HM-1 Committee for Integrated Vehicle Health Management

PHM Society Panel Discussion September 26, 2012



Goals for HM-1 Committee

- Review industry experience and the "state-of-the-art" technologies for integrated vehicle health management
- Publish documents known as SAE Aerospace Standards (AS), Aerospace Recommended Practices (ARP), Aerospace Information Reports (AIR), and Aerospace Resource Documents (ARD)
- Analyze and report on various approaches to IVHM (e.g. health management systems, fault prediction capabilities, data standards, ground software interfaces, etc.).
- Develop standards and recommended practices for IVHM equipment and techniques, e.g. overall system architecture, determination of system health, identification of signals common to IVHM systems, etc.
- Develop new requirements and uses for IVHM technologies to promote cost effective operation of vehicles.



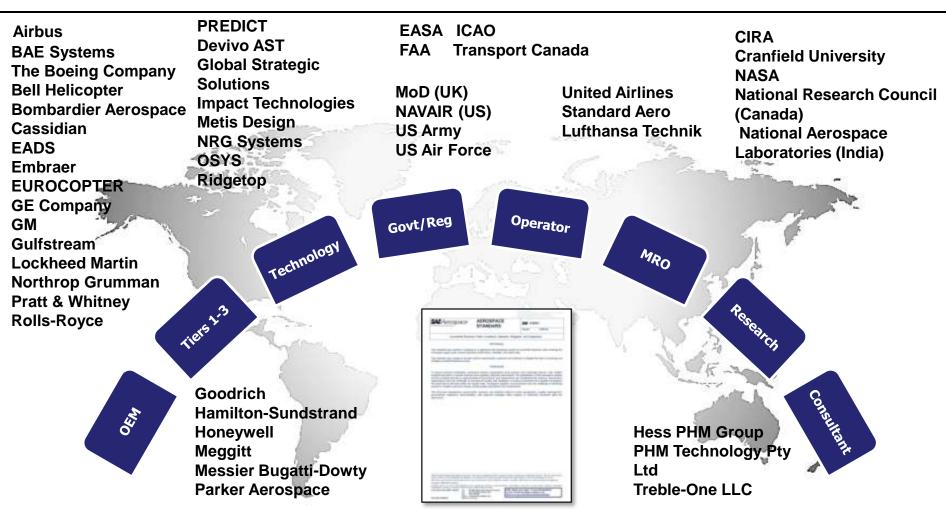
HM-1 – SAE IVHM Technical Committee

- Chair Mike Roemer, Impact Technologies.
- Vice-chair Francis Peloquin, Bombardier
- Approved by Aerospace Council October 2010
- 100+ members from 5 continents
- 1st Meeting
- 2nd Meeting
- 3rd Meeting
- 4th Meeting
- 5th Meeting
 - Operator panel
 - Regulator panel
- * Joint with E-32 EHM Committee

SAE International

- Seattle March 2012 Cleveland, OAI – October 3-5, 2012*
- Cologne, EASA March 12-14 2013
- San Francisco April 2010* Toulouse – October 2011

One Table, One Standard – HM-1



SAE International[®]

HM-1 Task Groups

- Design
- Architecture
- V&V, Metrics and Certification
- Data & Information Management
- Business Case
- Avionics



SAE HM-1 Document Roadmap

SAE IVHM Steering Group Oversight



	ARP6803 IVHM Cornerstone Document	
BUSINESS	TECHNOLOGIES	APPLICATION
ARP6275 Cost Benefit Analysis of IVHM Systems	ARPXXXX Architecture of an IVHM System	ARP6212 Volcanic Ash
ARPXXXX Guidelines for Certification of IVHM Systems	ARP6883 Requirements of an IVHM System	AS5391 HUMS Accelerometer Interface
	ARP6407 Guidelines for the	AS5392 HUMS Rotational System Indexing Sensor
	Design of an IVHM System	AS5393 HUMS Blade Tracker Interface
	ARPXXXX Verification & Validation of an IVHM System	AS5394 HUMS Advanced Multipoint Interface
	ARPXXXX Guidelines For IVHM System Software And Airborne Electronic Hardware Assurance Levels	AS5395 HUMS Data Interchange

SAE HM-1 Works in Progress

Standard	Title	Status
SAE ARP6803	IVHM Cornerstone	Currently Working on First Draft
SAE ARP6275	Cost Benefit Analysis of IVHM Systems	Currently Working on First Draft
SAE ARP6212	The Potential Use of Health Monitoring Technologies During or After Volcanic Events	Currently Working on First Draft
SAE ARP6407	Guidelines for the Design of an IVHM System	Currently Working on First Draft
SAE ARP6883	Guidelines for Writing IVHM Requirements for Aerospace Systems	Currently Working on First Draft
SAE ARPXXXX	Architecture of an IVHM System	Working Group close to launching document
SAE ARPXXXX	Verification & Validation of IVHM Systems	Will be done following ARP6883
SAE ARPXXXX	Guidelines For IVHM System Software And Airborne Electronic Hardware Assurance Levels	TBD
SAE ARPXXXX	Guidelines For Certification Of IVHM Systems	TBD
SAE ARPXXXX	Ground Stations	TBD