

A Turkish company is looking for a project partner for the Eureka Lightweight call: Digitalization of Joining Processes for Lightweight Bus and Truck Components

Summary

Profile type

Research & Development Request

Company's country

Türkiye

POD reference

RDRTR20251006006

Profile status

PUBLISHED

Type of partnership

**Research and development
cooperation agreement**

Targeted countries

- Netherlands
- Czechia
- Portugal
- Austria
- France
- Poland
- Lithuania
- Slovakia
- Spain
- Ukraine
- Germany
- Chile
- South Korea

Contact Person

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Term of validity

6 Oct 2025**6 Oct 2026**

Last update

6 Oct 2025

General Information

Short summary

A large automotive manufacturer based in Türkiye develops advanced solutions for heavy vehicle components using digitalized joining technologies, AI-driven quality control, and material modeling. The company seeks partners for testing, AI/ML development, and mechanical characterization under the EUREKA Lightweighting call.

Full description

A leading automotive manufacturer based in Türkiye, serving as a major R&D and production hub in Europe for over five decades, drives innovation in heavy vehicle development with a focus on lightweight design, digital transformation, and sustainability.

Within the EUREKA Lightweighting call, the company aims to digitalize joining processes (bolting, riveting, bonding) used in assembling composite and metallic structures for heavy-duty vehicles. The initiative integrates physical testing, AI/ML-based predictive modeling, and digital twin creation to optimize mechanical performance and manufacturing efficiency.

Its expertise includes:

CAE-based mechanical and material modeling for lightweight structures;

Full-vehicle validation under critical load conditions;

Digital twin development and process monitoring for manufacturing;

Material characterization for composite and hybrid joints;

Integration of sustainable and recycled materials.

The company seeks R&D and industrial partners with complementary expertise in experimental testing, machine learning algorithm development, material characterization, and data-driven process optimization. Through this collaboration, it aims to advance digitalized lightweight joining solutions that minimize production errors, improve reliability, and support the next generation of sustainable commercial vehicles in Europe.

Advantages and innovations

The company's main innovation lies in integrating digital manufacturing, AI analytics, and mechanical validation within a unified framework. This approach enables predictive analysis of joint performance under real-life load conditions and minimizes costly experimental iterations.

Key advantages include:

A validated digital twin methodology applied in European collaborative R&D projects;

In-house expertise in CAE simulations for complex assemblies;

Industry-grade testing facilities for component- and system-level validation;

Experience in AI-driven defect detection and process optimization through previous innovation initiatives;

Established collaborations with universities, SMEs, and research institutes across Europe.

This innovation contributes to European sustainability objectives by improving lightweight design efficiency, reducing material waste, and enhancing the reliability of joining processes in transportation systems.

Technical specification or expertise sought

Turkish company is looking for:

Partners with testing facilities for mechanical and fatigue validation of joint samples;

Research groups or SMEs developing AI/ML models for defect detection and predictive maintenance;

Experts in material modeling for polymer-metal or composite joints;

Institutes experienced in sensor-based process monitoring and data acquisition; Collaboration for EUREKA

Lightweighting proposal preparation and execution."

Stage of development

Under development

IPR Status

No IPR applied

IPR Notes

Sustainable Development goals

• **Goal 9: Industry, Innovation and Infrastructure**

Partner Sought

Expected role of the partner

The partners are expected to contribute complementary expertise in experimental validation, AI-driven analytics, and simulation modeling to support the development of a real-time digital twin for resistance spot welding (RSW). Their role will include conducting controlled welding tests on various materials to generate and label high-quality multi-sensor datasets (current, voltage, displacement, thermal and acoustic signals), which will be used to train and validate machine learning algorithms for defect detection, quality prediction, and adaptive process control. Partners experienced in data fusion, physics-based simulation, and digital twin modeling are encouraged to collaborate in integrating AI models with process simulations, enabling real-time prediction and optimization of welding performance.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME <=10**
- **SME 50 - 249**
- **SME 11-49**
- **Big company**

Call Details

Framework program

Eureka

Call title and identifier

Eureka Lightweight call 2025

Submission and evaluation scheme

Anticipated project budget

Coordinator required

No

Deadline for EoI

31 Oct 2025

Deadline of the call

31 Oct 2025

Project duration in weeks

Web link to the call

Project title and acronym

Dissemination

Technology keywords

- **02003001 - Process automation**

Targeted countries

- **Netherlands**
- **Czechia**
- **Portugal**
- **Austria**
- **France**
- **Poland**
- **Lithuania**
- **Slovakia**
- **Spain**
- **Ukraine**
- **Germany**
- **Chile**
- **South Korea**

Market keywords

- **03008004 - Other electronics related (including alarm systems)**

Sector groups involved