

Honeywell's Runway Awareness and Advisory System (RAAS) presents a viable safety solution that improves pilot situational awareness, minimizing the risk of runway incursions and reducing operational costs.



# Enhanced Aircraft Situational Awareness



A leading cause of aviation fatalities, runway incursions account for approximately \$1 billion annually in aircraft damages. To help prevent such losses, close calls and collisions, the industry requested a safety system that helps maintain situational awareness during taxiing and preparing for takeoff and landing. Because the loss of positional awareness is a causal factor in 44 percent of runway incursions, Honeywell has developed an easy-to-install heads-up advisory system to help the crew maintain awareness during ground and air operations relative to the runway.

As the only safety system of its kind, RAAS is an optional software upgrade for business aircraft fitted with Honeywell Mark V and VII EGPWS units. This quick, cost-effective upgrade activates features in existing EGPWS computers starting with 218-218 software (and units that can be upgraded to it). RAAS provides extra protection against runway incursions and accidents without downtime and expensive changes to the flight deck.

## System Operation

RAAS uses aircraft inputs within the EGPWS such as GPS position, heading, groundspeed and a runway database to generate 10 aural advisories. There are more than 1,700 airport runways in the database and additional runways can be added upon customer request. The extensive database helps to keep pilots informed, especially in highly congested or unfamiliar airports with complex operating environments.

When warranted, RAAS will use voice advisories to make pilots aware of vital runway information, allowing them to avoid a wide range of potential ground-based

incursions. The logic algorithms then determine the appropriate advisory sequence and timing, adjusting advisory distances based upon aircraft groundspeed to maximize and enhance crew reaction time.

## Aircraft Advisories

The system offers five routine voice advisories with an additional five non-routine call-outs for special circumstances. The limited number of advisories reduces cockpit chatter and permits the pilot to quickly react to specific situations without needing to monitor additional screens or flight deck hardware. Customers evaluate and select the advisories and audio levels appropriate to their operation. There is a menu of selectable audio volumes. All advisories are delivered calmly over the aircraft's audio system (speakers or headphones) in the operator's preference of a male or female voice announced in either feet or meters. Additionally, an optional RAAS inhibit switch is available to silence advisory messages during operation.



# Enhanced Runway Safety

## Routine Advisories

Aural messages the flight crew will always hear

### Approaching Runway – On Ground

"Approaching one-six right"



### On Runway – On Ground

"On runway three-four left"



## Optional Routine Advisories

Aural messages the flight crew will always hear, if enabled

### Approaching – In Air

"Approaching three-four left"



### Distance Remaining – Landing and Roll-Out

"4,000 remaining, 3,000 remaining, 2,000 remaining, 1,000 remaining, 500 remaining"



### Runway End Advisory Callout

"100 remaining"



## Optional Non-Routine Advisories

If enabled, aural messages the flight crew will seldom or perhaps never hear

### Extended Holding On Runway

"On runway three-four left, on runway three-four left"



### Taxiway Takeoff

"On taxiway! On taxiway!"



### Intersection Departure – Insufficient Runway

"On runway three-four left, 2,000 remaining"



### Approaching Short Runway – In Air

"Approaching three-four left, 3,000 available"



### Rejected Takeoff

"4,000 remaining, 3,000 remaining, 2,000 remaining, 1,000 remaining, 500 remaining"



Select only those advisories appropriate to your operational needs.

## Key RAAS Benefits

- Practical and affordable safety solution
- Simple EGPWS software upgrade for Mark V and Mark VII systems
- Navigate unfamiliar airports with ease
- Rich airport runway environment database
- Reduced pilot workload
- Heads-up voice advisories
- Advisories can be customized to match aircraft and operating environment

## Why Honeywell?

- 30 years of avionics system experience
- An industry leader in safety system integration
- Broadest range of avionics products and services
- Proven designs with high reliability
- Global service and support network (24/7/365)