ME24_13 – Proactive Asset Intelligence: AI-Driven Framework for Asset Predictive Management

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Abstract - This paper presents an AI-driven framework for predictive asset management that integrates multiple decision support tools. The framework combines advanced machine learning, physics-based models, risk assessments, and decision optimization to predict and diagnose asset health issues while optimizing performance and decision-making processes. The framework is a decision support system that simulates scenarios, provides risk assessments, and balances cost, performance, risk, and sustainability objectives. Additionally, the framework incorporates an information contextualization engine that integrates data from various sources, providing a comprehensive view of the asset to accelerate and enhance decision-making.