The primary drive for low cost lightweight composite structures has resulted in a number of new technologies with potential for automation. It was for this reason that the National Aerospace Laboratory NLR decided to invest in a fibre placement facility in order to support industry in developing novel innovative structural concepts. This facility is available for companies interested in carrying out research projects into the possibilities of fibre placement, be it in the fundamental or industrial level up to full scale prototypes.
Specifications of the new Fibre Placement Facility

- Thermoset, thermoplastic and dry fibre placement capability
- 8 × ¼” (6.35 mm) tows with individual tow control
- 8 axis closed loop control
  - 6 axis articulated robot on a linear axis
  - Horizontal or vertical spindle
- Product envelopes:
  - Horizontal spindle: 3.0 m diameter, 6.5 m length, tool weight 6,000 kg
  - Vertical spindle: 4.0 m diameter, 2.0 m height, tool weight 3,000 kg
  - Table: 3.5 m width, 6.5 m length
- Placement speeds up to 800 mm/s
- Infra red heating system for thermoset materials
- 6 kW laser heating system for thermoplastic and dry fibre placement
- Programming and simulation by Coriolis’ CATFiber which is embedded in CATIA DELMIA

Facilities of ACM-TC

The core of the ACM-TC is the R&D facility for composites manufacturing at NLR. Besides the Fibre Placement Facility other equipment includes an automated RTM machine, a 1,000 N hydraulic press with temperature controlled platens (heated and cooled), a 400 °C autoclave, a C-scan, clean rooms and a well equipped test house to perform material qualification and structural certification programmes.