Department of the Air Force and Army Digital Materiel Management (DMM)

Industry Association Consortium (IAC) Kickoff

November 2-3, 2023

Organized by:

EXECUTIVE SUMMARY

Objective

This initial forum aimed to launch an enduring Department of the Air Force (DAF), US Army (Army), broader Department of Defense (DoD), and defense industry collaboration through a formalized Industry Association Consortium (IAC). This collaboration is in partnership with Systems Engineering Research Center (SERC)/Acquisition Innovation Research Center (AIRC) and National Defense Industrial Association (NDIA). Its primary goal is to jointly define the details of Digital Materiel Management (DMM) adoption actions and establish an enabling collaborative framework across acquisition functional and capability delivery activities.

The Workshop

The two-day event—held in-person at The Ritz-Carlton in Crystal City, Virginia, on November 2-3, 2023—gathered participants from the DAF, Army, broader DoD, industry, Federally Funded Research & Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and academia. Moderators led five sessions, focused on areas of concern that could delay uptake of the full DMM promise in capability delivery:

- DMM Infrastructure and Environment
- Data Standards, Ontologies, and Style Guides
- Policy and Enforcement—Intellectual Property (IP) Policy and Rights
- Integration of Acquisition Functions
- DMM Workforce Development and Culture

Each session began with a talk specific to the area of focus, followed by guiding perspectives from government, industry, and academia, and concluded with a group discussion that gathered attendees' questions and comments for use in future sessions. Discussions throughout the two days consistently highlighted the following:

- Everyone—DoD, government, academia, and industry—is on the digital transformation journey, heightening the need for collaboration and insight.
- Transformation and collaboration require sharing data, interoperable tools, trust, an informed and skilled workforce, and cultural change.
- People, not tools, make the transformation happen, and training, knowledge, and clear communication (teaching people how to speak the same language) enable the transition.
- Data has value and introduces opportunities for change and transformation.
- Metrics, particularly metrics such as time that can be understood easily, are key to planning, progress, and innovation.
- There is strong acknowledgement of the importance of cross-function and cross-sector gatherings and events that support collaboration and shared learning.

Outcomes

The IAC kickoff event provided an open, collaborative opportunity for the defense industrial base to help identify and define barriers and solutions associated with rapid adoption of DMM within the Air Force Materiel Command (AFMC). This IAC effort will provide up to three additional in-person plenary meetings in 2024, as well as more frequent tag-ups for targeted working groups, to enable progress. Anticipated outputs include:

- Clearly articulated and documented problem statements, opportunities, and ideas
- Identification of focused joint government-industry initiatives
- Targeted working groups with time-based products

IAC activities will focus on advancing the DMM Strategic Imperative of rapidly accelerating the fielding of systems. It was decided that meetings, in-person and virtual, will be open and all inputs are considered non-attribution. On occasions that require voting, each entity (e.g., defense industrial base member, company, agency, etc.) will receive one vote, with AFMC designees as the deciding party. All discussions should be based on knowledge of the common lexicon, government processes, respect for IP, etc. Every effort will be made to maintain a common lexicon and to share governmental policy and process information. Finally, feedback will be distributed as summary notes (not minutes), and attendees will have an opportunity to offer changes, additions, and/or requests for deletion within a reasonable time.

Conclusion

The DAF, Army, broader DoD, and the defense industry share roles in the development and sustainment of major defense systems. The engineering and program management artifacts that define these roles have been transitioning individually to digital forms for over 30 years, while business practices and contract boundaries have remained mostly unchanged. In all the discussions and topics explored, a pervasive theme that repeated was the imperative need for a profound 'culture shift' towards embracing modern digital practices. The Services are stepping up to the transition challenge. The IAC aims to leverage the capabilities of the DAF, Army, broader DoD, and the defense industry to enable uptake of the full DMM promise in materiel program offices, which will be achieved when "models replace documents, structured data replaces disparate information, and digital collaboration breaks down decision stovepipes" (DMM: An Accelerated Future State whitepaper). The value of digital transformation over the system life cycle is gained from seamless and efficient connectivity of data and models, full lifecycle management and access to these data and models considering their authoritative sources of truth (ASOT), and an overarching imperative to radically accelerate fielding, sustainment, and modernization of warfighter capabilities.

This document is a partial summary of the conversations at the subject event, a working document, and not meant to be indicative of any formal DAF, USAF, SAF/AQ, or AFMC positions.

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INTRODUCTION

On November 2-3, 2023, the DAF and Army kicked off the IAC in collaboration with DAF, Army, broader DoD, industry, Federally Funded Research & Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and academia. The consortium is focused on advancing DMM adoption to accelerate capability deployment to US warfighters and to meet the rising pace and technical threats of adversarial nation states. Opening remarks focused on the challenge to the greater community to move from concepts and visions to implementation and organizational transformation. The desired end state the IAC is pursuing is captured in a DMM Operational View-1 (OV1) video and DMM: An Accelerated Future State whitepaper distributed to attendees prior to the event to ensure alignment of purpose and focus of activity. Another important reference is the Digital Guide on the DAF Digital Transformation Office website.

Workshop Agenda Structure and Audience

The two-day agenda contained numerous panels, open dialogues, and stage setting sessions, as well as five breakout sessions. This kickoff event was the first of what is intended to be quarterly plenary sessions. Formalized Working Groups (WGs) are expected to meet in between the quarterly sessions. The IAC aims to target the full capability lifecycle from ideation through fielding, sustainment, and retirement.

Workshop Kickoff, Motivation, and Intent
Speaker: Col Erik Quigley, *Digital Acceleration Task Force (DATF) Director, AFMC/EN*

Col Quigley shared how the IAC came about and pointed the audience to a DMM Operational View-1 (OV1) video and DMM: An Accelerated Future State whitepaper that were shared to set the stage for the IAC and introduce AFMC's six key initiatives for DMM:

- Structuring and securing data
- Modernizing IT infrastructure
- Providing access to DMM tools
- Training the digital workforce
- Instilling a digital-first culture
- Developing digital strategies

Col Quigley emphasized that DMM encompasses the full acquisition lifecycle and all business functions (e.g., contracting, finance, logistics, engineering). DMM drives faster and streamlined data sharing and supports the evolution of data and digital threads over the lifecycle. He also stressed the DoD's need to shorten development and fielding timelines to remain dominant over enemy nation states. It was noted that policy is as important as technology for successful DMM adoption, and policymakers and technologists need to be in lockstep to achieve faster acquisition.

Col Quigley closed with an invitation to participants to respond to a recently released Request for Information (RFI) to support the continued transition to DMM.

Fireside Chat
Moderator: Dinesh Verma*, Executive Director, SERC/AIRC*
Panel:

- Ms. Kristen Baldwin, Deputy Assistant Secretary of the Air Force for Science, Technology, and Engineering, *SAF/AQR*

- Ms. Jennifer Swanson, Deputy Assistant Secretary of the Arme for Data, Engineering, and Software, *DASA/DES*
- Mr. Robert Fookes, *Director of Engineering and Technical Management, AFMC/EN*

Initial discussions were focused on how things are done and how to overcome obstacles. The moderator noted that the DoD Digital Engineering (DE) Strategy, released in 2018, linked to the thematic areas of the workshop, and it is in these areas that the attendees need to act together to have an impact.

It was generally agreed that this journey requires "baby steps." Short-term goals include determining where to focus investment, training the workforce, transitioning to digital environments, examining policy, and emphasizing industry engagement. Long-term goals include fostering collaboration and optimizing data. A consistent theme across programs is the need to build a system model based on data that can grow over time and an architecture that allows agility, adaptability, and interoperability.

Workforce training and upskilling are known challenges. Everyone needs to know the vernacular of doing business in the digital space. Managers should focus on what helps staff perform in the digital environment. Industry can provide insights to the government and share training resources.

Thought also needs to be given to the narrative delivered to the workforce. People need to understand why something is done. Digital transformation will help attract and retain the future workforce that is now learning these advanced tools in colleges and universities. The Department needs this population to apply to and work for the DoD, to learn from them, and let them lead change.

IP poses a challenge to DMM, as does tool interoperability. It was stated that what is needed is not a mandated tool set but seamless data sharing across tools and environments, and guidance on how to achieve agility and flexibility.

The right metrics that measure return on investment are needed, as is the narrative that translates victories into value. This is an area that needs to be explored through collaboration.

The discussion ended with agreement that accelerating transformation is an urgent need. Digital transformation makes it possible to address issues in capability delivery, understand what happens on the battlefield, and quickly deliver the most relevant capabilities to the warfighter.

Workshop Context and Follow-on
Speaker: Phil Zimmerman*, Project Lead, SERC/AIRC*

Ms. Zimmerman provided context for the IAC kickoff and charged all to engage in, as opposed to only observe, the collaborative effort. The effort is to get the IAC, also referred to as the Executive Forum, to a functional state. The kickoff event was the first step toward defining problems that the IAC's various WGs and subcommittees will need to address. Over the next year, the IAC will hold multiple in-person meetings, as well as smaller tag-ups and working groups to decide what problems to work on (targets), how to work on them (activities), and in what order (roadmap). Ms. Zimmerman encouraged participants to watch the DMM Operational View-1 (OV1) video and DMM: An Accelerated Future State whitepaper to gain perspective of what is to be accomplished, noting that the six AFMC DMM key initiatives define the space

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for the overall IAC effort.

IAC members were challenged to confront the way business is done today to determine not just "what" needs to be done, but also "why" and "how." Problem statements need to be detailed with enough information that actions can be taken by the government, industry, and/or academia. Actions should consider opportunities for joint government-industry initiatives that advance DMM and accelerate the delivery of fielded systems.

All IAC meetings will be open and non-attribution, and a charter will be issued. If votes are necessary to decide priorities and actions, each organization will be represented by a single vote to ensure all voices are heard.

State of Practice – Toward Digital Materiel Management/Digital Transformation: A Strategic Perspective
Dan Heller, *Vice President for Engineering, Lockheed Martin Corporation*

Model-based enterprise (MBE) is about delivering capabilities to customers faster. Lockheed Martin (LM) MBE leverages a development environment to support partnerships between engineering and operations teams. The LM structure is based on systems engineering, which ensures what is being designed and built is what the customer bought, and system safety, which must be integrated into MBE and requires upskilling the workforce. LM has a detailed reference architecture for customers interested in pursuing MBE. Specific things to consider were:

- Common definitions are key; a common language is critical.
- It is critical to meet with the engineers, managers, and analysts using the tools to understand their context and to understand their data sharing and interoperability needs.
- Speed, adoption, and value creation are key metrics.

Highlighted industry headwinds included:

- Design reuse presents an opportunity that can be supported by a library of validated model-based artifacts, which requires everyone to speak the same language around IP.
- Common registries can enable bulk buying and common pricing.
- Simulation-based verification can reduce program cost but requires standards to eliminate uncertainties and government advocacy.
- Collaboration is key and needs to use an approach that assures security.
- Business processes need to change to make the digital transformation happen.

The concluding Q&A with the audience emphasized issues including:

- The importance of integrating schedules into a system model
- The importance of trust for everyone to work in the same digital ecosystem
- Culture is the hardest part when trying to engage programs on adoption
- The need to make sure everyone uses the same language and that everyone understands

Strategic Perspectives
Moderator: Col Erik Quigley, DATF Director, *AFMC/EN*

Program Executive Officer Panel Members: Brig. Gen. Luke Cropsey; Steven Wert; Kris Acosta; Col. Walt Bustelo; Jack Summers; Bill Myers

A panel of government representatives shared their perspectives on, and offered their leadership for, the IAC's strategic focus. The panel was united on the need for enterprise solutions that can be shared across DoD and the Services, and acknowledged this objective requires industry-wide collaboration and sharing for the common goal. The challenge to participants is to focus on capability delivery, not concept ideation.

One key focus of the panel was the need to create an digital environment that provides DMM leadership access to decision-making data in real time. The distributed collaboration, supported by development environments such as Cloud One, will provide stakeholders real-time access to weapon system development and design, and reduce the need for extended, paper-based technical reviews and issue resolution. The panel extended this collaborative vision to include operational capability assessments and Command and Control evaluation to truly enable future joint operations.

The panel addressed current challenges to realizing an integrated digital environment, the largest of which is how to fund the transition towards the necessary environment. The panel posited two strategies: (1) each weapon system and program office funds a portion of the development; and/or (2) fund transformation in the same manner as a large acquisition. Though both strategies present unique problems, there was consensus that funding must be addressed.

The panel also addressed the challenge of DoD policy and long-entrenched cultures. The lack of trust among agencies and concerns over data protection continue, and the linear vision of traditional major acquisitions, especially in legacy platforms, must be addressed. The panel expressed hope that the IAC will be able to identify very specific actions to instill trust and change policy to enable iterative development in a collaborative digital environment.

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WORKSHOP SESSIONS

DAY 1

SESSION 1: DMM Infrastructure and Environment

Moderator: James K. Hurst, Chief, *DAF Digital Transformation Office (DTO), AFMC/ENZ*

Session Talk: Jeff D'Amelia, Chief Engineer, Nuclear Enterprise, MITRE; and Vicky O'Sullivan, Digital Engineering and Digital Transformation Product Lead*, MITRE*

Guiding Perspectives: Dean Boucher *(The Aerospace Corporation);* Rob Nolen *(Amazon Web Services (AWS));* Matthew Rose *(Snowflake)*; Laura Szypulski *(Northrop Grumman Corporation)*

The session focused on the tooling and infrastructure needed to support an integrated DMM environment and began with a panel discussion before breaking into sub-groups. The moderator emphasized the importance of defining clear use cases and committee assignments to identify capability gaps and yield descriptive, solvable problems. The goal of a standard Digital Environment services suite was noted by the panel and session participants, but the impracticality of common tools across government and industry was acknowledged. Data services that connect the federated data sources will be a fundamental focus of the IAC (i.e. to build a roadmap that moves towards a greater level of data sharing). Focusing on a DevSecOps-type design space for all domains is a likely focus area. It was acknowledged that data tagging will be critical to ensure content security requirements and IP protection. After the panel session, the moderator assigned all members of the audience to eight random small groups to ideate potential future IAC WGs, problem statements, and areas for further collaboration. These sub-teams refined user stories and focus areas providing potential next steps back to the moderator. The moderator closed by summarizing the results and surveying event participants to volunteer for subcommittees to focus on specific aspects of the defined problem space.

SESSION 1 TAKEAWAYS
The session considered the importance of identifying existing AF environments and the difficulties in integrating these. Break-out sessions focused on what the IAC should do moving forward, and eight sub-teams developed tactical, specific tasks to be taken on by targeted working groups. Recurring areas for focus, as determined by the breakout teams, include:

- *Define high value use cases based on functional and lifecycle considerations and collectively agree on what should exist in a digital environment and why*
- *Collectively define a Reference Architecture for IDEs*
- *"Figure out the people aspect," including identifying needed training and acknowledging work culture challenges.*
- *Data interface standards and interoperability, including exploring ways to represent and share data more easily.*
- *Data sharing and IP protection considerations; notably data sharing rules of engagement and trust in data sharing (e.g. what government and industry need to see in an environment to feel comfortable with IP protection)*

- *Enable sharing between government and industry, including establishing a standardized process flow that industry can follow.*
- *Redefine how data is requested in contracts, including identifying the most critical Contract Data Requirements List (CDRL) item that can be changed over the next 12 months.*

It was acknowledged there needs to be a change in mindset, from thinking of digital environments as a singular, monolithic thing to thinking about interoperability across a set of environments, with a focus on sharing of data, models, and analysis to drive decisions. Infrastructure needs to facilitate this, as can collaborating with industry to collectively address challenges.

SESSION 2: Data Standards, Ontologies, and Style Guides

Moderator: Dan Andrews, Digital Engineering, ASA/ALT

Session Talk: Chris Benson, *IstariDigital*

Guiding Perspectives: Matt Seaman *(Lockheed Martin);* Jason Cook & Mark Blackburn

(DEVCOM/SERC); Pat Morrison *(JHU/APL);* Dr. Alberto Ferrari *(RTX)*

The session focused on the data standards, ontologies, and style guides needed to institutionalize digital acquisition priorities. The moderator framed the conversation by asking, "What is preventing interoperable data sharing?" The majority of participants responded that trust, standards, and culture are the main obstacles. Generally, the panel discussion focused on each represented organization's perspective on standards, ontologies, and style guides. The panel and ensuing discussions provided insights into the following questions:

- Why are we connecting models and data sources?
- How do we reduce the IT burden on individual programs?
- How do we scale (beyond experimentation)?

SESSION 2 TAKEAWAYS

Discussion acknowledged that standards, ontologies, and guidelines organize digital language and ensure semantic interoperability across abstraction levels, functional domains, and a landscape of diverse modeling and simulation tools. The challenges in this area of focus are both technical and cultural in nature. It is important to find the appropriate amount of standards. There needs to be a focus on use case implementation with proper scope and on sharing the lessons to inform standards, ontologies, and style guides. Lack of trust and security need to be addressed, and this includes changing to a culture that wants to share.

Insights gained on why we are connecting models and data sources include:
- *Faster iterations*
- *Data driven decision-making*
- *Obtain the value out of the data created*
- *Understand cross-domain dependencies*
- *To improve team collaboration across different disciplines*
- *To eliminate knowledge gaps*
- *To manage risk. It was noted that connecting digital models is "just the tip of the iceberg" that requires consideration of contract requirements, data standards, IP protection and data rights, information security, and network architectures (AWS/GCP/GovCloud/Azure).*

Insights gained regarding how we reduce the IT burden on individual programs include:
- *Need to use shared environments enabled by common governance and standards*
- *Must stop using custom interfaces and use APIs*
- *Need to transform at the enterprise level*
- *Require upskilling across functions. It was noted that there is not one single solution to addressing this area.*

Insights gained on scaling beyond experimentation include:
- *Design for specific use cases*
- *Focus on use cases to learn, innovate, collaborate (e.g., don't develop a whole new standard, just change what is learned)*
- *Designate speed as the main metric*
- *Develop common data definitions*

SESSION 3: Policy and Enforcement—IP Policy & Rights

Moderator: Alexis Ross, *Apex Defense Strategies*

Guiding Perspectives: Richard Gray Office of the Undersecretary of Defense for Acquisition and Sustainment *(OUSD A&S); Angayurkanni* "Kanna" *Annamalai-Brown (DAF IP Cadre);* Margaret Boatner *(DASA);* Kelly Kyes *(Boeing)*

The session was facilitated as a panel discussion with feedback and input from attendees. The panel had representatives from various domains in the IP space (OUSD A&S, DAF IP Cadre, DASA, Boeing) and included individuals closely involved with streamlining IP functionality between industry and government. The high-level conversation focused on several points, including the importance of complete transparency on the intended use of IP to build trust and share goals. Coordinating DoD-wide IP reform necessitates realistic framing of challenges, a cross-functional IP cadre, and a federated problem-solving model. Industry input in this process is crucial and can be done through consortia and trade associations. The debate over access versus delivery of information emphasized the need for a balanced approach and a move away from the current binary model. Key reform takeaways for the DoD included emphasizing cultural evolution, policy updates, workforce development, and leadership involvement.

SESSION 3 TAKEAWAYS

It was noted that "talking about IP with people who are not IP lawyers is big." Various functions need to talk about IP with industry and consider it early in the lifecycle, highlighting the need for workforce training and for cultural change. IP has a significant impact on trust and security as the digital transformation journey adds value to data, requiring considerations such as flexibility for future use cases, compartmentalization, and protection of proprietary information. The range of the discussion illustrated the broad impact of IP, including:

Reform—Need to consider policy development and frameworks, industry perspective, ownership vs. access licensing, IP for additive manufacturing (AM), and compartmentalization

- Consistency vs. flexibility—Government needs to better explain its needs (asking for all the data and rights does not work for industry, nor is it necessary).
- Hardware vs. software—Software is operational and requires a different approach from that used traditionally with technical data.
- Access vs. delivery—Remote instant access is preferred, but giving government remote access to industry internal databases is not simply a technical issue. These internal development environments are sometimes not shared outside their owning companies.
- Data rights management and data tagging—Understanding models that allow proprietary manufacturing processes to be shared through a black box approach is critical and must be integrated into systems for IP purposes.

DAY 2

SESSION 4: Integration of Acquisition Functions

> Moderator: Stephanie Halcrow *(AIRC)*
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> Session Talks: Mark Krzysko *(OUSD A&S)*; Phil Antón *(AIRC);* Norman "RB" Metzger *(MTSI)*
>
> Guiding Perspectives: Norman "RB" Metzger *(MTSI, Program Management)*; Eileen Bjorkman *(DAF) (Test and Evaluation)*; Mark McMullan *(Manufacturing and Sustainment)*; Bruce Kaplan, LMI

The session was facilitated as a panel discussion with feedback and input from attendees. The panel had representatives from across the acquisition lifecycle (program management, test, academia, sustainment, etc.), both from legacy programs and those "born digital." The high-level conversation focused on several pain points, including acknowledgement that trust between departments and agencies, between contractors, and between government and contractors is a continual concern. Policy and cultural transformation need to accompany technology progression to realize the desired transformation and integration goals. The panel and attendees agreed there should be a focus on programs, whether born digital or re-born digital, to capture specific data that shares objectives and iterates as the system matures, prioritizing capability gaps with the highest impact on the warfighter. Metrics that can track this type of transformation were discussed, but there has been no standardization of adoption across the DoD.

SESSION 4 TAKEAWAYS

It was noted that "data is still the most important thing," even for programs trying to be "re-born" digital. Data is key to metrics. The importance of culture was also noted and the need to identify business practices that act as obstacles to transformation. Identifying what the government wants from industry and vice versa was noted as an important step to addressing challenges collaboratively.

- What does government need from industry? Responses included transparency, data and data rights, collaboration, and internal data sharing best practices.
- What does industry need from government? Responses included balanced implementation, predictability and flexibility, clearly defined data and model standards required, consistent leadership, and public-private partnerships.

Identified levers for implementation included:

- Communities inside and outside A&S (requirements, financial, academia, labs, and industry)
- Trust and security (e.g., trusted platforms, secure enclaves)
- Improved access (e.g., common storage and access, digital models)
- Metrics (near-term: functional; long-term: cost, agility, operational performance)
- Incentives and empowerment (e.g., warfighter focus, provide tools)
- Action (focus on pilots and experiment)

SESSION 5: DMM Workforce Development and Culture

Moderator: Dr. Steven Turek, Technical Director, DAF DTO, AFMC/ENZ

Session Talk: Cliff Whitcomb *(Cornell)*

Guiding Perspectives: Nicole Hutchison *(SERC/AIRC)*; Dave Pearson *(Defense Acquisition University (DAU))*; Olivia Pinon Fischer *(Georgia Tech)*

The panel started with a review of the Digital Engineering Competency Framework (DECF), published by SERC in July 2020, and other competency initiatives related to systems and mission engineering. The frameworks can help organizations manage their workforces in a variety of ways, such as developing the curricula for a two-year Systems Engineering Technology degree. The panel agreed that the focus of these competencies is engineering, and there could be an opportunity for the DMM IAC to investigate digital competencies needed for other disciplines such as logistics, test and evaluation, program management, and other functional areas. The panel highlighted the digital engineering efforts at their organizations, and discussed the shift to tailored, asynchronous training. It was noted there is no room in curricula for separate instruction in digital foundations. Panel members noted that they spent most of their time on workforce development, and they might need to address culture more thoroughly at a separate session.

The session broke into separate small groups to draft and prioritize tactical, achievable project statements for the IAC.

SESSION 5 TAKEAWAYS

The IAC can serve as a forum to pull together all stakeholders, and in particular industrial groups that work in the same areas, to build upon effective practices in workforce development and address challenges. The human resource function is organization-specific, and there is a need for this workforce to use digital processes across industries and segments, although they often do not possess the technical background or skills. Identified challenges included:

- Achieving individual and organizational commitment to training.
- Achieving learning at scale as it shifts toward virtual training, which places more of a demand on supervisors to guide employee development.
- No targeted DE curriculum exists, and these digital competencies should be developed through existing methods. Succinctly put, "Digital engineering is just engineering."
- Tools, such as software, need to be put into students' hands for effective training.
- The roles, responsibilities, and expected skillsets of a digital engineer need to be clearly defined, and new roles continue to emerge (e.g., digital curators, tool and platform process/quality managers).

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Mr. Arun Seraphin, *Director, NDIA ETI*

Moderators:

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Mr. Dan Andrews, *Army*
Ms. Alexis Ross, *Apex Defense Strategies*
Ms. Stephanie Halcrow, *AIRC*
Dr. Steven Turek, *DAF*

ACRONYM LIST

AFMC – Air Force Materiel Command
AIRC – Acquisition Innovation Research Center
AM – Additive Manufacturing
A&S – Acquisition and Sustainment
ASOT – Authoritative Source of Truth
AWS – Amazon Web Services
CDRL – Contract Data Requirements List
DAF – Department of the Air Force
DASA – Deputy Assistant Secretary of the Army
DATF – Digital Acceleration Task Force
DAU – Defense Acquisition University
DE – Digital Engineering
DECF – Digital Engineering Competency Framework
DES – Data, Engineering, and Software
DMM – Digital Materiel Management
DoD – Department of Defense
E&TM – Engineering and Technical Management
GCP – Great Power Competition
HQ – Headquarters

IAC – Industry Association Consortium
IDE – Integrated Digital Environment
IP – Intellectual Property
IT – Information Technology
JHU/APL – Johns Hopkins University Applied Physics Laboratory
MBE – Model-based Enterprise
MTSi – Modern Technology Solutions, Inc.
NDIA ETI – National Defense Industrial Association Emerging Technologies Institute
OUSD – Office of the Under Secretary of Defense
RFI – Request for Information
SERC – Systems Engineering Research Center

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