

# Defense Systems

## DIGEST

30 JULY 2019 – THE LATEST FROM DEFENSE SYSTEMS INFORMATION ANALYSIS CENTER



### NOTABLE TECHNICAL INQUIRY

*What small form factor systems exist or are in development to OTH communications in a satellite-denied environment?*

DSIAC was asked to research small form factor, over-the-horizon (OTH) communications technologies for use in satellite-denied environments. DSIAC searched in open sources and the DTIC Research and Engineering Gateway for relevant information and articles. DSIAC also contacted subject matter experts (SMEs) from the Cyber Security and Information Systems... [Read More](#)

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### FEATURED NEWS

#### Army Futures Command Is Already Testing Some of Its Next-Generation Tech Downrange

The Army may be celebrating its prized Army Futures Command (AFC) reaching full operational capability, but the organization's leaders still have quite a to-do list in front of them.

For example, the 1<sup>st</sup> Security Force Assistance Brigade (SFAB) that returned from a 9-month deployment to Afghanistan in November was the first to test out the Integrated Tactical Network that AFC has been developing. Brig. Gen. Scott Jackson, commander of the 1<sup>st</sup> SFAB, also expressed interest in trying out a semi-autonomous supply vehicle that's currently being tested by soldiers with the 101<sup>st</sup> and 10<sup>th</sup> Mountain Divisions.



One of the first things to go overseas, Murray said, will be the Next-Generation Squad Weapon. Army Brig. Gen. David Hodne said this week that an infantry brigade combat team will finally get their hands on both NGSW replacements for the M4 carbine and M249 starting in 2023, per Military.com. AFC's university partners... [Read More](#)

VOICE FROM THE COMMUNITY



**Joseph L. Haack**, Defense Technical Information Center (DTIC) Information Analysis Center (IAC), Cloud Lake Technology, LLC

I am a field advisor imbedded with U.S. Special Operations Command. I am retired from the U.S. Army as a Lieutenant Colonel after serving 25 years. My duties as an infantry, armor, and civil affairs officer included command and staff positions advising commanders and leading soldiers during peace time and in combat. I capped my career as the Civil Military Operations Officer for U.S. Central Command,

CCJ5 Plans Directorate, where I gained a detailed understanding of joint planning and integrations for U.S. and Coalition Forces for conventional and special operations. I earned my bachelor's degree from Western Michigan University, and I am a graduate of the U.S. Army Command and General Staff College and numerous Army schools for conventional and special operations.

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UPCOMING EVENTS

**Novel Optical Materials and Applications**

29 July 2019 to 1 August 2019

**Multi-Domain Battle Management Summit**

21 August 2019 to 23 August 2019

**Modern Day Marine**

17 September 2019 to 19 September 2019

**2019 Mechanical Design Reliability Course**

15 October 2019 to 17 October 2019

► Want your event listed here? Let us know!

HIGHLIGHT

**2019 Sensors & Seekers Test Technology Working Group Annual Workshop**



5 November 2019 to 6 November 2019

The Sensors & Seekers Test Technology Working Group (SSTT WG) 2019 Annual Workshop, hosted by the U.S. Army Aviation and Missile Center (AvMC), will take place 5–6 November 2019 in Huntsville, AL.

DSIAC JOURNAL SUMMER 2019



**A Multisensor System for Measuring the Light Output and Velocity of Live-Fired, Red Light-Emitting Pyrotechnic Tracers**

**Also in This Issue:**

- Disposal of Insensitive Munitions
- Computational and Experimental Characterization of an Improvised, Explosively Formed Penetrator
- Investigating Friction Stir Welding in Aluminum Hull Structures
- Additively Manufactured, Solvent-Loaded AP Composite Propellant – Printer Parameter Optimization



► Have an idea for a topic? Please contact us to write an article!



RECENT NEWS



**U.S. Army Wants World's Largest, Fastest Metal Powder 3-D Printer**



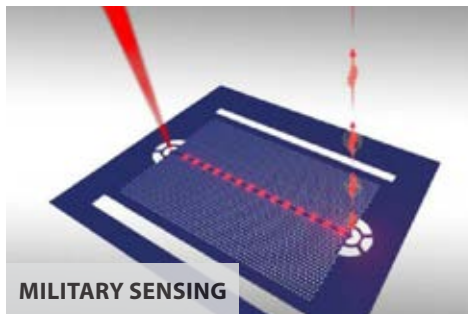
**The Air Force's Five Principles to Advance Artificial Intelligence**



**Deep Learning Research by NSWC Crane Engineer to Help Electronic Warfare Capabilities**



**U.S. Army Grant Supports Development of Hydrogen-Powered Unmanned Aerial Vehicle**



**Quantum Tech Developments by NRL Could Advance Lasers and Sensing**



**Pentagon Scientists Are Making Talking Plasma Laser Balls for Use as Non-Lethal Weapons**



**The F-35 Has a New Problem That Won't Be Easy to Solve**



**How 3-D-Printed Body Armor Is Useful for Both American Forces and Terrorists**



**"Intelligent-Rail" Software Destined for Next-Gen Squad Weapon**



**NEW RELEASE: Counter-Materiel (CM) Non-Lethal Weapons (NLW) Technologies, State-of-the-Art Report**

This state-of-the-art report (SOAR) addresses the definition of countermateriel (CM) non-lethal weapons (NLW) technologies and presents a brief overview of the history associated with their evolution. It focuses on the investigative research efforts conducted by predominant organizations involved in non-lethal CM technologies and on CM NLW technologies encompassing the following: (a) vehicle/vessel stopping (non-kinetic), (b) electronics/optics defeat, (c) structural materials degradation, (d) structural materials enhancement, and (e) investigative efforts by foreign countries. The content of this SOAR has been drawn from the vast experience of several U.S. Department of Defense engineers and scientists embedded in efforts to develop and analyze non-lethal CM technologies and from a wealth of reports by government agencies, universities, and industry.

**Report only available for distribution through [discover.DTIC.mil](https://discover.dtic.mil).**

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