

TRACK 3: 4TH INDUSTRIAL REVOLUTION**“AUTOMATING AERIAL REFUELING OPERATIONS”**

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ABSTRACT

Aerial Refueling is an essential capability of any Air Force to assure the Endurance and Range required for the mission of the receiver aircraft.

Aerial Refueling is risky and stressful for the refueling operator and for the receiver pilot. The refueling operator is in charge to coordinate with the receiver pilot the positions and clearance to proceed to the refueling position and to transfer the amount of fuel to the receiver. Moreover, in case of refueling with a Boom system, the operator has to control and fly the Boom towards the receiver and extending an internal telescopic beam to engage the Boom physically with the receiver aircraft.

Until now, almost all of the operation were performed manually because the tanker systems had no information about the receiver position to automate the operation. However, AIRBUS is developing a solution to determine the position of the receiver based on innovative techniques as image processing among other data fusion to enable this capability. This is the very first time that a manufacturer provides a feasible solution to automate Aerial Refueling (proven in flight on 21st March 2017) which is currently under industrialization phase to make the operations safer and more efficient.

BIOGRAPHY OF SPEAKER

Juan was born in Spain on April 1980 and grew up surrounded by radio controlled models which were built and flown by his father and restoring and optimizing motorbikes. These hobbies headed him to study Aerospace Engineering and incorporate his passion into his career. The academic studies were complemented later with a Masters in Aircraft Systems Integration and a Masters in Flight Tests. Almost his entire career has been with Airbus, a total of 14 years, where he started at the very beginning of the development of the MRTT Boom Systems passing from the preliminary design, laboratory testing and final integration in the aircraft. Juan was involved on board in all the essential flight test phases for the development of the Boom and the MRTT. Today Juan is in charge of a very talented and young team for AAR Ground Tests and Autonomous Refueling and also of the A310 Flying Test Bed.