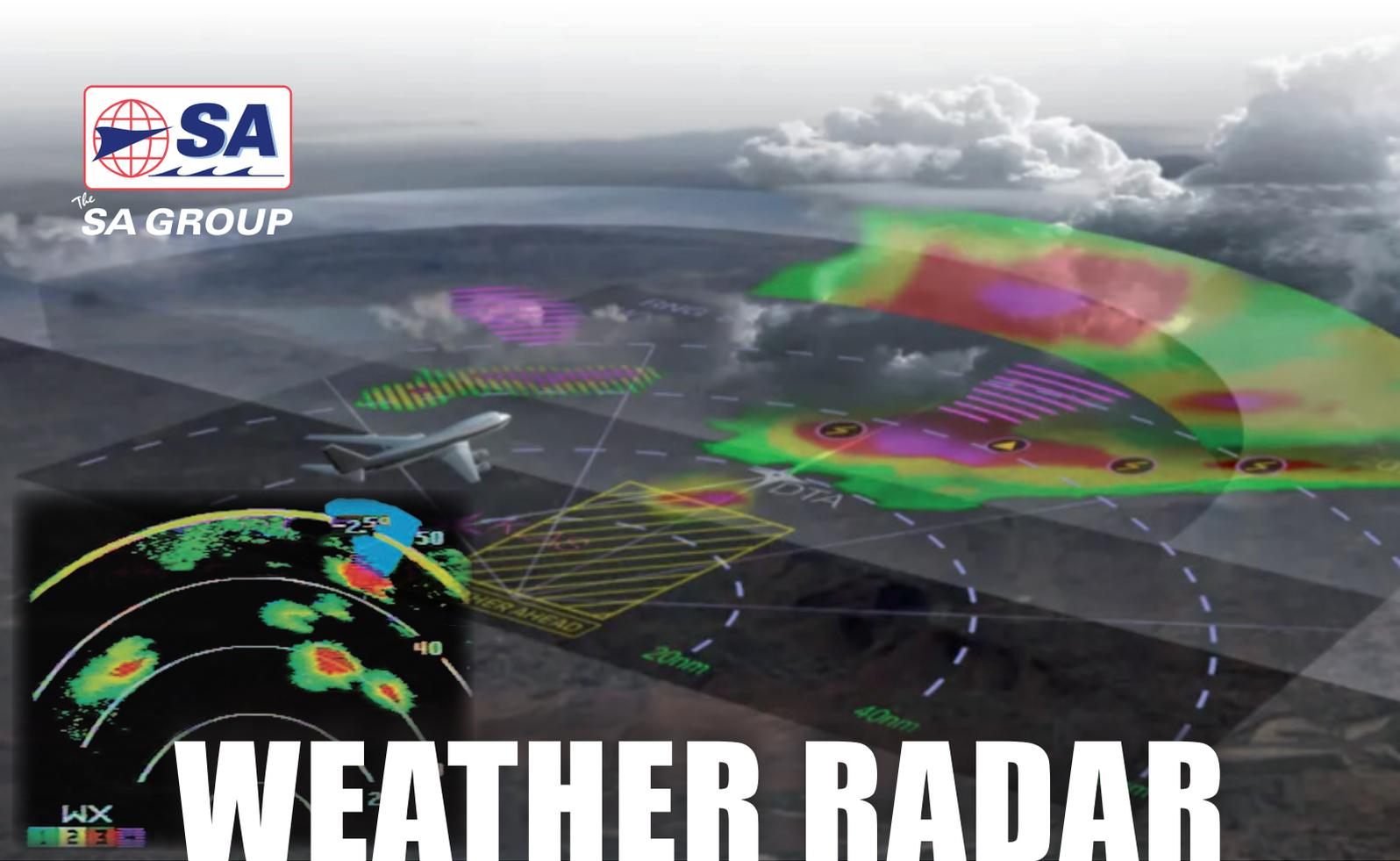




The SA GROUP



# WEATHER RADAR TRADE-IN

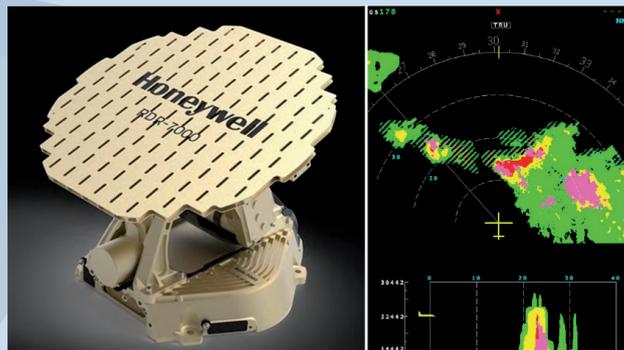
Honeywell

Primus 880/660/440/70X/70XA WXR

**OBSOLESCENCE**

Trade-In Program with

IntuVue RDR-7000 3-D Weather Radar



# HONEYWELL IS PLANNING TO END REPAIR SUPPORT OF PRIMUS 880/660/440/70X/70XA - BY MID 2023!

In 2019, Honeywell issued an end-of-life (EOL) notice, Publication Number D201909000028 for legacy magnetron-based Primus 864 Series weather radar product families and associated components, including the Primus 864 weather radar controllers. These notices included notification that repairs will no longer be supported after June 2023.

This decision was driven primarily by increasing material shortages associated with aging magnetron technology. If not pro-actively addressed, these issues were expected to significantly risk the continuity of supply and supportability for weather radars to our global customer base.

Also customers using the Honeywell Primus 70X/70XA/660 series weather radars are facing increasing repair costs, expired warranties and lack the latest weather hazard avoidance technologies.

Honeywell is expecting to sunset the P70X/70XA/660

series radar support in 2023 due to the aforementioned supportability issues.

In response to the increasing costs, lead times and unstable availability of parts and repairs associated with magnetron-based radars, Honeywell has invested heavily in the development of the next generation radar, the IntuVue RDR-7000 3-D Automatic Weather Radar system, which has now achieved multiple TSOs and STCs and is planned for many more over the coming months and years.

The RDR-7000 offers a step-change in technology over magnetron-based radars. It is solid-state and is based on the field-proven and widely deployed IntuVue RDR-4000 family, which was first introduced in 2005 and primarily serves Air Transport applications. Upgrading to RDR-7000 is Honeywell's primary long-term support plan for operators currently flying with legacy magnetron-based Primus radars.

## The Operational Problem: Legacy Radar Is Very Intensive to Use

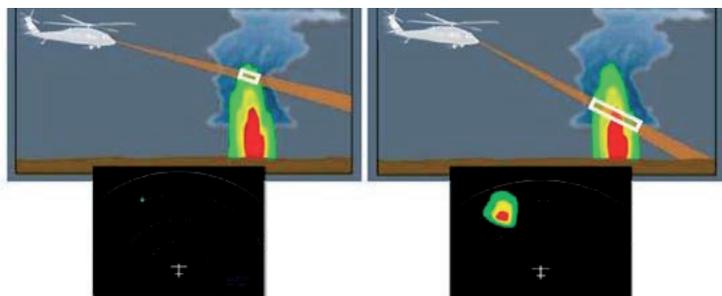


Figure 1. Limitations of Legacy 2D Radar Scans

For decades and still today, Honeywell has maintained a leading position as a supplier of weather radars to Business Jet, Helicopter, Military, and Air Transportation customers all around the globe. The IntuVue RDR-7000 is Honeywell's new flagship weather radar designed to replace all remaining magnetron-based radars still in production by Honeywell.

In addition to installation on commercial and military helicopter platforms, the IntuVue RDR-7000 is planned for numerous business jet and regional fixed-wing platforms, which will give this product a very large installed base. Honeywell expects the IntuVue RDR-7000 to be in

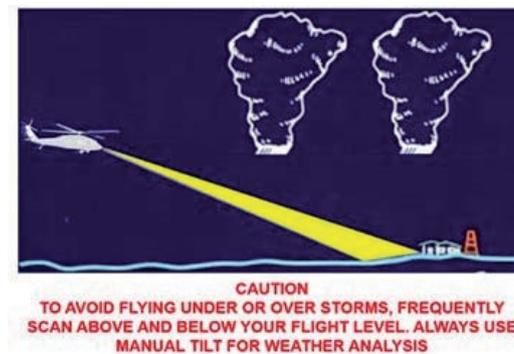


Figure 2. Legacy Radar Underflight Risk

production through at least 2045 and supported out to 2060 or longer.

Using the "Retro Mode", also named the "Real Beam Weather" configuration, the RDR-7000 is a near drop-in replacement for the Honeywell Primus 864 radars. No additional external inputs are required. Real-Beam modes are traditional radar modes where the tilt knob controls the antenna position. However, it does not work with the P660 WX Controller, it would need to be replaced with a P880 series WX controller. There are **no** software enhancement features in Real-Beam mode. However, it will resolve the obsolescence and provide a long-term solution.

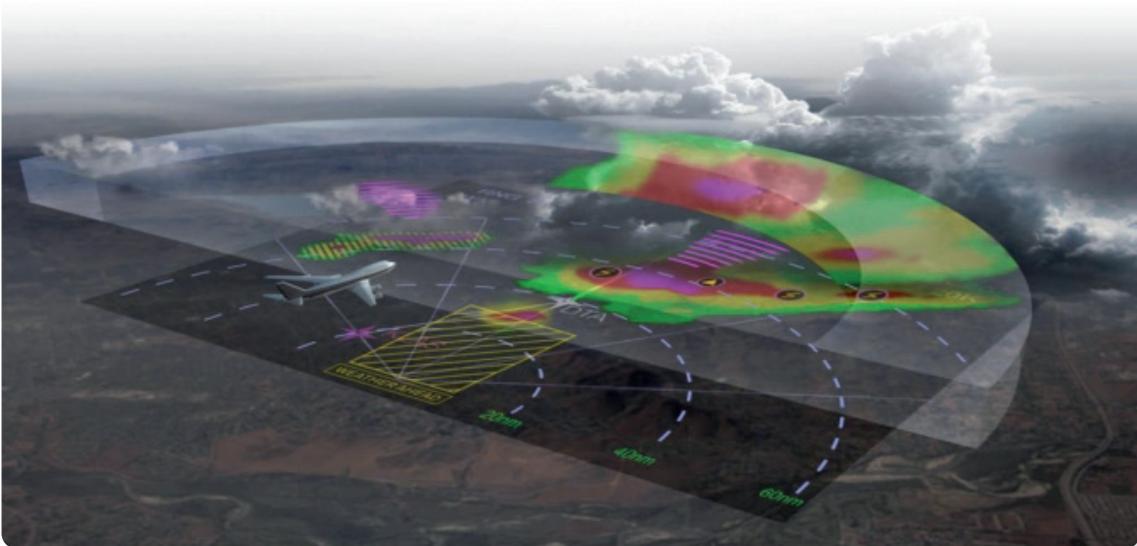
# INTRODUCING THE IntuVue RDR-7000 3-D SCAN

Upon its release in 2006, Honeywell's IntuVue RDR-4000 set a new standard for weather radars, providing fully automated 3-D volumetric weather at a glance. IntuVue's volumetric 3-D scanning and ground return elimination provide pilots a more complete view of the weather – a leap in technology over all other airborne weather radar systems.

Honeywell's IntuVue RDR-7000 is a state-of-the-art Solid-State Radar; it differs from previous generation weather radars in the magnetron elimination (a marginally reliable and technologically obsolete high-powered vacuum tube that works as a self-excited microwave oscillator) as well as the waveguide assembly. Additionally,

the RDR-7000's antenna drive assembly was designed to enhance operational reliability and uses a direct drive, DC brushless mechanical drive with coaxial rotary joints, this is a technological leap over legacy geared mechanical drive systems.

With the introduction of the RDR-7000 and its small size and lower weight, Honeywell can offer all the latest technology and benefits that large commercial and top-end business jets have been taking advantage of for the last few years with the RDR-4000, to older and/or smaller aircraft as a retrofit solution with only minimal wiring changes and a modification of the legacy weather radar controller faceplate(s).



The RDR-7000 scans all the weather in front of the aircraft out to 320NM and from the surface to 60,000 feet, filling a 3-dimensional buffer. The buffer is continuously updated and even maintains weather information that shows the

weather as it passes behind the aircraft. The RDR-7000 continuously applies hazardous weather algorithms to identify, locate and classify hazardous weather, thereby performing all the analysis and manual tasks for the crew.

## RDR-7000 EQUIPMENT DESCRIPTION

The Antenna Receiver Transmitter (ART-7000) is the main unit in the RDR-7000 system. It contains the electronics that transmit, receive, and process the radar pulses used to detect turbulence, windshear, weather, and terrain targets. It also contains system integrity monitoring and self-test electronics. It controls the modes of the radar and formats the radar data for display.

The ART-7000 is located within the radome. The integrated antenna drive scans a 120° sector in azimuth and  $\pm 15^\circ$  in elevation (tilt).

The RDR-7000 can be used with many varieties of controllers, control panels, and displays. Although the location and appearance of the controls may vary, the functionality is the same. The RDR-7000 has the ability to show two different radar display views simultaneously. The flight crew can operate each side independently without impacting radar performance, thus achieving maximum weather information display.



# BENEFITS OF IntuVue RDR-7000

## OPERATIONAL BENEFITS

- Automatic weather detection modes
- 3-D Volumetric Scan Buffer
- Integral terrain database for ground clutter elimination
- Extended ground map mode
- Enhanced Turbulence detection
- Hail & lightning detection
- Improved hazardous weather and turbulence prediction
- Improved windshear prediction (Phase 2 addition)
- Nearly “drop-in” replacement to current installed unit
- On-Path/Off-Path weather with hazard symbology

## REDUCED LIFE CYCLE COSTS

- Reduced size, weight & power (over comparable radar) – 1 LRU package
- Elimination of magnetrons with use of solid-state gallium arsenide transmitter
- Digital radio techniques eliminate tuning points providing improved repeatability, reliability and lower drift
- Elimination of gears in the antenna drive system
- On-board high-speed Ethernet software data loading
- Enhanced BITE and fault logging by flight leg
- Removable compact flash memory for software loading
- Greatly increased reliability
- No forced air cooling required

## PERFORMANCE BENEFITS

- Minimize pilot manipulation/interaction
- Increased range performance and higher resolution with Honeywell’s patented pulse compression technology
- Solid state gallium arsenide transmitter providing direct amplification
- Improved windshear performance – including significant reduction in false alerts
- Improved turbulence detection
- Direct drive antenna provides greater pointing accuracy

## IMPROVEMENT IN NUMBERS

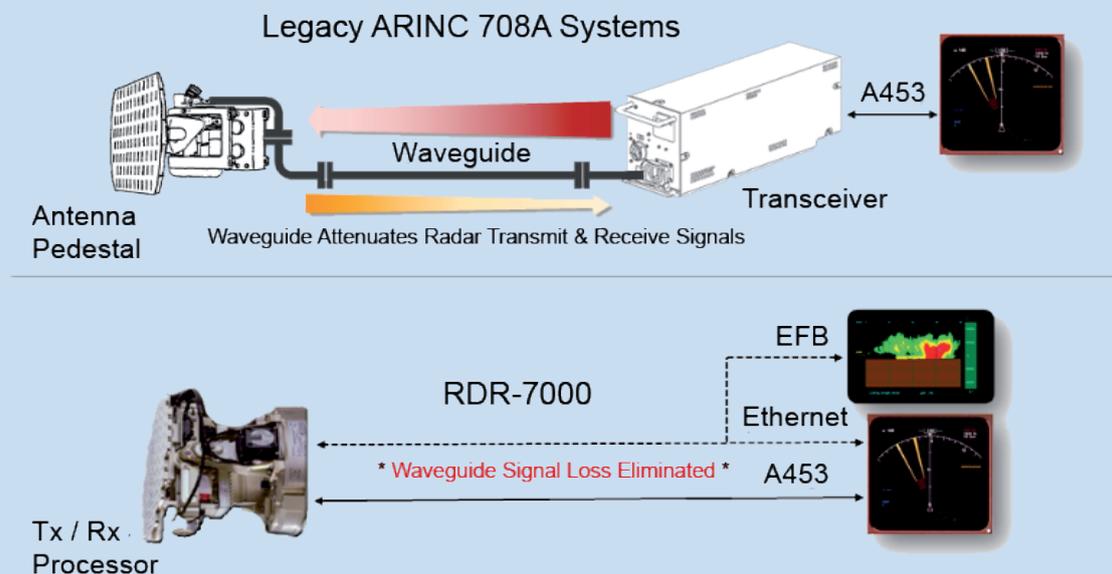
- Reduce Hail and Lightning related incidents by enabling a 26% improvement in weather avoidance decision- making – maximizing passenger comfort and safety, while minimizing fuel consumption
- Reduce turbulence-related incidents by over 45%
- System reliability increased by 50%
- Maintenance costs reduced by 30%
- Minimum modifications to current systems (minor wiring and radar controller face plate changes)
- Weight reduced by ~10%

## WAVEGUIDE ELIMINATION

The figure shows the comparison of the legacy systems to the RDR-7000, highlighting elimination of the waveguide, thereby simplifying installation and improving performance.

## NEAR PLUG AND PLAY RETROFIT

The RDR-7000 has less LRUs than previous generation weather radars. Available installation kits are designed to permit near plug and play capability for legacy Honeywell Primus Weather Radars. The bolt patterns mirror the P660. An adapter plate will be developed if required for 70X/70XA (depending on platform).



# AVAILABLE STC'S

STCs are already available for a number of aircraft, as listed below and more will follow, as Scandinavian Avionics are also planning to further add to this list by developing additional STCs.

Please don't hesitate to reach out for your specific aircraft requirement.

- Global Express
- Global XRS
- Global 5000 Classic
- Challenger 600/601
- Lear 40/45
- Falcon 900C
- Falcon 900EX
- Falcon 900EX
- Falcon 900A/B
- Hawker 800XP (Hon C/P)
- 750 Citation X
- 550 Citation Bravo
- 560 Citation Ultra
- 680 Citation Sovereign
- 650 Citation Series
- EMBRAER 135/145 (L600/650)
- AW139 (Short nose, P701)
- AW139 (Short nose, P660)
- AW139 (Long nose, P701)
- AW139 (Long nose, P660)



## TRADE-IN CREDIT PROGRAM

As an incentive to upgrade to the latest in radar technology, Honeywell and Scandinavian Avionics are offering aircraft operators, a trade-in credit for purchase orders received and shipped by December 31, 2022.

Honeywell & Scandinavian Avionics are offering multiple significant promotional incentives to operators who upgrade now, in order to ease the transition to the IntuVue RDR-7000 system and maintain the path to a long-term support plan.

These incentives include a trade-in credit, as well as an MSP-Avionics discount.

The program is currently planned to be available throughout 2022, but will be re-evaluated periodically and are subject to change at any time. Additional rebates may be available for operators who upgrade early, so don't wait to contact Scandinavian Avionics and secure your IntuVue RDR-7000 upgrade today!

In addition to the subject Primus models, a trade-in credit or rebate may be available for other non-Honeywell radars.

### Maintenance Service Plan (MSP) Avionics Program

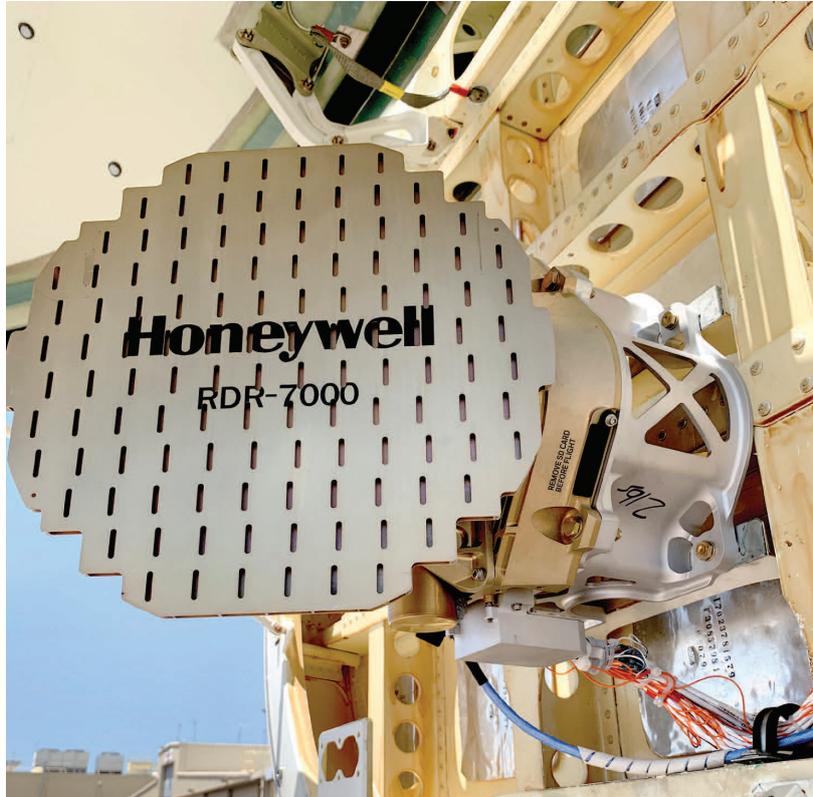
MSP – Avionics (formerly HAPP) is a maintenance service plan that offers coverage for your Honeywell Avionics. Choose the plan that best meets your needs. Specially priced plans are also available for fleet operators. Take the uncertainty out of repair and maintenance costs. A fixed-price MSP - Avionics contract guarantees that your repair bills will not exceed your budget.

For more information about MSP - Avionics, please contact: [SA@scanav.com](mailto:SA@scanav.com)

# RDR-7000 PRODUCT OVERVIEW

For related brochures, documents and videos, please refer to the following Honeywell Aerospace portal web page for RDR-7000 Product Overview:

<https://aerospace.honeywell.com/us/en/learn/products/weather-radar/rdr-7000>



**Training material is available on the Honeywell Pilot Gateway site (You must register):**

<https://pilots.honeywell.com/#/myac/>

**Look for RDR-7000 Section:**

<https://pilots.honeywell.com/#/myac/aircraft/%7BEED5F812-5482-42B3-AF8F-C1D3A367854C%7D/%7BA7FA2D41-6854-4F55-B4B6-91DEC3817ECF%7D>true/>

**Or go to YouTube.com for key videos:**

**RDR-7000 Product Video:**

<https://www.youtube.com/watch?v=arRj6DMI0XU&t=76s>

**RDR-7000 3D Volumetric Buffer and how it works:**

<https://www.youtube.com/watch?v=ciN7lg9KjXQ>

**RDR-7000 Constant Altitude Slices:**

[https://www.youtube.com/watch?v=XtDtqqW8\\_zg](https://www.youtube.com/watch?v=XtDtqqW8_zg)

## THE SA GROUP

Scandinavian Avionics (SA) provides complete turn-key solutions within avionics, electronics, training and interiors, for the international aviation and defense community. Including sales, avionics maintenance (MRO), certification (STC), design & engineering, installation, product development, production, training and consultancy services.

The SA Group is represented in 9 countries, on 14 locations in Europe, the Middle East, India and Southeast Asia. The headquarters, which was established in 1978, is located in Billund, Denmark.

### APPROVALS

EASA Part-145 | EASA Part-21J | EASA Part-21G | EASA Part-147  
FAA Part-145 | TCCA Part-145 | BCAA Part-145 | GAR Part-145 | DOT RIN N083



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