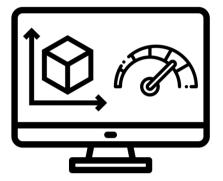
Informational Requirements (IR)



**IR1: Physical Properties** 

Point Clouds, Building Information Model (BIM)

**IR2: Reference Values** 

Lifetime Data, Run-to-Failure Data, Threshold Value

**IR3: Contextual Information** 

**Environmental Parameters, Sensor Information** 

**IR4: Performance Metrics** 

Standardized Metrics – Froude Efficiency, Propulsive in Aviation

**IR5: Historical Data** 

Maintenance Records and Historical Usage Profile

**IR6: Faults** 

Scale of PMx tasks – Outlier or Diagnosis or Prognosis

Requirements of a PMx System

FR1: Theory Awareness

Physics-Informed Neural Network (PINN), Hybrid Model

**FR2: Context Awareness** 

Rule-based System, Bayesian Network, Hidden Markov Model

FR3: Interpretability

Interpretable Models – Decision Tree; Model-Agnostic Methods

**FR4: Robustness** 

Robust Optimization, Robust Control, Adversarial Training

FR5:Adaptivity

**Concept Drift, Online Reinforcement Learning** 

FR6: Scalability

Parallel Computing, Edge Computing

FR7:Transferability

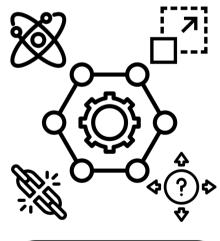
Transfer Learning, Pre-trained Embeddings/Libraries

**FR8:Uncertainty Awareness** 

Fuzzy Logic, Bayesian Probability



**Keywords fulfilling** requirement



Functional Requirements (FR)