

Charles River's MiFID II Solution

Enhanced Trading and Best Execution Reporting Capabilities

Charles River helps clients capture the additional data and trade lifecycle decision points needed to comply with transparency, best execution and transaction reporting requirements under the European Union's Markets in Financial Instruments Directive II (MiFID II). The Charles River Investment Management Solution (Charles River IMS) provides flexible investment management processes and execution analysis options to help ensure support for future MiFID II updates and new global regulations.



Best Execution

As an end-to-end solution, Charles River IMS can track factors and decisions throughout the lifecycle of an order that impact execution quality. The solution helps demonstrate adherence to best execution standards defined in the regulation and simplifies the audit process for questionable trades.

- Measure execution quality using TCA for equities or execution analysis for fixed income to measure benchmark variance and identify outliers
- Review detailed order level execution analysis embedded in Charles River IMS or through reports
- Track key decision points along the order lifecycle, including the portfolio manager's priority, trader's execution strategy, and reasons for placing or cancelling an order with a given broker
- Audit the full history of an order using historical data

Key Benefits:

- Track execution quality factors and decisions throughout the order lifecycle
- Demonstrate adherence to best execution standards
- Simplify audits when a given trade is in question



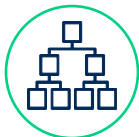
Transaction Reporting

Charles River's complete coverage of the trade lifecycle offers clients a natural point for transaction reporting. New data models, interfaces and workflows help clients capture, track and report on key data required under MiFID II.

- Capture data points necessary for reporting key requirements, including investment and execution decision makers, fund owner, and security specific details
- Distinguish between automated processes and individuals responsible for investment and execution decisions
- Create rules to automate investment decision maker assignments based on flexible criteria associated with the fund, instrument, or other details tailored by the client
- Track regulatory details including jurisdiction and relevant IDs for a variety of entities such as branches offices, reporting vendors, traders, PMs, automated processes, and brokers
- Submit transaction reports to ESMA or FCA regulators through Approved Reporting Mechanism (ARM) vendors

Key Benefits:

- Capture, track and report on key data required under MiFID II
- Track regulatory details, including jurisdiction and relevant IDs
- Submit reports to regulators through ARM vendors



OTC Derivatives

Charles River IMS supports most OTC asset classes, across cleared and bilateral orders. Regulatory indicators identify when orders might be subject to MiFID II workflow and reporting requirements, and enrich the order data for regulatory reporting needs.

- Designed to ensure legal agreements are in place between fund and broker
- View jurisdictions for each allocated fund and split orders by allocation based on jurisdiction to enable each fund to follow its respective requirements
- Set liquidity thresholds (LIS, SSTI)* based on security characteristics
- Track MTF eligibility to identify if a given order can be, or must be, sent to a Multilateral Trading Facility (MTF)
- Identify notional increases and decreases for transaction reporting
- Integrate electronically with MTFs
- Create clearing defaults for clearing houses and clearing brokers based on fund, product, and other determinants

Key Benefits:

- Identify when a fund is within the ESMA or FCA jurisdiction
- Split an order by allocation based on fund jurisdictions
- Help determine which orders to send to an MTF vs SEF

* Large in Scale (LIS), Size Specific to the Financial Instrument (SSTI)

Charles River helps clients report trades based on key broker and liquidity information



Trade Reporting

Charles River IMS helps clients submit real-time reports for trades not covered by the trading venue or sell-side counterparty.

- Send ESMA/FCA jurisdiction trade capture reports to the Approved Publication Arrangement (APA) vendors detailing an execution
- Filter the trades that need to be reported based on
 - Whether the counterparty is a systematic internalizer for the security
 - Executing branch of the firm
 - Whether the trade is traded on a venue
 - Jurisdiction of the counterparty

Key Benefits:

- Submit real-time reports for trades not covered by the trading venue or sell-side counterparty
- Filter trades that need to be reported on, based on a variety of factors



Trade Workflow

Charles River IMS provide traders with key information to help guide the trade process related to their reporting obligations.

- View systematic internalizers associated with an order
- View liquidity indicator for the security
- View Large in Scale (LIS) and Size Specific to the Financial Instrument (SSTI) thresholds for the security and whether the order is eligible for reporting waivers

Key Benefits:

- Provide traders with key information to guide processes related reporting obligations
- View systematic internalizers and liquidity indicators
- Determine eligibility for reporting waivers by scale and size thresholds

Charles River Development, A State Street Company

Investment firms, asset owners, wealth managers, hedge funds and insurers in more than 30 countries rely on Charles River's front and middle office investment management platform to manage more than US\$46 Trillion in assets. Together with State Street's middle and back office capabilities, Charles River's cloud-deployed software technology forms the foundation of State Street AlphaSM. The Charles River Investment Management Solution (Charles River IMS) is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. Charles River's growing partner ecosystem enables clients to seamlessly access external data and analytics, applications and liquidity venues that support the demands of their product and asset class mix. Headquartered in Burlington, Massachusetts, we serve clients globally with more than 1,200 employees in 11 regional offices. (Statistics as of Q2 2022)

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