

# Innovative manufacturing and MRO - Digitalization of maintenance operations

**CS2 ADVANCE**

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# Scientific & technical goals

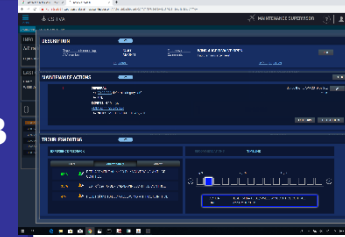
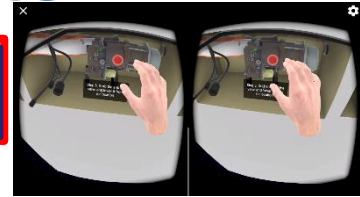
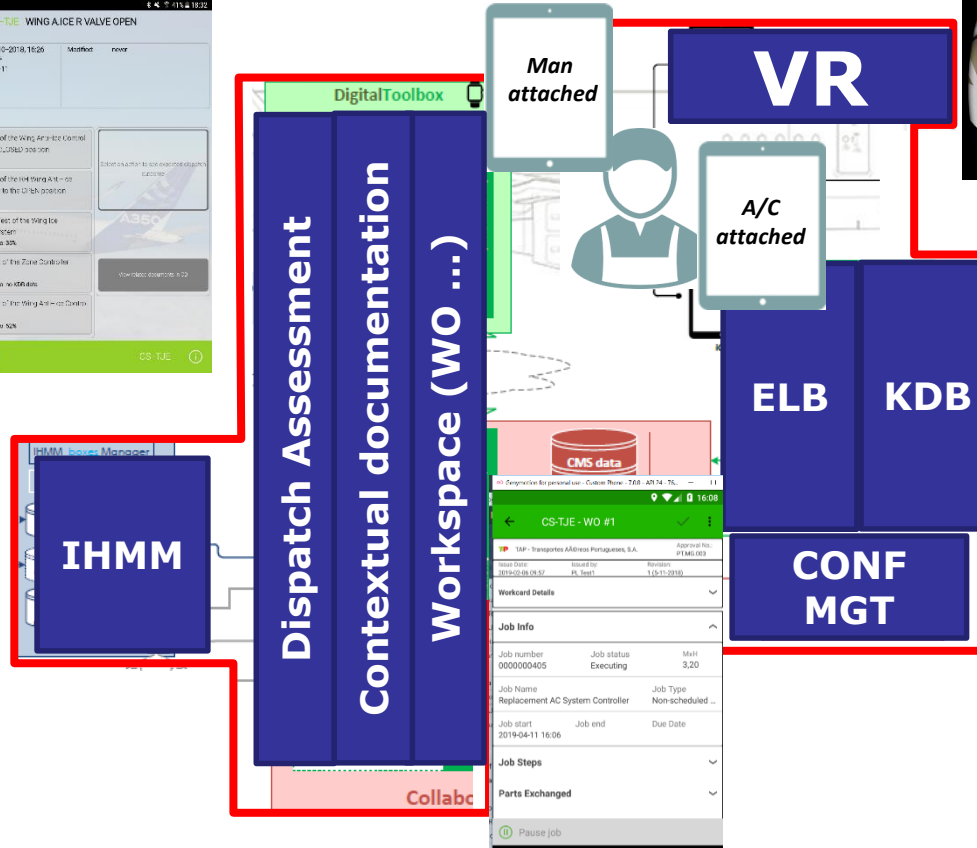
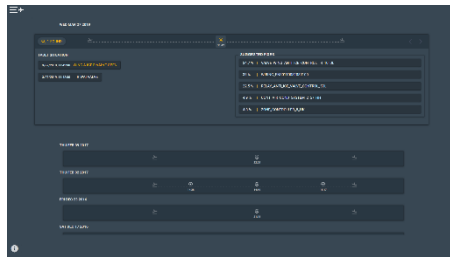
- **Be on-time** by reduction of technically-induced operational disruptions
- **Maximisation** of airline and maintenance asset utilization
- Improvement of **maintenance execution efficiency**
- **Value Improvement** through a service driven E2E integration approach and a collaborative way of working
- Focus on **Legacy Fleet** and the **maintenance value chain**
- Support **H2020** objectives on **enhanced mobility** and **industry competitiveness** in Europe

To achieve this objective the project developed:

- **An E2E architecture for maintenance operations**
- **Prognostics and Structural Health Monitoring solutions for condition based maintenance**
- **Digitalization of maintenance processes through mobile tools and enablers to expedite trouble shooting, decision making, and dispatch and to optimize asset utilization and maintenance planning**
- **Integration of the mobile tools and enablers through a Collaborative Environment**

The presentation will focus on the Mobile tools and enablers development and the current

# Main achieved and expected results



VR	Virtual reality
ELB	Electronic Logbook
IHMM	Integrated Health Monitoring & Management
KDB	Knowledge Database
MCC	Maintenance Control Center
T/S	Trouble Shooting



# Main achieved and expected results

Objective	Achieved?
Better decision support for AMTs	Yes (DA; KDB)
Increased Access to information	Yes (CD; DR; VR; METC/WS)
Awareness of the whole org.	Yes (DR; METC/WS)
Integrated seamless mobile suite	Yes (METC/WS; CE)
Available for legacy A/C	Yes (also for NG A/C)

• **Line maintenance more efficient**, with better support and awareness means better technical support to operating aircraft which will **reduce technical delays**, and, ultimately, **more efficient airline operations!**

CD	Contextualized Documentation
CE	Collaborative Environment
DA	Dispatch Assessment
DR	Defect Reporting
KDB	Knowledge Database
METC	Maintenance Elapsed Time Control
WS	Workspace

# Potential gaps and challenges

- *Prognostics*
  - Access to more data
  - Precision should be close to 100%
  - Intermediary step with human in the loop until maturity
- *Integrated mobile tools*
  - Expanding the scope from tested UCs to all needs (all ATA chapters, etc.)
  - Integration with existing IT systems
  - Modularity (if someone decides to adopt just part of the tool)
  - Integration with maintenance providers using different systems

# Cross-cutting issues (tech. & non-tech.)

- *Accessibility to flight data for more robust prognostics algorithms*
- *Change of working acceptance (remote aircraft dispatches)*
- *Integration of mobile solutions with existing IT systems from airlines*
- *Connectivity in poor coverage areas*

# Impacts

- *Less operational disruptions*
- *More efficiency in maintenance*
- *Better working environment*
- *Faster decisions*
- *Better informed decisions*

# Useful infos and acknowledgements



**AIRMES Project**

**<http://www.airmes-project.eu>**

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**Thank you**



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