Global Supply Chain Security for Microelectronics

The workshop will start shortly. Please stand by.

27 – 29 July 2022 workshop

ANSI

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Welcome!

§ <u>This event is being recorded for internal use in connection with preparing the meeting report</u>

§ **To Maximize Productivity & Engagement:** Please engage! Workshop is meant to be discussion based

§ We will generally hold Q&A until after presentations or questions from the moderators in the case of panels

§ In-person & Online: Use your microphone. Mute mic when not speaking

§ Identify yourself and your organization

§ Zoom Participants 'Raise Hand' to be called on and we will unmute you

§ Prefer you engage on audio in lieu of using Zoom Chat if possible
  - Sending document links, titles, names on Chat is most welcome

§ Presentations and other workshop materials will be made available to participants at the link on the agenda

ANSI Staff Support

In Person Attendees

§ **Jim McCabe**
Senior Director, Standards Facilitation
jmccabe@ansi.org; 917-535-5105

§ **Christine Bernat**
Associate Director, Standards Facilitation
cbernat@ansi.org; 202-236-7580

§ **Michelle Deane**
Senior Director, Standards Facilitation
mdeane@ansi.org; 917-623-6016

Virtual Attendees: Zoom Access / Breakout Groups

§ **Sarah Katz**
Standards Facilitation Admin Support
skatz@ansi.org
203-417-1045

NDAA FY20 Section 224 Background

§ Section 224 of the FY20 National Defense Authorization Act (NDAA) requires DoD microelectronics products and services to meet trusted supply chain and operational security standards (*starting Jan 1, 2023*)

§ Standards that systematize best practices relevant to:

- manufacturing location
- company ownership
- workforce composition
- access during manufacturing, suppliers' design, sourcing, manufacturing, packaging, and distribution processes
- reliability of the supply chain
- other matters germane to supply chain and operational security

§ <u>Not</u> military standards (MIL-STD) or specifications (MIL-SPEC)

- specify individual features for DoD microelectronics, OR
- inhibit DoD acquisition of securely manufactured, <u>commercially-available</u> products

Stakeholder Consultation

§ Department of Homeland Security

§ Department of State

§ Department of Commerce National Institute of Standards & Technology (NIST)

§ suppliers of microelectronics products and services

§ representatives of major industry sectors that rely on a trusted supply chain and the operational security of microelectronics products and services

§ insurance industry

Overarching Objective / Workshop Scope

§ To foster an ecosystem where trusted supply chain and operational security standards for procuring microelectronics products and services are widely adopted by U.S. government agencies, allies, partners, and commercial industry

§ Workshop scoped to commercial off-the-shelf (COTS) devices

§ Custom devices are outside the workshop focus

- Application specific integrated circuits (ASICs)
- Systems on Chip
- DoD-specific bitstream for field programmable gate arrays (FPGAs)

Sec 224 Considerations

§ DoD may establish tiers and levels of trust and security

§ Ensure ability to sell commercially

- suppliers able and incentivized to sell products commercially and to governments of allies and partners of the U.S. that are produced on the same production lines as the microelectronics products supplied to DoD
- DoD requirements & acquisition of microelectronics enable the success of a dual-use microelectronics industry

§ Maintain competition, innovation, and health of defense industrial base

- providers of microelectronics products and services that meet the standards are exposed to competitive market pressures to achieve competitive pricing and sustained innovation
- microelectronics products and services that meet the standards includes providers manufacturing in the U.S. or in countries that are U.S. allies or partners

Timeline

§ Dec 20, 2019, PUBLIC LAW 116–92

§ By Jan 1, 2021, DoD shall establish trusted supply chain and operational security standards for the purchase of microelectronics products and services by DoD

- RFI issued June 30, 2020 to 9 standards developing organizations (JEDEC, SEMI, ISO, IPC, ECIA, Underwriters Laboratories (UL), IEEE, ASTM, SAE)
- Responses received from JEDEC, IPC, IEEE, SAE

§ By Jan 1, 2023, DoD shall ensure that microelectronics products and services meet these standards

§ By Oct 1 each year, DoD shall review the standards and issue updates or modifications as needed/appropriate
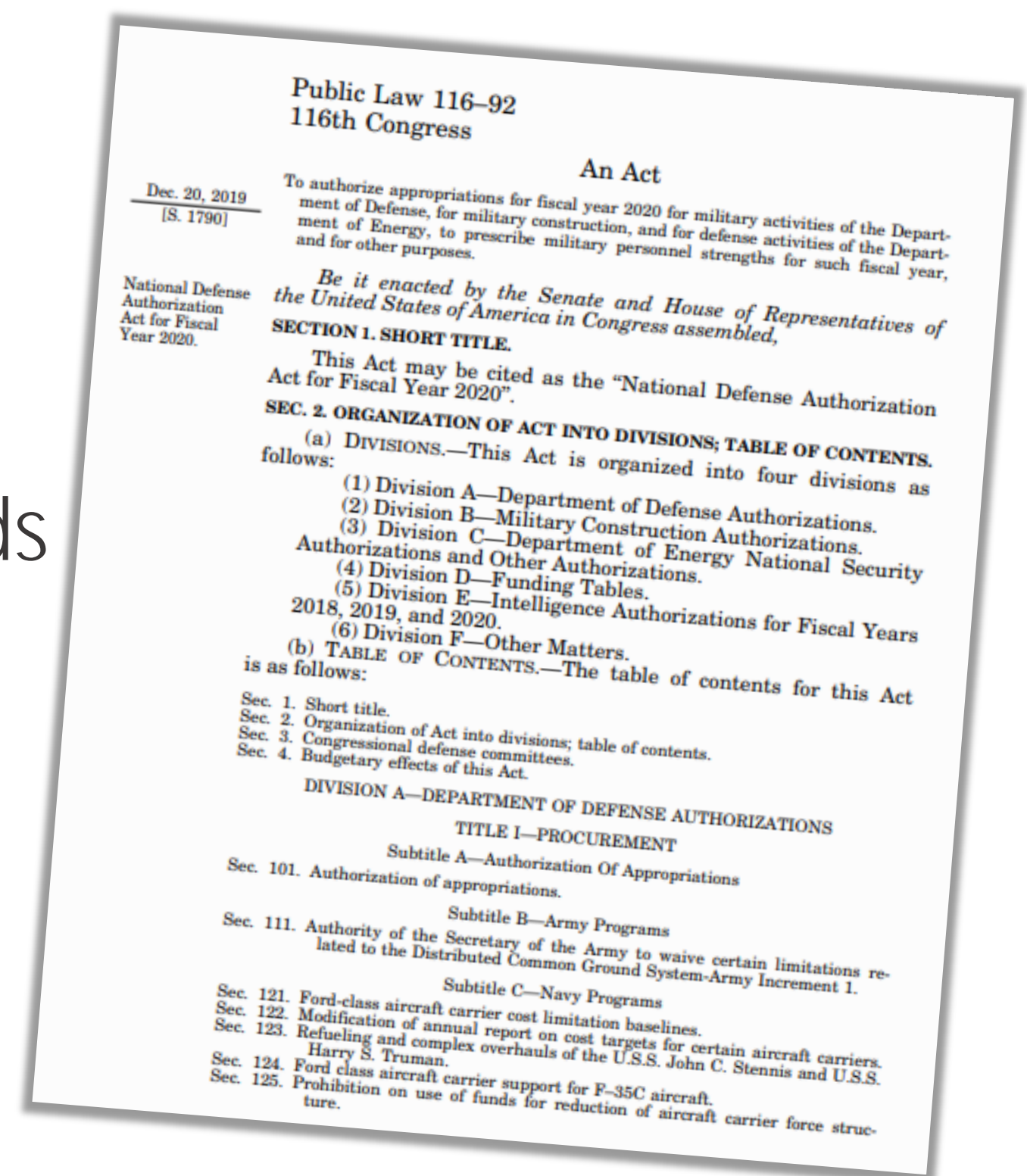
Workshop Tasks

§ To provide DoD feedback on voluntary consensus standards and conformity assessment programs that safeguard the integrity of microelectronic products and services and on the proposed DoD section 224 framework approach

§ **Workshop One** (Jul): Tee up the Issues, Identify Standards & Gaps

§ **Workshop Two** (Oct): Develop an Action Plan to Address Issues, Standards & Gaps

- October 26-28, 2022 likely at Booz Allen HQ, McLean, VA

§ A report will be issued 6 weeks after each workshop

Breakout Questions

1. What recommendations do you have regarding standards or sets of standards that provide:

    a. Commercially viable mitigations in support of FY20 NDAA Section 224 requirements?

    b. Coverage across all phases of the microelectronics development lifecycle?

    c. Coverage across vendor types (system integrators, original equipment manufacturers, component distributors, original component manufacturers)?

2. What suggestions do you have for DoD to improve its candidate standards approach in terms of:

    a. The Modular approach for integrated assured supply chain?

    b. What methods would you suggest for determining and sharing compliance to standards across supply chain and to acquirer?

    c. What section 224 related factors influence sub-tier vendor selection?

    d. Requirements development and flow down?

    e. DoD adoption strategy and timelines?

    f. DoD organization of standards?

3. What are the top 2-3 most important take-aways from the discussions in your breakout group?

Program Schedule - Today

	Wednesday July 27, 2022 (Opening Session) – Room: Auditorium
8:30 – 9:30 am	**Registration and Continental Breakfast** (Auditorium Foyer)
9:30 – 9:45 am	**Welcome: Introduction of ANSI Team, Background, Review of Objectives, Schedule**
9:45 – 10:00 am	**Opening Remarks by DoD: Sec 224 of Public Law 116-92**
10:00 – 10:30 am	**Request for Information (RFI) of Standards Developing Organizations (SDOs): Summary of Responses Received and Analysis**
10:30 – 10:45 pm	**Networking Break**
10:45 am – 12:30 pm	**Proposed DoD Section 224 Framework Approach & Discussion**
12:30 – 2:00 pm	**Catered Lunch (in-person attendees)** (Room: Auditorium Foyer)
2:00 – 3:15 pm	**Moderated Panel Discussion: SDO Capabilities to Address the Issues**
3:15 – 3:30 pm	**Networking Break**
3:30 – 4:45 pm	**Moderated Panel Discussion: Federal Agency and Industry Perspectives**
4:45 – 5:00 pm	**Preparation for Breakout groups**

Program Schedule – July 28-29th

	Thursday, July 28, 2022 (Standards Assessment Sessions) - Room Assignments Below
8:30 – 9:30 am	**Continental Breakfast** (Room: Auditorium Foyer)
9:30 am – 12:30 pm	**Concurrent Breakout Groups** Group 1: Procurement Management (Room: Auditorium) Group 2: Information and IP Protection (Room: 2011) Group 3: Secure Design (Room 2014)
12:30 – 2:00 pm	**Catered Lunch (in-person attendees)** (Room: Auditorium Foyer)
2:00 – 5:00 pm	**Continuation of Breakout Groups / Preparation of Reports Back**
	Friday, July 29, 2022 (Closing Session) – Room: Auditorium
8:30 – 9:30 am	**Continental Breakfast** (Room: Auditorium Foyer)
9:30 – 11:00 am	**Breakout Group Report Backs** (roughly 30 minutes per group)
11:00 – 11:45 am	**Open Discussion**
11:45 am – 12:00 pm	**Wrap-up and Next Steps**
12:00 pm	**Adjourn**

DoD Opening Remarks: *Sec 224 of Public Law 116-92*

Brett Hamilton

Deputy Principal Director, Microelectronics

OUSD(R&E),

Office of Deputy CTO for Critical Technologies
U.S. Department of Defense (DoD)

RFI of SDOs: Summary of Responses Received* and Analysis

Christine Bernat
Associate Director, Standards Facilitation
American National Standards Institute (ANSI)

*The microelectronics standards landscape spreadsheet can be downloaded at the link for Workshop Materials

Break – Workshop will Resume at 10:45 am Eastern

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4:45 – 5:00 pm	Preparation for Breakout groups

Proposed DoD Section 224 Framework Approach & Discussion

Christine Rink
Associate Deputy Director for Microelectronics
Assurance Standards, OUSD(R&E) /
Modernization
U.S. Department of Defense (DoD)

Stephanie Lin
Defense Microelectronics Cross Functional
Team
U.S. Department of Defense (DoD)

Break – Workshop will Resume at 2:00 pm Eastern

	Wednesday July 27, 2022 (Opening Session) – Room: Auditorium
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12:30 – 2:00 pm	Catered Lunch (in-person attendees) (Room: Auditorium Foyer)
2:00 – 3:15 pm	Moderated Panel Discussion: SDO Capabilities to Address the Issues
3:15 – 3:30 pm	Networking Break
3:30 – 4:45 pm	Moderated Panel Discussion: Federal Agency and Industry Perspectives
4:45 – 5:00 pm	Preparation for Breakout groups

Panel: SDO Capabilities to Address the Issues

Gordon Gillerman (Moderator)
Director, Standards Coordination Office

National Institute of Standards and Technology (NIST)

Panel: SDO Capabilities to Address the Issues

§ **David Bergman**, Vice President, Standards & Technology, IPC

§ **Mike Regan**, Vice President of Business Performance, Telecommunications Industry Association (TIA) QuEST Forum

§ **Maria Palombini**, Global Practice Leader, Healthcare & Life Sciences, IEEE Standards Association

§ **Paul Nixon**, Senior Principal Engineer II, Quality Assurance, BAE Systems (JEDEC)

§ **Alan Lucero**, Senior Quality & Reliability Engineering Manager / Director of International Standards Development, Intel (U.S. Technical Advisor IEC SC 47D, Semiconductor Devices Packaging) (virtual)

§ **Daniel DiMase**, President & CEO, Aerocyonics (SAE International)

Break – Workshop will Resume
at 3:30 pm Eastern

	Wednesday July 27, 2022 (Opening Session) – Room: Auditorium
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4:45 – 5:00 pm	Preparation for Breakout groups

Panel: Federal Agency and Industry Perspectives

Mary Saunders (Moderator)
Vice President for Government Relations and Public Policy

American National Standards Institute (ANSI)

Panel: Federal Agency and Industry Perspectives

§ **Kanitra Tyler**, Information & Communications Technology (ICT) Supply Chain Risk Management (SCRM) Service Element Lead, National Aeronautics and Space Administration (NASA)

§ **Jon Boyens**, Deputy Chief, Computer Security Division, National Institute of Standards and Technology (NIST)

§ **John Zolper**, PhD, Defense Technology Strategy, Raytheon Technologies (virtual)

§ **Jeremy Muldavin**, Distinguished Member Technical Staff, Aerospace and Defense, GlobalFoundries

§ **Ife Hsu**, Senior Quality/Reliability Engineer, Intel (virtual)

Preparation for Breakout Groups

§ Participants have been pre-assigned to a breakout group based on the questions they answered at registration and with a view toward a balance of expertise and organizational representation among the 3 groups

§ While our preference is that you remain in the assigned group, if you really wish to change groups, please email Sarah Katz skatz@ansi.org indicating which group you wish to participate in

§ Groups are organized across three supply chain practice areas: procurement management, information and IP protection, and secure design

§ Building on today's discussions, each group will be asked to identify standards and provide input on the proposed DoD section 224 framework approach

Breakout Question # 1

1. What recommendations do you have regarding standards or sets of standards that provide:

   a. Commercially viable mitigations in support of FY20 NDAA Section 224 requirements?

   b. Coverage across all phases of the microelectronics development lifecycle?

   c. Coverage across vendor types (system integrators, original equipment manufacturers, component distributors, original component manufacturers)?

Breakout Question #2

2. **What suggestions do you have for DoD to improve its candidate standards approach in terms of:**

   a. The Modular approach for integrated assured supply chain?

   b. What methods would you suggest for determining and sharing compliance to standards across supply chain and to acquirer?

   c. What section 224 related factors influence sub-tier vendor selection?

   d. Requirements development and flow down?

   e. DoD adoption strategy and timelines?

   f. DoD organization of standards?

Breakout Question #3

3. What are the top 2-3 most important take-aways from the discussions in your breakout group?

Preparation for Breakout Groups (contd.)

§ Facilitators will lead the discussion/ensure the group answers all questions

§ Scribes will capture key points of discussion

§ Remote participant interface will alert scribe of raised hands & questions in the chat for those participating via Zoom

§ Facilitator/Scribe will prepare the group report back

§ Breaks can be taken as needed

Preparation for Breakout Groups (contd.)

§ <u>Group 1: Procurement Management</u> (Room: Auditorium) – The process and contractual considerations required for evaluating and defining engagements with external entities for procurements, including the risks/mitigations identified from the other supply chain practice areas. Procurement processes are focused on mitigating risks associated with sourcing IP and parts (e.g., counterfeit, DMSMS), and should include considerations for vendor demographics as identified in FY20 NDAA Section 224 (e.g., company ownership, location, workforce composition)

§ *Facilitator*: **Lori Gordon**, Space Enterprise Integration Initiatives Leader, Office of the Corporate Chief Engineer, The Aerospace Corporation

§ *Scribe*: **Jim McCabe**, ANSI

§ *Remote Participant Interface*: **Stephanie Carroll**, ANSI

Preparation for Breakout Groups (contd.)

§ <u>Group 2: Information and IP Protection</u> (Room: 2011) – Risks attributed to the confidentiality of intellectual property and information not intended for public dissemination. May overlap with other supply chain practice areas. Processes are focused on mitigations associated with networks and personnel.

§ *Facilitator*: **Roger R. Smith**, Defense Microelectronics Cross Functional Team – Navy Lead, U.S. Department of Defense

§ *Scribe*: **Christine Bernat**, ANSI

§ *Remote Participant Interface*: **Sarah Katz**, ANSI

Preparation for Breakout Groups (contd.)

- § <u>Group 3: Secure Design</u> (Room 2014) – Design practices to improve assurance (e.g., verification and validation), manage risk when the part is outside vendor or user control, and address supply chain volatility (e.g., open architecture or modularity). May overlap with other supply chain practice areas.

- § *Facilitator*: **Daniel Radack**, PhD, Assistant Director, Information Technology and Systems Division, Institute for Defense Analyses (IDA)

- § *Scribe*: **Michelle Deane**, ANSI

- § *Remote Participant Interface*: **Susanah Doucet**, ANSI

Online Submittals

§ Supplement Breakout Discussions

§ Ideal for Post-Event or those with connectivity limitations

§ Participants can provide details and hyperlinks

§ Direct URL:

https://forms.office.com/r/P7kgLstTvd

Program Schedule – Tomorrow

	Thursday, July 28, 2022 (Standards Assessment Sessions) - Room Assignments Below
8:30 – 9:30 am	**Continental Breakfast** (Room: Auditorium Foyer)
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New badges are issued each day by our host. Please be prepared with the same information at security again tomorrow.

Program Schedule – Today

	Friday, July 29, 2022 (Closing Session) – Room: Auditorium
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12:00 pm	**Adjourn**

Breakout Group Report Backs & Discussion

§ [Group 1: Procurement Management](#)

§ [Group 2: Information and IP Protection](#)

§ [Group 3: Secure Design](#)

Online Submittals

§ Supplement Breakout Discussions

§ Ideal for Post-Event or those with connectivity limitations

§ Participants can provide details and hyperlinks

§ Direct URL:

https://forms.office.com/r/P7kgLstTvd

Wrap-Up and Next Steps

§ Mark Your Calendars for Workshop 2
- October 26-28, 2022 likely at Booz Allen HQ, McLean, VA

§ Workshop 2 goal: develop an action plan on issues, standards, and gaps identified in workshop 1

§ Presentations and other workshop materials will be made available to participants at the link on the agenda

§ Workshop report will be released in about 6 weeks

Feedback Request Form

Please use this QR Code or hyperlink to provide feedback on this week's workshop

DoD Microelectronics

29 July 2022

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