

Thermographic crack detection

The partners want to replace the current manual inspections of aluminum aircraft fuselages, which is intensive in terms of both time and labour, with mobile, robot-based thermographic test procedures.

The partners in this research project have set themselves the task of replacing the current manual inspections of aluminum aircraft fuselages, intensive in terms of both time and labour, with mobile, robot-based thermographic test procedures.

In order to ensure the safety of active aircraft fleets, aircraft supported by Lufthansa Technik are regularly subject to appropriate visual and technical inspections. More efficient inspection processes must be developed and put in place in order to further reduce the processing time and thereby the ground time of customer aircraft in the future. In the context of economical, forward-looking aircraft maintenance, the goal of the research project “Thermographic crack detection on aluminum-cladded aircraft fuselages” is to develop a mobile inspection system for detecting structural damage to aircraft fuselages. The project encompasses, on the one hand, the development of thermographic inspection technology to detect cracks and defects in the outer cladding of a fuselage, and on the other hand the development of a mobile robotic system to position and control this thermographic inspection technology. Furthermore, a modular structure and the inclusion of optical cameras and alternative test sensors is intended to make the robotic system suitable for a wide variety of inspection and testing tasks.

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