PHM Information Systems Roadmap Fodder

Near Term	**Dependencies**
• Design and host web site information system structure – ❑ user access management (authorization etc)	
• Compile compendium of existing PHM info systems ❑ Examine standards for applicability to prognostic data ❑ V/V standards by creating and executing test cases and providing feedback to COE and standards groups	
• Determine and document requirements for COE repository ❑ data stored at COE ❑ interfaces to member data	
• Lexicon of terminology (besttest.com)	T, X
• Determine existing infrastructure tools for requirements analysis and PHM design	
• Develop a compelling case for COE participants to share data and resources	
• Define a data management philosophy (manage large data sets)	T

• Define a data management and prioritization scheme for management of real time, near real time and deferred health management data	T
• data flow model for producers/consumers of PHM data and information	T (end user)
• define mechanism for capturing diagnostic info at Organizational level to support predictions	T,X
• Begin developing information models for interfaces of producer/consumer boundaries	T,X
• Create library of available body of knowledge (papers, lessons learned, etc)	T,X
• define methodologies for data storage for: ❑ real time data ❑ sensor data ❑ maintenance forms ❑ system configuration	T
• Formally define (model) PHM system configuration data	
Mid Term	
• Data Analysis techniques for: ❑ discover patterns ❑ trending on recognized patterns ❑ data fusion (combining data from disparate systems to create information value chains)	T,X
• Define methodology for diagnostic maturation processes	
• address gaps in temporal/geographic information integration that are not covered by existing interface standards	
• expand data management philosophy to include commercial (roller coaster) data sets	
• techniques for collecting and managing	

large volumes of (high rate) real time data (increase bandwidth and storage, data compression, reduction, etc)	
• library of prognostic algorithms (for re-use) and generalize software design patterns	T
• Develop mechanisms for placing prognostic toolsets in design packages – develop partnerships to ensure that tools support PHM	
• Identify what aspects of a PHM system provide direct support for decision making (decision support system) at both maintenance and mission levels	
• Drive modifications to existing maintenance data collection systems to incorporate data elements that provide support for PHM	
• collect benchmark data sets	**X**
Long Term	
• how to optimize maintenance processes (scheduling and activity) based on information feeds	
• integrate other disparate data systems	
• system that can be used internally and with customer that can evolve over time	
• Extend data flow and architecture to support complete integration of all relevant aspects of PHM system information into mission control system. Should provide support for high level asset and fleet management.	
• Forecast the impact of Health Management state data on future mission requirements	