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Humanitarian Demining toolbox
TriDem high mobility robot
Introducing the toolbox

TIRAMISU (Toolbox Implementation for Removal of Anti-Personnel Mines, Submunitions and UXOs) will develop a set of advanced tools for Humanitarian Demining. These tools will be designed and tested on the field with the help of International demining experts. The toolbox will benefit all the Humanitarian Demining operators allowing for a faster, safer and more precise decontamination of Mine- and UXO-polluted area.

What’s in the toolbox

1) Advanced General Survey tools to help setting priorities among the affected areas, using remote sensing, contextual data, expert knowledge and GIS analysis.
2) Non-Technical Survey tools to support Suspected Hazardous Area (SHA) assessment and delimitation using remote sensing, contextual data, expert knowledge and GIS analysis.
3) Technical Survey tools to detect indicators of probable presence of landmines/UXOs.
4) Stand-off Detection tools to detect mines, submunitions or explosives at close range with remotely controlled Micro (Unmanned) Aerial Vehicles (MAV/UAV), remote controlled ground platforms (UGV) or flying biosensors (honeybees).
5) Ground-based Close-in Detection tools, such as advanced metal detectors, ground penetrating radars and novel chemical sensors.
6) Disposal of ERW ( Explosive Remnants of War) tools to protect deminers or vehicles against explosions.
7) Mine Risk Education tools to assist in Mine Risk Education activities.
8) Training tools aiming at developing capacity building and enabling the user uptake of the tools developed.
9) Mine Action mission management tools to improve planning and execution of Mine Action missions.
10) Standards this module includes the current and in-progress or proposed CEN Workshop Agreements (CWA).

Stand-off Post-Clearance Quality Assurance: TriDem

The Royal Military Academy of Belgium, coordinator of the TIRAMISU project, in close cooperation with the University of IASI, is developing a wheeled mobile robot for Humanitarian Mine Clearance. This light-weight modular Remote-controlled sensor carrier (metal detector or chemical sensor) is used for AP detection or post-clearance quality assurance. The TriDem robotic system is composed of the following elements: a central vehicle, visual tracking and positioning systems and a control station with the Human Machine Interface.

TriDem Characteristics

The TriDem robot communicates with a computer, where some parameters may be monitored, thanks to a LabView graphical interface.

Three steered standard wheels allow an omni-directional mobility. It can: perform a linear motion in any direction; follow circular trajectories in different configuration or turn around its center.

It has a great potential for humanitarian demining application due to its simplicity, modular architecture, low cost and its capability to work in more than one operational mode.

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