



## INTELLIGENT GROUND SYSTEMS



### UNMANNED GROUND VEHICLE SAFE OPERATIONS (SafeOps)

The U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) Intelligent Ground Systems SafeOps team's mission is to:

- Directly address risks associated with employing unmanned ground vehicles (UGVs) in dynamic environments.
- Identify additional risk areas associated with operating UGVs around traffic, pedestrians and dismounted forces.
- Utilize Future Combat Systems (FCS)-relevant sensors to minimize transition risk.

**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**



## Application Areas

SafeOps will utilize UGV-mounted, FCS-relevant sensors to detect, track and predict the path of dynamic mounted and dismounted obstacles. If the UGV's and the obstacle's paths are likely to intersect, the UGV will dynamically replan the path in time to avoid a collision.

## Current Capabilities

- Dynamic path planning for UGVs.
- Real-time processing for SafeOps behavioral algorithms.
- Validated simulation model for predicting system behavior in new environments.
- Path detection, tracking and prediction of dynamic mounted and dismounted obstacles with FCS representative technologies.

## Future Capabilities

- Traverse safely through complex environments with dynamic obstacles.
- Ensure the safety of dismounted forces working in close proximity to UGVs.
- Maintain a safe travel distance and a traffic lane along improved roads.
- Increase the level of autonomy to minimize warfighter interventions.
- Transition SafeOps technologies to the Unmanned Systems for Reconnaissance in Complex Environments (SOURCE) Army Technology Objective and FCS UGVs.

