

Innovative turbine cavity swirl control systems through Additive Manufacturing

Up to 15% of total losses in turbine efficiency can be related to leakages flow through the flow path seals, which therefore play a key role in determining the turbine global performance. Negative impacts of the leakages are related to the amount of by-pass flow flowing through seal, and the way this flow is re-injected in the flow path. The new manufacturing process based on Additive Manufacturing gives large opportunity by opening new design space for innovative solutions currently not implementable, improving both the sealing capability and the control of the swirl factor during re-ingestion phase. This Call for Proposal aims at developing and investigating different potential sealing/swirl control architectures, realizing prototypes of the most promising solutions for experimental validation in a simplified environment (TRL3). Please refer to the full topic descriptions document published in this call.

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