

# Development of Experimental Techniques and Predictive Tools to Characterise Thermo-Mechanical Fatigue Behaviour and Damage Mechanisms

## What is DevTMF?

The DevTMF project focus is on the characterisation of thermo-mechanical (TMF) behaviour of superalloys to allow for more accurate prediction of design lives of present and future gas turbine components.

The ultimate goal is to enable a further increase of operation and service life, which will subsequently provide environmental and economic benefits to the European gas turbine industry and Europe as per High-Level Objectives set by Clean Sky 2.

## Objectives

- Improvement and development of advanced standard and non-standard TMF experimental methods to enable standardisation across the field by performing comprehensive studies for a range of representative parts
- Advanced metallurgical assessment of advanced structural disc alloys taking into account the effect of multiple critical variables to determine active damage mechanisms that control the life under TMF operating conditions
- Development of advanced TMF prediction models, with experimental validation, capable of predicting TMF initiation and propagation lives of components subjected to complex engine cycles.



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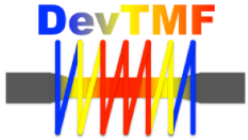


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# The Consortium at a Glance



DevTMF takes the collective technical expertise and experience of working on thermo-mechanical fatigue (TMF) problems related to large aero-engines from three major centres of TMF research, namely Linköping University, Swansea University and the University of Nottingham in order to perform the activities of this topic.

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