



Aircraft Enhanced Resilience and Intelligence Systems

A.E.R.I.S.

Bridging the predictive maintenance technologies gap for legacy commercial aircrafts through retrofitable sensor networks and unified data integration with the goal of maintenance efficiency and life extension.

Hardware:

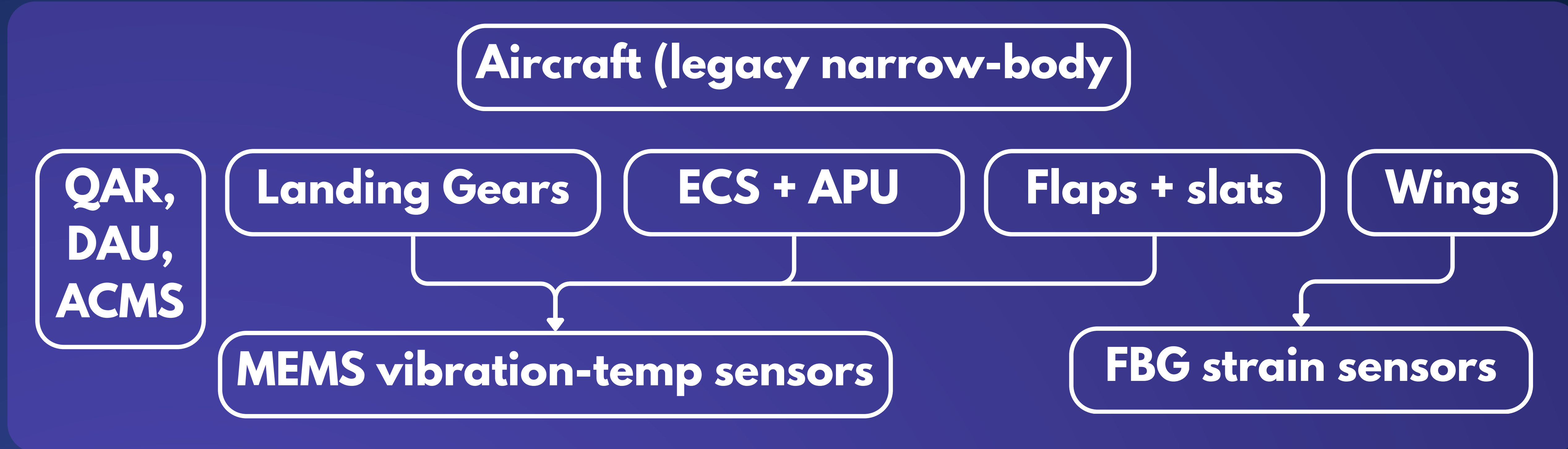
MEMS nodes capture vibration and temperature wirelessly. FBG strain sensors map distributed structural load. Both are modified to harvest power from ambient vibration.

Software:

Sensor and legacy system data is unified through protocol translation, transmitted via the IoT Gateway, and evaluated by the Intelligent Solution Matrix to generate ranked maintenance actions.

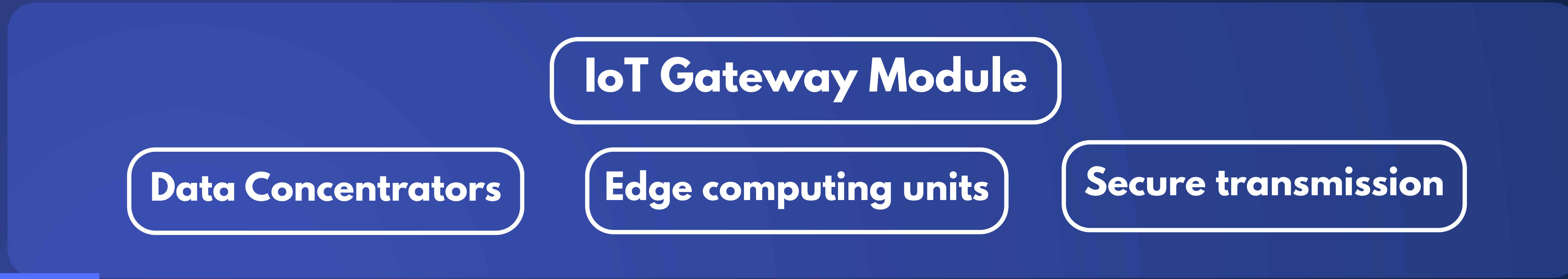
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In-Flight Data Aggregation: Hybrid-Wireless Sensor Network

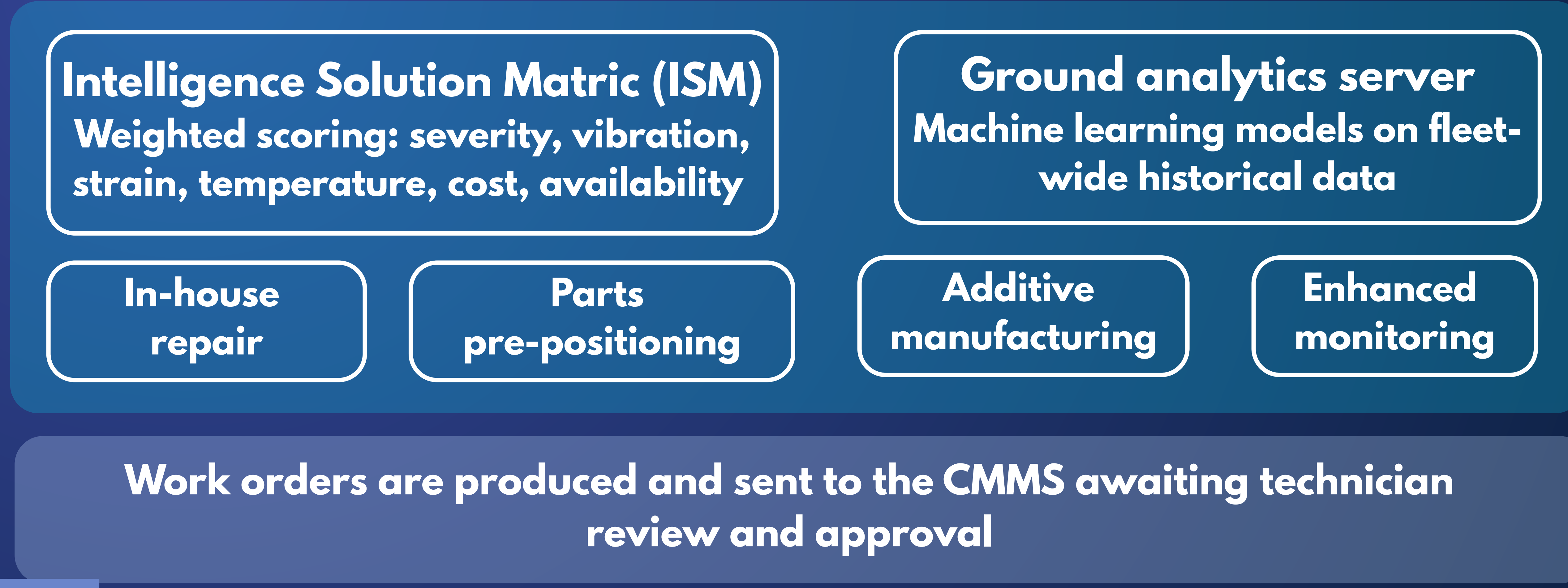


Layer 1:
On-board Units

Post-Flight Data Integration



Maintenance Integration



Layer 2:
Ground Units

