Rugged, smart military displays and their commercial influence

Commercial technology must process information quickly, be sleek and compact in its design, offer a high-resolution image, and remain simple in operation.

Rugged military displays must perform similarly but in incredibly harsh environmental conditions. Manufacturers of military technology are using these industry commonalities as inspiration behind the production of their rugged, smart displays.

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Unmanned surface vessel to be developed for U.S. Navy

A U.S. Navy request for proposals calls for a new class of unmanned surface vessels. The request seeks developers for a craft of up to 164 feet long, to function as a sensor and communications relay in part of a family of unmanned surface systems under development. The craft would be able to carry a payload equivalent to a 40-foot shipping container, operate on its own for at least 60 days before requiring a return to port, and be capable of refueling at sea.

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New 3U VPX Board Optimizes High-Speed Optical and RF I/O Connectivity

The Model 54851 is based on the Xilinx Kintex Ultrascale FPGA and features two 500 MHz 12-bit A/Ds with two programmable multiband DDCs and one DUC with two 800 MHz 16-bit D/As. The 54851 3U VPX board features advanced wideband I/O options including optical connections based on VITA 66.5 (draft), RF connections based on ANSI/VITA 67.2 and 67.3.

C4ISR contract for Navy ships potentially worth $2.45 billion awarded to six firms

Al-powered Squad X to go to battle alongside warfighters
Six companies have been included in a contract to provide installation services for all afloat command, control, communications, computer, intelligence, surveillance and reconnaissance (C4ISR) and supporting systems for the U.S. Navy by way of Information Warfare Systems Command (NAVWAR). The contract has a base period of five years and a potential value of $2.45 billion.

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The Defense Advanced Research Projects Agency’s (DARPA) Squad X Experimentation program aims to demonstrate a warfighting force with artificial intelligence as a true partner.

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Editor's Perspective

Old space computers, current podcasts, and new staff

This summer, two events celebrate 50th anniversaries?one is significant to the whole world, while the other likely only to two 75-year-olds in Florida. Eight days from this writing, it will be July 20, 2019, marking 50 years since Apollo 11 astronauts Neil Armstrong and Buzz Aldrin landed and walked on the moon. Less than two months after that momentous date, I turn 50. You can guess which one my parents find more important.

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Market/Business Deals

Undersea warfare systems market to see billions in global growth

According to a new market intelligence report, titled “Global Undersea Warfare Systems Market, Analysis & Forecast, 2019-2024”, the undersea warfare systems market is expected to reach $14.61 billion by 2024.

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Top Story

Space weapons program to protect French satellites

The French Defense Minister’s plans for a space weapons program will include military protection of its satellites. Defense Secretary Florence Parly outlined a new direction for France’s space program at an air base near Lyon. The announcement comes after President Emmanuel Macron called for a space high command to protect the country’s existing future satellites.

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Top Story

Directed energy weapons to be developed by MoD

In a Prior Information Notice published this week, the United Kingdom Ministry of Defence (MoD) announced it is seeking to develop three new Directed Energy Weapon (DEW) demonstrators to explore the potential of the technology and accelerate its introduction onto the battlefield.

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Top Story

Astronauts may take information systems from seabed to space
Scientists, engineers, and key partners of the Naval Surface Warfare Center Panama City Division (NSWC PCD) are collaborating by testing and adapting an NSWC PCD technology -- originally designed for undersea diving -- for potential use during space exploration missions.

**MARKET/BUSINESS DEALS**

**SATCOM equipment for space to be worth $7 billion by 2025, study says**

The global market for satellite communications (SATCOM) equipment is projected to grow from $2.8 billion in 2019 to $7.0 billion by 2025, at a combined annual growth rate of 16.8%, according to a study from MarketsandMarkets, "SATCOM Equipment Market for Space -- Global Forecast to 2025.

**TOP STORY**

**Combat aircraft to be jointly developed between U.K. and Sweden**

Sweden and the United Kingdom agreed on Friday to partner on development of future combat aircraft. U.K. Defense Secretary Penny Mordaunt and Swedish Defense Minister Peter Hultqvist signed a memorandum of understanding calling for "work on a joint combat air development and acquisition program, including the development of new concepts to meet both nations' future requirements," a statement from the U.K. government said.

**TOP STORY**

**Space-suit update prototype shows enhanced sensors, electronics, avionics**

Collins Aerospace Systems and materials-engineering firm ILC Dover recently unveiled its Next-Generation Space Suit system prototype designed for future missions to the moon, to orbital stations, and destinations beyond.

**MARKET/BUSINESS DEALS**

**Military systems and artillery market to grow around 3.6% per year globally, study says**

The global market for military artillery and systems is expected to pass $76 billion during 2019-2027, a combined annual growth rate of approximately 3.6%, according to a study by Market Forecast, "Global Artillery and Systems -- Market and Technology Forecast to 2027.”
**TOP STORY**

**U.S. Air Force proposes to replace dated missile system**

The U.S. Air Force announced a request for proposals for its new intercontinental ballistic missile (ICBM) weapon system program to replace the Minuteman III system designed in the 1960s. The request for the Ground Based Strategic Deterrent (GBSD) ICBMs follows the weapon system's Engineering and Manufacturing Development (EMD) phase.

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**TOP STORY**

**Hypersonic weapon review completed by Raytheon and DARPA**

Raytheon Company and the Defense Advanced Research Projects Agency (DARPA) completed a baseline design review for the Tactical Boost Glide hypersonic weapons program. Hypersonic vehicles operate at extreme speeds and high altitudes. Raytheon is developing hypersonics for the U.S. Department of Defense.

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**TOP STORY**

**Autonomous counter UAV system acquisition fast tracked by DIU**

Defense Innovation Unit (DIU) has awarded Citadel Defense an Other Transaction Authority contract to help military, government, and law enforcement agencies rapidly purchase a validated capability that protects the airspace from unwanted drones.

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**SPONSORED CONTENT**

**COTS, SOSA, and Open Architectures - The New Space Race Podcast**

The commercial spacecraft market, known as “new space,” is where companies are introducing new designs that propel them at the forefront of technological advancement in areas such as 5G networking and big data imaging. Each episode in the New Space Race Podcast, hosted by John McHale, group editorial director for Military Embedded Systems, dives down into the changing scope of the space industry, featuring interviews with spacecraft engineers, experts, and founders.

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**CHARITY**

**The Warrior-Scholar Project**

Each issue, the editorial staff of Military Embedded Systems will highlight a different charitable organization that benefits the military, veterans, and their families. This issue we are highlighting the Warrior-Scholar Project (WSP), a 501(c)(3) nonprofit that was originally founded by Yale University classmates Chris Howell, Jesse Reising, and Nick Rugoff with the aim of ensuring excellence in educational opportunities for exiting U.S. enlisted service personnel.

**GUEST BLOG**

**Radar and the kill web**

This is a complex topic, broad in applications and deep in technical details. Radar can be studied from several different angles. Each of these approaches spill over into the next, creating a convoluted mess if you’re not careful. So, the safest way to eliminate the confusion in a short article like this is oversimplification. Therefore, we will look at what radar does in the kill web, and a little about how it works.
Designer and manufacturer of high-end processing and Ethernet switch boards for HPEC systems.