Gas and Electricity Trading

- User administration of master data
- Multi-commodity support
- Keeping records on all kinds of trades
- Real-time position monitoring
- Integrated open position optimization algorithms
- Support for trading automation
- Administration and issuing of Trade Confirmations
- Administration and issuing of Trade Invoices
- Risk management and reporting features
- Pre-configured and user-defined reports
- Built-in Scheduling and nominations calculation
- Interfaces for integration and communication with external applications, authorities, trading platforms and system operators

Lancelot ETRM (Energy Trading and Risk Management) is a comprehensive solution for gas and electricity traders, large and small, operating in the environment of the liberalized energy market. Lancelot ETRM covers whole trade lifecycle supporting processes of Front, Middle and Back Office. Starting with Trade Capturing and Confirmations followed by Scheduling and Nominations and finally ending with Risk Management Reporting and Trade Invoicing.

Master Data and Registers

This module provides administration of business partners of several types (Trades, TSO, DSO, SSO, Market operators and others) and their contacts, identifiers for various markets, and trading permissions for a given counterparty in a given market, as well as administration of contractual rules for confirmations and invoicing. By default, it also contains definitions of trader commodities and currencies, technical structure, markets, products (supporting multiple calendars), exchange rates, index (price, volume, forward) curves and portfolios and books.

Based on this setup system automatically generates all necessary entities, time series and formulas used for trade capturing, position monitoring and optimization, scheduling/nomination processes.

Trade Capture System

The essential functionality of Lancelot ETRM is capturing of different kinds of trades (commodity trades with physical or financial settlement, forwards and futures, in various currencies with a selected exchange rate curve, etc.). The following trades types are captured:

- Commodity (exchanges, borders, OTC, brokers...)
- Gas Transmission Capacity (Firm, Interruptible)
- Working Gas Volume of Underground Storages
- Injection and Withdrawal to/from Underground Storages
- Capacity rights at borders
- Emission permits
- Green certificates

Trade records are kept in portfolios and books. Powerful computation cores with more than a hundred predefined functions and power and price
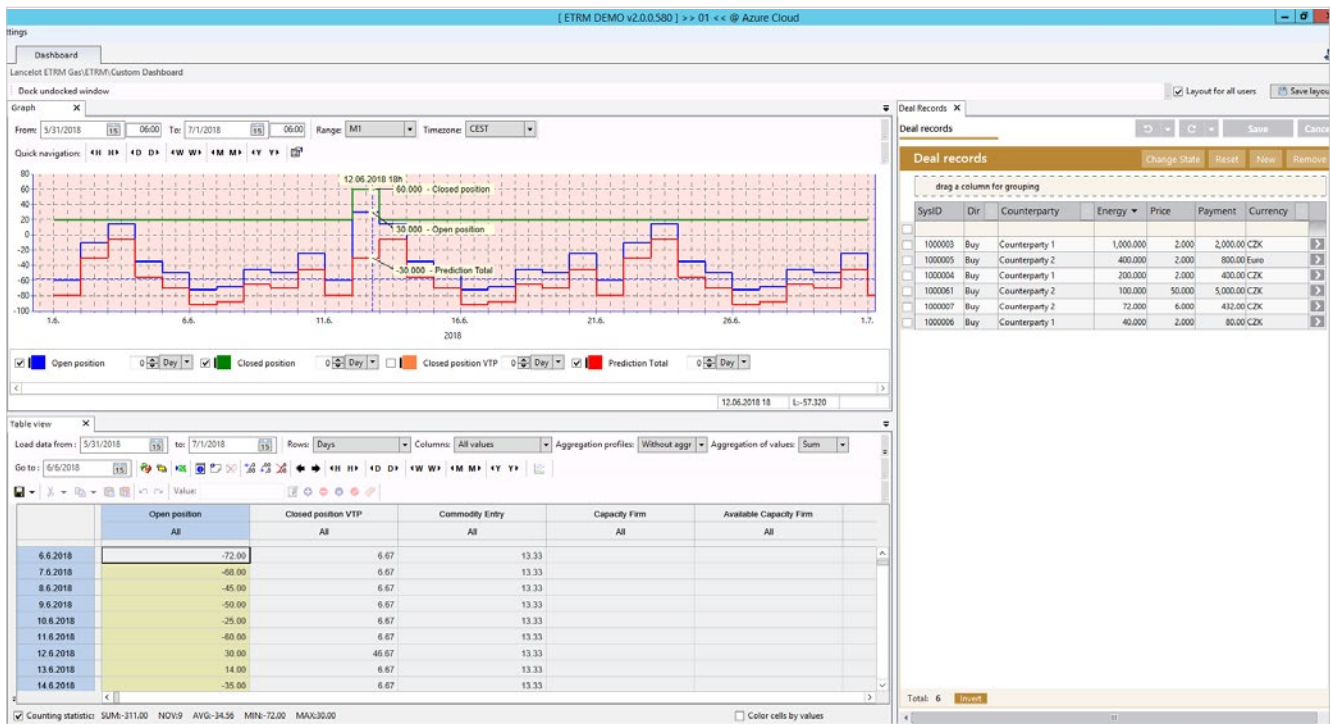
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Fig. 1 – Trader's Dashboard

curves can be used to define custom calculations of trade values, in order to automate and tailor your business processes.

Lancelot ETRM supports a user while entering the Trade in a way that all the fields are filled automatically by the context or at least prefiltered so the users are choosing from relevant values only. By default, also automatic validator of fields including business validations is in place. Once the trade is created it must be accepted to be calculated into the positions. This is done by workflow engine for approvals which can be customized by customer needs.

Trades are shown in a well-arranged, filterable and groupable list.

A trader can create custom dashboards, e.g. for short-term trading, providing a well-arranged list of trades for a selected day or week, along with the current open position and prices in selected markets. The system may also keep records on trade opportunities, which are then used to optimize your open position.

All performed operations done within Trade records are audited and traceable in the system, including full history of all values. For trades with financial settlement, product time breakdown is implemented pursuant to rules of the appropriate exchange.

Confirmations

The trade records module also provides management of confirmations (typically pursuant to the Equias/EFET standard), generation of confirmations governed by defined contractual rules, status monitoring, and storage of digitalized documents, if required. The system supports also the electronic version of confirmations using eCM system of Equias.

Position Monitoring

The system evaluates your position near real time; as soon as a trade is made and accepted, all relevant positions are recalculated. In the system, positions are represented by time series of energy, average price and payment. The time series can be shown in various charts and tables and then used to define alarms

and calculate other time series using functions included in computation core.

Positions are evaluated for individual Balance zones, networks, points, profiles, gas storages, gas reservoirs (with calculation of reservoir gas volumes and prices), portfolios, books, counterparties, products. By default, scheduling and nomination aggregations are also

Assets of Lancelot ETRM
- Support for Front, Middle and Back Office processes
- Real-time monitoring of open and closed positions
- Support for trading in various marketplaces and broker platforms
- Special solutions for day-ahead, intraday, and balancing markets
- Integrated open position optimizer for business decision-making support
- Excellent performance and user comfort

calculated. Other aggregations can be added easily with module of User Aggregations.

The position of any trader who is also a supplier reflects the consumption of end customers (typically a consumption forecast made by Lancelot CIS), provided as a special input including time series, as individual trades, or as a combination of both.

Position Optimization

Upon your request, the system performs optimization of your open position for a selected period, minimizing the resulting payment for coverage of the open position.

The optimizer of non-trading opportunities allows for the possibility that some of the output can be realized in the day-ahead market or in imbalances. For each trade, optimization restriction(s) can be specified, such as the minimum and maximum output (which can be specified for each hour separately) or minimum and maximum purchased/sold energy.

The system clearly shows both the actual open position and the open position after optimization. The decision on what trades to make and in what amounts is left to the trader, who can compare his or her proposal against the optimization.

Scheduling and Communication

This module provides automated data interchange with authorities, such as market operators, transmission/transport operators, or exchanges and brokers.

Scheduling and Nominations include detailed monitoring of communication processes and a quick view of the list of trades entering the scheduling process with a given counterparty for a selected day.

The system is designed to allow easy addition of automated interfaces for communication with operators, transmission/transport system operators, exchanges or brokers. Several automated interfaces are implemented, along with detailed monitoring of communication processes, particularly for CEE markets.

All messages exchanged with adjacent systems are handled by central message office module included in Lancelot ETRM, to provide a clear view of current and historical communications. Based on their contents and source systems, selected messages can be immediately forwarded to defined e-mail addresses and/or transformed into a user-legible form.

Risk Management

The system supports risk management processes and reporting (such as MtM, P&L, VaR, credit risk), permission-based restriction of selected operations, limits, such as VaR per trader or credit exposure limit per counterparty, and check-related notifications to provide risk management capabilities. It also ensures administration and calculation of forward curves based on obtained market data, including optional entry of individually calculated forward curves.

Reporting

The Reporting module allows you to configure user-defined reports and generates standard reports, such as the invoice book, the list of executed trades, or reports for supervisory authorities (e.g. REMIT). Reports are usually generated in the XML and MS Excel format.

The system can also generate user-defined parameterized reports to be exported to MS Excel (with user-defined templates) and XML – standard queries are created for this purpose, for which you may define parameters. Furthermore, the system provides report management and storage of generated reports.
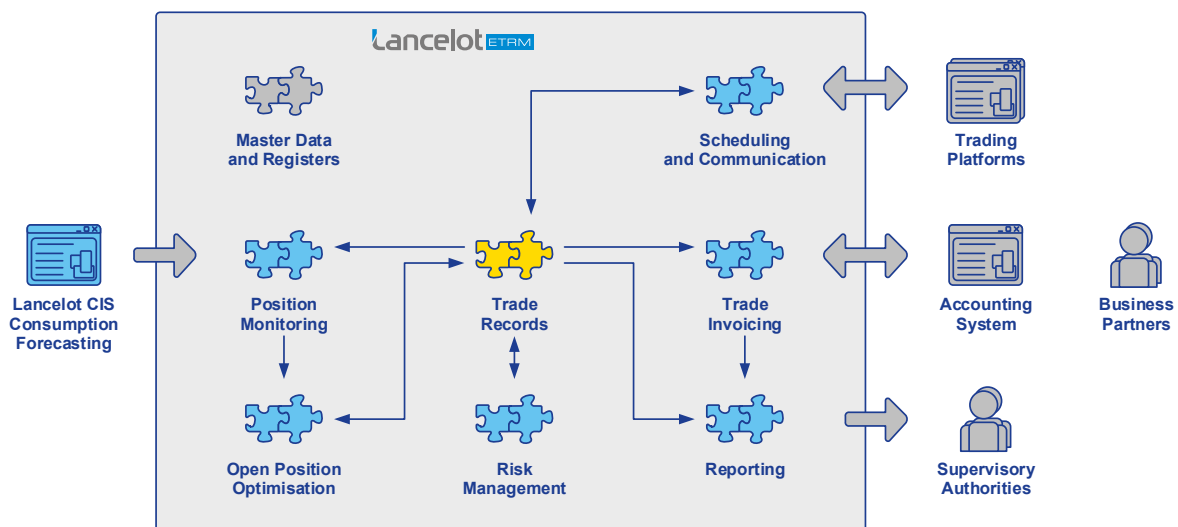
Fig. 2 – Modules of Lancelot ETRM

Fig. 3 – Deal Detail

Trade Invoices

Lancelot ETRM issues trade invoices based on registered contracts, issues shadow invoices to verify received invoices, and administrates contractual documents.

A number of standard connectors are available to link it to the customer's accounting system. The system provides:

- Contract records for all counterparties
- Matching of trades and contracts
- Assembly of invoices and shadow invoices (issued by suppliers) for trades based on rules defined for individual contracts, including amended invoices issued when invoicing data changes after an invoice was carried to accounts (credit note, debit note)
- Invoicing based on contractual rules and trades, including time series data

- State workflow for invoices and wshadow invoices
- Export and printing of PDF documents
- Records of digitized documents
- Export of document data to the accounting system interface

References

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