



DAVS

A system for detection and containment of chemical threats using advanced AI-empowered models, real-time meteorological forecasting and quadcopter-mounted Hazmat sensors

The DAVS Research & Innovation project will research, innovate, push technology barriers, and demonstrate use of artificial intelligence (AI), advanced atmospheric transport and diffusion models, real-time meteorological forecasting and innovative quadcopter-mounted sensors, to build a command, control, communications and computers (C4) system for dissipating chemical threats.

The project will validate its integrated prototype system (TRL 5-6) in a large-scale field-trial setup. Commercial exploitation of the DAVS components and system for various dispersing chemical threats, from accidents to malicious actions, will be clearly identified.

The project will develop a C4 system with advanced AI-empowered mathematical models for forecasting and analysis of threats, in real-time, during an event. The system will include full integration of HazMat/CBRN sensors on quadcopters, micro-meteorological measurement system and augmented reality (AR) display for presenting first-responders with a real-time image of the scene.

Product innovations for first responders, industry and public bodies will be incorporated, and benefits demonstrated. DAVS will incorporate communications among the DAVS command and control centre system, first-responder field teams, relevant local and national authorities.

Integration of the system, compatibility with common setups and procedures, effective usage protocols, functional performance, and system durability under stressful real-life conditions will be successfully demonstrated. To ensure reliability and enable extended usage periods, the system will include fail-safe measures and the quadcopter-mounted device will be self-powered, applying cutting-edge research on lightweight airborne materials and batteries.

The project partners include HazMat first-responder end-user organisations, technology developers, academic / research institutes and a system integrator.

Coordinator

Y.L. Systems Analysis (Israel) <https://yl-systems.com/>

- **Relevant Specialization:** CBRN command and control expertise; Large-scale real-life field-trial setup experience
- **Major roles in the project:** Coordinator; Command and control development, System integration; Field-trial leader; Participate in development of AI modules as tool for professional guidance; Participate in integration, demonstration, validation, dissemination and planning of exploitation.
- **Key Contributor/s:**
 - **Dr. Yoram Luninski**, a subject-matter expert with ~40 years' experience in design and development of CBRN command & control systems and architectures
 - **Dr. Doron Finkel**, an expert in CBRN sensing
 - **Nadav Luninski**, an expert in relevant regulatory and international treaty matters
 - **Itsik Arbel**, an experienced H-2020 coordinator with ~40 years' experience in management and engineering

Further information

Itsik Arbel Tel: +972-54-303-7262 e-mail: itsika@gmail.com	Nadav Luninsky Tel: +972 (73) 740-9240 e-mail: nadav@yl-systems.com
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