ReMAP
Real-time Condition-based Maintenance for Adaptive Aircraft Maintenance Planning

Funding: European (Horizon 2020)
Duration: Jun 2018 - May 2022
Status: Ongoing
Total project cost: €6,806,743
EU contribution: €6,806,743

CORDIS RCN: 216014

Objectives:
ReMAP will contribute to reinforcing European leadership in aeronautics by developing an open-source Integrated Fleet Health Management (IFHM) solution for aircraft maintenance. By replacing fixed-interval inspections with adaptive condition-based interventions, ReMAP will have an estimated benefit to the European aviation of more than 700 million Euro per year, due to a direct decrease in maintenance costs, reduced unscheduled aircraft maintenance events, and increased aircraft availability. ReMAP’s IFHM will be available for certification and reliable implementation on diverse aircraft systems and structures.

ReMAP will realize this vision by addressing four main goals:

1. To leverage existing aircraft sensors for systems and mature promising sensing solutions for structures;
2. To develop health diagnostics and prognostics of aircraft systems and structures using innovative data-driven machine-learning techniques and physics models;
3. To develop an efficient maintenance management optimisation process, capable of adapting to real-time health conditions of the aircraft fleet;
4. To perform a safety risk assessment of the proposed IFHM solution, to ensure its reliable implementation and promote an informed discussion on regulatory challenges and concrete actions towards the certification of Condition-Based Maintenance (CBM).

ReMAP’s IFHM solution will be tested in an unprecedented 6-month operational demonstration environment, involving more than 12 systems from two different aircraft fleets. Also, for the first time, structural health prognostics algorithms will be tested in complex structural composite subcomponents subjected to variable fatigue loading. These demonstrations will be a unique opportunity to develop innovative concepts into higher TRL levels, moving towards industry adoption.

ReMAP will define a common roadmap towards CBM, to be shared by the relevant aviation stakeholders represented in the consortium, Advisory Board and Support Group.

Parent Programmes:
H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport

Institute type: Public institution
Institute name: European Commission
Funding type: Public (EU)
Other programmes: MG-1.3-2017 Maintaining industrial leadership in aeronautics

Lead Organisation:

Technische Universiteit Delft
Address:
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<tr>
<th>Name</th>
<th>Address</th>
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<td>2600 GA Delft</td>
<td>Netherlands</td>
<td>€1,283,375</td>
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<td><strong>Partner Organisations:</strong></td>
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**Organisation Website:**
http://www.utrc.utc.com

**EU Contribution:** €591,924

### Technologies:
- Condition monitoring
- Sensor condition monitoring system

**Development phase:** Demonstration/prototyping/Pilot Production

### STRIA Roadmaps:
Vehicle design and manufacturing, Network and traffic management systems, Infrastructure

**Transport mode:** Air transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Safety/Security, Digitalisation

**Geo-spatial type:** Other