Mobile CRN Laboratory

We created a cutting-edge system for detecting and studying CWA, TIC, VOC, radiation, and nuclear threats. The laboratory features several complementing systems from early warning, to detection, idetification and analysis of any chemical and radiological threats.



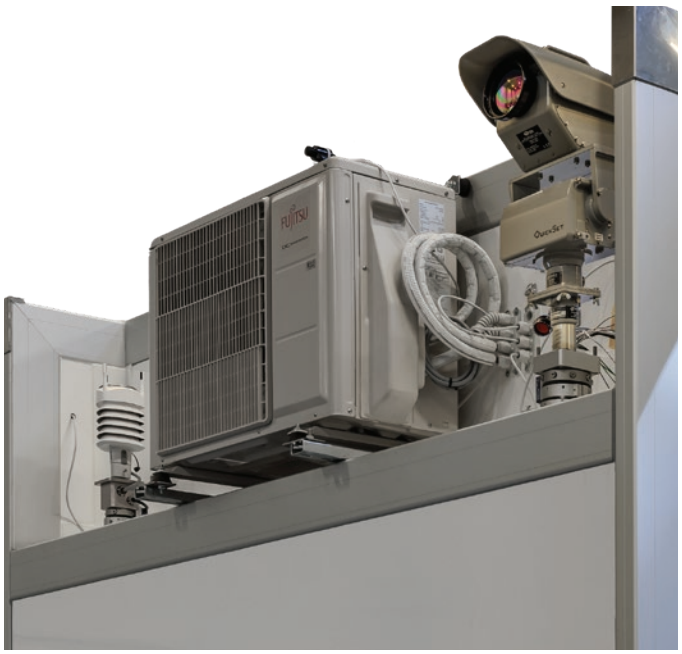
Detection and analytical capability on the move

The laboratory is built inside a container and is divided into five sections, all monitored for contamination and kept pressurised and sealed for safety.

Each part of the laboratory is meticulously designed for its purpose and equipped with state of the art equipment to maximise performance.

The container also features external systems for weather for local wind and air quality reporting as well as a stand-off chemical detector for detecting hazards from distances. Both are installed on retractable mast systems which can be controlled from inside the laboratory container and connected to the Observis ObSAS control center system for real time data streaming.

The ObSAS software displays all device readings and alarms in real time including units working from outside the laboratory.





Safety measures

All sections are continuously monitored for chemical and radiological threats with fixed detectors. If a hazard is detected, the ObSAS Control System activates CBRN filtration and extra air supply to ensure crew safety. The health of the CBRN filtration and capacity of air supply is constantly monitored.

Internal air is circulated and purified to ensure maximal operation time even with full filtration and pressurisation on.

High quality detection and analytical capability

The laboratory is equipped with a variety of technologies for detecting CWA, TIC; TIM and VOC threats as well as any discrepancies in radiation levels

For first alarm system there is a portable flame spectrometer which can be carried out on missions. The field units also have a handheld IMS device with detection and classification features, radiation detectors, multi-gas detectors and a device for local wind and atmoshpere data with them which are all wirelessly connected to the ObSAS control center via the ObSAS LINK mobile application.

Every area of the laboratory has a fixed IMS system and radiation detector monitoring the inside atmoshpere.

Laboratory area has a glove box and fume hood custom made for the laboratory equipped with a fast idenficiation system for collected chemical samples.

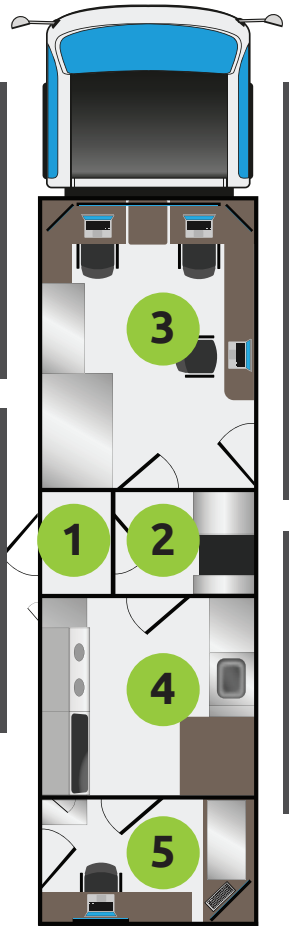
Analytical space is equipped with a full scale GC/MS system to further analyze and classify the samples.

All detection and identification equipment are integrated or work as an external part of the ObSAS vehicle system software. If a customer later wishes to expand the device inventory or switch detectors the new equipment can be easily integrated to the system.

Laboratory layout

1 & 2 Entry and Technical Room:
Crew enters through a decontamination room that uses pressurized air to remove particles from clothing. The technical space houses electronics, servers, and other equipment to run the container.

3 Control Center:
Space for personnel to work and store necessary gear. A large monitor shows the ObSAS interface and vehicle features. Each crew member has a workstation. There's a separate entrance/exit to isolate the control center crew when needed.



4 Laboratory:
Samples are received through a pressurized hatch from the field. All work is done inside fume hoods and gloveboxes to prevent contact with the inside air. The gloveboxes have a chemical analyzer installed inside them to inspect and identify samples quickly before transferring them to the analytical space

5 Analytical Space:
Samples ready for analysis move to this area through another pressurized hatch. It features a large GC/MS system and workstation for accurate analysis by up to three people at once.

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