



3-D WEATHER HAZARD AND  
AVOIDANCE SYSTEM

**More accurate weather detection  
at longer ranges**

Technology and automation revolutionizes weather detection for the most safe, efficient, comfortable and on-time flights possible.



## Advanced flight safety that improves we



Visibility of weather conditions is a critical factor for efficient, reliable, and safe aircraft operations. Weather related delays and cancellations cost billions of dollars each year. Turbulence related incidents cost airlines on average \$150,000 per incident.

For more than 80 years, Honeywell has pioneered flight safety system development and our innovations continue with the IntuVue weather radar family. The RDR-4000 is the first member of this new radar family. As the first totally new design in onboard weather radar for commercial aircraft in 40 years, IntuVue improves strategic rerouting and tactical maneuvering using state-of-the-art technologies that allow pilots to find the most efficient route for improved fuel efficiency and passenger safety.

### Enhanced Awareness

The IntuVue weather radar uses 3-D 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.

IntuVue's weather analysis tools help pilots better

understand weather hazards and calculate the best strategic and tactical responses. The unique display capability combines both weather and terrain data to provide a more intuitive horizontal and virtual view of upcoming weather dynamics – reducing or eliminating unnecessary route deviations. Pilots can select individual slices of the



Photo courtesy of Airbus

airspace; including specific range, azimuth or altitude displays, to make more informed routing and maneuvering decisions. These features have demonstrated a 26% improvement in weather hazard detection over conventional radar systems.

### Simplified Operation

Designed to be fully automatic, IntuVue does not require manual adjustments to the system or antenna for operation. To reduce pilot workload, general weather detection is based upon the flight path data with constant updates of the latest hazard assessments provided on the display screen. The system also improves cockpit efficiency by virtually eliminating ground clutter via an internal terrain database. IntuVue also automatically corrects for the earth's curvature, to ensure the clearest, most accurate view of the weather ahead.

### Advanced Hazard Detection

As the first system certified to the FAA's Minimum Operational Performance Standard (MOPS) for enhanced turbulence detection, pilots will be better informed of air turbulence and have the ability to make safer, more informed route decisions. With an extended range of 60 nm available with the V1.0 Hazard Display Update, this advanced protection has demonstrated a more than 45% reduction in turbulence related incidents – enhancing safety and passenger comfort and reducing costs related to damages. IntuVue also provides inherent over-flight protection with an aggressive down-tilt and 3-D scanning process. Hazardous cells below the



# Weather avoidance decision making

aircraft flight level are identified earlier and displayed longer than traditional radar systems, increasing passenger safety.

IntuVue is the first radar to offer predictive hail, lightning and windshear detection and alerting for aircraft with smaller antennas and it reduces hazardous weather false alarms by 15% which leads to more effective rerouting decisions. The V1.0 Hazard Display Update also offers our renowned REACT (Rain Echo Attenuation Compensation Technique) capability to indicate areas affected by radar attenuation.

## Cost-Effective Design

Using only 3 MCUs, our highly compact radar system provides up to a 30% weight reduction, allowing enough space for dual system installation in less space than a current A708 standard system. This weight and space reduction can provide as much as \$10,000 per year per aircraft fuel savings and allows for the additional avionics space to be allocated for other equipment needs.

IntuVue reduces maintenance costs by eliminating waveguide runs and switches. This advanced

design feature also improves overall radar performance and system sensitivity by reducing RF signal loss to and from the antenna.

With improved diagnostics, the system requires less repair time and labor, which can result in over a 30% reduction in maintenance costs, with lower spares provisioning required. Additionally, our advanced radar processor and antenna drive components increases system reliability, which can directly decrease operating expenses by at least 30%.

IntuVue is available on the B777, B737NG, A320, A330 and A340 as SSFE/BFE equipment. It is also part of the integrated surveillance system—the Aircraft Environmental Surveillance System (AESS)—standard equipment on board the Airbus A380 and selected for the A350. Other certifications are pending.

The IntuVue family of advanced weather radars offer you increased efficiency, greater safety, and enhanced performance across your fleet. Future enhancements will include more intuitive displays, extended turbulence detection and other advanced features.

## Key Benefits

- Improves strategic maneuvering for rerouting sooner due to weather
- Reduces risk of encountering hazardous weather by providing predictive warnings for hail, lightning and windshear
- Reduces delays, turn backs and diversions
- Minimizes turbulence costs by reducing injuries, aircraft inspections and passenger concerns
- Lowers cost of operations by more than 35% through increased reliability
- Reduces maintenance costs by more than 30%
- Decreases system weight by up to 30%, yielding a \$10,000 per year per aircraft savings

All estimates on performance, operational benefits and cost savings provided within this document are based on Honeywell data.



## 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 [www.honeywell.com/airlines](http://www.honeywell.com/airlines)

## 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.

## To Find Out More

To find out more about Honeywell's IntuVue, please visit us at [www.honeywell.com/intuvue](http://www.honeywell.com/intuvue)

## Honeywell Aerospace

Honeywell  
1944 East Sky Harbor Circle  
Phoenix, AZ 85034  
International: 1.602.365.3099  
U.S. Toll Free: 1.800.601.3099  
[www.honeywell.com](http://www.honeywell.com)

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