SS04: RFID Sensors for Structural Health Monitoring of Aircraft Structures and Materials (*Dr. Pascal Nicolay, Carinthian Tech Research – CTR, Austria*)

The continuous monitoring of the structural health of aircraft structures and materials is of paramount importance. Implantable sensors are expected to enable flight systems to detect early sign of structure and material failures. In addition, implantable sensors could be used for traceability purposes. In both cases, Radio Frequency Identification and Detection (RFID)-based solutions would be ideal, as they do not require wires. Complete passive solutions (i.e. no embedded electronics) would be of even greater interest, as they could strongly reduce the maintenance efforts while increasing the system overall reliability. A special focus will therefore be given to Surface Acoustic Wave (SAW)-based RFID solutions, which constitute a promising research area, for various applications in harsh environment (traceability, very-high and very-low temperature sensors, pressure and strain sensors etc.). In this session, researchers can present literature or focused topic reviews as well as some of their most recent original results in the field of RFID devices and sensors, for the structural health monitoring of aircraft structures and materials. Advantages and drawbacks of various solutions can be presented and discussed. Attendees will exchange their views concerning research in this field. The contributions can include new concepts, theoretical models, experimental investigations, reviews as well as presentations from industrials (existing and new products, current and future needs etc.).