Ambiente
Environment

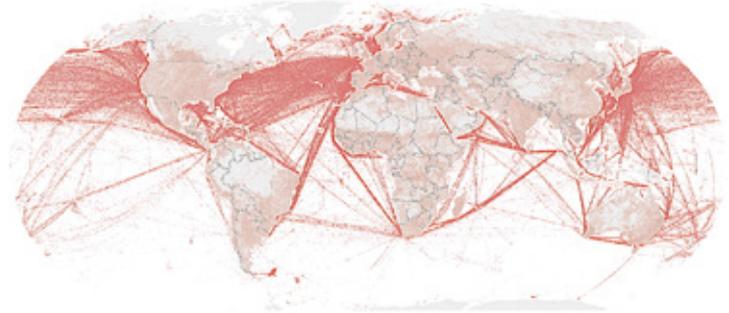DECON/DEMIL

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Main research topics

• WMD proliferation and non-state
terrorist or criminal use of CBRNE,
environmental Remediation and Recovery

Container Transport System Security CBRN Decontamination

Containers are the basic unit for delivering goods through any international market. Every year million containers reach the seaports around the world and million of them travel along the road, on land. The movement of containers brings a risk of illicit trafficking, as well as CBRN threats. Sealed containers pose a growing risk of prohibited or hazardous material to be shipped worldwide.

The impact of CBRN attacks perpetrated by terrorist to containerized transport reaching economic, psychological and personal targets can be devastating for the maritime and land containers transportation sector.

The security problems in the chain container transport are mainly related to internal freight integrators, carriers operating in the starting and ending links of the chain. Whereas a CBRN incident occurs (accidentally or intentionally), effective response and recovery plans must be activated. An action for the resolution of incidents will be taken, depending on the location of the incident itself, either public or shipping/logistics company; the essential matter for the transport companies is to be aware of the problems associated with the incident response and recovery.

The preparedness phase takes place before an incident; planning, tools and procedures will help to take action faster, thus providing a more efficient in response.

To contain a CBRN incident, the first consideration should be to reduce the impact of contamination above all. Decontamination efforts are essential to mitigate the effects of hazards in order to enhance effectiveness of post-event restoration. Typically, decontamination should be performed as soon as possible to maximize effectiveness.

The areas exposed to CBRN agents should be considered contaminated, with a presumption of validity until the contrary is demonstrated. This is why the decontamination and clean-up must be carried out in order to reduce or avoid exposure to CBRN materials for first responders and staff, thus avoiding the risk of an uncontrolled spread.

Historically, decontamination has been viewed and used as a defensive measure, normally as part of military force protection on the battlefield, but most experts agree that future threats are more likely related to urban or semi-urban environment and to critical infrastructures. An agile adversary also may seek to develop complex CBRN incidents that may involve a combined chemical and biological or radiological release, or any combination thereof.

Speed of response and multifunctional solutions are an intrinsic part of a new philosophy to help overcoming these challenges. This has a huge impact on training, operational procedures, logistics and supporting capability management and relating cost benefits, but above all it brings a real improvement at the operational level. If a respirator and suit can protect the operator against multiple types of hazards, why should decontamination be any different? R&D can work to refine processes and develop creative solutions for those who need them. Saving of life is the priority and decontamination must be timely provided.

With the development and the advances in decontamination technology, decontamination operations are refined to be used for the reduction of threat vulnerability. Decontamination systems and methods have increased their importance compared to few decades ago.

The protection of critical infrastructures, such as logistics and transportation systems, harbours, airports, industrial and commercial facilities, etc., is based, among the possible measures to prevent, mitigate and respond effectively to a potential CBRN incidents, on the development of adequate capabilities and their timely and flexible deployment and performance.