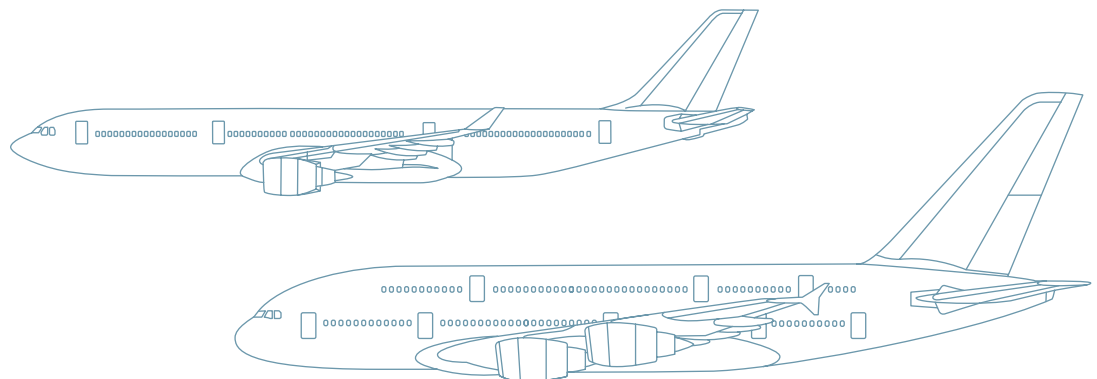




Ceramic Thermal Barrier Coatings

Ahead of the future



CCC specializes in EB-PVD

"The Ceramic Coating Center is one of the world's most advanced coating facility of its type", stated MTU Aero Engines' Dr. Thomas Cosack, senior manager surface technology. Based in France's Châtelleraut, CCC is a joint venture of Germany's leading engine manufacturer MTU Aero Engines and Snecma Services. With this collaborative endeavour, which was launched in 1999, the two companies are expanding their systems capabilities in the production and repair of turbine components for aircraft engines and industrial gas turbines (IGT) alike.

The CCC professionals are primarily coating turbine blades and vanes for the CF6-80, CFM56, M88 and also the GP7000, which is to power the Airbus A380 mega-transport. Envisioned additions to CCC's portfolio are high-pressure turbine components for the TP400-D6 to equip the Airbus A400M military transport, as well as parts for various types of industrial gas turbines.

MTU and Snecma Services, a SAFRAN group company, had opted for the joint venture after extensive studies had shown that economically, CCC would be the best bet for the job which is coating turbine components with the electron-beam physical vapor deposition technique. This EB-PVD technique uses an electron-beam to vaporize ceramic substances in a vacuum, with the resulting mist then depositing on the components. It produces an extremely thin homogeneous film 100-150 microns thick to protect components from heat.

The German and French companies have been cooperating extensively and profitably for decades. They are partnering in the CF6 and Larzac programs, on the engine for the AMC A400M military transport and on the GP7000 to power the Airbus A380, having major stakes in each of these engines. The two companies have also been partners for many years in various European technology programs.

Goals:

- Customer orientation
- Short TATs
- JAR/FAR 145
- AS 9100/ISO 9002
- GE-approved source



A high-pressure turbine vane getting a new lease on life: an engine-run vane (left), a vane after stripping (center) and a vane prepared for recoating (right).



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Highly qualified employees ensure the frictionless process of ceramic coating engine blades using the most modern technologies.



To verify the thickness of the protective coating, the blades are weighed on extremely precise scales.



The new state-of-the-art coating facility ensures highest quality TBCs.