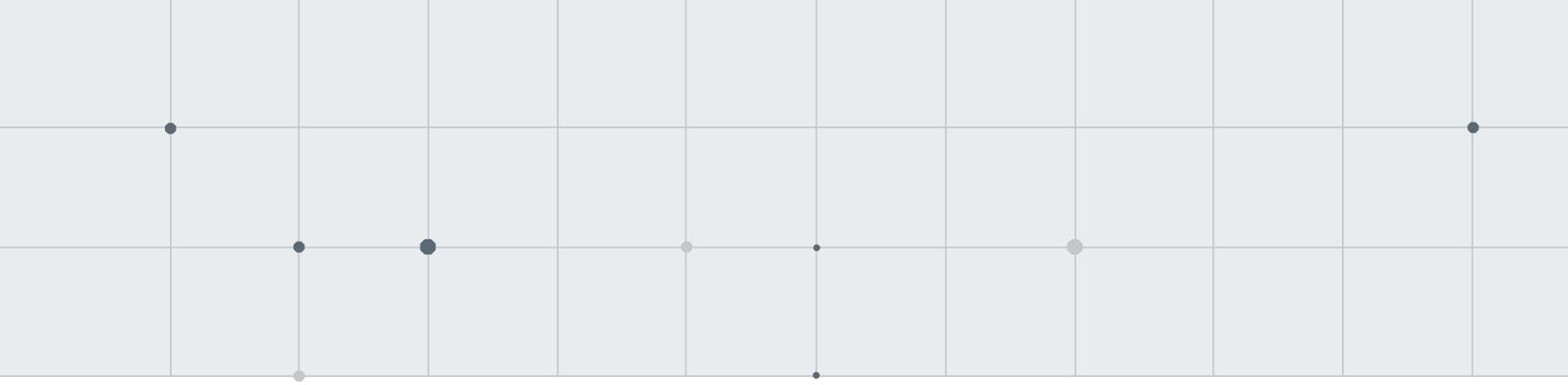
¹ Licensed from International Swaps and Derivatives Association, Inc., All Rights Reserved



Taking part in triBalance

A streamlined process minimizes the effort of participation by utilizing an automatic input data feed and offering STP 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 week after week.
- 3.** Exposure data is pulled automatically from AcadiaSoft at 11 am GMT.
- 4.** TriOptima staff generate a triBalance proposal, that reduce firms' IM exposure and the cost of trading.
- 5.** The triBalance proposal is published on the secure triBalance website at 1 pm GMT.
- 6.** The proposal is accepted bilaterally, directly between counterparties. Transactions are deemed executed when all participants in a cycle have accepted by 3 pm GMT.
- 7.** Trigger STP trade booking of triBalance transactions on the STP portal.

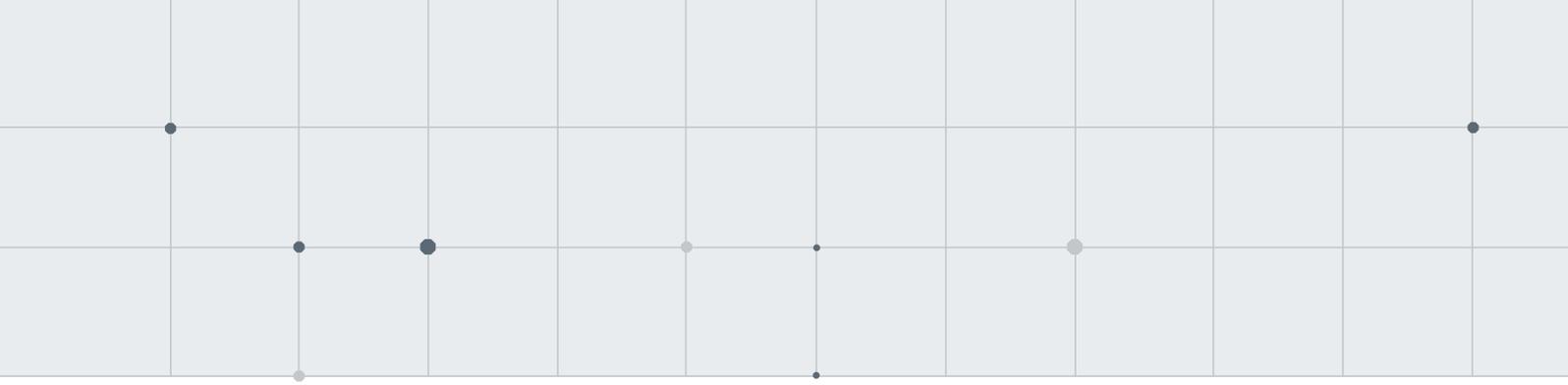


Getting ready

To join the triBalance network, complete simple legal 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 FX middle office teams.
- Discuss with traders for respective currencies on 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 you can execute G10 NDFs, have internal approvals for traders and ability to book trades.
- Check which NDF currencies you are set up to clear.
- Execute the STP agreement and set up your TRTN connectivity with TriOptima.
- Test the TRTN connectivity in UAT and production.

[REDUCE YOUR COST OF TRADING >](#)



Methodology

The triBalance algorithm uses both the SIMM formula and an approximation of the CCPs' IM calculation models as goal function to optimize the IM exposure, while keeping each participant's market risk untouched. Exposure data facing the CCP is automatically fed from the CCP to triBalance but can also be manually submitted through the secure triBalance website.

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 participants, because this is more accurate than optimizing pledgor exposures. Firms, however, often look at their pledgor exposure facing a counterparty to assess how much IM they expected to post, but triBalance will anyway optimize on the secured exposure because this is what the actual margin call is based on.

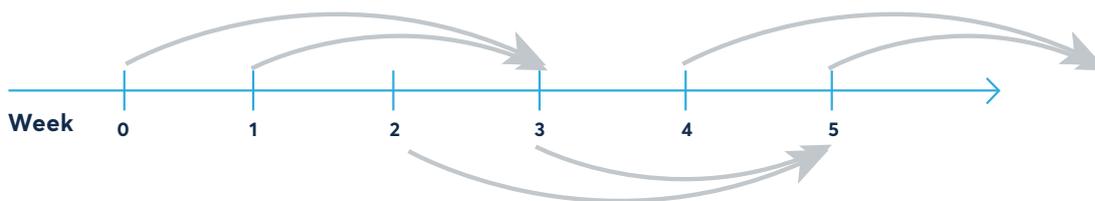
To maintain an efficient ratio between IM reduction and notional/number of trades added, the triBalance algorithm incorporates a "cost of notional". This ensures that only the most effective offsetting transactions from a balance sheet and operational standpoint are added.

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

The expiry of triBalance transactions is chosen to coincide with a future cycle, to ensure expiring IM reducing transactions can be rolled to avoid an IM spike when triBalance transactions fall off the books.

New transactions' expiries alternate between two and three weeks. Week 0 triBalance will propose transactions with three weeks' expiry. The week after any new exposures (from e.g. new trading or expiries) will be offset by two week transactions. This way, transactions from two consecutive triBalance cycles will expire on the same day, on week 3.



This methodology ensures that a minimum amount of notional is used to optimize IM over time as the outstanding triBalance hedge transactions reset every three weeks. If, for instance two-week transactions were systematically used, transactions that were originally risk reducing will over time become risk increasing when the original underlying risk rolls off, and any new IM optimizing transactions would predominantly hedge previously introduced hedge transactions.

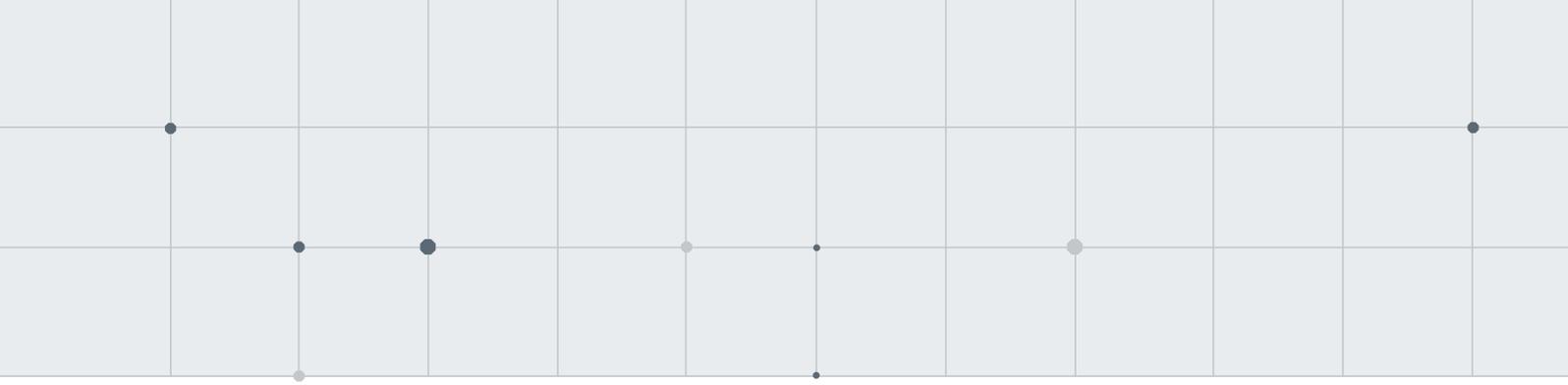
Spot delta exposures in the following currencies /commodities are currently addressed by triBalance FX using NDFs:

AUD/USD	USD/CAD	USD/HKD	USD/MXN	USD/SAR
EUR/USD	USD/CHF	USD/HUF	USD/NOK	USD/SEK
GBP/USD	USD/CLP	USD/IDR	USD/PEN	USD/SGD
NZD/USD	USD/CNY	USD/INR	USD/PHP	USD/TRY
USD/ARS	USD/COP	USD/JPY	USD/PLN	USD/TWD
USD/BRL	USD/EGP	USD/KRW	USD/RUB	USD/ZAR
Commodity exposure: XAU/USD*				

* FX and Commodity-Gold exposures are optimized across the SIMM FX and Commodity silos simultaneously.

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 currency pairs or facing certain counterparties. Tolerances can be specified facing both bilateral counterparties and CCPs. Please contact the TriOptima team for any specific considerations that need to be considered.

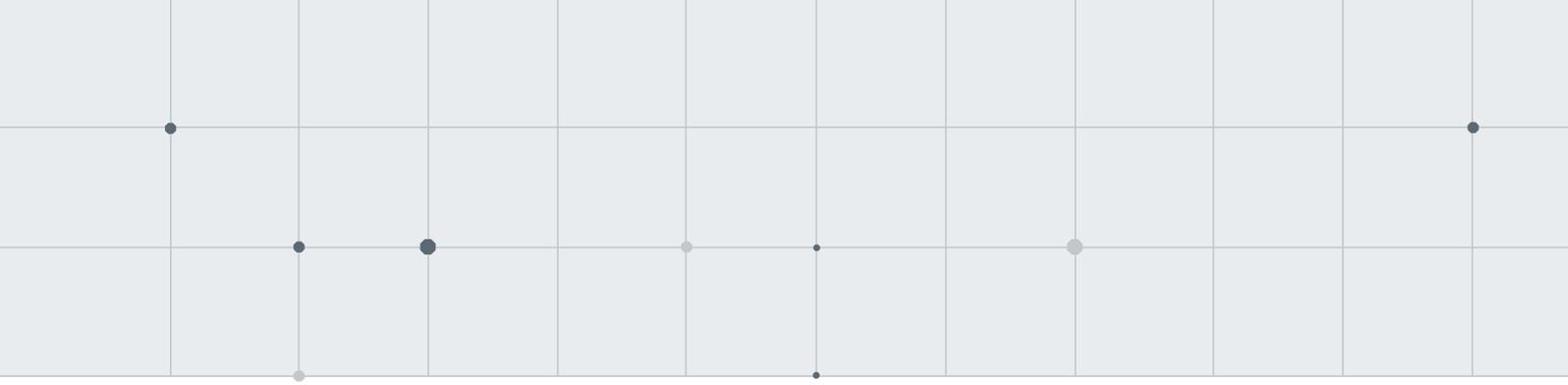


triBalance proposal

The triBalance proposal is a .csv file that contains one row per new transaction proposed. All the primary economic terms, such as currency pair, counterparty, etc. are specified for each transaction. This is the file that should be used for primary verification of the proposal before acceptance is submitted between counterparties.

Three additional proposal annex files are also published to help you 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 (two rows per FX NDF – one per currency).



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

A list of participants' e-mail addresses is included next to Annex A, B and C. 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.

Trade booking

TriOptima supports STP trade booking via TRTN. Routing information, including TCID, Dealer ID and Dealer routing e-mail, 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.

Transactions booked via TRTN with a clearing destination flagged will automatically feed through to the relevant clearinghouse provided the correct configurations are set in the firm's trade capture system.

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

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

Manually booked transactions flagged for a clearinghouse will need to be triggered internally to ensure they end up in the correct clearing destination.

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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