Pervasive Intelligent Diagnostics for High-Tech Systems

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Pervasive sensing: from the asset, for the asset

pervasive systems

Pervasive Sensing → Digital Twin → Diagnostic reasoning → Human feedback

Collect rich lifecycle data from assets

Mirror reality with a continuously updated reference model

Fuse model and data to explain and predict failures

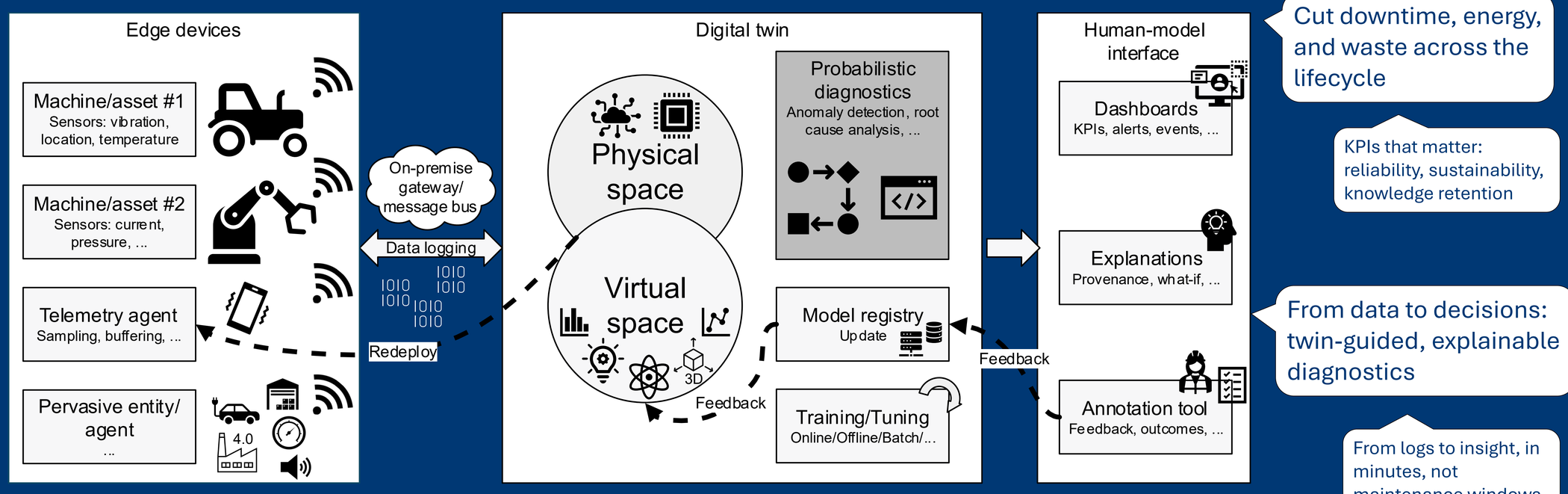
Validate, update, and enrich the knowledge base

Move from reactive service to predictive lifecycle management across long-lived systems

Diagnose earlier by pairing digital twins with pervasive sensing

From black-box to glass-box AI

Pervasive agents turn every asset into its own diagnostician: sensing, reasoning, and learning in real time



Cut downtime, energy, and waste across the lifecycle

KPIs that matter: reliability, sustainability, knowledge retention

From data to decisions: twin-guided, explainable diagnostics

From logs to insight, in minutes, not maintenance windows

Digital companions: agents that monitor, explain, and adapt across the system lifecycle

Hybrid AI = models + operational data → explainable root-causes you can act on

Keep expertise in the system: capture tacit know-how as reusable diagnostic knowledge

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JOINT INNOVATION CENTRE on Digital Lifecycle Management (DLM)

JIC-DLM is a collaboration between UT, TNO and regional partners to accelerate the adoption of Digital Lifecycle Management

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