



SAGE2

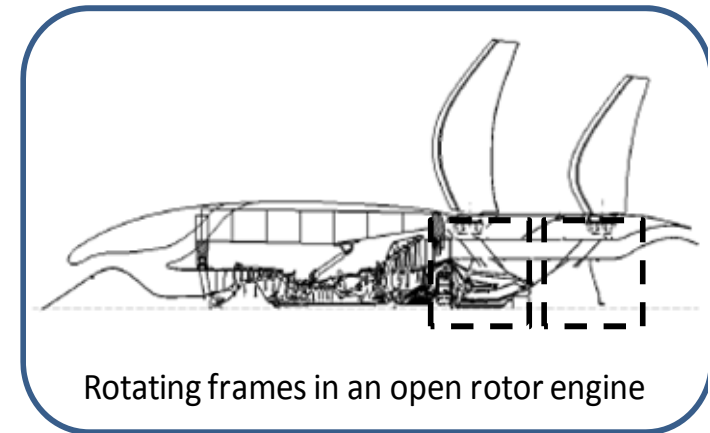
Short Description of
JTI-CS-2012-01-SAGE-02-013
*“Advanced NDT methods and equipment
development for fabricated structures”*

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Background and objectives

- Rotating frames are being developed for new environmentally friendly open rotor engines.
- The frames are considered as engine critical components which means that extremely reliable design methods, manufacturing and inspection methods and maintenance and overhaul procedures must be implemented.
- The rotating frames will include weld joints where robust and accurate NDT-methods need to be applied. Detection of defects and inspection of weld geometry is critical with respect to component life and flight safety and is currently performed by techniques such as Visual Inspection, Fluorescent Penetrant Inspection (FPI) and Radiography.
- This CfP project intends to improve detectability and improve accessibility for the methods in interior semi-closed design elements (i.e. hollow vane, torsion box)



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Scope

- New and improved methods for visual inspection, measurement and NDT on welded components with limited access, both in manufacturing and maintenance. Non-contact techniques such as optical, infrared camera and other with potential for miniaturization and automated measurement and evaluation have to be developed and its capability characterized. Novel measurement and NDT techniques for detection of sub-surface defects and weld characterization needs to be developed and applied.
- Proposed work package structure:
 - Task 1 Evaluation of novel inspection techniques
 - Task 2 Development of novel methods
 - Task 3 Capability of selected method
 - Task 4 Scanning inspection (automation feasibility)
 - Task 5 Automation of inspection method (Method + automation high level test)
- Special skills: Experience in the fields of: advanced measurements and NDT, optical and Infrared measurement techniques. Availability of facilities, lab resources and equipment for development work in the areas above.
- Maximum topic budget 500000€, Duration 30 months

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