

PROJECT

MASCOT

Modular multilevel cost Analysis Software for COMposite smart fuselage

Funding: European (Horizon 2020)

Duration: Oct 2019 - Sep 2021

Status: Complete

Total project cost: €404,533

EU contribution: €400,000



Call for proposal: H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225257](#)

Objectives:

The objective of the proposal is to set up a three-level-parameter cost estimation method that allows the determination of the final cost for the fuselage design under analysis.

The tree-structure of the procedure allows a quick, easy and friendly-user inclusion of the main parameters determining the final cost of a fuselage both at the raw material level and at the component level and at the fuselage level.

Level 0 contains information concerning the raw materials (rivet, fastener, composite raw material, honeycomb, gasket, sealant, paint), level 1 collects information regarding the components (stringer, skin, frame, doublers, floor-beam, pressure bulkhead) and level 2 deals with the fuselage as entire object.

The upper levels are connected to the lower levels by manufacturing routes that are expressed in terms of hours and hour cost (that is man-hours and machine-hours), and in terms of manufacturing technology.

Each of the three levels collects information and details to estimate the cost. Some of these parameters can be set as cost drivers in order to carry out both the analogous method and the parameter method.

Levels 0 and 1 can collect historical data that will be used by the analogous method.

The entire fuselage is thus defined by filling the three levels and the estimated cost can be computed by one of the methods (Analogous, Parametric or BottomUp).

At level 1 the software will allow the maintenance and repair parameters to be interfaced to the Structural Health Monitoring (SHM) system in order to estimate the SHM technology cost and its cost benefit on manufacturing, maintenance and repair. A Bayesian based Dynamic Data Driven Application System (BDDDSA), developed by the Topic Manager, will be also integrated to the software.

The cost estimation module will be endowed with GUI interface. It will be linked to CAD model to obtain geometrical parameters at each level. The module will also be interfaced to a multidisciplinary optimization tool.

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: JTI-CS2-2018-CFP09-AIR-02-76 - Cost analysis software platform for evaluating innovative manufacturing technology for SMART fuselage

Lead Organisation:

Universita Degli Studi Di Ferrara**Address:**

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44121 FERRARA
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Organisation Website:

<http://www.unife.it>

EU Contribution: €128,000

Partner Organisations:**Plyform Composites Srl****Address:**

VIA MIRABELLA 12
28040 VARALLO POMBIA
Italy

EU Contribution: €80,000

Sky Technology Srl**Address:**

VIA FRANCESCO GONIN 55
20147 MILANO
Italy

EU Contribution: €104,000

Universita Degli Studi Della Campania Luigi Vanvitelli**Address:**

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Organisation Website:

<http://www.unina2.it>

EU Contribution: €88,000

Technologies:

Composite materials
Composite fuselage sections

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other