Artisan Naval Radar

Maritime Services’ sensor systems deliver superior situational awareness and targeting solutions.

Artisan is in service as the Royal Navy’s new medium range surveillance, target designation and air traffic management radar for surface ships.

Artisan optimises medium-to-long range air and surface surveillance plus weapon systems target designation. Developed from proven technology, its architecture is future-proofed.
Key performance benefits:
• Realises full potential of modern anti-aircraft warfare (AAW) missile systems and is adaptable for future ship defence weapon systems
• Provides unrivalled performance in the littoral, particularly fast inshore attack craft and small airborne targets detection in clutter
• Makes significant contribution to tactical situational awareness in primary sensor role
• Electronic protection measures maintain detection ranges even when attacked by complex jammers
• Delivers track quality required for air traffic management
• Electronic stabilisation gives a smaller, lighter masthead envelope and higher reliability
• Fulfils secondary navigation role
• A software-centric radar, enabling ease of capability upgrade.

Functional aspects
• 3D air surveillance with fast target alerts
• Secondary navigation surface surveillance
• Jammer suppression and surveillance
• Identification friend or foe (IFF) interrogation support
• Weapons system support.

Low through-life costs
• Designed utilising commercial components to provide high operational availability and reliability
• Support Model Options benefiting from availability contracting approach
• MTTR < 30 minutes
• MTBCF > 5000 hours.

Performance data
Maximum instrumented range > 200 km
Maximum elevation coverage > 70 degrees
Minimum range < 200 metres
3D tracking capacity (air & surface) > 800 targets
Elevation accuracy 0.6 degree
Track declaration range
- Maritime aircraft > 185 km
- Missile > 50 km

Processing
• Digital adaptive beamforming
• Digital pulse compression
• Doppler processing using adaptive MTD filters
• Advanced track extraction
• Sophisticated classification support
• Optimised for weapon system performance.

Technical data
System:
• Four operating modes all at 30 rpm
• Fully automatic detection and tracking
• Unique to class digital adaptive beamforming provides immunity to jamming and interference.

Transmitter
Frequency band: E/F band
Type: Solid state transmit modules
Transmitter modes: minimum navigation mode or full power
Frequency agility

Installation
The equipment footprint and ships services required

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Ships chilled water</th>
<th>Ships power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>1.35m</td>
<td>4.1m</td>
<td>1.6m</td>
<td>None – air cooled</td>
<td>None</td>
</tr>
<tr>
<td>Signal generation and receive cabinet</td>
<td>1.56m</td>
<td>0.69m</td>
<td>0.68m</td>
<td>4 l/min</td>
<td>2 KVA</td>
</tr>
<tr>
<td>Data processing cabinet</td>
<td>1.56m</td>
<td>0.69m</td>
<td>0.68m</td>
<td>6 l/min</td>
<td>3 KVA</td>
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<tr>
<td>Antenna power cabinet</td>
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<td>0.75m</td>
<td>0.68m</td>
<td>5 l/min</td>
<td>15 KVA</td>
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<tr>
<td>Antenna cooling cabinet</td>
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<td>0.9m</td>
<td>0.68m</td>
<td>49 l/min</td>
<td>18 KVA</td>
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<tr>
<td>Turning control unit</td>
<td>0.8m</td>
<td>0.6m</td>
<td>0.25m</td>
<td>None</td>
<td>2 KVA</td>
</tr>
</tbody>
</table>

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