

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

13 May, 2015

*INTERNATIONAL AIRCRAFT SYSTEMS FIRE PROTECTION WORKING GROUP
MEETING*

Dresden, Germany

By

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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)

Execute 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, etc.)
- Phase III – execute activities required to produce the solution(s)

Consortium Proposal to Industry

IASFPWG Meeting, Cologne, Germany;
(HARC) sponsored Aviation Stakeholder's
Meeting Chicago, Illinois, U.S.A.

ICAO 38th Session Assembly

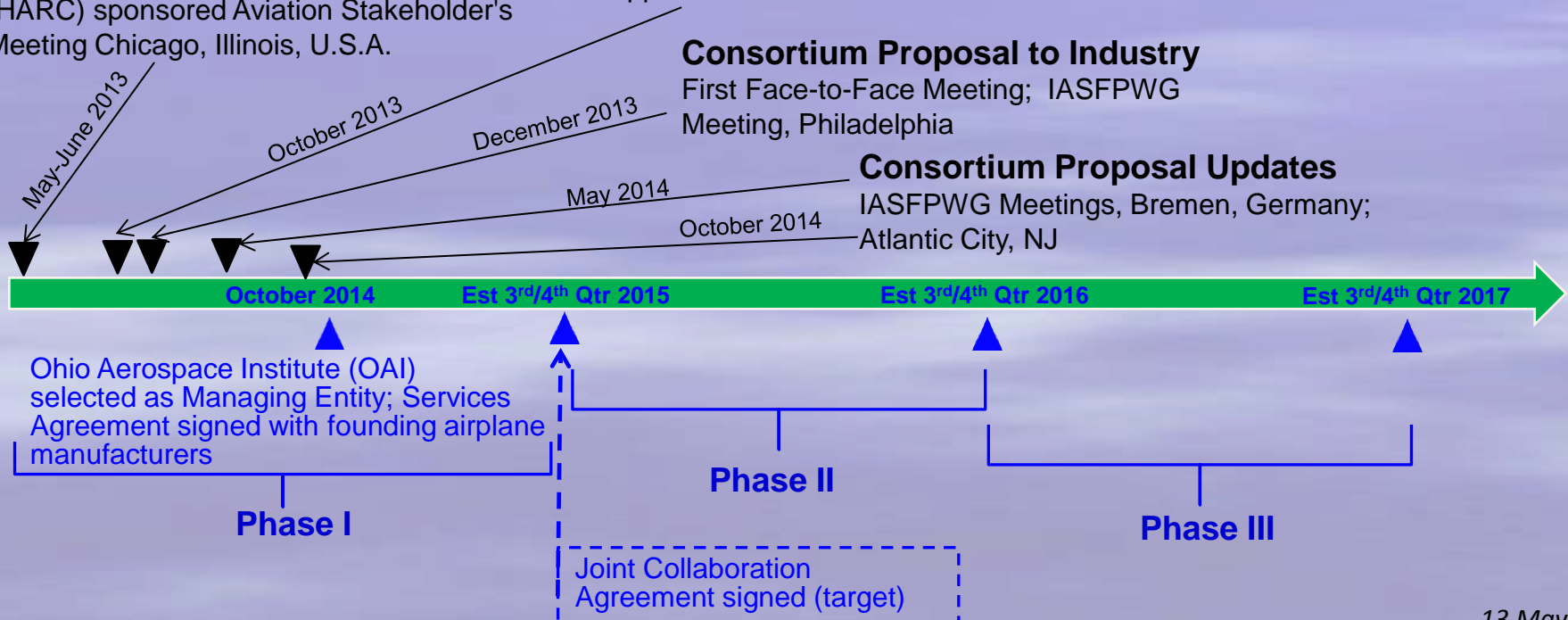
Support of consortium commitment

Consortium Proposal to Industry

First Face-to-Face Meeting; IASFPWG
Meeting, Philadelphia

Consortium Proposal Updates

IASFPWG Meetings, Bremen, Germany;
Atlantic City, NJ



Formal ME Selection & Initial Agreement

- Completed on 1 Oct. 2014
 - Ohio Aerospace Institute (OAI)
 - OAI Press Release:
<http://web1.oai.org/oaiweb.nsf/wnews/B16B96B2AFB1763D85257DD9004F0B28?OpenDocument&sc=2>
 - Joint Services Agreement signed
 - Initiates 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.)
 - Formal agreement to proceed with and fund Phase I activities

Phase I is Underway

- Joint Collaboration Agreement (JCA) Draft in Review
 - Will define working together agreements: administration and governance rules, IP protection, member rights & benefits, supplier integration & participation, etc.
 - Estimate signature of JCA by 3rd or 4th Qtr 2015
- HAAPS Stakeholder Outreach and Engagement
 - Formal invitation to participate will be via letter from OAI on behalf of HAAPS consortium
 - Other interested parties welcome and encouraged to contact OAI to explore participation
 - Engage additional Primary Stakeholder airframer OEMs
 - Estimate completion of initial effort by end 2nd Qtr 2015
 - Engage non-Airframer Members
 - Firex Agents/System Suppliers, Airlines, engine companies, nacelle suppliers, airworthiness authorities, etc.
 - Estimate completion of initial effort by end 3rd or beginning 4th Qtr 2015

Future Consortium Activities

- Phase II - Technical Statement of Work Definition
 - Development of and agreement on...
 - Agent/System Design & Validation Requirements
 - Candidate agent/system evaluation plans down selection criteria
 - Etc.
 - Start of Phase II dependent on Phase I completion
 - Estimate duration of no more than 1 year
- Phase III - Primary Deliverable Development/Validation
 - All activities required to produce the Primary Deliverable
 - Identification of potential candidate agents/systems & solicitation of proposals
 - Evaluate against Phase II Agent/System Design & Validation Requirements
 - Down selection to go-forward agent/system candidate(s)
 - Testing & analyses
 - Final down selection to common agent/system candidate
 - Follow-on evaluation (as needed)
 - Testing & analysis (E.g. MPSHRe, Toxicology, SNAP approval, other)
 - Final agreement by members on Primary Deliverable
 - Start of Phase III is dependent on Phase II completion (TBD)

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://www.oai.org/docs/Final-Approved-HAAPS-Press-Release-2015-01-26.pdf>
- ICCAIA Support of HAAPS Consortium
 - http://www.aia-aerospace.org/sectors/civil_aviation/news/iccaia_supports_international_consortium_seeking_alternatives_to_halon_fire
- IASFPWG Meeting, Cologne, Germany, May 22-23, 2013
 - <https://www.fire.tc.faa.gov/pdf/systems/May13Meeting/BennettMacias-0513-ICInterestEngineAPU.pdf>
- Halon Alternatives Research Corporation (HARC) sponsored Aviation Stakeholder's Meeting Chicago, Illinois, U.S.A., 11 June, 2013
- 2013 ICAO Assembly recognized consortium commitment , Resolution 31/1: Halon replacement ([link](#))
- IASFPWG Meeting, Bremen, Germany, May 14, 2014
 - <https://www.fire.tc.faa.gov/pdf/systems/May14Meeting/Bennett-0514-ICCAIAEngineAPU.pdf>
- IASFPWG Meeting, Atlantic City, NJ, October 30, 2014
 - <https://www.fire.tc.faa.gov/pdf/systems/Oct14Meeting/MACIAS-1014-ICUpdate.pdf>

Thank you!