

# Subway CBRN Monitoring



Public transportation systems represent valuable infrastructure of economic importance. They connect wide urban areas, have multiple access points, and gather masses of people in enclosed spaces. These characteristics make subways attractive targets for CBRN terrorism that aims to disrupt services and cause public panic, casualties, and economic loss. As a part of comprehensive concept of operations, reliable CBRN monitoring gives early warning and enables protection and further countermeasures to mitigate the hazardous effects.

## Key Benefits

Scalable, modular, and redundant system solution designed with proven CBRN expertise

Own innovations in detection, data processing, and system software, making 3rd party systems easy to integrate

Ease of use and low life-cycle costs

Full life-time support



Air Flow Measurement  
**Air Flow Sensor**



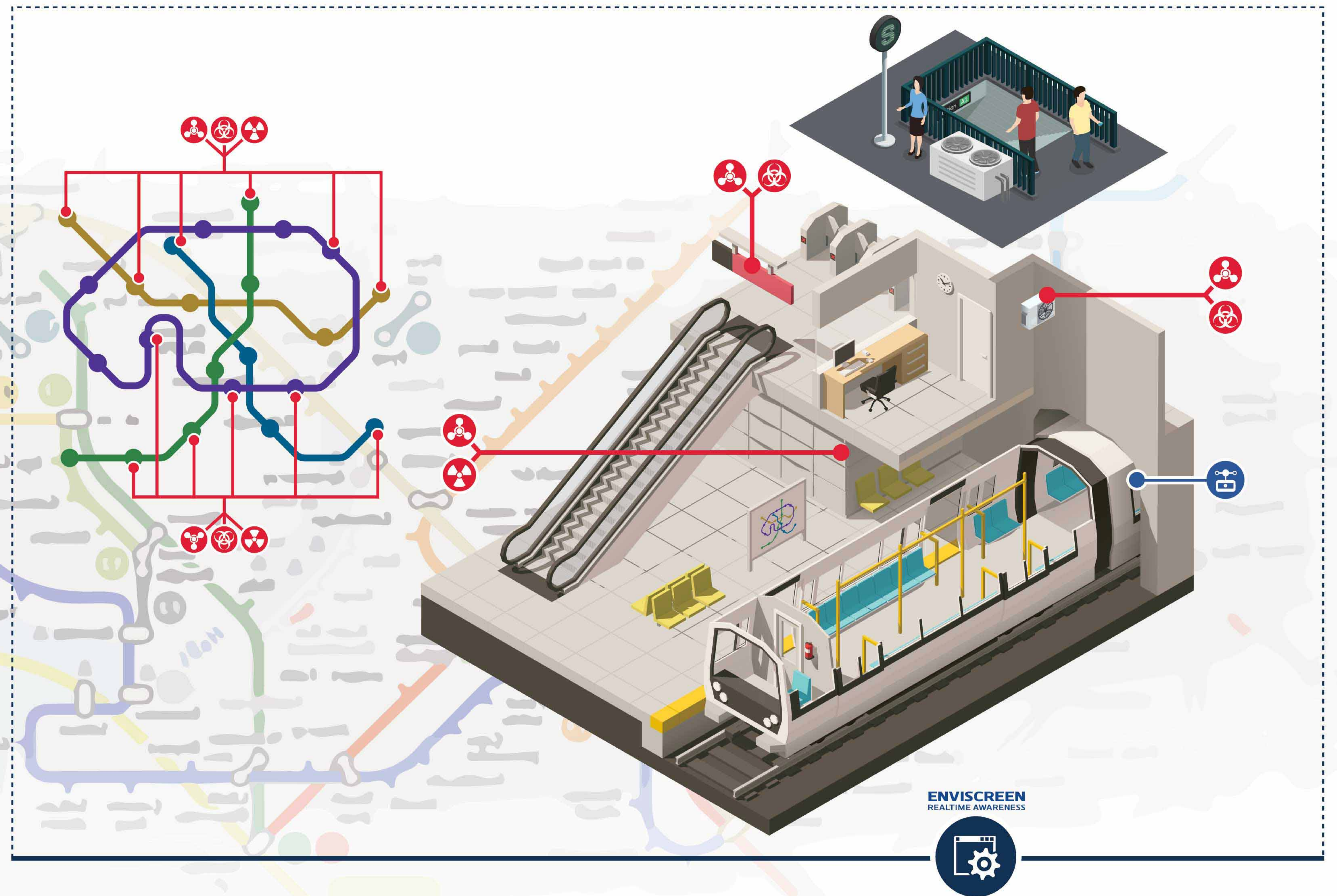
Chemical Detection  
**ChemProFXi**



Biological Detection  
**ENVI BioScout**



Radio Nuclear Detection  
**RanidProFX**



**ENVISCREEN**  
REALTIME AWARENESS



Subways are a challenging environment to protect due to several variables involved in dispersion of CBRN contamination in the system.

It is not only the locations of CBRN releases, but the movement of trains and people, operation of HVAC systems, weather conditions at passenger entrances, ventilation shafts, and tunnel entrances that affect the airflow and mixing of dangerous chemicals, and other airborne contaminants. Underground systems and parts of

may differ in design, size, age, and technology available, meaning there is no single solution for protecting these facilities. Preparedness for CBRN incidents requires comprehensive local concepts for operations that are based on risk assessments, evaluating threat scenarios, and vulnerabilities. It means understanding and determination of systems and processes for detection, warning, mitigation and operational, collaborative responses among the related organizations.

**Risk Assessment**

**System Design**

**Implementation & Training**

**Lifespan Support**

## Environics

is a Finnish company with **30 years** of experience from improving CBRN safety around the world with its in-house technologies and system solutions. Different safeguarding organizations in 50 countries, from civil defence and homeland security to the military, have already chosen us as their partner in CBRN threat detection.

# Concept on Subway CBRN Protection

The requirements for CBRN monitoring systems are formed by local risk assessments and concept of operations. In general, CBRN detectors are installed in several critical areas in the subway systems. The optimal placement and amount of sensors can be determined by site surveys and by simulating dispersions of the hazardous agents in a target and studying the dispersal patterns and detector capabilities. Test and evaluation periods provide understanding of the limits of detection and assist in creating targeted responses to

different threats. EnviScreen CBRN Monitoring Systems integrate a variety of instrumentation from CBRN detectors to camera surveillance. Real-time situational awareness and guidance is provided for the operators through the proprietary EnviScreen Operix system software in the control centers - measurement and event data can be displayed in overall and station specified views. The EnviScreen Systems integrate easily to 3rd party systems like facility management systems to control vital operations.



## Partner for the whole System Lifespan

Environics provides full life-cycle support to its solutions and always optimizes its systems to meet local environmental conditions. We are present from the first step of identifying customer needs to designing and delivering the system, all the way to full customer support and maintenance services. In addition to producing world-class CBRN systems, we also emphasize and provide user training.



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