SIRIUS™

SCADA / HMI / SAS SOFTWARE

S I R I U S

SCALABLE **I**NTELLIGENT **R**OBUST **I**NDIGENOUS **U**SER-FRIENDLY **S**ECURE

ABOUT

SIRIUS is an Integrated Process Management and Control System designed to provide an all embracing solution to Process Control requirements. It includes all the software and hardware components required to perform functions covering the following:

- Data acquisition from the process
- Data processing
- Taking pre-programmed intelligent control actions
- Archiving and statistical analysis
- Displaying data in a useful manner to the user
- Executing control actions as specified by the user
- Interfaces for add-ons & third-party applications
- Mission Critical Redundancy
- Cyber security compliant
- DNV-GL Certified protocol

FEATURES

MAN-MACHINE INTERFACE

- Achieve visualization On Desktop/Tablet/Mobile via web browsers. Enables 100% web-based remote monitoring, and control
- Scalable Graphics on any resolution. Configurable Layout of Graphics Screen
- Support for more than 100K points & smooth visualization for the same
- Integrated with geo maps
- Single Sign On (SSO)
- Alarms & Events
  - Be notified of critical alarms, wherever you are via SMS/email
  - Central processing of alarms
  - Acknowledge alarms by group, priority, station etc.
  - Hooter triggered in field and on individual MMI
- Safety Tagging
- Integrated Reports/Dashboards for Historical/ Realtime Data with export features(pdf, excel, etc)
- Playback of Historical Data
- Geographical Information System integration
- Training simulator module

THIRD PARTY INTERFACES

Through third-party interfaces, the choice of connectivity crosses all limits...

- Secure OPC/UA
- ODBC
- reST API
- MQTT
- ICCP/TASE.2

TIME SYNCHRONIZATION

- Master Clock / GPS Receiver:
  — Absolute time (NMEA 0183, SNTP , Custom)

CONFIGURATION TOOLS

From an abstract idea to a concretely engineered system, easy configuration tools make it possible...

- Integrated Development Environment
- Direct database import from Excel
- Integrated graphics editor

SMART OBJECTS

Virtual counterparts of Physical Objects (with intelligence)

- Introduce "smartness" into your applications through Smart Objects
- Built-in objects for objects of everyday use
- Customize object behaviour by writing custom logics
- Create and modify objects

APPLICATION LOGICS

- IEC61131-3 Programming Languages
- Multiple, Independent, Parallel execution of logics
- Built-in library of commonly used functions
- Support for user-defined libraries
- Access to Real-time Database

SUPPORTED ARCHITECTURES

- x86-64, Windows Server/Windows 11

PROTOCOLS SUPPORTED

PROTOCOL	MASTER /CLIENT	SLAVE/ SERVER
MODBUS RTU/TCP	⊙	⊙
MODBUS PLUS	⊙	
IEC870-5-101	⊙	⊙
IEC870-5-103	⊙	
IEC870-5-104	⊙	⊙
IEC 61850-8-1	⊙	
DNP 3.0 SERIAL (LEVEL 3)	⊙	⊙
DNP 3.0 TCP (LEVEL 3)	⊙	⊙
RP-570	⊙	
PROTEUS 2000	⊙	
SINAUT ST1	⊙	
EQUINODE	⊙	
SPORT	⊙	
ALSTOM COURIER	⊙	
SPA BUS	⊙	
PD BUS	⊙	
WORLDFIP SYCOWAY	⊙	
BITBUS	⊙	
INDACTIC 33	⊙	
INDACTIC 625	⊙	
SEL ASCII	⊙	
3964 R	⊙	
IEC 1107	⊙	
GE-FANUC SNP	⊙	
ALLEN-BRADLEY DF1	⊙	
SNMP	⊙	
OPC DA	⊙	
OPC UA		⊙

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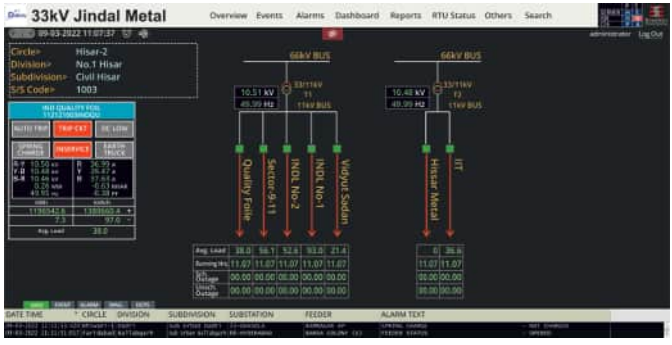

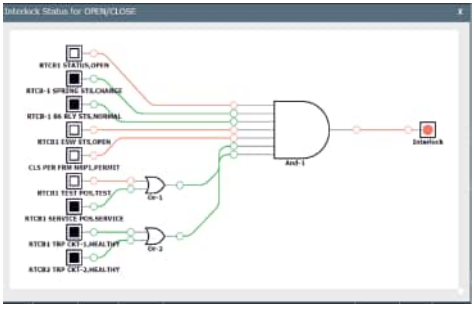

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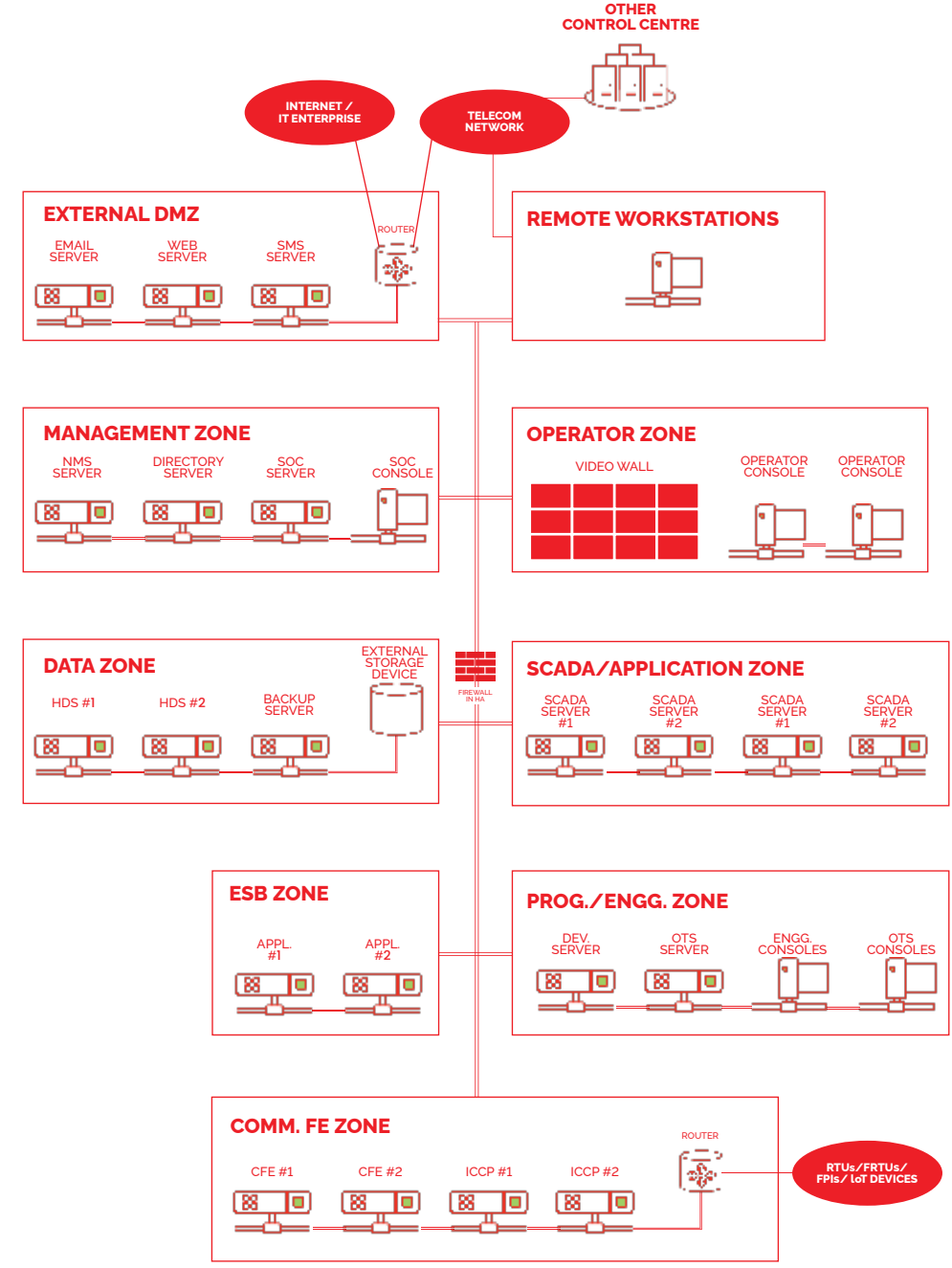

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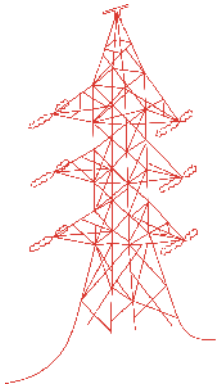

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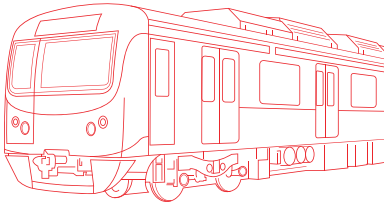
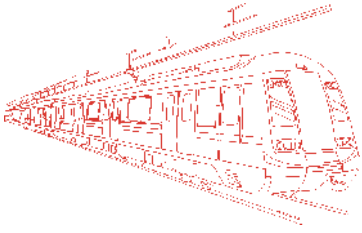
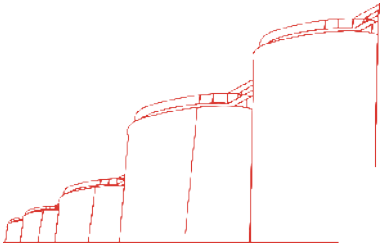


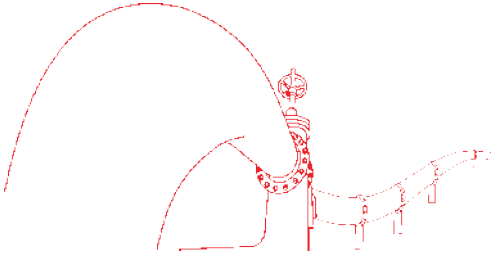
RAILWAY TRACTION



METRO RAIL



OIL TERMINALS



PIPELINE

SIRIUS™
HISTORIAN

PRODUCT OVERVIEW

SIRIUS Historian is a powerful real-time data management tool that gathers, stores, organizes, and evaluates enormous volumes of operational data—both historical and current. It is designed to manage challenging workloads, such as analytics data, time series, and events. Built on PostgreSQL so you can rely on rock-solid architecture and the entire ecosystem, but also get 1,000x faster queries, around 90% data compression, and 100+ SQL data analysis hyperfunctions.

More specifically, over top of PostgreSQL, SIRIUS Historian exhibits:

- 20x higher inserts at scale (constant even at billions of rows)
- Faster queries, ranging from 1.2x to over 14,000x improvements for time-based queries
- 2000x faster deletes, critical for implementing data retention policies
- New time-centric functions, making time-series manipulation in SQL even easier

DATA COLLECTION

Efficient collection and storage of historical data from various industrial processes. Support for diverse data types including analog, digital, and string data. Data can be collected over OPC UA or other protocols as per requirement.

DATA RESOLUTION

The ability to capture data at different resolutions (e.g., milliseconds, seconds, minutes, hours) to meet specific application requirements.

DATA COMPRESSION

Improved engineering results in more cost-effective computation and storage. 90 % or more storage savings via best-in-class compression algorithms without loss of precision or data.

DATA BACKFILL

Backfilling historical data helps ensure that the historian is comprehensive & provides a complete record for analysis, reporting, and decision-making.

MANUAL OVERRIDE

This functionality is typically used with caution, as it allows users to change recorded values or timestamps, potentially impacting the accuracy and integrity of historical records. User can update missing data or add future data as per requirement.

EMPOWERING INDUSTRY EXCELLENCE:
WITH SIRIUS HISTORIAN, HARNESS THE POWER OF DATA, DRIVE EFFICIENCY, AND CHART YOUR SUCCESS IN REAL-TIME

DATA INTEGRATION AND INTERFACING

- Seamless integration with existing SCADA systems & industrial automation components
- Compatibility with a variety of communication protocols commonly used in industrial automation, such as:
  - OPC
  - MQTT
  - REST
  - SQL
  - ODBC
  - Other protocols on request
- Email/SMS - Notification sent based on data changes. Reports can also be shared over mail as per configuration and requirement

DATA RETENTION

- Data Archiving: Capability to archive historical data for long-term storage and compliance with regulatory requirements
- Purge Policies: Configurable policies for data retention and purging based on specified criteria

DATA RETRIEVAL AND ANALYSIS

- Fast and flexible data retrieval capabilities with support for querying based on time ranges, specific tags, and other criteria
  - Tag filtering options that allow users to narrow down their search based on specific criteria, such as operational names, types, or units.
  - Support wildcard search capabilities that enable users to search for tags using partial names or patterns
  - Browse through the historical data by navigating through the tag hierarchy, making it easier to follow the operational flow.
- Email/SMS - Notification sent based on data changes. Reports can also be shared over mail as per configuration and requirement

REPORTING AND VISUALIZATION

- Integration with reporting tools for generating comprehensive historical data reports
- User-friendly graphical interfaces for visualizing trends and historical data

SCALABILITY

- Highly scalable architecture to accommodate the growing needs of industrial processes
- With columnar compression, real-time aggregation, and automatic partitioning, you can store and query data quickly and effectively. Expand without difficulty with infinite storage and dynamic scaling
- Ability to handle large number of data tags (~2.5 million tags) for monitoring and control. The number of tags can increase as per system requirements

HIGH AVAILABILITY

- Support for redundant configurations to ensure continuous operation even in the event of hardware failures. Failover SAN clustering provides high level of redundancy
- Hot standby switching of redundant data streams

DATA INTEGRITY

Measures to maintain data integrity & prevent data loss. Historian backup and restore can be done over NAS

SECURITY

- Robust security features to protect historical data from unauthorized access and ensure data integrity. Optional encryption of data at rest
- User authentication and authorization mechanisms for controlled access

AUDIT TRAIL

- Comprehensive audit logging of user activities and system events for compliance and accountability
- Traceability of changes to historical data for auditing purposes

DATA RESIDENCY AND PRIVACY

When considering hosting possibilities for a historian system, organizations can choose between on-premises (self-hosted) solutions and cloud hosting.