AIRBORNE MULTIFUNCTIONAL RF-SYSTEMS - MFRFS - OBJECTIVES, OPERATIONAL BENEFITS AND FUNCTIONALITIES

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Abstract

In an operational Multifunctional RF-System the realization of multiple functions such as RADAR, ESM, ECM and Data Link requires AESA antenna systems on an airborne platform in a wide frequency range. These multiple functions need to use a common hardware which shares these AESA antenna systems in a flexible, scalable and modular manner. It is shown that the integration of Radar-, ESM-, ECM- and Data Link functionalities on a common hardware has several operational benefits, including among others the enhancement of system interoperability and system efficiency, the improvement of response time as well as the enabling of new operations such as the instantaneous Direction Finding in Azimuth and Elevation. Furthermore, it is pointed out that airborne Multifunctional RF-Systems linked via Network Centric Operation offer even greater operational benefits. Better surveillance coverage is achieved, and the overall system availability is highly improved.