


This section features two images. The top image shows a large, red and white robotic platform being hoisted by cables against a reddish, hazy background. The bottom image shows a tan, four-wheeled robotic vehicle with a sensor dome on top, set against a reddish, rocky terrain.

Large-Scale Robotics Technologies supporting Maneuver Forces

This section features two images. The top image shows a tracked, autonomous vehicle with a sensor dome, set against a blue, hazy background. The bottom image shows a soldier in a blue uniform and helmet, wearing a backpack with a large fan, holding a rifle, set against a blue, hazy background.

Autonomous Mobility and Dexterous Manipulation for Man-Portable Systems

This section features two images. The top image shows a soldier in a green uniform and helmet, holding a rifle, set against a green, hazy background. The bottom image shows a soldier in a green uniform and helmet, holding a rifle, set against a green, hazy background, with several small, black, insect-like robots on the ground.

Micro-Autonomous System Technologies breeding a new class of Soldier assets

Providing the Soldier with superior situational awareness



Robotics is a Dual-Use Technology



- **Military convoys**
- **Automated highways**



- **Reconnaissance in buildings**
- **Search & rescue in confined space**

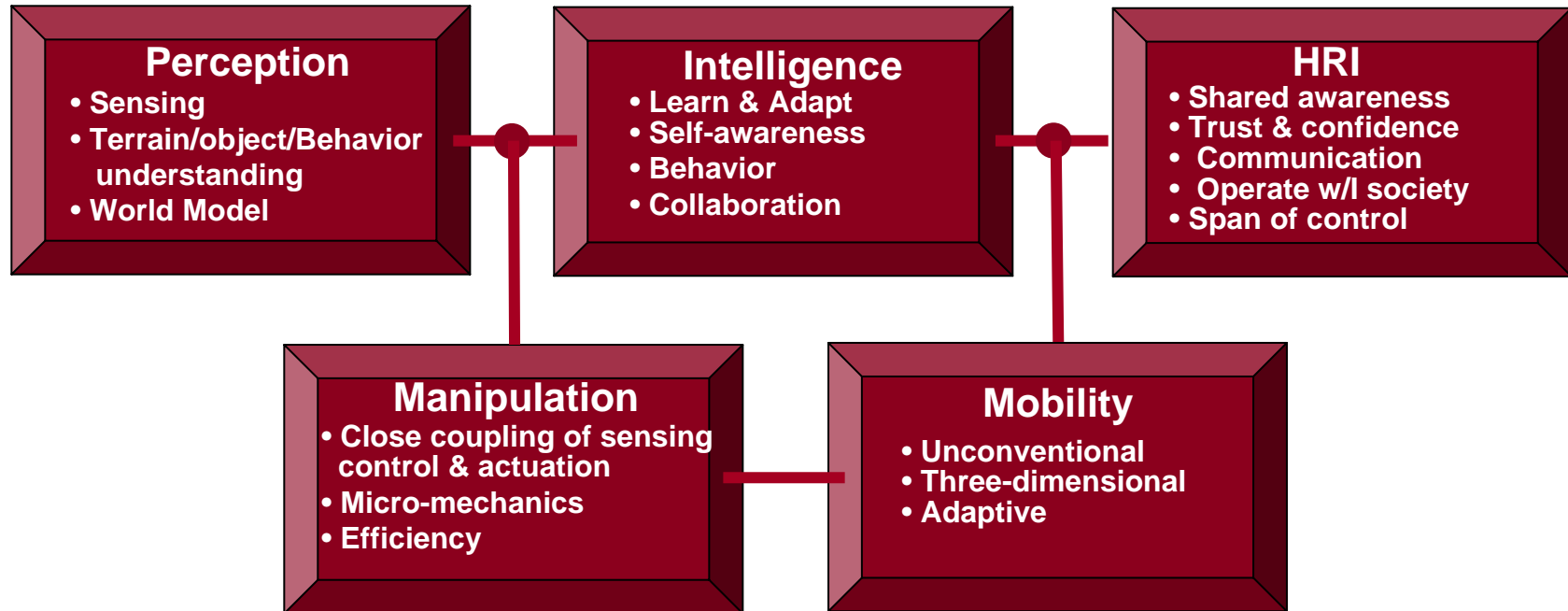
- **Automating Rear-area logistics bases**
- **Flexible automation of factories**



- **EOD robots**
- **Robots for first responders**



Key technologies required to achieve our vision are:



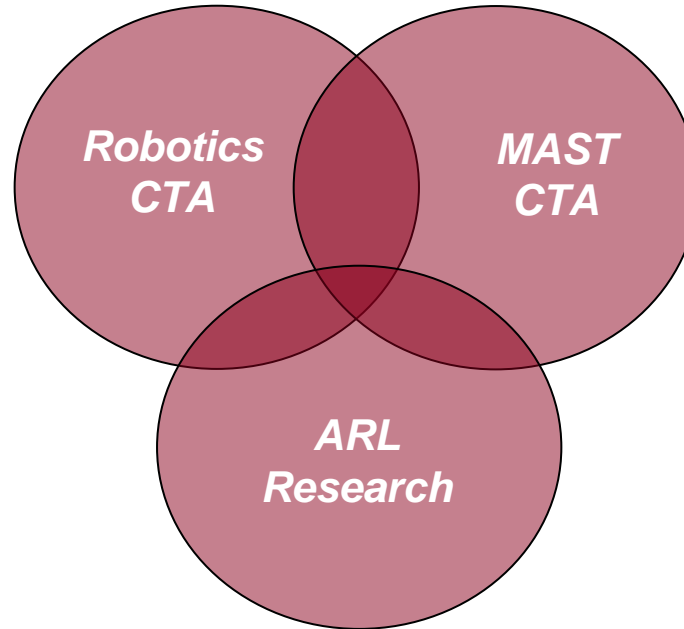
These will be supplemented by a number of supporting technologies with wider applicability

- Micro-electronics
- Power/Energy sources/storage/transmission, propulsion
- Image understanding/ATR
- Network Communication
- Materials & Structures
- Cognitive science, Psychology, Biology



ARL sponsors wide-ranging collaborative research

- Perception
- Intelligence
- Human-Robot Interaction
- Dexterous manipulation & unique mobility



- Microsystem mechanics
- Microelectronics
- Processing for autonomous operation
- Integration
- Power



- Army Research Office
- Computer & Information Sciences Dir.
- Human Research and Engineering Dir.
- Sensors and Electronic Device Dir.
- Vehicle Technology Dir.

