



LEADING BEYOND



2023 YEAR-END REPORT

Message from Chair

Climate change and the depletion of natural resources are the greatest challenges of our generation. Limiting global warming and reducing our environmental footprint will only be possible by taking a global and collective approach.

In this context, IAEG and its members across the civil and military aerospace and defense industries are supporting solutions to these challenges. IAEG members share good practices and develop voluntary Environment, Social and Governance (ESG) standards and methods that promote our supply chain's crucial transformation to sustainability.

We want to ensure that aerospace can continue to play its vital societal role and inspire future generations for centuries to come.



A stylized blue ink signature of Dr. Bruno Costes.

Dr. Bruno COSTES | BOARD CHAIR | IAEG

Materials and
Substances Declaration

WG1



Replacement
Technologies

WG2



Greenhouse Gas Management
and Reporting

WG3



REACH Authorization
and Restriction

WG5



ISO 14001 and Environmental
Management System Implementation

WG7



Emerging
Regulations

WG9



Aerospace Industry
ESG Engagement

WG11





Materials and Substances Declaration

- ✓ Industry experts collaborate to determine relevant data elements (IPC-1754).
- ✓ Maintenance of Aerospace and Defense Declarable Substance List (AD-DSL), incorporating the latest regulatory updates.

2023 Accomplishments

- Published Aerospace and Defense Declarable Substance List (AD-DSL) v7.0, which included additional substances based on IAEG members' annual screening of regulated substances.
- Published Aerospace and Defense Substances Reporting Tool (AD-SRT) v1.2.3, updated with the AD-DSL v7.0.
- Published Aerospace and Defense Substances Reporting Tool (AD-SRT) v2.0 to align AD-SRT compatibility with the IPC-1754 Amendment 2.0 release.
- Collaborated with IPC E31K Committee for the development of updated IPC-1754 Supplier Declaration Guidance Document, which is a guide for non-IT users on the functionality of the IPC-1754 standard.

2024 Goals

- Publish Aerospace and Defense Declarable Substance List (AD-DSL) v8.0. This version will include additional substances based on IAEG members' annual screening of regulated substances.
- Publish Aerospace and Defense PFAS Declarable Substance List (AD-PFAS DSL).
- Publish Aerospace and Defense Substances Reporting Tool (AD-SRT) v1.2.4 & v2.1, updated with the AD-DSL v8.0.
- Support publication of updated IPC-1754 Supplier Declaration Guidance Document – to guide a non-IT user on the functionality of the IPC-1754 standard.
- Publish Materials and Substances Declaration Development Document v3.0 – The v3.0 will constitute a major overhaul/reorganization of the entire document to make it flow more smoothly and be more user-friendly. It will also include an additional substance mass calculation example that was suggested from the ST5 webinar feedback.
- Publish WG1 Welcome Package and WG1 Handbook – The WG1 Welcome package will be used for new WG1 members onboarding, and the WG1 Handbook will be used as reference guidance to WG1 new and existing members.
- Create Materials and Substances Declaration Contract Terms verbiage, which will educate IAEG member companies about model contract language, for voluntary and unilateral consideration and use.
- Publish Materials and Substances Declaration Process Considerations document that identifies and discusses some key considerations related to executing product-related materials and substances declarations in the AD industry.

“ WG1 is committed to supporting Aerospace and Defense (AD) companies in dealing with the challenges posed by increasing global chemical regulations and the corresponding need for accurate identification of substances of concern in their products and related processes.

Through the development of an AD declarable substances list, declaration tools compatible to industry standard, information resources, training content, and webinars, WG1 continuously monitors the changing regulatory landscape while striving to enable and support the voluntary use of data exchange on materials and substances in products in the AD industry and its supply chain.

MUSSIE PIETROS
GE Aerospace
Work Group 1 Leader



Replacement Technologies



- ✓ Collaboration by industry experts to jointly develop qualified material substitutions.
- ✓ Cost sharing and common industry solutions developed for voluntary unilateral consideration and use.

“ IAEG WG2 is a collaborative forum for the Aerospace and Defense industry to seek and advance viable alternatives to regulated chemicals. 2023 has been a busy year, as we focused on improving our overarching processes, while at the same time our project teams have been gathering data, completing testing, and generating technical reports.

We look forward to building upon this success in 2024 through a continuation of alternatives analysis coupled with increased engagement with suppliers and industry standards bodies.

MICHELLE MCELVAINE
The Boeing Company
Work Group 2 Co-Leader

MARGARET PROUL
Lockheed Martin
Work Group 2 Co-Leader

2023 Accomplishments

- Completed Prioritization Voting, an annual activity to help focus WG2 activities, and addressed actions for the top 5 items in both the Chromium/Cadmium and Additional Materials voting lists.
- Developed Welcome Package to help onboard new members to the work group.

Replacement Project Teams

WG2 had 5 active projects throughout 2023: One focusing on alternatives to cadmium plating, and four seeking alternatives to materials containing hexavalent chromium.

- 4 project teams published reports, each summarizing the technical details of alternative evaluations:
 - Cadmium Plating – Electrical Connector Test Report.
 - Fuel Tank Coating – (1) [Requirements Document](#) and (2) [Project Summary Report](#).
 - Corrosion Inhibiting Primer – Requirements Document.
- 2 project teams engaged with suppliers to obtain information on alternatives:
 - Bond Primer – Working with 3 suppliers, who are each providing test data for the project.
 - Corrosion Inhibiting Primer – Hosted presentations from 6 suppliers.

2024 Goals



	WG2	Cadmium Plating	Conversion Coating	Fuel Tank Coating	Bond Primer	Corrosion Inhibiting Primer
Engage with Suppliers and Industry Standards Bodies	✓	✓	✓	✓	✓	✓
Revise Process Documentation	✓					
Finalize SOW and Launch New Phase of Project			✓	✓		
Perform Testing on Alternative Materials		✓		✓		✓
Publish Project Report		✓	✓		✓	✓



Greenhouse Gas Management and Reporting

- ✓ Efficient GHG Scope 1, 2 & 3 reporting supports industry credibility.
- ✓ Support industry wide collaboration on good practice sharing.

“ Guidelines and tools are available for an easier and harmonized reporting of greenhouse gas emissions. Any company in the Aerospace value chain should consider using them!

BRUNO DARBOUX
Airbus
Work Group 3 Leader

2023 Accomplishments

- Second update of Computation Tool for Scope 3 Categories 1 and 2 was released; more commodities were added, mass based and spend based figures were reconciled.
- A Pilot Phase to proof test Scope 3 Use of Sold Products (USP) Guidelines was successfully completed with a group of representative suppliers.
- With the feedback obtained, the Guidelines were issued and communicated in the IAEG networks and towards the broader supply chain through national professional associations.
- Published Fact Sheet ([link at right](#)).
- Decision was taken to expand the USP guideline to Military applications.
- Decision was taken to develop an internal IAEG white paper to share experience among members.
- An evaluation of space application providers needs was run to determine IAEG WG3's next priority actions.



2024 Goals

- A large update of the Computation Tool for Scope 3 Categories 1 and 2 is targeted for October 2024.
- Encourage adoption of Guidelines for Scope 3 Category 11 Use of Sold Products – Commercial and Business Aviation.
- Implement improvements from user feedback.
- Evaluate the interest in a dedicated Computation Tool.
- Proof test and release the guidelines for Military applications.
- Release of the Science Based Targeting white paper to IAEG members.
- Develop guidelines addressing space industry scope 3 priorities.



REACH Authorization and Restriction

WG5

- ✓ Industry collaboration to determine material obsolescence risks due to EU and/or UK REACH regulations.
- ✓ Input to formation of cost-sharing A&D consortia for creation of applications for authorisation.

2023 Accomplishments

- Assessment of BPA and BosC under the context of REACH Restriction.
- Assessment of PFAS, including preliminary use mapping under the context of REACH Restriction.
- Intelligence gathered on EU REACH Reform and UK REACH divergence.
- WG5 SVHC and Restriction Matrix updated with “mobility rating” to evaluate substances at risk of coming under regulatory-driven obsolescence.

2024 Goals



- Monitor the ongoing EU REACH Revision and UK REACH divergence to ensure that WG5 activities are flexible, relevant, and valuable to members.
- Anticipate Aerospace and Defence dependence on substances likely to come under REACH Restriction well in advance of regulatory activity.
- Develop methodologies for deeper CAS number free supply chain mapping reports based on established priorities, including:
 - PFAS (both non-polymeric and polymeric).
 - Bisphenols of Similar Concern (in the scope of the BPA Restriction).



The scope of WG5 has shifted primarily to REACH Restriction, with no Authorisation projects being carried out in 2023. This is driven by the evolving practice of ECHA to focus on restricting substances in Annex XVII over the historic focus of giving SVHCs sunset dates. This has drastically increased our workload and decreased the time we have as an industry to react to the potential regulatory driven obsolescence.

Now more than ever, WG5 provides an invaluable forum for members to collaboratively address shared risks, share information, and develop common approaches to tackle problems. Access to representative supply chain data and direct contact with suppliers provides insight into market availability of critical Aerospace and Defence formulations, and regular updates from consultants on the evolving regulatory landscape provides members with actionable intelligence to take back to their parent companies.

JOSEPH MCCARTHY
Leonardo, UK
Work Group 5 Leader

ISO 14001 and Environmental Management System (EMS) Implementation



- ✓ Provides sectorial guidance on ISO 14001 Implementation.
- ✓ Risk-based Maturity Framework developed for implementation of a suitable EMS for small- and medium-sized companies, based on ISO 14001.

“ IAEG’s ISO 14001 and EMS Maturity Framework

program continues to mature and expand its accessibility. The WG-7 team has expanded the foreign language translations of our working documents and guidance to include translation in French, Spanish, German, Portuguese, and Hebrew, allowing for Aerospace suppliers around the globe to leverage these tools for improving their Environmental Management systems.

Internally, the group has developed the tools and resources to help deploy and manage the maturity process. These tools will aggregate supplier EMS maturity status for easy reference by entirety of the Aerospace Industry. The implementation of a knowledge testing tool will qualify auditors and assure the full understanding of the model.

CINDY KLÖHN
Airbus
Work Group 7 Leader

2023 Accomplishments

- Published translations into French, German, Hebrew, Portuguese, and Spanish ([link at right](#)).
- Initial contract proposal approved for EMS Maturity Framework knowledge test solution.
- Conducted detailed discussions on integration with WG11 EcoVadis solution.
- Developed and implemented run-mode sustainment strategy:
 - Deploy run-mode and feedback mechanism.
 - Feedback mechanisms and run-mode set up – Roles and responsibilities defined.
- Developed reports and indicators for monitoring of EMS maturity and uptake.

**FRENCH
GERMAN
HEBREW
PORTUGUESE
SPANISH**



2024 Goals



- Implement Maturity Framework knowledge test solution.
- Promote availability of model and knowledge test.
 - Launch event
- Continue further integration across Work Groups for further implementation and uptake of EMS Maturity Model.
- Explore future roles and responsibilities of WG-7 and its members.
 - Convert to steering team after Launch.
 - Operate in run-mode and identify improvement opportunities.
 - Continue to promote (Internal/External) and expand Maturity model.



Emerging Regulations WG9

- ✔ Provides updates on global emerging regulations in 50 prioritized countries.
- ✔ Regulatory alerts developed for member companies and their supply chain.

“ The strong involvement of WG9 members is key to making our regulatory prioritization process and the related deliverables efficient. In addition, collaboration with other Working Groups is a lever to improve the IAEG outputs as we have seen with the PFAS example.

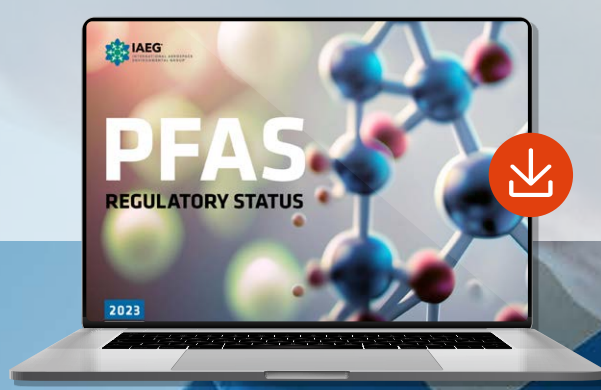
MICHEL RENAULT
Thales
Work Group 9 Deputy Leader

2023 Accomplishments

170 regulations reviewed	12 newsletters	7 regulatory alerts	2 fact sheets	1 webinar	COUNTRIES OF INTEREST survey results	DEVELOPED welcome letter for new work group members
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2024 Goals

ISSUE	DEVELOP	FACILITATE
12 newsletters	2024 countries of interest survey	2 webinars
2 fact sheets	KPIs to measure success	
5 regulatory alerts		



Aerospace Industry ESG Engagement

WG11

- ✓ Establish ESG assessment that includes risk-based validation of assessment results, for voluntary and unilateral consideration and use by Aerospace companies.
- ✓ Driving continuous improvement of Aerospace industry ESG performance through awareness campaigns throughout our supply chains.

“ As we look ahead, we are focused on maximizing engagement across the value chain, ensuring awareness of what is driving the need for action and providing pathways for progress.

ASHLEY RUBINSKY
Lockheed Martin
Work Group 11 Co-Leader

“ This baseline year of sector insights has been a tremendous testimony to the commitment across the industry and I anticipate us reaching new heights in 2024.

MARK WALKER
Airbus
Work Group 11 Co-Leader

2023 Accomplishments

- Announced contract with EcoVadis to administer voluntary IAEG program on Aerospace supply chain sustainability performance.
- Had 10 companies join the sector initiative which represents 62% of revenue across IAEG member companies.
- Reached an inaugural view of sector insights based on the over 1,000 suppliers assessed.
- Engaged multiple key stakeholders and sustainability thought leaders to mature our strategy.
- Realized an efficiency gain of 25% where 1 of every 4 suppliers were sought to join by more than one IAEG member company. We anticipate this number to increase considerably in 2024.



RESOURCE:
IAEG Sustainability Assessments Engagement Kit



2024 Goals

- Grow the sector pool of assessed suppliers from our baseline year.
- Establish a Sector Insights EcoVadis User Forum to ensure efficiencies and best practice sharing.
- Provide resources for sustainability improvement to the supply chain.
- Host an inaugural virtual event dedicated to small & medium enterprises of the industry.



It was a busy year of collaboration for IAEG and one full of change. IAEG transitioned to an Association Management Company, Inventures, saying goodbye to longtime colleague, IAEG ideator, and Program Director, Christer Hellstrand as he sailed into retirement. IAEG experienced significant growth in membership, welcoming eleven new member companies across the Aerospace Industry and re-engaging in external events like the Le Bourget Paris Air Show. IAEG hosted two in-person, face-to-face technical meetings (San Diego, California and London, England) that allowed Work Groups focused collaboration time to execute work product and deliverables and solve problems. The carbon footprint of both face-to-face meetings benefitted from carbon offset initiatives, working with Removall Carbon. IAEG continued to expand our social media presence, wrapping up IAEG leadership cameos and increasing technical meeting guest speaker summaries. Work Groups continued developing education content for the small- to medium-sized businesses and for the supply chain. Following are some highlights from our IAEG communications team:

Welcome to several new IAEG Board of Directors members

- **Ian Bentley** - *Rolls-Royce*
- **Chris Lines** - *Leonardo*
- **Sandra Gridley** - *RTX (returning BOD)*
- **Caroline Gibon** - *Thales*
- **Ryan Faucett** - *Boeing*
- **Frederic Roumegoux** - *Airbus*
- **Deborah Allen** - *BAE Systems*
- **Brodie Davis** - *Northrop Grumman*
- **Nathalie Stubler** - *Safran*
- **Hélène V. Gagnon** - *CAE*

Congratulations to our IAEG 2023 Award Winners

Congratulations to both the nominees and winners! Members were nominated by their peers for their outstanding contribution to an IAEG Work Group or the organization overall, specifically relating to IAEG's efficiency & effectiveness, strategic development, and customer value. This year's winners are:

- **Claire Bodlener Constans** - *Airbus*
- **Phill Godfrey** - *RTX*
- **Paul Guthrie** - *RTX*
- **Christer Hellstrand** - *HCC, LCC*
- **Carolyn Kupper** - *Boeing*
- **Joseph McCarthy** - *Leonardo*
- **Ally Rames** - *Haley & Aldrich, Inc*
- **Ashley Rubinsky** - *Lockheed Martin*
- **Mark Walker** - *Airbus*

Special recognition to the following individuals for their many efforts and time contributing to IAEG: Sally Twisleton (*Rolls-Royce*), David Pinsky (*RTX*), Sophie Le Pennec (*Thales*), Michele Lewis (*Collins Aerospace*), Steve Shestag (*Boeing*).

Welcome to New Members

IAEG Membership companies represent 70% of the Global Aerospace and Defence Industry. Aerospace OEMs can join as Full Members and any interested company, corporation, trade association, consulting company, or university may join IAEG as a Liaison Member. Membership benefits include:

- Have a voice in promoting the development of voluntary consensus standards addressing environmental and sustainability concerns.
- Participate in a forum for dialog on industry-optional approaches for implementation of environmental and sustainability requirements.

A warm welcome to IAEG's newest members:

Full Members:

- **CAE**
- **Diehl Aviation Holding**
- **General Atomics**
- **Henkel**
- **Hexcel Composites Limited**
- **MTU**
- **Ontic**
- **Praxair Surface Technologies, a Linde Company**

Liaison Members:

- **BSI Group**
- **Capgemini**
- **Sopra Steria**

Looking forward to 2024!

IAEG members should be proud of the accomplishments of 2023, which extended further into more Environmental, Social, and Governance (ESG) areas and providing tools and resources for the Aerospace Industry as we strive for responsible and sustainable aviation. We hope everyone has returned from the holiday season charged and eager to tackle environment challenges and sustainability in our industry.

Looking forward to seeing what IAEG members can accomplish next year!

Kathleen Oldham

IAEG COMMUNICATIONS OFFICER



Message from the Strategic Planning Committee

In 2023, IAEG's Strategic Planning Committee (SPC) evaluated several new ESG-related ideas from the membership, determined that they were aligned with IAEG's strategic direction, and recommended further development of those ideas into proposed Work Group charters. Those charters that were approved by the Board of Directors in late 2023 will be launching as Work Groups in early 2024.

Additionally, IAEG is in the process of updating its 2025 Vision that was created in 2020. The updated vision is intended to align with emerging environment, social, and governance topics that affect aerospace and defense and can be positively impacted by IAEG companies voluntarily working together. The SPC has been gathering input on the new vision throughout the year from many sources, internally and externally. Preparations are underway to analyze that information and recommend an updated IAEG vision to the Board of Directors in 2024.



Sandra Gridley

STRATEGIC PLANNING COMMITTEE LEADER

Message from Inventures

In June 2023, long-time IAEG Program Director, Christer Hellstrand, retired, transitioning IAEG operations to an association management company from California called Inventures. IAEG owes Christer a debt of gratitude for his effective guidance over most of IAEG's formative years!

Steve Crumb is now IAEG Executive Director, working with the Board and several other groups including the Executive Committee and the Compliance Working Group. His colleague, Michele Lawrie-Munro, is Senior Program Manager, supporting IAEG's Communication Committee and Working Groups. Both bring 20+ years of experience in leading collaborative organizations, Steve having worked with a variety of standards bodies, including ISO, SAE, and Internet Engineering Task Force.

Inventures offers its clients access to seasoned management professionals, best practices for effective collaboration, and proven processes for alliance management. Inventures puts in place the resources and structures to allow alliances to grow, thrive, and achieve their mission and goals. Through Inventures 30+ years, we have a history of growing our client organizations and providing the management services needed for their success. Inventures is pleased to serve IAEG as it establishes more environmentally sound and sustainable aerospace and defense industries.



Steve Crumb

IAEG EXECUTIVE DIRECTOR



Michele Lawrie-Munro

IAEG SENIOR PROGRAM MANAGER



LEADING EDGE
SOLUTIONS
ACROSS THE
VALUE CHAIN



RESPONSIBLE &
SUSTAINABLE
AEROSPACE
INDUSTRY

A RECOGNIZED GLOBAL BODY FOR AEROSPACE & DEFENSE

56 MEMBER
COMPANIES

70% OF GLOBAL AEROSPACE AND DEFENSE
INDUSTRY ARE IAEG MEMBERS

\$518B COMBINED ANNUAL 2022 REVENUES
FOR IAEG (FULL) MEMBERS

\$740B TOTAL GLOBAL AEROSPACE
INDUSTRY 2022 REVENUES

IAEG Full Members

Airbus SAS	Embraer
ATR	GE Aviation
BAE Systems	General Atomics
Boeing	GKN Aerospace
Bombardier	Gulfstream
CAE	Henkel
Dassault Aviation	Hexcel Corporation
De Havilland Aircraft of Canada Limited	Honda Aircraft Company, LLC
Diehl Aviation Holding	Honeywell

Howmet Aerospace
Huntsman Advanced Materials
Israel Aerospace Industry
L3Harris Technologies, Inc.
Leonardo Company
Lockheed Martin
MTU
Northrop Grumman
Ontic

Praxair Inc
RTX
Rolls-Royce
SAAB
SAFRAN
Spirit AeroSystems
Textron Inc.
Thales
3M Deutschland GmbH

IAEG Liaison Members

Aero Montreal
Airbus Canada
Airbus Defence and Space GmbH
Airbus Helicopters (Salamander)
Assent Compliance Inc.
BSI Group
Capgemini
Dassault Systemes Enovia

DXC Technology
Granta Design Ltd
Haley & Aldrich
Hangsterfer's Laboratories, Inc.
Noblis
Ramboll Environment & Health
Risk & Policy Analysts Ltd
SAFECHEM Europe GmbH

Sopra Steria
Souriau SAS
Tetra Tech
Yordas Group

