

# KUKA Aerospace, LISI AEROSPACE Develop Single-Robot, Automated System for One-Sided Aircraft Assembly



**KUKA Robotics Corporation** POSTED 06/16/2015

Sterling Heights, MI, | Paris, France – KUKA Aerospace and LISI AEROSPACE have joined forces to develop a new fully automated system for one-sided assembly of aircraft structures, whether made of metal or composites. The centerpieces of this automated technology are a single KUKA six-axis robot with a multi-function end effector co-engineered with a newly developed LISI AEROSPACE structural blind fastener. This highly advanced system, now available to customers, can perform all assembly functions from hole drilling to assembly control, including installation and removal of LISI AEROSPACE temporary fasteners and the installation of LISI AEROSPACE blind fasteners.

“By combining our strengths, KUKA in aerospace automation and robotics and LISI AEROSPACE in aerospace components, the two companies are able to offer shortened installation times with an end effector and fasteners specifically optimized for this system,” says Robert Reno, Group Vice-President, KUKA Aerospace. “It’s a robust and repeatable installation sequence ensuring a constant number of pairs installed per hour with the right level of quality assured by the latest electronic, real-time monitoring.”

One sided, automated assembly technology is something the aerospace industry has wanted for more than a decade, but until this breakthrough, the right technologies in terms of structural blind fastener and automation integration were unavailable. “With this new LISI AEROSPACE and KUKA integrated assembly system, this step change is now possible, opening wide perspectives for our customers to reduce assembly time and cost,” says Jean-Louis Colders, CEO of LISI AEROSPACE.

KUKA’s industry-leading, six-slot barrel multifunction end effector has been enhanced and adapted to handle a range of high end specific LISI AEROSPACE fasteners in a fully automated sequencing by a single robot on the assembly line. These capabilities include pre-holes and final drilling, temporary fastener installation and removal, a fully automated supply of fasteners, electronic monitoring of the entire installation sequence, as well as blind fastener installation with or without the application of sealant. The six end effector slots house two blind fastener installation modules, a camera for precise positioning, a temporary fastener installation and removal module and a drilling module, with one slot left free for possible additional customization.

## About KUKA Systems and KUKA Aerospace

KUKA Systems, part of Germany-based KUKA AG, is an international supplier of engineering services and flexible automation systems for the Automotive, Aerospace, Energy, and Industrial Solutions segments. Some 5,800 employees worldwide work on ideas, concepts and solutions for automated production and the provision of products and services for virtually all tasks in the industrial processing of metallic and non-metallic materials. KUKA Systems had sales revenues of €1.28 billion for the 2014 business year. KUKA Systems North America LLC, based in Sterling Heights MI, is responsible for the North American business and the worldwide aerospace group. The KUKA Systems Aerospace Group focuses on all aspects of tooling and assembly processes for aircraft manufacturing.

## About LISI Group and LISI Aerospace

LISI GROUP is a global €1,3 billion leader focusing on designing and manufacturing high-value-added assembly solutions. The Group's three divisions, LISI AEROSPACE, LISI AUTOMOTIVE and LISI MEDICAL, develop solutions for complex issues in innovative, value-added areas. LISI AEROSPACE is a company worth nearly \$1 billion that designs, manufactures and services more than 300 customers in 30 countries with components and sub-assemblies of high technical content, making the difference in its ability to innovate and sustain high operating performance standards. LISI AEROSPACE components and sub-assemblies can be found almost in every aircraft in the world and are all contributing to its integrity, performance and above all flight safety.