We are at the forefront of radar technology, delivering sensor systems that give commanders superior situational awareness and targeting solutions. Sampson combines the roles of surveillance and dedicated tracking. Selected by the Royal Navy for the Type 45 Destroyer, Sampson is central to the Sea Viper air defence system.

**Features**
- Provides search and precision tracking of multiple targets, together with weapon control functions
- Stealth target detection
- Variable data rate for threat tracking
- High electronic countermeasures (ECM) immunity
- S-band frequency enabling high search rates in clutter
- Fault-tolerant design.

**Evolution**
Sampson evolved from the successful MESAR collaborative research and development programme.

**Operational capability**
Sampson supports point and area defence against current and future air threats in heavy jamming land and sea clutter. Software controlled coverage and radar operation, automatically adapts to the operating environment.

The system is compatible with both active and semi-active homing missile systems, and provides mid-course guidance. Sampson supports fully automatic operation where rapid reaction is required.

Operational availability is high. The design uses multiple parallel paths and operation is maintained even if several sub-systems fail. Repair is simple: faults are diagnosed using built-in test facilities. There are no high voltage, high power microwave parts, or associated water cooling systems - enhancing maintainability of the equipment.

Operating costs are minimised by using high reliability solid-state transmitters. Initial purchase price and through-life costs are significantly lower than systems employing separate surveillance and tracking radars.
Technical description
- GaAs transmitters and receivers for each array element with digital phase control for beam steering
- Air cooling of antenna
- Negligible microwave losses
- Receive elements combined in sub-arrays via stripline
- Independent array processing chains
- Digital beamforming processes suppresses multiple jammers
- Azimuth and elevation monopulse
- High pulse compression ratio
- Multi-mode doppler processing
- Environmental analysis
- Adaptive track processing
- Radar management computer to control beam and waveforms
- Local control console
- Interface to weapon systems.

Design features
- Flexible modular design enabling radar to be tailored to individual applications
- Programmable signal, plot and track processing
- Antenna rotation of 30rpm
- Two arrays each with more than 2000 radiating elements.

Performances features
- Hemispherical coverage
- Very high power aperture product for maximum coverage and high rate surveillance
- Excellent detection of stealth aircraft and missiles
- Accurate 3-D target data
- Enhanced track and initiation range
- Multiple target tracking
- High data rate for precise guidance and manoeuvre detection
- Mid-course guidance via integral missile up-link
- Kill assessment.

Anti-jamming features
- Adaptive nulling
- Very low antenna sidelobes
- Monopulse accuracy maintained
- Very high bandwidth
- Frequency agility
- Pulse compression
- Automatic waveform selection
- Sidelobe blanking
- Jammer strobe extractor and tracking
- Jammer burnthrough.

DATA SUMMARY

FOR MORE INFORMATION CONTACT:

BAE Systems Maritime Services
Victory Point
Lyon Way, Frimley, Camberley
Surrey, GU16 7EX, United Kingdom
Telephone +44 (0) 1276 603000
Fax +44 (0) 1276 603001
email maritime.services@baesystems.com
www.baesystems.com/maritimeservices

Copyright © BAE Systems 2011. All rights reserved.
This publication is issued to provide outline information only which (unless agreed by BAE Systems in writing) may not be used, applied or reproduced for any purpose, or form part of any order or contract or be regarded as a representation relating to the products or services concerned. BAE Systems reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.
12.11.BC050206.05.v06