THE RADICLE PROJECT WILL HELP COMPANIES ACROSS DIFFERENT INDUSTRY SECTORS PRODUCE LASER WELDED COMPONENTS SMARTER, FASTER AND TO HIGHER QUALITY, REDUCING INSPECTION COST:

**TRANSPORT**

**OIL & GAS**

**MEDICAL**

**AEROSPACE**

**POWER GENERATION**

For more information: www.radiclelaser.eu
A NEW LASER WELDING MONITORING AND ADAPTIVE CONTROL ARCHITECTURE INTEGRATING MULTI-SENSOR DATA TO DELIVER HIGH-QUALITY WELDED JOINTS

THE RADICLE PROJECT HAS CREATED:

A modular system allowing users to configure the system to their specific applications:
- Photodiodes (off-axis and co-axial)
- Co-axial process zone imaging camera
- Microphone for acoustic emission analysis
- Seam tracking camera
- Keyhole depth monitoring sensor

Welding process windows for a number of ferrous and non-ferrous materials and joint configurations, supported by welding data from industrial case studies;

Welding data handling and analysis routines to extract valuable information from the welding process monitoring sensors;

The development of the architecture for a multi-sensor adaptive control system for laser welding including a machine learning algorithm able to:
- interpret raw sensor data and associated welding quality parameters
- generate the process window heatmap from the sensor data

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