

Proposal Title: Chain Home Radar

<p>Operational Capability (What will your idea do – technology independent))</p> <p>The “Chain Home “ concept is to measure the range & bearing of incoming aircraft such that defence intercept capabilities can be vectored to efficiently engage the approaching aircraft. The central purpose is to co-ordinate all departments so as to gain tactical superiority with a low number of interceptors against a potentially large number of approaching aircraft.</p>	<p>Proposed Technical Approach (How will you do it?)</p> <p>The Chain Home principle is based on the generation of radio frequency electromagnetic waves that are used to floodlight a given area of sky. Electromagnetic waves striking an aircraft will be reflected back to a receiver located in the vicinity of the transmitter.</p> <p>Pulses of horizontally polarized electromagnetic waves are generated by a modified, pulsed Hartley oscillator & radiated by means of a series of end fed dipoles equal in size to $\frac{1}{4}$ wavelength of the electromagnetic wave. The radiated waves will be reflected by approaching aircraft & a proportion of the reflected energy will be reflected towards a receiver mast.</p>
<p>Rough order of magnitude cost & schedule (What resources do you need & what for)</p> <p>Phase 1: Develop Transmitter & receiver, modify hartley oscillator, optimise super het low noise stage, erect masts & aerials (12 months); Phase 2:Commission site (4 months); conduct performance tests (5 months), Write report (1 month).</p> <p>Phase 1: £x k; Phase 2 £xK</p> <p>Deliverables: Interim progress reports; Final report including all performance test data; Hardware developed under research grant</p> <p>ACME has all required test facilities.</p>	<p>Company/individual description & significant relationships</p> <p>ACME RDF Ltd; 123 Any Street, Somewhere AB12 34YZ Size or organisation: 250 people in UK Lead researcher: Dr G Marconi; gm@xxx.yyy ; tel: 1234567890</p> <p>Previous MOD contact: provision of technical advice to RAF</p> <p>No collaborative partners</p>