

## Reducing technical risk for radar systems

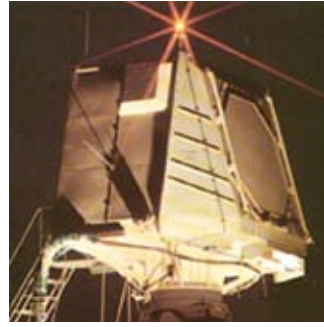
Roke Manor Research's Phased Array Simulation for Adaptive Radar (PHASAR) tool is an innovative design and development tool. Providing a platform for analysing system performance, it was created to reduce the technical and cost risk of complex radar and radio communication system designs before they are converted into hardware.

Picture courtesy of BAE Systems.



Datasheet

Roke Manor Research Ltd  
a Siemens company



Picture courtesy of  
BAE Systems.

## Meeting evolving requirements

As new technologies emerge for radar and radio communication systems, keeping the cost down and managing technical risk becomes critical. Challenging technical problems must be addressed by innovative solutions which provide realistic assessment under controlled environmental conditions. Roke's software simulator PHASAR (Phased Array Simulation of Adaptive Radar), meets these requirements and has made a significant contribution to reducing the technical risk on major system procurements.

### Key Features

- Fully adapted sum, difference and sidelobe blanking beams (SLB) modelled
- Monopulse accuracy statistics for real or simulated target tracks
- Antenna beam patterns in spatial domain slices or contour plots in 2D or 3D
- Statistical analysis for jamming residues and SLB assessments
- Jamming and target multipath generator
- Clutter generator for sea, land and rain environment models
- Bandwidth model enables assessments of element path length effects
- Standard element antenna patterns accommodated automatically (e.g omni and dipole)
- Array element positions may be specified in 3D, allowing planar or conformal arrays to be modelled.

### Key Benefits

- Simulation results validated against real data
- Real or simulated data may be used to assess processing techniques
- Realistic errors can be introduced at any stage in the radar system architecture
- Permits full evaluation of any adaptive algorithm and constraint mechanism
- Real target behaviour modelled
- Can be used to assist radar receiver architecture design
- May be used to assess main beam and sidelobe jamming threats
- Applicable to communication applications of adaptive arrays for risk assessment and performance validation.

Our team of experts has a wealth of expertise of working on high-risk prototype systems. Customers now confidently regard PHASAR as an essential part of the solution to their phased array technological requirements, thanks to its ability to accurately model phased array adaptive beamforming performance.

As a result of the success of our team, Roke has entered into a teaming agreement with BAE Systems Insyte and QinetiQ. Together we are working on a joint UK/US Navy phased array programme called ARTIST.

For further information on our capabilities in this area, please contact us.

#### For further information please contact:

##### Bryan Rickett

T +44 (0)1794 833405

F +44 (0)1794 833433

[info@roke.co.uk](mailto:info@roke.co.uk)

##### Roke Manor Research Limited

Roke Manor, Romsey, Hampshire SO51 0ZN UK

T +44 (0)1794 833000

F +44 (0)1794 833433

[info@roke.co.uk](mailto:info@roke.co.uk)

[www.roke.co.uk](http://www.roke.co.uk)

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##### Marketing department

T +44 (0)1794 833455

F +44 (0)1794 833433

[info@roke.co.uk](mailto:info@roke.co.uk)

[www.roke.co.uk](http://www.roke.co.uk)