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SUCCESS STORY

COMET.Core

COMET – THE REAL-TIME DATA PLATFORM

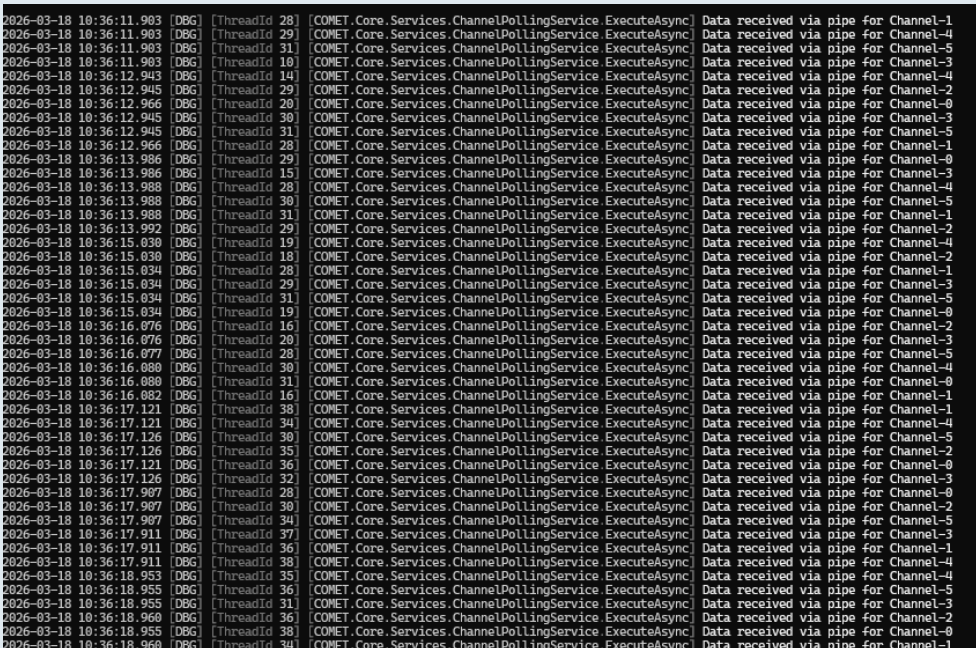
The platform, newly developed by Quality Automation for the high-performance acquisition and processing of industrial measurement data, is delivering outstanding results in the customer's processes.

COMET (Connected Operations and Manufacturing for Edge Tier Computing) is a real-time data platform developed by Quality Automation for the high-performance acquisition, processing, and delivery of industrial measurement and sensor data. The solution combines robust hardware components with a scalable real-time data pipeline, enabling the reliable use of high-frequency signals in demanding industrial and laboratory environments.

Architecture & Staging Layer for Industrial Real-Time Data

Designed as an end-to-end system, COMET includes not only a powerful software core but also complete hardware integration—including a measurement box, control cabinet, and cabling. At its heart is a high-performance staging layer that captures, buffers, and processes sensor data in real time.

The platform is designed as a robust background service and ensures stable data acquisition even under continuous industrial load conditions. The guaranteed "exactly-once processing" is a decisive factor for meaningful analyses and reliable data chains.



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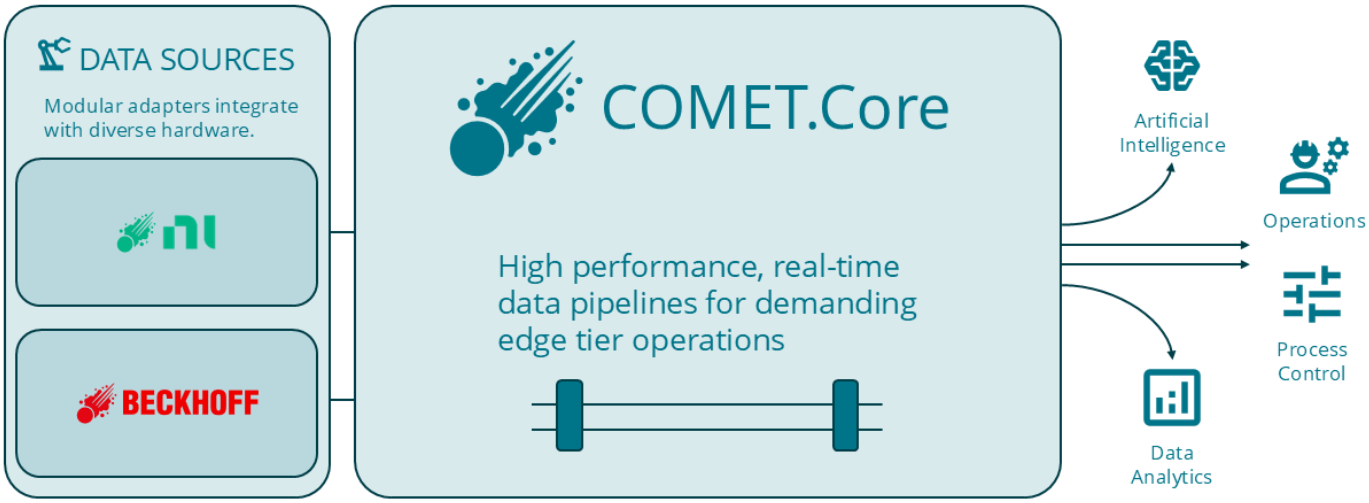

Top-notch performance and real-time capabilities

COMET was developed for applications where speed and resolution are critical. The system enables the processing of high-frequency measurement signals with sampling rates of up to 25 kHz per input channel. Despite these data volumes, analyzed results are delivered with very low latency—typically within less than five minutes in a format ready for immediate use.

By utilizing highly optimized data pipelines, volatile sensor data can be reliably stabilized and converted into structured, analyzable information. This lays the foundation for real-time decisions in production, test environments, and development processes.

Flexible integration and industrial connectivity

Our system is designed for maximum connectivity flexibility and supports a wide variety of industrial data sources via Ethernet-based interfaces, including National Instruments DAQmx systems already in successful use, as well as Beckhoff PLC hardware. Other systems can be easily integrated via freely configurable interfaces.

COMET has demonstrated its capabilities under real-world industrial conditions in two completed customer projects. In one of these projects, the application placed particularly high demands on real-time processing due to extreme current dynamics—with surges ranging from 0 to 600 A within a few milliseconds—which had to be recorded and analyzed with very high temporal resolution.

Real-time capability, flexibility, efficiency – your advantage with COMET

COMET enables high-performance real-time data processing with very low latency and high resolution—ideal for industrial and laboratory-based applications involving large volumes of data. Universal interfaces allow for the flexible integration of a wide variety of sensors and systems, regardless of the manufacturer or existing infrastructure.

The system is designed as a lean, industrial-grade solution and offers fast data delivery, ease of use, and robust performance on industrial-grade components. This makes COMET a powerful, flexible solution—especially for specialized applications and laboratory data analysis—and one that comes with no ongoing license costs, as all software components used are based on freely available technologies.

Do you have similar requirements for real-time data processing or high-frequency measurement data acquisition?

We would be happy to assist you in implementing your customized solution. Contact us to learn how COMET can enable powerful real-time analytics and reliable data processing for your application as well.

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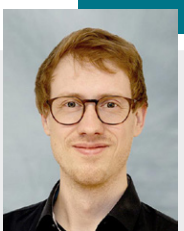

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