

**RCD Selection Guide for the
EGPWS Runway Advisory and Awareness System (RAAS)**

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1 Scope

1.1 Identification

This document identifies the set of functions available in the Honeywell Enhanced Ground Proximity Warning System (EGPWS) Runway Awareness and Advisory System (RAAS). For each function, guidance is provided for selecting configuration settings stored in the Reloadable Customer Definitions (RCD) database. This is not a requirement document and serves only as a guide to fill out the Reloadable Customer Definition (RCD) worksheet.

The original RAAS consisted of a set of functions first introduced in software version MK V / MK VII (-218-218/-051/-002) and are referred to as “basic” functions in this document.

Additional functions were introduced in software version MK V / MK VII (-230-230/-054/-004) and are referred to as “extended” functions in this document. Extended functions include, SAM (Stabilized Approach Monitor), LL Mon (Long Landing Monitor), CAM (Corrected Altimeter Monitor), and Takeoff Flaps Monitor.

Software versions MK V / MK VII (-236-236/-057/-006 or later) and MKV-A (-x01/-x51 or later) include support for RAAS Not Available/INOP, changes to Self Test level 1, and the option to inhibit CAM.

The extended version of RAAS is also known by its marketing name, SmartRunway® and SmartLanding® (SR/SL). However, it should be noted that the term “RAAS” will continue to be used on the flight deck, and in the Pilot’s Guide regardless of the function set available in the installed system.

RAAS support is provided in MK V and MK VII hardware platforms and the new MKV-A platform. MKV-A software version (-x01/-x51) contains the same functionality as MK V software version (-236-236/-057/-006).

1.2 RAAS Parameter Selection Process

For the RAAS parameter selection process, there are two aspects:

1. Certification of approved ranges and options.
2. Operator selection of parameters.

Guidance is provided below for each of these scenarios.

1.2.1 Certification of RAAS Parameters

Honeywell recommends that an STC Applicant use a methodology that tests and certifies a wide range of possible RCD values during a First-of-Type (FOT) certification. Honeywell recommends that the STC Applicant creates an Approved RCD Settings document to guide the operator when making their RCD selections.

For example, instead of certifying a single volume for an alert, a maximum volume and a minimum volume are certified, instead of certifying a specific runway hold time the full range of possible runway hold times is certified. In addition, all possible functions for a specific aircraft type are certified in the ON and OFF states. This approach allows the Operator to select a new volume within the certified range or any available runway hold time or to turn ON/OFF a RAAS function with minimal risk of additional certification testing.

1.2.2 Operator Selection of RAAS Parameters

The operator will typically work with Honeywell to develop an initial RCD for evaluation in their simulator or even for use in operations. The operator would initiate this by completing an RCD Worksheet and submitting to Honeywell for processing.

Honeywell as the Manufacturer remains responsible for building the RCD and returning the RCD media, either PCMCIA card for MK V / MK VII or Universal Serial Bus (USB) flash drive for MKV-A, to the operator.

Should the Operator decide to modify one of the certified RCD parameters (e.g. adjust a volume or turn ON/OFF a RAAS function), they (with the assistance of the STC Applicant as necessary) would complete a new RCD Worksheet using this RCD Selection Guide.

Note that this RCD Selection Guide must be used in conjunction with the Approved RCD Settings document (or similar STC document) to ensure the new parameter value conforms to the certified parameter set. See the following section for a description of necessary documents for this activity.

2 Reference Documents

Document Number, use latest revision	Document Title
060-4199-180	Enhanced Ground Proximity Warning System Line Maintenance Manual
060-4188-230 (Note 1)	Test Procedure for Adjustable Volume Settings of RCD Functions in the EGPWS
060-4564-001	Product Description SmartRunway® / SmartLanding® Functions of the Enhanced Ground Proximity Warning System.
993-0976-401	Interface Control Document for the Mark V Enhanced Ground Proximity Warning System (MKV EGPWS)
993-1076-401	Interface Control Document (ICD) for the Mark VII Enhanced Ground Proximity Warning System (MK VII EGPWS)
PDS69000940-201	Line Maintenance Manual for the MKV-A Enhanced Ground Proximity Warning System (EGPWS)
SYS69000940-700	Interface Control Document for the MKV-A EGPWS
CRI / <Aircraft Type Specific Identifier>	EASA Certification Review Item - Honeywell Runway Awareness and Advisory System (including extended functionality in software 230-230 and later)

Note 1: This document will be released in the future and is not published at RCD Selection Guide release time and merely provided here as this is cited elsewhere in this document.

3 How to Use This RCD Selection Guidance

Document Layout:

Section 4 of this document contains a table of RAAS functions and other required RCD parameters. Each function and parameter listed in the table references a corresponding paragraph in section 5 that provides guidance for completing the corresponding entry in the RCD Worksheet.

From the paragraph in section 5, the Operator will choose a value from the options listed based on:

1. Guidance provided in the Section 5 paragraph
2. Conformance to the Approved RCD Settings
3. Operator specific operating procedures applicable to the Operator's aircraft type for the route network the type operates on.

RCD Parameter Types:

RCD parameter options are one of three types:

- a. *Ranges*: Volume ranges whereby a maximum and minimum volume is certified allowing any volume within the range to be selected with a minimum risk of subsequent retest. A volume setting can be specified for each RAAS alert.
- b. *Discrete Values*: A set of discrete values whereby each value is certified allowing any value within the set to be selected with a minimum risk of subsequent retest. For example, six runway hold times may be certified from which the Operator will select the most appropriate hold time.
- c. *Distances*: A value that is selected and certified to meet the intended function allowing the Operator to select an optimal value for their operating procedures with a minimum risk of subsequent retest. For example, the Operator may choose an alert trigger value for the Short Runway function that most closely matches the runways used in the Operator's route structure.

Completing the RCD Worksheet:

Once a specific parameter value is determined, the Operator will complete the corresponding section of the RCD Worksheet located in Appendix A of this document. Note that for many of the parameter selections, there is space provided for the Operator to provide additional comments that may be helpful to Honeywell in understanding the selection methodology.

Notes: Although Honeywell reviews RCD Worksheet selections prior to building the RCD, responsibility for the correctness of the parameter selections remains with the operator. STC related approved RCD settings assist Honeywell with this review and may contribute to finding errors early in the process.

Each function listed in Section 5 is annotated with a reference to a section in Honeywell document 060-4564-001, "Product Description SmartRunway® and SmartLanding® Functions of the Enhanced Ground Proximity Warning System".

These references allow the Operator to easily locate a more detailed description of the function.

Submitting the RCD Worksheet:

Once the Operator has specified the desired RCD parameter selections in the RCD Worksheet, they will submit the worksheet to Honeywell for review and processing. Honeywell is responsible for creating the RCD as specified in the final approved RCD Worksheet, loading it on the physical media (PCMCIA card or USB flash drive), and returning it to the Operator.

The Operator can submit the worksheet for review to Honeywell, via email DLEGPWSRAAS-SMART-X@honeywell.com.

EGPWS Part Number Standards

Throughout this document, MK V and MK VII software version numbers are of the form, -XXX-YYY; where -XXX represents the Application SW version number and -YYY represents the Configuration SW version number. Note that in nearly all instances, these two version numbers will be identical.

The standard EGPWS MK V P/N 965-0976-0XX appends the SW version number to the end. For example, an EGPWS MK V P/N may be 965-0976-040-236-236. Similarly, the standard EGPWS MK VII P/N 965-1076-0XX may be 965-1076-040-236-236.

In order to simplify the EGPWS P/N for Airbus and Boeing aircraft, each EGPWS MK V P/N maps to a unique 10-digit Airbus or Boeing P/N (see Table 3-1, below). For a detailed discussion of EGPWS P/Ns, see Section 1.0 of the EGPWS MK V or MK VII ICD noted in Section 2 Reference Documents.

Table 3-1 - EGPWS Part Number Standard

Standard P/N	Airbus P/N	Boeing P/N
965-0976-0XX-218-218	965-1676-002	965-1690-051
965-0976-0XX-230-230	965-1676-004	965-1690-054
965-0976-0XX-236-236	965-1676-006	965-1690-057

The MKV-A will have part numbers in the form of 69000940-XYX, 69000941-XYX and 69000942-XYX where X is the HW version and YY is the SW version. For example, 69000941-101 is a 28VDC MKV-A EGPWC with hardware version 1 and software version 01. See Table 3-2 below.

Table 3-2 – MKV-A EGPWS Part Number Standard

MKV-A Standard P/N	Characteristics
69000940-XYX	115 VAC
69000941-XYX	28 VDC
69000942-XYX	Airbus 115 VAC

3.1 Compliance with Regulatory Agency Requirements

If your regulatory agency has supplied specific regulatory instructions such as EASA Certification Review Item (CRI), then these instructions may force some mandatory selections in the worksheet. Operators should share any such regulatory instructions with Honeywell to ensure the RCD meets regulatory requirements.

It is imperative that the operator understand which RAAS functions are being activated and the associated regulatory requirements. See Table 4-1 – RAAS Function Selections and Descriptions, below.

4 Function Selections and Descriptions Summary

Table 4-1 – RAAS Function Selections and Descriptions provides a list of RCD selections and descriptions for RAAS.

Table 4-1 – RAAS Function Selections and Descriptions

Function (Product Description Reference paragraph)	Monitor	Routine / Non-Routine	Advisory / Caution	Section Reference
Enable Visual Messages <i>(All, Cautions-only, Non-Routines and Cautions, None)</i>	-	-	-	5.1
RAAS Enable Method <i>(RCD Master Key / Enable Key Card)</i>	-	-	-	5.1
RAAS Program Pin Enable <i>(No / Yes)</i>	-	-	-	5.1
Use GPWS Caution Annunciator for RAAS? <i>(No / Yes)</i>	-	-	-	5.1
RAAS Inhibit/Enable Switch Configuration <i>(Option 1 / Option 2 / Option 3 / Option 4)</i>	-	-	-	5.1
Cockpit RAAS INOP Annunciator <i>(None / Use GPWS INOP / Yes)</i>	-	-	-	5.1
Select Voice Gender <i>(Male / Female)</i>	-	-	-	5.1
Select Annunciation of Unit of Measure <i>(Off / First)</i>	-	-	-	5.1
Distance Unit of Measure <i>(Feet / Meters)</i>	-	-	-	5.1
Select Advisory Suppress Window <i>(450-550ft / 350-450ft)</i>	-	-	-	5.1
GPS Antenna Location <i>(To nearest 5 feet)</i>	-	-	-	5.1
Approaching Runway In Air (4.2.1) <i>(Off / On)</i>	RAAS	Routine	Advisory	5.2.1
Approaching Runway On Ground (4.2.2) <i>(Off / On)</i>	RAAS	Routine	Advisory	5.2.2
On Runway On Ground (4.2.3) <i>(Off / On)</i>	RAAS	Routine	Advisory	5.2.3
Distance Remaining, Landing and Roll-out (4.2.4) <i>(Off / 50% of Runway)</i> <i>(1000, 2000, 3000, 4000, 5000 feet)</i>	RAAS	Routine	Advisory	5.2.4
Runway End (4.2.5) <i>(Off / On)</i>	RAAS	Routine	Advisory	5.2.5

Function (Product Description Reference paragraph)	Monitor	Routine / Non-Routine	Advisory / Caution	Section Reference
Approaching Short Runway In Air (4.3.1) <i>(Off, On, Always*)</i> - <i>If On, then enter nominal runway length</i> - <i>If Always, then enter maximum length of 9,999 feet</i> * <i>Selecting Always makes this a Routine advisory</i>	RAAS	Non-Routine	Advisory	5.3.1
Caution Approaching Short Runway In Air (4.3.2) <i>(Off, On - If On then enter nominal runway length)</i>	RAAS	Non-Routine	Caution	5.3.2
Insufficient Runway On Ground (4.3.3) <i>(Off, On, Always*)</i> - <i>If On, then enter nominal runway length</i> - <i>If Always, then enter maximum length of 99,999 feet</i> * <i>Selecting Always makes this a Routine advisory</i>	RAAS	Non-Routine	Advisory	5.3.3
Caution Insufficient Runway On Ground (4.3.4) <i>(Off, On - If On then enter nominal runway length)</i>	RAAS	Non-Routine	Caution	5.3.4
Extended Holding On Runway (Initial & Repeat) (4.3.5) <i>(Time in seconds for Initial & for Repeat)</i>	RAAS	Non-Routine	Advisory	5.3.5
Taxiway Takeoff (Advisory) (4.3.6) or, Taxiway Takeoff (Caution) (4.3.6) <i>(Off, On (Advisory), On (Caution))</i>	RAAS	Non-Routine	Advisory	5.3.6.1
	RAAS	Non-Routine	Caution	5.3.6.2
Distance Remaining, Rejected Takeoff (4.3.7) <i>(Off, 50% of Runway)</i> <i>(1000, 2000, 3000, 4000, 5000 feet)</i>	RAAS	Non-Routine	Advisory	5.3.7
Taxiway Landing (4.3.8) <i>(Off, On)</i>	RAAS	Non-Routine	Caution	5.3.8
Volume Settings <i>(Reconfigure RCD Volume No, Yes – If Yes, enter volumes)</i>	-	-	-	5.8
Stabilized Approach Monitor – Unstable (5.2.4) <i>(Enable SAM Off, On)</i>	SAM	Non-Routine	Caution	5.4
Stabilized Approach Monitor – Landing Flaps (5.2.1) <i>(Upper Flap Gate Alert Off, On – If On, set Gate Alt in feet)</i> <i>(Lower Flap Gate Alert Off, On – If On, set Gate Alt in feet)</i>	SAM	Non-Routine	Advisory	5.4.1
Stabilized Approach Monitor – Excessive Approach Angle (5.2.2) <i>(Off, On)</i>	SAM	Non-Routine	Advisory	5.4.2
Stabilized Approach Monitor – Excessive Approach Speed (5.2.3) <i>(Off, On)</i>	SAM	Non-Routine	Advisory	5.4.3

Function (Product Description Reference paragraph)	Monitor	Routine / Non-Routine	Advisory / Caution	Section Reference
Altimeter Monitor – Below Transition Altitude (6.2.1) Altimeter Monitor – Above Transition Altitude (6.2.2) <i>(Enable Altimeter Monitor Off, On)</i> <i>(Enable Altimeter Monitor Below TA Off, On)</i> <i>(Enable Altimeter Monitor Above TA Off, On)</i>	Alt	Non-Routine	Advisory	5.5
Takeoff Flap Configuration Monitor (7.2) <i>(Enable Takeoff Flaps Monitor Off, On)</i> <i>(Enable / Inhibit None, Gnd, 28v)</i> <i>(Takeoff Flap Handle Minimum Setting)</i> <i>(Takeoff Flap Handle Maximum Setting)</i>	T/O Flaps	Non-Routine	Caution	5.6
Long Landing Monitor (8.2) <i>(Enable LL Monitor Off, On)</i> <i>(Configure Callout “Long Landing”, “Deep Landing”)</i> <i>(LL Distance Off, On (Approach End), On (Departure End) in feet or meters)</i> <i>(LL Percentage Remaining Off, On in %)</i> <i>(LL Distance Remaining Off, On (Approach End), On (Departure End) in feet or meters)</i> <i>(LL Distance Remaining Percentage Off, On in %)</i>	LL	Non-Routine	Caution	5.7

5 RCD Worksheet Guidance

All options in the worksheet must specify a value, even if selected OFF. Worksheets with blank entries cannot be processed until all questionable selections are clarified.

Refer to the Product Description SmartRunway® and SmartLanding® Functions of the Enhanced Ground Proximity Warning System, Honeywell document 060-4564-001, for more information about each function. The relevant product description section numbers are listed in parentheses for the items below.

The Operator may use the COMMENTS block on the final page of the worksheet or write freehand notes anywhere practical in the worksheet to communicate any instructions not specifically covered by current available selections. The Operator may append more than one worksheet if the number of separate aircraft types is greater than nine.

5.1 Operator Information and System Preferences

Complete the following tables as specified.

General Information	
Aircraft Operator	
Date (MM/DD/YYYY)	
Customer name/Company	
Customer Phone /email	

Ordering Information			
Customer:		P.O. #:	Requested Ship Date:
EGPWS P/N:		STC #:	Regulatory Agency:
EGPWS S/N:		RCD Settings Doc # & Rev:	MDL # and Revision:

Model and Part Number Selection										
		<i>Columns are provided for up to nine separate aircraft types</i>								
	<i>Ex:</i>	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
OEM Aircraft Model	737-700									
OEM Aircraft TN or SN (leave blank for fleet)										
EGPWS Aircraft Type number <i>(See Notes 1 & 2)</i>	196									
MK V, MK VII, or MKV-A EGPWS	MK V									

Model and Part Number Selection

Notes

Note 1: A/C type number is a 1 to 3-digit number used by the EGPWS model to define the installation. This number can be found using one of the following methods:

- Conducting a Level 3 Self-Test on the aircraft per Line Maintenance Manual – MK V, MK VII, Enhanced Ground Proximity Warning Systems, and Honeywell document 060-4199-180. For MKV-A use document number PDS69000940-201, Line Maintenance Manual for the MKV-A Enhanced Ground Proximity Warning System (EGPWS).
- Examining EGPWS aircraft program pin wiring against the Interface Control Document for the Mark V Enhanced Ground Proximity Warning System (MKV EGPWS), Honeywell document 993-0976-401. For the MKV-A use Document Number SYS69000940-700, Interface Control Document for the MKV-A EGPWS.
- Examining EGPWS aircraft program pin wiring against the Interface Control Document for the Mark VII Enhanced Ground Proximity Warning System (MKVII EGPWS), Honeywell document 993-1076-401.

Note 2: MK VII aircraft types 3, 4, 5, 7 are generic, no windshear aircraft types that can be used with multiple airframes. For example, MK VII EGPWS A/C type 5 is a generic Air Transport, no windshear configuration that may be used on DC-9-32, B747-200 and A300B4-200 aircraft. The RCD will not distinguish between aircraft models, only aircraft type numbers. If more than one aircraft model has EGPWS installed and is using a MK VII generic aircraft type, then multiple RCDs will be required. Complete the worksheet listing all aircraft using the generic aircraft types and send to Honeywell for evaluation.

Visual Messages on Terrain Display for Non-TSO Functions

Enable Visual Messages <i>(See Note 1)</i>	All Messages	Non-routines and Cautions
	Cautions Only	None

Notes

Note 1: **Table 4-1 – RAAS Function Selections and Descriptions** in the previous section indicates for each function the type of message (Routine or Non-routine) and whether the alert level is considered a caution or advisory message. Visual messages on the Terrain display are not available for the Long Landing Distance Remaining (5.7), RAAS Distance Remaining (5.2.4 and 5.3.7) and the RAAS Runway End (5.2.5) callouts.

General RCD Information										
Select RCD Enable Method <i>(See Note 1)</i>				RCD Master Key			Enable Key Card			
Add RAAS/SAM/CAM Program Pin Enable <i>(See Note 2)</i>				NO			YES			
Runway Awareness and Advisory System (RAAS) Common Selections										
Enable Runway Awareness Advisory System (RAAS)				On			Off			
Select RAAS Enable / Inhibit Discrete	None	Ground or 28V = Inhibit		Ground or 28V = Enable			BOTH <i>1st: Ground or 28V = Enable</i> <i>2nd: Ground or 28V = Inhibit</i> <i>NOTE: Only valid for MKV-A</i>			
RAAS Discrete Connector Pin (ex: TP1A)				<i>1ST</i>			<i>2ND</i>			
RAAS Enable / Inhibit Switch Configuration If installing a RAAS Enable / Inhibit Discrete, select one Option <i>(See Note 4)</i>	Option 1: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps									
	Option 2: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + SAM									
	Option 3: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + CAM*									
	Option 4: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + SAM +CAM*									
<i>*NOTE: Options including CAM can only be selected for an "Inhibit" Discrete</i>										
Use GPWS Caution Annunciator for RAAS <i>(See Note 3)</i>						NO		YES		
Cockpit RAAS INOP Annunciator <i>(See Note 5)</i>					NONE	Use GPWS INOP		YES		
Select voice gender <i>(see Note 6)</i>						Female		Male		
Select Annunciation of Unit of Measure (UOM) <i>(see Note 7)</i>						OFF		FIRST		
Select Distance Unit of Measure (UOM)						Feet		Meters		
	<i>Ex:</i>	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
Select Advisory Suppress Window <i>(see Note 8)</i>	450-550 <i>(feet)</i>									
	350-450 <i>(feet)</i>									
GPS Antenna Location <i>(see Note 9)</i>	35 feet									
<i>Note 1: The EGPWS has two methods to unlock RAAS capability on the EGPWS.</i>										

General RCD Information

One method utilizes a RCD Master Key. The Master Key is loaded on the same PCMCIA card or USB flash drive (MKV-A) as the RCD. RAAS activation is accomplished when this single PCMCIA card/USB flash drive is used to install the RCD across a fleet of more than five aircraft.

Another method utilizes an Enable Key Card. An Enable Key unique to an EGPWS serial number is generated then loaded on a PCMCIA card/USB flash drive. The RCD is loaded on a separate PCMCIA card/USB flash drive. RAAS activation is accomplished when the PCMCIA card/USB flash drive containing the Enable Key is loaded followed by the PCMCIA card/USB flash drive containing the RCD. Because a unique Enable Key Card is required for each aircraft, this method is typically used by business aviation operators and airline operators with fleet sizes of five or less.

Note 2: Once unlocked (see Note 1, above), an optional RAAS Program Pin Enable can be used to ensure RAAS is not activated upon installation unless the program pins are wired correctly. This method was introduced in software version -230-230 (for MK V see Appendix D-15 of ICD 993-0976-401, for MKV-A see Appendix D-15 of ICD PDS69000940-201). This approach is helpful when multiple operators utilize a shared pool of spare units whereby an unlocked RAAS EGPWS computer could be installed on an aircraft not certified for RAAS. In this case, the absence of correctly wired program pins would prevent the activation of RAAS.

Note 3: “Activate GPWS caution annunciator for RAAS” refers to the GPWS Alert Discrete. This discrete can be associated with the RAAS Cautions (Stabilized Approach Monitor, Taxiway Landing, Long Landing, Takeoff Flap, Taxiway Takeoff, Short Runway on Takeoff, Short Runway on Landing) if set to 1 and if the aircraft type is using the Lamp Format 2 (this can be selected by program pin even if the default for the aircraft is lamp format 1). Some operators/aircraft may also opt not to use GPWS Alert Discrete for SR/SL if they prefer a different visual alerting method (e.g. messages driven on their displays by ARINC 429 outputs or visual messages on terrain display).

Note 4: RAAS automatically inhibits any aural alert for which a required input has failed and illuminates the optional Cockpit RAAS INOP Annunciator to advise the crew of loss of function. However, RAAS continues to enunciate aural alerts where all required inputs remain valid. RAAS Inhibit may be used in response to RAAS INOP to ensure no callouts occur while RAAS INOP is active. If installing a RAAS Inhibit switch, Honeywell recommends it should inhibit all functions (option 4).

Note 5: Honeywell recommends that any Cockpit RAAS INOP Annunciator that is installed be capable of annunciating all RAAS functions if an alternate fail indication mechanism is not available (such as an EICAS display).

Note 6: Honeywell recommends that the Gender Selection be consistent with the flight deck philosophy. The voice gender for all RAAS, SAM etc. callouts selected should be the same.

Note 7: Selection of FIRST adds the Unit of Measure (e.g. feet or meters) to the first callout for Distance Remaining advisories (5.2.4, 5.3.7, 5.7) but not subsequent callouts. For example, “*Four-Thousand Feet Remaining*”, “*Three-Thousand Remaining*”, “*Two-Thousand Remaining*”, ...

General RCD Information

For Runway End (5.2.5) and Short/Insufficient Runway Advisories (5.3.1, 5.3.3), FIRST adds the Unit of Measure to every instance of the callout.

Honeywell recommends the use of FIRST.

Note 8: When selecting 450-550, the RAAS In Air advisory is suppressed between 550 feet and 450 feet above runway elevation to allow normal 500-foot altitude call outs and/or crew procedures without conflict. The option, 350- 450, will suppress the RAAS In Air advisory to allow the 400-foot altitude call outs used in some Airbus aircraft. Most aircraft should select 450-550 unless the aircraft is configured for Airbus 400 foot callout.

Note 9: Enter the distance the GPS antenna is located, from the nose of the aircraft to the center of the antenna, rounded up to the nearest 5 foot. (i.e. if distance measured is 11 feet, then round up to 15 feet).

5.2 RAAS Routine Advisories

5.2.1 Approaching Runway – In Air advisory (Product Description 4.2.1)

The purpose of the Approaching Runway – In Air advisory is to provide the crew with awareness of which runway the aircraft is lined-up with on approach.

Annunciation criteria

RAAS equipped aircraft provide the flight crew with an aural advisory when the aircraft is airborne and approaching a runway. This advisory is enabled when:

- Aircraft is between 750 feet and 300 feet above the airport elevation (AFE) and
- Aircraft is within 3 nautical miles (<3NM) of the threshold end of the runway: and
- Aircraft track is aligned with the runway (aircraft track is within ± 20 degrees of the runway heading) and
- Aircraft position is within 200 feet laterally of the runway centerline plus runway width.

Message Content

This advisory consists of the word “Approaching” followed by the runway identifier, for example, “Approaching Two-Five-Right”.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

This call out must be activated to allow the In Air Short Runway advisory or caution to function.

Callout has a Suppress Window of 350-450 or 450-550 feet to avoid interference with altitude callouts

- Use 450-550 to suppress a 500 foot callout, typical in Boeing
- Use 350-450 to suppress a 400 foot callout, typical in Airbus

Enable Approaching Runway - in air (4.2.1)	OFF	ON
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5.2.2 Approaching Runway – On Ground advisory (Product Description 4.2.2)

The purpose of the Approaching Runway – On-Ground advisory is to provide the flight crew with awareness of a proximate runway edge being approached by the aircraft during taxi operations.

Annunciation Criteria

RAAS determines the runway identifier for the end of the runway that is closest to the position of the aircraft. This advisory is enabled when:

- Aircraft is on the ground, and
- Aircraft ground speed is less than 40 knots, and
- Aircraft is within a specified distance from the runway.

Message Content

The aural message consists of the word “Approaching” followed by the runway identifier. For example, “*Approaching Three-Four-Left*”. This advisory is issued once each time the aircraft approaches a runway.

Advice to Operator

- The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.
- EGPWS does not store location of hold short line. System is designed to provide voice at least two runway widths from centerline, so for 150 foot wide runway this will come 225 feet from runway edge (antenna location and nose geometry is included). This design matches ICAO minimum standards for hold short marks, but some airports may locate the hold short marks further back for any reason, and ILS hold lines may be on parallel taxiway.
- Crossing runway below 40 knots on takeoff may generate “Approaching XX” voice, brief as needed (example, takeoff from KEWR 22L or 22R may announce “Approaching 29”).
- On landing ATC may induce confusion for parallel runways. For example, ATC clears aircraft to land 09 Right, then ATC clears aircraft to cross 09 Left and taxi to

parking. As RAAS voices the nearest runway end, crew will hear approaching “27 Right”. This is correct and will match runway signage “09L –27R”.

Enable Approaching Runway – on ground (4.2.2)	OFF	ON
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5.2.3 On Runway – On Ground advisory (Product Description 4.2.3)

The purpose of the On Runway advisory is to provide the crew with awareness of which runway the aircraft is lined up with during ground operations.

Annunciation Criteria

The On Runway advisory is generated when the following conditions are met:

- Aircraft enters onto runway, and
- Aircraft heading is within ± 20 degrees of the runway heading.

Message Content

The aural message consists of the words “On Runway” followed by the runway identifier, for example, “*On Runway Two-Four*”. This advisory is annunciated once each time the aircraft enters a runway.

Advice to Operator

- The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.
- Volume setting should be carefully considered as this callout has the greatest potential to interfere with ATC takeoff clearance. If an operator chooses to remove the aural callouts and keep the visual alert only, this must be allowed by the RCD approved settings document.
- This call out will not announce if aircraft is crossing a runway but not aligned.
- If runway is re-numbered due to mag var change (example from 01 Left to 02 Left) but latest database is not yet loaded, voice will not agree with runway signage.

Enable On Runway – on ground (4.2.3)	OFF	ON
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5.2.4 Distance Remaining – Landing and Rollout advisory (Product Description 4.2.4)

The purpose of the Distance Remaining advisories is to enhance crew awareness of aircraft along-track position relative to the stop end of the runway.

Annunciation Criteria

- Aircraft is within 100 feet of the ground, over the last half of the runway or a specified distance from the runway end; or

- Aircraft is on the ground, on the last half of the runway (default) or a specified distance from the runway end, and
- Aircraft ground speed is above 40 knots.

Message Content

For systems using feet as the unit of length, these advisories are generated at whole thousand-foot intervals, except that the last possible advisory occurs at 500 feet. For example, a RAAS equipped aircraft landing on a 9000 foot runway, configured with the Distance Remaining advisory starting at the last half of the runway, could generate the following advisories: *“Four –Thousand Feet Remaining”*, *“Three-Thousand Remaining”*, *“Two-Thousand Remaining”*, *“One-Thousand Remaining”*, and *“Five-Hundred Remaining”*. A second example of a RAAS equipped aircraft landing on a 9000 foot runway, configured with the Distance Remaining advisory starting at 2000 feet from the stop end of the runway, could generate the following advisories: *“Two-Thousand feet Remaining”*, *“One Thousand Remaining”* and *“Five-Hundred Remaining”*.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

Most operator select 2000 or 3000 feet (600 or 900 meters) MAXIMUM as the point for the callouts to begin, otherwise the callout may interfere with after-landing ATC runway exit or taxi to parking instructions.

The crew should consider approach speed, landing distance, runway condition and autobrake settings to assess whether the callouts may be annunciated, recalling that callouts are only active above 40 knots groundspeed.

Select Distance remaining, landing and Rollout (4.2.4) <i>(See Note 1)</i>	OFF	50% of runway			
	1000 feet (300 m)	2000 feet (600 m)	3000 feet (900 m)	4000 feet (1200 m)	5000 feet (1500 m)
Notes					
<i>Note 1:</i> If activating both the Distance Remaining Landing & Rollout (DREM L&R) function and the Long Landing DREM function, the selected trigger values must be considered together. See section 5.7 Long Landing Monitor for this discussion.					
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet					

5.2.5 Runway End advisory (Product Description 4.2.5)

The purpose of the Runway End advisory is to improve flight crew awareness of the position of the aircraft relative to the runway stop end during low visibility operations. This advisory is active at all times, during both takeoff and landing. This advisory may occur during back-taxi maneuvers.

Annunciation Criteria

The advisory is provided to the flight crew when:

- Aircraft is on the runway and aligned within 20 degrees of runway heading, and
- Aircraft approaches within 100 feet of runway stop end and
- Aircraft ground speed is below 40 knots.

Message Content

The aural message is “*One-Hundred feet Remaining*” for units of feet, or “*Thirty Meters Remaining*” for units of meters.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other advisories.

This advisory may occur during back-taxi maneuvers.

Enable runway end advisory (4.2.5)	OFF	ON
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5.3 RAAS Non - Routine Advisories and Cautions

5.3.1 Approaching Short Runway – In Air advisory (Product Description 4.3.1)

The purpose of the Approaching Short Runway – In-Air Advisory is to provide the crew with awareness of which runway the aircraft is lined-up with, and that the available runway length for landing is less than the defined nominal landing runway length. The available runway length is determined by comparing runway length as defined in the EGPWS Runway Database with the nominal runway length required for the aircraft as defined in the RCD.

Annunciation Criteria

The advisory is generated when the following conditions are met:

- All conditions for a Routine Approaching Runway In-Air Advisory are satisfied, and
- Aligned runway is shorter than a nominal runway length.

Message Content

The Routine Approaching Runway Advisory is appended with available runway length information, for example “*Approaching Two-Five-Left, Three-Thousand-Eight-Hundred Feet Available*”. The available element of the message refers to the runway distance available from the EGPWS runway database to the nearest 100 feet or 30 meters depending on units selected.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

Typically, this advisory, and the following caution are driven by the same value, that being the shortest runway in your route structure for the particular aircraft less 100-200 feet excluding any displaced threshold. Setting the advisory and caution to the same value provides predictability to the crew -if the advisory is heard the caution will also be heard on that approach (which can be briefed or inhibited).

Select approaching short runway length – in air advisory (4.3.1) <i>(See Note 1)</i>	OFF	ON (Enter nominal runway length below)				ALWAYS (Enter a runway length of 99,999 feet making this a Routine Alert)				
Short Runway Length - in air (feet or m)	Ex: 4500ft	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
Notes <i>Note 1:</i> RAAS Short and Insufficient Runway functions do not take into account aircraft performance factors such as aircraft weight, wind, runway conditions, slope, air temperature and altitude of airport. This information is intended to enhance the flight crew awareness by identifying that the runway length available may be marginal for the aircraft type. Nominal Runway Lengths: Enter value rounded up to the nearest 100 feet (30 m). If advisory is turned OFF, then leave blank. If available runway length is to always be annunciated, then enter ALWAYS. The RAAS algorithm processes distances in feet. If the Operator selects the Meters option, and the nominal runway lengths listed are in meters, Honeywell will convert the meters value into feet using the formula (Feet = Meters x 3.280839895). When the advisories are triggered, the algorithm recalculates and provides distance advisories in meters.										
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet										

5.3.2 Approaching Short Runway – In Air Caution (Product Description 4.3.2)

The purpose of this annunciation is to provide the crew with an immediate awareness that the available runway length for landing is less than the runway length defined for the caution message (Product Description 4.3.1).

The available runway length is determined by the EGPWS Runway Database.

The selection of a Caution, in addition to the existing advisory, is configurable via the RCD.

If the caution is desired, it is recommended that both the advisory and caution are enabled.

Annunciation Criteria

The Approaching Short Runway – In Air Caution is generated when the following conditions are met:

- All conditions for an Approaching Short In-Air-Advisory are satisfied (5.3.1) and
- Aligned runway is shorter than a nominal runway length, and
- Aircraft is below RAAS Advisory Suppress Window (either 450 feet or 350 feet) and more than 300 feet above airport elevation (AFE).

The nominal runway length value must be specified by the Operator or is defaulted to OFF. This nominal runway length is used to provide advisory messages to enhance crew awareness to the fact that the runway length available may be marginal for the aircraft type. The Approaching Short Runway – In Air Caution does not take into account aircraft performance factors such as aircraft weight, wind, runway conditions, slope, air temperature and altitude of airport.

The Approaching Short Runway – In Air Caution aural message is “*Caution Short Runway, Short Runway*”

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

Typically, this caution and the preceding advisory are driven by the same value, that being the shortest runway in your route structure for the particular aircraft less 100-200 feet.

If advisory and caution are set to different values, an advisory but not a caution may occur on approach. Most operators, for predictability set these to same value, ensuring if the advisory is announced at 750 feet on approach, there will be a caution alert at 350 feet if the approach is continued (which can be briefed or inhibited).

As measurement of runway length excludes any known displaced threshold, be sure to include that factor in determining shortest runway in network.

Select Caution short runway in air (4.3.2)				OFF			ON			
<i>(See Notes 1 & 2)</i>							<i>(if ON, enter nominal runway length below)</i>			
Caution Short Runway Length - in air	Ex:	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
	<i>4500ft</i>									
(feet or m)										
Notes										
<i>Note 1: RAAS Short and Insufficient Runway functions do not take into account aircraft performance factors such as aircraft weight, wind, runway conditions, slope, air temperature and altitude of airport. This information is intended to enhance the flight crew awareness by identifying that the runway length available may be marginal for the aircraft type. Nominal Runway Lengths: Enter value rounded up to the nearest 100 feet</i>										

(30 m). If advisory is turned OFF, then leave blank. The RAAS algorithm processes distances in feet. If the Operator selects the Meters option, and the nominal runway lengths listed are in meters, Honeywell will convert the meters value into feet using the formula ($\text{Feet} = \text{Meters} \times 3.280839895$). When the advisories are triggered, the algorithm recalculates and provides distance advisories in meters.

Note 2: When diverting to a runway shorter than the selected minimum, advisories and cautions may occur that should be handled by the applicable Abnormal/Non-normal operating procedure, such as by briefing or inhibiting RAAS.

Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet

5.3.3 Insufficient Runway Length – On Ground advisory (Product Description 4.3.3)

The purpose of the Insufficient Runway Length–On-Ground advisory is to provide crew with awareness of which runway the aircraft is lined up with, and that the runway length available for takeoff is less than the defined nominal takeoff runway length. The runway length is determined by comparing the aircraft’s position in the runway, with the distance available as defined in the EGPWS Runway Database.

Annunciation Criteria

The advisory is generated when the following conditions are met:

- All conditions for a routine On-Runway advisory are satisfied (5.2.3).
- Available distance for take-off is less than the defined nominal runway length.

Operator will need to define nominal runway length required for normal operations, so that if runway distance remaining is less than the value designated, the advisory message will be given. Note that this advisory does not take into account aircraft performance factors such as aircraft weight, wind, runway condition, and slope, as well as air temperature and altitude of airport.

Note: Operators may wish to be alerted of the available distance for take-off at every take-off. In this case, the runway length is set to its maximum allowable value of 99,999 feet. Exercising this option effectively redefines the Insufficient Runway on Ground as a Routine advisory.

Message Content

Runway length remaining information is appended to the routine “*On Runway*” advisory. For example: “*On Runway Three-Four-Left, Two-Thousand Feet Remaining*”. The “remaining” element of the message refers to runway distance available from the EGPWS runway database to the nearest 100 feet (30 meters).

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

Honeywell recommends that this advisory and the following caution are driven by the same value, that being the shortest runway in your route structure for the particular aircraft less 300 feet (to allow some distance in the turn to align for takeoff). Setting the advisory and caution to the same value provides predictability to the crew - if the advisory is heard the caution will also be heard on that departure (which can be briefed or inhibited).

<p>Select insufficient runway length on ground advisory (4.3.3) <i>(See Notes 1 & 2, below)</i></p>	<p>OFF</p>	<p>ON (if ON, enter nominal runway length below)</p>					<p>ALWAYS (Enter a runway length of 99,999 feet making this a Routine Alert) <i>(See Notes 1 and 2, below)</i></p>				
<p>Insufficient Runway Length – on ground (feet or m)</p>	<p>Ex:</p>	<p>AC #1</p>	<p>AC #2</p>	<p>AC #3</p>	<p>AC #4</p>	<p>AC #5</p>	<p>AC #6</p>	<p>AC #7</p>	<p>AC #8</p>	<p>AC #9</p>	
	<p>4000ft</p>										
<p>Notes</p> <p><i>Note 1:</i> Operators may wish to be alerted of the available distance for take-off at every take-off. In this case, the runway length is set to its maximum allowable value of 99,999 feet. Exercising this option effectively redefines the Insufficient Runway on Ground as a Routine advisory.</p> <p><i>Note 2:</i> If ALWAYS is selected consideration should be given to the color of the associated visual message. By default, it is amber, but green is recommended for “routine advisories”.</p>											
<p>Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet</p>											

5.3.4 Insufficient Runway Length – On Ground caution (Product Description 4.3.4)

The purpose of this annunciation is to provide the crew with immediate awareness that the runway length available for takeoff is less than the defined nominal takeoff runway length when the takeoff is continued as noted below after the remaining length for takeoff has been provided.

The available runway length is determined by comparing the aircraft’s position on the runway with the distance available defined in the EGPWS Runway Database.

Annunciation Criteria

The Insufficient Runway – On Ground Caution is generated when the following conditions are met:

- All conditions for a routine On-Runway advisory (5.2.3) are satisfied, and

- Available Distance for take-off is less than the defined nominal runway length, and
- Aircraft ground speed transitions to above 40 knots.

Message Content

The Insufficient Runway Length – On Ground Caution aural message is “*Caution Short Runway Short Runway*”.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

Honeywell recommends that this caution and preceding advisory are driven by the same value, that being the shortest runway in your route structure for the particular aircraft less 300 feet (to allow some distance in the turn to align for takeoff).

Measurement is made at time of initial alignment, If at the time of alignment, runway remaining exceeds the caution value configured by the RCD and aircraft subsequently taxis down runway before takeoff, no caution alert will occur (it is unusual to taxi on runway before takeoff).

If advisory and caution are set to different values, an advisory but not a caution may occur on takeoff. Most operators, for predictability set these to same value, ensuring if the voice is announced at initial runway alignment, there will be a caution alert at 40 knots on takeoff (which can be briefed or inhibited).

Select Caution short runway on ground (Product 4.3.4) <i>(See Notes 1 &2)</i>				OFF				ON (if ON, enter nominal runway length below)			
Caution Short Runway Length – on ground (feet or m)	Ex:	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9	
	4500ft										
Notes <i>Note 1:</i> RAAS Short and Insufficient Runway functions do not take into account aircraft performance factors such as aircraft weight, wind, runway conditions, slope, air temperature and altitude of airport. This information is intended to enhance the flight crew awareness by identifying that the runway length available may be marginal for the aircraft type. Nominal Runway Lengths: Enter value rounded up to the nearest 100 feet (30 m). If advisory is turned OFF, then leave blank. If available runway length is to always be annunciated, then enter ALWAYS. The RAAS algorithm processes distances in feet. If the Operator selects the Meters option, and the nominal runway lengths listed are in meters, Honeywell will convert the meters value into feet using the formula (Feet = Meters x 3.280839895). When the advisories are triggered, the algorithm recalculates and provides distance advisories in meters.											

Note 2: When taking off from a runway shorter than the selected minimum, advisories and cautions may occur that should be handled by the applicable Abnormal/Non-normal operating procedure, such as by briefing or inhibiting RAAS.

Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet

5.3.5 Extended Holding On Runway advisory (Product Description 4.3.5)

The purpose of the Extended Holding On Runway advisory is to provide crew awareness of an extended holding period on the runway.

Annunciation Criteria

- RAAS generates the advisory when the following conditions are met:
- Aircraft must be on the runway, and
- Aircraft heading is within 20 degrees of runway heading, and
- Aircraft along track distance does not change more than 100 feet in a period of time considered to be an extended holding period (the time period can be configured 60, 90, 120, 180, 240, or 300 seconds). The advisory may be repeated again after 30, 60, 90, 120, 180, 240, or 300 seconds.

Extended Holding On Runway advisories are suppressed after a Rejected Takeoff is detected. The advisory is reset when the aircraft leaves the runway.

Message Content

After the specified time period has elapsed, RAAS generates an advisory that consists of the aural message “*On Runway*” followed by the runway identifier. This advisory is annunciated twice for each time interval. For example, if an aircraft is cleared to line up and wait on runway 22, and, after waiting in position for an extended period, say 90 seconds, the system will annunciate “*On Runway Two Two, On Runway Two Two*”.

If the aircraft continues to hold for another period of time, which may be set for the same time interval or a different one, the above message would repeat. The repeat message can also be configured to be OFF.

Advice to Operator

- The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.
- The Operator needs to take into account normal waiting times ATC may impose on aircraft for the route network operated.
- This callout will not announce if aircraft is stopped on a runway but not aligned.

Select extended holding time on runway, initial (in seconds) (4.3.5)	OFF		60	90	120	180	240	300
Select extended holding time on runway, repeats (in seconds) (4.3.5)	OFF	30	60	90	120	180	240	300

5.3.6 Taxiway Takeoff (Product Description 4.3.6)

5.3.6.1 Taxiway Takeoff advisory

The purpose of the Taxiway Takeoff advisory is to enhance crew awareness of excessive taxi speeds or an inadvertent takeoff on a taxiway.

Annunciation Criteria

The advisory is generated if:

- Ground speed of the aircraft exceeds 40 knots, and
- Aircraft is not aligned with the runway.

Note: RAAS functions are based on a database of runway locations. The system does not have knowledge of the locations of taxiways.

Message Content

The aural message “*On Taxiway On Taxiway*” is annunciated each time the advisory is generated.

5.3.6.2 Taxiway Takeoff caution

It may be desired to classify taxiway takeoff as a Caution condition rather than advisory.

Annunciation Criteria

Same as for the advisory condition above.

Message Content

The aural message “*Caution On Taxiway On Taxiway*” is annunciated once each time the caution is generated.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

Some airfields use a taxiway as a substitute runway on a temporary basis. When using such taxiways as a runway, the crew procedures should indicate a briefing to expect a message during the subsequent takeoff can be expected and that it may be ignored.

Nuisance alert may result if runway is extended but not included in loaded database. (Review database change descriptions at: <https://ads.honeywell.com/> under TerrDB-Change Info)

Database does not store location of taxiways, only the runways.

Enable Taxiway takeoff (4.3.6) <i>(See Note 1)</i>	OFF	ON (Advisory)	ON (Caution)
Notes			
<i>Note 1:</i> Because this callout can be configured as advisory or caution, the visual message on the terrain display may be affected based on the selected visual message scheme, for example if this callout is configured as an advisory and the visual messages are configured for Cautions Only, there will no visual message for this callout.			

5.3.7 Distance Remaining – Rejected Takeoff advisory (Product Description 4.3.7)

RAAS activates distance remaining advisories to provide the flight crew with position awareness during a Rejected Takeoff (RTO).

Annunciation Criteria

The advisory is generated if:

- Aircraft is on a runway, and
- Ground speed is greater than 40 knots, and
- Aircraft ground speed during the takeoff roll decreases by 7 knots from its achieved maximum, and
- Aircraft is on the last half of the runway (default) or specified distance from the runway stop end.

RAAS will provide distance remaining advisories until the ground speed decreases below 40 knots, when the advisories will terminate.

Extended Holding On Runway advisories are suppressed after a Rejected Takeoff is detected. The advisory is reset when the aircraft leaves the runway.

Message Content

For systems using feet as the unit of length, these advisories are generated at whole thousand-foot intervals, with last possible advisory occurring at 500 feet. For example, a RAAS equipped aircraft aborting a takeoff on a 9000 foot runway, with the Distance Remaining advisory issued at the last half of the runway, would generate the following advisories: “Four-Thousand feet Remaining”, “Three-Thousand Remaining”, “Two-Thousand Remaining”, “One-Thousand Remaining”, and “Five-Hundred Remaining”. A second

example, a RAAS equipped aircraft aborting a takeoff on a 9000 foot runway, with the Distance Remaining advisory issued starting at 2000 feet would generate the following advisories: “Two-Thousand feet Remaining”, “*One-Thousand Remaining*”, and “*Five-Hundred Remaining*”.

For systems using meters as the unit of length, these advisories are generated at multiples of 300 meter intervals, with last possible advisory occurring at 100 meters. For example, a RAAS equipped aircraft aborting a takeoff on a 3000 meter runway, with the Distance Remaining advisory issued at the last half of the runway, would generate the following advisories: “*One-Thousand-Two-Hundred Meters Remaining*”, “*Nine-Hundred Remaining*”, “*Six-Hundred Remaining*”, “*Three-Hundred Remaining*”, and “*One-Hundred Remaining*”. A second example, a RAAS equipped aircraft aborting a takeoff on a 3000 meter runway, with the Distance Remaining advisory issued starting at 600 meters would generate the following advisories: “*Six-Hundred Meters Remaining*”, “*Three-Hundred Remaining*”, and “*One-Hundred Remaining*”.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

Most operators select 3000 feet (or 900 meters) as the point for the callouts to begin.

This advisory may occur when aircraft slows during back-taxi maneuvers if groundspeed on runway exceeded 50 knots. If this becomes a nuisance, consider disabling this callout.

Select distance remaining Rejected takeoff (4.3.7)	OFF	50% of runway			
	1000 feet (300 m)	2000 feet (600 m)	3000 feet (900 m)	4000 feet (1200 m)	5000 feet (1500 m)
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet					

5.3.8 Taxiway Landing caution (Product Description 4.3.8)

The purpose of the taxiway landing caution is to provide crew awareness that the aircraft is not lined up with a runway at low altitudes.

Annunciation Criteria

The caution is generated if:

- Aircraft is airborne between 150 and 250 feet AGL, and
- Aircraft climb rate is less than 450 FPM, and
- Aircraft is within 5 NM of a runway and is not lined up with a runway.

Note: RAAS functions are based on a database of runway locations. The system does not have knowledge of the location of taxiways.

Message Content

The aural message “*Caution Taxiway Caution Taxiway*” is annunciated once each time the caution is generated.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

Some airfields use a taxiway as a substitute runway on a temporary basis. When using such taxiways as a runway, the crew procedures should include a briefing to expect a message during the subsequent approach and that it may be ignored.

Consideration should be given if frequently operating into runways with large offset approaches (LDA, circling, etc.) where the aircraft is not aligned within 20 degrees of runway heading until well below 250 feet AGL, as nuisance alarms may result.

<p>Enable Taxiway Landing (4.3.8) <i>(See Note 1)</i></p>	<p>OFF</p>	<p>ON</p>
<p>Notes <i>Note 1:</i> When anticipating landing on a taxiway, advisories and cautions may occur that should be handled by the applicable Abnormal/Non-normal operating procedure, such as by briefing or inhibiting RAAS.</p>		

5.4 Stabilized Approach Monitor (Product Description 5)

The Stabilized Approach Monitor is intended to inform the flight crew of awareness of unstable approaches and thus reduce landing risks and potential runway excursions.

<p>Stabilized Approach Monitor (SAM)</p>		
<p>Enable stabilized approach monitor (SAM) <i>(See Note 1)</i></p>	<p>OFF (if OFF, skip Landing Flap, Excessive Approach Angle, and Excessive Approach Speed Monitors)</p>	<p>ON</p>
<p>Select Voice Gender</p>	<p>Female Voice</p>	<p>Male Voice</p>
<p>Notes <i>Note 1:</i> The Stabilized Approach Monitor (SAM) can be inhibited using the RAAS Inhibit Switch if installed and properly configured. See the RAAS Common Selections Table in Section 5.1 for information regarding the selection and configuration of RAAS Inhibit Switch.</p>		

5.4.1 Landing Flap Monitor (Product Description 5.2.1)

Annunciation Criteria

This function provides an upper “*Flaps pause Flaps*” aural annunciation if the landing flaps are not set at an Operator chosen height (500ft – 1400ft) AFE.

This first (Upper) Landing Flap Monitor annunciation is generated when the following conditions are met:

- The Upper Flap alert is enabled via the RCD, and
- Flaps are not in Landing Configuration, and
- Height AFE is less than or equal to an Operator chosen height (500ft – 1400ft).

A lower “*Flaps – Flaps*” (*no pause in between*) aural annunciation is provided if the aircraft **is aligned with the runway** and the landing flaps are still not set at an Operator chosen height (500ft – 1000ft) AFE.

This second (Lower) Landing Flap Monitor annunciation is generated when the following conditions are met:

- The Lower Flap alert is enabled via the RCD, and
- Flaps are not in the Landing Configuration, and
- Height AFE is less than or equal to an Operator chosen height (500ft – 1000ft), and
- Aircraft is lined up with a runway (aircraft is within approximately 3 nautical miles of the runway and aircraft track is aligned with the runway within ± 20 degrees).

SAM Flap Monitor will function at all airports in the database, not just RAAS-enabled airports.

Message Content

The aural message consists of the phrase “*Flaps (pause) Flaps*” and is issued once for the initial entry into the envelope when flaps are not in landing configuration and the aircraft is not necessarily aligned with the runway. The phrase “*Flaps Flaps*” is issued once when flaps are not in landing configuration and the aircraft is aligned with the runway.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

The SAM Flap Monitor inputs are identical to the GPWS Mode 4 “Too Low Flap” inputs so any flap override that inhibits GPWS Mode 4 will also inhibit SAM Flap Monitor.

First/Upper Landing Flap Monitor height AFE

As crews are expected to have the aircraft fully stabilized with landing flap set by 1000 feet AFE, this upper gate is set by default to 950 feet AFE. For larger aircraft that perform only straight-in approaches or for operators with SOPs demanding an earlier stabilization point, consideration can be given to a higher figure (i.e. 1200 feet AFE). **However, for aircraft**

likely to perform circling approaches where landing flap will be set below 1000 feet AFE, consideration should be given to setting the upper gate OFF.

Second/Lower Landing Flap Monitor height AFE

After the first/upper gate callout the crew needs time to set flaps to the landing position and complete the checklist. Therefore, this lower gate is set by default to 600 feet AFE (upper gate minus 350 feet). If a flap alert ONLY WHEN ALIGNED WITH THE RUNWAY is desired, then the upper gate can be disabled. If no circling approaches are used, the lower gate can be turned off, this will prevent double callouts in cases where flaps are slow to transition.

Enable Landing Flap Monitor (5.2.1)										
<i>Upper Flap Gate Alert</i>		OFF					ON			
<i>Lower Flap Gate Alert</i>		OFF					ON			
Flap Gate Maximum Altitude		AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
Upper Flap Gate (feet)	<i>950 feet</i>									
Lower Flap Gate (feet)	<i>600 feet</i>									
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet										

5.4.2 Excessive Approach Angle Monitor (Product Description 5.2.2)

The purpose of the Excessive Approach Angle Monitor annunciation is to provide the flight crew with awareness of a possible unstabilized approach if the approach angle to the destination becomes too steep.

Annunciation Criteria

The function provides a “*Too High-Too High*” annunciation if the approach angle to the runway becomes too steep.

The aircraft must be lined up with destination runway on final approach to enable this function. When a circling approach is flown, the aircraft can fly over the runway on a downwind leg, which makes the computed angle to the runway very large. Therefore, the Excessive Approach Angle Monitor is not enabled until 600 feet AFE (minimum circling minima) unless the aircraft is fully configured to land.

Note: there is an effective 450 feet lower limit where the unstable voice would take precedence.

EGPWS Terrain/Airport database stores approach angle by runway end.

If within 2 dots of ILS this alert is inhibited, which prevents false activation if ILS angle is changed.

Trigger angle is approximately 1 degree higher than published/stored in database (4 degrees for 3 degree runways).

Message Content

The aural message consists of the phrase *“Too High-Too High”* and is issued once when the aircraft meets the conditions described in 5.2.2.1 of the Product Description.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

In the case of a temporary displaced threshold, nuisance alert could result, handle via company NOTAM system and brief accordingly or use the installed RAAS Inhibit.

Enable Excessive Approach Angle Monitor Advisory (5.2.2)	OFF	ON
---	-----	----

5.4.3 Excessive Approach Speed Monitor – (Product Description 5.2.3)

The purpose of the Excessive Approach Speed Monitor annunciation is to provide the flight crew with awareness of a possible unstable approach due to excessive approach speeds.

Annunciation Criteria

The function provides a *“Too Fast-Too Fast”* annunciation if the aircraft approach speed becomes too fast compared to the target approach speed (Vref or Vapp).

The Excessive Approach Speed Monitor annunciation is generated when all of the following conditions are met.

- Height above Field Elevation is less than or equal to 950 feet (default) with gear and flaps in landing configuration
OR
- Height above Field elevation is less than or equal to 600 feet (default) regardless of gear and flap configuration if Aircraft is lined up with a runway (aircraft is within approximately 3 NM of the runway and aircraft track is aligned with the runway within ± 20 degrees
AND
- Height above Airfield Elevation and Excessive Speed (Computed Airspeed minus

Approach Speed (Vref or Vapp) violate the excessive speed curve (ref Product Description 5.2.3.1).

SAM Excessive Speed Monitor will function at all airports in the database, not just RAAS-enabled airports

Message Content

The aural message consists of the phrase “*Too Fast-Too Fast*” and is issued once when the aircraft meets the conditions described in section 5.2.3.1 of the Product Description.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

<p>Enable Excessive Approach Speed Monitor Advisory (5.2.3)</p> <p><i>(See Note 1)</i></p>	<p>OFF</p>	<p>ON</p>
<p>Checklist:</p> <p>This monitor is currently only available on some airframes. Refer to Appendix H of the Product Description SmartRunway®/SmartLanding® Functions of the Enhanced Ground Proximity Warning System (060-4564-001).</p> <p>The following considerations are valuable for the TC/STC Applicant and remain in this document for that reason. They are not necessary for the Operator when making decisions regarding RCD selections.</p> <p>For Airbus aircraft this monitor requires a new connection to the FMGC to supply the three signals defined in ICD section 4.1.1.142. Also confirm both that the FMGC supplies this data in the specified format, <u>and</u> that the MK V aircraft type interface being used defines the input bus as illustrated in the following example:</p> <p style="padding-left: 40px;">Example 1: A319/320/321 MK V Aircraft Type 113, input from FMGC to EGPWS channel 14 was added to support this function.</p> <p>For Boeing aircraft this monitor requires a source of Approach/Reference Speed (per ICD section 4.1.1.141). Confirm both that the aircraft supplies this data in the specified format, and on the existing bus connected to the EGPWS, <u>and</u> that the MK V aircraft type interface defines the input as illustrated in the following examples:</p> <p style="padding-left: 40px;">Example 2: B737-600 MK V Aircraft Type 195, Label 070/072 was added to FMC Bus 1 (channel 2) & FMC Bus 2 (channel 18).</p> <p style="padding-left: 40px;">Example 3: B777-200LR/300ER MK V Aircraft Type 208, Reference speed brought in on both AIMS IRS buses (channels 1 & 2).</p>		
<p>Do the Aircraft and EGPWS support Excessive Approach Speed Monitor?</p>		
<p>EGPWS ICD Aircraft Type supports Approach/Reference Speed?</p>	<p>YES</p>	<p>NO</p>

Aircraft FMS/FMGC, AIMS, or EFIS matches the EGPWS interface For example, an FMS may not provide the needed data unless the Speed Tape option is activated.					YES	NO
Aircraft FMS/FMGC, AIMS or EFIS part number:						
Aircraft FMS/FMGC, AIMS or EFIS Software level:						
Use this area if more than one FMS type used:						
<i>Note 1:</i> If a function is enabled and the signals required for that function are failed or not available on the aircraft, then the function will be inoperative. For a Table of aircraft which support the Excessive Speed Monitor see the Product Description 060-4564-001 Appendix H.						
SAM Speed Curve – Select one of the three options below IF “Enable Excessive Approach Speed Monitor Advisory” is ON						
Curve A (Airbus)					YES	NO
300 feet – 15 knots	500 feet – 15 knots	950 feet – 40 knots	950 feet – 40 knots	950 feet – 40 knots		
Curve B (Boeing and all other OEM)					YES	NO
300 feet – 30 knots	500 feet – 30 knots	950 feet – 40 knots	950 feet – 40 knots	950 feet – 40 knots		
Custom- If selecting this option, fill-in the points below [Altitude (feet) - Excessive Speed (knots)] Note: Custom speed curves require flight testing and STC modification.					YES	NO

5.5 Corrected Altimeter Monitor (Product Description 6)

Annunciation Criteria (Below Transition Altitude)

The Below Transition Altitude Monitor annunciation is generated when the following conditions are met:

- GPS Altitude and Vertical Figure of Merit (VFOM) are valid and have passed the internal reasonableness checks.
- GPS is not in altitude aiding mode, the number of satellites tracked is 5 or greater, a non-isolatable satellite failure (NISF) does not exist, and GPS Horizontal Integrity Limit (HIL) is valid.

- Corrected Barometric Altitude and Static Air Temperature are valid.
- EGPWS Runway database is valid.
- Aircraft Altitude is less than the Transition Altitude for more than 30 seconds OR height above airfield is less than 1500 feet. The transition altitude is obtained from the EGPWS runway database for the destination runway.
- Aircraft is within 20 NM of the EGPWS selected destination runway.
- Height above airfield is less than 5000 feet.
- Airport is not indicated as QFE, altimeter setting is not QFE, and QFE program pin is not selected.
- Radio Height is greater than 600 feet.
- The filtered difference between Corrected Altitude and GPS Altitude exceeds a threshold computed based on the current estimated altimetry system errors.

Below Transition Altitude Monitor can also detect errors on takeoff and does not require previous climb above Transition Altitude.

Transition Altitude is stored in the EGPWS Terrain/Airport database for each runway.

Message Content

The aural message consists of the phrase “*Altimeter Setting*”. This advisory is issued once when the altimeter error is first detected and will repeat once, 8 seconds later if the error persists. After two voice messages, no additional messages will be generated.

Annunciation Criteria (Above Transition Altitude)

The Above Transition Altitude Monitor annunciation is generated when the following conditions are met:

- The Corrected Barometric Altitude, Uncorrected Barometric Altitude, and Runway Database are valid.
- The aircraft has been above the transition altitude for more than 30 to 60 seconds and not more than 5 minutes.
- The difference between Corrected Altitude and Uncorrected Altitude is less than the fixed threshold or the Barometric Altitude does not equal standard, depending on the selected aircraft type.

Message Content

The aural message consists of the phrase “*Altimeter Setting*”. This advisory is issued once when the altimeter error is first detected and will repeat once, 8 seconds later if the error persists. After two voice messages, no additional messages will be generated.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation and other selections.

For a list of QFE airports download the RAAS document at <https://ads.honeywell.com/search/egpwsSearch> (Refer to the “Altimeter Monitor Active” column).

Honeywell has released Service Letter D201009000033 recommending outside areas of harmonized transition altitude this function be turned OFF. This applies only to the MK V and MK VII EGPWS. The MKV-A has improved software that addresses the issues raised in the above Service Letter. Operator may decide if they want to activate this in MKV-A or keep off for fleet commonality (where mixed MK V and MKV-A fleet is operated).

Corrected Altimeter Monitor (CAM)		
Enable Altimeter Monitor (6.) <i>(See Note 1)</i>	OFF	ON
Select Voice Gender	Female Voice	Male Voice
Enable Altimeter Monitor Below Transition Altitude (6.2.1)	OFF	ON
Enable Altimeter Monitor Above Transition Altitude (6.2.2)	OFF	ON
<i>Note 1:</i> The Corrected Altimeter Monitor (CAM) can be inhibited using the RAAS Inhibit Switch if installed and properly configured. See the Table 4-1 – RAAS Function Selections and Descriptions for information regarding the selection and configuration of RAAS Inhibit Switch.		

5.6 Takeoff Flap Configuration Monitor (Product Description 7)

The purpose of the Takeoff Flap Configuration Monitor is to provide the flight crew with awareness of improper flap setting when the aircraft is lined-up on a runway in advance of takeoff.

Annunciation Criteria

The Takeoff Flap Configuration Monitor annunciation is generated when the following conditions are met:

- Flap Handle not set to a valid takeoff flap setting, and
- Aircraft enters a runway, and
- Aircraft heading is within ± 20 degrees of the runway heading.

Message Content

The aural message consists of the phrase “*Flaps Flaps*”. This aural message is annunciated once each time the aircraft enters and is aligned with the runway. No further aural messages occur unless the flap handle is adjusted and, after 5 seconds of settling time, the flaps are still not set within the valid takeoff setting range. Should the Pilot adjust the flaps after the first aural message but fail to set takeoff flaps, an additional “*Flaps Flaps*” message is provided. Each time a new flap setting is made, the aural will be provided if flaps are not within the takeoff flap range.

If the RAAS On Runway advisory is enabled, “*Flaps Flaps*” is appended at the end of the On Runway aural message. For example, “*On Runway Two-Four, Flaps Flaps*”.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of each function in relation to route network, crew experience and type of operation.

This is NOT currently available for Airbus aircraft (no flap input to EGPWS).

This alert uses a range of all flap settings legal for takeoff. It does not (currently) check that the flaps are set to the exact setting used in FMS takeoff performance. However, if your airline procedures exclude certain settings for takeoff, these settings should also be excluded from the RCD settings.

While 737 has a Takeoff Configuration Warning Horn, it sounds for many reasons, and only after the thrust levers are advanced. Typical response to the horn is rejected takeoff. The benefit of this caution alert is it occurs on initial runway alignment, allowing the crew time to position the flaps correctly before takeoff or exit the runway immediately, avoiding a rejected takeoff.

This alert is suppressed for 5 minutes after landing.

If using a runway as a taxiway before takeoff (or more than 5 minutes after landing), with flaps not in a legal takeoff position, a FLAPS FLAPS alert will occur.

Notes

- The Takeoff Flap selection below must reflect the AFM.
- On some aircraft, the flap handle to flap angle conversion has an associated tolerance. The setting entered below should account for these tolerances.

Takeoff Flap Configuration Monitor										
Enable Takeoff Flap Configuration Monitor (7.) <i>(See Notes 1 & 4)</i>		OFF					ON			
Select Voice Gender		Female Voice					Male Voice			
	Ex:	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9

Takeoff Flap Handle Minimum Setting <i>(See Note 2)</i>	5 ⁰									
Takeoff Handle Maximum Setting <i>(See Note 3)</i>	10 ⁰									
Flap Angle Checklist										
Not every aircraft will support Flap Angle Monitor functionality.										
For a complete list of supported aircraft types, see Appendix G of the Product Description SmartRunway®/SmartLanding® Functions of the Enhanced Ground Proximity Warning System (document 060-4564-001).										
Do Aircraft and EGPWS support Takeoff Flap Configuration Monitor?										
EGPWS ICD Aircraft Type supports Flap Angle?									YES	NO
Aircraft interface matches the EGPWS interface?									YES	NO
Notes										
<i>Note 1:</i> RAAS, Takeoff Flaps Monitor, and Long Landing Monitor share the same RAAS Program Pin Enable Discrete. See the RAAS Common Selections Table in section 5.1 regarding the RAAS Program Pin Enable Discrete.										
<i>Note 2:</i> Minimum flap handle setting, in degrees (0-50), required for takeoff. Flap selection must reflect AFM.										
<i>Note 3:</i> Maximum flap handle setting, in degrees (0-50), required for takeoff. Flap selection must reflect AFM.										
<i>Note 4:</i> When anticipating takeoff without Landing Flap in an AFM legal setting, advisories and cautions may occur that should be handled by the applicable Abnormal/Non-normal operating procedure, such as by briefing or inhibiting RAAS.										

5.7 Long Landing Monitor (Product Description 8)

The Long Landing Monitor adds two annunciations to enhance crew awareness of aircraft along-track position relative to the runway end. One provides annunciation if the aircraft has not touched down before a configurable distance and the second provides airborne only aural annunciations of current distance of the aircraft to the runway stop end.

Annunciation Criteria

The Long Landing and airborne only Distance Remaining alerts are generated when the following conditions are met:

- Aircraft is within 100ft AGL, beyond a customer specified distance.
- Aircraft is airborne above 5ft AGL, or weight on wheels is false.

- Vertical speed doesn't exceed +450 fpm (go-around).

The callout activation points are defined by several RCD items:

1. Distance from approach end of runway or departure end of runway where approach end is defined as the runway end closest to the aircraft on landing and departure end is defined as the runway end furthest from the aircraft on landing.
2. Percentage of runway remaining.

Message Content

If the aircraft has not touched down before a configurable threshold, the EGPWS will issue the default aural “*Long Landing-Long Landing*” (the message can be configured to “*Deep Landing – Deep Landing*”). In addition, airborne only aural annunciations of current distance from aircraft to the runway stop end can be enabled.

Advice to Operator

The Operator needs to evaluate the relevance and desirability of this function in relation to route network, crew experience and type of operation and other selections.

I. Selection of “Long Landing” or “Deep Landing” callout Activation points.

According to industry standards, the aircraft should touchdown in the first 3000 feet (~900m) or one third of the runway.

Therefore, it is recommended all operators select 67% distance remaining as the activation point. This will ensure that the Long Landing alert will be provided in accordance with industry standards for all landings regardless of the runway length.

If it is desired to reinforce a standard operating procedure (SOP) for crews to land in the first 3000 feet (~900m) on runways longer than 9000 feet (~3000m) operators may select 3000 feet (~900m) passed the approach end as an additional activation point.

If both a distance and a percentage are selected to activate the long landing callout, the activation will be based on the first condition to occur.

Scenario 1: Long Landing Callout on a long runway length			
Parameter	Value/Setting	Activation Point passed Approach end	Result
Runway Length	12000 feet	n/a	n/a
LL Distance	3000 feet from Approach End	3000 feet	3000 feet passed approach end is first condition to occur, so LL Distance is the source of the alert, not the LL Percentage
LL Percentage	67% remaining	4000 feet	

Scenario 2: Long Landing Callout on a short runway length			
Parameter	Value/Setting	Activation Point passed Approach end	Result
Runway Length	6000 feet	n/a	n/a
LL Distance	3000 feet from Approach	3000 feet	2000 feet passed approach end is

	End		first condition to occur, so LL Percentage is the source of the alert, not the LL Distance
LL Percentage	67% remaining	2000 feet	

II. Selection of Activation point of distance remaining callouts.

Selected as a Distance from the departure (stop) end:

These are the considerations when selecting the Long Landing Distance Remaining (LL DREM) callout.

1. Long Landing Distance Remaining (LL DREM) callouts are not required, and if activated should not annunciate sufficient distance where the crew may misinterpret them and respond inappropriately to the initial Long Landing (LL) callouts.
2. If activated, sufficient time should be allowed between the LL callout and the start of any LL DREM callout. The LL callout requires approximately 3 seconds to complete and the crew requires time to interact after the LL DREM callout is made to determine an appropriate response.
3. If activated, the Long Landing Distance Remaining (LL DREM) callouts should not be based on the distance passed the Approach end. Callouts should be based on Percentage Remaining (max 50%) or Distance to the Departure end (max would depend on the aircraft type).

Scenario 3: Long Landing Callout with Distance Remaining Callout			
Parameter	Value/Setting	Activation Point passed Approach end	Result
Runway Length	10000 feet	n/a	n/a
LL Distance	3000 feet from Approach End	3000 feet	3000 feet passed approach end is first condition to occur, so LL Distance is the source of the alert, not the LL Percentage
LL Percentage	67% remaining	3333 feet	
LL DREM	4000 feet from Departure (Stop) End	6000 feet	5000 feet passed approach end is first condition to occur, so LL DREM % is the source of the alert, not the LL DREM
LL DREM %	50% Remaining	5000 feet	
DREM Landing & Rollout (L&R) (see Section 6.2.4)	2000 feet from Departure (Stop) End	8000 feet	On touchdown, DREM L&R is now the active callout and will alert at 2000 feet remaining if groundspeed > 40 knots
Note – In the above scenario the Long Landing Callout will occur when the aircraft is 3000 feet passed the Approach end and the first Distance Remaining Callout will be “5000 feet remaining”. At typical landing speeds there would be 10 to 15 seconds between these callouts, allowing sufficient time for the crew to communicate and respond appropriately.			

Note: Honeywell provides a simple Excel spreadsheet that can assist the operator in determining the optimal Long Landing Distance and Distance Remaining activation points. It is available for download via the following link:

<https://aerospace.honeywell.com/content/dam/aero/en-us/documents/myaerospace-documents/egpws/LongLanding.xls>

Long Landing Monitor			
Enable Long Landing Monitor <i>(See Notes 1, 2, & 3)</i>	OFF	ON	
Select Voice Gender	Female Voice	Male Voice	
Configure callout	<i>“Long Landing” callout</i>	<i>“Deep Landing” callout</i>	
Long Landing Distance	OFF	ON From Approach End	ON From Departure End
		<i>Enter distance from selected end in the table below [Ex: 900 m or 3000 ft].</i>	
Long Landing percentage	OFF	ON	
		<i>Enter percentage (%) of runway remaining in the table below. Percentage Remaining – This is the % of runway remaining that would trigger the aural if aircraft has not yet touched down on the runway. For example, a setting of 67% runway remaining would trigger the aural if the aircraft has not touched down in the first 33% of the runway.</i>	
Long Landing Distance Remaining Callout	OFF	ON From Approach End	ON From Departure End
		<i>Enter Distance from selected end in the table below [Ex: 900 m or 3000 ft].</i>	
Long Landing Distance Remaining Callout Percentage.	OFF	ON	
		<i>Percentage Remaining – This is the % of runway remaining that would trigger the aural if aircraft has not yet touched down on the runway. For example, a setting of 45% runway remaining would trigger the aural if the aircraft has not touched down in the first 55% of the runway.</i>	

Long Landing Monitor										
	Ex:	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
Long Landing Distance (feet or m) from Threshold	<i>3000ft</i>									
Long Landing Percentage (%) of Runway Length	<i>67%</i>									
Long Landing Distance Remaining (feet or m) from Threshold	<i>3000ft</i>									
Long Landing Distance Remaining Percentage (%) of Runway Length	<i>45%</i>									
Notes										
<p><i>Note 1:</i> RAAS, Takeoff Flaps Monitor, and Long Landing Monitor share the same RAAS Program Pin Enable Discrete. See the RAAS Common Selections Table in section 5.1 regarding the RAAS Program Pin Enable Discrete.</p> <p><i>Note 2:</i> The Long Landing Monitor will be triggered when either the aircraft reaches the specified distance from the selected end of the runway or the specified percentage of runway remaining, whichever occurs first.</p> <p><i>Note 3:</i> When anticipating landing on a runway with a temporary displaced threshold, advisories and cautions may occur that should be handled by the applicable Abnormal/Non-normal operating procedure, such as by briefing or inhibiting RAAS.</p>										
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet										

5.8 Volume Requirements

The Operator will select a volume level from within the certified range of volume levels as defined in the STC’s Approved RCD settings document.

Advisory audio should not be so loud as to interfere with ATC communications. Caution audio will need to be louder than advisories to emphasize the situation to the crew. The relevant volumes should be evaluated on a test flight and adjusted appropriately.

Guidance for adjusting and testing volume levels can be found in the Honeywell Test Procedure for Adjustable Volume Settings of RAAS Functions, document 060-4188-230. Contact your Honeywell Field Service Representative or the Technical Operations Center for assistance.

Reconfigure RCD Volume	NO	YES (If Yes, enter the values below in decibels)								
Range is 0 to -48 (0 = no attenuation; -48= 48dB attenuation)	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
5.2.1 Approaching Runway/Short Runway In Air	<i>-6 dB</i>									
5.2.2 Approaching Runway on Ground	<i>-12 dB</i>									
5.2.3 On Runway/Insufficient Runway On Gnd	<i>-12 dB</i>									
5.2.4 Distance Remaining - Landing	<i>-6 dB</i>									
5.2.5 Runway End	<i>-6 dB</i>									
5.3.2 Short Runway Caution In Air	<i>0 dB</i>									
5.3.4 Short Runway Caution On Ground	<i>0 dB</i>									
5.3.5 Extended Holding Initial and Repeated	<i>-6 dB</i>									
5.3.6 Taxiway Takeoff	<i>0 dB</i>									
5.3.7 Distance Remaining – Rejected Takeoff	<i>0 dB</i>									
5.3.8 Taxiway Landing	<i>0 dB</i>									
5.4 Stabilized Approach Unstable	<i>0 dB</i>									
5.4.1 Stabilized Approach Flaps Flaps	<i>-6 dB</i>									
5.4.2 Stabilized Approach Too High	<i>-6 dB</i>									
5.4.3 Stabilized Approach Too Fast	<i>-6 dB</i>									
5.5 Altimeter Setting	<i>-6 dB</i>									
5.6 Takeoff Flaps Monitor Flaps Flaps	<i>0 dB</i>									
5.7 Long Landing	<i>0 dB</i>									
5.7 Long Landing Distance Remaining	<i>-6 dB</i>									
Operator adds a brief description of the methodology for choice of parameter to the RCD Worksheet										

5.9 Adding Additional Comments

Additional comments may be added to the Comment Section at the bottom of the RCD Worksheet (see Appendix A).

If additional customization of items such as Visual Message Color or Alert Advisory Curves is requested, contact Honeywell via email @ DLEGPWSRAAS-SMART-X@honeywell.com.

5.10 Additional Considerations

Warning/Caution Lamp Format

Two Lamp formats are defined as a function of aircraft type. The lamp format defined for each aircraft type can be found in the tables of ICD Appendix F.

Lamp Format 1 configures EGPWS to activate an amber annunciator (typically “Below G/S”) for Mode 5 Glideslope alerts. All other alerts (except Windshear) will activate a red annunciator (typically “Pull Up”). If activating RAAS caution level alerts, Lamp Format 1 may be deemed a certification risk as red annunciators are activated for caution level alerts.

Lamp Format 2 should be used if activating RAAS caution level alerts. Lamp Format 2 configures EGPWS to activate a red annunciator only for Pull Up warnings. All other alerts (except Windshear) will activate an amber annunciator (typically “GPWS”). This will ensure RAAS caution level alerts are accompanied by an amber annunciator.

Another option, regardless of Lamp Format used, may be to request RAAS cautions activate messages on the Terrain display only and will not activate any existing cockpit caution lamps. This may result in a requirement to have at least one terrain display active at all time.

Note: Use of the Terrain Inhibit will prevent the terrain display from activating, so no visual messages can be seen, but RAAS aural alerts will remain active.

Terrain Database

Terrain Databases are released every 56 days synchronized with alternating FMS database releases of the year.

Database changes should be reviewed for effect on RAAS at airports in network.

RAAS Airport Search is here: <https://ads.honeywell.com/search/egpwsSearch>

6 NOTES

6.1 Acronyms and Abbreviations

AFE	Above Field Elevation
AFMS	Airplane Flight Manual Supplement
AGL	Above Ground Level
AIMS	Airplane Information Management System
ASDS	Aerospace Software Download Services
ATC	Air Traffic Controllers
AVBL	Available
CAM	Corrected Altimeter Monitor
CRI	Certification Review Item
DREM	Distance Remaining
EASA	European Aviation Safety Agency
EFIS	Electronic Flight Instrument System
EGPWC	Enhanced Ground Proximity Warning Computer
EGPWS	Enhanced Ground Proximity Warning System
EICAS	Engine Indication and Crew Alert System
ESTC	EASA Supplemental Type Certification
ETC	EASA Type Certification
FAA	Federal Aviation Administration
FMC	Flight Management Computer
FMGC	Flight Management Guidance Computer
FMS	Flight Management System
FOQA	Flight Operations Quality Assurance
FOT	First-of-Type
FPM	Feet Per Minute
GPS	Global Position System
GPWS	Ground Proximity Warning System
HIL	Horizontal Integrity Limit
ICAO	International Civil Aviation Organization
ICD	Interface Control Document
ILS	Instrument Landing System
INOP	Inoperative
IRS	Inertial Reference System
ISA	International Standard Atmosphere
LDA	Localizer Type Directional Aid
LL Mon	Long Landing Monitor
MDL	Model
MKV	Mark V Warning Computer
MKVII	Mark Seven Warning Computer
MKVIII	Mark Eight Warning Computer
NISF	Non Isolatable Satellite Failure
NOTAM	NOTice To AirMen
OEM	Original equipment manufacturer
PCMCIA	Personal Computer Memory Card International Association

QFE	Corrected Baro Alt relative to field elevation
RAAS	Runway Awareness and Advisory System
RCD	Reloadable Customer Definitions
RTO	Rejected Take Off
SAM	Stabilized Approach Monitor
SAP	Systems, Applications, and Products
SL	SmartLanding [®]
SOP	Standard Operating Procedure
SR	SmartRunway [®]
STC	Supplemental Type Certification
TDB	Terrain Database
TSO	Technical Standing Order
UOM	Unit of Measure
USB	Universal Serial Bus
VAC	Volts, AC
VDC	Volts, DC
VFOM	Vertical Figure of Merit
V ₁	Takeoff Decision Speed
V _{ref}	Landing Reference Speed

Appendix A – RCD Worksheet

The RCD Worksheet accompanying this RCD Selection Guide is a .pdf form attachment. This requires Adobe Pro to save the data entered in the worksheet. If Adobe Pro is not available the worksheet below should be printed as a means of saving the selections.

Contacts:

Engineering development team:

- DLEGPWSRAAS-SMART-X@honeywell.com
- Please submit RCD worksheet and feel free to contact us with questions about RCDs or about the RCD development/release process.
- Engineering CANNOT answer questions about pricing, order status, or part numbers that are not RCDs.

SWOH:

- SWOH@honeywell.com
- Please submit working PO to SWOH and feel free to contact SWOH for PO specific questions.
- SWOH creates invoice for customer orders and can work with customer for completeness of PO. SWOH can answer questions regarding pricing, order status and shipment information.

ASDS Website:

- <https://ads.honeywell.com>
- ASDS website can be used to access the electronic version of the worksheet, submission of the RCD request and electronic download of the RCD.
- The RCD file can be provided for download onto customer's own media via ASDS website. See Aerospace Services Operations Information Bulletin ASOIB-ADS-20190222 for details on registering for and downloading files from ASDS website.

Completed PO can be submitted to SWOH group and copy
DLEGPWSRAAS-SMART-X@honeywell.com.

To order existing RCDs, please contact orders@honeywell.com.

After the customer worksheet and PO have been accepted by the engineering team, the engineering process starts. 30 calendar days is the standard lead time from engineering acceptance to shipping.

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

INSTRUCTIONS:

- 1) Refer to the RCD Selection Guide for the EGPWS Runway Advisory and Awareness System, Drawing Number 060-4314-092, for assistance in completing this worksheet.
- 2) Return the completed worksheet to DLEGPWSRAAS-SMART-X@honeywell.com. For PO and Processing queries write to SWOH@Honeywell.com. To order existing RCDs, please contact orders@honeywell.com.

RCD Software Part Number:

General Information	
Aircraft Operator	
Date (MM/DD/YYYY)	
Customer name/Company	
Customer Phone/email	

Ordering Information			
Customer:		P.O. #:	Requested Ship Date:
EGPWS P/N:		STC #:	Regulatory Agency:
EGPWS S/N:		RCD Settings Doc # & Rev:	MDL # and Revision:

Model and Part Number Selection										
	<i>Ex:</i>	<i>Columns are provided for up to nine separate aircraft types</i>								
		<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
OEM Aircraft Model	<i>737-700</i>									
OEM Aircraft TN or SN (leave blank for fleet)										
EGPWS Aircraft Type number	<i>196</i>									
MK V, MK VII, or MKV-A EGPWS	<i>MK V</i>									

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

General RCD Information		
Select RCD Enable Method	RCD Master Key	Enable Key Card
Add RAAS/SAM/CAM Program Pin Enable ICD Appendix D-15 (-230/-054/-004 and on)	NO	YES

Visual Messages on Terrain Display for Non-TSO Functions		
Enable Visual Messages	All Messages	Non-routines and Cautions Only
	Cautions Only	None

Runway Awareness and Advisory System (RAAS) Common Selections				
Enable Runway Awareness Advisory System (RAAS)		On		Off
Select RAAS Enable / Inhibit Discrete	None	Ground or 28V = Inhibit	Ground or 28V = Enable	BOTH <i>1ST: Ground or 28V = Enable 2nd: Ground or 28V = Inhibit NOTE: Only valid for MKV-A</i>
RAAS Discrete Connector Pin (ex: TP1A)			<i>1ST</i>	<i>2ND</i>
RAAS Enable / Inhibit Switch Configuration If installing a RAAS Enable / Inhibit Discrete, select one Option		Option 1: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps		
		Option 2: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + SAM		
		Option 3: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + CAM*		
		Option 4: RAAS Discrete(s) applies to: Rwy + LL + T/O Flaps + SAM +CAM*		
<i>*NOTE: Options including CAM can only be selected for an "Inhibit" Discrete</i>				
Use GPWS Caution Annunciator for RAAS?			NO	YES
Cockpit RAAS INOP Annunciator		NONE	Use GPWS INOP	YES
Select voice gender			Female	Male
Select Annunciation of Unit of Measure (UOM)			Off	First
Select Distance Unit of Measure (UOM)			Feet	Meters

**Reloadable Customer Definitions (RCD) Worksheet
for the Runway Awareness and Advisory System (RAAS)**

Runway Awareness and Advisory System (RAAS) Common Selections										
	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
Select Advisory Suppress Window	450-550 (ft)									
	350-450 (ft)									
GPS Antenna Location	35 ft									

RAAS Routine Alerts					
Enable Approaching Runway - in air (4.2.1)				OFF	ON
Enable Approaching Runway – on ground (4.2.2)				OFF	ON
Enable On Runway – on ground (4.2.3)				OFF	ON
Select Distance Remaining, Landing and Rollout (4.2.4)	OFF	50% of runway			
	1000 ft (300m)	2000 ft (600m)	3000 ft (900m)	4000 ft (1200m)	5000 ft (1500m)
Additional Comments:					
Enable Runway End advisory (4.2.5)				OFF	ON

RAAS Non-Routine Alerts											
Select approaching short runway length – in air advisory (4.3.1)	OFF	ON (Enter nominal runway length below)					ALWAYS (Enter a runway length of 99,999 ft making this a Routine Alert)				
	Short Runway Length - in air (ft or m)	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
	4500 ft										
Additional Comments:											

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Select Caution short runway in air (4.3.2)				OFF			ON (if ON, enter nominal runway length below)			
Caution Short Runway Length - in air (ft or m)	<i>Ex:</i>	<i>AC</i> #1	<i>AC</i> #2	<i>AC</i> #3	<i>AC</i> #4	<i>AC</i> #5	<i>AC</i> #6	<i>AC</i> #7	<i>AC</i> #8	<i>AC</i> #9
	<i>4500 ft</i>									
Additional Comments:										

Select insufficient runway length on ground advisory (4.3.3)	OFF	ON (Enter nominal runway length below)					ALWAYS (Enter a runway length of 99,999 ft making this a Routine Alert)			
Insufficient Runway Length – on ground (ft or m)	<i>Ex:</i>	<i>AC</i> #1	<i>AC</i> #2	<i>AC</i> #3	<i>AC</i> #4	<i>AC</i> #5	<i>AC</i> #6	<i>AC</i> #7	<i>AC</i> #8	<i>AC</i> #9
	<i>4000 ft</i>									
Additional Comments:										

Select Caution short runway on ground (4.3.4)		OFF					ON (if ON, enter nominal runway length below)			
Caution Short Runway Length – on ground (ft or m)	<i>Ex:</i>	<i>AC</i> #1	<i>AC</i> #2	<i>AC</i> #3	<i>AC</i> #4	<i>AC</i> #5	<i>AC</i> #6	<i>AC</i> #7	<i>AC</i> #8	<i>AC</i> #9
	<i>4000 ft</i>									
Additional Comments:										

Select extended holding time on runway, initial (in seconds) (4.3.5)	OFF		60	90	120	180	240	300
Select extended holding time on runway, repeats (in seconds) (4.3.5)	OFF	30	60	90	120	180	240	300

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Select distance remaining Rejected takeoff (4.3.7)	OFF	50% of runway			
	1000 ft (300m)	2000 ft (600m)	3000 ft (900m)	4000 ft (1200m)	5000 ft (1500m)
Additional Comments:					

Enable Taxiway takeoff (4.3.6)	OFF	ON (Advisory)	ON (Caution)
Enable Taxiway Landing (4.3.8)	OFF		ON

Stabilized Approach Monitor (SAM)										
Enable stabilized approach monitor (SAM)	OFF <small>(if OFF, skip Landing Flap, Excessive Approach Angle, and Excessive Approach Speed Monitors)</small>							ON		
Select Voice Gender	Female Voice							Male Voice		
Enable Landing Flap Monitor (5.2.1)										
<i>Upper Flap gate Alert</i>	OFF							ON		
<i>Lower Flap Gate Alert</i>	OFF							ON		
Flap Gate Maximum Altitude	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
Upper Flap Gate (ft)	<i>950 ft</i>									
Lower Flap Gate (ft)	<i>600 ft</i>									
Additional Comments:										

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Enable Excessive Approach Angle Monitor Advisory (5.2.2)	OFF	ON			
Enable Excessive Approach Speed Monitor Advisory (5.2.3)	OFF	ON			
Checklist: Do the Aircraft and EGPWS support Excessive Approach Speed Monitor?					
EGPWS ICD Aircraft Type supports Approach/Reference Speed?	YES	NO			
Aircraft FMS/FMGC, AIMS, or EFIS matches the EGPWS interface For example, an FMS may not provide the needed data unless the Speed Tape option is activated.	YES	NO			
Aircraft FMS/FMGC, AIMS or EFIS part number:					
Aircraft FMS/FMGC, AIMS or EFIS Software level:					
Use this area if more than one FMS type used:					
SAM Speed Curve – Select one of the three options below IF “Enable Excessive Approach Speed Monitor Advisory” is ON					
Curve A (Airbus)				YES	NO
300ft.–15Kts.	500ft.–15Kts.	950ft.–40Kts.	950ft.–40Kts.	950ft.–40Kts.	
Curve B (Boeing and all other OEM)				YES	NO
300ft.–30Kts.	500ft.–30Kts.	950ft.–40Kts.	950ft.–40Kts.	950ft.–40Kts.	
Custom- If selecting this option, fill-in the points below (Altitude(ft.)-Excessive Speed(Kts.))				YES	NO
Additional Comments: 					

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Corrected Altimeter Monitor (CAM)		
Enable Altimeter Monitor (6.)	OFF	ON
Select Voice Gender	Female Voice	Male Voice
Enable Altimeter Monitor Below Transition Altitude (6.2.1)	OFF	ON
Enable Altimeter Monitor Above Transition Altitude (6.2.2)	OFF	ON

Takeoff Flap Configuration Monitor										
Enable Takeoff Flap Configuration Monitor (7.)	OFF					ON				
Select Voice Gender	Female Voice					Male Voice				
Select Enable/Inhibit discrete	Takeoff Flap Configuration Monitor (and Long Landing Monitor) uses the same Enable/Inhibit discrete as RAAS.									
	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
Takeoff Flap Handle Minimum Setting	<i>5 °</i>									
Takeoff Flap Handle Maximum Setting	<i>10 °</i>									
Flap Angle Checklist										
Do Aircraft and EGPWS support Takeoff Flap Configuration Monitor?										
EGPWS ICD Aircraft Type supports Flap Angle?							YES	NO		
Aircraft interface matches the EGPWS interface?							YES	NO		

Long Landing Monitor		
Enable Long Landing Monitor (8.)	OFF	ON
Select Voice Gender	Female Voice	Male Voice
Configure callout	<i>“Long Landing” callout</i>	<i>“Deep Landing” callout</i>

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Long Landing Distance	OFF	ON From Approach End	ON From Departure End							
		<i>Enter distance from selected end in the table below (Ex: 900 m or 3000 ft).</i>								
Long Landing percentage	OFF	ON								
		<i>Enter percentage (%) of runway remaining in the table below.</i>								
<i>Percentage Remaining – This is the % of runway remaining that would trigger the aural if aircraft has not yet touched on the runway. For example, a setting of 67% of runway remaining would trigger the aural if the aircraft has not touched down in the first 33% of the runway.</i>										
Long Landing Distance Remaining Callout	OFF	ON From Approach End	ON From Departure End							
		<i>Enter Distance from selected end in the table below (Ex: 900 m or 3000 ft).</i>								
Long Landing Distance Remaining Callout Percentage.	OFF	ON								
		<i>Enter percentage (%) of runway remaining in the table below.</i>								
<i>Percentage Remaining – This is the % of runway remaining that would trigger the aural if aircraft has not yet touched down on the runway. For example, a setting of 45% runway remaining would trigger the aural if the aircraft has not touched down in the first 55% of the runway.</i>										
	<i>Ex:</i>	<i>AC #1</i>	<i>AC #2</i>	<i>AC #3</i>	<i>AC #4</i>	<i>AC #5</i>	<i>AC #6</i>	<i>AC #7</i>	<i>AC #8</i>	<i>AC #9</i>
Long Landing Distance (ft or m) from Threshold	<i>3000ft</i>									
Long Landing Percentage (%) of Runway Length	<i>67%</i>									
Long Landing Distance Remaining (ft or m) from Threshold	<i>3000ft</i>									
Long Landing Distance Remaining Percentage (%) of Runway Length	<i>45%</i>									
Additional Comments:										

Reloadable Customer Definitions (RCD) Worksheet for the Runway Awareness and Advisory System (RAAS)

Volume Settings										
<i>See Section 5 in the RCD Selection Guide (060-4314-092)</i>										
Reconfigure RCD Volume	NO	YES (If Yes, enter the values below in decibels)								
Range is 0 to -48 (0 = no attenuation; -48= 48dB attenuation)	Ex:	AC #1	AC #2	AC #3	AC #4	AC #5	AC #6	AC #7	AC #8	AC #9
5.2.1 Approaching Runway/Short Runway in Air	-6dB									
5.2.2 Approaching Runway on Ground	-12dB									
5.2.3 On Runway/Insufficient Runway–On Gnd	-12dB									
5.2.4 Distance Remaining - Landing	-6dB									
5.2.5 Runway End	-6dB									
5.3.2 Short Runway Caution In Air	0dB									
5.3.4 Short Runway Caution On Ground	0dB									
5.3.5 Extended Holding Initial and Repeated	-6dB									
5.3.6 Taxiway Takeoff	0dB									
5.3.7 Distance Remaining – Rejected Takeoff	0dB									
5.3.8 Taxiway Landing	0dB									
5.4 Stabilized Approach Unstable	0dB									
5.4.1 Stabilized Approach Flaps Flaps	-6dB									
5.4.2 Stabilized Approach Too High	-6dB									
5.4.3 Stabilized Approach Too Fast	-6dB									
5.5 Altimeter Setting	-6dB									
5.6 Takeoff Flaps Monitor Flaps Flaps	0dB									
5.7 Long Landing	0dB									
5.7 Long Landing Distance Remaining	-6dB									
Additional Comments:										

**Reloadable Customer Definitions (RCD) Worksheet
for the Runway Awareness and Advisory System (RAAS)**

Customer Comments

Honeywell – Internal Use Only