

**Press relations - H&B Communication:**

Marie-Caroline SARO – Nadège CHAPELIN

Tel. +33 (0)1 58 18 32 44 / 45 – [mc.saro@hbcommunication.fr](mailto:mc.saro@hbcommunication.fr)

DAHER Group: Hubert CLEMENT

Tel. +33 (0)1 49 75 98 13 – [h.clement@daher.com](mailto:h.clement@daher.com)

---

**Equipment and services supplier DAHER invests in R&D on the European "FRIENDCOPTER" programme and demonstrates its abilities as a level 1 equipment and services supplier for composite structural assemblies**

*The FRIENDCOPTER project is an FP6 (Sixth Framework Programme) European research and development project which started in March 2004 and should be finished at the start of 2009. It brings together 34 European partners including helicopter constructors, industrial groups, research centres and universities.*

*Given the increasingly frequent medical, rescue and law enforcement missions in populated zones, the aim of this programme is to significantly reduce external and cabin helicopter noise through the "Integration of technologies in support of a passenger and environmentally friendly helicopter".*

Overall, this project represents 32.5 million euros, with 125,000 hours of research covering several angles, including the treatment of "engine noise" (Work Package 3).

The Work Package 3.1.3 partners (for redesigning the air inlet) are:

- TURBOMECA, engine manufacturer and project leader
- EUROCOPTER DEUTSCHLAND, the end user
- Various research centres, including:
  - IST in Portugal for the calculations
  - CRANFIELD University in the United Kingdom for the simulations
  - FREE FIELD TECHNOLOGIES (FFT) in Belgium for the acoustics
- One industrial partner:
  - DAHER for the "air inlet" composed of a "PLENUM" or "AIR INTAKE".

The helicopter chosen for the tests is the EC 135, the most-sold rescue helicopter in the world, and the Work Package 3 budget is **5.2M euros** and represents **45,000** hours of R&D.

Originally, EUROCOPTER was responsible for the design of the part, which they manufactured themselves using titanium.

DAHER quickly presented an alternative for this project with the use of composite materials, by proposing a structure in carbon fibre and BMI (Bismaleimide) resin.

With an **innovative and complex process of drape-forming and baking**, this solution has enabled all the components of the finished part to be integrated and responds to the technical constraints required for operation at high temperature and fire resistance.

Likewise, the use of this new material has enabled a new air inlet to be created which takes directly from the exterior and should significantly increase engine performance.

At the request of TURBOMECA and FFT, DAHER has worked on two acoustic treatment definitions: a standard version with two thick partitions and an innovative version with four thin partitions.

After a year of tests and demonstrations, this solution has been chosen by EUROCOPTER. This decision has changed the scope of the project entrusted to DAHER, which has designed and developed the part for the EUROCOPTER account.

This innovative solution developed by DAHER and its partners offers several advantages:

- The development of an innovative acoustic treatment, with higher performance than the standard solutions currently used
- The PLENUM manufactured in titanium was produced in **16** parts that had to be assembled. Made of composite materials, the new plenum is produced in two half-shells which are much quicker to install (installation and maintenance productivity)
- The mass is significantly optimised by the use of a composite material much lighter than titanium (by around 30% for the same scope),
- The new system should enable engine performance to be improved through the opening on the side to inlet external air without, however, being noisier.

At present:

- A complete PLENUM has finished its testing period on test benches at TURBOMECA
- Two PLENUMS, one for each engine, left and right, have just been installed on an EC 135 in Germany for test flights scheduled for the start of 2008.

With this project and its innovative approach, DAHER:

- Demonstrates its Research and Development abilities to imagine and create innovative solutions
- Consolidates its expertise in the use of composite materials for all types of structural assemblies, including those with high technical constraints to meet the requirements for operation at high temperature and fire resistance
- Consolidates its specialisation in the design, development and production of air inlets, plenums and APU Inlets already used on several programmes (A320, A380, Tiger, Arrius & Arriel engines, etc.)

This expertise enables DAHER to be a partner to aerospace manufacturers and equipment and services suppliers for developing innovative technical solutions, offering real technological advances whilst optimizing the key parameters of mass and cost.

List of the 34 European partners of the FRIENDCOPTER project:

VERTAIR EEIG	Aircelle	Westland
ECD	INECO	ZFL
AGUSTA	ISQ	Cranfield University
ANOTEC	ISDEFE	Inst. Superior Technico
CIRA	Paulstra	Kungl Tekniska Högskolan
DLR	LMS	Politecnico di Milano
DAHER Aerospace	NLR	Universitaet Oldenburg
EADS-CRC	NOLIAAC	RIGA-Technical University
Eurocopter	ONERA	University Patras
FFT	PZL-Swidnik	University Rome Tre
Formtech	Turbomeca	
Gamesa	VZLU	



For further information on DAHER – [www.daher.com](http://www.daher.com)

DAHER is a European integrated equipment and services supplier, dedicated to Aerospace and other manufacturing industries.

In addition to Aerospace, DAHER specializes in three other sectors: Nuclear, Defence and Automotive. DAHER is developing in three fields of expertise: manufacturing, services and transport, which enable it to offer a comprehensive package.

Founded in 1863, DAHER is an exclusively family-run, independent international group, with more than 5,000 employees and 12 international installations (4 in Western Europe, 3 in Eastern Europe, 2 in North America, 2 in Africa and 1 in Australia). DAHER has doubled in size over four years to reach an annual turnover of 530 million euros in 2007.