IEEE AESS Germany Chapter – Lecture

Integration of Manned and Unmanned Aircraft Systems into U.S. Airspace

IEEE AESS Lecture by **Ron T. Ogan**, IEEE Distinguished Lecturer

DATE	Tuesday, September 22, 2015
TIME	11-12h IEEE AESS Invited Lecture 12-13h Have lunch with Ron Ogan in the Fraunhofer cafeteria 18-20h Networking dinner with Ron in a Rhine Valley restaurant
LOCATION	Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE, www.fkie.fraunhofer.de Fraunhoferstrasse 20 *(formerly: Neuenahrer Strasse 20)* D-53343 Wachtberg
REGISTRATION	Wolfgang Koch, Fellow IEEE, +49 228 9435-373, w.koch@ieee.org registration required, no fees, lunch and dinner are non-hosted
SPEAKER	Ron T. Ogan, IEEE Senior Member, IEEE Aerospace & Electronic Systems Society Board of Governors, Brandon, Mississippi 39042 USA

Abstract— Drone, remotely piloted vehicle (RPV), remotely piloted aircraft (RPA), remotely operated aircraft (ROA), Unmanned Aerial Vehicles (UAV), or Unmanned Aircraft Systems (UAS) refer to aircraft without a human pilot on board. UAVs are classified based upon the weight, operating altitude and airspeed.

The FAA currently requires a Certification of Authorization (COA) and special airworthiness certificate –experimental category for all UAVs to fly in National Airspace. Restrictions limit commercial use of UAS, though they are in use by the military, law enforcement and for university research. Businesses, farmers and others have been clamoring for new UAS regulations from the FAA, which officials say could come as early as the end of 2015.

Safety is paramount for the integration of unmanned and manned aircraft into the United States or national airspace (NAS). Collision avoidance is achieved by the pilot performing "seek and avoid" for manned aircraft and Remote Pilots using "sense and avoid" for unmanned aircraft systems. The largest UAS have all of the safety equipment and capabilities of commercial passenger carrying aircraft, only with ground based pilots and observers. The pilot training requirements for UAS matches or exceeds the requirements for similar categories of manned aircraft. Collision avoidance systems such as TCASII have been used on commercial and military aircraft for years with improved safety outcomes. UAS will require advanced sensors to assure safe operation in NAS.
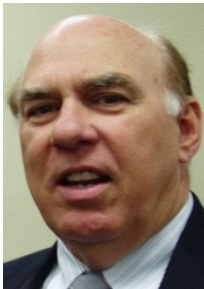
Mr. Ogan's Biographical Information

Mr. Ogan recently was a Senior Research Engineer at Georgia Tech Research Institute working on the Missile Defense Agency program supporting systems engineering and sensor developments. Prior experience at Raytheon Systems Company, Forest, MS and El Sedundo, CA included development, design and testing of advanced Electronically Scanned Phased Array (AESA) radar systems for ther F/A-15 and F/A-18 aircraft. Skills include certified Six Sigma Specialist, Integrated Product Design Performance IPDP lead using SLATE and DOORS ® software for systems allocations.

Professional experience also includes, telecommunications and space communications system for military and commercial applications in ground based, airborne and space based electronics.

Mr. Ogan, worked as a Industry Adjunct Instructor at the University of North Texas, developed and taught a project-oriented course Radio Frequency Identification technology (RFId) for engineering in support of a National Science Foundation grant.

Mr. Ogan is a certified Six Sigma Specialist with several projects completed that resulted in total program savings in millions of dollars. Analysis skills include MATLAB radar modeling simulations and device characterization electrical design and improvement