

Engine/APU Halon Replacement Industry Consortium – Halon Alternatives for Aircraft Propulsion Systems (HAAPS)

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*INTERNATIONAL AIRCRAFT SYSTEMS FIRE PROTECTION WORKING GROUP MEETING
Atlantic City, New Jersey, USA*

By

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In Review...Industry is leading a broad stakeholder approach

The consortium will . . .

- Define common non-halon fire extinguishing solution(s) for use in engine/APU fire zones that...
 - is compliant to basic industry and regulatory requirements
 - meets multiple OEM (airframe, engine, APU, nacelle, etc.) requirements
 - meets multiple governmental agency regulatory requirements;
 - provides a viable business solution for Consortium partners; and
 - is production-ready
- Engage...
 - Primary Stakeholders = Airframer OEMs
 - Members = Firex Agents/System Suppliers, Airlines, engine companies, nacelle suppliers, airworthiness authorities, etc.
 - A focal point, facilitator & fiscal/contracting “Managing Entity” (ME)

Ohio Aerospace Institute (OAI) Selected 1 Oct. 2014 as ME

- Services Agreement signature initiated activities to form the Halon Alternatives for Aircraft Propulsion Systems (HAAPS) consortium
- Signatories: OAI and founding OEM Airframers (Airbus SAS, The Boeing Company, Bombardier Inc., Embraer S.A., Textron Inc.)

In Review...Executing to a Plan

- Phase I – initial engagement, confirm interest, launch consortium formation activities, engage ME, business & working together agreements
- Phase II – develop technical statement of work (requirements, performance validation, down selection criteria, certification path, suppliers requests for proposal, etc.)
- Phase III – execute activities required to produce the solution(s)

Phase I Status

- HAAPS Joint Collaboration Agreement (JCA) in Approval Signature Cycle at Founding OEM Airframers
 - Primarily a working together agreement between air framers and OAI:
 - Administration and governance rules
 - Proprietary data sharing & protection
 - Intellectual Property protection & ownership
 - Member rights, benefits, integration
 - Cost & resource sharing
 - Etc.
 - Signed by OAI, Boeing, and Bombardier
- JCA Approval Enables Next Steps – Phase II Initiation
 - Formal creation of Technical and Non-Technical Task Teams

Phase II Overview

- Builds Upon Previous & Ongoing Technical Activities
 - IASFPWG, CCHWRG, NIST, FAA ARC
 - Halon replacement certification test challenges lessons learned
 - Advance engagement with airworthiness authorities to develop certification paths
- What's Different or New?
 - Single formal working together agreement between signatory air framers and other TBD signatory stakeholders
 - Sharing of knowledge (data, lessons learned, etc.) and resources
 - Joint development of information that will support on-airplane implementation
- Two Task Teams to be Created
 - Technical & Non-Technical
 - Technical Task Team will synergize with past & ongoing CCHRWG activities where applicable

Phase II - Task Team Activities

- Technical Task Team
 - Define Workscope, Operating Rules, Documentation Requirements, & Timeline
 - Define High Level Solution(s) Strategy
 - Define Regulatory Requirements
 - Compile applicable airworthiness and environmental requirements
 - Define Design Requirements
 - Define Draft Certification Path (Airworthiness)
 - Activities progressing where appropriate in parallel with JCA signature cycle
- Non-Technical Task Team
 - Define Workscope, Operating Rules, Documentation Requirements, & Timeline
 - Develop Deliverables (Assist from Technical Task Team)
 - Development of Industry and Advisor Member agreements
 - Engagement terms & conditions, working together agreements, development of RFI/RFP content

Contacts, Announcements & History

- Ohio Aerospace Institute (OAI) <http://www.oai.org/>
 - Carol Cash, HAAPS Project Manager CarolCash@oai.org, Phone: 440-962-3073
- OAI's HAAPS Press Release
 - <http://web1.oai.org/oaiweb.nsf/wnews/B16B96B2AFB1763D85257DD9004F0B28?OpenDocument&sc=2>
- ICCAIA Support of HAAPS Consortium
 - <http://www.aia-aerospace.org/news/iccaia-supports-international-consortium-seeking-alternatives-to-halon-fire-suppressant/>
- IASFPWG Meeting, Cologne, Germany, May 22-23, 2013 – Consortium Proposal
 - <https://www.fire.tc.faa.gov/pdf/systems/May13Meeting/BennettMacias-0513-ICInterestEgineAPU.pdf>
- Halon Alternatives Research Corporation (HARC) sponsored Aviation Stakeholder's Meeting Chicago, Illinois, U.S.A., 11 June, 2013 – Consortium Proposal
- 2013 ICAO Assembly recognized consortium commitment , Resolution 31/1: Halon replacement ([link](#))

Thank you!