Abstract

Within the TELEMACO project, the development of an innovative avionic radar system for advanced land monitoring, provided with an Active Electrically Scanned Array, has demanded for a system able to provide a rapid and flexible antenna beam steering in order to control the radar during its target search and tracking functions. This system, named Beam Steering Controller, receives as input the azimuth and elevation angles for the beam point angle and set accordingly the attenuators and phase shifters of the transmit/receive modules of the antennas array. The paper analyzes and compares two architectures, a distributed one and a centralized one, for the above Beam Steering Controller, and shows a scalable implementation of the centralized architecture suitable for an FPGA based hardware platform.

References


5. Rafael H. Medina Sanchez , “Beam steering control system for low-cost phased array weather radars: design and calibration techniques”, Doctoral Dissertations, University of Massachusetts, 2014


Index Terms

Computer Science  
Signal Processing

Keywords

Beam Steering Controller, Antennas Array, Active Electrically Scanned Array, FPGA design, FPGA implementation.