

# TECNALIA

**FoF-12: Industrial technologies for advanced joining and assembly processes for multi-materials**

tecnalia  Inspiring  
Business

# Project idea and main objectives

- **Dissimilar materials joining and assembly in the automotive sector**
- **Final component cost reduction**
- **Increase the final component performance**
- Increase the strength-to-weight ratio for joined components
- In-situ monitoring and control systems + automated NDTs
- Process automation

# Application cases

- **Sub-frame components**
- The application cases have to be defined during the proposal stage, the project aims to start with the industrial requirements well defined
- At least one prototype or pilot implementation in pre-industrial settings:
  - Multi-technology prototype Adhesive and/or mechanical joining
- Final application case linked with the selected OEM

# Proposal – FoF-12. Expected impacts

- **Multi-material construction for:**
- Increase the strength-to-weight ratio
- Multi-functionality
- Operation under highly aggressive environments
- Low carbon footprint (assembly and disassembly efficiency, recycling)
- Higher level of automation and lower production times compared to **current technologies** → To include innovations/ novel joining technologies

# Technical Work-packages

- **WP1. Production cell requirements**
- **WP2. Joining technologies development**
  - Process simulation, surface preparation...
- **WP4. Quality and process control**
  - Efficient and automated non-destructive inspection, monitoring..
- **WP5. Joining technologies integration and prototype(s) construction**
- **WP6. Prototype(s) validation**

# Consortium

- OEM - Specs
- Tier 1- Application case (component)
- Composite material provider (thermoplastic/thermoset)
- Recycling assessment
- Tecnalia - R&D joining technology development and quality control
- Prototype integrator – SME
- Systems for mechanical fastening supplier
- Adhesive systems supplier
- Other R&D's
- Application in other industrial sectors. Aeronautic?

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# Consortium

- Looking for:
- Industrial companies with high experience in automated systems for mechanical joining and/or adhesive bonding.
- Industrial and research companies with high experience in quality control systems for mechanical joining and/or adhesive bonding.

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