

CBRN eSCuDo

An integral System for CBRN Communication and Detection

The eSCuDo system is an integrated detection, identification and monitoring solution for chemical, biological and radiological/ nuclear agents specifically designed for mobile units, such as armoured vehicles, naval craft, or for critical infrastructure. eSCuDo comprises a series of modular, state-of-the-art CBRN sensors enabled to be set up at different monitoring points. The system is low-cost, easy to install, and yields wireless communication through a central control unit.

eSCuDo consists of three sensor units: one radiological, one biological and one chemical as well as a communication unit, which links them up via central command.

The radiological unit (RN) has a Nal (TI) scintillator radiation detector fitted along with a Geiger-Müller (GM) counter that is able to detect ionising radiation at high and low levels within the same unit, at 0.5-10000 mSv/h and 0.001-0.5 mSv/h respectively.

The biological unit (B) performs a continuous process of sampling and monitoring of biological particles in the atmosphere through elastic scattering and ultraviolet laser induced flourescence. This unit can warn of sudden spikes

in bacteria levels, indicating the possible presence of harmful agents.

The chemical unit (C) contains a series of chemical sensors with complementary detection and identification technologies, i.e. ion mobility spectrometers, photo ionisation detectors and electrochemical sensors. These modules are able to alert about the presence of a wide range of harmful industrial chemical agents, e.g., ammonia, chlorine, hydrogen cyanide, and warfare agents like Sarin, VX gas, or mustard gas.

All sensor units have 8 hours of autonomous battery life.

The communication system, designed specifically for eSCuDo, is set up to transmit data gathered by the sensor units wirelessly to the central command. All data is encrypted before being sent, ensuring integrity and confidentiality.

eSCuDo includes a laptop computer that acts as central command, data processing and storage unit. Information is displayed on a highly intuitive dashboard, enabling easy interaction with the user.

