

DESCRIPTION OF PROGRAM

(a) Describe the complete program of research and experimentation proposed including a description of the equipment and theory of operation:

The equipment is a combination of a front-end (transmitting device) and back—end (recording and controlling device) for a radar. The system is an experiment in developing a more modular radar system design for use by the U.S. government. The radar front-end, which transmits, is a standard super-heterodyne radar, the theory of which is well understood and has been designed for in a number of systems. It will be used in a variety of experimental scenarios targeting automotive traffic to determine the viability and efficiency of the overall system design and to verify the operation of the back-end (recording) system. It will also allow us to tune a set of new tracking algorithms on real targets without interfering with their operation.

(b) Describe the specific objectives to be accomplished:

We expect to demonstrate the acquisition of range and range-rate (velocity) data on vehicular traffic and to demonstrate the ability of our radar transmitter to be controlled by and to interface with the back-end of our system.

(c) Describe 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 a line not already investigated.

If this program produces positive results it will enable us to show that the back-end system and front-end system are truly modular and it will allow us to develop more modular radar systems for the government's future needs – a major requirement of the military services in future requests for proposals is presently to design for modularity in systems that are not yet being constructed. The experiments will also help us to establish the utility of the tracking algorithms and to enhance their operation.