



Aerial Refueling Systems Advisory Group (ARSAG) Joint Standardization Board

**Informational Briefing
31 October 2018**

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Naval Air Systems Command**

Unclassified



ARSAG JSB

Aerial Refueling Systems Advisory Group (ARSAG)

- **Founded in 1978**
- **Independent, not-for-profit**
- **Chartered as Joint Standardization Board (JSB) for Aerial Refueling Standardization in 2006**
- **Meetings:**
 - **Open-forum Annual Meeting each spring**
 - **20 + nations' government/military and industry representatives**
 - **High-level briefings, status reports, exhibits**
 - **Two ARSAG Workshop / JSB Meetings each year**
 - **September 3 day meeting**
 - **February 2 day meeting**
 - **Participation limited to NATO nations + Australia**
 - **Seven Working Groups**



Joint Standardization Boards



OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 203 1-3000

ACQUISITION
TECHNOLOGY
AND LOGISTICS

MEMORANDUM FOR JOINT AERIAL REFUELING SYSTEMS ADVISORY

GROUP SUBJECT: Joint Standardization Board for Aerial Refueling Systems

The attached charter establishing the Aerial Refueling Systems Advisory Group (ARSAG) as a Joint Standardization Board (JSB) for Aerial Refueling Systems under the Defense Standardization Program (DSP) is approved. The objective of the JSB is to achieve common, mutually satisfactory solutions to shared requirements and problems. The JSB will:

- Develop and improve processes and procedures to facilitate aerial refueling initiatives
- Establish DOD standards (IAW DOD 4210.24-M, Defense Standardization Program (DSP) Policies & Procedures);
- Define joint doctrine, tactics, techniques and procedures, and recommend DOD policy for effective and efficient deployment of aerial refueling systems;
- Establish a comprehensive, integrated structure necessary to achieve interoperability, promote standardization, and conserve resources in support of Joint Service and Multinational Operations;
- Establish an effective, Department-wide forum for interoperability coordination, planning, and decision making.

Your participation in the DSP's efforts to achieve interoperability and standardization for aerial refueling systems is appreciated.

My focal point for JSBs is Mr. Mike Goy, _____ Defense Standardization Program Office, (703) 767-6882, Mike.Goy@dla.mil.

JAMES D. HALL
Defense Standardization Executive



Joint Standardization Boards



- **ARSAG JSB:**

- Bring together all stakeholders, including Industry
- Develop collaborative solutions to Joint Service/DoD requirements
- Achieve DOD-wide and NATO standardization
- Promote Interoperability...among systems, equipment and technologies
- Influence & guide multi-Service standardization efforts
- Advocate the use of standards in the acquisition process
- Establish a prioritized list of targeted standardization opportunities



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PROJECTS SUMMARY

Group 1

Antonio Cano-Gonzalez, Airbus

Andrew Ferguson, AFLCMC/EZFA

- Boom Nozzle Spec. with IDS Doc. No. 44-15-18WD
 - In-Work

Group 2

Tom Cavallaro, NAVAIR

Josh Tokarz, AFLCMC

- AR Probe Nozzle Spec. Rev. Mil -N- 25161 Doc. No.51-16-18WD
 - In-Work
- MA-2,3,4,5, AR Coupling Specification Doc. No.11-04-17R
 - On Hold
- MA-5, AR Coupling Specification Doc. No.13-14-15
 - Posted on ASSIST



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ARSAG WORKSHOP / JSB PROJECTS SUMMARY

Group 3 John Luu, AFLCMC

Derek Ferwerda, NAVAIR

- Formation Aids Guide, 06-06-18WD
 - In Work
- Hose Color and Markings For Drogue AR System, 05-05-18WD
 - In Work

Group 4 Gregory Twyford, Boeing

Ken McCain, Northrop Grumman

- Incident Investigation Guide Doc. No. 50-17-18WD
 - Mark Lane, Cobham, Document Manager, In-Work
- Ground Support Equipment Guide Doc. No. 45-14-18WD
 - Jim Turner, PSI, Document Manager, In Work
- Maintenance Sustainment & Support Reference Guide, Doc. 12-06-18WD
 - Ken Koontz, Boeing, Document Manager, In-Work



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ARSAG WORKSHOP / JSB PROJECTS SUMMARY

Group 5 **WGCDR Greg (Bear) Pasfield, RAAF** **Richard Simms, USTRANSCOM**

- AR Clearance Process Guide and AR Clearance Compatibility Checklist, Doc. No. 43-08-14 Rev.1
 - Completed
- Interface Data Acquisition, no number assigned, Ref. No's 18-08-09 & 19-11-11
 - Mark Burket, AFLCMC, Document Manager, In-Work
- Point paper, no number assigned, Ref. Doc. Nos. 18-08-09, 19-11-11
 - Richard Simms, Document Manager, In-Work
- Standardized AR Interface Data Survey (SARIDS) previously (STDS) Doc. No. 17-81-03R
 - Mark Burket, AFLCMC, Document Manager, In-Work
- World-wide Tanker/Receive List
 - Sean Martin, Boeing, Document Manager



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Group 5A Steve McLaughlin, NAVAIR

Ba Nguyen, AFRL

- Automated AR Concept of Operations Procedures Guide Doc. No. 42- 13- 17
 - Completed

Group 6 Harry Slusher, Boeing

Rob Tipton, Lockheed Martin

- Probe /Drogue Guide Doc. 04-06-18WD
 - Derek Ferwerda, NAVAIR, Document Manager, In DRT Review
- Probe/Drogue Req's, STANAG 3447 ED.5 ARSAG recommended added requirements: inputs to include probe loads, EMI (Static discharge), Hose Reel automatic take-up provisions and any other urgent technical factors currently contained in draft Probe/Drogue Guide doc., Draft, DM. Derek Ferwerda



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ARSAG WORKSHOP / JSB PROJECTS SUMMARY

Group 6 cont'd

- Boom/Receptacle Guide Document 20-08-17R
 - Harry Slusher, Boeing, Document Manager, Complete
- Aerial Refueling Boom/Receptacle Systems & Interface
 - Harry Slusher, Boeing, Document Manager, In-Work
- Aerial Refueling Equipment Probe/Drogue Interface
 - Derek Ferwerda, NAVAIR, Document Manager, Proposed



ARSAG JSB Process



ARSAG WORKSHOP DOCUMENT PROCEDURES and WORKFLOW OUTLINE

1	<p>Request Submitted via Project Initiation Form (PIF) to ARSAG for Initiation of a Project, Document Creation or Revision of Existing Document</p> <p>Requesting agency may be military/government or industry aerial refueling entity</p>
2	<p>PIF Reviewed</p> <p>Project Accepted or Rejected</p> <p>Accepted Project Prioritized, Assigned to Working Group</p> <p>ARSAG Executive Director, JSB Chair and JSB Deputy Chair Working Group Leads</p>



ARSAG JSB Process



3	<p>Document Generated (or Revised) in Standardized ARSAG Format at ARSAG Workshop / JSB Meetings Working Group Meetings</p> <p>Working Group Lead, Co-Leads. Document Managers, Technical Advisors, Working Group Participants</p>
4	<p>Completed Draft of Document Submitted to Executive Director, JSB Chair, JSB Deputy Chair Working Group</p>



ARSAG JSB Process



5	<p>Document Reviewed, Submitted to Document Review Team</p> <p>ARSAG Executive Director JSB Chair & Deputy Chair</p>
6	<p>Document Reviewed, Returned with Recommendations to Working Group and Executive Director</p> <p>Document Review Team (DRT)</p>



ARSAG JSB Process



7	<p>DRT Recommended Changes Coordinated with Working Group and with Executive Director's team.</p> <p>Working Group Leads Sign Out Document</p> <p>Working Group</p>
8	<p>Document Submitted to NAVAIR or USAF (AFLCME/EZFA) for Clearance for Release in Public Domain</p> <p><i>(Signatories: Executive Director, Working Group Leads, JSB Chair, JSB Deputy Chair, ARSAG Secretary)</i></p> <p>ARSAG Executive Director JSB Chair, JSB Deputy Chair</p>



ARSAG JSB Process



9

Document Submitted to Document Technical Information Center (DTIC) for Posting, Forwarding to NATO/JAPCC for Adoption as STANAG, SRD, etc.

**JSB Chair, JSB Deputy Chair
ARSAG Executive Director**



ARSAG JSB Documents



DOCUMENT (custodian)	Name	Last Updated	Status	Next Update Due	Next Update Begins
STANAG 7207 (JAPCC)	ATP 3.3.4 II, Ed A Ver1 AAR Doctrine	2018	Updated and promulgated	2023	Spring 2021
STUDY 7218 (GBR)	Hose Colour and Markings in Hose and Drogue Systems	N/A	Study complete for the time being. More information required before further work.	N/A	N/A
STANAG 3447 (USA)	ATP 3.3.4.6 EdA, Ver1 AAR Equipment: Probe-Drogue Interface Characteristics	2016	Updated and promulgated	2021	Spring 2019
STANAG 7215 (GBR)	ATP 3.3.4.7 AAR Signal Lights in Hose and Drogue Systems	2018	Document reviewed with no need to update.	2023	Spring 2021
STANAG 7191 (USA)	ATP-3.3.4.5 Ed A Ver1 AAR Equipment: Boom-Receptacle System & Interface Requirements	2018	Updated and promulgated	2023	Spring 2021
STANAG 3971 (JAPCC)	ATP 3.3.4.2 Air-to-Air Refuelling Ed D	2019?	Updated and at NSO for publication creation and silence/promulgation procedure	2024	Autumn 2021



USAF Boom-Receiptacle Refueling





Navy Probe-Drogue Refueling





USN / USMC Receiver Aircraft





Italian Air Force KC-767





Australian KC-30 Tanker





USAF KC-46 Tanker





MQ-25 Unmanned Aerial Refueling





Opportunities



- “Coalition of the willing” that sees value in standardizing
- Standardization (i.e. STANAG compliance) ensures Interoperability between new receiver and tanker aircraft being procured by many nations
- Provide participants to have direct inputs in the development of guidance documents
- Facilitate cooperative work among military, civilian, industry and academia in resolving technical issues
- Lack of standardization is very costly - to all involved
- ARSAG JSB held the very first Fall Workshop meeting overseas in conjunction with NATO and EU Air To Air Refueling Conference in Brussels 10-12 Sep 2018



Questions/Comments?



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