High performance intelligent Bottle Bore Tool for machining of the engine drive shaft

Fact Sheet

Project Information

BBT

Grant agreement ID: 785446

Project website

DOI
10.3030/785446

Project closed

EC signature date
11 December 2017

Start date
1 January 2018

End date
31 December 2019

Funded under
SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

Total cost
€ 400 503,75

EU contribution
€ 400 503,75

Coordinated by
FUNDACION TEKNIKER
Spain

Objective

The development of the new Ultra High Propulsive Efficiency (UHPE) engine architecture includes significant changes in the configuration and functioning scheme compared to current technology for the aircraft engines. A main change is the addition of a gearbox to decouple the fan and the turbine rotation, resulting in new requirements for the main turbine shaft (increased RPM and decreased torque); these aspects involve new size and shape needs for this shaft that challenge the

current manufacturing methods to achieve an internal bottle bore geometry with Length to Diameter ratio above 30 and length over 2 meters. At this point, the proposal covers the development of new tooling systems to perform the machining of the shaft with the required precision and quality.
The main objective of the BBT project is to develop an intelligent tool concept for the internal profiling of the engine drive shaft integrating different technological subsystems that enable the achievement of large Length to Diameter ratio and meeting the aeronautic requirements related to the machined surface condition.

Fields of science (EuroSciVoc)

engineering and technology > mechanical engineering > **thermodynamic engineering**

engineering and technology > electrical engineering, electronic engineering, information engineering > electronic engineering > **signal processing**

engineering and technology > mechanical engineering > vehicle engineering > aerospace engineering > **aircraft**

engineering and technology > mechanical engineering > manufacturing engineering > **subtractive manufacturing**

engineering and technology > electrical engineering, electronic engineering, information engineering > electronic engineering > **sensors**

Programme(s)

H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

MAIN PROGRAMME

H2020-EU.3.4.5.5. - ITD Engines

Topic(s)

JTI-CS2-2017-CFP06-ENG-01-18 - Development of innovative methods and tooling for machining of slender shafts

Call for proposal

H2020-CS2-CFP06-2017-01

[See other projects for this call]

Funding Scheme

CS2-RIA - Research and Innovation action

Coordinator

FUNDACION TEKNIKER

Net EU contribution

€ 227 100,00

Total cost

€ 227 100,00

Address

CALLE INAKI GOENAGA 5
20600 Eibar Guipuzcoa
Spain

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Research Organisations

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Participants (1)

GMTK MULTI PROCESS MACHINING, S.A

Spain

Net EU contribution

€ 173 403,75

Address

POLIGONO INDUSTRIAL SANSINENEA ERREKA, PARCELA A4, NAVE 8
20740 ARRONA-ZESTOA, GUIPUZCOA

Region

Noreste > País Vasco > Gipuzkoa

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

€ 173 403,75

Last update: 16 August 2022

Permalink: https://cordis.europa.eu/project/id/785446