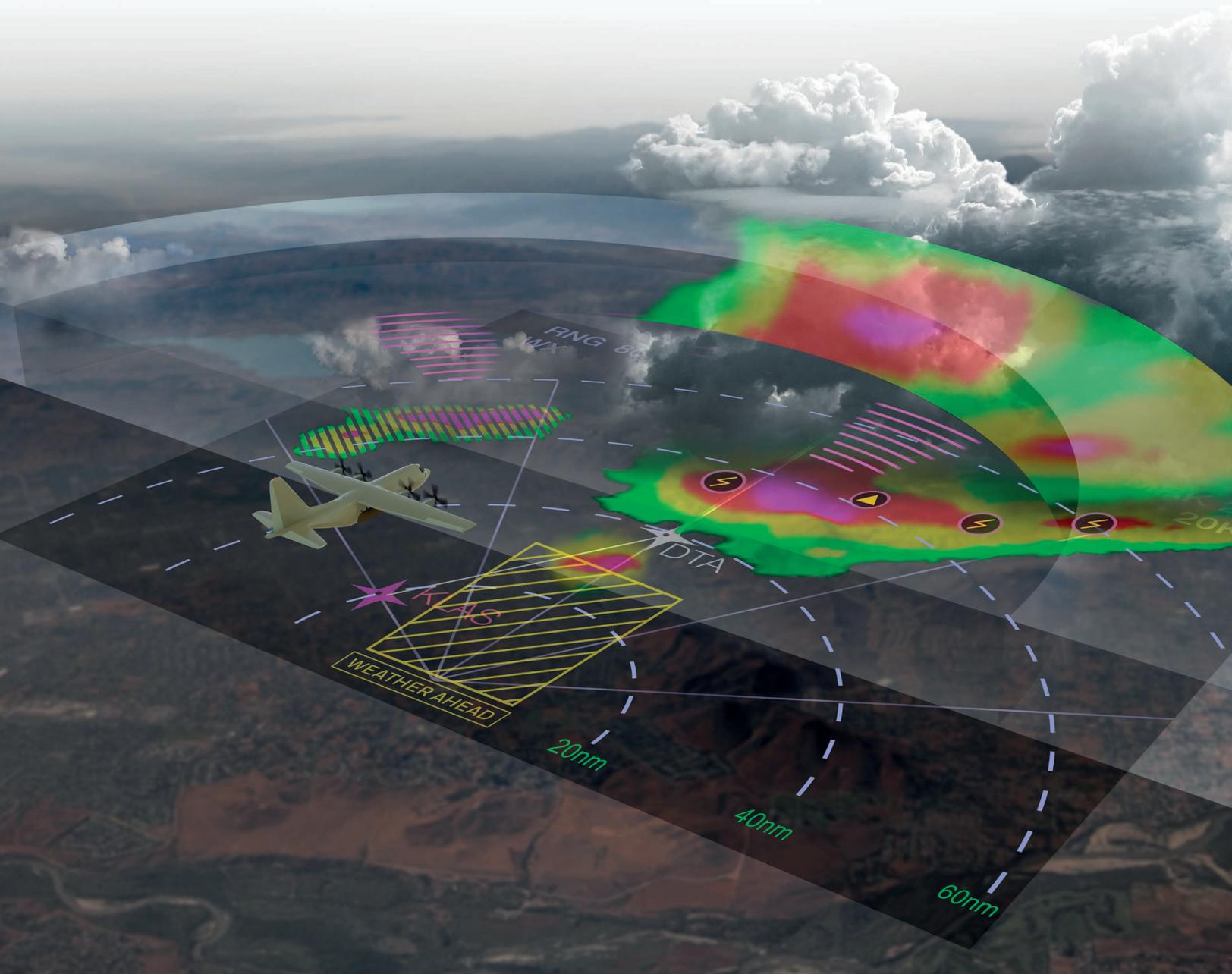


Honeywell

RDR-4000M 3D WEATHER RADAR SYSTEM

Extended high-resolution ground map mode



Extended high-resolution ground map mode

The RDR-4000M 3D weather radar system, Honeywell's industry leading weather radar technology, reduces system-installed weight by 65 percent over other existing military weather radars and is proven to increase system reliability by a factor of 5X over many existing weather radars – significantly reducing maintenance costs.

Utilizing the same patented 3D volumetric buffer that is used on thousands of large commercial aircraft, the RDR-4000M was designed specifically for military applications. This military version of the IntuVue™ RDR-4000 3D weather radar system features all the benefits of the commercial line of weather radars - advanced technologies, processing approaches and operational modes, along with added features specifically designed for military purposes - including High-Resolution Ground Mapping (HRGM), Doppler Beam Sharpened Precision Ground Mapping (PGM) and sectored skin paint modes.

Honeywell continues to evolve our advanced weather detection radars to offer you greater safety, increased efficiency and enhanced performance across your fleet.

Along with Automatic Weather detection and Predictive Windshear, recent enhancements include Precision Ground Mapping (PGM), Extended Turbulence Detection to 60nm, predictive lightning, predictive hail, and REACT (which identifies areas of beam attenuation).

The RDR-4000M is installed on the C-17 Globemaster, C-130 Hercules and a version of the RDR-4000M has been selected for the new Japan C-X transport. Customers select the RDR-4000M because it is one of the most cost-effective radar systems available. The RDR-4000M reliability has an unsurpassed system Mean Time Between Failure (MTBF) of 8000 hours which lowers maintenance and operational costs. Historically the highest failure rates are due to the mechanical drive and magnetron based transmitters. The RDR-4000M family of radars achieves high MTBF largely due to the direct drive, DC brushless mechanical drive with coaxial rotary joints, and a solid state transmitter design.

RDR-4000M 3D Weather Radar System uses 3D volumetric scanning and pulse compression technologies to provide a complete view of the weather from 0 to 60,000 feet across a 320 nm detection range.



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Advanced Technologies

Pulse compression technology allows the use of a low power solid state transmitter (35 Watts) while providing coherent transmissions allowing higher resolution weather and ground mapping capability. The design eliminates the need for aircraft waveguide runs with the transmitter receiver installed with the antenna, allowing the freedom to locate the processor anywhere in the aircraft.

Advanced Operational Modes

The RDR-4000M features automated weather detection. The automated features allow significant weather to be displayed without pilots having to make tilt adjustments, thereby reducing pilot workload and supporting pilot safety by expanding time for situational awareness PGM utilizes Doppler beam sharpening to provide full scan as well as zoom X2 and X4 modes to provide detailed imagery of runways, fence lines, buildings and other geographical features from 2.5nm all the way to 80nm. This mode can be used to support navigation correction in GPS deprived areas, as well as a novel suspend mode that allows motion compensation of the frozen image to allow accurate approaches in limited visual conditions.



Advanced Process Approaches

The RDR-4000M automatically collects a complete 3D volumetric scan of all weather and terrain 320 nautical miles (nm) ahead of the aircraft and up to 60,000 feet. Utilizing a global terrain database and advanced signal processing techniques the radar returns are analyzed to separate ground and weather returns providing a near clutter free display in weather and a full coverage ground map mode. This technique of scanning the entire storm from bottom to top enables the radar to accurately depict the most reflective part of the storm cell, and provide the necessary data to perform weather hazard analysis.

Provide pilots with the safest and most efficient flight routing, fuel savings, potential hail, lightning and structural damage reduction due to turbulence avoidance, the RDR-4000M 3D weather radar system enables passenger, crew and aircraft safety while providing military modes to support the mission.

KEY CAPABILITIES



AUTOMATED WEATHER AND GROUND MAP MODE FOR ENHANCED SITUATIONAL AWARENESS



PREDICTIVE WINDSHEAR



HIGH-RESOLUTION GROUND MAP (HGRM) FOR A MORE DETAILED PICTURE



PRECISION GROUND MAP (PGM) FOR NAVIGATION UPDATE



CORRECTION SKIN PAINT MODE FOR FORMATION AND REFUELING OPERATIONS



ADVANCED HAZARD FEATURES INCLUDING PREDICTIVE HAIL, PREDICTIVE LIGHTNING, EXTENDED RANGE TURBULENCE TO 60 NM AND RAIN ECHO ATTENUATION COMPENSATION TECHNIQUE (REACT)



NIGHT VISION GOGGLE (NVG) COMPATIBLE CONTROL PANEL



EMISSIONS CONTROL FOR SILENT RUNNING

Honeywell Aerospace

Honeywell is a leading global provider of integrated avionics, engines, wheels and brakes systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations.

For more information on Honeywell Aerospace, visit us online at aerospace.honeywell.com.

Global Network of Support Services

Honeywell's worldwide resources span the Americas, Europe, Middle East, Africa, Asia and the South Pacific to deliver dedicated 24/7 service support. As a world leader in aviation aftermarket services, our global repair centers, logistics network and field services engineering teams are able to quickly repair, supply, and warrant equipment whenever and wherever it is needed.

Find Out More

Please visit aerospace.honeywell.com/weatherradar

Honeywell Aerospace

1944 East Sky Harbor Circle
Phoenix, AZ 85034
aerospace.honeywell.com

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