



The Complete Solution for Traders and Risk Management

Traders and Risk Managers rely heavily on data and internal analysis to develop reliable strategies and generate their profit and loss. Many organizations still use fragile, static, or restrictive spreadsheet systems to manage their risk. These systems rely on manual calculations, introduce errors, create inefficiencies, and can cost organizations time and money. Moreover, those systems rarely have audit trails; they introduce security risks and lack transparency.

Traders and Risk Managers are challenged with:

- Minimizing risk and maximizing profits in a complex global market
- Rationalizing and defending every position taken
- Making accurate technical and fundamental analysis reliably
- Deriving superior market insights over the competition

The ZEMA™ platform is an enterprise data automation software solution that gives companies advanced capabilities for data collection, market analysis, curve management, business process automation, and integration with third-party tools. ZEMA is designed to provide benefits for multiple aspects for the front, mid, and back office.

Highlights for Risk and Trade Managers

- Automated collection of data from brokers, exchanges, publishers, and public data sources.
- Validation of data that is imported into the system
- Seamless downstream integration with RMIS, C/ETRM, ERM, ERP, and BI systems
- An analytical engine designed to support historical and forward analysis
- Ability to generate simple or highly complex forward curve logic
- Sophisticated IPV processes
- Import of trader or broker marks
- Full automation of curve construction, validation and integration with any downstream system
- Complete audit trails and event notifications
- From rapid access to actionable insights, any mathematical, statistical and logic validation and transformation can be applied
- Is commodity and region agnostic ICE, CME and more than 1,000 publishers

From rapid access to actionable insights

ZEMA collects and stores data from any number of external and internal data sources.

Data that is collected is checked for timeliness, accuracy, and completeness to ensure that it is reliable and useful.

ZEMA provides the following data capabilities:

- Provides a single point of data access
- Collects data in real time
- Commodity and region agnostic
- Validates data as it is imported into the system
- Collects from providers such as Argus, S&P Global Platts, ICE, NYMEX, ICIS, AccuWeather, ICE, CME etc.

ZEMA has the following analytical capabilities:

- Spreads, unit/currency conversion, extrapolation, shifting, aggregation, and trend-line analysis
- Advanced forward curve functionality such as contract analysis, forward plotting, promptness analysis, arbitrage-free blending, shaping, flattening, and curve extensions
- A rich formula library that mathematical, statistical, date-based, conditional, and forward functions
- The blending, prioritization, and comparison of various source providers against one another
- Account for holiday calendars, time zones and expiration dates
- Replaces Excel-based curve logic with ZEMA-based curve logic for greater flexibility, scalability, security, and readability

Automated Intraday and End-of-Day Processes

ZEMA comes with a powerful workflow engine that automates the construction, mapping, validation, and integration of the corporate forward curve library. Curves that are constructed through ZEMA are delivered directly to the target system. ZEMA provides a full audit trail of all activities and provides notifications of successes and failures, ensuring that all business processes are auditable, transparent, and repeatable.

- Automates the generation of thousands of curves
- Allows for the automation of the Independent Price Verification (IPV) process
- Monitors curve building and validation statuses
- Works with internal and external curves
- Sets read/write access permissions, curve logic, curve definitions, and curve editing privileges
- Event or schedule-based curve initiation
- Distributes curve results to downstream systems (such as C/ETRM, ERM, ERP and BI systems)
- Sets automatic email-based notifications for curve successes and failures

Upload Trader and Broker Marks

ZEMA provides organizations with the ability to enter and upload internal marks in a systematic and controlled manner. Each user is associated with any number of curves and can create spread-sheets quickly. With ZEMA, users can view curve histories, compare curves from day to day, enter current day values, copy previous day values, or make other adjustments to the data. Combining SaaS, PaaS and IaaS - ZEMA allows for flexible delivery of system capability through Software, Platform, Curves or Data as a Service (SaaS, PaaS, CaaS, and DaaS) completely managed and hosted by ZE. ZEMA is sized and configured to each clients' business use case.

Value of using ZEMA for internal curves:

- Simplifies the data entry process
- Fully integrated with curve automation process
- Permission based and highly secure
- Works in Microsoft Excel

Integration

ZEMA provides a number of integration points that allow any third-party tool to access data through the database layer or through the ZEMA service layer. Users can use MS Excel, Tableau, TIBCO Spotfire, PowerBI, Python, Spotfire, MATLAB, R, SAS, or any other tool of choice. Furthermore, ZEMA is designed to integrate fully with downstream ERP, C/ETRM, ERM, RMIS, Middleware, and financial systems.

Deployments

ZE's diversified approach to client deployments guarantees satisfaction through flexibility. Whether deployed on the private ZE Cloud or on a 3rd-party public cloud, ZE's private and secure cloud is built to perform, leveraging the best in hardware, software and technologies, including flash storage, real time replication, and high availability across geographically dispersed data centers. Combining SaaS, PaaS and IaaS, ZEMA hosted and Managed by ZE is the pinnacle of software and service delivery.

Summary

Simply stated, ZEMA allows Traders and Risk Managers to enhance their risk management activities. ZEMA can automate a company's data collection, curve generation, and business processes. ZEMA is designed to reduce cost, enhance efficiency, and add security. Large scale organizations each day are automating analysis, constructing thousands of curves, and using ZEMA in conjunction with a wide variety of third-party systems.

Challenges and the ZEMA Solution

Challenges for Traders and Risk Managers

Challenge	ZEMA Solution
Risk organizations globally have identified implementing regulatory demands as one of their main challenges	Ensures the security of one's data while providing an automated notification system by letting users know of incoming information which is outside of user-specified parameters
Businesses and data-driven organizations are looking to improve risk management and modelling	Has over 200 pre-built mathematical and statistical formulas and a customizable graphic visualizer
Handling real-time data is an essential part of trading	Is capable of real-time visualization and updates of graphs, spreadsheets, web pages, settlements, pricing data, and any other digital data
Traders struggle to find ways to integrate the functionality of Excel - spreadsheets with other analytical software systems	Allows seamless integration between the ZEMA solution and Excel by allowing spreadsheet data to be uploaded into ZEMA and ZEMA queries to be loaded back into Excel enabling mutual functionality
Organizing data from different time zones	Allows users to schedule data to be automatically collected as dependent on the time zone making it so traders won't have to wake up early or stay up late in order to download and review reports to suit time zone changes
Ensuring data is of the same file format. (standardized)	Is capable of normalizing, warehousing, and persisting incoming data of any format into any other format
Capture end-of-day. data as soon as it is available from price providers (maximum lag 1 minute)	Can specify when prices should be collected up to the minute
Need to collect correlations and volatilities market pricing data	Collects historical and implied volatilities and correlations from over 40 sources
Need to monitor commodity trends in various markets by comparing prices to various data feeds (internal databases and market reports) to make decisions	Collects prices for variety of commodities and energy sources including: coal, crude oil, agriculture, electricity, emissions, metals, natural gas, petrochemicals and others. We capture financial data (high, low, last, open, settle, change, previous settle, prior interest, prior volume, volume points) both from exchanges and brokers

Challenge	ZEMA Solution
Typical data systems lack the ability to capture the following market data types, i.e. collection of date, time and value data in a single, central data source. This data may include (but not be limited to)	Collects data from any primary or third party data source: it allows automatic importing and consolidating of data from multiple data vendors (Bloomberg, Reuters), brokers (Platts), and industry websites at any time and from any source across the globe. ZEMA collects data from any electronic source, via the various standard protocols (http, email, local disk, https, ftp) and the various output formats (xml, Excel, txt, CSV, database, html)
Need to organize and collect Interest Rates information from various financial institutions	Collects data from the largest world central banks with an ability to add any required data source
Need to collect imbalance data on stocks	Collects data from Energy Imbalance Markets (such as gas or power)
Need to monitor live volumetric data	Collects extensive reports with volumetric data such as weather reports, pipeline capacity, trading volume, storage reports, loads and many others
Automated data collection and data warehousing from market data providers	More than 4,000 reports from 400+ public and proprietary data providers, with new reports added on a weekly basis. Captures outages, prices, demand, congestion, FTRs/CCRs, forecasts, imports/exports, transmission data, supply, generation and more
Storing user created forward curves to allow creation of central price repository	Stores all curves in a centralized yet secured database in customizable file groups. Curve can be assigned a variety of pre-built parameters, as well as user-customizable parameters
The task of calculating and storing system generated correlations and volatilities	- An extensive formula library (> 200 formulas) supports calculation of the following correlations and volatilities: - Simple correlation (can be calculated between the values, their arithmetic returns, or for their logarithmic returns), - Sliding correlation, - Historical volatility (both simple and annualized), - Implied volatility for the option on futures contract (using the Black-1976 model)

Challenge	ZEMA Solution
The ability to receive and store curve data (not limited to price, multiple data streams) with different time granularity (multiple time based formats)	Can store curve data with the following granularities: 5-min, 15-min, 30-min, hourly, daily, weekly, monthly, seasonal, quarterly, annual
Storing meta-data (Unit of Measure, Currency, Location, Product etc.) associated with forward curves in standard formats	Uses Meta-data to normalize all the collected and stored data, and categorizes data based on different attributes. This meta-data is stored in its own schema within the database
Controlling access to curves through a centralized security groups and user specific access	Can share read and written with group administrator user, and administrator user is the centralized controller and can specify access to other users in the group
Allowing authorized users to Add, update, delete points on forward curve	Offers fully customizable and traceable auditing functionality to curves, including add, update, delete points, either automatically through upload sheet or manually by users
Having the ability to see the latest/ live view of a set of curve data at a given point in time	Collects data then report at a customized schedule time, along with advance schedule functionality, both local time or source time
Retrieving the latest version of a closing price for a historic period	Provides full access of historical data, users can retrieve data from Market Analyzer to perform as simple or as complicate analysis as demanded, or retrieve through Excel Add in to spreadsheet and use existing analytical model
Retrieving the ability to see a defined version of a set of curve data at a given point in time	Collects data from any data sources and generated curves, and it offers full access to curves at any time period or a given time point
Individually tagging forward curves with unique ID's for quick reference	Stores curves with unique properties for quick references, and group them in folders based on different topics

Challenge	ZEMA Solution
• Solution should allow the easy upload and extract of holiday calendars	• Can calculate and store Calendar spreads. The calculations can occur both at the database and the user interface level • Users can either manually input holiday dates or pull a table from the client's database
• The ability to receive alerts around prices e.g. • If required prices are not updated in the system by specified times • If duplicate prices are loaded	• Pricing alerts can be notified to users in one of two ways. The first method allows users to be notified of any data points that are out-of-bounds of user-defined thresholds (correctness) • The second method is through ZEMA's 'Curve Manager' application which can send e-mail notifications to users about errors or if certain formulas are (un)satisfied
• The ability to configure separate holiday calendars per traded country/market/exchange	• Has pre-built holiday calendars for major markets, countries, and exchanges. These include all UK, North American, and Asian calendars
• The ability to define non-standard calendars	• Allows users to define and set-up non-standard calendars themselves • Has the ability to add and remove holidays. Each report can have a defined start-of-week.
• The ability to extract separate holiday calendars per traded country/market/exchange for use in downstream systems	• Can calculate and store Calendar spreads. The calculations can occur both at the database and the user-interface level. These calendars can then be exported to downstream systems