CT leads innovation in industrial processes with ImaginA project: a leap towards enhanced efficiency through computer vision.

In a ground-breaking collaboration, CT is at the forefront of revolutionizing industrial processes with the launch of ImaginA project. This initiative marks a significant progress in applying state-of-the-art artificial intelligence (AI) and computer vision technology to industrial purposes, setting a new benchmark for efficiency and quality in manufacturing and inspection capabilities.

ImaginA project is designed to tackle two critical challenges in the industrial sector: identifying solder defects in Printed Circuit Boards (PCBs) and detecting corrosion in aluminium specimens. Developed in partnership with Solar MEMS Technologies and Titania, the project showcases the potential to significantly streamline and enhance the accuracy of current manual inspection processes.

CT holds the responsibility for the comprehensive software development segment within the project, primarily encompassing all tasks associated with AI model training. Following this, CT experts will create a system that can process the outcomes generated by the model, providing users with a final report and an image that displays the results in the required format. Additionally, the team has meticulously outlined the specific requirements and identified the technologies for a future user interface, which is scheduled for development in the second phase of the project (2024-2025).

Solar MEMS Technologies, a pioneering engineering firm specializing in microsystems technology for high-tech applications, including the space sector, will benefit from ImaginA's AI-driven approach to easily identify soldering faults in PCB components through simple photographic analysis. This innovation promises to replace time-consuming manual inspections with a more efficient and reliable automated system.

Similarly, Titania, a technology-based SME with roots in the University of Cadiz, engaged in quality control, R&D of materials, and industrial processes, particularly in the aerospace sector, will utilize the AI model to conduct image-based analyses for quantifying bond line corrosion (BLC) in aluminum specimens. This approach is poised to enhance the accuracy and speed of corrosion detection, a critical aspect in maintaining the integrity and performance of aerospace components.

The collaboration between CT, Solar MEMS Technologies and Titania underlines a collective commitment to achieving the highest standards in manufacturing and quality control. By minimizing the need for manual

corrections and leveraging AI for detailed image analysis, ImaginA aims to significantly reduce production costs while maintaining, if not improving, the quality of parts produced for the aerospace and other high-tech industries.

ImaginA project is spearheaded by Andalucía Aerospace, a private association acting as a cluster to represent and boost the aerospace companies in Andalusia on both national and international stages. This project is not just a testament to the innovative spirit of the participating companies but also a crucial step towards the digital transformation of the Spanish aerospace industry, aiming to position it as a global leader.

By integrating AI and computer vision into industrial processes, ImaginA is not only enhancing the efficiency and reliability of current methodologies but is also paving the way for future applications across various sectors. This initiative reflects a significant leap forward in the digital transformation journey, promising to redefine the landscape of industrial manufacturing and quality assurance with cutting-edge technology.

About ImaginA

ImaginA is an R&D project, funded through the AEI 2023 Call by the Ministerio de Industria y Turismo. Its consortium comprises CT, Titania, Solar MEMS, and is led by Andalucía Aerospace.

About CT

CT is a leading engineering company throughout the complete product lifecycle. For more than 35 years, our mission has been to provide innovative services and technological solutions that help our clients be more effective and competitive. Today, CT´s success is driven by 2.000+ engineers in seven countries providing end-to-end expert support to leading customers in the aeronautical, space, naval, automotive, railway, energy and industrial plant sectors. www.thectengineeringgroup.com

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