



## INTELLIGENT GROUND SYSTEMS



### Following, Awareness, Safe-ops and Tracking Through Intelligent Ground Systems (FAST IGS)

The TARDEC Intelligent Ground Systems FAST IGS team **MISSION** is to:

- Enhance and integrate 360-degree spatial awareness using ultra wide band (UWB) for dismounted following and mounted autonomous tactical vehicles.
- Mature existing UWB tracking technology.
- Update the R-Gator™ vehicle to Aware 2.0 software and add control capability for UWB dismount following.

**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**



## Capabilities

### Spatial Awareness

- At any given time any entity will know the relative spatial location of any other entity within range of the system.

### Dismounted Operations

- Dismounted following without the use of a global positioning system.
- Through operator exchange Soldiers traveling with FAST IGS can exchange who is operating the robot through the use of a tablet each Soldier carries.
- Safe operation of the Dismount Platform when the platform is operating in an autonomous mode.
  - Line-of-Sight (LOS) following – the system controls the dismount platform to maintain a specific distance from the operator while both leader and follower maintain LOS.

### Mounted Operations

- Safe operations ensures that the robot will avoid static and dynamic objects.

### Emphasis on In-house Development

- Electrical fabrication
- Mechanical work
- Software development
- Simulation.

### Integration With Dismount Controller (Tablet PC)

- Blue Force Tracking
- Soldier usage
- Close-ups of screens.

## Future Capabilities

- Increase following behaviors and user interface capabilities based on Solider feedback from mission needs.
- Implement FAST IGS on a High Mobility Multipurpose Wheeled Vehicle for urban operations.
- Develop a portable system.
- Ensure cross-vehicle readiness.

## Rapidly Moving Technology to the Soldier

- Eight months from conception to Fort Benning experiment with Soldier Battle Lab.
- Project feeds Near Autonomous Unmanned System Army Technology Objective – we supply 360-degree situational awareness for its tactical behaviors portion.

