Abstracts

Active Array Radar Systems Applied to Air Traffic Control

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Increased traffic flow, mobility, safety, and decreasing T/R module costs, will lead the way for future air traffic control (ATC) radar systems to be based on GaAs active array radar (AAR) technology. In this paper, system tradeoffs and potential architectures are described for civil ATC radars and mobile military ATC radars. Current developments are provided in transmit-receive (T/R) module state of the art, the enabling technology. Discussions include the potential for large AARs with single or multiple arrays located at airport terminals to simultaneously undertake functions presently performed by the airport surveillance radar (ASR), the precision approach radar (PAR), the terminal Doppler weather radar (TDWR), and the airport surface detection equipment (ASDE) radars for increased performance at lower cost. These features are accomplished through the beam agility, wide bandwidth, multimode adaptive wave forms and power programming features only possible with the AAR.

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