

At a Glance

What it is

- The Office of Naval Research (ONR) Maneuver Thrust identifies and develops technologies to increase the warfighting capabilities and effectiveness of the Marine Corps Air Ground Task Force and other naval ground forces with emphasis on developing autonomous capabilities, enhancing mobility and improving survivability for ground vehicles in decentralized, asymmetric or conventional warfare scenarios.

How it works

- The Maneuver Thrust is separated into three technology investment areas: autonomy, mobility and survivability.

What it will achieve

- Adaptable, trusted, low-cost perception and machine intelligence capabilities that enable fully autonomous tactical-vehicle maneuver
- Maximized mobility, stability, payload, fuel efficiency and exportable power capabilities for naval ground vehicles and small boats
- Optimized platform and crew survivability across the battlefield balanced with reduced weight and cost

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The Maneuver Thrust encompasses all science and technology (S&T) areas supporting naval ground and amphibious maneuver. These investments, ranging from basic and applied research to advanced technology development, help fill Navy and Marine Corps gaps in capability cited in each organization's strategic plan.

The primary customers are the U.S. Marine Corps, Naval Expeditionary Combat Command and Naval Special Warfare Command. Recent transitions include: Medium Tactical Vehicle Replacement and High Mobility Multipurpose Wheeled Vehicle On Board Vehicle Power; Combat and Tactical Vehicle Technology Demonstrator for the Joint Light Tactical Vehicle; and Gunslinger Hostile Fire Detection and Counterfire System. Program Executive Officer Land Systems and the Marine Corps Systems Command are the primary materiel developers for transition.

The thrust's willful intent highlights the specific capabilities, S&T challenges and solutions of interest as highlighted in the section below.

Research Challenges and Opportunities:

- **Autonomy**
 - ◆ Affordable sensor suites and enhanced perception
 - ◆ Intelligence enablers and architectures allowing near- and far-field planning
 - ◆ Human-machine collaboration with unmanned ground vehicle adapting to operator
 - ◆ Systems engineering for robust, open source, low-cost kit capabilities
- **Mobility**
 - ◆ Reduced fuel consumption of the legacy and future fleets
 - ◆ Increased vehicle agility
 - ◆ High density prime power ratio improvements
 - ◆ Onboard exportable electric power
- **Survivability**
 - ◆ Integrated signature management for ground systems
 - ◆ Enhanced, affordable lightweight armor materials
 - ◆ Crew protection technologies to mitigate injuries
 - ◆ Active and reactive protection systems to defeat rocket-propelled grenades/air-to-ground missiles