



# KR14 – Tactical Decision Support System

## MODULE

- First Responders' Support System (FRSS)

## SCOPE

The TDSS is part of the response and mitigation tools **against physical threats**, supporting the decision making at the 7SHIELD core and also the FRs team in the field. It interacts with ENGAGE, which belongs to the monitoring, early warning and situational picture tools. This tool supplies data to the 7SHIELD core system to enrich the situational picture and also giving feedback and relevant information to the FRs teams through a Mission Management application. Within the scope of the TDSS, a team leader will have a specific terminal to produce and receive decision support information, which in turn helps the team to take efficient decisions and increase awareness of the tactical situation. Each team member will function as a sensor and at the same time will receive tactical information.

## CONTRIBUTION

INOV, **designed and developed** the Tactical Decision Support System. INOV participates in technological development and innovation processes in close cooperation with governments, enterprises and universities.

STWS designed and developed Engage CSIM Edition which is communicating with the Tactical Decision Support System, providing the users with the **capability to manage and send missions to this component**. At the same time, Engage CSIM presents information regarding the FRs' vital sensors, location, missions status & possible disaster impact (provided by the TDSS).



Response



Mitigation



Crisis Management

## PARTNERS



INOV Portugal

Inov Inesc Inovacao – **Instituto De Novas Tecnologias (INOV)** is a private non-profit research institute and has strong technical expertise in Telecommunication Equipment, Access Networks, Mobile Communication Systems, Sensor Networks, Network Architectures and Protocols, Navigation Systems, Remote Monitoring and Surveillance Systems, Security and Defence Systems, Control and Electronics Development.

INOV has consolidated knowledge and proven installed solutions for security, monitoring and surveillance, with clients and partners in Portugal, EUA, Angola, Turkey, Brazil, Greece, Italy. INOV has extensive experience in National and European R&D projects with over 70 participations in the last 10 years.



SATWAYS Greece

**Satways LTD (STWS)**'s mission is the development of solutions for Security and Public Safety applications, providing effective decision support, simplifying operations, providing a Common Operational Picture (COP) and collaboration tools across organizations, collecting and disseminating data in the field, and coordinating response units and system users.

All the modules developed in the frame of 7SHIELD have been designed with the consultancy of identified external stakeholders, first responders and following the **requirements** provided by the partners working in the space sector acting as Pilots, who provided the Critical Infrastructures for **testing and demonstration**.

## PURPOSE

A Tactical Decision Support System (TDSS), is a complex system, which is based on a pro-security vest, embedded with **wearables sensors**, communication transceivers and **Universal Tactical Display (UTD)** for action team members. The TDSS is developed using commercial-off-the-shelf **(COTS) components** as much as possible, with a dedicated terminal to connect sensors with local **IoT communications**.

The use of a TDSS First Responder (FR) teams enables teams to be self-aware and have more information to support effective decision making in the field even without an infrastructure or Command and Control center(C2) support. Some of the most obvious gains of using this solution are: response effectiveness, improved communications, safety of FRs, increased success rate, team performance, response time.



## STAKEHOLDERS

Given the system's characteristics, namely in terms of reconfiguration flexibility, cost and ease of use, its application areas are countless, and it will undoubtedly find application in the most diverse sectors such as **Police, Security and surveillance, Fire Fighters departments, Search and Rescue teams, Civil protection**.

## CONTACT

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## TECHNOLOGY

The TDSS is a system to operate **in post-crisis management scenarios** in response to and mitigation of crisis and often operates in extreme conditions, both from the point of view of the mission to be performed and the conditions on the ground. The few solutions available in the market to address this type of situations, are mostly military solutions and therefore proprietary, technologies which are of limited/restricted access, most of the times with prohibitive acquisition and maintenance costs.

The TDSS was developed with a focus on integration of **low-cost COTS components**, easily obtained, where the big challenge was to integrate them in a common platform, with a **flexible architecture**, so the system has plenty capability to evolve and be quickly reconfigured for new application scenarios.

## FUTURE IMPROVEMENTS

The potential improvement vectors of the system may include a **greater miniaturisation** and **robustness** of its components, the monitoring of emerging sensor technologies with a view to their integration and availability in the system's portfolio, thus widening the range of options offered to those potentially interested in using the TDSS.

Another vector to explore concerns usability and wearability, seeking and offering as options other ways of transporting the system by its users that are not restricted only to the tactical vest in which the equipment that constitutes the system are mounted and explore other alternatives for the universal tactical display and like with the sensor, widening the range of option for the UTD and thus making it more fit for each type of usage/application.

