Honeywell Analytics

AREARAE PLUS & PRO

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RAE Systems Area Monitoring Products today

AreaRAE introduced wireless gas detection and changed the market in fire and hazmat response operations

- First Introduced In 2001 and adopted by hazmat teams at the SLC winter Olympics
- Allowed for real time hazard monitoring from a remote location
- Monitored a broad range of threats

- Sensor Technology Has Advanced
- New Wireless Options
- Customers Asking For New Improvements

AreaRAE Plastic   *AreaRAE Steel, Inert and Gamma*

First Rapidly Deployable Wireless Area Threat Monitor

Next Generation of Area Monitoring

Honeywell AreaRAE Plus and Pro carries on that legacy and incorporates 15 years of in service experience to deliver expanded features and capabilities required by the new challenges faced by our customers.

AreaRAE Plus
Honeywell

- ppm PID
- RAEMet optional
- No Gamma

AreaRAE PRO
Honeywell

- ppb PID
- RAEMet
- Gamma optional

Built On Our Legacy and In-Field Experience

Market Positioning

Industrial/First responder

Fire/Hazmat/CST/Military

Safety Investment

> **Monitor Risks Remotely**
> **PID w/ ppb resolution**
> **Plume Modeling; Gamma**
> **Class 1 Div 2, Atex Zone II**

AreaRAE Pro

> **Monitor Standard Known Risks Remotely**
> **PID w/ppm resolution; Class 1 Div 2**

AreaRAE Plus

Complexity/Flexibility
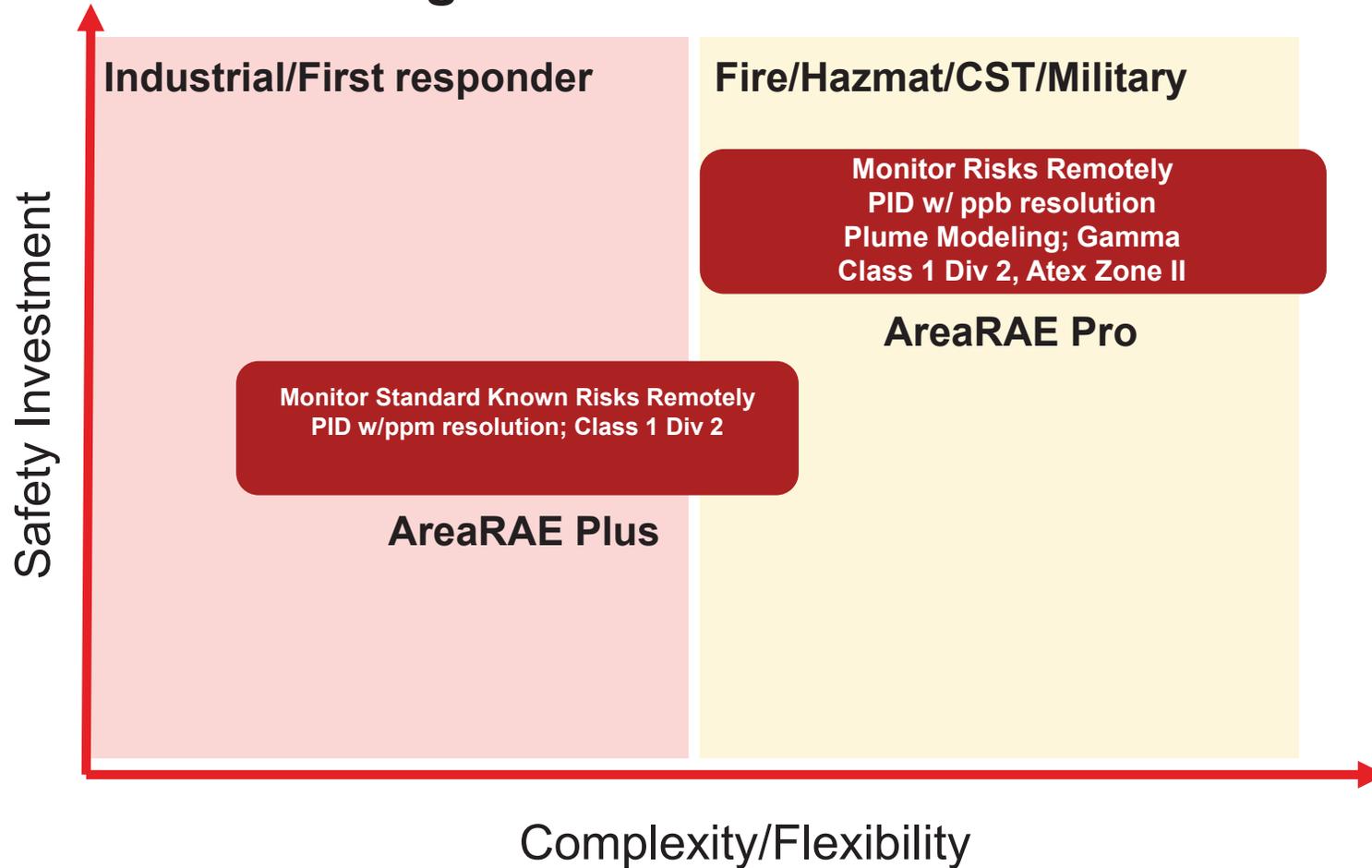
AreaRAE PRO
Honeywell

Plus and Pro Meet the Needs of Low and High End Detection

An Overview of AreaRAE Plus / Pro

Summary

The most advanced wireless Transportable Local Area Monitor on the market. *Complexity has never been this simple!*

Key differentiators

- All-in-one gas, radiation, ppb level VOC and meteorological detector
- Multiple options for monitoring threats from a remote location
- RAEMet sensor for meteorological measurements and plume modeling
- Easy to deploy, use and service

Communications

- Up to 4 on-board Wireless modules in same unit
    - Primary radio module (ISM and/ or Wi-Fi)
    - Secondary Mesh radio module
    - Standard GPS
    - BLE*

Sensing technologies

- Multiple sensing technologies in one product
    - PID, EC, Combustible, Gamma, Meteorological & GPS
    - More than 25 sensors types to choose
    - Up to 12 sensors in same unit **(7 gas sensors)**

Certifications

- All major IS certifications (CSA C1 Div 2, ATEX/IECEX Zone II)
- All major Wireless approvals (FCC/IC, R&TTE)
- Designed and tested with MIL STD 810G and 461F

Flexible and Versatile with Advanced Communications

Sensing Technologies

Sensors

7 sensor slots	• Increased # of threats monitored
Improved PID	• 7R+ format opens extra 4R+ slot • Better temp and humidity compensation for linearity/accuracy • 10ppb resolution • 2 year warranty on lamp
4R+ EC sensor	• Uses existing proven sensor (MultiRAE and ToxiRAE Pro Series) • Reduce inventory level for Partners & End customers • Supported by SensorRAE 4R+
New Gas Plate	• Enables 4R+ HF and HCL sensors

RAEMet

Easy to use meteorological data capturing sensor makes it easy to input weather information in to plume modeling software.

Measures meteorological parameters
- Wind speed / direction
- Temperature And Relative humidity

Key benefits:
- High Sensitivity: 0.1m/s & Quick response time: 1s
- Built-in electronic compass
- Factory calibration
- Low maintenance & Service support cost
- Power supply by the AREARAE unit

Gamma Sensor
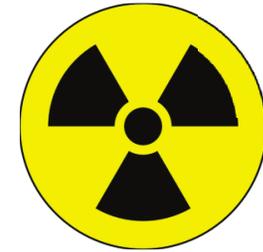
- Can detect much lower levels and higher counts of gamma radiation.
  - 1-200 µSv/hr range
  - resolution >20cps(µSv/hr)

- Important for the detection of dirty bombs.

Additional And More Accessible Sensor Options

Improved Connectivity

- Integrated standard GPS module
  - (down to 5 -10m accuracy)

- Long Distance **Primary** Radio (only 1 active at given time)
  - ISM license free
    - 900 MHz Line of Sight up to 2 miles (~ 3.2 km)
    - 2.4GHz Line of Sight up to 1.2 miles (~ 2 km)
  - Wi-Fi radio module to connect long-distance via Wi-Fi backhaul

- Short Range Mesh **Secondary** Radio
  - Mesh (900MHz / 868 MHz)
    - RAE Systems by HON proprietary
    - Line of Sight ~ 330ft (~100m)
  - Acts as a "**wireless HUB**" for up to 8 Mesh Portable devices

- Bluetooth® Low Energy (BLE) Module
  - Over the air configuration (Future Release) – Part of Mobile Roadmap


GPS   ISM

RAEMesh   Wi-Fi
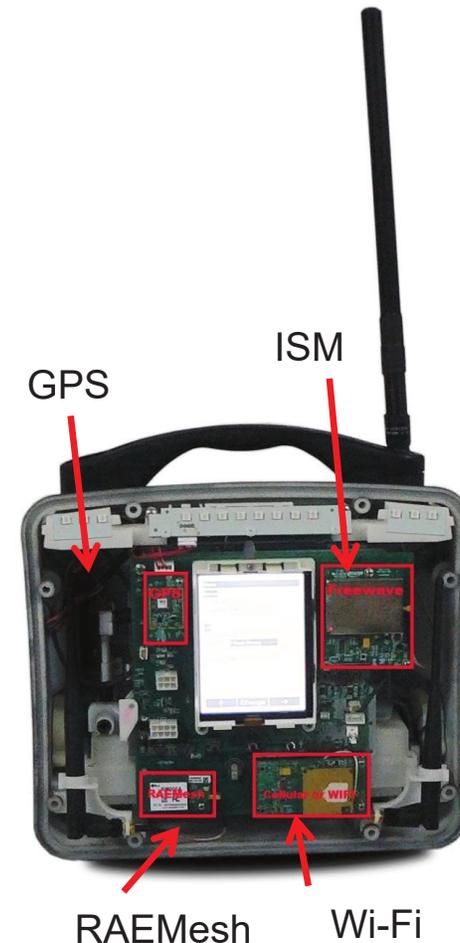
1st product Series to support up to 4 radio modules simultaneously

Wireless Ecosystem ISM

ISM   2miles
Mesh   330ft
Bluetooth   16ft

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Wireless Ecosystem Wi-Fi

·········	Mesh	330ft
·········	Wi-Fi	330ft

Plume Modeling Through ProRAE Guardian

- ProRAE Guardian Software Integrates With Freely-Available ALOHA software
- Predictive Plume Modeling Based On Gas Types And Weather Conditions
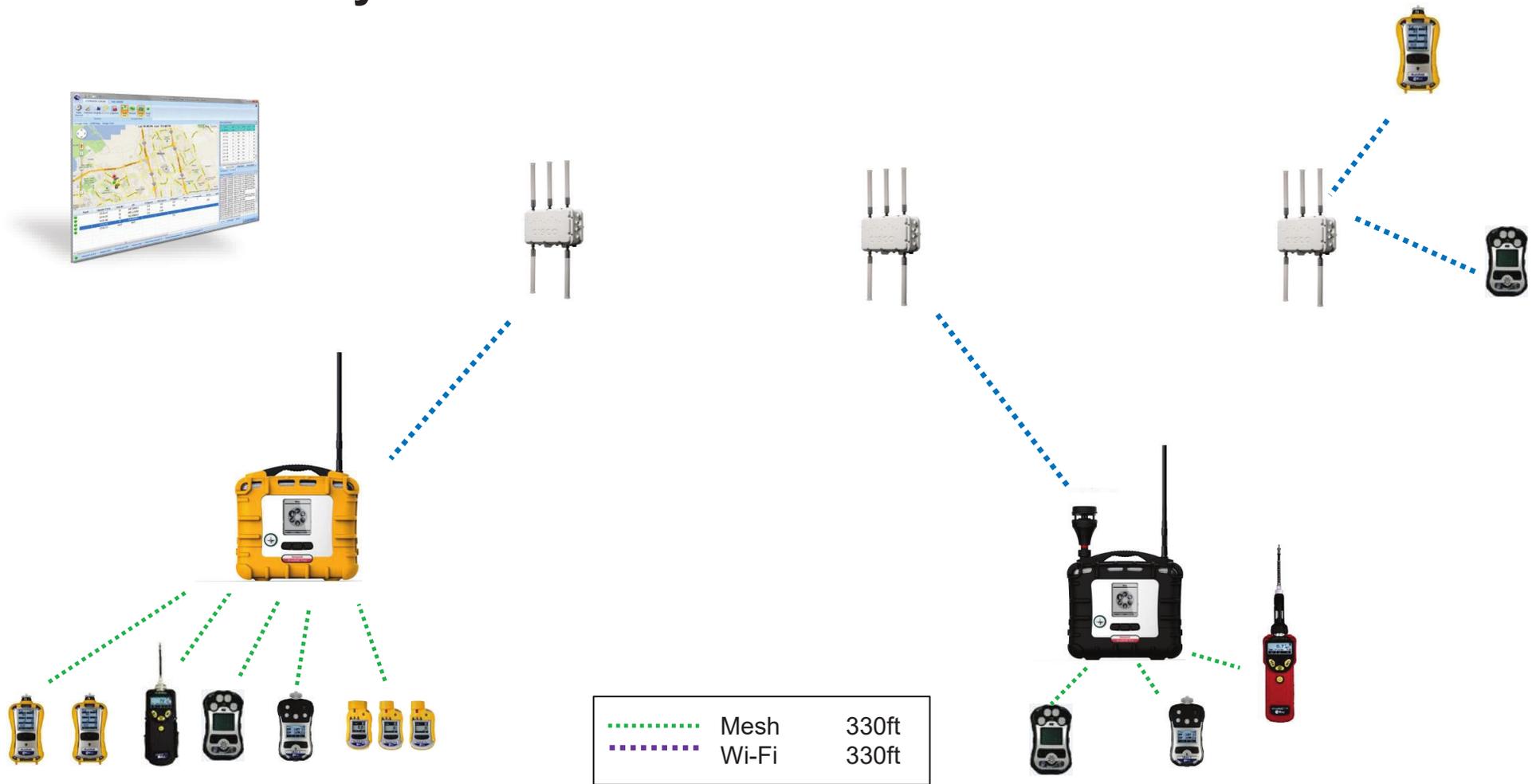
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Improved Usability

Handle not in contact with antenna

Large, non-moving, replaceable handle

Long lasting, flexible antenna for a longer service life

Similar menu structure to MultiRAE and ToxiRAE Pro – anyone who can operate a MultiRAE can operate an AreaRAE

Easy download of data via USB cable, no special cables required

Better UI with large display

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Improved Product Design

- Rugged Design:
  - Durable shock absorbing colored rubber boots with integrated feet
  - Third Party test IP 65 Rating
  - Pass Shock / Vibration / Drop tests 3rd party test @ CSA

- Improved Alarm Notification
  - Ultra Bright 360-Degree-view LED (RED and GREEN)
  - "Around the product" 108dB @1m Audible Alarm

- Low- Power Consumption

	Charging time	Running time
Rechargeable Li-Ion	Spec:<12 hours ≈ 9h @ room temperature	"Fully loaded" configuration (γ + 7gas sensors + RAEmet + GPS+ wireless) Spec: 16h (@ room temp. ≈ 15h @ -20°C ≈ 21h @ room temp.
Alkaline Battery pack	NA	"Fully loaded" configuration (γ + 7gas sensors + RAEmet + GPS+ wireless) Spec: 10h (@ room temp. ≈ 2h @ 0°C ≈ 12h @ room temp.

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Designed for Improved Serviceability and Maintenance

>50 – 70 % time savings over following existing procedures:

- Battery pack replacement
- Gas plate removal
- Pump Cleaning / Replacement
- Access/ Replace gas Sensors
- PID cleaning operation (7R+)

- RAEMet installation: No tools required; factory calibrated
- No specific gas plate for exotic sensors (HF/ HCL)
- Fully interchangeable with 4R+ Sensor
  (MultiRAE and ToxiRAE Pro Series)

- Detailed diagnostic mode on large screen
- Glance Mode feature

wind sensor

gasplate

lithium battery

battery

alkaline battery

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