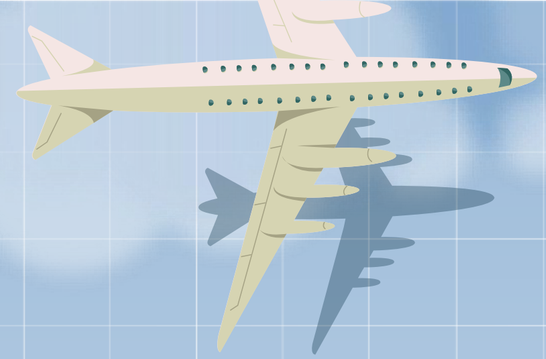
EAMHP DOCUMENTATION

“EAMHP – PREDICTING FAULTS BEFORE THEY FAIL YOU”

AN EXCEL-BASED INNOVATION IN AVIONICS & MECHANICAL HEALTH MONITORING

EAMHP



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Developer of EAMHP
(Excel Based Avionics and Mechanical Health Predictor)

01

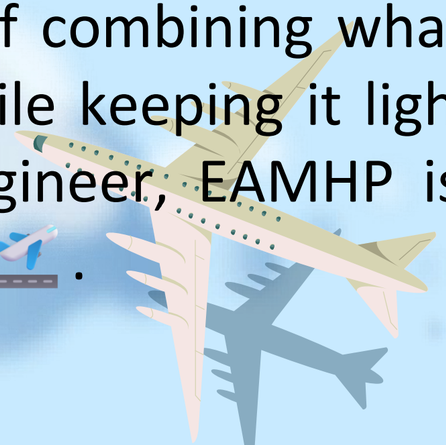
WHAT IS EAMHP?

A LITTLE SNEAK - PEAK ON THE PROJECT

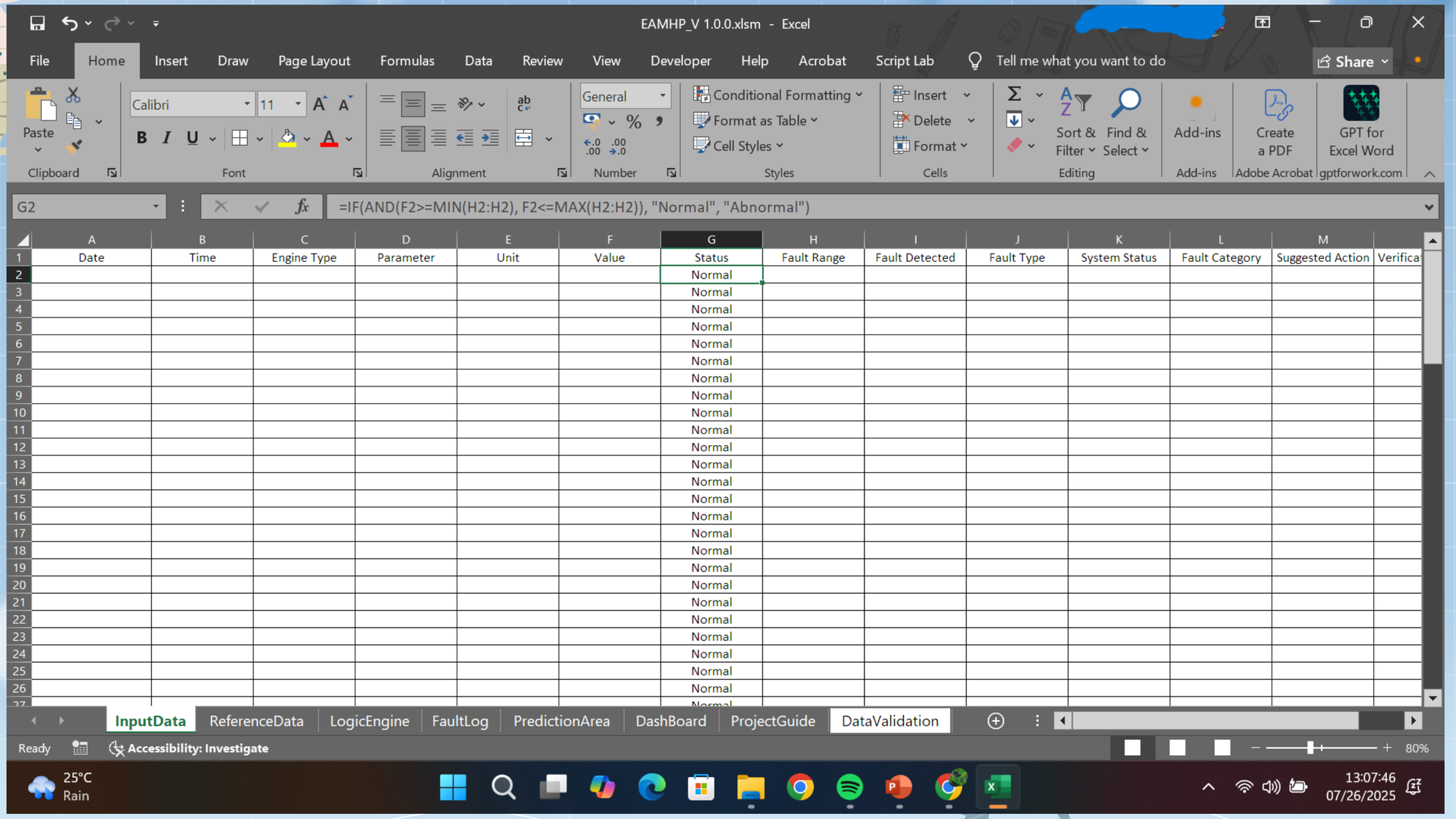
1) EAMHP, short for **Excel-based Avionics & Mechanical Health Predictor**, is a simple yet powerful tool I created to help in **predicting faults** in aircraft systems — *before they actually happen* ⚠️✈️. Built entirely using **Microsoft Excel** 💻, this project is designed for AME students 👷 and MRO engineers 🛠️ who want a practical and easy way to keep track of an aircraft's health.

2) It works by comparing real or test values of different components against their **OEM tolerance limits** 📏, and instantly tells you if something's not right. With its built-in logic, colourful dashboards 📊, and automatic fault alerts ⚡, EAMHP makes it easy to understand the current condition of avionics and mechanical parts without needing any complex software or programming.

3) This project is my way of combining what I've learned about aircraft systems with the power of data 📈 — all while keeping it lightweight, fast, and beginner-friendly. Whether you're a student or an engineer, EAMHP is made to support smarter, safer, and more predictive maintenance ✨🛬.

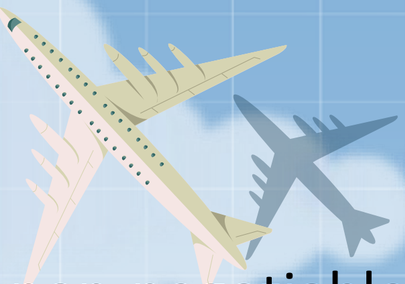


SMALL PICTORIAL SNEAK – PEAK OF THE PROJECT



02
WHY EAMHP?

WHY IS IT NECESSARY



1) In today's aviation industry ✈️, where safety 🛡️ and reliability 🔁 are non-negotiable, the early detection of faults in aircraft systems has become more important than ever. Traditional maintenance methods rely heavily on manual inspection and routine checks—which may miss hidden issues or lead to unexpected failures ❌. That's where EAMHP comes in.

2) EAMHP is built to give engineers, AMEs, and students a data-backed support system 📈 to make quicker, smarter decisions. Instead of waiting for a system to break down, this tool helps in predicting faults in advance, using simple Excel-based logic 💻 and conditional checks ⚠️. It acts like an early warning system 🚨, saving time, reducing risk, and improving overall efficiency in the maintenance process 🔧.

3) Especially for AME trainees 👷 and small MRO setups without access to expensive diagnostic tools 💸, EAMHP becomes a low-cost, high-impact solution. It blends theory with real-time application, making it a valuable learning and operational tool for the future of aircraft maintenance 🛬.

03

FOR WHOM IS EAMHP?

USE CASE

1) EAMHP is designed for anyone involved in the world of aviation maintenance and learning. For AME students and trainees 👨‍🎓, it acts as a practical tool to understand fault diagnosis, tolerance checking, and predictive maintenance in a hands-on, Excel-based environment.

2) For MRO engineers and technicians 🛠️, it offers a simple, low-cost method to track component health, flag warnings early ⚠️, and make informed service decisions without needing high-end diagnostic systems.

3) Aviation instructors and training institutions 👩‍🏫 can also adopt EAMHP as a teaching tool to demonstrate real-world fault logic, decision making, and health monitoring. Even for innovative project builders and final-year students 🧠, EAMHP serves as a strong base for expanding into AI-integrated solutions and smart aviation tools.

4) In short, whether you're learning how systems work, maintaining aircraft in the field, or teaching the next generation of aviation professionals — EAMHP is built to support you. ✈️💻

HOW IS IT USEFUL TO THE INDUSTRY

1) EAMHP (Excel-Based Avionics and Mechanical Health Predictor) is emerging as a spark in the aviation industry 🔥 —bringing a refreshing change by combining simplicity with smart analytics.
Traditional aircraft health checks rely heavily on manual inspection or high-end systems. But EAMHP bridges the gap by providing a lightweight, cost-effective, and predictive maintenance solution using the power of Excel. 💻📈

2) It assists Aircraft Maintenance Engineers (AMEs) and MROs in quickly identifying abnormalities, out-of-range values, and possible future faults — all through well-structured tolerance logic, color-coded alerts, and easy-to-read dashboards. ⚠️✅

3) Whether used in classrooms for training or inside hangars for maintenance planning, EAMHP supports:

Early fault detection 🔍

Component health tracking 🛠️

Reduced downtime and safety risks 🚨

4) A smarter way of record-keeping and diagnostics 📑

EAMHP proves that even simple tools, when used wisely, can create impactful innovations in aviation. It is designed by a student, for the future of aviation — with one mission: to make predictive maintenance more accessible, educational, and effective. 🌍✨

DIFFERENCE BETWEEN MY EAMHP AND INDUSTRY LEVEL OEMS (ORIGINAL EQUIPMENT MANUFACTURER)

Feature / Aspect	✈️ EAMHP (Excel Avionics & Mechanical Health Predictor)	🛠️ OEM Systems (Airbus Skywise, Boeing AHMS, etc.)
Accessibility	💻 Runs on MS Excel, easily accessible to students & AMEs	🔒 Proprietary, accessible only to airline/MRO clients
Cost	💸 Free / Low-cost project for learning & simulation	💰 High license & integration costs
Customization	🛠️ Fully customizable by users for aircraft models & faults	🚫 Limited customization due to closed architecture
Educational Value	📚 Designed to build understanding of fault diagnostics	🤖 Primarily for operations, less educational value
Data Input	✍️ Manual or simulated fault input for learning purposes	📡 Real-time sensor & operational data
Target Audience	👩‍🎓 AME Students, MRO trainees, innovators	👨‍✈️ Airlines, OEM engineers, high-level MRO teams
Industry Entry Point	🚪 Gateway for students to understand predictive maintenance	🔄 Deep industry integration with existing systems
Scalability	📈 Can be scaled in future with AI/ML features	🏢 Already enterprise-grade and globally deployed
Innovation Spark	⚡ A spark in the aviation MRO education sector	🔄 Continuous OEM innovation but less open-source focus

Short Term Goals

1) Getting every updated version within 3 months of Patch update from the previous recent update and 6 months of Major Update from the previous recent update.

2) Getting in touch with MRO’s to implement my project into their educational stream

Long Term Goals

1) Getting DGCA and MoCA Approval for project by 2028

THANK YOU

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