Predictive Machinery Analyzer ~ PreMA
flexible, trusted, end-to-end platform

The Industrial Internet of Things Opportunity

According to researchers, 50 billion connected devices by 2024 and the potential economic impact of IoT technologies will be between $2.7 to 6.2 trillion per year by 2055

IoT

Internet of Things (IoT) describes a world in which everyday objects are embedded with tiny computers that can monitor surroundings, analyze it, display information, and perform actions with some degree of autonomy.

"**We believe to most effectively manage Physical Machines, engineering context matters.**"

Challenges

Sustainment of equipment function, usually defined as maintenance, is a crucial process for the operation of today's complex production systems. Ineffective maintenance due to incorrect maintenance strategy, lack of required spare parts, service equipment, or the right personnel can result in increasing downtimes of production systems, creating major economic impacts. Excessive downtimes cause diminished profits for the system operator, as well as negative effects on the equipment provider, due to perception of equipment un-reliability.

To avoid this problem, it is necessary on one hand, to be able to estimate the equipment maintenance needs in advance, so as to avoid unforeseen breakdowns and production interruption. On the other hand, advance planning of resources and spare parts become more important for ensuring spare parts availability while maintaining an optimal inventory, with reduced transportation costs.

The DEI Group - a leadear in industry - with over 33 years of experience , trusted by customers like US Navy, GE Power Systems, Chevron Shipping to deploy solutions that change the "Status Quo "

Contact Signar for additional information or to schedule an Upside Workshop and advance your Reliability program:

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Dynamic Remaining Useful Life—Powered by PreMA

US Navy Program Success

*"Overall, the LCS CBM+ pilot was instrumental in the sustainment of both LCS 1 and 3 during their maiden overseas deployments and garnered positive feedback from their crews and shore-based support teams. The pilot achieved several objectives: **predicting remaining useful life of equipment,** diagnosing failures, assisting in the scheduling of maintenance tasks for upcoming availabilities, reducing crew workload, and helping operators and maintainers make smart decisions that reduced risks and impacts to the ships' operations and schedules. Lessons learned from this pilot will help inform and shape the future of LCS CBM+.....Surface Warfare Magazine Sharing stories and news from Sailors across the U.S. Navy's Surface Forces, Oct 2016*

Engineering Expertise	Automatic Analysis Dynamic Remaining Useful Life Calculation	Advance Machine Learning
PreMA is based on an Engineering Solution, only utilizing those elements of Big Data that provide value to the decision management process Broad range of academic and experiential resource base within a single organization: PhDs in Reliability Engineering, Electrical Engineering, Nuclear Engineering, Mechanical Engineering, Software Engineering; Plant Engineers, Business Administration Professionals	PreMA's primary functionality is to provide automatically the continuous insight into present and future health of the equipment components. Prognostic is the key functionality needed to move to an integrated predictive maintenance process. Maintenance actions are synchronized with the overall business operational requirements of the system, as well as with the necessary maintenance resources and spare parts provisioning	Deploying advanced machine learning methodologies coupled with AI We combine the Engineering Expertise with our Data Scientists' understanding of the evolving IoT and Cloud Space computing, to provide our clients the best analytics solution for their environment.

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Developed and successfully implemented Intelligent Asset Management Solutions since 1975

Engineering approach, combined with state of the art Data Analytics

DEI Products:

- Predictive Machinery Analyzer (PreMA) & Digital Twin Equipment Dashboard – Assess current, predicted equipment condition and reliability risks

- APS: Optimized Advance Planning and Scheduling taking into account, predictive equipmetnt conditions, calendar time, and operational hours based requirements in addition to corrective maintenance

- MDSS Knowledge Center: Dashboards, Maintenance Data Analysis, Predictive and Historical Metrics, RAM

- Reliabity Strategy Manger (RSM): MIMOSA asset life cycle data model attributes, RCM/CBM Analysis based strategy, CBM diagnostics and prognostics models, equipment failure/maintenance history, extensive equipment library

- Portable Data Analyzer (PDA): Daily, Weekly, Monthly, Annual Inspections, conditions found data collection, integration with sensor based analysis

Market Expertise	Solutions Expertise	CBM Smart Sensors Expertise
Extensive Knowledge of a wide range of Equipments in diverse operational environments (Maritime, Power, Nuclear, T&D, Wind)	- Configurable, customizable, and scalable to address unique system/equipment requirements, for plant applications - Secure web-based application allows multiple user access from anywhere - Extensive Equipment design and reliability attributes Library (over 5000 equipments) for reuse	- On-line lube oil monitoring - On-line diesel generator health monitoring - On-line motor monitoring - - On-line vibration monitoring - On-line breaker monitoring -On-line transformer monitoring - Power quality monitoring