Hyperspectral imaging IED and explosives reconnaissance system

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Objective

The objective with the HYPERION project is to develop and test a system concept for the on-site forensic analysis of an explosion. The forensic tools and procedures used will in majority be at safe stand-off detection distances. This will also include tools for identification of unexploded IEDs. The on-site data provided by the HYPERION system will be the type and amount of explosive used in the attack, the point of origin of the detonation and an assessment of the type of IED. The crime scene will be mapped using 3D-registration and in the map the positions that have been analysed in detail will be marked. The forensic tools and data will be of a quality that can be used as evidence in a court of law. The quality assured data will be on-site electronically documented and sent to the police instantaneously at the crime scene.

At a crime scene, due to the detonation of an IED, police, ambulance, fire brigade and the crime scene unit are parties that must be present.

The first measures taken at a crime scene due to a detonation of an IED are the initiation of rescue actions. In parallel to the rescue actions the HYPERION system can be used. This includes the collection of forensic data and risk assessment of suspected unexploded IEDs using stand-off detection of the post-blast scene. After the rescue operations, all of the forensic tools of HYPERION can be used in order to investigate the type and amount of explosive used in the attack. In combination with the 3D registration of the crime scene a reverse-event analysis can be performed giving the size of the charge and point of origin for the detonation.

After the crime scene area has been secured, the laboratory forensic sampling and analysis can be started. New and validated sampling protocols will be developed. The crime scene is finally left to the rescue leader for clearing up the area.

The consortium consists of four research organisations, three industries, two SMEs and three end users.

Cordis website	https://cordis.europa.eu/project/id/284585