Sustainment (5)
4. Silent Tactical Energy Enhanced Dismount (Hendrick Motorsports)
5. iConnect Vehicle Seat Charger (NSRDEC)
6. Jenny 600S Direct Methanol Fuel Cell (SFC Energy)
7. Emily 3000 Direct Methanol Fuel Cell (SFC Energy)

Mobility (1)
9. Slash (CERDEC)

Lethality (20)
11. Hybrid Advanced Multi-Rotor (Advanced Aircraft Company)
13. 40mm Aerial Flash Bang (Combined Systems Inc.)
14. MK18 Carbine (Daniel Defense)
15. R400S Mk2 D Remote Weapons Station (EOS Defense Systems USA)
16. 9x19mm 103gr Enhanced Ball Round (Federal Cartridge Company)
17. RAMP (Gear 4 Grunts)
18. 5.56mm Ball Reduced Range Ammunition (General Dynamics OTS Canada)
19. 7.62mm Ball RRA (General Dynamics OTS Canada)
20. Ground Warfare Acoustical Combat System (GWACS)
21. InstantEye Mk2 GEN4-E1 Short Range Recon (InstantEye Robotics)
22. InstantEye Mk2 GEN 5-D1 Soldier Borne Sensor (InstantEye Robotics)
23. McQ OWL Intelligent Camera (McQ Inc)
24. McQ RANGER Sensor (McQ Inc)
25. vWatch Tactical Video Kit (McQ Inc)
26. MR2300 High-Intensity IR & Visible Illuminator (Megaray)
27. M72E8 & E10 FFE Fire From Enclosure (Nammo Talley)
28. M72E11 PD/AB Fragmenting Warhead (Nammo Talley)
29. MCX PDW (SIG SAUER)
30. Penguin C Group 2 UAS (UAV Factory USA)

Survivability (3)
32. Tarian Textile RPG Armor System (AmSafe Bridport)
33. MIKE Butt-Pack (ECBC)
34. eWindow 360 Situational Awareness (Sekai Electronics)

Mission Command (16)
36. Leader/Soldier Effects Tool Suite (ARDEC)
37. LETS Unmanned System Technology (ARDEC)
38. APEX 4-Port Hub System SUAS MCS (Black Diamond)
39. Soundwave Push to Talk (Black Diamond)
40. SCABARD (CERDEC)
41. RONIN Platform (Coolfire Solutions)
42. Flexible Light Emitting Diode (NSRDEC)
43. Expeditionary Joint Battle Command-Platform (PM JBC-P)
44. RA4000 (Racal Acoustics)
45. RA7000 (Racal Acoustics)
46. Integrated Digital Vision System (Rockwell Collins Optronics)
47. RolaTube 30ft Mast/RolaCage (Shakespeare Military Antennas)
48. RolaTube RAMM Antenna Mast System (Shakespeare Military Antennas)
49. RolaTube Squad Antenna (Shakespeare Military Antennas)
50. Rolatube TM IAM Extender (Shakespeare Military Antennas)
51. “Radio-Over-Satellite” SlingShot (Spectra-Group)

Soldier Performance (6)
53. ARES (ARL)
54. Low-cost mobile AR/VR training sys for IED Detectors (NSRDEC/ARL)
55. Electronic Blanks (Federal Resources)
56. Krossbow Tourniquet (N1oi)
57. Golden Hour Ambulatory Rescue Pack (NSRDEC)
58. Heat Ailment Recovery Pack (NSRDEC)
SUSTAINMENT
Capabilities for Mounted and Dismounted Small Tactical Units
Silent Tactical Energy Enhanced Dismount (STEED)

**CAPABILITY DESCRIPTION**

- Innovative solution to lighten the load for dismounted troops, enhancing close combat lethality
- Powered cart: all-terrain, water fording, zero turning radius, tactically silent, zero emissions
- Moves twice its own weight across 20 miles
- Small tactical unit dominance: 1) increased load capacity 2) reduced fatigue and stress 3) longer endurance and range 4) heavier weapons → lethality 5) expanded PPE → survivability 6) improved self-sustainment 8) subterranean mobility 9) rapid casualty evacuation 10) carry robotics 11) silent last mile

**CAPABILITY RELEVANCE**

- Troop overburden is a well documented issue with direct consequences on small unit dominance
- Mission packages are constrained by limitations of dismounted weight carriage → capability gaps
- Musculoskeletal injuries: 1/3 of non-combat medevacs from Afghanistan and Iraq 2004-07, 50% of veteran disabilities 2001-10, 10x increase 2003-09
- “Wheeled load carts” cited and recommended:
  1. 2017 Army Techniques Publication – Foot Marches, ATP 3-21.18 (FM 21-18)
  2. 2016 AMEDD, Injury Prevention,12-008-0416

**CONTACT INFORMATION**

Hendrick Motorsports
4400 Papa Joe Hendrick Blvd.
Charlotte, NC 28262
www.hendrickmotorsports.com

POC: Rhegan Flanagan
Tel: (704) 455-0633
Email: rflanagan@hmsracing.com
iConnect Vehicle Seat Charger

CAPABILITY DESCRIPTION
Provide Soldiers with multiple charging options and provide the capability for the Soldier to charge his batteries and operate his NETT warrior and Core system while seated in a vehicle giving the ability to charge on the move.

CAPABILITY RELEVANCE
Decrease the requirement to disconnect the batteries from the Soldier and be placed in a charger

Maintain battery charge state of readiness during periods of inactivity while on mission

Provide opportunistic charging of Conformal Wearable Batteries before, during and after mission.

CONTACT INFORMATION
US Army Natick Soldier RD&E Center
10 General Greene Ave.
Natick, MA 01760 USA

POC: Noel Soto
Tel: (978) 233-5707
Email: noel.soto2.civ@mail.mil
A capability gap exists with increasing expeditionary power needs (greater mission capability) while maintaining or reducing weight during extended mission durations (> 72 hrs).

The Jenny 600S focuses on AEWE Objectives 1 and 2 to reduce soldier weight load and provide 24/7 power at point of need to the soldier. Several studies and field trials conducted by independent groups have confirmed mission performance requirements can be satisfied by a hybrid combination of batteries and active power generation system compared to batteries alone.

**CAPABILITY DESCRIPTION**

- Extends mission duration with reduced weight
- Usable as a battery charger or tactical system power source
- Minimal noise and thermal signature
- Pre-packaged fuel in UN approved fuel cartridges for safety
- Usable with Nett Warrior and a variety of power managers

**CAPABILITY RELEVANCE**

**CONTACT INFORMATION**

SFC Energy  
1787 Willa Circle  
Winter Park FL 32792  
www.sfc.com

POC: Henry C Merhoff  
Tel (254) 289-3960  
Email: henry.Merhoff@sfc.com
**CAPABILITY DESCRIPTION**

- Extends mounted vehicle mission duration with reduced weight (carry more water)
- Usable as a battery charger or tactical system power source when vehicle is not operating
- Minimal noise and thermal signature
- Pre-packaged fuel in UN approved fuel cartridges for safety
- Usable with a variety of power managers

**CAPABILITY RELEVANCE**

A capability gap exists with increasing expeditionary power needs (greater mission capability) while maintaining or reducing weight during extended mission durations (> 72 hrs).

The Emily 3000 focuses on AEWE Objectives 1 and 2 to increase mounted unit mission duration during Silent Watch and decrease weight (carry more water to increase mission supportability). Field trials conducted by independent groups have confirmed mounted requirements can be satisfied by combing batteries and an active power generation system compared to batteries alone.

**CONTACT INFORMATION**

**SFC Energy**
1787 Willa Circle
Winter Park FL 32792
[www.sfc.com](http://www.sfc.com)

POC: Henry C Merhoff
Tel (254) 289-3960
Email: henry.Merhoff@sfc.com
MOBILITY
Capabilities for Mounted and Dismounted Small Tactical Units
Slash is a vehicle or mine-roller mounted improvised explosive device (IED) detection system used to clear vulnerable points in all weather conditions. The system mounts to a vehicle or mine-roller using the Rhino Universal Bracket and detects IED components associated with victim operated and command initiated IEDs. The system enables the rapid clearing of vulnerable points or danger areas as described in FM 3.21-8.

CAPABILITY RELEVANCE
Slash provides a capability to detect IEDs at safe standoff distances.

The findings from the AEWE Benning 2019 will inform the Forward Reconnaissance and Explosive Hazard Detection Capability Development Document (CDD) and RDECOM’s Slash Effort.

This also applies to Army Warfighting Challenge #16 by maintaining freedom of movement.

CONTACT INFORMATION
CERDEC
Night Vision and Electronic Sensors Directorate
10221 Burbeck Road
Fort Belvoir, VA 22060
https://www.cerdec.army.mil
POC: Marc Titler
Tel: (703) 704-3594
Email: marc.a.titler.civ@mail.mil
LETHALITY
Capabilities for Mounted and Dismounted Small Tactical Units
Currently Group 1 UAS have the following shortcomings:

- They must be hand launched and belly landed → Requires large clearing to operate from.
- Requires bringing a generator to recharge batteries and extra batteries to swap.
- Limited endurance → Organic UAS assets can’t provide persistent ISR.
- Only carries a small camera → Limits image quality
- Can’t carry any secondary payloads, for example comms relay.

**HAMR UAS address all of these shortcomings**

**CAPABILITY DESCRIPTION**

- Long endurance multi-rotor UAS that spans the gap between the Group 1 size hand launched UAS and the Group 2 size catapult launched UAS.
- Multiple capabilities all in one system:
  - VTOL operations from small clearings
  - Multiple hour flight endurance
  - Group 2 size payload/sensors to provide quality imagery
  - Small logistical footprint
- **More ISR capability in a UAS asset that is organic to small units.**

**CONTACT INFORMATION**

Advanced Aircraft Company
1100 Exploration Way Suite 302S
Hampton, VA 23666-6264
www.AdvancedAircraftCompany.com

POC: William J. Fredericks
Tel: (757) 727-3326 (cell)
Email: w.j.fredericks@advancedaircraftcompany.com
The ALS12SKY-Mi5 is a 12-gauge anti-drone defense round designed to be rapidly deployed against commercially available drones being utilized for illegal purposes; i.e., illegal surveillance, contraband delivery. Upon firing through a 12-gauge cylinder or improved bore barrel, the five tethered segments separate with centrifugal force and create a five (5') foot wide ‘capture net’ to effectively trap the drone’s propellers causing it to fail. This less-lethal tool also allows for intel gathering of the captured drone.

**CAPABILITY RELEVANCE**

- Very affordable, less-lethal 12-gauge ammunition
- Easy to use with currently fielded 12-gauge shotgun
- Won’t completely destroy UAS allowing platform for intelligence gathering
- Safe in heavily populated areas for both forward deployment and CONUS environments
- Is a combat multiplier for currently fielded 12-gauge platforms

**CONTACT INFORMATION**

AMTEC Less-Lethal Systems, Inc.
4700 Providence Road
Perry, Florida 32347
[www.lesslethal.com](http://www.lesslethal.com)

POC: Bill Gazza
Tel: (870)421-6417
Email: bill.gazza@lesslethal.com
**40mm Aerial Flash Bang**

**CAPABILITY DESCRIPTION**

40mm single spin stabilized flash bang projectile

- 6 million candela
- 170 dB overpressure
- Ranges of 50 - 600 meters
- Current inventory includes 50, 100, 200, 300, and 600 meters.
- Cartridges are shoulder fired using multiple weapons systems (M203, M320, PENN Arms Multi-Shot Launchers).

**CAPABILITY RELEVANCE**

The 40mm Aerial Flash Bang is a shoulder fired warning device deployed by an individual soldier at the squad level.

- Escalation of force at vehicle checkpoints.
- Crowd dispersal.
- Allows for determination of intent outside of small arms direct fire range.
- Signal device if typical 40mm signal devices aren’t available.
- Tool to clear birds or other wildlife from aircraft runways and landing zones.

**CONTACT INFORMATION**

Combined Systems Inc.
388 Kinsman Road
Jamestown, PA 16134
www.combinedsystems.com

POC: Richard Edge
Tel: (724)-932-2177
Email: richardedge@combinedsystems.com
## CAPABILITY DESCRIPTION

- **BARREL LENGTH:** 10.3”
- **BARREL MATERIAL:** CMV STEEL
- **BARREL TYPE:** CHF, CHROME LINED
- **BARREL PROFILE:** GOVERNMENT PROFILE
- **RIFLING TWIST:** 1:7”
- **GAS SYSTEM LENGTH:** CARBINE LENGTH
- **MUZZLE DEVICE:** IMPROVED FLASH SUPPRESSOR
- **OVERALL LENGTH:** 26 3/4” - 29 7/8”
- **WEIGHT (UNLOADED):** 5.88 LB
- **CALIBER:** 5.56 NATO (5.56X45MM)
- **RAIL SYSTEM:** MK18 RIS II

## CAPABILITY RELEVANCE

The Daniel Defense MK18 features a 10.3” Cold Hammer Forged Barrel along with the RIS II free floated rail. The Rail Interface System (RIS) features a Bolt-Up System that has been rigorously tested prior to fielding by USSOCOM (currently over 15,000 units). The patented mounting system produces the most rigid and reliable mounting of the upper receiver to the rail. The Cold Hammer Forged (CHF) barrel has proven to be unmatched in accuracy and barrel life (even with M855A1). The manufacturing process of a CHF barrel allows for an internal progressive taper that results in higher MV than standard button or broached barrels.

## CONTACT INFORMATION

**DANIEL DEFENSE**  
101 Warfighter Way  
Black Creek, GA 31308  
[www.danieldefense.com](http://www.danieldefense.com)

POC: Joseph Scull  
Tel: 912-851-3310  
Email: jscull@danieldefense.com
The R400S Mk2 D RWS is a stabilized, medium-caliber dual weapon RWS that supports integration of the XM914 30mm cannon, the Javelin missile and a 7.62mm coax machine gun at an above-the-roofline weight of <1,000lb. The sighting system offers target detection beyond 12,000m, recognition beyond 5,000m and identification beyond 4,000m in both white-light and thermal operations. This system’s ability to detect and distinguish targets at long range, coupled with outstanding system precision, is an extremely lethal combination and gives us the capacity to effectively counter most threat light and armored systems.

EOS Defense Systems USA
2865 Wall Triana Hwy.
Huntsville, AL 35824
Eosdsusa.com

POC: Steve Below
Tel: (256) 508-3601
Email: sbelow@eosdsusa.com
### Capabilities Description

‘Barrier-Blind’ 9x19mm 103gr EBR projectile defeats common intermediate barriers that stop M882, XM1152, and XM1153.

Minimized risk of collateral damage due to initiating design of multi-piece projectile.

Yaw-independent terminal performance behavior.

Loaded cartridge is approximately 11% lighter than 124gr and 20% lighter than 147gr 9x19mm ammunition.

### Capabilities Relevance

Ammunition currently fielded in the M9 (legacy) and XM17/XM18 (MHS) systems exhibits a lethality deficiency against common battlefield barriers.

The use of 9x19mm ‘EBR’ ammunition increases effectiveness of the Soldier through improved Probability of Incapacitation as well as better mobility due to a reduced ammunition weight load.

### Contact Information

**Federal Cartridge Company**  
900 Ehlen Drive  
Anoka, MN, 55303  

**POC:** Bryan Peterson  
Tel: (763) 280-1718  
Email: bryan.peterson@vistaoutdoor.com
The RAMP (Rapid Access Magazine Pod) is an article of tactical equipment which provides fast access to, and the secure storage of, spare ammunition magazines for the M4 Battle Rifle. The RAMP is worn by the Soldier, affixed to the torso area, attaching to standard MOLLE body armor. The RAMP facilitates a rapid reload of the M4 Battle Rifle markedly faster than current magazine pouches. The RAMP also provides the Soldier the added benefit of maintaining eyes on the target throughout the reload process. The RAMP is currently TRL 9.

This capability is designed to enable soldiers to rapidly reload their Battle Rifle in all battlefield conditions without any changes to the weapon or other currently fielded equipment. These findings will inform basic and advanced rifle marksmanship to include current CQB doctrine. U.S. Army FM 3-22.9 states “One of the keys to sustained suppressive fire is reloading the rifle rapidly. Rapid magazine changes must be correctly taught and practiced during dry-fire and live-fire exercises until the soldier becomes proficient.” The RAMP directly supports this doctrine.

**CAPABILITY RELEVANCE**

**CONTACT INFORMATION**

Gear 4 Grunts, LLC.
3205 Indigo Waters Dr.
Austin, TX. 78732
www.gear4grunts.com

POC: Doug Mullen
Tel: (512) 751-2119
Email: doug.m@gear4grunts.com
**CAPABILITY DESCRIPTION**

- Cartridge case, primer and propellant are the same as those used in conventional ammunition.
- Projectiles are currently made of solid brass.
- Specially designed fins on the bullets gradually add drag and prematurely force projectile out of the sky.
- Cartridge is fired out of weapons that require no modifications. Use is completely transparent to user.
- Tracer version not currently available.

**CAPABILITY RELEVANCE**

- The improved 5.56mm Reduced Range Ammunition (RRA) provides ballistic match to conventional ammunition up to a distance of 600 meters.
- Maximum range of conventional M855 type cartridges is approximately 4 km whereas RRA cartridges will not fly further than 1,800 m.
- Operationally this allows both rifle and machine gun (SAW M249) users to train on targets up to 600 m, while benefitting from much shorter SDZ training facilities.
- Under development, currently TRL6.

**CONTACT INFORMATION**

General Dynamics OTS Canada
5 Montée des Arsenaux
Repentigny QC J5Z2P4 Canada
[www.gd-otscanada.com](http://www.gd-otscanada.com)

POC: Pierre Lemay
Tel: (450) 582-6361
Email: pierre.lemay@can.gd-ots.com
## 7.62mm Ball Reduced Range Ammunition

### CAPABILITY DESCRIPTION
- Cartridge case, primer and propellant are the same as those used in conventional ammunition
- Projectiles are currently made of solid brass
- Specially designed fins on the bullets gradually add drag and prematurely force projectile out of the sky
- Cartridge is fired out of weapons that require no modifications. Use is completely transparent to user
- A tracer version, currently under development will also be supplied for the demonstration.

### CAPABILITY RELEVANCE
- The improved 7.62mm Reduced Range Ammunition (RRA) provides ballistic match to conventional ammunition up to a distance of 800 meters.
- Maximum range of conventional M80 type cartridges is approximately 4 km whereas RRA cartridges will not fly further than 2.4 km.
- Operationally this allows machine gun users to train on targets to 800 m while benefitting from much shorter SDZ training facilities
- Under development, currently TRL6

### CONTACT INFORMATION
**General Dynamics OTS Canada**  
5 Montée des Arsenaux  
Repentigny QC J5Z2P4 Canada  
[www.gd-otscanada.com](http://www.gd-otscanada.com)

POC: Pierre Lemay  
Tel: (450) 582-6361  
Email: pierre.lemay@can.gd-ots.com
# CAPABILITY DESCRIPTION

Man wearable and unattended ground sensor tactical systems which identifies and locates hostile fire, suppressed fire, detects and tracks ground vehicles and Small UAS threats and can display friendly forces enabling coordinated maneuver and targeting scenarios to protect the warfighters. GWACS operates in both single sensor and mesh network fully distributed mode. Probability of Detection: > 95%, Azimuth Error: ± 3.5°, Range Error: <10%, Storage of over 3000 events, zero false positives. GWACS sensor based stimulator enhances live training with the system.

# CAPABILITY RELEVANCE

Reaction to unanticipated hostile fire is critical. GWACS GDS in less than one second classifies and locates hostile fire in open, urban and other complex terrain and conditions. Proliferation of small UAS also propose a threat. The mesh netted acoustical system with a sophisticated classifier allows the GWACS system to detect and track small UAS providing situational awareness to the warfighter. Live training is enhanced using a stimulator to enable the system to report a hostile shooter or shooters locations.

# CONTACT INFORMATION

GWACS DEFENSE INC
1000 Riverwalk Terrace STE 100
Jenks, OK  74037
[www.gwacsdefense.com](http://www.gwacsdefense.com)

POC:  Shel Jones
Tel: (202) 595-4683
Email: sjones@gwacs.us
CAPABILITY DESCRIPTION

Weight:
- Aircraft: 2 lb (no battery)
- GCS: 1 lb EUD & VSM hand controller
- Field: 12 lb (1 aircraft, 1 VSM, batteries)

Size:
- GCS: 11 x 7 x 4 in. – Aircraft 12 X 20 X 4.3 in.

Range:
- LOS 1500 – 3000m – Video/C2 AES 256

Speed:
- Hover to 35 mph

Stowage:
- Waterproof case, 2 aircraft, 1 VSM, batteries and spares

Endurance:
- Up to 30 min., 45 min. with mission battery (payload & wind dependent)

Service Ceiling:
- >12,200 feet MSL

Wind Station Holding:
- >30 mph

CAPABILITY RELEVANCE

Currently, tactical formations lack organic, robust, cost effective Intelligence, Surveillance, and Reconnaissance, Network Extension, and stand-off CBRN capabilities that enable full spectrum operations during hours of limited visibility, in adverse weather, or in dirty battlefield conditions. Units must rely on non-organic assets to enhance force protection, and mitigate operational risk. This results in loss of critical information in the Ground Force Commander’s decision making process.

CONTACT INFORMATION

InstantEye Robotics
6 Riverside Drive
Andover, MA 01810
www.instanteyerobotics.com

POC: Mike Mackiewicz
Tel: (978) 802-5411
Email: mmackiewicz@instanteyerobotics.com
**CAPABILITY DESCRIPTION**

- **Weight:** Aircraft: 225 grams
  System (field deployment kit): 3 pounds
- **Size:** Aircraft (stowed): 7.5 x 7.5 x 2.5 inches
  System (field deployment kit): < 150 in³
- **Range:** LOS, ~ 650 to 1000 meters, Video/C2 AES 256
- **Speed:** Hover to > 20 mph
- **Endurance:** 15 to 20 minutes
- **Service Ceiling:** 12,000 feet MSL
- **Wind Station Holding:** 20 mph

---

**CAPABILITY RELEVANCE**

Currently, tactical formations lack organic, robust, cost effective Intelligence, Surveillance, and Reconnaissance, Network Extension, and stand-off CBRNE capabilities that enable full spectrum operations during hours of limited visibility, in adverse weather, or in dirty battlefield conditions. Units must rely on non-organic assets to enhance force protection, and mitigate operational risk. This results in loss of critical information in the Ground Force Commander’s decision making process.

---

**CONTACT INFORMATION**

InstantEye Robotics
6 Riverside Drive
Andover, MA 01810
[www.instanteyerobotics.com](http://www.instanteyerobotics.com)

POC: Mike Mackiewicz
Tel: (978) 802-5411
Email: mmackiewicz@intanteyerobotics.com
McQ OWL™ Intelligent Camera

**CAPABILITY DESCRIPTION**

McQ OWL™ Intelligent Camera is a radar triggered day and night camera for surveillance applications. McQ OWL™ is an “all in one” capability to monitor activity in a wide variety of situations. McQ OWL™ uses a radar that only detects moving targets while rejecting clutter from non targets. The radar triggers the camera and initiates sending images or video to the operator over several communication options. The imagery is compressed with advanced technology to provide excellent quality while using communication infrastructure that may have low bandwidth.

**CAPABILITY RELEVANCE**

- Provides pictures and live video to multiple users
- Quality video using proprietary compression algorithms over low bandwidth communications
- Adjustable compression rates in real time
- Can communicate over cellular or any external device that accepts TCP/IP information
- Target ranges of 50 meters for people and 100 meters for vehicles
- Non-visible IR LEDs images targets out to 45 meters at night
- Small, light, and simple to install for an operator

**CONTACT INFORMATION**

McQ Inc.
1545 Forbes Street
Fredericksburg, VA 22485
http://www.mcqinc.com

POC: Nicholas Husson
Tel: (540) 373-2374
Email: nhusson@mcqinc.com
McQ RANGER™ Sensor

CAPABILITY DESCRIPTION

McQ RANGER™ is a high performance yet small and rugged sensor for detection and classification of personnel and vehicle targets. Its use of different modalities including seismic, acoustic, and magnetic provide excellent performance yet allows the sensor to operate autonomously. Multiple communication configurations allow the sensor to interface directly to a mobile device, to a network of other machine-to-machine assets, or directly to a SATCOM system. The sensor is smaller than a hockey puck, has an operational life of 30 days with an integrated rechargeable battery.

CAPABILITY RELEVANCE

- Revolutionary high performance yet small and rugged sensor for detection and classification of personnel and vehicle targets
- Small form factor and advanced algorithms allows it to be used for extended detection and tracking in rural areas and/or for personnel detection in indoor and urban environments
- State-of-the-art hardware platform provides high performance yet low cost, no configuration required, and no maintenance

CONTACT INFORMATION

McQ Inc.
1545 Forbes Street
Fredericksburg, VA 22485
http://www.mcqinc.com

POC: Nicholas Husson
Tel: (540) 373-2374
Email: nhusson@mcqinc.com
The vWatch® Tactical Video Kit provides the capability to autonomously detect targets in real time and communicate the imagery information to distributed users over a variety of wireless network options. The kit can provide persistent surveillance for operators monitoring an area or for setting up a perimeter in a hostile environment. Advanced vWatch® video compression and video management provides high quality video at low data rates. The small size and weight of the video kit means it can be deployed by one person and easily camouflaged in a given area. The vWatch® Tactical Video Kit provides day and night surveillance video. The video cameras are triggered by McQ sensors in a power saving architecture. The unit remains in a very low power mode until the sensor cues the camera. The live video begins streaming immediately over a wireless communications network to the user. The vWatch® Image Processing Node video compression is set by the operator to match the throughput of the communications network that can be cellular, satellite, or terrestrial.
### MR2300 COMPONENTS

- MR2300 Illuminator
- Power Supply
- Remote Control

### MR2300 High-Intensity IR & Visible Illuminator

#### CAPABILITY DESCRIPTION

MR2300 provides high-intensity covert IR & SWIR illumination enabling existing vehicle / RWS “Day Cameras” and SWIR sensors to continue being used in no/low light and subterranean conditions for long-range target ID, DVE, situational awareness and surveillance. When used on vehicles in the overwatch, the MR2300 also enhances image intensification NVDs (e.g. ENVG-B & AN/PVS-14) of dismounted troops for battlefield or reconnaissance illumination. In addition, it provides covert target illumination for mounted CSW gunners using these NVDs. In Visible mode it is a potent non-lethal weapon for FOB protection and checkpoints.

#### CAPABILITY RELEVANCE

In no/low light and subterranean conditions, Soldiers can only use thermal imagers however these have 1) lower identification capabilities for combat ID or IEDs and 2) limited visibility for surveillance, DVE and situational awareness when thermal contrast is low (i.e. during dawn/dusk and when rainy, cloudy, windy or humid). The MR2300’s covert IR & SWIR illumination fills this capability gap by enabling CCD/CMOS & SWIR (“Day Cameras”) as well as image intensification NVDs to be used in no/low light. Additionally, the MR2300’s high-intensity Visible light is significantly more effective for non-lethal suppression than current POR systems.

#### CONTACT INFORMATION

Megaray, LLC  
60 West 23rd Street, Suite 1908  
New York, NY 10010  
[www.megaray.com](http://www.megaray.com)

POC: Jon Friedland  
Tel: (215) 939-4460  
Email: jon.friedland@megaray.com
**CAPABILITY DESCRIPTION**

- An upgrade to the M72 LAW E8 Anti-armor & E10 Anti-structure rounds
- Fire From Enclosure propulsion - utilizes Davis gun Countermass principle
- Significant reduction to noise, visual signature and back-blast hazards
- Dual Safe piezo fuze, autonomous dual mode for E10 ASM
- Improved on-axis trigger with shoot-thru bumpers
- ≤13 pound total system weight, 32” long
- M72 FFE system level TRL 8-9

**CAPABILITY RELEVANCE**

- Provides dismounted Soldiers a lightweight, shoulder fired; penetration/fragmenting round
- True fire from enclosure, > 5 Shots/Day with Single Hearing Protection
- $P_{hit} > 0.5 @175m$ on 1.5m x 1.5m Target
- E8 > 4.9” RHA Penetration
- E10 – 8” SRC, Brick/CMU, 12” Adobe, E&T bunker, light vehicle
- 12” adobe & double brick or similar thicker targets
- Delivers 1.4 lbs of explosive in fragmenting case

**CONTACT INFORMATION**

Nammo Talley Inc.
4051 N Higley Road
Mesa, AZ 85215
www.nammo.com

POC: Ben Carpenter
Tel: (919) 353-0500
Email: bcarpenter@nammotalley.com
M72E11 PD/AB Fragmenting Warhead

**CAPABILITY DESCRIPTION**
- M72E11 AB/Frag Warhead
- Programmable Air-burst or Point-Det, fragmenting warhead with 0.8 lbs of IM explosive fill
- Burst Radius: Impact 12m+; Air-burst ~15-20m
- 4,000+ frags: lethal penetration in 10% ballistic gel @ 15 meters
- Range 600+ meters
- PIP to existing M72 family of weapons.
- ~10 pound total system weight, 30 inches long
- M72E11 AB is at TRL Level 7

**CAPABILITY RELEVANCE**
- Provides dismounted Soldiers a lightweight, shoulder fired anti-personnel fragmentation round
- Increase individual Soldier/squad organic firepower
- Improved low weight launcher with on-axis trigger
- Delivers 0.8 lbs of explosive surrounded by preformed Tungsten alloy fragments
- Capable of defeating in defilade or behind walls
- Capable of defeating personnel in the open, in defilade, or behind walls
- Leverages current training for M72 LAW systems

**CONTACT INFORMATION**

Nammo Talley, Inc.
PO Box 34299
Mesa, AZ 85227-4299
www.nammo.com

POC: Ben Carpenter
Tel: (919) 353-0500
Email: bcarpenter@nammotalley.com
CAPABILITY DESCRIPTION

SIG SAUER (MCX) is the most technically advanced proven short barrel user configuration PDW or URG and can be fired suppressed and/or unsuppressed exceeding weight and length objectives. 

Benefits: special operations units would benefit from the stand alone MCX or URG. Both systems incorporate the same captured buffer system. Modular capability provides the operator with the ability and flexibility to change barrel lengths, calibers, suppressors and buttstock configurations at the soldier, unit or armorer level to meet the global mission requirements.

CAPABILITY RELEVANCE

• The SIG SAUER MCX is smaller and lighter than the M4A1 with capabilities beyond any pistol. The MCX design maintains normal operator controls that mirror M4 style designs with additional ambidextrous features; standard M4 controls offer the operator increased capability without training to a different platform.

• The unique design of SIG SAUER’s MCX PDW allows the weapon to be fired semi or fully automatic in the collapsed or folded position safely without limiting functionality.

CONTACT INFORMATION

SIG SAUER
72 Pease Blvd
Newington, NH 03801
www.sigsauer.com

POC: Robby Johnson
Tel: (336) 528-3678
Email: robbjohnson@sigsauer.com
**CAPABILITY DESCRIPTION**

- Persistent ISR
- Can support multiple mission sets per flight
- 20+ hour flight endurance, 60+ mile flight radius
- Can be launched up to 10,000 ft above MSL
- 49.6 pound aircraft with day/night sensors, laser range finder and laser illuminator
- Operates in heavy rain and temps of -40F to 122F
- FMV can be displayed on OSVRT and ROVER
- System assembly by 2-person team in 20 minutes
- Rail launched; software aided parachute recovery
- System transports in 3 “Pelican” type cases

**CAPABILITY RELEVANCE**

- SUAS supporting STU operations require use of short duration flight systems carried into the field
- Multiple group 1 systems or battery swaps are needed to support operations over 1-2 hours.
- Operating this system from a secure location by higher echelon provides long duration ISR while improving STU mobility
- Real time ISR will enable greater lethality and mission command
- Will significantly reduce or eliminate the need for the current fixed wing group 1 UAVs

**CONTACT INFORMATION**

UAV Factory USA LLC
50 South Buckhout St
Irvington, NY 10533
www.uavfactory.com

POC: Josh Brungardt
Tel: (541)-602-1842
Email: joshb@uavfactory.com
SURVIVABILITY
Capabilities for Mounted and Dismounted Small Tactical Units
**Tarian Ultra-Lightweight RPG Armor System**

**CAPABILITY DESCRIPTION**

Tarian RPG armor is the lightest weight RPG armor system currently available, globally. The innovative flexible mounting system, which folds flat to the vehicle, enables rapid deployment into an A2AD environment with ‘into action’ time of <2 mins. This capability enables vehicles with RPG armor already installed to roll off of the ramp of strategic air transport or amphibious sea lift directly into high threat operations.

**CAPABILITY RELEVANCE**

Tarian RPG armor is designed to improve survivability against RPG attack while supporting expeditionary deployment into high threat A2AD environments. Current in-service RPG armor does not support rapid deployment, needs to be contractor installed and presents transportability challenges. The flexible mounting system and minimal weight of Tarian allows vehicles fitted to easily ingress and egress the range of strategic and tactical transport platforms, including airdrop. The mounting system can be crew installed and flexible brackets allow the RPG armor to be ready for battle in less than 2 mins.

**CONTACT INFORMATION**

**AmSafe Bridport**
2220 E Cerritos Ave
Anaheim, CA, 92806
[www.amsafebridport.com](http://www.amsafebridport.com)

POC: Chris Sharpless
Tel: (814) 923-3092
Email: christopher.sharpless@amsafebp.com
### Civil Defense Set

**M8 Paper**

- Repackaging and Hardening of COTS Equipment
- Lightweight, easy to train. small cube.
- Soldiers will be carrying everything they need for a period of at least seven days and as many as twenty one.
- Should contain at least 25 tests (T) and possibly contain as many as 50 (O).
- Should be able to detect Nerve Agents, Blister Agents, Blood Agents, TICs/TIMs.

### CAPABILITY DESCRIPTION

### CAPABILITY RELEVANCE

- Improved sustainment for mounted and dismounted Small Tactical Units
- Demand reduction solution
- Increased mounted and dismounted Small Tactical Unit mobility.
- Reduced Soldier load.
- Lighter and smaller than the M256A1 Chemical Agent Detector Kit.
- Small cube.
- Easy to train

### CONTACT INFORMATION

**U.S. Army Edgewood Chemical Biological Center**

Ricketts Point Rd
Aberdeen Proving Ground, MD 21010

[https://www.ecbc.army.mil/](https://www.ecbc.army.mil/)

**POC**: Dr. James O. Jensen

Tel: (410) 436-5665
Email: james.o.jensen.civ@mail.mil
The “eWindow 360 System” supports Combat vehicles by providing improved Situational Awareness under Battlefield Conditions. The System provides a full 360-degree Color Visible View for the combat crew using Helmet Mounted Displays, Ruggedized Flat Panel Displays, or current vehicle displays. The System is “Observer Centric”, and can provide multiple view points to the crew. The eWindow system provides basic Detection coverage out to 300 meters, with optional cameras for increased Detection & Recognition ranges. The system can “Live Stream” video and be integrated to display other On-Board vehicles sensors.

Current Combat Systems have Stand Alone Sensors, not integrated into a Battlefield Management System. Critical Battlefield Situational Awareness information is not available to the entire crew in real time. Under current tactical threat situations, the crew is “buttoned up” inside the vehicle which greatly reduces combat situational awareness. In urban areas the crew must have soldiers or spotters outside the vehicle guiding through these congested and dense areas. Situational Awareness for Unmanned & Tele-Operated platforms is ineffective for todays combat missions.

Sekai Electronics
38 Waterworks Way
Irvine, CA 92618
www.Sekai-electronics.com

POC: Michael Mohawk
Tel: (949)-783- 5732
Email: michael.mohawk@Ssekai-electronics.com
MISSION COMMAND

Capabilities for Mounted and Dismounted Small Tactical Units
Currently, the small unit lacks the ability to conduct cooperative engagements, mounted and dismounted, using both direct and indirect fires, without advanced munitions, to mass accurate and/or mutually supporting fires quickly missions. Moreover, the small unit leaders lack information processing and decision support tools to enable rapid planning and execution of sensor to shooter target hand-off in decentralize operations while optimizing utilization of effects resources. This program addresses TCM-IBCT Capability Gap #3, S/D Focus Area #3-2017 and JBCP CDD V17

This technology provides small unit soldiers (i.e., squad and fire team leaders) with LOS/BLOS effects planning/coordination/synchronization tools to optimize effects asset management and execution to include target nomination, sensor-to-shooter information processing and target hand-off. This technology allows the increase of survivability and lethality of the small unit by decreasing the sensor-to-shooter timeline. In addition, it enables the integration of fires and maneuver in order to defeat the enemy and carry out missions in complex operational environments.

**CONTACT INFORMATION**

Armament Research, Development and Engineering Center (ARDEC)

Picatinny Arsenal, NJ 07806-5000


POC: Ketula Patel
Tel: (973) 724-8671
Email: ketula.patel.civ@mail.mil
**LET'S Unmanned System Technology**

**CAPABILITY DESCRIPTION**
The LETS Unmanned System Technology uses products of the Mobile Autonomous Counter-WMD System, Increment B (MACS-B) joint program with DTRA, and consists of heterogeneous unmanned platforms able to autonomously operate together, performing high-level mission tasks, such as autonomous 3D mapping, in a dynamic denied-GPS environment with minimal operator involvement. This system can provide innovative capabilities to accomplish mission objectives such as 3D mapping, which can be utilized for advanced fires planning including 3D range cards.

**CAPABILITY RELEVANCE**
This technology will be utilized in conjunction with our LETS mobile and x86 platforms. The LETS robotics operator control unit will create, process, store, and distribute 2D and 3D mapping data for mounted/dismounted operations. For example, the UGV and UAV system can be deployed to do reconnaissance and 3D data collection of an objective area prior to the deployment of soldiers. Once the system returns, data can be shared in order to create their 3D range cards. This technology aligns with the Next Generation Combat Vehicle and Future Vertical Lift Army’s modernization priorities.

**CONTACT INFORMATION**
Armament Research, Development and Engineering Center (ARDEC)
Picatinny Arsenal, NJ 07806-5000
POC: Ketula Patel
Tel: (973) 724-8671
Email: Ketula.patel.civ@mail.mil
## APEx 4-Port Hub System SUAS Mobile Control Station

### CAPABILITY DESCRIPTION

The APEx 4-Port Hub System can replace a laptop based ground control station enabling the SUAS controller to be able to maneuver on the battlefield while maintain positive control of their SUAS asset. The APEx 4-Port Hub System is easily mounted on any MOLLE based surface and it is 4.9 inches by 2.9 inches and weighs 10 ounces.

### CAPABILITY RELEVANCE

Currently SUAS Ground Control Stations revolve around using a laptop which does not facilitate dismounted operations. The APEx 4-Port Hub System will give the Soldier the ability to maneuver with their supported unit. This capability applies to Army Warfighting Challenge 1, 6, 13, 17, 18, and 19.

### CONTACT INFORMATION

Black Diamond Advanced Technology  
2301 E. Yeager Dr., Suite 8  
Chandler, AZ, 85286  
[www.bdatech.com](http://www.bdatech.com)

POC: Greg Dell  
Tel: (480)721-2023  
Email: gdell@bdatech.com
# Soundwave Push to Talk

## Capability Description

Black Diamond Advanced Technology (BDATech) developed the Soundwave PTT to counter audio feedback (warble). The Soundwave PTT also counters feedback from certain datalink operations that are conducted through radios, such as Situational Awareness updates. The Soundwave PTT integrates a 3.5mm audio jack that allows for the connection of a smart phone or recording device, enabling the Soldier to record/play audio, and make phone calls through a tactical headset. The 3.5mm audio jack facilitates training in the field.

## Capability Relevance

Currently there is no device that remedies negative audio feedback from power management systems. The negative audio feedback impacts the ability of the Soldier to receive clear and concise radio communications. This can potentially have a catastrophic impact on the battlefield if critical communications are missed, delayed, or misinterpreted. The Soundwave PTT's unique technology is specifically designed to eliminate this negative audio feedback. This capability applies to Army Warfighting Challenge 1, 8, and 9.

## Contact Information

Black Diamond Advanced Technology  
2301 E. Yeager Dr., Suite 8  
Chandler, AZ, 85286  
[www.bdatech.com](http://www.bdatech.com)

POC: Stone Hazlett  
Tel: (615) 557-6488  
Email: shazlett@bdatech.com
**CAPABILITY DESCRIPTION**

- SCABARD is cybersecurity software for defending mobile wireless tactical networks
- SCABARD displays warnings and Cyber-SA on the Nett Warrior map while on the move
- SCABARD defends against multiple threats: EW, route attacks, PLI, high traffic, unexpected movement, and Agent tampering
- SCABARD relays warnings to Post Compromise Analytical Toolkit (PCAT) at a nearby TOC to widen awareness and enable strategic response

**CAPABILITY RELEVANCE**

- Currently, units lack situational understanding and defense of mobile tactical networks in the field
- SCABARD provides an operational picture on the squad leader’s Nett Warrior map for Cyber Situational Understanding
- SCABARD provides detection and warning during emergent threat actions
- SCABARD records threat intelligence for post-operation analysis and review
- Capabilities address SBCT Gap 78 Detect / Warn

**CONTACT INFORMATION**

CERDEC Tactical Cyber Toolset (TCT) Team

Supported by
Georgia Technology Research Institute (GTRI)
Architecture Technology Corporation (ATC-NY)

POC: Mr. George Zigich
Tel: (443) 395-5714
Email: george.m.zigich2.civ@mail.mil
RONIN Platform

CAPABILITY DESCRIPTION
RONIN Platform is a complete C4 platform, able to interoperable with Nett Warrior/ATAK, comprising an integrated, Android-based, hardware and software platform. The system provides significant enhancements and capability to ATAK and is able to interface to existing Nett Warrior networks/comms architecture, UAV, UAS, UGS and manned tactical platforms within BCT. Comprehension of information from multiple external layered data systems by simplifying the human-machine interface and enables the “Soldier as a Sensor”, allowing them to process and understand greater amounts of information.

CAPABILITY RELEVANCE
RONIN Platform will be deployed within the BCT to SQD, PLT and CO levels as an C4 platform to provide enhanced capability to ground users through interoperability with the existing Nett Warrior/ATAK system and architecture. Carried by individual soldiers within BCT units and manned tactical platforms to track friendly forces and assets, identify enemy targets, markers, chat data, video and bio-med monitoring. Significant increase/enhancement in capability for the existing ATAK platform enabling BCT teams to increase radius of action and overwatch capability.

CONTACT INFORMATION
Coolfire Solutions
415 N. 10th St., 3rd Floor
St. Louis, MO 63101
www.coolfiresolutions.com

POC: Hector Michaud
Tel: (910) 237 3869
Email: hmichaud@coolfiresolutions.com
Flexible Light Emitting Diode (LED) Lighting System

**CAPABILITY DESCRIPTION**

- LED lighting offers extended, maintenance free, lighting while not significantly contributing to heat signature or warfighter discomfort.
- Offers the flexibility to reconfigure lighting supporting a wide variety of structure designs and needs.
- Is easily transferable to fixed structures where warfighters may temporarily occupy existing urban facilities to include subterranean complexes.
- Is rugged enough to function is the harshest environmental conditions with no degradation of performance or damage.

**CAPABILITY RELEVANCE**

- Decreases time to setup and takedown a command post, thus reducing vulnerability to attack.
- Supports the capability requirements specifically identified in the Movement and Maneuver Functional Concept citing: “Adversaries will employ precision and extended range munitions, requiring U.S. forces to transition rapidly from movement to maneuver and disperse forces to avoid enemy massed fires.”
- Supports Mission Command FC: “Agile and expeditionary command posts.”

**CONTACT INFORMATION**

US Army Natick Soldier RD&E Center
10 General Greene Ave
Natick, MA 01760
www.natick.army.mil
POC: Melvin Jee
Tel: (508) 233-5245
Email: melvin.w.jee.civ@mail.mil
CAPABILITY DESCRIPTION
The improved and lighter XJBC-P is a man-packable version of the mounted JBC-P system designed for use by dismounted forces in operational environments and missions when vehicle platforms are not available. System weighs less than 20 pounds and consists of a transceiver, KGV-72 in-line encryption, computing device, and power solution. Mounts on the MOLLE system and current ruck sacks for ease of access and shorter implementation times. Provides a BLOS capability for messaging, SA, and mission command. When used with a SRW radio can link Nett Warrior into the wider COP.

CAPABILITY RELEVANCE
The improved and lighter XJBC-P should be packaged onto a soldier's rucksack in accordance with procedures established at the beginning of the experiment. The capability should serve as a primary dismounted Mission Command capability for the BN/CO in support of both Live Fire and the Force on Force portions of the experiment. The capability should be used in all weather and light conditions and the recommended number is one per BN/CO.

CONTACT INFORMATION
Product Manager Joint Battle Command-Platform
3rd Floor, 6007 Combat Drive
Aberdeen Proving Ground, MD 21005

POC: Philip Bird
Tel: (443) 395-0975
Email: philip.r.bird.ctr@mail.mil
RA4000 USB is a new digital high noise headset that offers increased reliability and new capabilities over the current material solution, the Product Improved Combat Vehicle Crewman headset (PI-CVC).

- **Sustainment:** Submersible (IP68) and modernized design (IP68) increases reliability when compared to PI-CVC while also reducing sustainment costs
- **Mounted mission command:** USB 2.0 capability and optional 3D technology allow for plug/play capability between analogue and digital systems and improved intelligibility when monitoring multiple networks

**CAPABILITY DESCRIPTION**

RA4000 is a TRL-9, waterproof, ruggedized, digital communications combat vehicle crewman headset designed for Soldiers operating Army Combat Vehicles or Strykers. RA4000 addresses shortcomings with the current PI-CVC and provides new capabilities such as connection to digital systems like MFoCS, wireless intercom systems, or next-generation digital radios. RA4000 is smaller and lighter than PI-CVC, has a wider power range and is more reliable. Digital Active Noise Reduction technology protects Soldier’s hearing. RA4000 works with AN/VIC-3 and will fit into the current DH-132B (ballistic shell).

**CONTACT INFORMATION**

Racal Acoustics Inc.
11910 Beverly Park Road
Everett, WA 98055
[www.esterline.com](http://www.esterline.com)

POC: Steve Rooney
Tel: 603-203-4884
Email: steve.rooney@esterline.com
**CAPABILITY DESCRIPTION**

Digital ruggedized control module/push-to-talk and headset system. Protects Soldiers’ hearing and allows them to communicate over medium and high noise. Advanced digital architecture with USB 2.0 ensures connectivity with any current analogue communication system and next-generation digital systems. Qualified to MIL-STD-810G, MIL-STD-461F and IP67 for increased reliability in all weather and environmental conditions. Optional 3D technology helps improve intelligibility when monitoring multiple networks. User adjustable situational awareness control. User adjustable communications volume control.

**CAPABILITY RELEVANCE**

RA7000 USB helps improve mounted mission command by allowing Soldiers to simultaneously connect to and control a wide range of analogue and digital communication systems. The digital architecture, USB 2.0 capability and four push-to-talk buttons ensures connectivity to dual-channel radios, vehicle intercom systems, laptop computers and next-generation all-digital radios. 3D technology helps improve intelligibility when monitoring and communicating over multiple networks.

**CONTACT INFORMATION**

Racal Acoustics Inc.
11910 Beverly Park Road
Everett, WA 98055
www.esterline.com

POC: Steve Rooney
Tel: 603-203-4884
Email: steve.rooney@esterline.com
**Integrated Digital Vision System (IDVS)**

**CAPABILITY DESCRIPTION**
IDVS creates new sensor capabilities by digitally fusing multispectral sensors and Augmented Reality symbology overlays. SAASM GPS via the Remote Secure Receiver (RSR) and/or NEMA data via the Smart Cable is used to orient the augmented reality view in the see-through Heads-Up Display (HUD). Situational Awareness (SA) from VMF/Link-16 is geo-registered and displayed. The integrated system formats full motion video and SA data projected on the HUD day or night. IDVS digital capabilities allow for image capture and transmission.

**CAPABILITY RELEVANCE**
IDVS projects critical information in a way that allows operators to keep their eyes focused forward, and their hands on the weapon. Geo-registered symbology eliminates the need for the warfighter to constantly reorient the network operational picture to the real world by looking up and down. The advanced sensor system allows team leaders/navigators to identify, maneuver and coordinate targeting day or night in hostile environments. IDVS is designed to enable the FO/FIST to coordinate with JTACs, TOCs, and upper echelons. Both maneuver and CFF cycle time will be reduced through the fusion of sensor and SA data in the HUD.

**CONTACT INFORMATION**

Rockwell Collins Optronics  
2752 Loker Avenue West  
Carlsbad, CA  92010  
[www.rockwellcollins.com](http://www.rockwellcollins.com)

POC: Adam Sundberg  
Tel: 760-827-0443  
Email: adam.sundberg@rockwellcollins.com
<table>
<thead>
<tr>
<th>Army Expeditionary Warrior Experiments</th>
<th>RolaTube 30 ft Mast/RolaCage System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPABILITY DESCRIPTION</strong></td>
<td></td>
</tr>
<tr>
<td>• Mast can be deployed various heights up to 30 ft.</td>
<td></td>
</tr>
<tr>
<td>• System can support weights up to 25 lbs.</td>
<td></td>
</tr>
<tr>
<td>• System can be deployed in less than 30 minutes</td>
<td></td>
</tr>
<tr>
<td>• Stowed volume is less than any current mast system</td>
<td></td>
</tr>
<tr>
<td>• System can deploy multiple antennas</td>
<td></td>
</tr>
<tr>
<td><strong>CAPABILITY RELEVANCE</strong></td>
<td></td>
</tr>
<tr>
<td>• System can be rapidly deployed</td>
<td></td>
</tr>
<tr>
<td>• Mast can be erected using fewer resources than current masts</td>
<td></td>
</tr>
<tr>
<td>• System is smaller and lighter than legacy systems</td>
<td></td>
</tr>
<tr>
<td>• Mast can be used to mount multiple items i.e. cameras, lights, cell booster</td>
<td></td>
</tr>
<tr>
<td><strong>CONTACT INFORMATION</strong></td>
<td></td>
</tr>
<tr>
<td>Shakespeare Military Antennas</td>
<td></td>
</tr>
<tr>
<td>3801 Westmore Dr.</td>
<td></td>
</tr>
<tr>
<td>Columbia, SC, 29223</td>
<td></td>
</tr>
<tr>
<td><strong>POC:</strong> Dean Young</td>
<td></td>
</tr>
<tr>
<td>Tel: (803) 227-1543</td>
<td></td>
</tr>
<tr>
<td>Email: <a href="mailto:deyoung@jardenmaterials.com">deyoung@jardenmaterials.com</a></td>
<td></td>
</tr>
</tbody>
</table>
RolaTube RAMM Antenna Mast System

**CAPABILITY DESCRIPTION**

- 23ft RolaTube with an embedded 30-108 MHz and 225-512 dipole antenna with 2m flying cable and 2 TNC connectors.
- Rolls Up to 8x10” Weighs: in bag 12lbs
- Set Up Time: ~10 min
- Delivers: Significant LOS RF range extension
- Possible to add on either an additional antenna such as L Band and / or a mount for a MANET radio such as TrellisWare or MPU5.
- UHF 50 watt, VHF 25 watt capable

**CAPABILITY RELEVANCE**

- Covers tactical VHF (30-108 & 225-512 MHz)
- Ideal for range extension of comms of the most forward elements (such as mortar teams in the picture and Squads and Platoons)
- Radio Agnostic
- Fast Set Up Time
- Compact and Light when packed
- Safe & Low Training and Maintenance Burden

**CONTACT INFORMATION**

Shakespeare Military Antennas
3801 Westmore Dr.
Columbia, SC, 29223
http://shakespeare-ce.com/military/

POC: Dean Young
Tel: (803) 227-1543
Email: deyoung@jardenmaterials.com
RolaTube Squad Antenna Mast System

CAPABILITY DESCRIPTION

• 11ft RolaTube with an embedded 30-300 MHz dipole antenna with 2m flying cable and TNC connector.
• Rolls Up to 6x6x6” Weighs: 3 Lbs. in bag 4.8lbs
• Set Up Time: ~30 seconds
• Delivers: Significant LOS RF range extension
• Possible to add on either an additional antenna such as L Band and / or a mount for a MANET radio such as TrellisWare or MPU5.

CAPABILITY RELEVANCE

• Covers tactical VHF (30-300 MHz)
• Ideal for range extension of comms of the most forward elements (such as mortar teams in the picture and Squads and Platoons)
• Radio Agnostic
• Fast Set Up Time
• Compact and Light when packed
• Safe & Low Training and Maintenance Burden

CONTACT INFORMATION

Shakespeare Military Antennas
3801 Westmore Dr.
Columbia, SC, 29223
http://shakespeare-ce.com/military/

POC: Dean Young
Tel: (803) 227-1543
Email: deyoung@jardenmaterials.com
**CAPABILITY DESCRIPTION**

- 11ft RolaTube with an embedded 136-470 MHz dipole antenna with 2m flying cable and TNC connector.
- Rolls Up to 6x6x6” Weighs: 3 Lbs.
- In bag with contents - weighs 4.8 Lbs.
- Set Up Time: ~30 seconds
- Delivers: Significant LOS RF range extension

**CAPABILITY RELEVANCE**

- Covers tactical VHF/UHF (136-470 MHz)
- Ideal for range extension of comms for ground to air operations utilizing 136-470 MHz (such as JTACs)
- Radio Agnostic
- Possible to add on either an additional antenna such as L Band and/or a mount for a MANET radio such as TrellisWare or MPU5' This addition would provide the user with dual capability (1) RF range extension in VHF/UHF via the embedded antenna and also either L Band or Mesh Radio range extension

**CONTACT INFORMATION**

**Shakespeare Military Antennas**  
3801 Westmore Dr.  
Columbia, SC, 29223  
http://shakespeare-ce.com/military/  

POC: Dean Young  
Tel: (803) 227-1543  
Email: deyoung@jardenmaterials.com
**CAPABILITY DESCRIPTION**

- A unique, small, lightweight frequency conversion device that allows tactical military and commercial VHF/UHF radios to operate over commercial L-band satellite. It provides BLOS, interoperable, Comms on the Move (COTM) with low-latency voice and data connectivity to radio networks.
- SlingShot affords communications while elements are on the move in ground, vehicle (80mph), maritime (40 knots) or on airborne platforms (350knots).
- The systems is capable of communications with or without encryption.

**CAPABILITY RELEVANCE**

- SlingShot provides BLOS, COTM interoperability for widely dispersed military forces or civilian agencies in austere environments without the delay of deploying terrestrial infrastructure or the operational burden of protecting and sustaining them.
- Reliable, secure method of communications for US Forces to utilize various LOS radios as BLOS radios.
- Enables interoperability between US, Coalition and Partner Nation forces.
- Tactical CDR’s can expand their C2 footprint across a GCC.

**CONTACT INFORMATION**

Spectra-Group, Ltd
Spectra Group UK,
Bridge Court Barn,
Kingstone, Herefordshire, HR2 9ES.
https://spectra-group.co.uk

POC: Pat Gallagher
+1-540-729-0744
p.gallagher@spectra-group.co.uk
SOLDIER PERFORMANCE
Capabilities for Mounted and Dismounted Small Tactical Units
Augmented REality Sandtable (ARES)

CAPABILITY DESCRIPTION
The ARES architecture improves battlespace visualization, providing a user-defined common operating picture at the point of need in support of training, mission planning and command & control.

Users collaborate (locally or remote), visualizing terrain and tactical data via one or more modes;
- Physical sandtable augmented with digital overlays,
- Augmented Reality (Microsoft Hololens) and Virtual Reality (HTC Vive),
- Mobile devices (e.g. phones and tablets),
- Desktop/laptop PCs.

CAPABILITY RELEVANCE
Addresses Army Warfighting Challenges:
- Develop Situational Understanding (AWFC #1),
- Counter Weapons of Mass Destruction (AWFC #5),
- Conduct Homeland Operations (AWFC #6),
- Enhance Realistic Training (AWFC #8),
- Improve Soldier, Leader, and Team Performance (AWFC #9),
- Ensure Interoperability and Operate in JIM Environment (AWFC #14),
- Conduct Joint Combined Arms Maneuver (AWFC #15),
- Employ Cross-Domain Fires (AWFC #17/18), and
- Exercise Mission Command (AWFC #19).

CONTACT INFORMATION
Army Research Laboratory
12423 Research Parkway
Orlando, Fl., 32826
https://simulation.arl.army.mil/ARES

POC: Charles R. Amburn II
Tel: (407) 384-3901
Email: charles.r.amburn.civ@mail.mil
Low-cost mobile AR/VR training system for Handheld IED Detectors

**CAPABILITY DESCRIPTION**

- Low-cost Mobile Augmented Reality (AR) and Virtual Reality (VR) training for handheld IED detector at the point of need.

- Multi-layer training capability ranging from Army SOP field manuals to immersive, 3D game engine based environments. Complex soil conditions are presented in a relevant environment.

- A comprehensive, on board user AAR shows critical speed and lane coverage for each scenario.

**CAPABILITY RELEVANCE**

- Significantly increases accessibility of training for a very low cost.

- System can be used both indoors and outdoors and mimic various soil conditions.

- No network required.

- 100 % Government owned.

**CONTACT INFORMATION**

US Army Natick Soldier RD&E Center/
Army Research Laboratory/UCF

12423 Research Parkway
Orlando, FL 32765

POC: Mr. Gino Fragomeni
Tel: (407) 384-5542
Email: gino.f.fragomeni.civ@mail.mil
**CAPABILITY DESCRIPTION**

E-blanks™ is a fully-patented, highly effective, cost efficient and environmentally friendly training system that realistically simulates the firing of ammunition with recoil, sound, and muzzle flash. E-blanks™ replaces blank ammunition to support training exercises that currently use blanks, dry fire, and vocal firing simulation. Using advanced electronics to replicate not only the sound of rounds being fired but also weapon recoil and muzzle flash, E-blanks™ simulates the realistic environment of firing.

**CAPABILITY RELEVANCE**

E-blanks™ should be used by military, security and law enforcement personnel who routinely use AR-15 rifles (M4/M16) in the normal course of their duties and need training on the handling and use of the weapon as well as its tactical employment in diverse and varied scenarios, individually and in groups of any size. E-blanks™ reduces logistic burden on units by removing the need for blank ammunition, reducing wear on weapons and increases safety by removing the need for blanks which can pose safety hazards in close environments during training.

**CONTACT INFORMATION**

Federal Resources  
235-G Log Canoe Cir  
Stevensville, MD 21666  
[www.federalresources.com](http://www.federalresources.com)

POC: Scott Graham  
Tel: (770) 570-0943  
Email: scott.graham@federalresources.com
**CAPABILITY DESCRIPTION**

Krossbow is an intuitive tourniquet specifically designed to function in any condition including when a Soldier is wearing of CBRNE PPE, cold weather gear or operating in an amphibious and underwater environments. The Krossbow is so effective it eliminates the need for the application of a 2nd tourniquet for uncontrolled bleeding from the same limb. The composite polymers allow both flexibility with near unbreakable strength and resistance to all forms of corrosion encountered during military operations. Made in the USA, patent protected, FDA Class I Medical Device.

**CAPABILITY RELEVANCE**

The Krossbow Tourniquet has specifically designed as first line carry by Soldiers in a combat, hostile and CBRNE environments, in accordance with current Army doctrine, as well as part of the medical load out for any operations with expecting the treatment of extremity trauma. Dimensions ≈ 5” x 2” x ½” & 3oz in wt.

Designed for use in:

- MOPP Gear
- Wearing of bulky and/or heavy gloves
- Amphibious & underwater

**CONTACT INFORMATION**

N1oi LLC  
6155 Sage Brush St.  
Las Vegas, NV, 89120  
Website Under Development

POC: Mark Donald  
Tel: (619) 248-1544  
Email: mdonald@jicglobal.com
CAPABILITY DESCRIPTION

- Indefinite operation in temperatures below 90°F when using solar panel. No need to replace battery.
- Between 30-111 hours of storage time (95°F-135°F)
- 2L of cold storage and ½ ft³ of insulated storage.
- Temperature monitoring/user feedback/diagnostics.
- Vacuum insulated internal cold chamber (VICC) with phase change material and liquid cooling system can be removed and carried separately if necessary.
- Can be attached to MOLLE frame pack for transport
- All components except VICC have safety confirmation and NSNs.

CAPABILITY RELEVANCE

- Difficult to store / provide medical supplies in the field at the correct temperature (blood, IV bags, etc - 39°F-46°F for blood / 77°F - 98.6°F for IV bags) when high ambient temperatures are present (95°F-130°F).
- Providing medical supplies at unsafe temperatures or not providing them at all can prove detrimental to mission success or can be a safety issue.

CONTACT INFORMATION

Natick Soldier Research Development & Engineering Center (NSRDEC)

10 General Greene Ave
Natick, MA 01760
https://www.nsrdec.army.mil/

POC: Ben Williams
Tel: (508) 233-5212
Email: benjamin.s.williams20.civ@mail.mil
Heat Ailment Recovery Pack (HARP)

**CAPABILITY DESCRIPTION**
- Rapidly cool IV bags/water after any duration of time in temperatures up to 135°F
- Store 15-20 bottles of water with Ice
- Actively cool up to 2 IV bags at a time and 1 gallon of water from high ambient temperatures (110°F - 120°F) to a safe usable temperature in 10-15 minutes. Cool up to 20 IV bags on 1 battery charge.
- Temperature monitoring/user feedback/diagnostics.
- Modular design can be scaled down to be more man-transportable
- HARP has safety confirmation is fielded/provisioned for with NSNs and a preliminary user manual.

**CAPABILITY RELEVANCE**
- Difficult to store / provide water/IV bags in the field at the correct temperature (60°F-70°F for water / 77°F - 98.6°F for IV bags) when high ambient temperatures are present (95°F-130°F).
- Heat related ailments can prove detrimental to mission success and can be a safety issue for Warfighters operating at high ambient temperatures.
- Providing cold water/IV bags on-demand in the field after any duration of time will allow medical personnel to treat heat related ailments on-site.

**CONTACT INFORMATION**
Natick Soldier Research Development & Engineering Center (NSRDEC)
10 General Greene Ave
Natick, MA 01760
https://www.nsrdec.army.mil/

POC: Ben Williams
Tel: (508) 233-5212
Email: benjamin.s.Williams20.civ@mail.mil