



Fast Track to Innovation Pilot Scheme

Deadline for submission: 29th of April 2015

Evaluation results: 21th August 2015

The Curti experience: how we won it

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C CURTI *INDUSTRIES*

A *never stop innovating* mechanical engineering company



CURTI COSTRUZIONI MECCANICHE S.p.A.

Established in 1955, Curti is an engineering and manufacturing company based in Castel Bolognese (RA) specializing in advanced machinery equipment development & manufacturing. Curti is a family run company constantly striving for quality and innovation and operating in five main business areas, serving more than 300 clients in 90 different countries.

Co-Engineering and Manufacturing

Subcontracting & supply chain management

**AERONAUTIC PARTS FOR
AGUSTA WESTLAND &
MORE**



**FILLING & CAPPING
MACHINE FOR TETRAPAK**



3 Strategic Business Units

In-house developed solutions

CURTI
WIRE PROCESSING



CURTI
PACKAGING DIVISION



CURTI
ENERGY DIVISION



CURTI INDUSTRIES – STRUCTURE & SHAREHOLDING



*BLISTER PACKAGING,
HORIZONTAL CARTONERS &
CASE PACKERS*

CURTIMET

*SUBCONTRACTING OF
MECHANICAL PARTS & UNITS*



*INNOVATIVE PACKAGING
SOLUTION BY FORMABLE
PAPER*



*SPECIAL MACHINE TOOL,
AUTOMATION &
SUBCONTRACTING*

COGNETEX

*LEADER IN THE GLOBAL
TEXTILE MACHINERY
MARKET*



*SPECIAL MACHINE TOOL,
AUTOMATION &
SUBCONTRACTING*



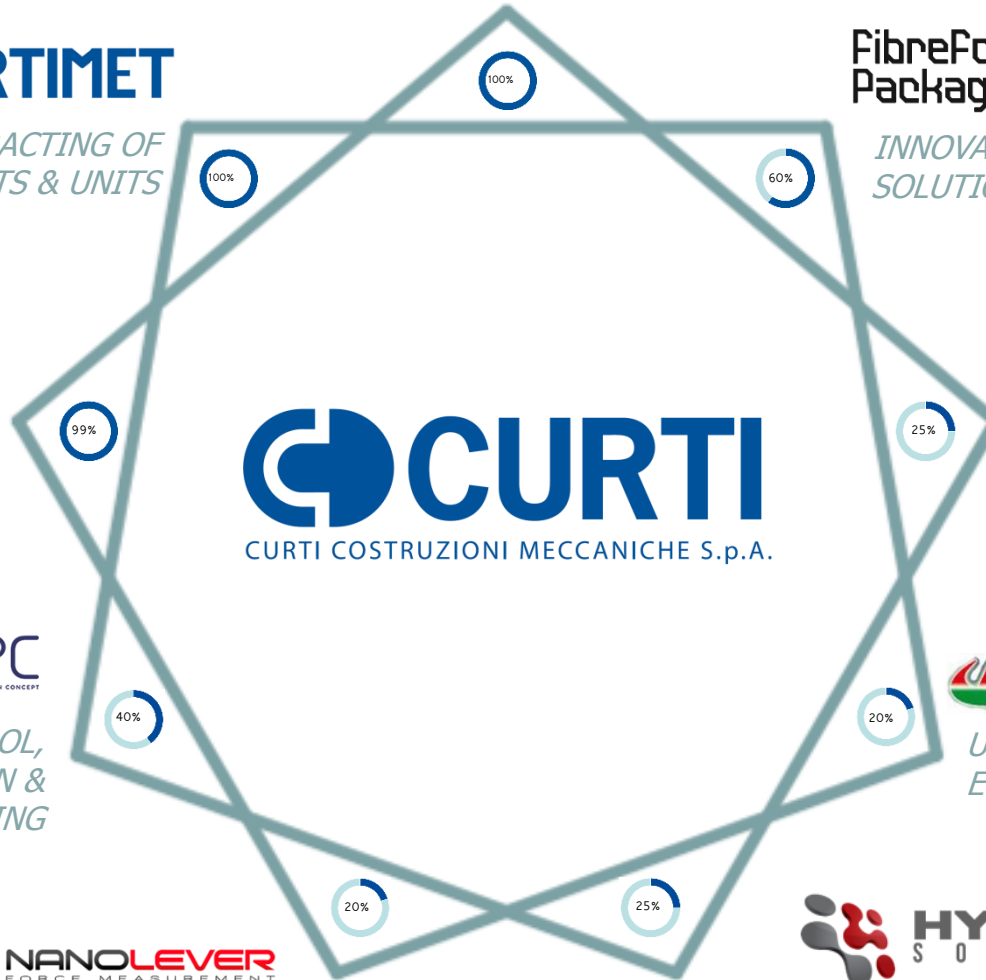
*ULTRA-LIGHT AIRCRAFT'S
ENGINES*



FORCE MEASUREMENT TECHNOLOGY



TOP ENGINEERS & DESIGNERS





Curti: Key Facts and Figures

Founded: 1955

HQ: Castel Bolognese Italy (branches in Imola and Modena)

C.E.O: Eng. Alessandro Curti

N° of employees: 220

Facilities: 12,500m²

Turnover: €70.4 million (2014)

Total assets: €53.7 million (2013)

Stakes in another 9 companies

2014 GROUP FIGURES

TURNOVER: 103 Million €

EMPLOYEES : 315

INVESTMENT IN R&D : 5% of turnover

DISRUPT DEVELOPMENT OF AN INNOVATIVE AND SAFE ULTRALIGHT TWO-SEATER TURBINE HELICOPTER

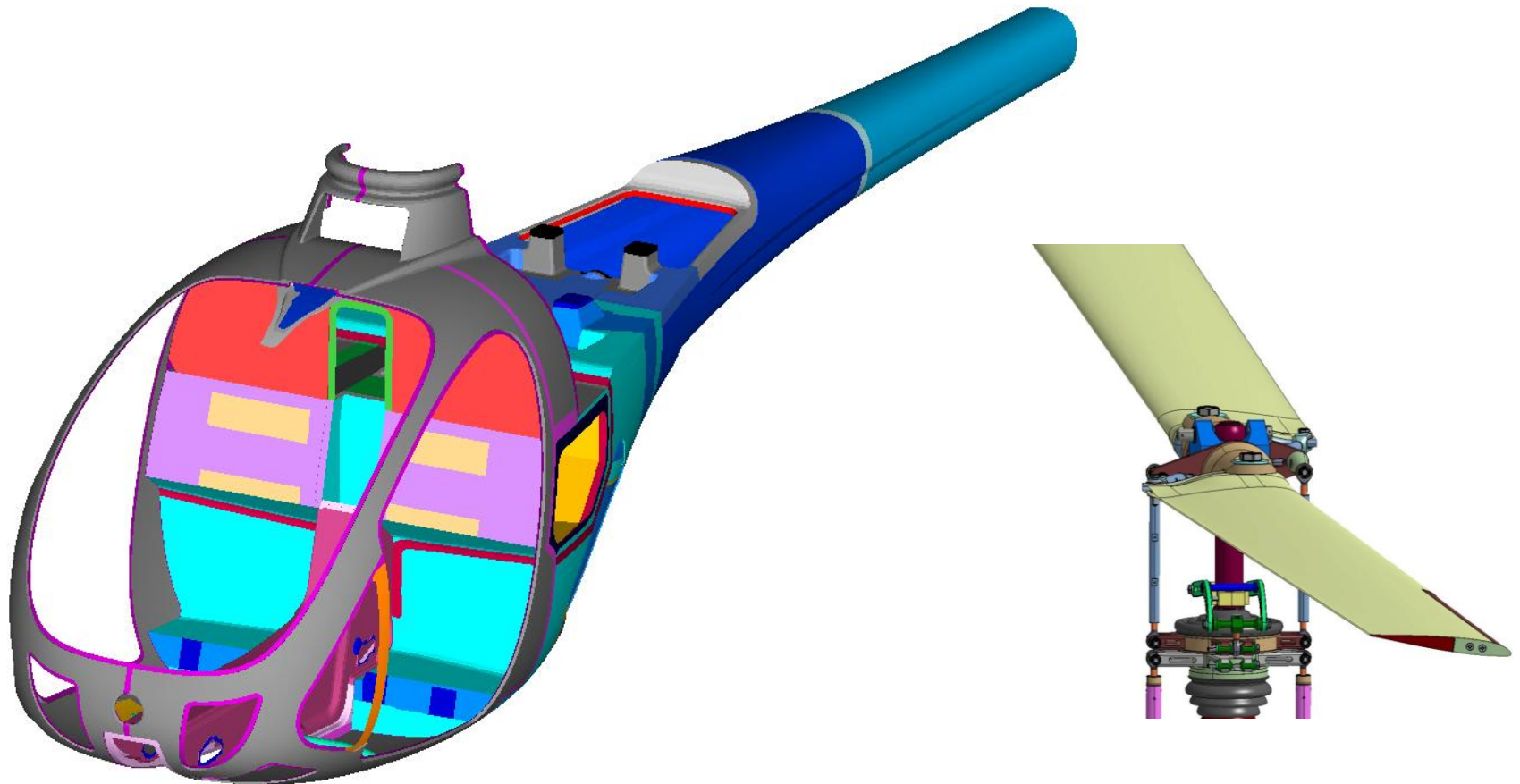


WHAT'S THE IDEA BEHIND DISRUPT?

The DISRUPT project was conceived to satisfy market demand for a more secure and reliable ultralight helicopter to serve both the recreational and commercial sectors. Curti, PBS Velká Bíteš (PBSVB) and Junkers Profly have created a partnership to build a highly reliable and secure ultralight helicopter, thanks to a customized turbine engine and a state-of-the-art ballistic parachute safety mechanism.

CURTI'S FOCUS

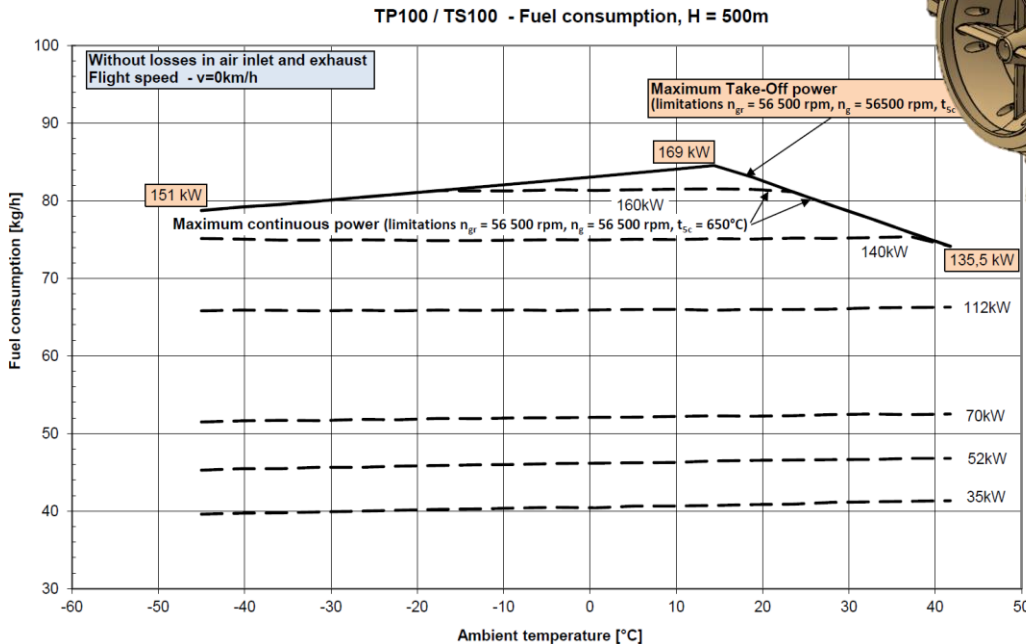
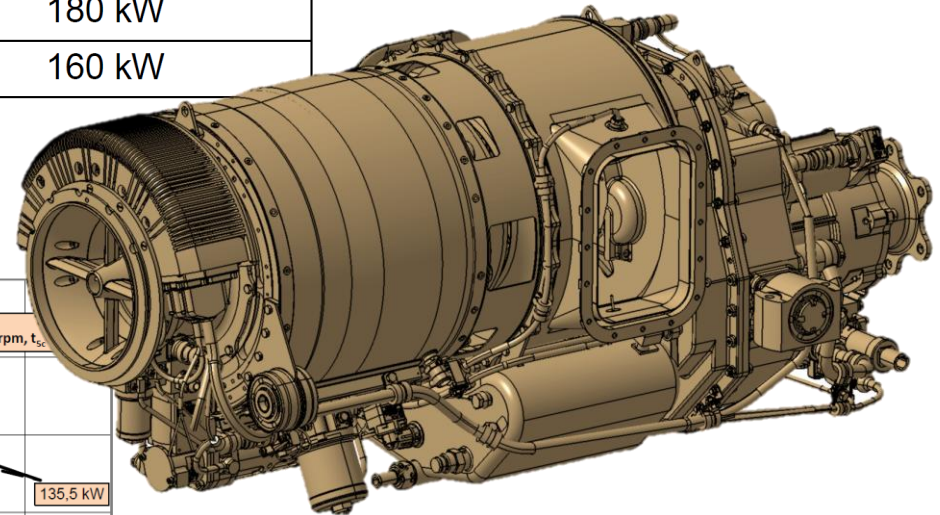
Development and manufacturing of the helicopter



turbine development & adaptation to the helicopter

Main characteristics

Gas generator speed 100%	56 500 rpm	
Free turbine speed 100%	44 790 rpm	
Output shaft speed *)	2 158 rpm	5 978 rpm
Output shaft torque *)	798 Nm	287 Nm
Take-off power on the output shaft (5 min)	180 kW	
Maximum continuous power	160 kW	



JUNKERS' FOCUS

Adaptation of ballistic parachute to the helicopter



KEYS TO SUCCESS

1. Good project with a strong R&D base
2. Driven by a real market need
3. Engaged & complimentary partners
4. Good support in proposal writing and management
5. A European coordinator for a European project

KEY 1: STRONG R&D RECORD

Curti's track record in R&D projects

- IMI 2001
- 4 MIUR projects between 2005 and 2010
- Several POR FESR 2007-2013 REGIONE EMILIA ROMAGNA (CHP, surface passivation, tyre pyrolysis, helicopter)

PBS' track record in R&D projects

- 5th Framework Programme - project STR (research and development of efficient small turbine stage)
- 6th Framework Programme - project MOET (leader of Task "More Electric APU"), BEARINGS (development of more reliable bearings), CESAR (involved as a partner in activities covering development of efficient air conditioning unit based on bleed air, High precision gears testing methods, Advanced design model applied on high precision gears), NEWAC (definition of methods for improvement of compressor surge margin)
- 7th Framework Programme - project ESPOSA

KEY 2: REAL MARKET NEED

- According to the European Aviation Safety Agency (EASA) in 2013, deaths resulting from accidents in aircraft below 2,250 kg decreased 21% compared to the period 2008-2012.
- However, ultralight helicopters do experience flying issues caused in large part to their lower reliability and sub-optimized design process. **There were approximately 219 accidents involving ultralight helicopters in Europe in 2013 with 18% of these accidents resulting in fatality** . According to the EASA, by far the highest occurrence category for these accidents, is "Loss of Control – In Flight". Annual Safety Review 2013 – EASA
- Our Disrupt ultralight helicopter will offer a unique flying experience based on an innovative and tailored 150 Horse Power turbine engine from our partner PBSVB, the use of lightweight materials, optimized aerodynamic designs and state-of-the-art control systems from Curti and the integration of a ballistic parachute safety mechanism from Junkers.

KEY 3: ENGAGED & COMPLIMENTARY PARTNERS

- 1. CURTI
Italy



- 2. PBS VELKA BITEŠ
Czech Republic



- 3 JUNKERS PROFLY
Germany



KEY 4: GOOD SUPPORT IN PROPOSAL WRITING AND MANAGEMENT



- Excellent technical capabilities in supporting the project
- Came with us to visit our partners and fine tune the details of the partnership
- Helped by native English speakers in writing the proposal

KEY 5: EUROPEAN PROJECT COORDINATOR FOR A EUROPEAN PROJECT

- Erasmus student in Utrecht (Netherlands) as part of Chemistry degree
- Two year Marie Curie Fellowship to partially fund my Ph.D. at Imperial College London
- Coordinated Eco-Innovation application last year where we scored equal to the last financed projects and ended up 13th on the waiting list

CONCLUSIONS

- We are honoured to be part of the first wave of Fast Track to Innovation pilot scheme winners and fully committed to make it a real success and contribute to EU technology leadership
- We foresee international recognition for developing a safe and innovative product
- We welcome financial backing opportunities for this and other endeavours within our company
- We believe this EU Commission endorsement will really help us reach the commercial viability of our ultralight helicopter sooner