PROJECT

INNOTOOL

Development of Thermoplastic press-forming Tool for Advanced Rear End Closing Frame Prototype and Tooling 4.0 for Assembly and transportation of the Advanced Rear End Prototype

Funding: European (Horizon 2020)

Duration: May 2020 - Jun 2022

Status: Ongoing

Total project cost: €715,953

EU contribution: €715,953

CORDIS RCN : 229246

Objectives:

The INNOTOOL proposal deals with novel and innovative development of tooling sets for manufacturing and assembly of components corresponding to Advanced Rear End Prototype Specimen. This demonstrator aims to improve current state of art materials and manufacturing processes, combining high rate production, high automation and new thermoplastic materials use.

Regarding this main objective, several edge-cutting tooling sets will be designed, validated by means of simulation and manufactured. On the one hand the development of innovative press-forming tool is required for Thermoplastic Closing Frame manufacturing, including consolidation of stiffeners and press-forming of frame caps considering variable frame thickness.

The novelty in this approach arises from addition of additive manufacturing processes, modular part design and press-forming process optimized thermal control strategies. These improvements are part of the progress beyond the state of art. On the other hand, an innovative metrology-aided and sensorised tooling set is presented for part assembly purposes. This tooling includes all the fixtures required for components handling, drilling, assembly and transportation tasks. Moreover, structure sensing and monitoring is enabled by means of force sensors and signal transducers.

These signals will be analyzed by means of data analytics strategies to obtain useful information from process raw data. Fixture positioning which ensures part location and fixing are guided by external metrology approaches. This assistance enables to simplify and reduce structure complexity and costs meeting eco-design purposes.

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-CS2-2019-CfP10-LPA-01-82 Development of Thermoplastic press forming Tool for Advanced Rear End Closing Frame Prototype and Tooling 4.0 for Assembly and transportation of the Advanced Rear End Prototype

Lead Organisation:

Fundacion Tekniker

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Organisation Website:
http://www.tekniker.es

EU Contribution: €375,953

Partner Organisations:

Fundacion Aitiip

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Organisation Website:
http://www.aitiip.com/

EU Contribution: €340,000

Technologies:

Composite materials
Thermoplastic-based composite materials

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