

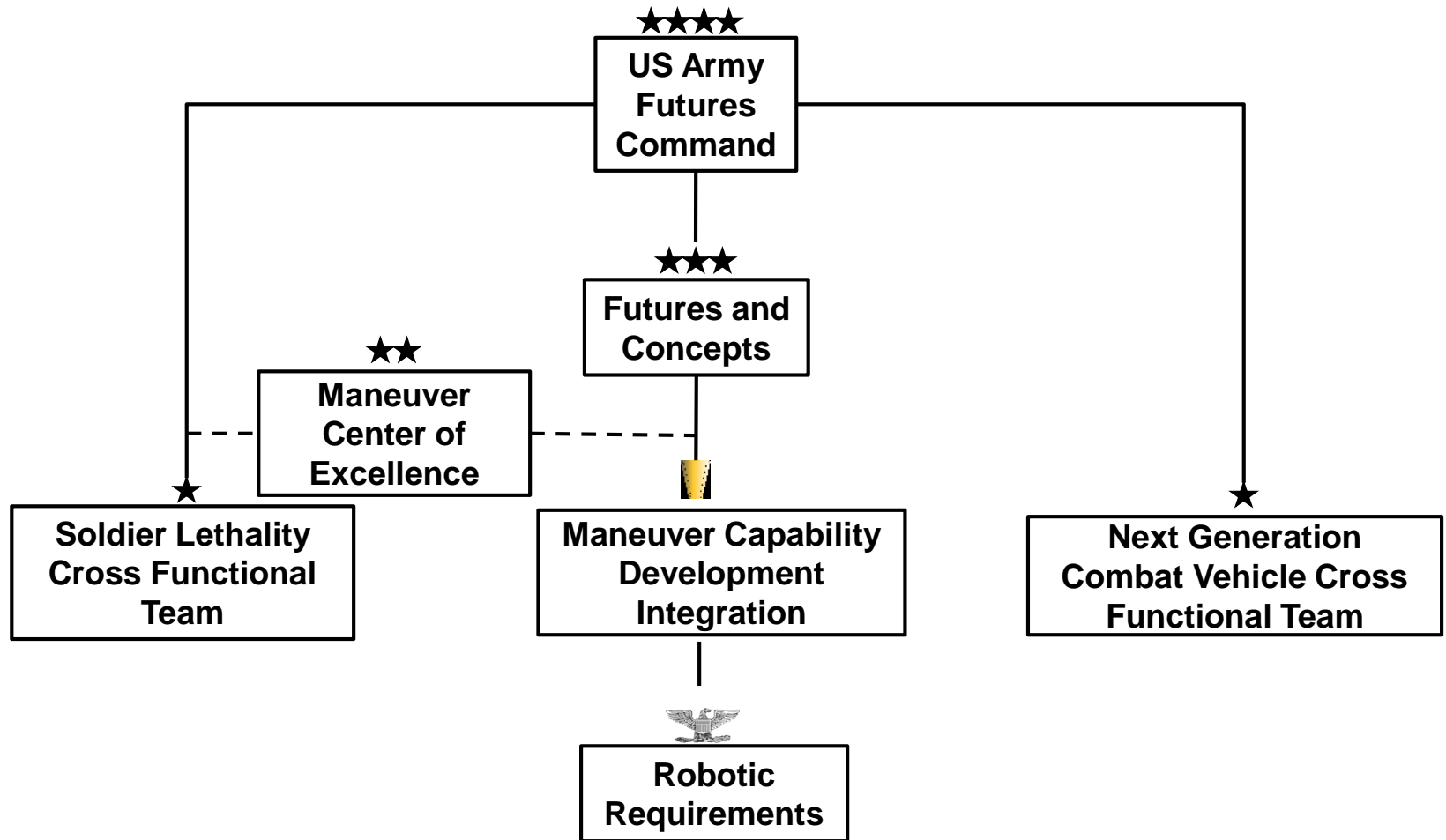
Army Robotics at the Tactical Edge



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Chain of Command



Army Robotics Outlook

- FY21 is an exciting time to be in the business of Army Robotics
 - Approved Requirements for Small Air and Ground Robots
 - Increased Funding of Robotics Research and Acquisition
 - Significant Senior Leader Support of Robotics and Artificial Intelligence (AI)
 - Approval of the Army's Small Unmanned Aircraft System (sUAS) Strategy
- Robotic Requirements Mission - Manage Army Futures Command level activities to include requirements generation, force modernization, industry engagement, and concept development for robotics, autonomy, and AI
- Vision - Enable Army Formations to increase their lethality, endurance, persistence, protection, and depth



Robotics Programs, Initiatives, and Strategy

Robotics Capability Development

Ground Systems

- Small Multipurpose Equipment Transport (SMET) and Modular Mission Payloads (MMP)
- Common Robotic System – Individual (CRS(I))
- Movement and Maneuver Exoskeleton (M2E)

Air Systems

- Small Unmanned Aircraft System (sUAS) Strategy – approved September 2020
- Soldier Borne Sensor (SBS) - Squad
- Short Range Recon (SRR) - Platoon
- Medium Range Recon (MRR) - Company
- Long Range Recon (LRR) – Battalion
- Tethered UAS (Te-UAS)

Overarching Systems

- Universal Robotic Controller (URC)
- Counter sUAS (C-sUAS)
- AI for Small Unit Maneuver (AISUM) in Multi Domain Operations (MDO)

Robotics Strategy

Near-term / Fielded Force (2020-2024):

- 10x Robotic and AI Infantry Platoon Tech Demo
- Insert Soldier Operated Robots: SBS; SMET; CRS(I); SRR
- Mature capabilities for LRR; URC; C-sUAS; EPAS; FITS; AISUM
- Support NGCV CFT's Robotic Combat Vehicle (RCV)
- Support Soldier Lethality CFT with Robotics and AI
- Drive RDTE for Network; Autonomy; AI; Energy

Mid-term / MDO Capable Force (2024-2028):

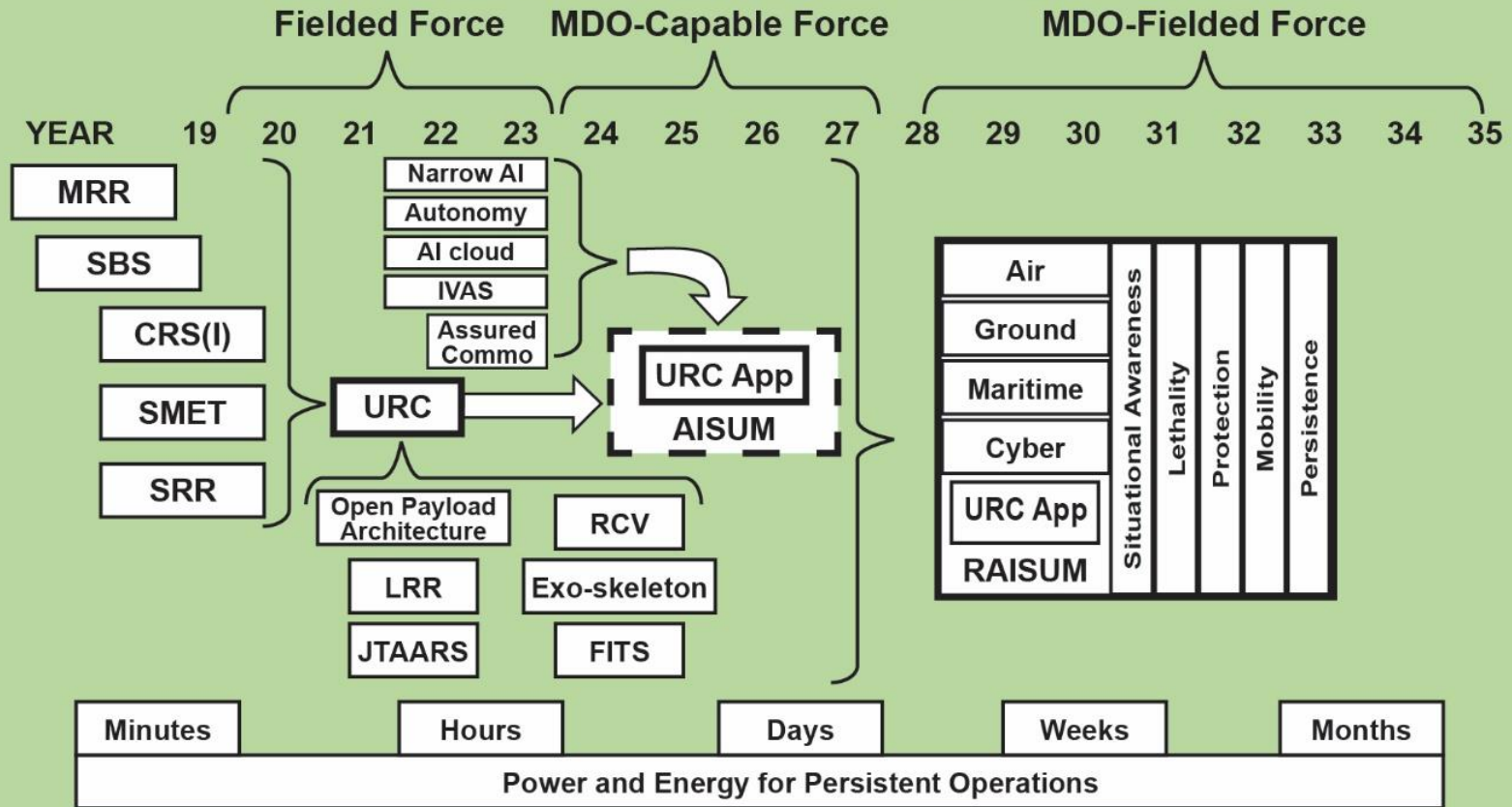
- More effective maneuver formations (>x)
- Field interim robotic capabilities supported by AISUM
- Develop and field small, light, inexpensive, expendable Robotic systems to enhance maneuver formations
- Field RCV Light/Medium

Far-term / MDO Ready Force (2028-2035):

- Significantly more effective maneuver formations (>10x)
- Field integrated persistent air and ground robotic capabilities controlled by AISUM and commanded by Soldiers



Maneuver Robotic Strategy



AI Cloud – Artificial Intelligence at the small-unit level
 AISUM – Artificial Intelligence for Small-unit Maneuver
 CRS(I) – Common Robotic System – Individual
 FITS – Family of Integrated Tactical Sensors
 IVAS – Integrated Visual Augmentation System
 JTAARS – Joint Tactical Autonomous Aerial Resupply System (UAS)
 LRR – Long-range Reconnaissance (SUAS)
 MDO – Multi-domain Operations
 MMP – Modular Mission Payload

MRR – Medium-range Reconnaissance Small Unmanned Aircraft System (SUAS)
 RAISUM – Robotics and Artificial Intelligence for Small-unit Maneuver
 RCV – Robotic Combat Vehicle
 SBS – Soldier Borne Sensor (SUAS)
 SMET – Small-multipurpose Equipment Transport
 SRR – Short-range Reconnaissance (SUAS)
 URC – Universal Robotic Controller
 URC APP – Universal Robotic Controller Application

10X Robotic and AI Equipped Dismounted Infantry Platoon

Unclassified

- Demonstration of a robotically equipped dismounted Infantry Platoon that is measurably more effective with a goal of 10 times more effective. Infantry Platoons will integrate - through Manned-Unmanned Teaming (MUMT) – prototype robotic ground, air, water, and virtual systems that increase the Infantry Platoon's lethality, mobility, protection, situational awareness, endurance, persistence, and depth.
- Demonstration of prototype Artificial Intelligence (AI) tools that show a path to enabling Platoon leaders and Soldiers to observe, orient, decide, and act (OODA loop) faster than their current capability with a goal of 10 times faster. AI tools will take disparate streams of information from organic robotic and Soldier worn sensors with higher echelon mission command, intelligence, and sensors. AI tools will then weave those streams of information into a coherent picture and provide that picture to Soldiers. Soldiers will then use AI tools to command effectors on robotic systems.

Georgia Tech Research Institute (GTRI) is the Technology Integrator