Advanced manufacturing gives AISI-Aerosud partnership welcome lift

In line with its vision of helping the local aeronautics and related sectors to improve their global competitiveness, the Aerospace Industry Support Initiative (AISI) and global aviation leader Aerosud are employing advanced manufacturing capabilities to drive down costs and weight of components.

The AISI is an initiative of the Department of Trade and Industry (**the dti**) and is hosted and managed by the Council for Scientific and Industrial Research.

Marié Botha, AISI Manager, says, “Continuous cost reduction while maintaining world-class quality and safety standards is of increasing importance to this sector. Our work with Aerosud involves exploring manufacturing technologies that will allow it to reduce costs on existing and future materials and processes. Cost and weight reduction to promote efficiency and ultimately achieve reduced cost is critical.”

The project detailed below illustrates how advanced manufacturing is being industrialised in the South African aerospace industry.

Localisation and industrialisation of insulation blankets

To further reduce manufacturing costs and improve Aerosud’s competitiveness, the manufacture of insulation assemblies will be industrialised at an Aerosud-certified location. This project will not only advance the capability to assemble and deliver assembled components, but will also bring foreign spending back to South African companies through localisation of this technology.

This AISI-supported project will deliver a fully certified and industrialised process for the manufacture of A400M insulation blankets as per the Airbus requirements. The industrialisation of the assembly will create an additional five permanent jobs to deliver approximately 550 insulation assemblies per month.

According to Brian Ingram from Aerosud, the company is pursuing this project as an ideal localisation initiative. The insulations are currently purchased from Canada at high cost. The product will attract a small amount of labour, where the skill level is reasonably low. The labour requirement can also be filled by persons with disabilities.

Ingram reports, “The required capital equipment has been purchased and the design and industrialisation processes to support production are in full swing. The process mapping was initiated in January 2016 and the current expected date for the machine is April 2016.”

The project has also delivered some unintended benefits. “Due to the versatility of the cutting machine that we selected for this programme, several other areas of process improvement have been identified. The most significant opportunity is the automated cutting of prepreg material (a reinforcing fabric which has been pre-impregnated with a resin system). Interesting concepts on possible process and efficiency improvement in the manufacture of the insulations have been tabled as a result of this initiative,” he concludes.