

Title: Toward Industrial UAVs: Flight Control and Communications

Abstract: In Drone industry, flight controller is considered as the ‘brain’ of these flying machines. For years, open source flight controllers have largely facilitated technology evolution on computational performance, control algorithm, communication protocols, industrial applications, etc. However, those off-the-shelf flight controllers mostly running on MCUs, have their bottlenecks, in terms of shortage of CPU resources, lack of interfaces, non-hardware-programmability.

The seminar covers topics including but are not limited to: industrial UAVs market in China, all-programmable UAV dev-platform for academics and industry, wireless communications products and dev-kit for UAVs, industrial UAVs use cases, challenges and opportunities. Founder of RobSense, Mr. Jie Jin and co-founder of RobSense, Dr. Zhenhui Yuan will present how their products and solutions apply to the next generation UAVs, and additionally to other industrial robotics.

RobSense Technology (www.robsense.com) is located at Hangzhou, P.R.China. With expertise on robotics and computer networks, core products released by RobSense include next generation flight controllers, UAV datalink transmitter & receiver and UAVs solutions for industry customers. Our products are enabling smart and connected applications driven by mobile artificial intelligence, Industrial IoT, and embedded Computing. RobSense’s partners and clients include Nokia, SUPCON (one of china’s leading providers of automation and IT products and solutions), State Grid of China, mmWave lab at UCLA, FACT lab at ZJU (won first place of the IARC 2016), etc.

Mr. Jie Jin is currently a Ph.D candidate, as a research assistant for European H2020 INPUT project, and previously for European FP7 ECONet project at Dublin City University, Ireland, from Aug. 2012 to Dec. 2013. He is also running a flight controller company called RobSense in Hangzhou, China. Previously, He has been a visiting researcher in Key Laboratory of Radio Frequency and Circuit, Ministry of Education, Hangzhou Dianzi University from Jan. 2014 to Jun. 2015, studying high-performance embedded computing and networking on mobile robot. Before working in Ireland, He acquired his M.Sc of Embedded Control System on Mechatronics from University of Southern Denmark in Jul. 2012. Initially, He received his B.Eng of Electronic Science and Technology from Hangzhou Dianzi University in China.

Dr. Zhenhui Yuan received his PhD (Electronics Engineering) at Dublin City University, Ireland, in 2012 and B.degree (Software Engineering) at Wuhan University, China, in 2008. His research focuses on wireless communications and networking with micro unmanned aera vehicles (Micro UAVs). He received Ericsson-Enterprise Ireland Postdoc Fellowship in 2012-2014. He was the visiting scholar at Network Research Lab, UCLA, U.S. in 2014. He was 3GPP researcher on 5G (2014-2015) at Huawei (Shanghai) Technologies.Co.Ltd. Since 2015, he is the associate professor at Key Laboratory of Radio Frequency and Circuit, Ministry of Education, Hangzhou Dianzi University. He is the co-founder and chief scientist at RobSense (Hangzhou) Technology Co.Ltd , a start up providing industrial robotics system. He has published over 20 papers at international journals and conferences. He won the best paper awards at IEEE ICCRE 2016 and IEEE BMSB 2014. (website: www.zhenhuiyuan.com)