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|  | **Proposal for the Triangulation of Rogue RF Signals** | | | | | |  |
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| Abstract: | Often times RF interference can be a nuisance and even rather an issue at times. The unwanted interference can lead to delays cause potentially hazardous response. When it comes to important issues that can tolerate little to no interference, it is valuable to be able quickly locate and remove the interference source. We propose a method to do this using phase arrays and software defined radios | | | | | | |
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| Objectives: | I propose to evaluate the feasibility of receiving and then locating a RF signal using properly spaced and placed phased arrays.  An RF signal propagates at a speed **S** of (m/s) with frequency **f**(1/s). When propagating at a speed S, the RF Signal will thus be received across a phased array at differing times proportional to the spacings of phased array elements relative to the transmitter. If given a single element spacing of **d**(m), we can see that there will be a **d/S**(s) difference in time in the waves received from the 2 elements. Given a period of **1/f** we can see a relative phase difference of **(d\*f)/S.** In order to sufficiently locate the signal, we will need a sampling frequency sufficiently higher than **S/d** and a sufficiently large **(d\*f)/S.**  In our purposes we will examine frequencies in the VHF band(30MHz-300MHz). | | | | | | |
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| Plan: |  |  |  |  |  |  |  |
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| Equipment: |  |  |  |  |  |  |  |
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