

Presentation Topic: Establishing Situational Awareness Based on a System of Systems Using
Multi-Sensor Fusion in Civil Aviation

Presentation Summary

This presentation will cover system of systems intended to provide situational awareness and decision support (DS) based on multi-sensor fusion (MSF) similar to the DS systems mainly used in Military and other industries, Civil Aviation DS systems are focused on providing an Identified Aerial Picture for managing a confused airspace with military and civilian needs shared at the same time. Advances in information distribution and handling systems have influenced Defense systems and communication industry at first. Nevertheless; industries providing decision support for defense needs are expected to be focused on less-known Civil Aviation.

The defined Area of Interest (AOI) for civil aviation is based on the aerial movements of objects that are discovered by radars and other information Exchange links based on VHF and/or L Band transmitters. Moreover, this defined AOI covers an area which not covered by military AOI. Hence the systems for providing situational awareness in airspace or in any fields covering even naval AOI are accepted nearly the same. Briefly; the state of art of these systems are the same, just the difference is the way of thinking of the needs of different user groups focused on their AOI.

MSF applications in civil aviation is not only based on RADAR sensing as a main sensor, VHF/UHF transmitters and L-band information distribution systems, but also data distribution systems for providing a reliable and quicker Flight Information Management and Exchange systems between national and multinational organizations to provide identification of Aerial Picture and aerial platforms (Fixed or rotating wings and manned or unmanned) sharing same airspace. Hence this MSF systems are providing a defined multistructural information and exchanged in remotely placed users with a Service Oriented Architecture (SoA) in a System of Systems intended for aviation information handling.

In the conclusion; the expected approach from defense industries is to focus on MSF systems and their demand in Civil Aviation to provide an extended decision support systems to meet logarithmically increasing civil aviation traffic management needs in a quick changing and a confusing environment.