



Sensors Roadmap

40th AF Corrosion Conference

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Overview

- Current Programs
- Future Plans
- Teaming Efforts
- Roadmap



Current Programs

Aircraft Cumulative Environmental Exposure Sensors

- >400 sensors flying on 7 platforms
- Measures environment
- Prognostic—identifies potential for corrosion





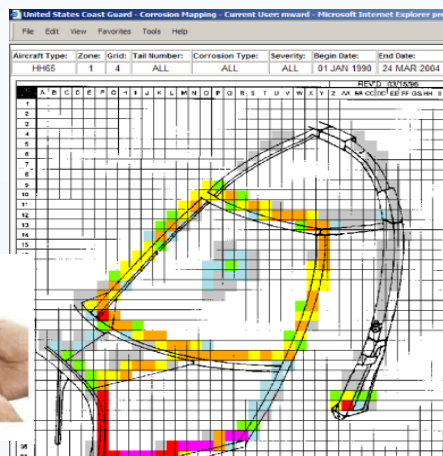
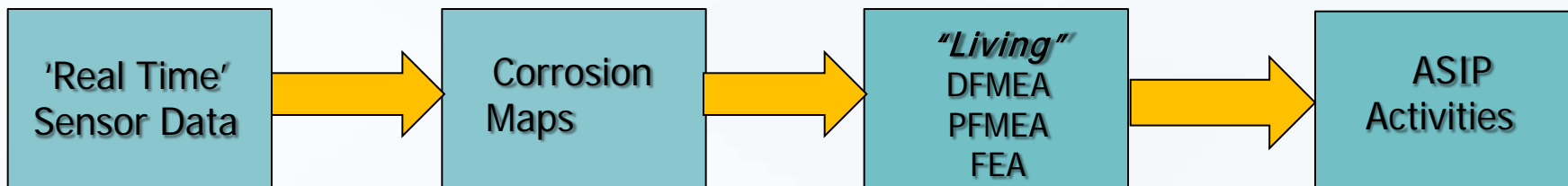
Future Plans- Sensor Technology

- **Currently, data generated from “1st Generation” (passive) sensors**
 - Subjective interpretation
 - Proprietary software
 - Readings are orientation-sensitive
- **Improve data accuracy- “2nd Generation” (wireless) sensors**
 - Influence HVM, CBM
 - Some in use by industry infrastructure
 - Correlate sensors and corrosion mapping
- **Seamless user interface- “3rd Generation Sensors”**
 - Real time data capture from any location, surface, environment
 - User-friendly interface
 - Identify types of corrosion



Future Plans – Use of Sensor Data

- Sensor data will augment ASIP activities
- Lower corrosion maintenance costs; result in lower lifecycle costs



Potential Failure Mode and Effects Analysis (Process FMEA)		AIAG Fourth Edition													
Item	Name/number of item	FMEA Number	Insert FMEA#												
Model Years	model years/programs	Page	1 of 1												
Core Team	Team members	Prepared by	who												
Process Step	Responsibility	FMEA Date	07/15/08												
Key Date	07/15/08														
Item	Name/number of item	Model Years	model years/programs	Team members	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Potential Cause(s) / Mechanism(s) of Failure	Current Process Controls Prevention	Current Process Controls Detection	RPN	Recommended Action(s)	Responsibility & Target Completion Date	Actions Taken	Results
					Manner in which part could fail: cracked, loosened, deformed, leaking, oxidized, etc.	Consequences on other systems, parts, or people: noise, unstable, inoperative, impaired, etc.		List every potential cause and/or failure mechanism: incorrect material, improper maintenance, fatigue, wear, etc.	List prevention activities to assure process adequacy and prevent or reduce occurrence.	List detection activities to assure process adequacy and prevent or reduce occurrence.		Design actions to reduce severity, occurrence and detection ratings. Severity of 9 or 10 requires special attention.	Name of organization or individual and target completion date	Actions Taken	Results





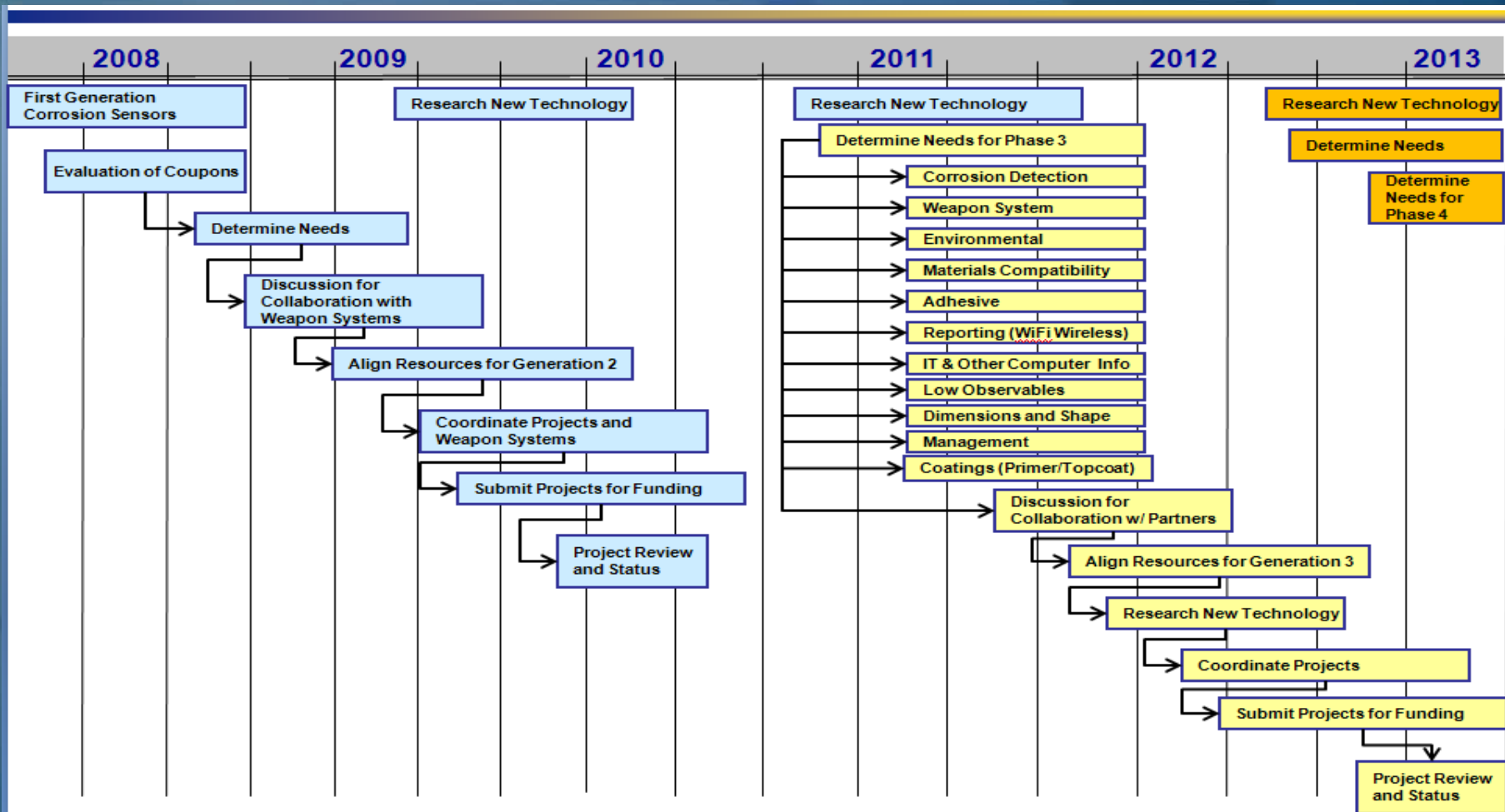
Teaming Efforts

- In early stages
- Partnerships
 - OSD Airframe WIPT
 - DLA
 - RTOC
 - Civil Engineering
 - AFRL
 - Industry
 - Academia





Sensor Roadmap Overview





Summary

- Useful data from “1st generation” sensors
- Use lessons learned to drive technology for “smart” corrosion sensor development
- Continue teaming efforts



Thanks for your time!



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