Secondary and Leakage Flow Effects in High-SPEED Low-Pressure Turbines

Fact Sheet

Project Information

SPLEEN
Grant agreement ID: 820883

Funded under
SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

DOI
10.3030/820883

Total cost
€ 1 964 515,00

EU contribution
€ 1 964 515,00

Closed project

Coordinated by
VON KARMAN INSTITUTE FOR FLUID DYNAMICS
Belgium

Start date
1 November 2018

End date
31 December 2022

Project description

Probing the aerodynamics of low-pressure turbines at high speeds

High-bypass ratio turbofans offer enormous potential to reduce noise and pollution of aviation. In the geared engine architecture, the low-pressure turbines operate at transonic exit Mach numbers and low-Reynolds numbers. There is a critical shortage of experimental data at these engine-like conditions and especially at transonic exit flow speeds. The EU-funded SPLEEN project aims to fill this gap by carrying out detailed flow measurements in two world-class turbine test rigs at the von Karman Institute for Fluid Dynamics. The focus is on the interaction of secondary air and
leakage flows with mainstream flow and its impact on turbine performance and design.

**Fields of science**

- engineering and technology > mechanical engineering > vehicle engineering > aerospace engineering > aircraft
- engineering and technology > mechanical engineering > vehicle engineering > aerospace engineering > aeronautical engineering

**Programme(s)**

- H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green And Integrated Transport
- H2020-EU.3.4.5.5. - ITD Engines

**Topic(s)**

- JTI-CS2-2017-CFP07-ENG-01-23 - Improvement of high speed low pressure turbine performance through reduction of secondary effects

**Call for proposal**

- H2020-CS2-CFP07-2017-02

See other projects for this call

**Funding Scheme**

- CS2-RIA - Research and Innovation action

**Coordinator**

- VON KARMAN INSTITUTE FOR FLUID DYNAMICS

Net EU contribution

- € 1 964 515,00