

Counting Aircraft: Applying marine X-Band radar as an alternative to current aircraft counting techniques

Problem Statement

Counting aircraft accurately has been a struggle at many non-controlled airports. Pneumatic tubes, cameras, and labor intensive human counting have all been used before, but with a level of accuracy that is less than desired. Marine X-band radar has been utilized for counting cars and even measuring wave height. We hope to investigate the potential of marine X-Band radar as an approach to counting aircraft frequency as a first step in creating a system to prevent aircraft collisions, with the hope of applying this technology to help further the safety and security of the aviation world.

Proposal

We intend to investigate the potential use of marine X-Band radar as a means of counting aircraft. A radar system will be installed at the Council Bluffs Airport, either on top of a building or on the airfield. The radar system that we need, to complete our research, will include a stationary radar antenna linked to a 10 inch radar display that will transmit data to a computer with hyper-terminal, where the data can be interpreted to count aircraft. The data being transmitted includes the distance from the radar, the heading from the radar, the heading of the aircraft, and much more