

DEFENSEWERX

NEWSLETTER

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SOFWERX

Maritime Assault Suit System (MASS) Assessment Event (AE)



With ever-evolving technology advancements, United States Special Operations Command (USOCOM) is pursuing a Commercial-Off-The-Shelf (COTS) surface dry suit that is user friendly, durable enough for rugged field use, more comfortable for the Warfighter, and can be employed as a combat/dry suit for the Naval Special Warfare community in maritime, land, airborne, shipboard, and transitional environments.

On 18 November 2021, SOFWERX, in collaboration with USSOCOM PEO Special Operations Forces (SOF) Warrior (PEO-SW), hosted an Assessment Event to identify solutions for the Maritime Assault Suit System. The weight specifications for the MASS were not to exceed 5-lbs and for the Lightweight MASS the weight was not to exceed 4-lbs. The suit, consisted of an over-garment, a tension relief and ventilation system, repair kit. The suit had to have a high degree of water vapor management, must keep the Warfighter comfortable and dry in all weather conditions, and not interfere with typical mission movements or compromise range of motion.

USSOCOM selected 3 organizations to present their MASS/L-MASS technology brief to a panel of Government evaluators. The event consisted of nine Industry representatives and eight Government representatives who participated virtually. USSOCOM will make their decision as to which industry representatives they will select to move forward with in December 2021.

Autonomous Interoperability Standards Development Collaboration Event (CE)

Naval Special Warfare (NSW) has developed a vision for the future to include capabilities such as next generation Underwater Systems (UxS) and autonomy solutions, as well as interoperable maritime and air assets. To support the future development of heterogeneous UxS platforms, NSW requires a set of interoperability standards that are adaptable and will provide enough freedom for companies to use their creative approaches with well-defined interfaces, messaging, communications, navigation, and control systems.

On 07-09 December 2021, SOFWERX, in collaboration with USSOCOM's Directorate of Science and Technology (S&T) and Naval Special Warfare (NSW), hosted the Autonomous Interoperability Standards Development Collaboration Event. The objective was to bring together Special Operations Forces (SOF) representatives and Subject Matter Experts (SMEs) to assist USSOCOM in discerning the future of Autonomous Interoperability for Unmanned Air, Ground, Surface, and Underwater Systems (UxS). Focus areas included but were not limited to sensors, communications, and platforms.

34 SMEs from Industry, Academia, and National Labs participated in the event. 17 additional Government representatives participated both at SOFWERX and virtually. During the event, participants were able to work in teams of likeminded talent to focus on concept areas and solutions. Insight gained from the event will be used to shape future efforts for USSOCOM and provide an incentive for commercial players to rally around the new standards. Additionally, this effort further supports wider governmental and commercial participation and promotes cost-effective development.





Transferring Knowledge, Concepts, and Ideas

MGMWERX Hosts Workshop on AFRL's Front Door Web Service Tool: Tech Connect Werx Series Seminar – Tech Connect



MGMWERX hosted an Innovation Education Workshop with Ms. Elizabeth Escamilla, the Department of the Air Force (DAF) Science and Technology (S&T) Tech Connect Lead. As a part of the Werx Seminar Series, a monthly virtual/in-person hybrid education program, Ms. Escamilla explained the Front Door Service's history, capabilities, and applications to an audience of military and civilian attendees.

In April of 2019, the U.S. Air Force announced its Science and Technology 2030 Strategy which lays a path forward for the science and technology ecosystem to rapidly develop warfighting capabilities. Identifying the struggles of partnering and connecting with the Department of the Air and Space Forces enterprise, The Air Force Research Laboratory (AFRL) committed Ms. Escamilla and her team to develop the Air and Space Forces Science & Technology (S&T) Front Door: Tech Connect. Tech Connect is an effective service committed to connecting industry, academia, and small businesses with S&T experts to elicit ideas, inputs, thoughts, and solutions.



In a conversation with Trent H. Edwards, MGMWERX Director, Ms. Escamilla expanded on her work with the web interface tool that strengthens partnerships, and leverages innovation networks. "It's all a part of the same network ecosystem. [By] pulling on those threads of small business partnerships and innovation relationships we find multiple ways to access opportunities," Escamilla explained. "We are trying to tie all of those ecosystems together and gather ideas to create easier avenues for transformative innovations.

The seminar was recorded and posted on the MGMWERX YouTube channel as a part of the Werx on the Web Series.

Seminar Link: <https://youtu.be/V25sNKeXyFw>

Promotional Link: <https://youtu.be/PiQMZTgImK0>



DEFENSE WERX

Challenges are opportunities

KAYLYN ST. JEAN



Short Bio

Originally a Southern California native, Kaylyn moved to Georgia in 2007 with her husband Tim and their two sons, Nick and Logan. She pursued a career in business administration from 2007 to 2018 where she directed multiple childcare locations in Georgia, and multiple hotel franchises in Florida. She became the Dean of Admissions for the Georgia Institute of Cosmetology from 2018 to 2021 and simultaneously started a side business creating and selling her own artwork which is a mixture of paintings, taxidermy art, oddities, and curiosities. Kaylyn joined the Defensewerx's team in December of 2021 as Office Administrator for the Cyber Fusion Innovation Center (CFIC) on the Georgia Cyber Center campus. Her creative background in business administration, graphic design, event planning, marketing, and social media networking, make her a great asset to our CFIC team. She loves Mexican food, George Strait, the color green, the movie Benny and Joon, and being married to her best friend in the world for over 20 years.





ERDCWERX Visits U.S. Army ERDC Cold Regions Research and Engineering Lab

ERDCWERX visited the U.S. Army Engineer Research and Development Center (ERDC)'s Cold Regions Research and Engineering Laboratory (CRREL) in November to examine strategic partnership opportunities.

Headquartered in Hanover, New Hampshire, CRREL is a leading center for research in the Earth's cold regions. For over 60 years, CRREL has helped the U.S. Army Corps of Engineers, U.S. Army, Department of Defense, and nation meet challenges faced in harsh cold region environments. The laboratory is recognized for its Permafrost Tunnel Research Facility in Alaska, Ice Adhesion Testing Facility, as well as cutting-edge LiDAR research.



ERDCWERX Director Paul Sumrall and Chief Innovation Officer Janice Karcher met with CRREL Director Dr. Joseph Corriveau and CRREL researchers to discuss potential collaboration projects including events and tech challenges as well as technologies patented by CRREL researchers to be featured on ERDCInnovation.org, a resource for licensing ERDC intellectual property. The site currently features CRREL's Photocatalytic Water Treatment, a patented technology that uses solar energy to remove dangerous microscopic contaminants from water. Interested parties are encouraged to visit the website and contact ERDCWERX with general questions and to discuss licensing interests.

Sumrall and Karcher also toured the lab's Ice Adhesion Testing Facility which is equipped to evaluate the performance of a variety of materials in multiple configurations and with a range of ice types and temperatures.

For more information about ERDCWERX and opportunities with ERDC, visit www.erdowerx.org.



ARFL AWARDS TWO -\$1M GRAND CHALLENGES

In collaboration with the Wright Brothers Institute and the Doolittle Institute, the Air Force Research Laboratory (AFRL) was able to close out 2021 with TWO \$1M Grand Challenges awarded.

Grand Challenge #4 centered around Large- Scale Metal Additive Manufacturing. The challenge looked for manufacturers with existing systems to produce large-scale metal 3D printing to enable future on-demand production of geometrically complex structures.

AFRL received fourteen white papers, of which four were selected to present. Edison Welding Institute(EWI), headquartered in Columbus, Ohio, had the winning presentation. EWI's comprehensive engineering services help companies identify, develop, and implement the best options for specific applications and have a history of working with various industries, including aerospace and defense.

In Grand Challenge #5, a solution for predicting the internal structure of a building using machine learning was sought. The overarching goal was to predict the internal configuration of structures by only using external satellite photographs taken from various angles. Karagozian & Case, Inc. (K&C), based out of Glendale, California, was awarded the challenge with their ASPEN (Adversarial Structural Predictor and Extraction Network) solution, which uses the shape, size, and external characteristics of a building to produce a model of the basic structure system. K&C's submission was selected out of twenty-four submissions and two letters of support.

The Doolittle Institute, an AFRL Innovation Institute, is proud to have played a role in the Grand Challenges that support the Air Force Research Labs discovery, development, and delivery of warfighting technologies for our air, space, and cyberspace forces.

GEEKFEST 2021



The second annual Geekfest was held virtually October 18-19, 2021. The organizing committee consisted of AFRL RW senior staff, the Doolittle Institute, and the cloud solutions partner Onix. The team began collaboration in July to create the framework for the event and Google platform. There was a total of 608 attendees and 107 abstracts submitted. Throughout the two-day event, the group heard from four keynote speakers and 76 presenters.

Overall feedback from those involved was highly positive. Internal feedback from the organizing committee was also positive. The event was a great forum to share projects, which not only enlightened the AFRL community but also promoted unique partnerships between the Technical Directorates. The platform allowed immediate feedback from attendees and a chat box to continue conversations or share contact information for future discussions. Geekfest was a phenomenal venue to create awareness and cultivate information sharing across AFRL.



Announcing the DHS S&T PIA with DWX

In March 2021, DEFENSEWERX (DWX) entered into a Partnership Intermediary Agreement (PIA) with Department of Homeland Security (DHS) Science and Technology Directorate (S&T) with the aim of increasing the effectiveness of DHS technology transfer and commercialization (T2C) activities. DWX is also exploring a pilot DHS Innovation Hub to drive the culture of innovation supporting the DHS Components. The PIA consists of interrelated tasks spanning from March 2021 to February 2024.

For the initial task, DWX assessed the current DHS S&T ecosystem by conducting over 50 discovery interviews with S&T personnel and DHS component representatives. Information collected from these interviews served as the foundation for two Virtual Collaboration Events (VCE). The VCEs were attended by S&T and DHS component representatives who developed a set of solution ideas using Derivative Inquiry relating to four topics: Innovation, Partnerships, Communication, and Return on Investment/ Metrics. DWX developed a Summary Report which compiled all data from these discovery efforts.

DWX then analyzed the findings from the interviews and VCEs to develop recommendations for S&T to consider as they expand their innovation practices. DWX made suggestions to expand S&T's T2C ecosystem and to explore establishing a pilot DHS innovation hub to support the organization's strategic objectives. DWX also provided a roadmap with near-term, mid-term, and long-term objectives that support S&T's innovation goals.

DWX is continuing this effort by developing a procedural framework for establishing a pilot DHS Innovation Hub and utilizing proven methodologies to engage with external partners and accelerate solution delivery to homeland security end users. DWX is well positioned to assist DHS S&T in expanding its innovation culture and ecosystem in support of homeland security missions.



ICWERX

Newly Established DEFENSEWERX PIA

Under the newly formed Partnership Intermediary Agreement (PIA), the DEFENSEWERX-ICWERX Innovation Hub, in Tampa, Florida, was established on 20 August 2021 to develop an unclassified, innovative, and collaborative platform to support Central Intelligence Agency Laboratory (CIA Labs') needs.

One of the main objectives of ICWERX is to serve as a public-facing emissary on behalf of CIA Labs, increasing the likelihood of expertise and technology advancements for the benefit of the United States. To accomplish this, ICWERX has since begun to assemble leading innovators from Industry, Academia, and National & Federal Laboratories, from across the globe, to bolster current national security priorities.

ICWERX fosters an agile environment designed to stimulate novel idea and solution development between our Government partners and potential non-traditional ecosystem members. Several Objective Strategic Sessions (OSS) have occurred in order to address CIA Labs' current mission focus areas of interest. ICWERX has fully executed multiple business-to-business (B2B) awards and is projected to execute many more awards in FY 2022.