



# LEVERAGING INTERNATIONAL AEROSPACE ENVIRONMENTAL GROUP'S DECLARATION PROCESS FOR CHEMICAL SUBSTANCES REPORTING

*How the International Aerospace Environmental Group's (AIEG) Aerospace and Defense Declarable Substances List, "AD-DSL", can be leveraged by DoD Acquisition Programs*

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# AGENDA

- HAZARDOUS MATERIALS MANAGEMENT IN DOD ACQUISITION
- IAEG CHEMICAL SUBSTANCES REPORTING PROCESS AND IPC DATA EXCHANGE STANDARD
- IAEG DECLARATION PROCESS VIDEO
- AEROSPACE INDUSTRIES DECLARABLE SUBSTANCES LIST
- DEPARTMENT OF DEFENSE (DOD) - INDUSTRY COLLABORATION TO IMPROVE HAZMAT MANAGEMENT IN DOD ACQUISITION
- BENEFITS OF GOVERNMENT-INDUSTRY COLLABORATION
- HAZMAT INFORMATION FLOW ALONG THE SUPPLY CHAIN
- LOGISTICS PRODUCT DATA REPORTS UPDATE
- LOOKING AHEAD
- SUMMARY

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# HAZARDOUS MATERIALS MANAGEMENT IN DOD ACQUISITION

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- DoD acquisition policy for Hazardous Materials (HAZMAT) management:
  - Identify HAZMAT associated with the system and used for operation and support of the system; and, plan for their minimization and/or safe disposal in accordance with all regulatory requirements.
  - Use the system safety methodology in Military-Standard-(MIL-STD)-882E, *DoD Standard Practice System Safety*, to eliminate hazards where possible and manage Environment, Safety, and Occupational Health (ESOH) risks where hazards cannot be eliminated.
- Industry has two main components of HAZMAT management for DoD customers:
  - Reporting – Understand and communicate materials present in military hardware products and HAZMAT needed to support the hardware/system
    - “Materials and Substances Declaration”
  - Selection – Select the material that meets the need(s) of the system while minimizing risks throughout the product life cycle
    - Government approval for use of HAZMAT categorized as “Prohibited”

# INTERNATIONAL AEROSPACE ENVIRONMENTAL GROUP'S MATERIALS DECLARATION PROCESS FOR CHEMICAL SUBSTANCES REPORTING



- International Aerospace Environmental Group (IAEG<sup>®</sup>) developed a declaration process for chemical substances for the Aerospace and Defense (AD) industries to obtain information about the chemical substance content of its products from the industry's global supply chain.
- The process consists of several tools used to enhance industry substance compliance processes and address chemical substance-related supply risks.
  - **Aerospace and Defense Declarable Substances List (AD-DSL)** - a list of regulated substances of concern to the AD industry and its customers; used for substance declarations.
  - **Aerospace and Defense Substance Reporting Template (AD-SRT)** – an interim Excel form used to request and obtain chemical substance information from AD suppliers consistent with IPC 1754 data fields and rules.
  - **IAEG<sup>®</sup> Supplier Training** – Training to provide chemical substance data consistent with the IAEG<sup>®</sup> declaration process.

# INDUSTRY ASSOCIATIONS COLLABORATE ON DECLARATION PROCESS DATA EXCHANGE STANDARD

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- IPC is the global trade association serving the printed board and electronics assembly industries, their customers, and suppliers.
- The **IPC-1754 Standard**, *“Materials and Substances Declaration for Aerospace and Defense, Heavy Equipment and Other Industries”* allows industries to communicate chemical information within the supply chain in a consistent and structured manner, based on an agreed-upon set of rules.
  - IPC-1754 **identifies data elements and supports the electronic data exchange** of declaration information using XML.
  - The Standard is currently in draft, and is expected to be published in December 2017.

**One format for common suppliers offers significant advantages.  
The Standard can be used by any hardware-producing industry.**

# WHY A STANDARD ON SUBSTANCE REPORTING?

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- Industry standard versus company specific solutions
- Standardized industry requirements and format for substance data exchange provides:
  - Improved supply chain awareness and buy-in
  - Ecosystem to support development of tools and processes that support data exchange and management
  - Enhanced efficiencies obtaining necessary data and developing declarations
  - Reduced turnaround time for declarations
  - Improved quality of data (vs. custom data request)
  - Reduced cost versus custom information technology tools development and training

# IAEG DECLARATION PROCESS FOR CHEMICAL SUBSTANCES REPORTING (4 MINUTE VIDEO)

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IAEG Materials  
Declaration Video



**IAEG**<sup>®</sup>

INTERNATIONAL AEROSPACE  
ENVIRONMENTAL GROUP<sup>®</sup>

170515 - IAEG Video Draft 9 (Copyright) (2)



# AEROSPACE AND DEFENSE DECLARABLE SUBSTANCES LIST



**IAEG**<sup>®</sup>  
INTERNATIONAL AEROSPACE  
ENVIRONMENTAL GROUP<sup>®</sup>

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- The AD-DSL includes substances that:
    - Are product related and
    - Have regulatory-based restrictions and/or reporting requirements of industry interest
  - Latest version – Developmental Version 2 (August 14, 2017)
  - Two types of data reporting possible, depending on need:
    - Chemicals in the product – mandatory when AD-DSL chemicals are present
    - Chemicals required to manufacture or support products – optional
  - Forward-looking – “what is and what is likely to be regulated...”
  - Aerospace and defense companies use the data acquired to:
    - Identify and comply with compliance liabilities – regulatory/contractual
    - Identify dependence/materials obsolescence risks in the supply chain
    - Report product related hazardous chemicals to customers

# DOD-INDUSTRY COLLABORATE TO IMPROVE HAZMAT MANAGEMENT

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- 2012 - DoD **MIL-STD-882E** published
  - Includes a new optional Task 108, *Hazardous Materials Management Plan*
- DoD-Aerospace Industries Association(AIA) NAS411 Workgroup Collaborative Projects
  - Harmonize NAS411 and MIL-STD-882E Task 108
  - 2013 - **NAS411, Hazardous Materials Management Program** Rev 3 published
    - Adopted for use by DoD in 1994, renewed 2017
  - 2013 - **NAS411-1, Hazardous Material Target List (HMTL)** Rev New published
    - List of HAZMAT to be actively managed and tracked
  - 2016 - **NAS411-1 Rev 1** published
    - Added discrete Chemical Abstract Service (CAS) numbers for all chemicals
    - Added “tracked” chemicals
    - Adopted for use by DoD in 2017



# BENEFITS OF GOVERNMENT-INDUSTRY COLLABORATION

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- NAS411 and 411-1:
  - Provide a common framework to avoid trying to manage all known HAZMAT and focus on highest priority HAZMAT
  - Requires program offices and their contractors to agree on a finite list of HAZMAT to be actively managed for the system
    - Both documents contain tailorable content that can be modified to meet customer and supplier needs and supplier capabilities
  - Eliminates the need for multiple different HAZMAT lists from the various DoD Component organizations

	HAZMAT Categories		
Requirement	Prohibited	Restricted	Tracked
Program Office must approve usage	X		
Eliminate or minimize HAZMAT	X	X	
Report HAZMAT locations and amounts (in articles or used in operation/support)	X	X	X

**Reduces cost and increases relevance of HAZMAT information.**

# DOD & AIA WORKING TO HARMONIZE THE AD-DSL AND NAS411-1 LISTS

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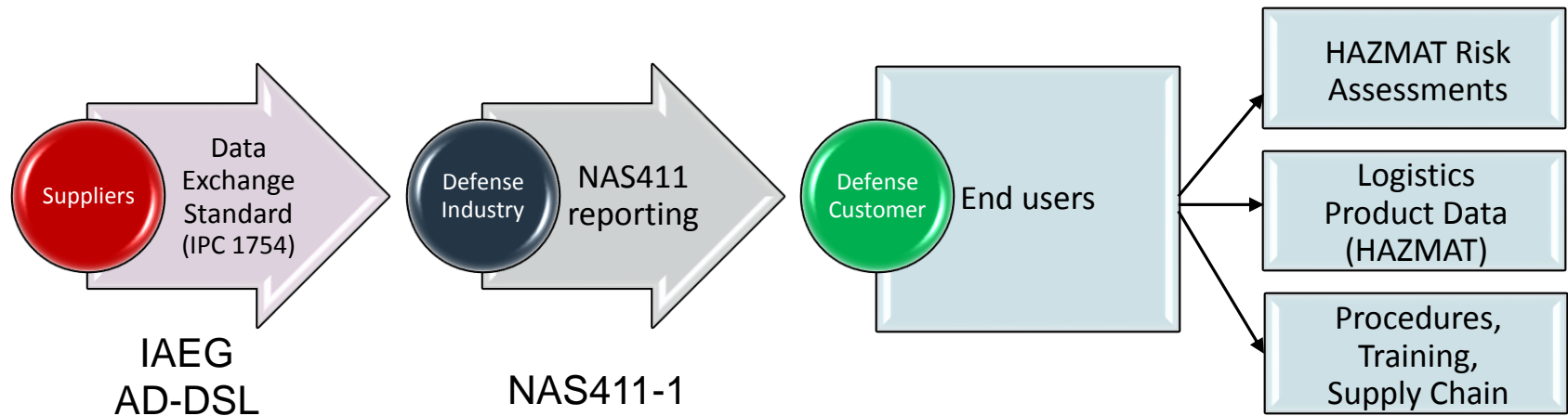
- There is significant overlap of chemical listed on the two lists.

List Attributes	IAEG AD-DSL	NAS411-1 HMTL
Discrete list of chemicals	X	X
Product-related regulated hazardous chemicals	X	X
Hazardous chemicals identified in the supply chain	X	X
Hazardous chemicals identified in delivered hardware and used in operation/support	X	X
Hazardous chemicals identified in manufacturing processes	X	

**Consistency between lists promotes supply chain efficiency and risk management support.**

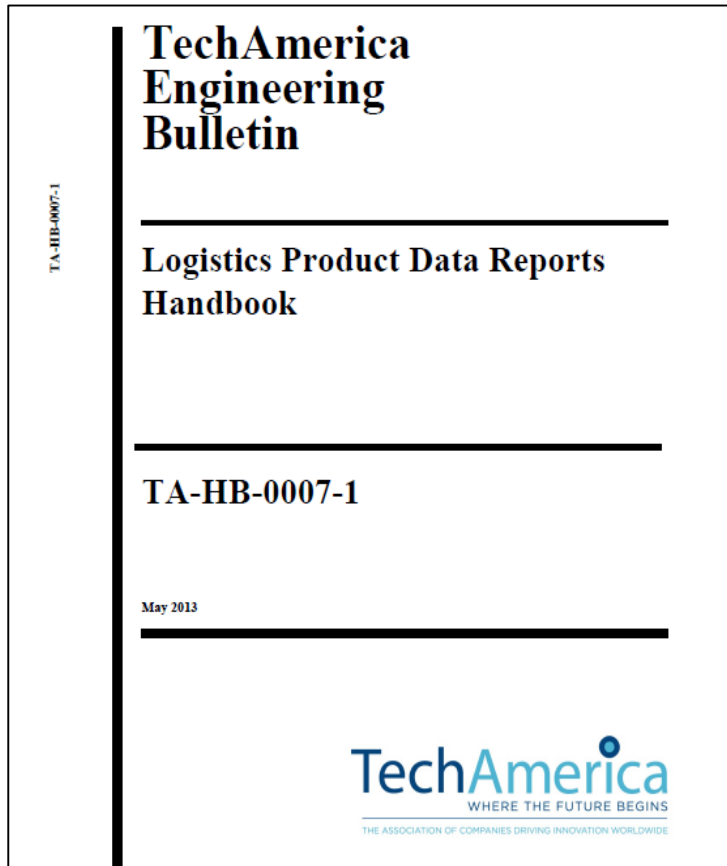
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# HAZMAT INFORMATION FLOW ALONG THE DEFENSE SUPPLY CHAIN



**The hope is DoD acquisition programs will take advantage of the increased capabilities of the defense industry by using NAS411 and NAS411-1 on contracts.**

# LOGISTICS PRODUCT DATA REPORT UPDATE LEVERAGES NAS411 AND NAS411-1



- Life Cycle Logistics Supportability Committee is updating LSA-078 Report
- New report does a better job of identifying all HAZMAT associated with a system
- Good News – Most programs are already buying most of these data elements for other Logistics Product Data (LPD) reports – provisioning, maintenance planning, etc.

**Accurate HAZMAT data reported via LPD with improved  
ESOH risk coordination.**

# LOGISTICS PRODUCT DATA REPORT UPDATES LEVERAGES NAS411 AND NAS411-1, CONT.

- New “HAZ” Entity in next update to LSA-078 Report
- Improves collection of HAZMAT in articles, end items, and maintenance tasks
- Provides traceability between NAS411 required data and “HAZ” Entity

LPD ELEMENT	DEFINITION
Substance Name	Name of the hazardous substance
Substance Identification	Chemical Abstracts Service Registry Number
Substance Mass Minimum	This field identifies the inclusive lower limit of the hazardous substance in the part when mass is expressed as a range
Substance Mass Maximum	This field identifies the inclusive upper limit of the hazardous substance in the part when mass is expressed as a range
Substance Mass Nominal	This field identifies the nominal mass of the hazardous substance in the part which is a defined value that may not correspond exactly to the actual value because manufacturing processes result in small variations
Substance Mass Unit of Measure	This field identifies the unit of measure for the substance mass: milligrams, grams, or kilograms
Substance Mass Percent	Calculated Value
Chemical Category	Chemicals with shared chemical and toxicological properties which are grouped into categories. E.g. "cyanide compounds," "lead compounds", etc.
Hazardous Materials Target List Category	The hazardous material category of "Prohibited", "Restricted", or "Tracked", as identified in the contract

# LOOKING FORWARD

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- The need to report on specific HAZMAT continues to evolve:
  - REACH, TSCA, OSHA, Canada CMP, etc.
  - The AD-DSL and NAS411-1 HMTL will be managed to reflect changing needs.
  - The NAS411 WG will work to increase inclusion of HAZMAT used to operate and support systems.
- Planned updates include:
  - AIA feedback loop to obtain input from users of NAS411-1“
  - Semi-annual reviews of the NAS411-1 HMTL
    - Comparison and adjustment between the two lists (AD-DSL & NAS411-1)
    - Resolve scope differences between the two lists
- LPD elements and reports improvements to leverage the materials declaration process using NAS411 and 411-1



# SUMMARY

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- The IAEG Materials Declaration Process allows industries to communicate chemical information within the supply chain in a consistent and structured manner, based on an agreed-upon set of rules.
- Leveraging the AD-DSL and Materials Declaration Process is a win-win for industry and DoD
  - Harmonizes NAS411 & AD-DSL to the greatest extent possible
  - Supports both industry and DoD needs
  - Helps support ESOH risk management in acquisition
    - Improves supply chain management and sustainability
    - Helps with predictive material obsolescence (know where HAZMAT is used)
    - Addresses global regulatory compliance
    - Provides content/format standardization (reliable data and efficiencies)
    - Increases visibility to material presence, concentration, source

**Use of industry materials declaration processes to obtain supplier product information expected to provide cost avoidance savings to program offices.**

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