Research on efficient integrated systems for the manufacturing of complex parts based on unidirectional tapes for the automotive and aeronautical industry

UD tapes manufacturing
Three different technologies for fibre impregnation will be researched to develop an innovative and efficient process to manufacture unidirectional (UD) carbon and glass fibre tapes with increased fibre content.

Automotive parts
Adaptation of the conventional over moulding process through injection-compression moulding (ICM) technologies, automated tape laying and online process control.

Aeronautic parts
In-situ consolidation without the use of autoclave for the manufacturing of secondary structure and interior cabin applications complying with fire-proof regulations.

Simulation & Modelling
Simulation and new mathematical modelling technologies will be developed to assess the design of the complex composite parts as well as the manufacturing processes.

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<thead>
<tr>
<th>IMPACT</th>
<th>EC target</th>
<th>FORTAPE targets</th>
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<tbody>
<tr>
<td>Reduction of material usage</td>
<td>30%</td>
<td>40%</td>
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<tr>
<td>Energy savings</td>
<td>20%</td>
<td>35%</td>
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<td>Faulty manufactured parts</td>
<td>-</td>
<td>85% elimination</td>
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<tr>
<td>Production costs savings</td>
<td>-</td>
<td>30%</td>
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**AUTOMOTIVE**
Automotive door panel: although it does not have high performance requirements, as it happens with a structural part, it is a complex part with many types of integrated functions and different requirements depending on the area.

**AERONAUTICS**
Stiffening Window Frame: the In-Situ consolidation process will be adapted to work with UD carbon fibre tapes impregnated with low cost PA resin.

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