ULTRA | PCS

# Health and Usage Monitoring System


## Key features

- Compact design, easy to install due to networked architecture.
- Combined HUMS, Cockpit Voice & Flight Data Recorder (CVFDR) in a single unit.
- Autonomous Rotor Track & Balance (RTB) monitoring.
- CVFDR solution ED-112A compliant.
- Compact and lightweight (average fully integrated crash survivable system is less than 15 lbs).
- 90 day Ultrasonic Locator Beacon to TSO-C121b.
- Designed in accordance with RTCA/DO-178C and RTCA/DO-254 meeting all FAA and EUROCAE Requirements.
- Prognostics Software and Fleet Management Ground Analysis Software provides an easy and intuitive user interface.
- The system supports Flight Operations Quality Assurance (FOQA) programs

## Overview

The Ultra PCS Health and Usage Monitoring Systems (HUMS) are designed to provide platform operators with an up-to-date view of the health of their fleet. This information can be used to plan preventative maintenance, schedule inspections, provide oversight of crew operations and identify problem patterns and trends. All of this leads to lower operating costs, increased operational readiness, and optimised fleet usage.

The system uses a network of smart sensors, such as accelerometers, tachometers, and optical blade trackers, to provide mechanical diagnostics reporting, helicopter rotor track and balance, engine and airframe vibration monitoring, vehicle usage data, exceedance monitoring and regime reporting.

The HUMS can be combined with a crash survivable Cockpit Voice and Flight Data Recorder from Curtiss-Wright to provide a complete HUMS and ED-112A compliant CVFDR solution known as Fortress HUMS. Ultra PCS can also ensure that the data stored in the recorder is encrypted to the highest standards, so that only authorised personnel can access it in case of platform loss.

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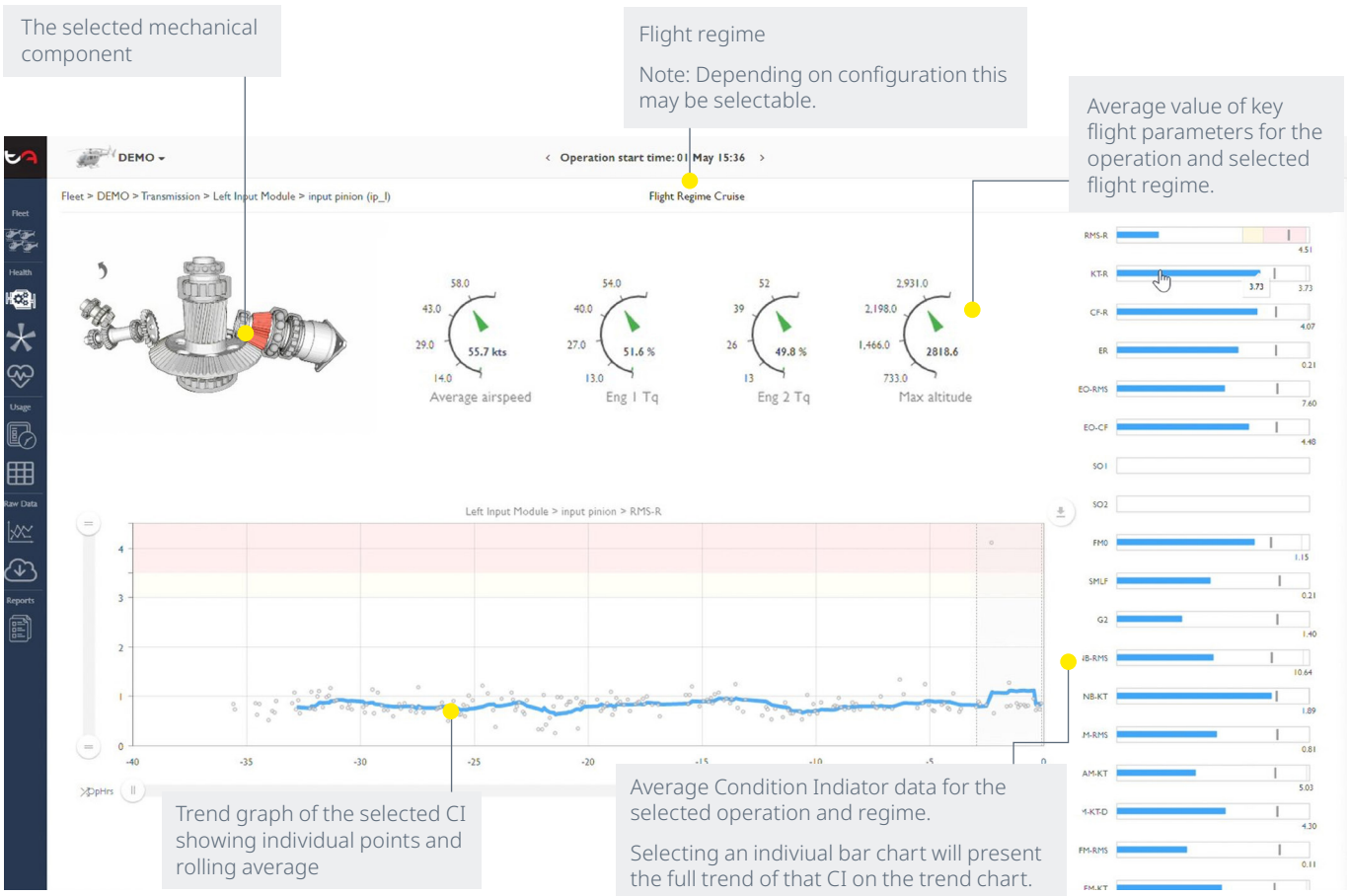
**Tailored to your needs:**

Ultra HUMS modular and scalable system can perform the necessary data reduction and time synchronous averaging (TSA), energy calculations, narrowband, FM, AM and order extraction condition indicators required to monitor shaft vibration, providing up to sixteen (16) different "Condition Indicators" (CI's) for gear analysis, 7 different CI's for bearing analysis, monitor engine and structural vibration, and provide specific exceedance notifications.

**Interfaces:**

The CVFDR & HUMS can interface with the aircraft systems and act as the Digital Flight Data Acquisition Unit (DFDAU) utilizing ARINC 429, MIL STD 1553, Discrete, Analog & Frequency interfaces.

## Detailed Functions – Transmission Health Gears





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