U.S. Army
Aviation Cyber Rodeo
Redstone Arsenal, AL

October 22nd – 23rd

AVIATION CYBER INITIATIVE

2024

AVIATION CYBER RODEO

Rodeo Director: Veronica Bunn, FAA, veronica.v.bunn@faa.gov
Technical Director: Tom Barnett, US Army PEO Aviation, thomas.c.barnett10.civ@army.mil
Event POC: Reece Johnston, DESE Research, Inc., reece.johnston@dese.com

Event Sponsor and Coordinator DESE RESEARCH, INC.

Agenda – October 22nd

Time (CT)	Topic/Presenter	Description
	Opening Session	
0800 – 0830	**Social, Housekeeping, & Connectivity** Jasmine Savage, vFairs Support	Time will be given for attendees to arrive/connect, get settled, and for any issues to be troubleshot. Coffee and light refreshments will be provided.
0830 – 0900	**Opening Remarks** Dr. Charles L. Karr, UAH Tabitha Horrocks, US Army APEO E&A Dr. Stephanie Reitmeier, DEVCOM AvMC	UAH and Army leadership will introduce the event and discuss the significance and impact of the cybersecurity work being done at both UAH and Redstone Arsenal.
0900 – 0915	**Agenda and Event Overview** Tom Barnett, US Army PEO Aviation	ACI Army leadership will provide an overview of this Army ACI Rodeo event.
0915 – 0945	**An Overview of the Modular Open Systems Approach (MOSA)** Scott Dennis, US Army APEO E&A	US Army APEO E&A leadership will give an overview of MOSA and its impact to all future acquisitions by Army Aviation.
0945 – 1000	**Session Break**	
1000 – 1030	**What an Open Systems Approach Means for Risk-Driven Cyber Assessments** Elijah Evans, DESE Research, Inc.	The Army and its industry partner, DESE Research, Inc., will give a presentation covering how MOSA fundamentally alters the security profiles of platforms and recommendations for how best to proceed with cyber assessments.

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Time (CT)	Topic/Presenter	Description
	Opening Session (Cont'd)	
1030 – 1115	**Zero Trust for Army Aviation Computing Platforms** Jared Bents, Parry Labs	The Army's industry partner, Parry Labs, will present an overview on a Zero Trust approach to cyber resilience for the Army's Aviation Mission Computing Environment (AMCE) Component Specification Model (CSM).
1115 – 1200	**Modular Digital Forensics for Cyber Incident Response** Tom Barnett, US Army PEO Aviation	The Army will provide background on Army Aviation's approach for handling a cyber incident by reviewing its Army Aviation Cyber Incident Response Team (AA-CIRT) CONOPS and by previewing its relevant cyber and forensic technologies.
1200 – 1300	**Hosted Lunch & Virtual Exhibit Hall Hours**	
	Development, Test, and Evaluation Session	
1300 – 1315	**Session Introduction** Dr. John Bland, DEVCOM AvMC	Session organizers will introduce the session and provide an overview of what will be shown.
1315 – 1345	**DevSecOps for Modular Systems** Bryce Johnston, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate an Infrastructure-as-Code (IaC) Software Assurance Factory for establishing a DevSecOps pipeline for modular platforms.
1345 – 1415	**SBOM Generation and Attack Surface Reduction** Erik MacIntyre, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate a build chain utility called Embedded Attack Surface Reduction (EASR) that can generate an SBOM from and automatically reduce a system image.

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Time (CT)	Topic/Presenter	Description
Development, Test, and Evaluation Session (Cont'd)		
1415 – 1430	**Session Break**	
1430 – 1500	**AI/ML Software Assurance Technology** Justin Cole, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate an AI/ML-based static analysis tool called Automated Vulnerability Prediction (AVP).
1500 – 1530	**Transitioning to Rust for Aviation Software Development** Thomas Macklin, Navy Research Lab	The Navy Research Lab will present and demonstrate its efforts on transitioning from C to Rust for aviation software development.
1530 – 1600	**Memory Safety for C-based Applications through Rust Transpilation** Martin Cox, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present a Proof-of-Concept Secure Compiler Extension (SCE) technology that leverages Rust transpilation of C source code to automatically improve the memory safety of Aviation applications.
1600 – 1630	**Model Based Cyber Assessment for Future Vertical Lift** Janice Dyer, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate the application of the Army's risk assessment process for MOSA-aligned aviation platforms that have been developed using Model-based Systems Engineering processes.

Agenda – October 23rd

Time (CT)	Topic/Presenter	Description
Operations and Maintenance Session		
0800 – 0830	**Social, Housekeeping, & Connectivity** Jasmine Savage, vFairs Support	Time will be given for attendees to arrive/connect, get settled, and for any issues to be troubleshot. Coffee and light refreshments will be provided.
0830 – 0845	**Session Introduction** Tom Barnett, ACI Army Focal	Session organizers will introduce the session and provide an overview of what will be shown.
0845 – 0930	**Cyber Resiliency within MOSA-Aligned Avionics Architecture** Will Keegan, Lynx Software Technologies Mark Spencer, Avilution	The Army's industry partners will present and demonstrate a modular and secure avionics architecture that leverages configuration defined Unikernels to enable rapid, low-cost safety recertification.
0930 – 1015	**Operational Threat Monitoring and Recovery Technologies** Trey Franklin, DESE Research, Inc. Matthew Johnson, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate a suite of security capabilities that can monitor, attest, and recover a compromised LRU within an aviation platform.
1015 – 1045	**Digital Forensics Approach and Exercise** Reece Johnston, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate a forensic analysis approach that could build upon the Army's operational threat monitoring technology.
1045 – 1100	**Session Break**	

Agenda – October 23rd

Time (CT)	Topic/Presenter	Description
Operations and Maintenance Session (Cont'd)		
1100 – 1130	**Malware Reverse Engineering Technology** Corwin Warner, DESE Research, Inc.	The Army's industry partner, DESE Research, Inc., will present and demonstrate a novel hardware capability for reverse engineering persistent malware.
1130 – 1200	**Keystone Security Architecture for MOSA-Compliant Systems** Andrew Nelson, Idaho Scientific	The Army's industry partner, Idaho Scientific, will present their Keystone Security Architecture that extends security across LRUs through secure boot technology and discuss its application within MOSA-enabled architectures such as VICTORY and FACE.
Academia and Industry Session		
1200 – 1300	**Hosted Lunch & UAH Cyber Bytes—Cybersecurity at Space and Missile Defense Command (SMDC) from Mr. Terry Carlson, SMDC**	
1300 – 1315	**Session Introduction** Dr. Tommy Morris, UAH	Session organizers will introduce the session and provide an overview of what will be shown.
1315 – 1345	**UAH CCRE Research Efforts: Systems Observation and Analysis Platform** Dr. Shelton Wright, UAH	The University of Alabama in Huntsville will present a multi-pronged approach to gathering low level Linux system data in both developmental and deployed use cases.
1345 – 1415	**ERAU CARS Research Efforts: GNSS Challenges and PNT Spoofing & Jamming Identification** Daniel Diessner, ERAU CARS	Embry Riddle Aeronautical University's (ERAU) Center for Aerospace Resilient Systems (CARS) will present an overview of some of today's real-world challenges to Global Navigation Satellite Systems (GNSS) and some of ERAU's research into Positioning, Navigation, and Timing (PNT) spoofing and jamming identification.

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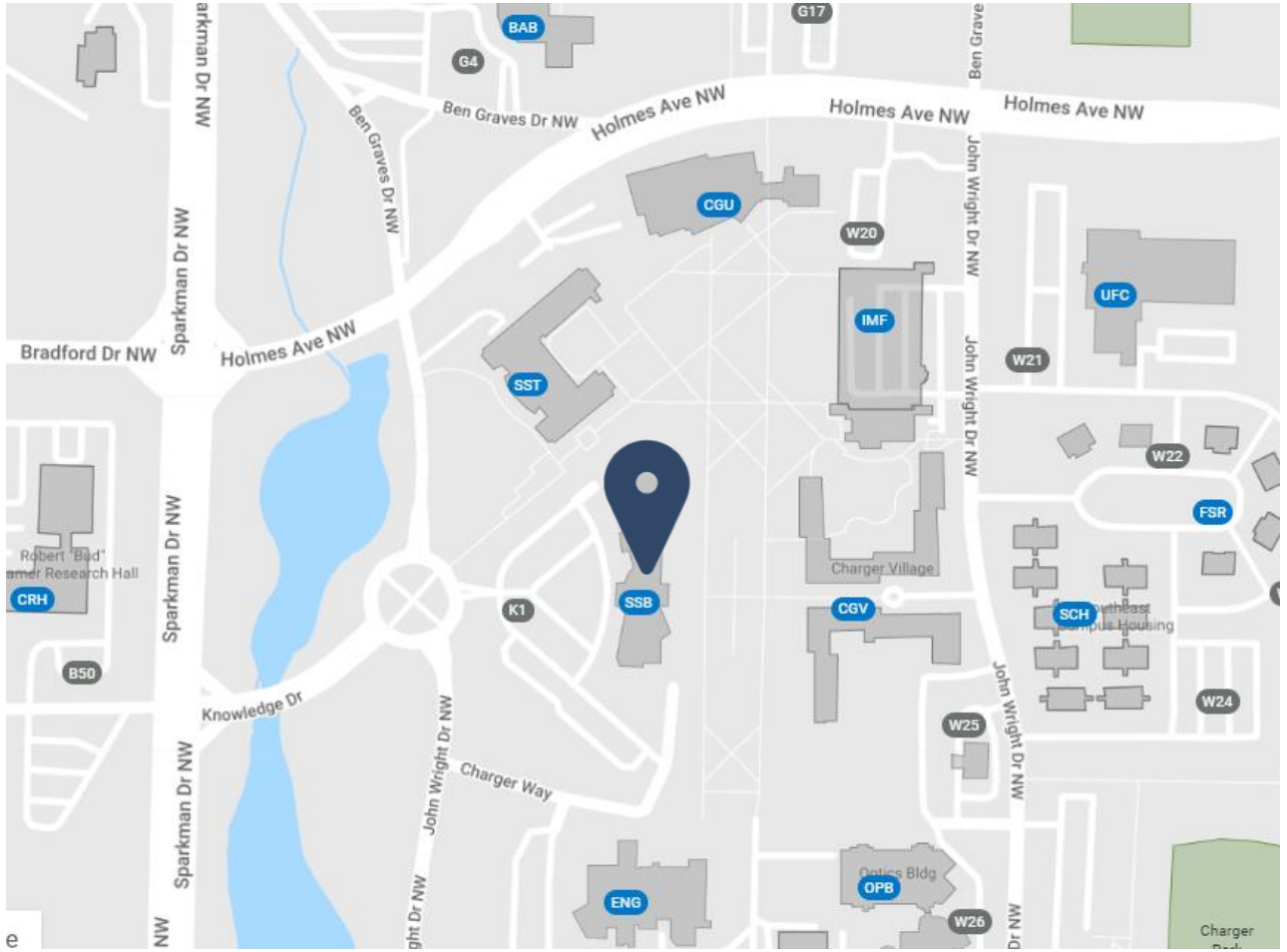
Time (CT)	Topic/Presenter	Description
Academia and Industry Session (Cont'd)		
1415 – 1430	**Session Break**	
1430 – 1450	**Modular Approach to Fuzz Testing** Arch Owen, Draper Labs	Draper Labs will present a modular approach to fuzz testing using a GOTS tool suite, the Vader Modular Fuzzer (VMF).
1450 – 1510	**Smart Fuzzing for Avionics** Shaun Power, BAE SMS	BAE will present its upcoming research areas for smart fuzzing, a dynamic test concept that more efficiently identifies cyber vulnerabilities in avionics systems.
1510 – 1530	**Securing SOSA-aligned RF Sensors** Thomas Bailey, Riverside Research	Riverside Research will demonstrate DARPA-funded cybersecurity technologies for securely parsing and validating traffic of SOSA-aligned RF sensors.
1530 – 1550	**Least Privilege for Embedded Linux** David Esler, Star Lab	Star Lab will present their Titanium for Linux technology that protects mission critical systems and technologies through complex access control/data release policies.
1550 – 1610	**SystemX Secure Networking Demo** Iro Pitoglou, CCX Technologies	CCX Technologies will demonstrate suite of secure networking tools that enhance the cybersecurity posture of mobile and computing platforms in the air, on land, and at sea.
1610 – 1630	**OMNI: A Modular Open Architecture Approach to AI Inferencing at the Edge** Dr. William Monroe, Analytical AI	Analytical AI will present OMNI (Open Message Network Interchange), an open architecture approach for streaming multimodal/multiplexed data sources into low-power AI-inferencing devices.

Location

UAH Student Services Building (SSB)

- Auditorium/Room 112
- 301 Sparkman Dr NW, Huntsville, AL 35899
- 34.72470, -86.64061
- POC: Sharon Johnson, 256-457-8483



Accommodations and Airports

Accommodations

- **Huntsville Marriott at the Space & Rocket Center**
  - 5 Tranquility Base, Huntsville, AL 35805
  - 256-830-2222
  - 1.4 miles [4-Minute drive]
- **Hilton Garden Inn Huntsville/Space Center**
  - 4801 Governors House Dr SW, Huntsville, AL 35805
  - 256-430-1778
  - 1.3 miles [4-Minute Drive]
- **106 Jefferson Huntsville, Curio Collection by Hilton**
  - 106 Jefferson St S, Huntsville, AL 35801
  - 256-288-0128
  - 5 miles [8-Minute Drive]
- **The Westin Huntsville**
  - 6800 Governors W, Huntsville, AL 35806
  - 256-428-2000
  - 3.3 miles [9-minute Drive]
- **Four Points by Sheraton Huntsville Airport**
  - 1000 Glenn Hearn Boulevard, Huntsville, AL 35824
  - 256-772-9661
  - 9.7 miles [18-Minute drive]

Airport(s)

- **Local:**
  - Huntsville International Airport (HSV)
- **Driving Distance:**
  - Birmingham-Shuttlesworth International Airport (BHM) [1.5-Hour Drive]
  - Nashville International Airport (BNA) [2-Hour Drive]

Dining

Nearby

- **Governor's Drive:**
  - Taqueria El Cazador, Stovehouse (256-678-7047)★
  - Straight to Ale, Campus 805 (256-801-9650)★
  - Gold Sprint Coffee ★
- **Midcity Area:**
  - Viet Huong (256-890-0104)★
  - Kamado Ramen (256-964-6826)★
  - Tous Les Jours (256-270-7168)
  - Salt Factory Pub (256-585-2488)
  - Rosie's Mexican Cantina (256-922-1001)
  - Chipotle (256-895-7761)
- **Bridge Street Town Center:**
  - Connors Steak & Seafood (256-327-8425)
  - Agave & Rye Epic Tacos (256-203-5788)
  - Panera Bread (256-971-1235)

Area

- **Downtown Area:**
  - Purveyor (256-419-2555)★
  - The Poppy and Parliament (256-715-7152)★
  - L'Etoile Patisserie (256-460-6309)★
  - Canadian Bakin (256-489-2323)★
  - Jack Brown's Beer & Burger Joint (256-270-7045)
- **Town Madison:**
  - J. Alexander's Restaurant (256-870-7100)
  - Prohibition Rooftop Bar & Grill (256-325-4438)
  - Super Chix (256-325-4063)
- **Redstone Gateway:**
  - Rocket City Tavern (256-319-3333)
  - Fiero Mexican Grill (256-319-3310)

Huntsville Area Information

WELCOME TO THE HUNTSVILLE/MADISON COUNTY COMMUNITY! Huntsville is a great place to live, work, and play. Decades ago, Huntsville played a major role in sending man to the Moon. Now, the Rocket City is powering NASA's Space Launch System, which will take us back to the Moon, then on to Mars! We continue with advancements in military and space – we are home to Redstone Arsenal, a Federal Center of Excellence with more than 75 federal organizations and commands including NASA's Marshall Space Flight Center, the four-star U.S. Army Materiel Command, and an FBI presence that is growing by the day. Huntsville is also home to one of Alabama's top tourist destinations, the U.S. Space & Rocket Center (shown above). Huntsville and Madison County offer a high quality of life. In 2022, U.S. News & World Report named our city the No. 1 Best Place to Live in the country! We have consistently ranked in the magazine's top cities the past several years, including for affordability. We are proud to have high quality education, good paying jobs, and specialized medical care. There is plenty to do in the Rocket City! We have a thriving music and entertainment scene. There are also great restaurants, live theatre, and a symphony.

Check out Huntsville's Destination Guide below:

2024 Huntsville Destination Guide : Huntsville Destination Guide (mydigitalpublication.com)