

**Prof. Dr. Rudolf Andoga:**

## Perspective Algorithms in Control of Turbojet Engines

**Abstract:**

Turbojet engines are nowadays mostly controlled by full authority digital engine control (FADEC) systems using electronic engine control units. Microprocessor based control systems allow application of sophisticated control algorithms. The aim of the presentation is to show the state-of-the-art control systems and perspective algorithms based on integrated situational control methodology, which are aimed to increase the efficiency, reliability, and safety of operation of turbojet engines. Situational control is applied in this case in control and management of turbojet engines under all operational conditions including atypical ones using intelligent elements and strong integration with diagnostic systems. The concept of highly integrated control and diagnostic system is leading to a novel modular control framework with morphing structure and a degree of intelligence. It will be presented for application on general turbojet engines with specific implementation tested on a small turbojet engine in laboratory conditions as a proof of concept with positive results. These algorithms are designed as modular and robust with perspective applications in control of other large scale systems.

