

# TODEAL

Access Platform for Fixed Income Markets



The network of excellence

# TODEAL

## Access Platform for Fixed Income Markets

The globalisation of financial markets, the merger of European stock exchanges and the EU's Markets in Financial Instruments Directive (MiFID) have radically changed the shape of the EU market.

These are all factors that have resulted in investments shifting towards fixed income instruments.

During the last few years, European fixed income markets have been characterised by the development of new initiatives such as the outward expansion of MTS from Italy to all Euro currency countries and the diffusion of trading circuits on a European level.

These changes are greatly impacting the organization and strategy of market members. The management of financial investments at a global level requires more efficient instruments and integrated systems.

Thanks to the know-how and experience of generating trading products for over ten years, SIA has developed **TODEAL, the new platform to access Fixed Income markets**, based on the consolidated technology.

### **TODEAL: the innovative solution for Fixed Income markets**

TODEAL is a **state of the art multi-market solution** developed to satisfy the trading needs of financial institutions.

TODEAL is distinguished by its **high performing flexibility** and includes continuous **updates**.

TODEAL uses **modular architecture** allowing enhancement and easy configuration meeting the specific needs of each operator. Its cutting edge client/server technology is designed to deal with the dynamics of multi-platform electronic trading in fast markets by delivering:

- :: connectivity to all major exchanges and ECNs
- :: proven system reliability and built-in fault tolerance
- :: scalable and distributed architecture for global trading.

**TODEAL Platform** offers the following modules:

- :: TODEAL Gateway
- :: TODEAL Liquidity
- :: TODEAL Station
- :: TODEAL Quotation System
- :: TODEAL Quant.



# TODEAL Quotation System

In order to respond to specific needs and to reduce to a minimum the need for human intervention in trading strategies, TODEAL offers a group of modules for **automated quotation on bond instruments on interconnected markets**:

- :: **TODEAL/Quoting** for the automated quotation on instruments based on strategies decided by the user
- :: **TODEAL/Pricefeed** to receive through Excel theoretical quote prices on instruments to be used in the automatic quotation.

## Features

**TODEAL/Quoting** is a server module that **centralizes the administration of the trading strategies of bonds** on interconnected markets with TODEAL. TODEAL/Quoting allows the creation and sending of quotes for a particular instrument to the markets. The prices of the quotes sent are created on the basis of the theoretical prices acquired from the TODEAL/Pricefeed module, for each quoted instrument or TODEAL/Quant.

TODEAL/Quoting offers a series of strategy models (Strategy template) that defines the quotation procedure on the basis of specific parameters for each one.

The quotation parameters of a strategy include for example bid/ask spread, bid/ask size, max/min quote price deviations, number of refills, ... Among the quotation parameters there are also those which define automatic actions triggered by the strategy, for example if the quote concludes in a contract ("execution"). Actions may be: none, suspension, reinstatement of quantity, ...

TODEAL/Quoting is capable of managing double-side or single-side quotes in a transparent manner regarding the operations supported by the destination market. TODEAL/Quoting receives concluded contracts from the various markets in real time and updates the daily position of the security. TODEAL/Quoting offers all necessary functions for the management of quotes put to the markets, for the management of quoting strategies and for the modification of control parameters and for the verification.

**TODEAL/Station for TODEAL/Quoting** module offers, in particular, all necessary functions to:

- :: define/cancel strategies
- :: manage quotes put to the market (suspension and activation of the strategy)
- :: manage the quotation strategies (modification of parameters and associated securities)
- :: verify the status of quotes of single securities resulting from the effectiveness of the associated quote strategy.

TODEAL/Station also offers functions for monitoring the sending of quotes to the markets. In particular, reply times (last and average) are observed. In that way the user can quickly spot possible malfunctions or slowing down and, if that is the case, automatically or manually suspend the activated strategies.

# TODEAL Quant

In today's market, the primary measures of success in most businesses are the frequent computation of instrument prices and the ability to respond to market changes in real time.

The ability to model data and price relationships under these performance criteria is a common challenge, especially with complex pricing requirements.

A simple change in one market indicator can cause a massive cascade of downstream repricing. This trend is exacerbated by the development of ever more complex structured products and derivatives.

## Features

**TODEAL Quant** gives to the brokers an indispensable **real time reference prices** calculation tools.

TODEAL Quant is the cornerstone for running and accessing value added services:

- :: TODEAL Quant Pricing
- :: TODEAL Quant Curve
- :: TODEAL Quant Bond Analysis.

**Quant Pricing** engine provides a flexible pricing interface with wide range of pricing methods:

- :: Basis Pricing
- :: TED Spread
- :: CTD Spread (Future Pricing)
- :: Spread vs. Single Benchmark
- :: Benchmark Curve Spread
- :: Money Market Curve Spread
- :: Swap Curve Spread
- :: Asset Swap Spread
- :: Manual Price Fixing
- :: Discounted Margin
- :: Z-Spread
- :: Price given modified duration.

**Quant Curves** engine can manage the reference curves for each credit sectors. The benchmark curves, or the best fitted curves, are used to generate a fair values for priced bonds and derivatives.

Zero yield curves modelling using a wide range of methods inter alia: Bootstrap, Nelson & Siegel, B- & C-Splines, Spread models based on real-time market data.

The yield curves can consist of Bonds, Futures, Swaps and Money Market Rates; moreover they can be customized by each trader.

**Quant Bond Analysis** engine calculates in a reliable and fast mode all the relevant indicators, including: Duration, Modified duration, Maculay Duration convexity, BPV Cash Flow analysis.

**TODEAL/Station for the TODEAL Quant** module provides all functions in a fully integrated GUI allowing to:

- :: visualize all data produced by the pricing server
- :: dynamically change the pricing model for each security
- :: change the instrument setting or calculation conventions
- :: dynamically start or stop securities calculation on the pricing server.

**Supported Products** include Government Bonds, Strips, Corporate Bonds, Floaters, Inflation-Linked Bonds, Multi-Steps Bonds, Futures, Bond Options, Future Options, Swaptions.



# TODEAL Gateway

**TODEAL Gateway** is a server application that **manages connections from market GUIs, third-party or in-house applications to electronic markets.**

TODEAL Gateway merges market data subscriptions coming from several user applications in order to provide bandwidth optimization over the network connection to market systems.

TODEAL Gateway manages **both market data subscriptions** (best prices, market depth, own quotes, own orders) **and transactional requests** (proposal and order management).

TODEAL Gateway collects subscription requests and the resulting distribution of requested data.

## Features

TODEAL Gateway autonomously subscribes market data apart from application requests from the logged-in user applications. Subscriptions to the market are managed through a single logical connection (logon).

TODEAL Gateway directly replies to data subscriptions coming from the market GUI, third-party or in-house applications.

TODEAL Gateway manages the transactional requests through a multitude of logical connections to the market. The solution establishes a connection to the market for each user application connected. TODEAL Gateway manages the routing going towards the associated market connection. It also manages the routing of responses towards the user application that originally sent the request.

## Value added services

TODEAL Gateway is the cornerstone for running and accessing value added services of the TODEAL Platform:

- :: TODEAL Gateway Admin
- :: TODEAL Gateway Audit
- :: TODEAL Gateway Capture
- :: TODEAL Gateway Analyser
- :: TODEAL Liquidity.

**TODEAL Gateway Admin** centralizes the management and definition of personalized roles that the administrator can assign to each trader accessing the market platform. The defined roles and permissions are associated with each single function of every available service/market.

TODEAL Gateway Admin either validates or refuses a request, in real time, depending on the trader's defined role.

TODEAL Gateway Admin also allows the advanced management of passwords (password expiration, double cryptography, syntax rules).

Through **TODEAL Gateway Audit** all trader transactions and configurations are updated in an internal database. This storage is completely customizable to any type of data (proposals, orders, ...) and request (new, edit, delete, ...).

The module also allows the viewing of recorded data based on filters set by the trader.



**TODEAL Gateway Capture** allows to download trading data (proposals, orders, contracts, ...) in order to feed middle or back office applications. The module allows to export recorded data based on filters (data type, request type, temporary intervals, service, user, ...) either on request or through predefined configurable intervals set by the trader.

**TODEAL Gateway Analyser** provides a programmatic interface for trading applications to receive latency data, thus enabling algorithmic trading engines to adapt to changing conditions.

### TODEAL Liquidity

Busy trading across multiple fast-moving markets means that there's simply too much to cope with: multiple orders, multiple exchanges/markets, multiple brokers, changing market dynamics.

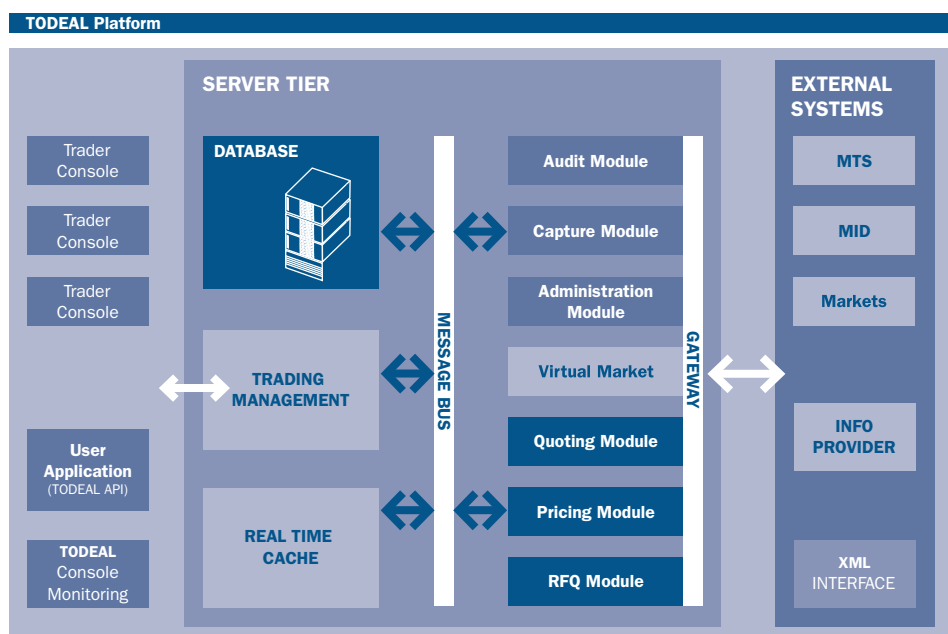
TODEAL Liquidity consolidates information from multiple trading venues to create a virtual order book that simplifies liquidity analysis. You control which venues and the range of information to include: full depth from all venues, full depth from some venues.

### Platform administration

**TODEAL Gateway Console**, a GUI application, allows the administration of TODEAL Gateway and value added services.

As for other user applications, TODEAL Gateway Console can be executed on a PC connecting via TCP/IP (i.e. a LAN) systems that TODEAL Gateway runs on.

TODEAL Gateway Console provides status information about logged-in user applications, connections established and the bandwidth utilisation with market systems.



# TODEAL Station

**TODEAL Station** allows users to easily and intuitively **tailor both the function and graphic interface** according to their needs.

In order to achieve an operative efficiency and widen the range of trading possibilities, traders can monitor and operate across different markets at the same time, thanks to **multi-market features** of the module:

- :: unique blotter, for executed order, with cross and single market filters
- :: shared ticker view to simultaneously monitor multiple markets
- :: multi-market messages distribution.

Thanks to the Trade On\Trade Off and Activate\Suspend Trader functions (offered in single or multi-market mode), the solution offers a **high level of flexibility for trading room activity**.

## Features

Developed with **state of the art technology** and specifically designed on a **good understanding of traders' needs**, the solution offers a fully customizable trading environment.

TODEAL Station allows users to select and gather market data, move across columns, hide and show them, define filters and arrange market data using standard or customized criteria.

The solution is configurable in **two different window modes**:

- :: **Single Document Interface (SDI)**: all the windows are independent and can easily be moved across the screen
- :: **Multi Document Interface (MDI)**: all the windows float in the main application window.

It also has the following **features**:

- :: loading of each user profile from any network client
- :: definition of shortcuts to the most used functions
- :: storing of different profiles including custom preferences
- :: shared menu
- :: customizable toolbar and desktop (colours, fonts, ...).

# SIA Services

SIA remote management services offer an **alternative to ever increasing costs of IT administration.**

These comprehensive services provide:

- :: a solution to the heavy investment in management tools, monitoring, training and related operation costs
- :: an alternative to the creation of an internal network-monitoring
- :: a way of reducing IT administration costs.

Remote management services can enable companies to **focus their efforts on their key business, instead of IT administration.**

## Services benefits

SIA remote management services provide several benefits, both financial and strategic:

- :: remote IT management frees technical personnel to **focus on projects** instead of daily network administration
- :: the quick implementation of remote management services allows customers to easily **recuperate IT investment costs**

- :: the services allow to diminish IT costs through **risk reduction** with **pricing easy to predict**
- :: SIA standard-based **problem-resolution methodology** make sure that issues are handled within industry-leading service-level agreements
- :: detailed reporting helps with early identification of problems, thus ensuring the best **possible deployment of resources.**

## Services highlights

Standard-based IT management procedures ensure that daily tasks and unexpected incidents are handled efficiently, providing a seamless IT infrastructure to support all kinds of clients needs.

## Services offered

- :: Call management
- :: OS support and security administration
- :: Installation, migration and configuration
- :: Upgrade and patch management
- :: Backup and recovery.

## SIA expertise

**SIA** delivers leading remote monitoring and management services at a competitive cost, while maintaining an unparalleled reputation for service and customer satisfaction.

SIA expertise in providing services include the following:

- :: 30 years of experience in managing enterprise-level mission-critical solutions
- :: 3 Exchanges managed
- :: 220 European banks under management.

***Focus on what you do best, leave the rest to us.***



SIA S.p.A.  
Via Francesco Gonin, 36 - 20147 Milano  
Tel. +39.02.6084.1  
info@sia.eu  
www.sia.eu



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