

Measurement & Analytics

Spirit IT eXLerate supervisory software
Automation specific for the oil & gas industry

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Spirit IT eXLerate is a software platform for flow metering supervisory systems within the oil and gas industry. It provides an automation solution for many market segments, such as custody transfer flow measurement in refineries and pipelines.

Did you know?

Since 2003, over **1200 Spirit IT eXLerate supervisory systems** have been installed worldwide!

Even though solutions with common HMI/SCADA packages already exist, they lack essential functions for making control metering systems truly efficient and effective. As Spirit IT eXLerate is exclusively engineered for the oil and gas industry, it overcomes many generic systems' shortcomings.

Spirit IT eXLerate is the first of its kind to:

- Properly **acquire and archive** all measurement data;
- **Monitor and control** the quality of measurement;
- Use its **smart device-potential** fully by checking its health, communicating it to other devices and providing additional fluid property information on its own;
- Apply **self-diagnostics** on both device and system level to warn the user in real-time for (upcoming) measurement issues;
- Automatically correct errors, by utilizing the newest **mis-measurement management-technology**.

Designed for our industry
Features for the oil & gas industry



A Spirit IT eXLerate system in operation, together with Spirit IT Flow-X flow computers

As Spirit IT eXLerate is developed specifically for the oil and gas industry, it has the most powerful set of integrated tools, functions, add-in libraries and applications.

Standard Calculations

As a standard, the following gas & liquid calculations are available in our software:

- AGA3, AGA5, AGA8, AGA10. Compliant with AGA7, AGA9, AGA11
- API chapters 11.1, 11.2, 12.2, 21.1 and 21.2, API 2540, API 1952, 1980, 2004 tables (both metric and US versions)
- ISO 5167 (all editions), ISO 6976 (all editions), NX19, SGERG, GOST, PTZ, GERG2004, GERG2008
- GPA 2172 / ASTM D3588, TP15, TP16, TP25, TP27
- IAPWS-IF97 steam and water tables
- NIST-1045 for Ethylene, API 11.3.2.1 Ethylene (API-2565)
- ASTM D1550
- Time & flow weighted averages, periodic time series. Accurate period & accumulative totalizers and reporting.
- Linearization curves for correction of calibrated meters.
- Dynamic viscosity, isochoric heat capacity, isobaric heat capacity, isentropic exponent, energy, entropy, and many other data.

Optional features

- **Virtual Flow Computing (VFC)** functionality with detailed diagnostics.
- **Validation and calibration procedures**, ensuing real-time verification of field devices.
- Ultrasonic and Coriolis **diagnostics & performance monitoring** and Condition Based Monitoring-technology.
- **Control features** of proving, sampling and batching.
- **Virtual printer management**: possibility of retrieval, storage, processing & printing of fiscal flow computer reports.
- For custody transfer applications, the unique functionality of **100% redundancy and Mismeasurement Management.**



Key benefits:

Clear visualization & animation

Information is presented in a multilingual & graphically animated environment.

Clear data communications

All information is defined in one single worksheet, with support for almost any field device.

Custody transfer reporting

High-quality reports are fully integrated and may be automatically or manually generated.

Reliable security

Multiple security levels prevent accidental mistakes or unauthorized access.

Alarm management

A programmable summary with current & past alarms and events is available.

Trending

Customizable real-time and historical trending, which may be displayed in a single trend graph.

Database storage

A database server is available with ready-to-use functions for easy integration and further analysis.

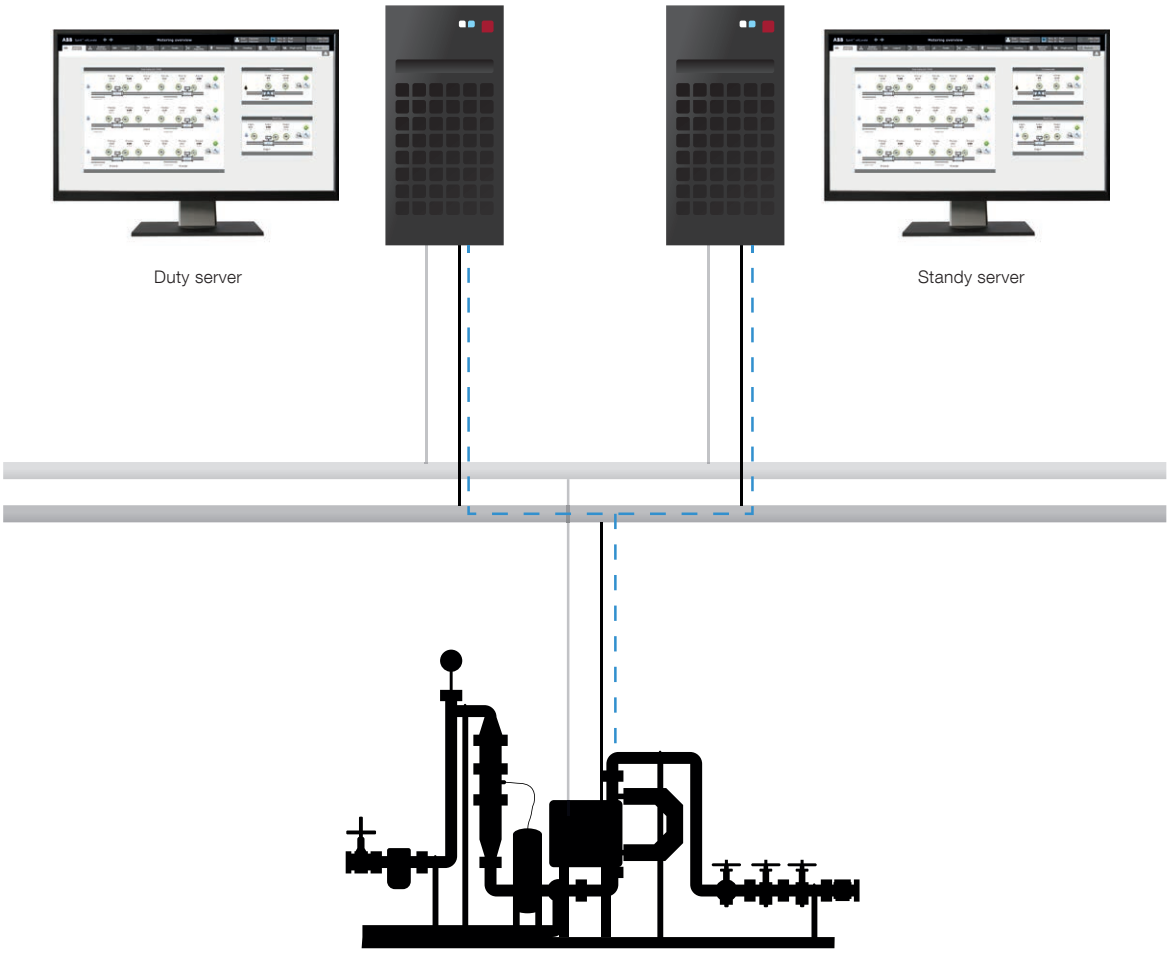
Automation Intelligence
Maximize quality & results

100% Redundancy

For custody transfer-specific systems, Spirit IT eXLerate is the first to ensure full availability with its 100% redundant system architecture.

With the use of multiple server computers, which synchronize and back-up all metering data, one point of failure will never lead to a total breakdown. Because our computers are capable of instantly taking over the role as Duty server in a ‘bumpless’ manner, data monitoring and control will never be interrupted.

As Spirit IT eXLerate software offers the highest degree of redundancy in its systems, full data transparency and maintainability is realized on all connected computers.



Our redundant configuration ensures ‘bumpless’ automatic switchovers from Duty to Standby

MMM: Mis- Measurement Management

Up to now, detecting and solving software measurement errors has been time-consuming, expensive and not done by default.

Spirit IT's innovative Mis-measurement Management technology finally overcomes this inefficiency. Being the first to automatically detect and resolve all mis-measurement issues in (near) real-time, this technology incorporates extensive methods varying from basic checks to sophisticated algorithms. Furthermore, it includes a highly accurate and patented method based on API MPMS Chapters 21.2 and 21.2, to improve system uncertainty.

The MMM technology:

- Detects errors as quickly as possible;
- Allows the user to efficiently analyze the issue;
- Corrects errors as precisely as possible;
- Facilitates automatic billing corrections;
- Is both time- and moneysaving.



Due to its MMM-technology, Spirit IT eXLerate sets the highest standard in custody measurement

From standard to custom
Suitable for every application

Scalable architectures

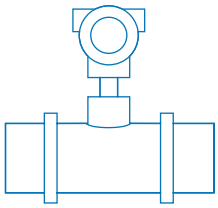
Not only is Spirit IT eXLerate compatible with a wide range of applications, its scalability makes it suitable for everything between small local supervisory and large corporate control systems.

In abundant facilities, one standalone Spirit IT eXLerate-based application is sufficient to create a solid, reliable HMI solution with more than adequate functionality.

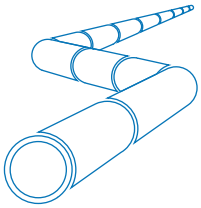
However, for highly critical systems where stability and availability is essential, Spirit IT eXLerate also provides redundant system architectures.

Additionally, the system can be extended with multiple Client computers, which each act as fully functional operator station.

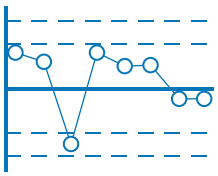
Highly scalable systems have the following advantages:
- High flexibility in I/O from and to devices;
- Consistency in settings as modifications are constantly updated;
- Automatic synchronization between operator commands and control logic.



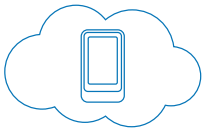
Metering Supervisory & Control



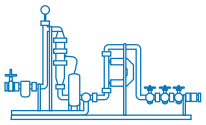
Pipeline Network Management



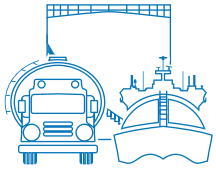
Flow Calibration Facility Management



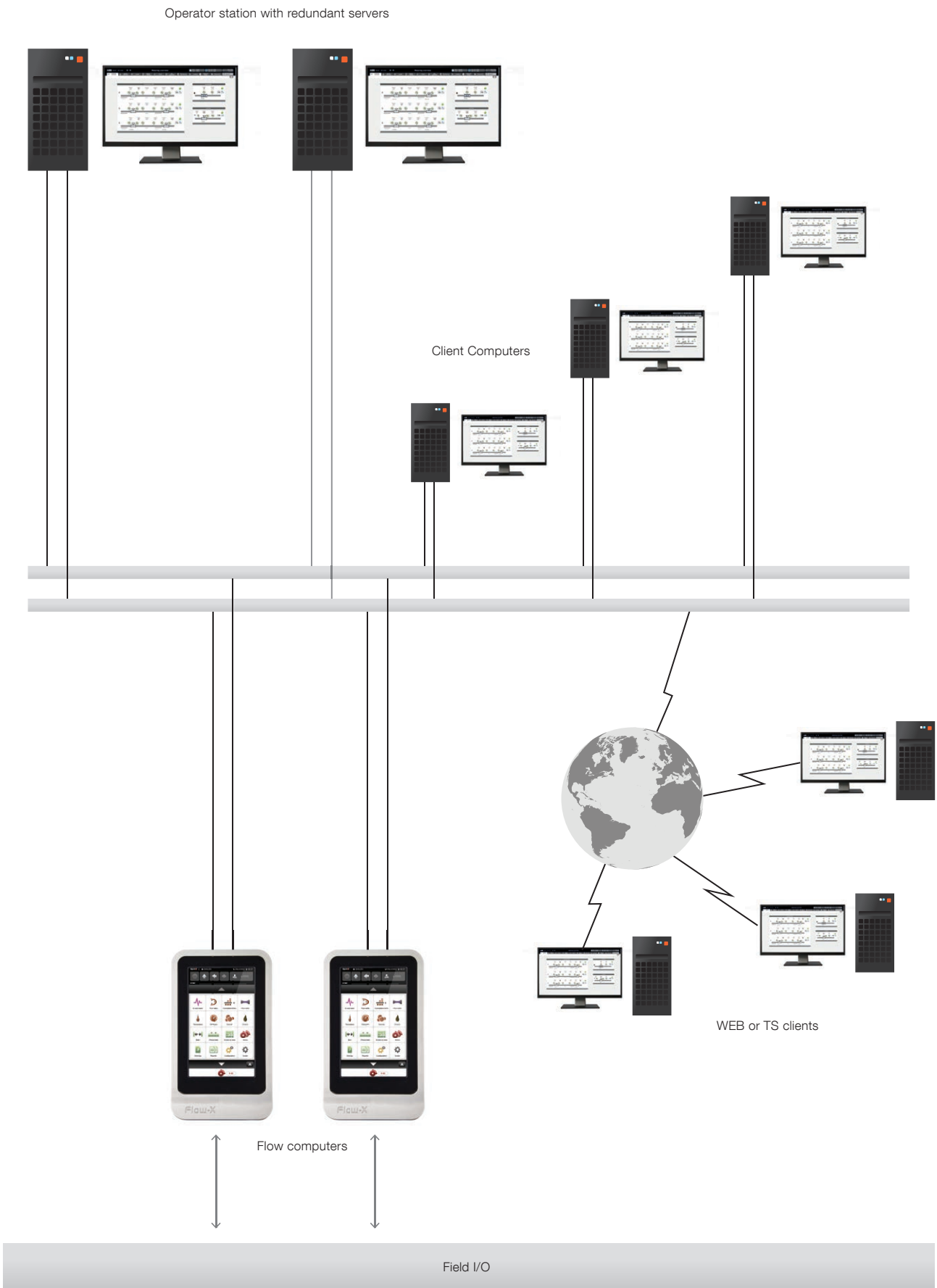
Virtual Flow Computing System



LACT control



Terminal Automation



System architecture of an eXLerate installation

Service & Support
Advice, assist & teach

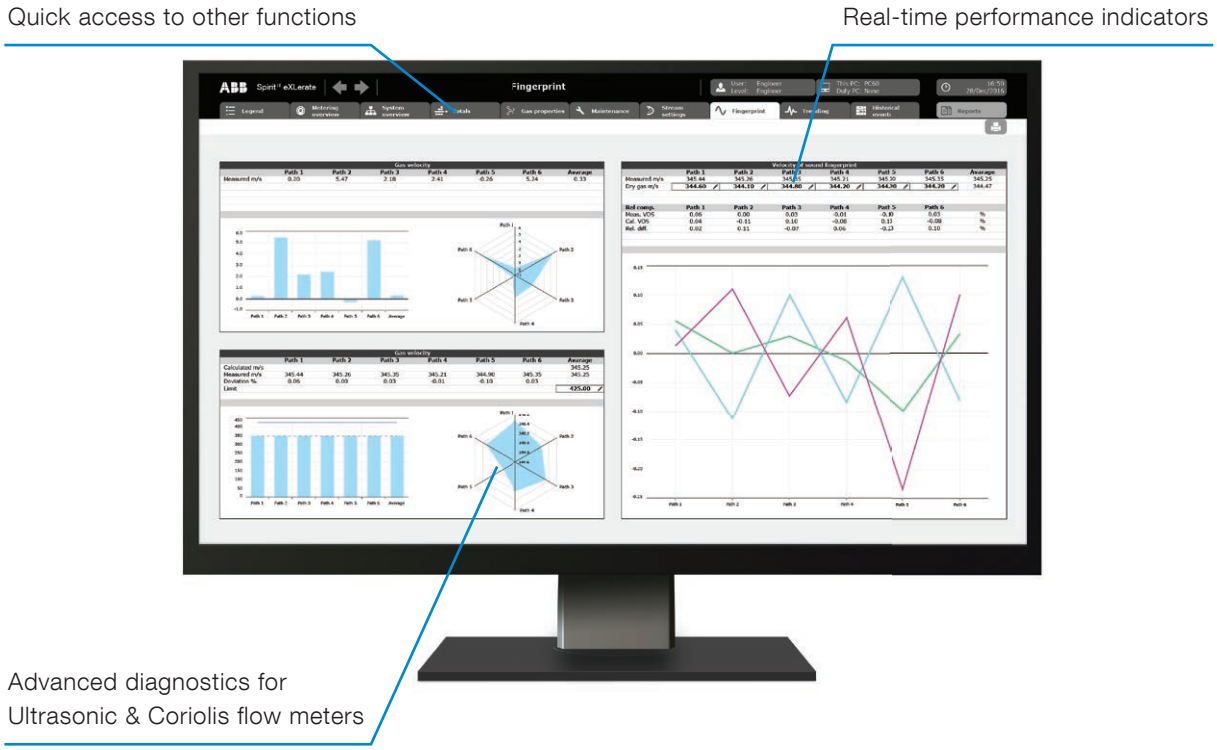
Product licensing for integrators
System integrators may use Spirit IT eXLerate licenses for their own applications and projects. Engineering and consulting services can be provided on either a turnkey or project basis, including specific software development.

Training
In order to make users feel confident with our software, we provide customized operator training to turn them into eXLerate- and metering specialists.

Technical support
We provide life-cycle management services to support the work of system integrators and equipment manufacturers. Conducted by a global network of trained experts, this includes strategic cooperation, consultancy and total project management.



High usability
Clear informative graphics



Diagnostics Screen



Control Charts Screen

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