# ✗metrics
# for MiFID II Compliance

**instrumentix**
the evolution of flow monitoring

- Modular software means financially accessible to all

- Scalable, offering many deployment patterns

- Easily integrated with existing systems

- Real-time monitoring and alerting

## *What makes xMetrics® different?*

- *Totally modular software allows for reduced footprint and cost, facilitating – for the first time – global flow monitoring deployments*

- *Software can be installed on existing client hardware*

- *Powerful correlation engine provides insight into complex transactions*

- *All data automatically persisted to an industry-standard database and/or elasticsearch indexes for retention and analysis*

- *Visualisation Framework provides ability to quickly drill down to individual transactions and create customised dashboards and views*

- *Powerful reporting engine allows stored data and analysis to be regularly provided to all key Stakeholders*

## What is xMetrics?

xMetrics® is a modular, high performance flow monitoring system which provides capture and decode of all RTS-25 relevant transactions and timestamps, enabling the full correlation, visualisation, monitoring, alerting and persistence of the data needed for compliance with ESMA RTS. xMetrics® can be deployed on existing client hardware, allowing for rapid deployment and is also offered as a managed service.

## MiFID II Transaction Monitoring and Reporting

MiFID II requires the precise recording of all messages and events throughout the lifecycle of an order and the reporting of executed transactions. Transmission, receipt and modification of orders and decisions to trade need to be accurately timestamped and made available to regulators, either continuously for transaction reports or on demand historically for up to 5 years.

## xMetrics® Provides key data and functionality for compliance with:

- RTS-6 Algorithmic Trading
- RTS-7 Trading Venues
- RTS-22 Reporting of Transactions
- RTS-24 The maintenance of data
- RTS-25 The level of accuracy of business clocks
- RTS-27 Data to be published by Venues on quality of execution
- RTS-28 Information to be published by Investment Firms on quality of execution
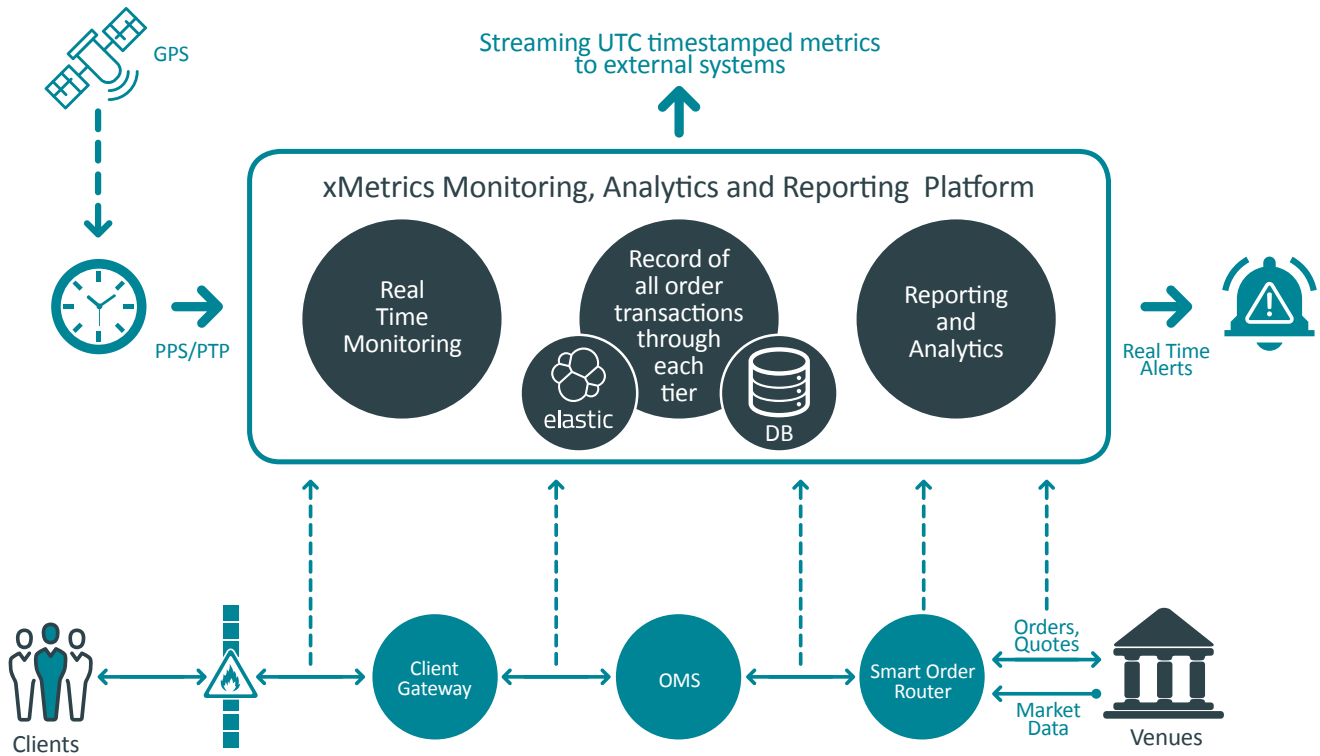
## Key Benefits:

- Multi asset class solution for Sell Side, Buy Side and Venues
- Assists in managing regulatory risk without the need to overhaul existing IT infrastructure
- MiFID II performance data can be integrated with other KPI's
- Fully comprehensive, but affordable solution
- Secure, fully segregated views for different user groups
- Powerful analytics

## xMetrics® Architecture

The xMetrics® platform provides a fully independent and integrated solution for the capture of all application network and transaction data required for ESMA RTS reporting, evaluation and storage. xMetrics® is a software solution that is easily deployed across a distributed execution environment and can utilise an existing traffic capture fabric, removing the need to overhaul internal IT infrastructures. Due to its modular nature typically only a reduced footprint is needed at remote sites, facilitating extremely cost-effective and rapid implementations.



*An example Equities use case*



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## xMetrics® MiFID II Solution Features and Key Components

xMetrics® can track, alert on and store for analysis any transaction in any trading environment across all tiers and Asset Classes in real time, with no impact to production flow.

## Data Source

The capture and decode layer of xMetrics® consumes the network traffic being exchanged between all tiers of a distributed execution and market data environment in real time and decodes it to expose the business objects such as ticks, orders and quotes. It also measures the network traffic providing additional visibility of issues within the network itself.

xMetrics® comes with a broad range of decoders, with new decoders usually added at no cost.

Uniquely xMetrics® also comes with a "Fixed Width" plugin that allows for the creation of decoders based on configuration only, allowing clients to create decoders without the need to engage a developer.

## Time Synchronisation

xMetrics® is usually deployed with industry-standard capture cards, allowing for packet timestamping in hardware; xMetrics® supports precision time protocol (PTP), pulse per second (1PPS) and Network Time Protocol (NTP).

xMetrics® can leverage an existing time source, or, where necessary, we can assist with the deployment of a new timing infrastructure.
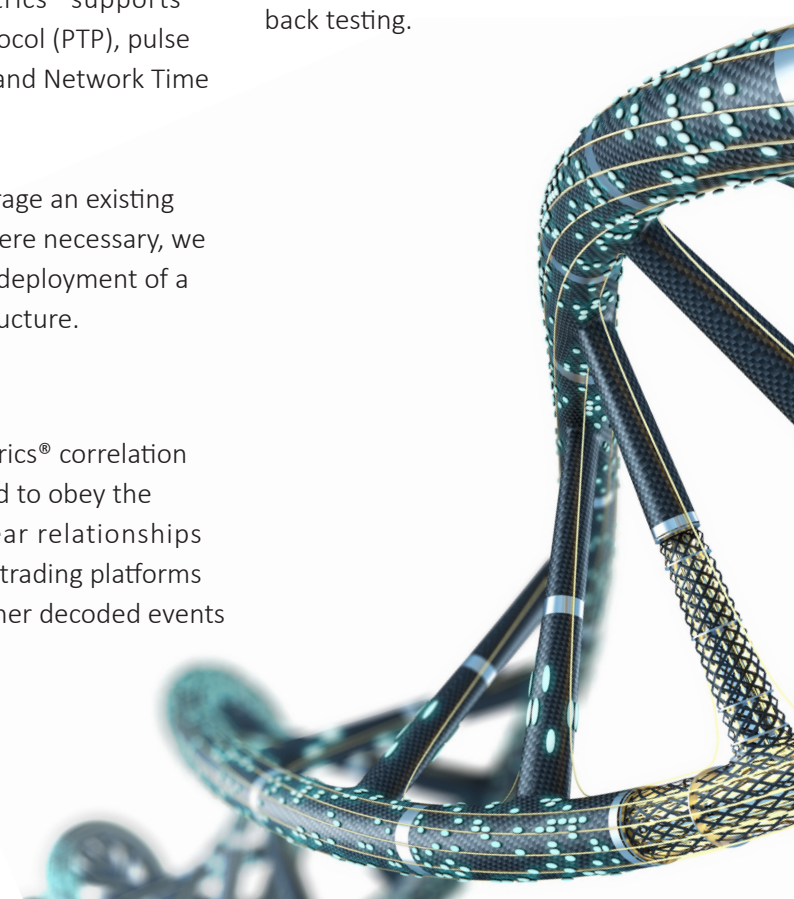
## Correlation

The powerful xMetrics® correlation engine is configured to obey the complex, non-linear relationships inherent in todays' trading platforms and matches together decoded events to create transactions that model the performance of the environment, however complex.

Packets can be captured at nano second accuracy, providing access to all events of interest throughout the lifecycle of an order.

All traffic seen is captured in industry-standard PCAP files and can be used to replay market events, or assist with back testing.

## Persistence

xMetrics® persists all transactions and all summarised statistics to an industry-standard database and/or elasticsearch indexes for later interrogation, and fully complies with ESMA RTS data retention rules.

Users have full access to the database, allowing them to leverage their existing data exploration tools – a feature often missing in other solutions.

Redundant datastores can be deployed where required to provide additional data security.

## Exploration

The xMetrics® visualisation layer allows users to interrogate the network, application and transaction data dynamics across the whole of the Trading infrastructure.

Several visualisation options are provided, and clients can utilise their existing visualisation platforms to explore the data due to xMetrics® open architecture.

## Ops Visualisation and Alerting

xMetrics® is fully pluggable, allowing for integration with other more general purpose, high–level monitoring platforms such as ITRS Geneos.

Alerts can be configured against summarised statistical measures such as rate, percentiles and standard deviation or against individual transactions, bandwidth, microburst or gap-detection.

## Flow Monitoring as Middleware

InstrumentiX publish the specification of all internal xMetrics® protocols, making it easy to integrate with existing monitoring/analytics environments, leverage existing correlation tiers (e.g. Esper) and persistence / analytics tiers (e.g. KDB/Oracle/Splunk) and remove the "islands of data" problem that is inherent in competing solutions.

## Summarisation

*xMetrics® summarises orders, quotes, ticks etc over configurable time periods using one or more dimensions, such as symbol, gateway or trader, allowing users to understand volumes, fills and performance as it relates to the entities they care about.*

*In addition to standard measures, additional measures such as percentiles and jitter are also provided, with sampling periods as low as 1 microsecond.*

*"InstrumentiX is a London based Software Company with a wealth of experience in delivering Latency & Flow Monitoring solutions. With over 15 years in the financial services sector, we deliver solutions which help Capital Markets firms achieve competitive edge."*

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