



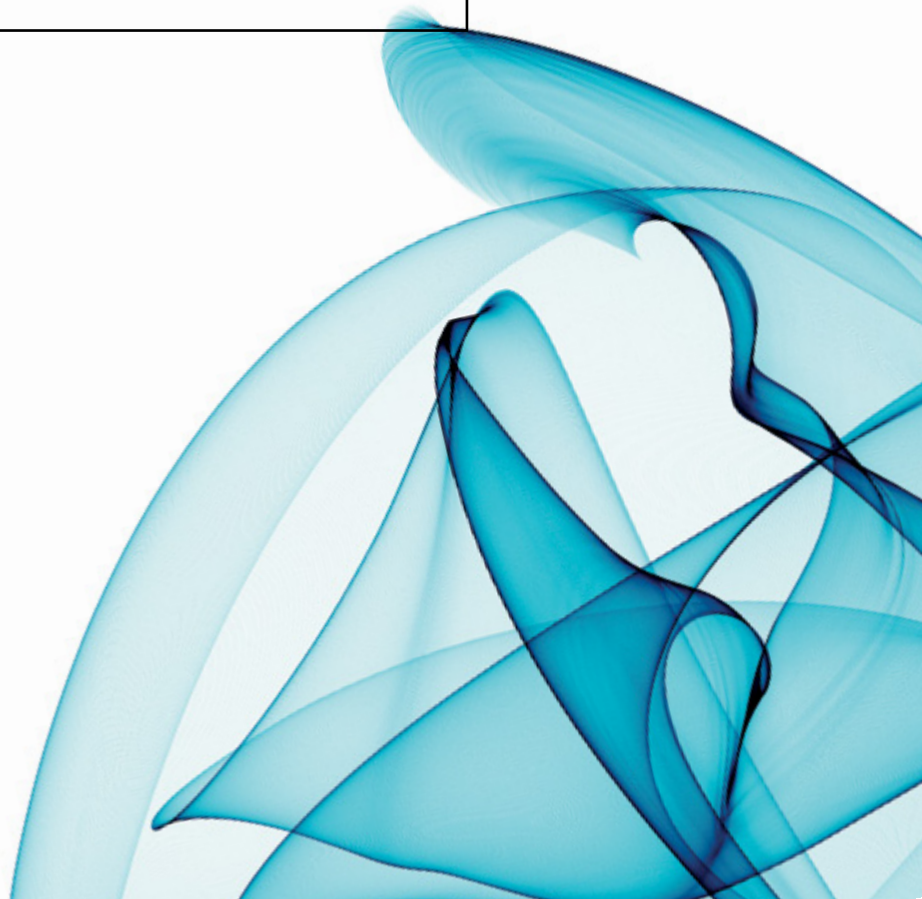
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DEFENCE AND SECURITY

CBRN LABORATORIES

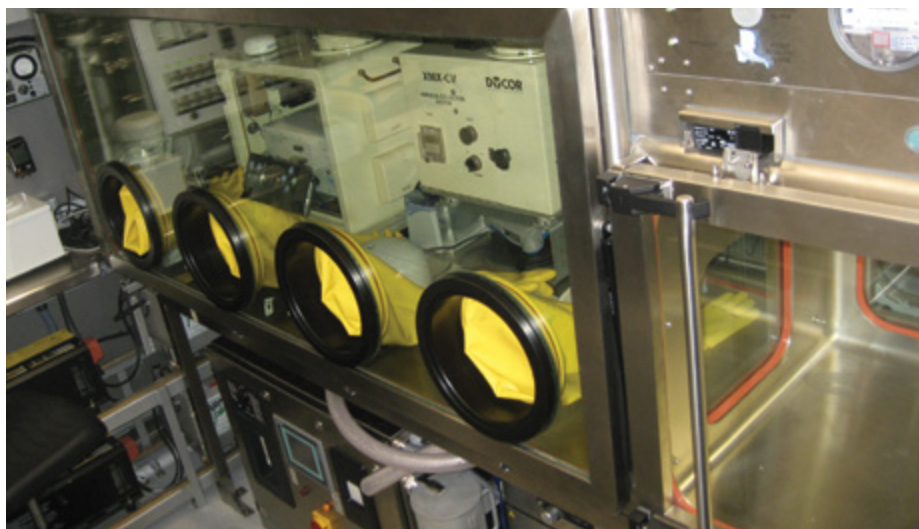
Complete solutions for defense and protection
from CBRN threats

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CBRN LABORATORIES

Our laboratories are available in different configurations depending on the requirements in terms of mobility and deployment time



- 1 **Detection**
- 2 **Identification**
- 3 **Protection**
- 4 **Decontamination**
- 5 **C4I Systems**

INTRODUCTION

The ever-present threat of chemical, biological, radiological and nuclear (CBRN) attacks is now greater than ever and are likely to remain the weapon of choice for adversaries in asymmetric warfare. In addition to terrorist and military CBRN threats, industrial activity often entails dangers for nearby population centers.

An adequate response to a CBRN attack or incident must ensure that threats can be rapidly detected, the nature and scale of the threat can be identified, and appropriate protection and decontamination measures can be taken.

Indra Laboratories are suitable for onsite and remote analysis of chemical, nuclear-radiological and biological compounds, ensuring that CBRN threats can be rapidly and accurately identified and dealt with. They allow operators to analyze and identify toxic and dangerous substances in the field, and can be used in military conflict as well as in the event of a terrorist attack or industrial incident.

CONSTRUCTIVE CONFIGURATIONS

Depending on the concept of use established by the users and the requirements in terms of mobility, several configurations are available:

- **Mobile configuration.** This configuration can be based both on board of a shelterized solution or a commercial Van/Truck. This solution is suitable for applications demanding an immediate response along widely changing sites. With this configuration a confirmed identification level could be reached.
- **Modular configuration.** This solution is pivoting on a semi-stationary approach. The modular configuration is composed of several fielded containers linked to each other through tunnel tents. This configuration has been devised to achieve a truly fast complete deployment on site allowing to reach an unambiguous identification level.
- **Stationary configuration.** This configuration is based on a stationary (fixed) facility fitted with a wider range of analytical equipment to allow an unambiguous identification level. This configuration is the most appropriate to set up national reference R&T Centers.

MOBILE CBRN LABORATORIES

CONCEPT OF USE

These kind of Mobile Laboratories are suitable for onsite analysis of chemical, nuclear-radiological and biological threats, ensuring a quick and accurate identification.

They allow operators to analyze and identify toxic and dangerous substances in the field, and can be used in military conflict as well as in the event of a terrorist attack or industrial incident. It can be deployed and it can work as a stand alone system giving a confirmative result in less than 6 hours from sample reception.

The laboratory can be tailored to customer requirements, and can be presented in a single container covering all threats or one container for each type of threat (C, B, and R/N).



- 1 Entrance, decontamination and bathroom area
- 2 Laboratory area (Identification and Communication)
- 3 Technical area

SYSTEM DESCRIPTION

The mobile CBRN laboratory consists of the following key elements:

- 20" ISO standard container with optional ballistic protection
- Compliant with STANAG 4632, AEP-10 and AEP-49
- Able to operate from -32°C up to +55°C.
- CBRN filtration system
- Isolator with SAS door for samples entrance and manipulation
- Autonomous generator working continuously up to 72 h.
- Back-up battery system / UPS system
- Water supply system
- Decontamination system for laboratory material and personnel
- Analytical instruments
- Data handling, local communication devices, and security systems
- Certified Laboratory as a whole system
- Able to work in movement
- Three operators workspace
- Enough consumables, reagents and tools for working continuously up to 72h



MAIN TECHNOLOGIES

Chemical Technologies

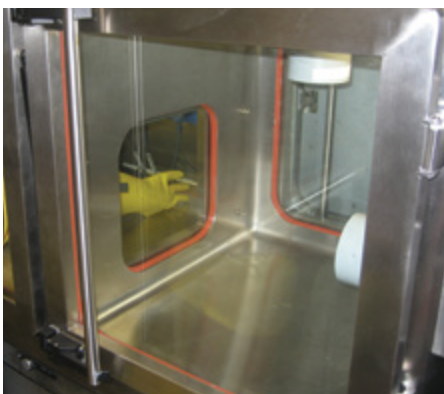
- GC - MS
- Infrared spectrometry
- X ray fluorescence spectrometry
- UV/Visible
- Selective ion technology
- Standard laboratory equipment

Biological Technologies

- Real Time-PCR
- Immunological assays
- Standard laboratory equipment

Nuclear - radiological Technologies

- Alpha and Beta total activity
- Gamma spectroscopy
- Alfa spectrometry
- Portable radiological detectors
- Liquid Scintillation
- Personal dosimeters
- Standard laboratory equipment



The equipment listed enables the identification of volatile and non-volatile toxic and dangerous chemicals, including mid-spectrum chemicals from environmental samples and interaction products, radiological materials, and biological agents such as bacteria, viruses and toxins, always accordance with international regulations

MODULAR CBRN LABORATORIES

CONCEPT OF USE

These solutions are suitable for being deployed in conflict areas (military use) with recurrent CBRN attacks when an early confirmed identification is requested. This facility is fully deployable at site in 1 week. (requested emplacement inside hosting camp or protected area).



SYSTEM DESCRIPTION

- Housing based on ISO 20 feet containers (sea/ air/terrestrial freight)
- Built-in CBRN air filtration to guarantee a clean and safe working environment and prevent any leaks to or from the surrounding environment.
- Integrated HVAC cooling / heating
- Integrated power conversion system (UK/USA/EU) and Back-up power supply (UPS)
- Water handling systems:
 - Clean water (cool/ hot)
 - Waste water management system (Hazardous, Grey & Black)

- Analytical instruments and sampling tools (Latest state of the art for Biological, Chemical and Radiological devices)
- Personnel safety means (EPIs, etc.)
- Incorporates an Integral Security System (Control access, Firing System)
- Specific area for preserving & storage samples (tempered, vented, etc.)
- Includes an administrative office space and sanitation facility
- Integral Data Management throughout the lab by the Lab Information Management System (LICU®)
- Full IT network connectivity (Int. LAN/ Ext. Secure WANs)

WORKING AREAS

Functional areas and Triage

Chemical, Biological, Radiological analytical equipment
Handling cabinets
First inspection tooling

SEA Secure Storage Area

Tracking and labeling system
Vented cabinet for explosive storage

Command Area

8 Working posts connected to LANs

Platform management & Control

LICU® management module
Fire fighting control application
Security control application
Power conversion & backup
Secure/ Non-secure IT Network (LAN)

Sanitation Area

Water management (clean/ waste)



- 1 Triage (DMAT Entrance)
- 2 Biological Analysis
- 3 Radiological Analysis
- 4 Chemical Analysis
- 5 Secure Storage Area (SEA)
- 6 Command Area
- 7 Platform Management & Control
- 8 Sanitation Area



STATIONARY CBRN LABORATORIES



CONCEPT OF USE

Stationary laboratories are suitable for hosting a wide range of analytical equipment using different technologies to provide an unambiguous identification capability. Besides that a stationary facility allows to manage a considerable amount of samples and evidences as well as to reach the highest CBRN security levels (up to BSL-3). The above makes this type of facility the most appropriate to act as Reference Laboratory Centers.

SYSTEM DESCRIPTION

The different analytical equipments specified in these laboratories will be selected following the customer's necessities and requirements.

Our Stationary CBRN laboratories include the general common systems for this type of laboratories as well as the following specific key elements:

- Several anterooms (separate restricted traffic flow)
- Self closing and inter-locking logic for rooms
- Class II or III (with SAS door) Biosafety Cabinet (BSC)
- Multiple cascade differential pressure between rooms
- Supply and exhaust air is HEPA filtered
- Organic Self-decontamination system by Hydrogen peroxide
- Contaminated materials are decontaminated by SAS and/or double door autoclave
- Thermal-chemical decontamination of effluents prior final discharge
- Fulfillment of the most restrictive regulations (OMS Directive & Canadian normative for Biosafety Lab guidelines)
- Long term power autonomy (Power generators and back up UPS system)
- Secure and Non-Secure IT network (LAN)
- Massive storage evidence Area

This type of laboratory is Certified as a whole system (facility, equipment and personnel).





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