

PROJECT

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:

2600 GA Delft
Netherlands

EU Contribution: €1,283,375

Partner Organisations:

Instituto Pedro Nunes Associacao Para A Inovacao E Desenvolvimento Em Ciencia E Tecnologia

Address:

Rua Pedro Nunes
3030N/A199 Coimbra
Portugal

EU Contribution: €439,000

Ecole Nationale Superieure D'arts Et Metiers

Address:

BOULEVARD DE L HOPITAL 151
75013 PARIS
France

Organisation Website:

<http://www.ensam.eu>

EU Contribution: €495,050

Embraer Portugal Estruturas Em Compositos Sa

Address:

PARQUE DA INDUSTRIA AERONAUTICA
7005-797 EVORA
Portugal

EU Contribution: €287,000

Smartec Sa

Address:

VIA POBIETTE 11
6928 MANNO
Switzerland

Organisation Website:

<http://www.smartec.ch>

EU Contribution: €499,448

Office National D' Etudes Et De Recherches Aéropatiales

Address:

29, avenue de la Division Leclerc
BP72 CHÂTILLON CEDEX
France

Organisation Website:

<http://www.onera.fr>

EU Contribution: €408,500

Atos Origin Sociedad Anonima Espanola**Address:**

CALLE ALBARRACIN 25
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Spain

EU Contribution: €503,750

Koninklijke Luchtvaart Maatschappijnv**Address:**

Amsterdamseweg 55
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Netherlands

EU Contribution: €684,188

Universidade De Coimbra**Address:**

Paco Das Escolas
3001 451 Coimbra
Portugal

EU Contribution: €291,259

Cedrat Technologies Sa**Address:**

CHEMIN DU VIEUX CHENE 59
38240 MEYLAN
France

Organisation Website:

<http://www.cedrat-technologies.com>

EU Contribution: €487,500

Optimal Structural Solutions Lda**Address:**

Rua De S. Francisco - Parque Doroana - Arm Ce 786
2645N/A019 Alcabideche
Portugal

EU Contribution: €298,875

Panepistimio Patron**Address:**

University Campus- Rio
26500 Patras
Greece

Organisation Website:

<http://www.upatras.gr>

EU Contribution: €536,875

United Technologies Research Centre Ireland, Limited

Address:

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T23
Cork
Ireland

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