



REMUS

Radiation and Environment Monitoring Unified Supervision

REMUS is a Supervision, Control and Data Acquisition system (SCADA), able to monitor and control organisations' impact on their environment. It has been developed by CERN HSE Unit, who is in charge of providing Radiation Protection and Environmental Impact Monitoring to CERN facilities and immediate surroundings. REMUS took advantage of more than 30 years of experience providing safety systems to CERN. It is based on Siemens WinCC Open Architecture.

REMUS provides a unified way to supervise and continuously operate heterogeneous types of instrumentation. It currently offers out-of-the-box interfacing to more than 75 device types and provides software tools easing the integration of new ones, in a time and cost effective way.

REMUS provides the following functionalities:

- *Data acquisition and archiving of measurements and events coming from the instrumentation.*
- *Display of near real-time measurements, alarms and operational states of instrumentation through customisable user interfaces composed of synoptic, widgets and alarm screens.*
- *Remote sending of commands and operational parameters to the instrumentation.*
- *Display of archived and near real-time measurements and events coming from the instrumentation, through a data visualisation tool, ERGO (Environment and Radiation Graphic Observer).*
- *Publishing of archived and near real-time measurements to external systems.*
- *Run-time installation of new instrumentation.*

REMUS at CERN is used by more than 200 users (CERN Control Centre, RP & Environmental Experts, Fire Brigade, ...), providing 600 synoptic screens, 50,000 remotely controlled parameters, 3,200 data streams and archiving 100,000,000 measurements every day.

REMUS has been designed to be as scalable and adaptable as possible, allowing its installation in a different environment than CERN, in a few days.

AREA OF EXPERTISE

- ICT, software

PLATFORM

- WinCC OA

IPT STATUS

- CERN Proprietary license

CONTACT PERSON

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Find out more at:

kt.cern

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technology

Knowledge Transfer
Accelerating Innovation

FEATURES

- Multiplatform and Scalable Supervision, Control and Data Acquisition system.
- Extensible Access Control system.
- Run-time Edition & Deployment of Tailored Graphical User Interfaces: No reboot necessary, clients are notified of GUIs updates automatically. GUIs are editable by end-users having sufficient system privileges.
- Heterogeneous Equipment Interfacing: From Water Samplers to Ionization Chambers.
- Run-time installation of new instrumentation: Accessible from end-users having sufficient system privileges. No reboot necessary.
- Full Redundancy, allowing rolling updates and high reliability.

APPLICATIONS

- Environmental and radiation monitoring of any facilities.
- Integration of heterogeneous instrumentation in a centralized and distributed supervisory system.

PAPERS

[PCaPAC 2018:](#)

[CERN Supervision Control and Data Acquisition System for Radiation and Environmental Protection](#)

[PCaPAC 2018: Innovative Graphical User Interfaces Development: Give the Power back to Users](#)

[ICALEPCS 2015: REMUS: The new CERN Radiation and Environment Monitoring Unified Supervision](#)

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CATALOG OF INTERFACED INSTRUMENTATION TO DATE:

- o GROAC (CERN)
 - o MSDA (CERN+)
 - o MMS (CERN+)
 - o VMS (CERN+)
 - o RWM (Bertin Technologies SAS)
 - o HFM (Bright Technologies Ltd)
 - o SGM (Bertin Technologies SAS)
 - o PCM (Bertin Technologies SAS)
 - o WMS (CERN+)
 - o AC32 (Environnement S.A.)
 - o O342 (Environnement S.A.)
 - o LB112 (Berthold Technologies GmbH & Co)
 - o FHT1100 (Thermo Fisher Scientific)
 - o AD6 (Automess-Automation)
 - o ICAM (Mirion Technologies)
 - o SMART (CERN)
 - o LB147 (Berthold Technologies GmbH & Co)
 - o iWMS (CERN+)
 - o RADHOME (Algade)
 - o ABPM (Mirion Technologies)
 - o DTionix (Premium Analyze)
 - o MinAlarm (Thermo Fisher Scientific)
 - o UNIDOS (PTW)
 - o iAS (CERN+)
 - o Alarm Repeater (CERN)
 - o FHT1388 (Thermo Fisher Scientific)
 - o CROME (CERN)
 - o Custom Drivers / Scripts developed with WinCC OA API & REMUS Templates
- General Purpose (counting cards)
 - Radioactivity Monitor
 - Meteorological Station
 - Ventilation Station
 - Radioactive Water Monitor
 - Hand Foot Contamination Monitor
 - Site Gate Monitors for Radioactivity Contamination
 - Water Monitoring Station
 - NO, NOx, NO2 Monitoring
 - O3 Monitoring
 - Gamma rays Monitoring
 - Contamination (mobile)
 - Radioactivity Monitor (mobile)
 - Air Alpha/Beta Monitor
 - General Purpose (PLC)
 - Hand Foot Contamination Monitor
 - Water Monitoring Station
 - Radon Monitoring
 - Alpha/Beta Particulate Monitor (mobile)
 - Tritium Monitor
 - Radioactivity Monitor
 - Dose Meter
 - Aerosol Sampler
 - Alarm Signals Transmitter
 - Truck Gate Monitor for Radioactivity
 - Radioactivity



RADIATION AND ENVIRONMENT MONITORING UNIFIED SUPERVISION

