

Simulation of Synthetic Aperture Radar System Parameters for Light Surveillance Aircraft - LAPAN

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Abstract—The synthetic aperture radar (SAR) system has been designed and developed. The system is a compact multi polarimetric (HH, VH, HV, VV) SAR system and designed to be mounted on flight platform, Light Surveillance Aircraft (LSA) - STEMME S15. The STEMME aircraft can be equipped with a wide range of sensor payloads for specific missions. It provides pods in various shapes and size under-wing stations from standard to special customized designs with total mass payload 160kg. The system parameter have been designed with good trade-offs between performance and the limitation of onboard resource such as antenna size and mass payload. In this paper we present a brief description of the SAR system design and discuss the simulation result of LSA SAR parameters system, which meet the requirements of the platform. A simulation is completed which includes system design and system parameter calculation with the limited antenna size and the desired range and cross range resolution.

Keywords - SAR;; *Light Surveillance Aircraft; STEMME S15,*