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The Flexible And Reliable Radar Solution

C-BAND ACTIVE ARRAY RADAR (CBAAR)

Currently under development at DRS, the C-Band Active Array Radar (CBAAR) is a fixed (non-rotating), solid state radar, initially designed as a replacement for the legacy AN/SPN-43(V)1 and AN/SPS-67(V)1 radars aboard large deck amphibious and aircraft carrier platforms. The initial version of CBAAR will support air traffic control (ATC), surface surveillance and navigation missions but has the flexibility and scalability to support other applications.

Because CBAAR's antenna array design is scalable, it can be tailored to meet the needs of each platform and/or missions. CBAAR uses a common array element design which features a scalable mounting and cooling architecture, allowing for easy modifications in either the vertical or horizontal dimension to suit specific needs. CBAAR uses COTS (Commercial Off-The-Shelf) components combined with unique packaging techniques to minimize cost and risk.

The Transmit/Receive modules (TRM's) are major component of the active array. Mounted in a four-channel configuration, the array is designed with optimum cooling capabilities using advanced technologies in the sidewall and a water cooled manifold construction in the structure. This design allows for easy access to the TRM's for installation and serviceability.

Because CBAAR provides a distributed transmit power source rather than a centralized high-power transmitter, it eliminates a single point of potential failure, thus reducing maintenance frequency and increasing reliability. CBAAR also offers high reliability because it features fixed array faces eliminating rotary joints. The array has a graceful degradation in performance where the array can support its mission even with a number of TRM channel failures (approximately 15%).

The radar uses an open signal processing hardware and software architecture to conform to other US Navy programs. CBAAR can be tailored to provide limited coverage or tailored to provide complete coverage and potentially replace the need for multiple radars on a given platform. This leads to lower-cost radar solution with a considerable reduction in weight.

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