

REFERENCES: SOME RADIATION MONITORING SYSTEMS FOR ENVIRONMENTAL & PLANT APPLICATIONS IN RECENT YEARS

Client	Location	Date
Gulf Advanced Control Systems (GACS)	Saudi Arabia	Ongoing (2024-2025)
Description Supply of RADON/SEISMIC MONITORING SYSTEM, part of <i>NEOM Climate & Environmental Quality Monitoring Stations with Installation, and Data Management Support Project</i>. The system includes: n. 1 RTS RAM-TF Multifunction Air Monitor, dedicated to the on-line detection and quantification of alpha/beta/gamma emitting radioactive aerosols present in the environmental air and to the continuous measurement of Radon (Rn-222) / Thoron (Rn-220) and related Uranium/Thorium chains, also equipped with: RTS AIR SAMPLING PROBE and circuit RTS ENVIRAD-01 GDR, External Gamma Dose-rate Smart Probe RTS WTS-19 Weather Substation SEISMIC SET with a couple of seismic sensors (Seismometer and Accelerometer).		
Client	Location	Date
SOGIN SpA	Italy (Garigliano site)	Ongoing (2024-2025)
Description Supply and installation of the required devices for the updating of the instrumentation of the radiological environmental monitoring network huts at the Garigliano Power Station. The system includes n. 4 RTS RAM-TF-GD (Sampling and measurement stations), Remote management system of measured data and sampling station and photovoltaic Power systems.		
Client	Location	Date
IAEA	Lithuania	2025
Description Supply and installation of n. 1 Gaseous Iodine Monitor RTS RIM-01 Single cartridge – Manual changing. The RTS RIM-01 is stationary equipment designed to operate continuously without interruption to detect gaseous iodine activity in air.		
Client	Location	Date
IAEA	Sri Lanka	2025
Description Supply and installation of the RTS RGMS (Remote Gamma Monitoring Station). The System includes one (1) Network Monitoring Centre NMC, with associated one (1) IT package for provision of data to IRMIS, and a set of six (6) Remote Gamma Monitoring Stations RGMSs (5 fixed and 1 mobile). The System is based on the RTS RGMS (Remote Gamma Monitoring Station), a completely automatic station, power supplied by solar cell and backup battery, which performs the measurement cycles with a configurable frequency, remotely controlled by telemetry systems. The main component of the system is the RTS ENVIRAD-01, a compact and smart microprocessor-based radiation monitoring unit (smart probe) for gamma dose-rate.		

Client	Location	Date
SAMINA/MURAD Ltd for Government of Pakistan	Pakistan	2024
Description		
Supply of n.1 RTS RAM-TF (for Stack Monitoring) with spares and consumables; supply of n. 1 Alpha Beta Particulate Monitors RTS CCAM – TFSTT Trolley mounted with Shrouded Probe -Single Nozzle- for Stack Sampling; supply of several spare parts and consumables.		
Client	Location	Date
RIVM, National Institute for Public Health and the Environment	The Netherlands	2022 - ongoing
Description		
Supply and installation of radioactivity monitors for the Dutch National Radioactivity Monitoring Network (NMR): supply and installation of n. 9 outdoor $\alpha\beta\gamma$ Aerosol Monitoring stations RAM-TFCB also including Front-End Central Control & Management Station. The Dutch National Radioactivity Monitoring Network (NMR), an early warning network of the Dutch Government, is aimed to provide timely warnings of large-scale radiological incidents. The network can geographically map dispersion of radioactivity during and following radiological incidents as well as the natural background radiation levels. The NMR consists of ambient dose equivalent rate monitors, monitors that measure total artificial alpha and total artificial beta activity concentration in aerosols, and a nuclide specific aerosol monitor.		
Client	Location	Date
RIVM, National Institute for Public Health and the Environment	The Netherlands	2022 - ongoing
Description		
Supply and installation of n.1 Reference station with the nuclide specific aerosol monitor RAM-TFGE, also including Front-End Central Control & Management Station.		
Client	Location	Date
EPA, Environmental Protection Agency	Ireland	2020-2024
Description		
Supply and maintenance of aerosol monitors and aerosol samplers for radioactive aerosols for National Radiation Monitoring Network of Ireland: supply and installation of n. 12 Outdoor Monitoring Stations with RTS Alpha/Beta Aerosol Monitors RAM-TFD tape filter automatic changing for long time autonomy with prompt and delayed measurements and n. 12 Outdoor Sampling Stations with RTS Smart Continuous Aerosol Samplers SCAS-12, including Front-End Central HW/SW.		

Client	Location	Date
SOGIN	Saluggia site, Italy	2017-2021/2023-ongoing
Description		
Supply and installation of the RTS RGMS (Remote Gamma Monitoring Station). The System includes one (1) Network Monitoring Centre NMC, with associated one (1) IT package for provision of data to IRMIS, and a set of six (6) Remote Gamma Monitoring Stations RGMSs (5 fixed and 1 mobile).		
Client	Location	Date
IAEA	Malta	2023
Description		
Supply and installation of n. 1 Gaseous Iodine Monitor RTS RIM-01 Single cartridge – Manual changing. The RTS RIM-01 is stationary equipment designed to operate continuously without interruption to detect gaseous iodine activity in air.		
Client	Location	Date
ENVIRONMENT & RESOURCES AUTHORITY (ERA)	Malta	2023
Description		
Upgrade and maintenance of n. 3 Radiation Monitoring Stations. Since 2013, RTS has provided of Environmental Radiation Monitoring Network composed by 3 Multifunction Air Monitoring Stations (3 x Outdoor Shelters, 3 x RAM-31NA Alpha/Beta/Gamma Aerosol Monitors, 3 x Gamma Smart Probes SMU-01) and a HW/SW Control & Coordination Centre. Since then RTS has provided and is providing spare parts and continuous assistance for repair as well as for periodical calibration.		
Client	Location	Date
ANSALDO NUCLEARE for SOGIN (ITEA)	Sogin-ITEA, Latina, Italy	2020-2023
Description		
Supply of n.2 Air Contamination Monitoring Systems, both including Central Front-End HW/SW, one including six CCAM-TF Long Autonomy Alpha/Beta Aerosol Monitors tape filter automatic changing for rooms and pipes, the other including one RAM-TF Alpha/Beta Long Autonomy Aerosol Monitor tape filter automatic changing with stack sampling complete management for stack monitoring as per the applicable IEC/ISO/ANSI standards.		
Client	Location	Date
SOGIN	Italy	2021-ongoing (to 2025)
Description		
Maintenance continuous contract of all RTS Monitoring Systems installed at Trino NPP, Garigliano NPP and Latina NPP, all in decommissioning. This includes 21 CCAM-TFSTT Long Autonomy Alpha/Beta Aerosol Monitors tape filter automatic changing, delivered in 2018, apart other Air, Gamma & Safety Monitoring Systems delivered previously. Four preventive interventions per year plus calls.RE		

Client	Location	Date
JOINT RESEARCH CENTRE ISPRA, EU	Ispira, Italy	2020-2021
Description		
Supply of 9 High Sensitive TGM-D10L Continuous Tritium Monitors (ETM). The ETM measure low range (tritium) beta emitters in gaseous effluent in nuclear installations and determine the volumetric activity of tritium and noble gas. ETM monitor continuously without using sampling filters to retain tritium. ETM have a filter placed in a filter-holder at the sampling circuit inlet to remove any dust and aerosols from the air. In order to maintain the specified performance of the equipment, such a filter shall not trap, or even temporarily, retain tritium. ETM is able to detect tritium in air achieving concentration levels of, at least, 37 kBq/m³.		
Client	Location	Date
Samina/Murad Ltd for Government of Pakistan	Pakistan	2013-2023
Description		
Supply of n.4 RMS Stack Systems each including Alpha/Beta/Gamma RAM-01NA Aerosol Monitor and RGM-02LIR Gas Monitor, with Central Front-End SW packages and spares. Supply of n.1 Stack Monitor based on Alpha/Beta Aerosol Monitor RAM-TF. Supply of n. 10 cart mounted Alpha/Beta Aerosol Monitors CCAM-TF. Supply of n.11 wall mounted Alpha/Beta Aerosol Monitors CCAM-12. Supply of several spare parts sets.		
Client	Location	Date
STENGG	Singapore	2022-2023
Description		
Supply of several ENVIRAD-01W ENVIRONMENTAL GAMMA COMPLETE PROBE spare parts for RMS System in Singapore.		
Client	Location	Date
IAEA	Republic of Moldova	2022
Description		
Supply and installation of n. 3 Mobile alpha/beta Air Monitor RTS CCAM-TFSTT with n. 2 Central SW RTS CAM-UCG Package. The RTS CAM family includes very compact and smart Radioactive Aerosol Monitoring Instruments dedicated to sample and measure the radioactive contamination in air, due to alpha and beta (or beta-gamma) emitters, and to provide gamma dose-rate as adding information.		
Client	Location	Date
IAEA	Tajikistan	2021
Description		
Supply and installation of a Low background Alpha/Beta Counting System with automatic sample changer FMD-50. The FMD-50 are instrumental systems suited for the measurement of radioactive contamination sampled by means of circular filters and/or similar samples/planchets, as the ones, as example, used for wipe test purposes.		

Client	Location	Date
IAEA	IRAN	2020
Description		
Supply of Transportable Air Monitor for Iran 1 CCAM-TFSTT Unit - standard configuration and consumables. The RTS CCAM-TF Air Monitor trolley mounting (STT is the code indicating 'mounted on mobile cart or trolley, all included'–TF is the code for 'tape filter') belongs to the CAM/CCAM family of RTS air monitors, based on advanced and well tested technologies. All of them are equipped with the RTS MAB-03C monitoring processor allowing MCA analysis (2048 channels conversion, 1024 channels used for the alpha/beta applications) and separated-head configuration. They may be used as mobile or fixed standalone instruments as well as peripheral stations in complex monitoring networks. The proprietary algorithm for the air contamination measurement and background (Gamma dose rate and Radon/Thoron progenies) compensation is included into all units, with or without the RTS alpha collimator which enhances the peak resolution.		
Client	Location	Date
IAEA	ARMENIA	2020
Description		
Supply and installation of Radiation Monitoring System – Gas Monitor unit and accessories consisting of : n. 1 Alpha & Beta Aerosol Monitor RAM-TF with Tape filter, n.1 Alpha and Bet Aerosol Monitor RIM-01, n.1 Radioactive Inert Gases Monitoring module RGM-02LIR. The Stack Radiation Monitoring System (RTS SRMS) has the aim to continuously measure the radioactive releases from stacks or ducts. It is constituted by a sampling line coming from the effluent stack/duct to the measuring station which provides the following functions: alpha/beta particulate monitoring, stack/duct flow-rate (and temperature) monitoring/acquisition, sampling flow-rate regulation, gamma particulate monitoring, iodine monitoring, noble gas monitoring, gamma dose-rate monitoring (included as standard with the alpha/beta monitor), adding/optional functions (as example: back-up grab sampling).		
Client	Location	Date
GA & Hi-Q for USEPA Environmental Protection Agency	USA	2006/2018
Description		
Supply of Air Radiation Monitoring Network (RADNET) comprising n. 180 peripheral outdoor stations for beta and gamma monitoring and central stations with encrypted redundant communication all over US territories. RTS equipment and software expressly developed and realized for USEPA (this tender has been awarded thanks to two prototypes presented by RTS to the customer) constitutes the 'core' of the system: Dual Detector DDA-02 for alpha/beta and gamma, Local Processing Unit LPU-02, Local & Central Operating Software Packages, redundant communication. All stations also include weather substation and service UPS. An impressive number of spare parts has been supplied in the period Local assistance has been provided directly and through the partner Hi-Q for years. Now the maintenance is provided by a local 'small' company that has been properly trained. It is to be noted that the DDA-02 for alpha/beta/gamma and the LPU-02 are both components also used in the RAM Family of RTS Aerosol Monitors.		

Client	Location	Date
WEST SYSTEMS for NATO (Sardinia, Italy)	Sardinia, Italy	2009/2014-2017/2022
Description		
Supply of Outdoor Stations for Aerosol Monitoring and Gamma Monitoring including Outdoor Shelters (6), RAM-31 for alpha/beta (6), ENVIRAD-01 for gamma dose-rate (6), Weather substations (6), UPS and redundant communication. RTS provides maintenance to all monitoring systems.		
Client	Location	Date
ENVIRONMENT & RESOURCES AUTHORITY (ERA)	Malta	2013-2014
Description		
Supply of Environmental Radiation Monitoring Network composed by 3 Multifunction Air Monitoring Stations (3 x Outdoor Shelters, 3 x RAM-31NA Alpha/Beta/Gamma Aerosol Monitors, 3 x Gamma Smart Probes SMU-01) and a HW/SW Control & Coordination Centre. RTS has provided and is actually (2021/2025) providing spare parts and continuous assistance for repair as well as for periodical calibration.		
Client	Location	Date
ANSALDO NUCLEARE/SOGIN/Nucleco	Latina/Caorso/Saluggia Plants, Italy	2006-2016
Description		
Supply of RMS Custom Systems for Gamma Monitoring (LCU/HNQ/GAMSI) and Aerosol Monitoring (RAM/CAM) with 3 types of Central Software Packages; Gamma Monitoring (LCU/HNQ) and Aerosol Monitoring for indoor and stack (RAM/CCAM); Gamma Monitoring (LCU/HNQ) with a Central Control and Management station; Several Trolley mounted CCAM Aerosol Monitors and two Central Control and Management Front-End units.		
Client	Location	Date
Government of India, BARC	India	2005 – 2022
Description		
Supply of Radiation Monitoring Systems including 58 Alpha/Beta Aerosol Monitors (CCAM types), 2 Iodine Monitors (RIM/CCIM) and related central control software packages.		
Client	Location	Date
STE/DSTA, Government of Singapore	Singapore	2002-2003, 2008-2013, 2015-2018
Description		
Supply of n.2 RMS System both comprising 5 Peripheral Stations, the last System in 2015/17. Each System with 5 x Outdoor Shelters, Alpha/Beta & Gamma Aerosol Monitors (3 x RAM-31NA, 2 x RAM-31GE with electrically cooled HPGe), Iodine Monitors (5 x RIM-14), Gamma Dose-rate Monitoring Smart Probes (5 x ENVIRAD-01), Weather substations (5), High power UPS (5), several Underwater Monitors (3 x RWM-01/UWM, plus 6 adding units). All expressly set-up for the Military Harbour of Singapore. Several spare parts sets and remote assistance have been provided in the period 2016-2022.		