C-Smart
LAUF

- Store all your data in a single database by analyzing and acting on data confined in silos such as measuring equipment, SCADA systems, measurement accounting systems, including files and emails on individual PCs.

- Provides bigger picture as C-SMART Analytics integrates data from multiple tools, vendors, and software systems which help speed the identification and resolution of problems.

- Continuously monitor as C-SMART Analytics™ provides 24/7 monitoring and automated analysis, which increases your measurement certainty while reducing the need for on-site visits.

- Increase technical knowledge as C-SMART Analytics normalizes the data across devices and brands, allowing your technicians to understand what they see and confidently address issues.

Specifications

Device Error	Malfunction of sensor
Maintenance Error	Operating error
Configuration Error	Incorrect settings
Software Error	Error from software bugs
Data Transfer Error	Software failure
System Design Error	Incorrect design

LAUF
How does software optimize LAUF management?

- Gather holistic system diagnostics data
- Process with Advanced Analytics & AI
- Identify error with 0.1% accuracy
- Determine error cause of 98% of events
- Recommend resolution
- Estimate error magnitude for balance

C-Suite
1. Less LAUF.
2. An overall risk reduction across your enterprise.
3. Proven ROI.

SUITE

Measurement Team
1. A complete picture of your operation through simple, on-demand report.
2. Real-time troubleshooting & proactive maintenance.
3. A reduction in manual tasks, travel time, and use of vendor specific software programs.

IT
1. Easy integration into your existing infrastructure – no special software is required.
2. A secure, intuitive, and web-based interface to access system-wide data.
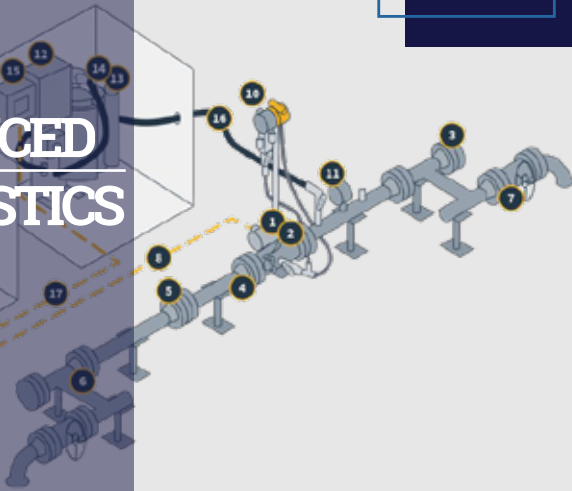
C-Smart
Suite

- C-SMART Analytics analyses your natural gas monitoring systems remotely and in real-time.

- C-SMART Analytics knowledge, vendor recommendations, industry best practices, including your policies, can be used to customize diagnostic operating ranges.

- Database information is recorded hourly, which means before an issue becomes a significant problem, you can quickly analyze data, track trends, and determine correlations – right from your desk.

- Using C-Smart, you can prioritize site visits, bring the appropriate equipment and tools to repair the issue, do your job much more efficiently and manage service by minimizing internal labor.

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C-Smart
Advanced Diagnostics

- Advanced diagnostic systems increase your measurement certainty.

- Manage your measurement diagnostics in a single database by providing business logic that analyses your diagnostics automatically and alerts you to issues.

- Advanced diagnostics C-Smart consists of different software modules, including C-Smart Meter Diagnostic Solution, Balance Tool Solution, and Remote Analytics for Metering Contracts for live monitoring and error optimization.

- C-SMART Analytics is mainly used to identify pressure transmitter problems, ultrasonic meter path failures, blockages, chronic k-factor errors, etc.

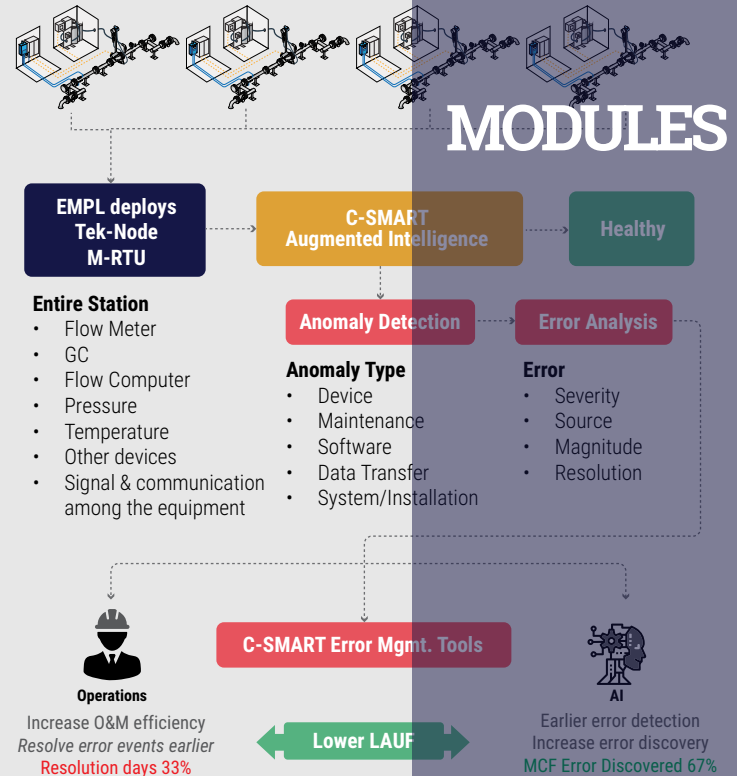- Increase the precision and long-term health of your remote flow measurement systems.

MODULES

EMPL deploys Tek-Node M-RTU

Entire Station
- Flow Meter
- GC
- Flow Computer
- Pressure
- Temperature
- Other devices
- Signal & communication among the equipment

C-SMART Augmented Intelligence

Healthy

Anomaly Detection

Anomaly Type
- Device
- Maintenance
- Software
- Data Transfer
- System/Installation

Error Analysis

Error
- Severity
- Source
- Magnitude
- Resolution

Operations
Increase O&M efficiency
Resolve error events earlier
Resolution days 33%

C-SMART Error Mgmt. Tools

Lower LAUF

AI
Earlier error detection
Increase error discovery
MCF Error Discovered 67%

ADVANCED DIAGNOSTICS

1. Checks USM
2. Identifies USM
3. Identifies control valve
4. Identifies contamination
5. Identifies blockages and debris
6. Identifies installation effects
7. Identifies leaks
8. Checks communications
9. Checks Flow Computer calculations
10. Checks pressure transmitter
11. Checks temperature transmitter
12. Checks GC
13. Checks GC is not in hold
14. Identifies GC calibration
15. Identifies GC electronics
16. Identifies GC sampling
17. Checks comms

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C-Smart
Modules

- C-SMART Basic consists of Flow calculations, uncertainty calculations & error identification.

- C-SMART Complete provides error estimation and recommends correction.

- C-SMART Balance provides live monitoring of system balance diagnostics.

- C-SMART Hardware is an edge IIoT device used for data collection as it supports live monitoring & analysis.

- C-SMART Onsite is onsite support for installation, commissioning and/or troubleshooting.

- Analytics Platform Portal enables live monitoring, reports, emails, alerts, analysis tools, estimates error and provides recommendations to correct.