



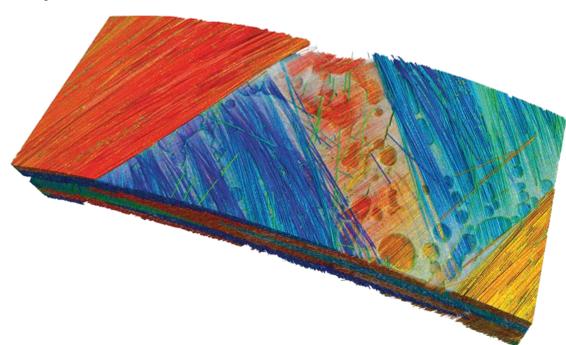
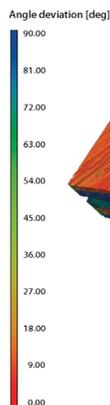
# Quantitative Inspection of Complex Composite Aeronautic Parts Using Advanced X-ray Techniques

## Concept

Recent years have seen a rapidly growing demand from aeronautic industry regarding function-oriented, highly integrated, energy-efficient and lightweight structures.

In **advanced composites** a promising material was found which integrates these characteristics. Advanced composite materials allow to elevate the complexity of new components concerning shape and structure.

The consequences of this increasing complexity are tremendously raising efforts in quality control. Conventional non-destructive testing methods are reaching their limits and become either extremely time-consuming or unusable for a full inspection.



## Aims and Objectives

QUICOM aims at **taking the next big step in the development of aeronautic components. A new technology platform of highly detailed inspection methods** will be developed, alongside with **advanced composite modelling and simulation**.

The project **generates new concepts and methods** based on cutting edge X-ray techniques. The aim is to escalate conventional nondestructive techniques in aeronautics on the short run and to replace them on the long run.

**The QUICOM technology platform will allow a full characterization of all kinds of aeronautic specimens** concerning material decomposition and geometric features. Results are integrated into a feedback cycle to boost composite development, in the direction of saving weight without losing key characteristics.

In detail the following **high level goals** are targeted:

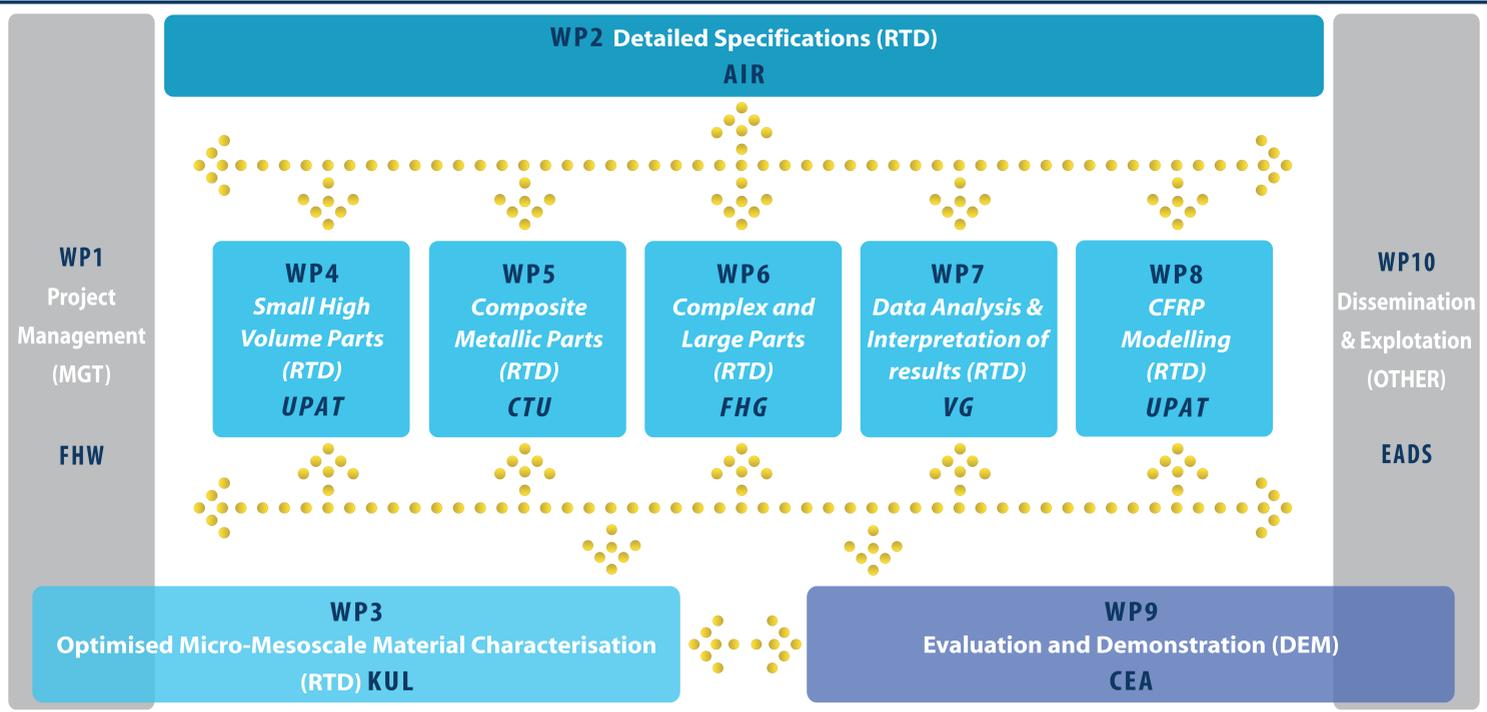
- » Escalate and replace commonly used NDT techniques (e.g., ultrasonic inspections, micro cuts) by using X-ray computed tomography in aeronautics.
- » Develop and apply advanced X-ray computed tomography techniques for characterizing aeronautic composites and components.
- » Provide highly detailed, qualitative and quantitative 3D characterizations of inner and outer structures.
- » Advanced application specific simulation and modelling of composites materials and parts.

## The Project



The QUICOM project is expected to be completed in 36 months and is divided into 3 distinct phases.

## Work Breakdown Structure



## Get Involved

An industrial interest group was set up as an extension to the core partners and as a forum for end users who may benefit from the research of the QUICOM project. **The QUICOM Industrial Interest Group (IIG) helps to ensure the seamless dissemination of results to the stakeholders of the European aeronautics industry, as well as to RTD and other institutions.** For more information, please contact [c.heinzl@fh-wels.at](mailto:c.heinzl@fh-wels.at).

The image used is courtesy of Volume Graphics

## The Partners



QUICOM Project Website  
[www.QUICOM.eu](http://www.QUICOM.eu)



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Designed by EASN - TIS



QUICOM

The logo features the word "QUICOM" in a stylized, metallic, 3D font. The letter 'O' is replaced by a circular emblem containing a yellow silhouette of an airplane in flight. The entire logo is set against a blue gradient background within a rounded rectangular frame.

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