

The complete program of research and experimentation proposed including description of equipment and theory of operation.

An active phased array for multi-mission radar will be researched. The array operates as a continuous phasing to produce a single transmit beam and uses digital beamforming to produce multiple receive beams that are processed by the radar signal processor.

The specific objectives sought to be accomplished.

The research will be for near in goals of demonstrating search and track of targets of opportunities as well as antenna parameter measurement from a broadside horn. Further, it will serve to demonstrate robustness of design in hours of operation and may be tasked for specific tracking of targets under launch control from the Wallops Island facility.

How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along line not already investigated.

The Navy and MDA have open needs for advanced radars that incorporate digital beamforming and high power amplifiers into active array technology. Demonstration and development of this technology in a relevant environment will advance the technical maturity to a level that will allow for fielding such capability, reducing the risk to arriving at initial operational capability in a time frame required for the defense of the nation.