NDIA
AT THE HEART OF THE MISSION

2020 VIRTUAL
SYSTEMS & MISSION ENGINEERING CONFERENCE

November 10, 12 – 13, 2020 | NDIA.org/VirtualSME

AGENDA

Please note, all sessions listed in Eastern Standard Time.

TUESDAY NOVEMBER 10TH

9:00 – 9:15 am EST

OPENING REMARKS

Joe Elm
Principle Consultant (retired), Elm System Solutions
Chairman, Systems Engineering Division

Bob Rassa
Director, Engineering Programs, Raytheon Intelligence and Space Chair Emeritus, Systems Engineering Division

Gen Herbert "Hawk" Carlisle, USAF (Ret)
President and CEO, National Defense Industrial Association

9:15 – 10:15 am EST

KEYNOTE ADDRESS

Dr. Sandra Magnus
Deputy Director for Engineering, Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E))

10:15 – 10:30 am EST

NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK

10:30 am – 12:15 pm EST

EXECUTIVE PLENARY PANEL: SERVICE AND AGENCY SYSTEMS ENGINEERING LEADS

Dr. Sandra Magnus (Moderator)
Deputy Director for Engineering, Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E))

Kristen Baldwin, Air Force
Deputy Assistant Secretary of the Air Force (Science, Technology, and Engineering)

Jeannette Evans-Morgis, Army
Chief Systems Engineer, Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)), U.S. Army

David McNeill, SES
Chief Engineer, Missile Defense Agency

John Fiore, Navy
Chief Engineer (Acting), Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN(RDA))

12:15 – 12:30 pm EST

AWARDS PRESENTATION

12:30 – 1:00 pm EST

EXHIBIT HALL & LUNCH BREAK

CONCURRENT BREAKOUT SESSIONS

	Digital Engineering	Engineered Resilient Systems	Agile Systems Engineering	System of Systems
MODERATORS	Jennie Horne	Lois Hollan	Suzette Johnson	Judith Dahmann

1:00 – 1:30 pm EST	23064 INCOSE Model-Based Enterprise Capabilities Matrix - for Organizational Assessments **Al Hoheb** Senior Systems Engineer, The Aerospace Corporation	23427 DARPA CRANE Program Philosophy **Dr. Alexander "Xander" Walan** Program Manager, DARPA Tactical Technology Office	23990 Introduction to the DoD Software Acquisition Pathway **Sean Brady** Software Acquisition Pathway Lead, Office of the Under Secretary of Defense for Acquisition & Sustainment	23255 Leveraging Set-Based Practices to Enable Efficient Concurrency in Large Systems and Systems-of-Systems Engineering **Brian Kennedy** Chief Technical Officer, Targeted Convergence Corporation
1:35 – 2:05 pm EST	23206 I Want it Now! ... Mature Digital Engineering Capabilities Deployable Today **Christopher Finlay** Digital Engineering Director, SAIC	23402 Hypersonic Design Engineering **Dr. Justin Foster** Research Mechanical Engineer, U.S. Army Engineer Research and Development Center Information Technology Lab	23470 Enabling the Future for Agile in Defense Systems: ADAPT Strategic Plan **Dr. Suzette Johnson** Enterprise Lean-Agile Strategic Lead, Northrop Grumman	23058 A Pattern-Based Approach to the Development of Systems of Systems Using the Unified Architecture Framework 1.1 **Dr. Graham Bleakley** Systems Engineering Technical Director, IBM United Kingdom Ltd.
2:10 – 2:40 pm EST	23319 Digital Engineering Strategy to Enable Enterprise Systems Engineering **Ryan Noguchi** Director, Space Architecture Department, The Aerospace Corporation	23401 Data Architecture and Strategy to Support Engineering Design **David Stuart** Associate Technical Director, Engineered Resilient Systems	23062 Adopting DevSecOps in Defense Systems: Systems Engineering Considerations **Dr. Richard Turner** Senior Software Engineer, Software Engineering Institute, Carnegie Mellon University	23395 Applying Systems Engineering for Threat Based Planning **Dennis Chapman** Strategic Planner, U.S. Army Futures Command
2:45 – 3:15 pm EST		23390 Industry / Government Simulation Collaboration Framework **Dr. George Ball** Principle DT Fellow, Raytheon Technologies	22989 DevSecOps - Software Development in the Next Generation DoD **Joseph McKairnes** Sr. Federal Solutions Architect, GitLab	
3:15 – 3:30 pm EST	**NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK**			
	Digital Engineering	**Systems Engineering Effectiveness**	**Agile Systems Engineering**	**System Security Engrg & Assurance**
MODERATORS	**Jennie Horne**	**Joe Elm**	**Suzette Johnson**	

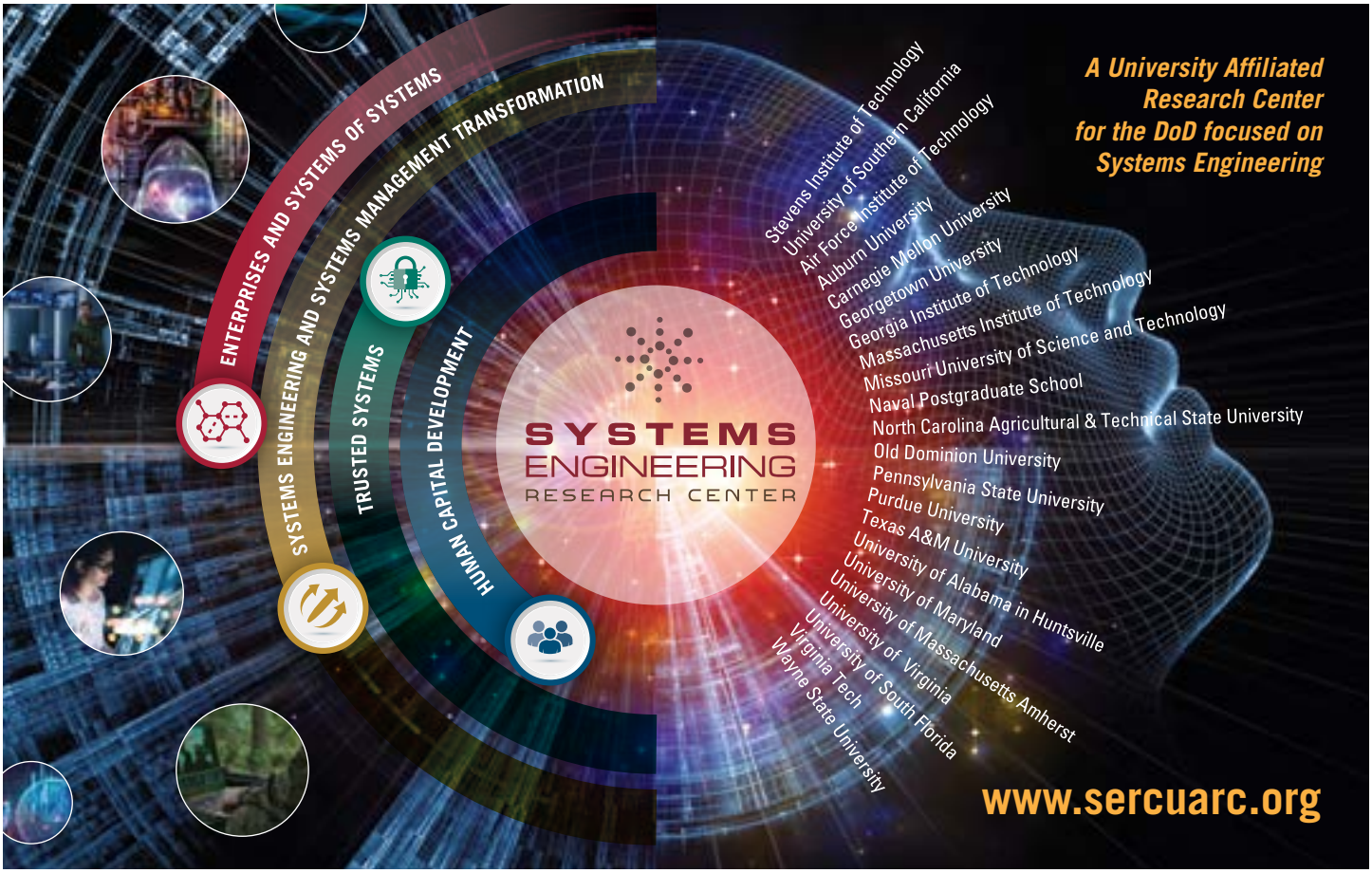
3:35 – 4:05 pm EST	23367 Promoting a Distributed Model-Based Market/Exchange **Troy Peterson** Vice President, Systems Strategy, Inc.	23272 Integrated Product Line Engineering and the Digital Thread **Matthew Hause** Principle Systems Engineer, Systems Strategy, Inc.	23091 Provisioning Pipelines: A Managed DevSecOps Approach to Software Pipeline Creation **Shane Ficorilli** Software Engineer, Software Engineering Institute	23458 Welcome and System Security Engineering Committee Highlights **Cory Ocker** Secure Systems Manager, Raytheon Technologies
4:10 – 4:40 pm EST	23119 Leveraging the Digital Engineering transition to Revolutionize the IP Marketplace **Curtis Sisson** Boeing Defense, Space and Security (BDS) Model-Based Systems Engineering Manager, The Boeing Company	23282 Answering the Challenges of AI with Systems Engineering **Dr. Barclay Brown** Engineering Fellow, Raytheon Technologies	23097 A Holistic DevSecOps Perspective for Big System Builders **Dr. Harry Koehnemann** SAFe® Fellow and Principle Consultant, Scaled Agile	23203 OUSD(R&E) Resilient Systems Overview **Melinda Reed** Director, Resilient Systems, Office of the Under Secretary of Defense for Research and Engineering
4:45 – 5:15 pm EST	23218 Extending a Digital Engineering Framework Through Operations **Christopher Ritter** Director, Digital Innovation Center of Excellence, Idaho National Laboratory	23176 Not All Data is Created Equal: Solving the Problem of Traceability and Repeatability with Analysis Workflows **Dr. Andy Ko** Director, Engineering Services, Phoenix Integration, Inc.	23222 The Systems Engineer as an Agile Product Owner **Paul Zajac** Software Factory Principle SME, Lockheed Martin Corporation	23171 Agile Authorizations for Cyber Resiliency **Daniel Holtzman** Cyber Technical Director, U.S. Air Force
5:20 – 5:50 pm EST	23354 Digital Engineering Information Exchange Challenge **Sean McGervey** Systems Engineer, Johns Hopkins University Applied Physics Laboratory		23333 The GAP Model for Agility and Excellence **Noah Carpenter** Chief Scrum Master/ Software Developer, Northrop Grumman	23186 The Missing Link: The Operational Level of Weapon Systems Cybersecurity **Dr. William Bryant** Technical Fellow, Modern Technology Systems, Inc.

THURSDAY, NOVEMBER 12TH

	Digital Engineering	Model-Based Systems Engineering	Agile Model-Based Engineering	System Security Engrg & Assurance
MODERATORS	**John Daly**	**Joe Elm**	**Geoff Draper**	

9:00 – 9:30 am EST	23357 Modeling Case Studies for Dynamic Exploration of Acquisition Decisions **Marilee Wheaton** Systems Engineering Fellow, The Aerospace Corporation	23364 INCOSE and the Future of Systems Engineering **Troy Peterson** Vice President, System Strategy, Inc.	23102 Model-Centri Systems Engineering in an Agile Environment **Natasha Shevchenko** Member of the Technical Staff, Software Engineering Institute, Carnegie Mellon University	23224 Protecting the DevSecOps Application Through Software Assurance **Bradley Lanford** STP&E Contractor Support Team, SAIC Software Assurance Lead, Office of the Undersecretary of Defense for Research and Engineering
9:35 – 10:05 am EST	23283 Digital Engineering Modeling Methods for Digital Signoffs **Dr. Mark Blackburn** Senior Research Scientist, Stevens Institute of Technology	23381 Agile for All - Integrating Agile Practices Across Functions **Robin Yeman** Senior Fellow, Lockheed Martin Corporation	23177 A Framework for Agile MBSE Development **Dave Wood** Scientist, Systems Engineer, CSEP, OCSMP, L3Harris Technologies	23321 Accelerating Modernization of Software Acquisition to Better Serve the Warfighter with a Special Emphasis on Software Assurance and Near-Term Technology Drivers **Dr. Kenneth Nidiffer** President & CEO, Ken's Software Company
10:10 – 10:40 am EST		23100 Model of Models Methodology **Aleczander Jackson** Chief Engineer of Digital Engineering, Modern Technology Solutions, Inc.	23085 Agile Robots from Jupiter **Todd Shayler** Associate Branch Head, Applied Decision Systems, Georgia Tech Research Institute	23172 Threat and Attack Modeling: System Centric vs Attack Centric **Randall Brooks** Engineering Fellow, Raytheon Technologies
10:40 – 11:00 am EST	**NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK**			
	Digital Engineering	**Model-Based Systems Engineering**	**Agile Acquisition**	**System Security Engrg & Assurance**
MODERATORS	**John Daly**		**Geoff Draper**	
11:00 – 11:30 am EST	23063 Accelerating the Change - MBE Deployment Mechanisms **Karla Beas** Systems Engineer, Raytheon Technologies	23065 Leading Model-Based Systems Engineering Adoption - Top 6 Things Leaders Can Do to Drive MBSE **Al Hoheb** Senior Systems Engineer, The Aerospace Corporation	23098 DOs and DON'Ts in Capacity-Based Agile Procurements – A Case Study **Dr. Mahdieh Gholampoor** Director of Service Delivery, Abaco Strategy LLC	23308 The Expansive Use of NIST SP 800-53r4 as a Common Requirements Lexicon **David Olmstead, PE, ESEP, CISSP-ISSEP** Cyber Systems Security Engineer/ Senior Staff, Lockheed Martin Corporation

11:35 am – 12:05 pm EST	23268 Digital Engineering: From Toolchain to Platform **Dr. Aleksandra Markina-Khusid** Department Manager of Systems and Mission Analysis Department, MITRE	23201 Workflows in Multi-Repository Model Management **Veejay Gorospe** Solutions Consultant, Dassault Systems CATIA | No Magic	23084 Evaluating, Selecting, and Succeeding with Agile Suppliers **Jeff Dalton** Chief Evangelist and CISO, AgileCxO.org	23271 Continuous, Agile, Cyber Assured? **Ronda Henning** Senior Fellow, L3Harris Technologies
12:10 – 12:40 pm EST	23299 Cloud Infrastructure for Digital Engineering Tools **Nancy Gomez Dominguez** Lead Cloud Infrastructure and Software Engineer, Idaho National Laboratory	23284 The Lifecycle Modeling Framework: Organizing and Simplifying the Application of Model-Based Systems Engineering **Dr. Jerry Sellers** President, Teaching Science and Technology, Inc.	23050 Doing Agile in Hard places: 10 Things the DoD Does Poorly When Implementing Agile (And 5 It Does Really Well) **Scott Grimes** Agile Coach/Co-Organizer, Agile for Defense	23326 Incorporating Cybersecurity into SAFe® **Flavius Galiber** Digital Engineering Coach, Northrop Grumman
12:40 – 1:10 pm EST	**EXHIBIT HALL & LUNCH BREAK**			
	Digital Engineering	**Model-Based Systems Engineering**	**Agile Program Management**	**System Security Engrg & Assurance**
MODERATORS	**John Daly**		**Andrea Nibert**	



1:10 – 1:40 pm EST	23191 DE Metrics: Categorizing the Benefits and Value of Digital Engineering **Tom McDermott** Deputy Director and Chief Technology Officer, Stevens Institute of Technology	23340 Digital Tread - Integrating MBSE and Product Lifecycle Management **David Segal** Senior Director of Business Development, PTC, Inc.	23096 PSM Continuous Iterative Development (CID) Measurement Framework **Cheryl Jones** System Engineer, U.S. Army Combat Capabilities Development Armaments Center	23204 Design Principles for Weapon Systems Engineering **Michael McEvilley** Principle Scientist, MITRE
1:45 – 2:15 pm EST	23199 Digital Engineering Measures Correlated to Digital Engineering Lessons Learn from Systems Engineering Transformation Pilot **Dr. Mark Blackburn** Senior Research Scientist, Stevens Institute of Technology	23229 6 Vs and 3 Ts of Systems Engineering **David Long** Founder and President, Vitech	23086 Managing an Agile Project in an EVM World **Colt Stout** Deputy Project Manager, Sandia National Laboratories	23202 Cyber Resilient Weapon Systems Workforce Competency **Melinda Reed** Director, Resilient Systems, Office of the Under Secretary of Defense for Research and Engineering
2:20 – 2:50 pm EST	23179 A Digital Engineering Demonstration for a Small Unmanned Underwater Vehicle **Dr. Ronald Giachetti** Chair and Professor, Department of Systems Engineering, Naval Postgraduate School	23231 Schema and Metamodels and Ontologies, Oh My! **David Long** Founder and President, Vitech	23109 Performance Measurement in an Agile Contract – Do's and Don'ts From a Success Story **Kishore Nakka** Enterprise Lean/Agile & SAFe® Transformation Leader, OST	23332 Trusted Traceability: What the Semiconductor and Electronics Can Learn from the Food and Beverage Supply Chain **Alastair Orchard** VP, Digital Enterprise, Mentor, A Siemens Business
2:55 – 3:25 pm EST	23279 Lessons Learned in the Creation of a Digital Thread **Kayla Corey** Systems Engineer, SPEC Innovations	23234 Model-Based Requirements: Writing Requirements without Writing **Dr. Alejandro Salado** Assistant Professor, Virginia Tech University	23095 DevOps Successes and Lessons Learned from the Field - The Office of Naval Intelligence **Nickolas Guertin** Senior Software Systems Engineer, Carnegie Mellon University	23991 FY20 NDAA Standards Update **Randy Woods** Director of Hardware Assurance, Department of Defense Research & Engineering Enterprise
3:25 – 3:45 pm EST	**NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK**			
	Mission Engineering & Assurance	**Model-Based Systems Engineering**	**Agile Program Management**	**System Security Engrg & Assurance**
MODERATORS	**Judith Dahmann**		**Andrea Nibert**	

3:45 – 4:15 pm EST	23230 R&E Mission Engineering State of Practice **Elmer Roman** Director, Mission Integration, Office of the Undersecretary of Defense for Research and Engineering	23263 Transitioning Legacy Systems to Model-Based Systems Engineering **Paul White** ICBM GBSD Digital Engineering Branch Lead, BAE Systems	23092 Mission Based Alternative to WSJF **Keith Korzec** Senior Member of the Technical Staff, Software Engineering Institute	23205 Concepts for an Approach to Weapon Systems Engineering **Michael McEvilley** Principle Scientist, Office of the Undersecretary of Defense for Research and Engineering
4:20 – 4:50 pm EST	23246 Approach to Digital Engineering for Large Systems of Systems Mission **Dr. Judith Dahmann** Technical Fellow, MITRE	23129 Format Independence for SysML Models **Robin Mikola** Principle Solutions Architect, SodiusWillert	23469 Measuring Product Value **Bill Golaz** Project Engineering Principle and Lockheed Martin Fellow Emeritus, Lockheed Martin Corporation	23192 Can We Assure Resilience of Cyber-Physical Systems Using Model-Based Systems Engineering? **Tom McDermott** Deputy Director and Chief Technology Officer, Stevens Institute of Technology
4:55 – 5:25 pm EST	23346 Application of Probabilistic Graph Models to Kill Chain and Multi-Domain Kill Web Analysis Problems **Dr. Valerie Sitterle** Principal Research Engineer and Chief Scientist of the in the Systems Engineering Research Division, Georgia Tech Research Institute	23371 MBSE: From Abstraction to Implementation **Javier Villafane** Principle Systems Engineer, Raytheon Technologies	23307 Building Quality by Engineering People and Values: Improve the Person, and You Improve Everything! **Dr. Barclay Brown** Engineering Fellow, Raytheon Technologies	23361 Model-Based Cyber Threat Analysis Approach **Leqi Zhang** Cyber Solution Architect, L3Harris Technologies
5:30 – 6:00 pm EST	23347 Implementing Digital Engineering Environment for Mission Engineering **Dr. Jeff Boulware** Technical Director, The MITRE Corporation **Jason Anderson** Strategic Multi-Disciplinary Systems Analyst, The MITRE Corporation		23104 Integrating DevOps Into Navy Combat Systems Development **LT Andrew Miller, USN** Engineering Duty Officer, Naval Postgraduate School	23343 On-Demand Integrity Measurement at the Circuit-Board Level **Random Gwinn** Cybersecurity Researcher and Engineer, Johns Hopkins University Applied Physics Laboratory

FRIDAY, NOVEMBER 13TH

	Mission Engineering & Assurance	Modeling & Simulation	Agile Systems Engineering	Environment Safety & Occupational Health
MODERATORS	**Judith Dahmann**		**Robin Yeman**	**Sherman Forbes**

9:00 – 9:30 am EST	23254 Leveraging Set-Based Practices for Ongoing Optimization of Your Mission Engineering Designs, even as the Mission Unfolds **Brian Kennedy** Co-Founder and Chief Technical Officer, Targeted Convergence Corporation	23213 Relationship Between Traditional Modeling & Simulation and Digital Engineering **Brian Miller** U.S. Army Futures Command, Office of the Undersecretary of Defense for Research and Engineering	23394 Industrial DevOps: From Value Streams to Agile Teams **Dr. Suzette Johnson** Enterprise Lean-Agile Strategic Lead, Northrop Grumman	23197 Environment, Safety, and Occupational Health in the Adaptive Acquisition Framework **David Asiello** Program Manager, Office of the Assistant Secretary of Defense for Sustainment
9:35 – 10:05 am EST	23348 Advancements Towards a Digital Approach for Mission Engineering **Todd Shayler** Associate Branch Head, Applied Decision Systems, Georgia Tech Research Institute	23257 Every Mission-Level or System-Level Trade Study Should Have an Associated Trade Space Map to Facilitate Multi-Discipline Review **Brian Kennedy** Chief Technical Officer, Targeted Convergence Corporation	23082 CyberAgility Deliver Security Faster: Agile Case Studies in Cybersecurity **Tim LaPorta** Director of Agile Coaching and Staffing, Lithespeed LLC	23351 F-35 Joint Program Office and Support Team – Environmental Excellence in Weapons System Acquisition **John Casana** Senior Lead Engineer, Booz Allen Hamilton
10:10 – 10:40 am EST		23296 Improved Delivered Capability: Isolating and Predicting New Technologies, Technology Uses, and Emerging Threat Sources **Dr. Carlo Lipizzi** Associate Professor at the Stevens Institute of Technology and Principle Investigator at the System Engineering Research Center	23093 Agile: Beyond IT and System Development **Dr. Martha Hennen** Personnel Psychologist, Office of Equal Employment Opportunity, U.S. Securities and Exchange Commission	23184 ESOH Track - Integrating ESOH Engineering And Product Support Activities **Erin Beck** Environmental Engineer, Naval Air Systems Command
10:40 – 11:00 am EST	**NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK**			
	Software	**Model-Based Systems Engineering**	**Architecture & MOSA**	**Environment Safety & Occupational Health**
MODERATORS	**Ken Nidiffer**		**Bob Scheurer**	**Megan Clampitt**

11:00 – 11:30 am EST	23352 Building Safety into Autonomous Robot Software **David Hetherington** Principle Systems Engineer, System Strategy, Inc.	23251 Using Effective MBSE to move up the Data-Information-Knowledge-Understanding-Wisdom Chain and Providing Long Term Strategic Value to the Enterprise **Brian Selvy** Principle Systems Engineer, Vitech Corporation	23377 Purpose of Architecture **Michael Stokes** Sr. Principle Systems Engineer/Raytheon Certified Architect, Raytheon Technologies Corporation	23194 Unmanned System (UxS) Safety IPT and Engineering Precepts for Safe Autonomy **Michael Demmick** Navy Weapon System Explosives Safety Review Board Secretariat, Executive Secretary, Joint Weapons Safety Working Group & OSD UxS Safety IPT Chair, Naval Ordnance Safety & Security Activity
11:35 am – 12:05 pm EST	23358 A Pattern Language for Integrating Software Cost Estimation into a SysML System Model **Dr. Thomas Ford** Principle Systems Engineer, Centauri, LLC		23363 The WWWWW&H of Architecture with the UAF **Matthew Hause** Principle Systems Engineer, System Strategy, Inc.	23391 Weapon System-Related Impulse Noise Assessment **LTC Andy Merkley, USA** Army Hearing Program Manager, Army Public Health Center
12:10 – 12:40 pm EST			23327 System Operational Architectures with Agent Modeling for Ground Vehicle Autonomous and Smart Systems **David Hetherington** Principle Systems Engineer, System Strategy, Inc.	23399 Strategizing Solutions for Protecting Warfighter Brain Health **Olivia Webster** Biomedical Engineer, Army Public Health Center
12:40 – 1:10 pm EST	**EXHIBIT HALL & LUNCH BREAK**			
	Program Management: Risk Management	**Model-Based Systems Engineering**	**Architecture & MOSA**	**Environment Safety & Occupational Health**
MODERATORS	**Dave Ingalls**		**Ed Moshinsky**	**Megan Clampitt**
1:10 – 1:40 pm EST	23209 Risk Management within Nuclear Weapons Programs: Where We Were, and Where We're Heading **R. Glenn Bell** Chief System Engineer for Defense Programs, National Nuclear Security Administration	23285 A System Dynamics Model to Measure and Quantitatively Improve Digital Transformation and MBSE Adoption Within a Large-Scale Organization or Enterprise. **Robert Iannuzzi** Mission and Systems Engineer, U.S. Navy	23374 MOSA Strategy **Steve Thelin** Engineering Fellow, MOSA Pillar Lead for Raytheon Missiles and Defense, Raytheon Technologies	23226 Answering the Ask Through Imagination: NEPA Process Streamlining Innovations **Brian Boose** Vice President, Technical Practice Director – Impact Assessment and Permitting, AECOM

1:45 – 2:15 pm EST	23233 Formal Inconsistencies in Risk Assessment Processes **Dr. Alejandro Salado** Assistant Professor, Virginia Tech	23360 MBSE Research Testbed for Rapid and Flexible Modeling and Experimentation **Dr. Azad Madni** Professor, Astronautical Engineering, Executive Director, Systems Architecting and Engineering Program, & Chief Executive Officer, Intelligent Systems Technology, Inc., University of Southern California	23457 Integrating MOSA **Nadine Geier** Director of Systems Engineering, Office of the Undersecretary of Defense for Research and Engineering	23372 Ground Based Strategic Deterrent Program Office National Environmental Policy Act Compliance Perspective - High Risk Management **Sharon Dore** Chief, Product Support, Division Ground Based Strategic Deterrent, U.S. Air Force
2:20 – 2:50 pm EST	23328 Risk & Opportunity Management Transfer - Systems Engineering & The PMO **Liz Garypie** Director, Enterprise Configuration Control, Lockheed Martin Corporation	23365 Graph Exploration of System Models **Troy Peterson** Vice President, System Strategy, Inc.	23252 Identifying Security Patterns for Modular Open Systems **Giselle Bonilla-Ortiz** Senior Systems Engineer, Raytheon Technologies	23200 Department of the Navy Initiatives to Expedite NEPA Reviews **Barbie Prine** Senior Environmental Planner, Chief of Naval Operations, Headquarters Marine Corp
2:55 – 3:25 pm EST			23373 Measuring MOSA **Steve Thelin** Engineering Fellow, MOSA Pillar Lead for Raytheon Missiles and Defense, Raytheon Technologies	
3:25 – 3:45 pm EST	**NETWORKING CHAT LOBBY & EXHIBIT HALL BREAK**			
	Program Management	**Model-Based Systems Engineering**	**Architecture & MOSA**	**Environment Safety & Occupational Health**
MODERATORS	**Stewart Tague**		**Bob Schuerer**	**Megan Clampitt**
3:45 – 4:15 pm EST	23190 Early Science and Technology Protections Translate to Uncompromised Transition of Advanced Capabilities into Acquisition **Kristopher Gardner** Director, Science and Technology Protection, Office of the Undersecretary of Defense for Research and Engineering	23195 A Model-Based Systems Engineering Approach to Assessing Modularity in System Architectures **Benjamin Stirgwolt** PhD Student, George Washington University	23449 Assessing MOSA – Refining the Practice **Nadine Geier** Director of Systems Engineering, Office of the Undersecretary of Defense for Research and Engineering	23212 Lockheed Martin's Chemical Stewardship Program: Reducing Risk through the Sustainable Management of Chemical Substances and Materials **Margaret Proul** Enterprise Risk and Sustainability Program Manager, Lockheed Martin Corporation

4:20 – 4:50 pm EST	23344 Achieving Airborne System Airworthiness In a Landscape of Disruptive Technologies and Diverse Regulatory Objectives **Todd Stempel** Avionics Chief Technologist/Certification Manager, ENSCO	23228 Applying an MBSE Approach for Evaluating Shipyard Operations **David Jurkiewicz** Specialist Master Consultant, Deloitte	23317 Method for Consistent Evaluation of Applicability of Open Standards **Tara Trumbull** Principle Systems Engineer with Honors Section Head, Raytheon Technologies	23331 Model-Based Systems Engineering Library – The National Aerospace Standard 411-1 Hazardous Materials Target List **Jack Gallagher** Staff Engineer, Booz Allen Hamilton
4:55 – 5:25 pm EST	23219 Deep Digital Thread from Project Controls Through Engineering Design **Jeren Browning** Full Stack Developer, Idaho National Laboratory	23382 Using SysML State Machines to Automatically Conduct Failure Modes and Effects Analysis **Michael Vinarcik** Chief Systems Engineer, SAIC	23339 Developing Meta Systems Architectures for Leading Innovation with Complex Societal and Technical Challenges **Dr. Cihan Dagli** Professor of Systems Engineering and Engineering Management/ Professor Computer and Electrical Engineering, Missouri University of Science & Technology	23178 Evaluating Potential Impacts to the DoD Mission and the Defense Industrial Base from Emerging National and International Chemical Regulations **Emma Williams** Junior Environmental Engineer, Noblis
5:30 – 6:00 pm EST	23294 Addressing Capability Gaps in the A&D Industry: Strategic Frameworks & Best Practices **David Gross** Founder & Managing Director, Strategic Value Partners		23375 Architecture in the Design Process **Michael Stokes** Senior. Principle Systems Engineer/Raytheon Certified Architect, Raytheon Technologies	23313 Addressing Environment, Safety, and Occupational Health in the Adaptive Acquisition Framework **Sherman Forbes** Engineering Policy and Standards and Specialty Engineering Team Lead, SAF/AQRE

6:00pm **CLOSING REMARKS**

The NDIA has a policy of strict compliance with federal and state antitrust laws. The antitrust laws prohibit competitors from engaging in actions that could result in an unreasonable restraint of trade. Consequently, NDIA members must avoid discussing certain topics when they are together at formal association membership, board, committee, and other meetings and in informal contacts with other industry members: prices, fees, rates, profit margins, or other terms or conditions of sale (including allowances, credit terms, and warranties); allocation of markets or customers or division of territories; or refusals to deal with or boycotts of suppliers, customers or other third parties, or topics that may lead participants not to deal with a particular supplier, customer or third party.

ON-DEMAND SESSIONS

EDUCATION & TRAINING

23267

Growing an Organic Systems Engineering/Systems Thinking Culture within a Legacy Program

Patrick McMillan
Systems Integration Manager, Lockheed Martin Corporation

Not only changing the wheels of the bus while its moving, but aligning the steering at the same time.

23370

A Scalable Agile Mechanism for Developing Model Based Engineering Practitioners and Expertise

Dr. Carla Sayan
Radar Systems of Systems Architect, Raytheon Technologies

We introduce our agile-based approach to address existing MBE/Digital Engineering challenges and accelerating MBE practitioner's expertise.

23314

The Future of Defense Training Starts with an Immersive Toolset

Hamza Ayaz
Business Development Executive, Modest Tree

Immersive technologies are transforming the training landscape. This presentation will cover the innovations that are currently being incorporated to modernize defense training, and the potential changes these innovations are bringing to the shape of the industry at large.

23349

Resiliency Across Spectrums

Claudia Rose
President, BBII Enterprises

How to train workforce resiliency so that individuals and teams can create more flexible designs in systems engineering. This presentation introduces these new systems engineering possibilities, discusses the problems and suggests the new paradigms that can help further these goals.

23217

With a Little Help From Our Friends: The Family of Systems Disciplines and What We Can Learn from One Another

Zane Scott
Vice President for Professional Services, Vitech

There are a variety of systems disciplines all of which employ the same fundamental concept of systems. These disciplines offer each other their unique perspectives and approaches. This presentation explores ways in which the disciplines can open new solutions and new market spaces for each other.

ENGINEERED RESILIENT SYSTEMS (ERS)

23407

Design Engineering Advancements through Lockheed Martin's EXPEDITE Program

Juan Montoro
Manager, Conceptual Design; ADP Program Manager, Lockheed Martin Corporation

Lockheed Martin is achieving significant advances in Design Engineering capabilities by employing a Multi-disciplinary Design Optimization (MDO) framework to enable Effectiveness Based Design (EBD).

23403

Python Technologies for Rapid, Agile Development of Novel Simulation & Analysis Workflows

Dr. James A. Bednar
Senior Manager, Technical Services, Anaconda, Inc.

New tools developed in the HoloViz.org project make it feasible to specify, configure, visualize, and share results from high-performance-computing simulations and analyses as needed for emerging requirements, using Python in a web browser with very little code or training.

23415

HPCMP CREATE: A Vision for Physics-Informed Digital Engineering

Dr. Robert Meakin
Associate Director, Computational Research and Engineering Acquisition Tools and Environments (CREATE), U.S. DoD High Performing Computing Modernization Program

A vision for physics-informed digital engineering is presented. The approach is to synthesize digital surrogates using physics-based and data-driven analytics, providing decision makers actionable information, intuitively understood, at the speed of relevance.

23993

Empowering Program Offices to Incorporate Computational Engineering Development and Insertion (CEDI) with Acquisition Projects to Significantly Reduce Processing Time and Technical Risk.

Dr. Robert Wallace
Technical Director, U.S. Army Engineer Research and Development Center Information

ERS-Industry Partnerships, under Program Office sponsorships, have proven highly successful in significantly reducing processing time and risk in platform development, and have introduced a radically new dynamic in Government-Industry collaboration. This talk introduces the structure and value of the CEDI Fail-Fast/Fix-Fast approach.

HUMAN SYSTEMS INTEGRATION

23423

Joint Human Systems Integration Capabilities-Based Assessment Initiative Updates

Dr. Larry Shattuck
Director, Human Systems Integration Program; Chair, Institutional Review Board, U.S. Army Energy Research and Development Center Information Technology Lab

This presentation will provide an overview and update of Joint HSI activities and initiatives with a focus on the recent updates to Defense System Acquisition policy for HSI.

23304

Maturation of a Human Readiness Levels Scale

Dr. Judi See
Systems Analyst, Sandia National Laboratories

Maturation of a human readiness levels (HRL) scale to complement and supplement the existing technology readiness levels (TRL) scale is described. The HRL scale has demonstrated utility for a range of scenarios and missions.

LIFE CYCLE SUPPORT

23329

NanoFlowX Electronic Waterproofing Solutions

Dr. Evan Vickers
Lead Chemist, NanoFlowX

NanoFlowX Nano Coating solution is the world's fastest IP68 rated electronic waterproofing solution that protects against liquids, humidity, dust, corrosion, and bacteria in just two-minute without special equipment or training. This is a Commercial off-the-Shelf Technology Readiness Level-9 product.

MODEL-BASED SYSTEMS ENGINEERING

23318

Think Globally, Act Locally: Adapting MBSE for the Enterprise Context

Ryan Noguchi
Director, Space Architecture Department, The Aerospace Corporation

MTSI proposes the Model of Models methodology in order to enable traceability while facilitating reusability and modularity. The key to this process is a library system where reusable elements are placed within libraries dedicated to reusable elements with the goal of elimination of rework.

23180

Inconceivable: Those Requirements Don't Mean What You Think They Mean

Michael Vinarick
Chief Systems Engineer, SAIC

Using modeling to identify inconsistencies and gaps in text-based requirements.

23117

The Future of Performance Design with MBSE: Electric Powertrain Example

Dr. Sulius Pavalkis
Industry Business Senior Consultant and Model-based systems engineering Transformation Leader, Dassault Systems, Catia, No Magic

Using an electric vehicle powertrain example, we will illustrate how to achieve performance design in the context of a system architecture utilizing a MBSE methodology called Cyber MagicGrid©. Through this framework, we will cover all phases of systems engineering life.

SYSTEMS ENGINEERING EFFECTIVENESS

23253

Using Graph Analysis to Support the Digital Thread for Mission Engineering

Dr. Dirk Zwemer
President, Intercax, LLC

An extensible graph analysis framework encompassing mission models (UAF), systems models (SysML) and other domain models provides an approach for formulating executable tests to verify and validate the Digital Thread. Application to a sample mission/system is illustrated.

23324

Model Based Automated Design Exploration for Wargaming

Jonathan Kidner
Marine Corps Warfighting Laboratory Liaison, Naval Surface Warfare Center (NSWC) Crane

A system model driven approach to mission engineering. Using SysML to inform modeling and simulation in order to enable quantitative wargaming outputs.