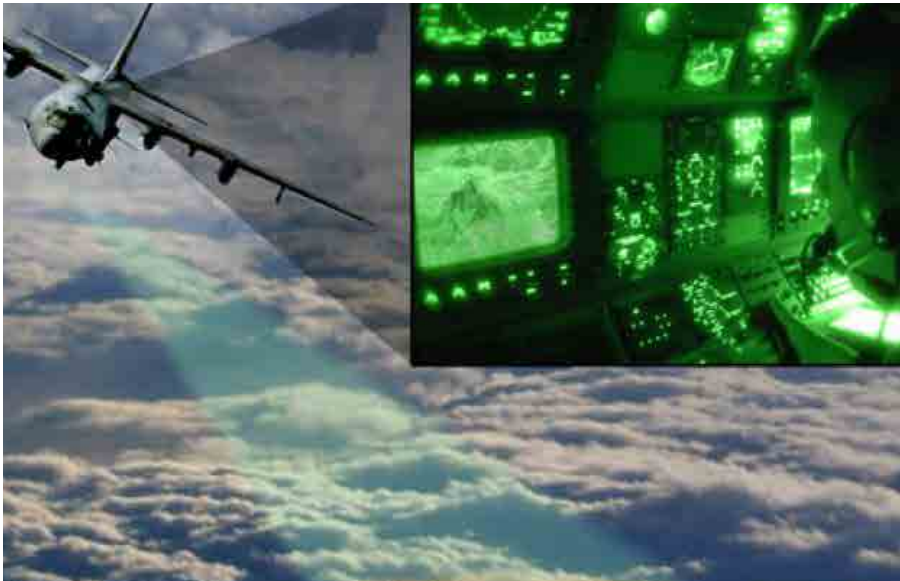


# Defense Systems

## DIGEST

8 MAY 2018 – THE LATEST FROM DEFENSE SYSTEMS INFORMATION ANALYSIS CENTER



### NOTABLE TECHNICAL INQUIRY

*What metrics are used to measure electro-optics sensor performance or image loss due to image compression artifacts?*

DSIAC staff were requested to research and compile a list of technical reports in which image loss due to compression and compression-related artifacts were studied and characterized. The purpose of the research was to support an analysis of... [Read More](#)

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### FEATURED NEWS



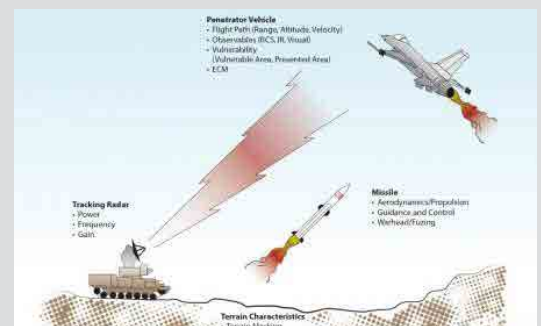
### Debating Slaughterbots and the Future of Autonomous Weapons

In just the past few weeks, we have seen multiple non-state actors launch saturation attacks with drones. These include 13 homemade aerial drones launched against a Russian air base in Syria and three remote-controlled boats used to attack a Saudi-flagged oil tanker in the Red Sea. I predict we are likely to see more attacks of this kind over time, at larger scales, with greater autonomy for the drones, and eventually cooperative autonomy (“swarming”). I do not think it is likely that non-state actors will gain access to sufficient scale and capability to launch attacks on a scale that would be reasonable... [Read More](#)

### MODEL OF THE MONTH

**ESAMS** – Enhanced Surface-to-Air Missile Simulation (ESAMS) is a computer program used to model the interaction between an airborne target and a surface-to-air Missile (SAM) air defense system. Detailed data have been abstracted from intelligence information and incorporated into the model to provide comprehensive representation of radio frequency (RF) land-based and naval-based SAM systems.

[Get this model!](#)



**VOICE FROM THE COMMUNITY**



**Dr. Carl W. Magnuson** *Texas Research Institute Austin Inc., NDE Division, Division Director*

Dr. Carl W. Magnuson has a PhD in Materials Science and is an expert in the nondestructive evaluation (NDE) of materials. TRI Austin's NDE division focuses on developing and evaluating novel and existing NDE techniques, products, and data analyses. Dr. Magnuson is currently involved with the Engineered Residual Stress Implementation workgroup for the US Air Force. The need for a nondestructive method to verify the cold expansion of fastener holes has led him to develop a handheld inspection system, the FastenerCam™.

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**UPCOMING EVENTS**

**33<sup>rd</sup> Annual National Test & Evaluation Conference**

15 May, 2018 to 17 May, 2018

**61<sup>st</sup> Annual Fuze Conference**

15 May, 2018 to 17 May, 2018

**JANNAF Meeting**

21 May, 2018 to 25 May, 2018

**JASP FY19 Proposal Review Meeting**

22 May, 2018 to 24 May, 2018

► Want your event listed here? Let us know!

**BULLETIN BOARD**

**Flare Aerodynamic Modeling Environment (FLAME) & Tri-Service Flare Database (TFD) Now Available Through DSAIC**

**DARPA Launch Challenge (DLC)**

**2018 JASP Model Users Meeting (JMUM)**

**Exclusive Web Article Submissions Now Available**

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**DSIAC JOURNAL WINTER 2018**



**Two Arms are Better Than One: The Benefits of a Dual-Arm Robotic System**

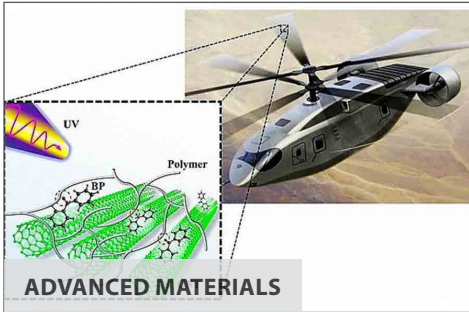
**Also in this issue:**

- Soft Coatings for Armor Enhancement
- 3-D-Printed Weapons: Challenges and Opportunities in Advanced Manufacturing
- A New Design for a Better Bunker Buster
- Underbody Blast Methodology: A Modular Approach to Simulating Buried Blast Effects
- Expanding the Navy's Unmanned Systems Portfolio: An Update



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

RECENT NEWS



ADVANCED MATERIALS

**Army Engineers Discover Technique to Make Adaptive Materials**



AUTONOMOUS SYSTEMS

**DARPA OFFSET Second Swarm Sprint Pursuing State-of-the-Art Solutions**



DIRECTED ENERGY

**Navy Likely to Be First Service to Field Laser Weapons**



ENERGETICS

**Researchers Boost Efficiency and Stability of Optical Rectennas**



MILITARY SENSING

**Quantum Radar Technology Could Expose Advanced Stealth Aircraft and Missiles**



NON-LETHAL WEAPONS

**Non-Lethal Weapons Technology to Stop Vehicle and Vessel Attacks**



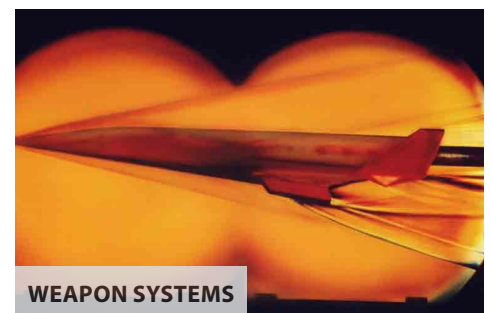
RMQSI

**AFRL Researchers Push Limits in High-Temperature, Polymer Additive Manufacturing**



SURVIVABILITY AND VULNERABILITY

**Shodan Indicates Hospitals and Universities Have Many Vulnerable IoT Devices**



WEAPON SYSTEMS

**Navy Seeking Role in National Hypersonics Initiative**



NEWLY AVAILABLE STI

Documents only available through DTIC to registered users.

**Development Of A  
Manufacturability Assessment  
Methodology And Metric**

Distro. A

**Effects Of Hip Processing  
On Eb-ded Additively  
Manufactured Ti-64 Materials**

Distro. A

**Expanding Mbe With  
Simulation Features Ppi**

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**Hydrogen Embrittlement  
Mitigation Techniques In High  
Strength Steel Manufacture**

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destructive Examination Tools  
To Assess Integrity Of Thermal  
Sprayed Amorphous Coatings  
On Ship Deck**

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Cost Sustainment (mamls)**

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Modernized Nitrocellulose  
Manufacturing Process**

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**Modeling of Steel Casting  
Performance – Dimensions  
and Distortion**

Distro. A

**Minutes Of The Explosives  
Safety Seminar (16<sup>th</sup>), Held  
At The Diplomat Hotel:  
Hollywood, Florida On 24-26  
September 1974 Volume I**

Distro. A

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