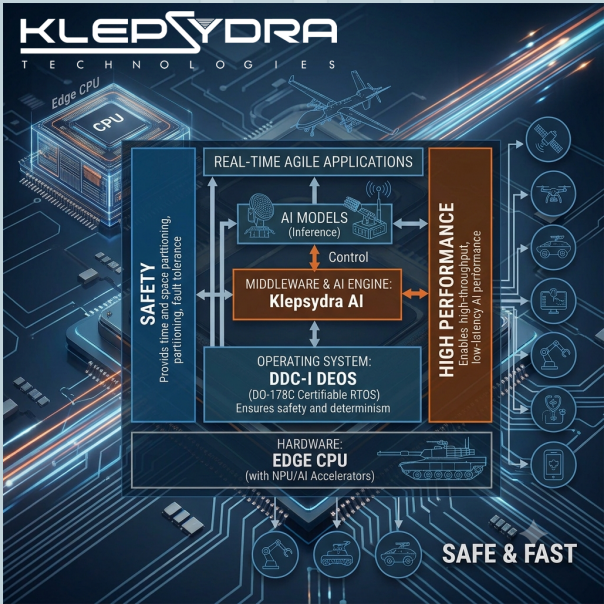


Bridging fast AI and Aerospace-Grade Safety: A Joint Solution by Klepsydra AI and DDC-I

As aerospace and defense platforms adopt Artificial Intelligence (AI), deploying high-performance inference alongside mission-critical controls requires strict safety isolation. Klepsydra AI and DDC-I have validated a joint, certifiable software architecture that runs complex AI workloads within the deterministic memory and timing partitions of the Deos RTOS. Proven on the ARM i.MX8 platform for real-time predictive maintenance, this unified solution delivers ultra-low latency edge analytics and agile model updates without compromising safety or regulatory compliance.



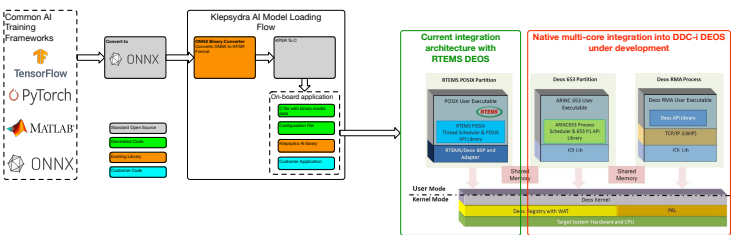
Enabling Certified AI in Safety-Critical Avionics

Executing Artificial Intelligence and Machine Learning (AI/ML) models on a safety-certified Real-Time Operating System (RTOS) like DDC-I Deos is critical for deploying advanced avionics, autonomous drones, and next-generation aircraft. While AI algorithms traditionally introduce unpredictable processing times and heavy computing demands, a safety-compliant RTOS isolates these complex tasks into protected memory and timing zones. This strict boundary ensures that high-demand AI workloads run smoothly without risking interference with flight-critical controls. By hosting AI within a certifiable runtime environment, aerospace developers can guarantee predictable performance, prevent resource starvation, and establish a clear path toward full regulatory approval for safety-critical operations.

AI-Driven Predictive Maintenance with Klepsydra AI and DDC-I Deos

Klepsydra AI and DDC-I have jointly validated a unified, high-performance software architecture engineered for safety-critical platforms.

Demonstrated in a live proof-of-concept on the ARM i.MX8, the integrated solution delivers real-time predictive maintenance for ground vehicle bearing systems, leveraging vibration sensors to pinpoint damage location and severity. Fully supported by both companies, this deployment proves that advanced AI inference runs reliably inside a deterministic, certifiable RTOS environment without compromising system safety or performance.

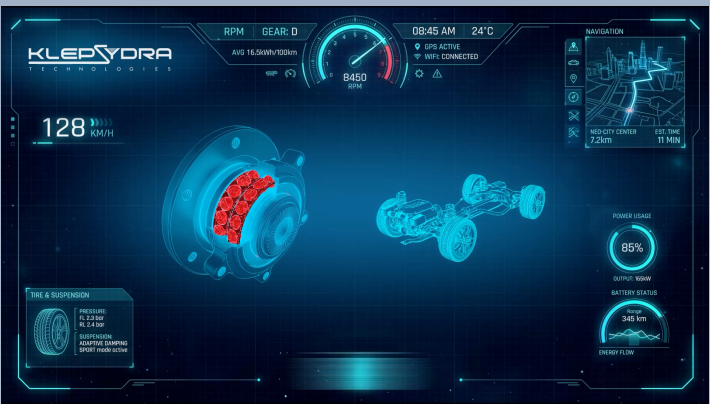


Agile and easy to use deployment process of AI application

Key Strategic & Technical Benefits

By uniting Klepsydra's lightweight AI engine with DDC-I's Deos RTOS, this joint solution bridges high-performance artificial intelligence with strict safety compliance:

- Fully Safety-Certifiable: Runs AI in isolated time and space partitions, ensuring complex inference tasks never compromise mission-critical controls or regulatory compliance.
- High-Performance Edge Inference: Maximizes processing speed and minimizes latency on embedded chips like the ARM i.MX8, enabling real-time edge analytics without heavy hardware overhead.
- Agile Model Deployment: Simplifies the deployment pipeline, allowing teams to rapidly update, test, and swap AI models in the field without rewriting core safety software.



Bearing predictive maintenance demo