SECTION 27 52 25
WIRELESS EMERGENCY CALL SYSTEM

PART 1 GENERAL

1.1   RELATED DOCUMENTS

   A.   Drawings and general provisions of Contract, including General and Supplementary
          Conditions and Division -1 Specification sections, apply to work of this section

1.2   SUMMARY

   A.   This section includes wireless and wired emergency call systems. It includes
          requirements for system components including, but not limited to the following:

   > Designer Note: Remove items that are not used.

   1.   Wireless devices

   2.   Wired Devices

   3.   Caregiver Console

   4.   Dome Lights

   5.   Personal Emergency Response System: Cube

   6.   Wireless Locator Network

   7.   Smart Phone Enabled Caregiver notification and tracking system

   8.   Activity Monitoring

   9.   Door Monitoring

1.3   WORK INCLUDED

   A.   Provide labor, materials, equipment and services to perform operations required for the
          complete installation and related work as required in Contract Documents

   B.   Obtain all permits as required

1.4   DEFINITIONS

   A.   Standards by the following organizations shall apply:

          BICSI: Building Industry Consulting Services International
          EIA: Electronics Industries Association
          ETL: Electrical Testing Laboratory
          FCC: Federal Communications Commission
          NEC: National Electrical Code
          NFPA: National Fire Protection Association
          UL: Underwriters' Laboratories

1.5   SUBMITTALS

   A.   Provide submittals for the entire system including:

1.   Complete equipment list

2.   All cable types

3.   Catalog descriptive literature for equipment

4.   Riser Diagram showing devices

5.   Typical Installation Diagram for each type of device

1.6   GENERAL REQUIREMENTS

A.   The contractor shall furnish and install all equipment, accessories and materials necessary for a complete system in accordance with specifications and applicable drawings.

> Designer note: remove reference to wireless telephone and smoke detectors if not used.

B.   The equipment furnished under this specification shall be the standard product of one manufacturer (with the exception of on-site pagers and smoke detectors) and shall be equal in performance and quality to the design make

C.   All components and the system as a whole shall meet or exceed the minimum standards issued by the EIA. All work in conjunction with this installation shall meet the provisions of the National Electrical Code and other applicable codes

D.   The system shall conform to the current NFPA, UL, ETL and FCC standards

E.   Each major component shall bear the manufacturer's name and catalog number

F.   The contractor shall be responsible for providing a complete functional system including all necessary components, whether included in this specification or not

G.   The contractor shall guarantee availability of local (within 100-mile radius) service by factory-trained personnel from an authorized distributor of the equipment manufacturer

H.   The contractor shall have technicians certified by the manufacturer in the installation and operation of the system to be installed

I.   The contractor shall have available a stock of the manufacturer's standard parts

J.   The Owner reserves the right to use the systems prior to final acceptance without obligation to pay additional costs but must commence the warranty period on that particular system upon activation and use

K.   On-the-premises maintenance shall be provided at no cost to the Owner, for a period of 12 months from date of completion of installation, unless damage or failure is caused by misuse, abuse, neglect or accident

L.   On-the-premises demand service at other than normal working hours shall also be available and may be charged for by the manufacturer's distributor at the prevailing labor rates

M.   System must be compliant with UL 1069 7th Ed. and/or UL2560 dependent upon application.

1.7   DESCRIPTION OF SYSTEM

A.   Provide a complete fully functional personal emergency response system.

B.   The system shall be microprocessor-controlled, of modular design and shall provide the following features and functions:

1.   Operation shall be accomplished simply and easily with minimal training required

2.   Ability to receive and relay to the emergency call computer signals from various wireless alarm devices

3.   Incoming alarms shall be displayed by location and call type with automatic arrangement of calls by priority and time of placement

4.   Full operation during power failure utilizing battery backup power supply

5.   Ability to provide annunciation on a care provider's mobile device, describing room and location of the call being received

6.   Ability to retain emergency calls at the personal emergency response system

7.   Ability to send alerts to any email address

8.   Programmable escalation patterns

9.   Ability to receive emergency alerts throughout the facility

10.   Ability to perform inactivity monitoring routines for verification of resident activity within their residence accomplished via a motion sensor within the residence and reporting set to display inactivity conditions

11.   Ability to interface with any of the following wireless devices

a)   Mobile Duress Transmitters / Pendants

b)   Bed Stations

c)   Pull Stations and Cords

d)   Bed / Chair Alarms

e)   Door / Window Monitors

f)   Smoke Alarms

g)   Dome Lights

h)   Intercom stations

i)   Mobile Displays

j)   Motion Sensors

k)   Text-to-Speech Devices

l)   Pagers

m)   Caregiver consoles

      n)   Desktop Stations

      o)   Laptops

      p)   Cell Phones

      q)   Two-Way Radios both Analog and Digital

      r)   Wireless Handsets

      s)   Remote Keypads

      t)   Wall Mounted Push Buttons

      u)   Water Sensors

      v)   Temperature Sensors

      w)   Hybrid Receivers

12.   Ability to interface with any of the following wired devices

      a)   Dome Lights

      b)   Call Station

      c)   Single Call Cord Station

      d)   Bathroom Station

      e)   Shower Station

C.   RCare Mobile option and NFC / QR tags allows the system to signal alarms to track status of caregiver response time and care given.

D.   Accutech Integration option allows wander alerts to be displayed on any web-based monitoring device or RCare Mobile Device.

E.   Fire Alarm Integration option allows connected RCare notification devices to receive fire alarm textual alarm information.

F.   PointClickCare (PCC) integration to keep patient information up to date.

PART 2 - PRODUCTS

2.1   MANUFACTURERS

A.   Manufacturers: Subject to compliance with requirements. Provide products by the
        following:

   1.   RCare Inc. RCube, VCube, MCube, BCube, or HCube Monitoring System

2.2   WIRELESS ALARM DEVICES:

A.   Personal Pendant Alarms

   1.   Wearable transmitter convertible to wrist or pendant

   2.   Status LED to assure user that signal has been sent

   3.   Includes 2 transmitters for compatibility with Gen3 and Gen4 systems

   4.   Compatible with ALP (Advanced Locating Protocol)

   5.   WTC-G4

        a)   Features:

            1)   Includes breakaway lanyard; soft plastic wrist band sold
                    separately

            2)   Permanently sealed

            3)   Call Assurance LED indicator

        b)   Specifications

            1)   Dimensions - 38.6 x 25 x 10.9 mm

            2)   Range - 200 meters (Open Air)

            3)   Battery - CR2032 (irreplaceable) / 5.5-year life*

            4)   Frequency - 433MHz FM/429.82MHz FM

            5)   Waterproof - Up to 20'

            * Note: Actual battery life may vary with product settings, operation

   6.   WTC-PAT-G4, WTC-B-FL-G4, WTC-WHITE-G4, WTC-BR-F-G4

        a)   Features:

            1)   Different personal design patterns

            2)   Includes breakaway lanyard, soft plastic wristband sold
                    separately.

            3)   Permanently Sealed

            4)   Call Assurance LED indicator

            5)   Contact RCare for availability

        b)   Specifications:

      1)   Dimensions 48 x 36 x 13.6 mm

      2)   Range - 350 meters (Open Air)

      3)   Battery - CR2032 (irreplaceable) / 6-year life*

      4)   Frequency 433MHz FM/429.82MHz

      5)   Waterproof - IP67 Standard

      * Note: Actual battery life may vary with product settings, operation

7.   WTC-G34, WTC-White-G34

    a)   Features:

      1)   Different personal design patterns

      2)   Includes breakaway lanyard, soft plastic wristband sold separately.

      3)   Permanently Sealed

      4)   Call Assurance LED indicator

      5)   Contact RCare for availability

    b)   Specifications:

      1)   Dimensions 38.6 x 25 x 10.9 mm /48 x 36 x 13.6 mm

      2)   Range - 350 meters (Open Air)

      3)   Battery - CR2032 (irreplaceable) / 6-year life*

      4)   Frequency 433MHz FM/429.82MHz/433 MHz AM

      5)   Waterproof to 20 feet/IP67 Standard

      * Note: Actual battery life may vary with product settings, operation

8.   WTC-GEO – Geo Pendant

    a)   Features:

      1)   Designated "safe zones" for residents

      2)   Includes breakaway lanyard

      3)   Call Assurance LED indicator

      4)   Contact RCare for availability

    b)   Specifications:

      1)   Dimensions 57.15 x 41.28 x 19.05 mm

      2)   Range - 350 meters (Open Air)

      3)   Battery – 3 V CR2477 (replaceable) / 1-2-year battery life*

      4)   Frequency 433MHz FM/429.82MHz

      * Note: Actual battery life may vary with product settings, opera

B.   Bedside Station

    1.   Allows for emergency calls to be made in a convenient wall mounted design.

    2.   Interfaces with a variety of industry standard call cords for multipurpose use.

    3.   Mounts to standard plastic or metal single gang electrical box

    4.   Re-transmits activation until reset

    5.   Cord out detection

    6.   18-hour supervision schedule

    7.   Powered by 2 standard AAA batteries (included)

    8.   Transmits low battery condition

    9.   Red call assurance indicator LED

    10.   Compatible with non-conductive dummy plugs

    11.   Compatible Devices

        a)   Any device with a momentary contact closure through a ¼" jack

    12.   Design Make: Response Care JR-14

  C.   Classic Call Cords:

    1.   Call cords are used for patients to initiate a call through a bedside station.

    2.   Large contoured button is easy for patients to operate.

    3.   Button provides tactile feedback with an audible click.

    4.   Switch rated for a minimum of 30,000 activations per UL1069 part 24.

    5.   Electrostatic discharge (ESD) resistant design.

    6.   Available in coiled and double configurations.

    7.   Self-Extinguishing pendant design.

    8.   Custom cable lengths available

    9.   Provide 1 per bedside station

  D.   Bed Chair Alarm

    1.   Multi-functioning, unobtrusive alert system allows caregivers to monitor residents via wireless silent messages or audible alerts to their mobile device, pager, radio, or phone.

    2.   Silent or audio alert

    3.   Programmable volume settings

    4.   Tamper protection

    5.   Auto reset option

    6.   Multiple delay settings

    7.   Integrates with RCare Bed and Chair Pads

    8.   Design Make: RCare – BCA9

  E.   Duty Station

    1.   Duty Station for Skilled Care and Hospital environments.

2.   For Clean/Soiled Utility Rooms, Med Rooms, and Nurse's Stations.

3.   Pleasing Chime

4.   Green LED flashes upon activation

5.   Red "Snooze" Button (can be deactivated)

6.   Single Gang

7.   Requires 12V wired connection to DLC-2400 for operation

8.   Design Make RCare - DS-10

F.   Door / Window Contact

1.   Monitors a door or window. Can be mounted directly to door or window or can be used to remotely monitor two magnetic contacts.

2.   Includes magnetic contact and mounting materials

3.   Auxiliary input terminal allows for the connection of other standard door contacts

4.   30mm maximum space between magnet and base terminals

5.   Tamper Detection

6.   Range – 70 meters

7.   LED Indicator

8.   Powered by 2 standard AAA batteries (included)

9.   Low battery detection

10.   Design Make: Response Care WD-3

G.   Motion Sensor

1.   Infrared sensor to detect resident inactivity. Works with Cube to generate report for all inactive resident accounts.

2.   Microprocessor controlled with advanced digitalized adaptive signal processor algorithm

3.   Surface and corner mounting

4.   Tamper protection

5.   Randomized supervision signals for trouble-free system integrity checking

6.   Powered by standard 2 AA batteries (included)

7.   Low battery detection

8.   Superior white light noise rejection

9.   Detection range: 12 meters

10.   Automatic power saving mechanism

11.   Insect and draft-resistant

12.   Activity LED

13.   Complies with CE and UL requirements

14.   Range: 230 feet

15.   Dimensions: 4.5" x 2.75" x 2.25

16.   Design Make RCare - MS-6

H.   Wall Mount Push Button

1.   Multi-purpose Push Button that can be used in a variety of applications including: Door Bypass, Activity Monitoring, Emergency Acknowledgement, RCare Check-In and as a standalone Emergency Call Button.

2.   Transmits supervisory and low battery signals

3.   IPX6 Water resistance

4.   Operating Temperature -10 to 45 deg C

5.   Powered by 1 CR123 Lithium battery (included)

6.   Expected Life: Over 8 years (10 activations per day)

7.   LED Call Assurance Indicator

8.   Transmits Low Battery Signal

9.   Space for labeling

10.   Dimensions: 2.9" x 1.75" x 0.875"

11.   Design Make: RCare - WM-8-G4 or PB-23

I.   Universal Transmitter

1.   Transmits alarm for any contact closure device. Compact and versatile that allows integration to many third-party healthcare telecommunications devices.

2.   Low battery detection

3.   Range – 70 meters

4.   Powered by CR2025 Lithium Battery (included)

5.   Expected Life: over 5 years (2 activations a day)

6.   24-hour supervision schedule

7.   UT-3E includes single gang mounting plate with visible status LED

8.   Space for Labeling

9.   Common Uses:

a)   Smoke Detectors

b)   Resident Wander Systems

c)   Door Monitoring

10.   Dimensions:

a)   UT-3   1.25" x 1.25" x 0.5" (not including leads)

b)   UT-3RE-G4   2.8" x 1.7" x 0.6"

11.   Design Make RCare – UT-3, UT3E-G4

J.   Remote Keypad

1. Used in conjunction with Door and Window Contact (WD-3), Universal Transmitter (UT-3) and Push Button (WM-8) for door monitoring. Allows for secure operation of monitored doors.

2. Programmable code

3. 16 Backlit Buttons

4. Battery Powered

5. Tamper Detection

6. Standby mode for battery preservation

7. 75 meters transmit range

8. Powered by 3 standard AAA Batteries (included)

9. Expected Life: Over 3 years (2 activation per day)

10. Dual LED indicators

11. Dimensions: 5" x 3.5" x 1"

12. Design Make RCare - RK-77

K.   Emergency Pull Cord

1. Wall mount Design

2. Allows for emergency calls to be made

3. Mounts to standard plastic or metal single gang electrical box for ease of installation.

4. Locking call switch connected to a 4 ft. nylon cord.

5. Retransmits activation every 5 minutes until reset for maximum reliability.

6. Water Resistant

7. Includes 5-ft. nylon cord

8. 18-hour supervision schedule

9. Powered by 2 standard AAA batteries (included)

10. Expected battery life of 3 – 5 years under normal use

11. Transmits low battery condition

12. Red call assurance indicator LED

13. Design Make RCare - BP-7RWR

L.   Water Sensor

1. Uses a probe to sense water. Used to monitor toilet flooding and AC overflows.

2. Sends alarm on contact with water

3. Signal restores when no longer in contact with water

4. Battery Life: Up to 5 years (avg. 1 activation per day)

5. 4 AAA batteries (included)

6. Design Make: RCare – WS7

M.   Temperature Sensor

1. Transmits temperature condition to cube every 30-50 minutes

2. Sends alarm if outside programmed temperature range

3. Restores when no longer out of tolerance

4. Battery Life: Up to 3 years (avg. 1 activation per day)

5. CR-2 3V battery

6. Dimensions: 103 x 31 x 21 mm

7. Design Make: RCare – TS-9, TAS-9E

N. Hybrid Receiver

1. The Hybrid Receiver adds wireless functionality to any wired nurse call system. Upon the activation of a transmitter, a contact closure is activated, allowing for integration into almost any hardwired system.

2. Momentary or Maintained Contact Closure

3. Up to 10 devices can be programmed

4. Status and Power LED

5. 12V Power Supply (included)

6. Low Battery Detection

7. 80 ft range

8. Design Make RCare - RC-HR7

2.3 Wired Alarm Devices

A. ICall IP-Unit

1. Has two Local Bus connections (50 devices total)

2. RJ45 ethernet connection

3. 24V power connection

4. Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

5. Ampacity 6mA~100mA

6. Overcurrent protection device 1000mA (ItPTC)

7. Communication confirmation with IP bus every minute

8. Dimensions: 3" x 4" x 2.5"

9. Power, Fuse, TX and RX LED indicators

10. Design Make: NWUSIN0160

B. ICall Dome Lights

1. 4 wire hardwire connection to local bus (NWUSIN0160)

2. 5 different LED Lights

3. Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

4. Ampacity 6mA~20mA

5. Overcurrent protection device 400mA (ItPTC)

      6.   Communication confirmation with IP bus every minute

      7.   Dimensions: 4.5" x 2 7/8" x 1.25" (single gang)

      8.   Design Make: NWUSAA0800

   C.   Call Station

      1.   4 wire hardwire connection to local bus (NWUSIN0160)

      2.   Call and Reset Button

      3.   Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

      4.   Ampacity 6mA~20mA

      5.   Overcurrent protection device 400mA (ItPTC)

      6.   Communication confirmation with IP bus every minute

      7.   Dimensions: 4.5" x 2 7/8" x 1.25" (single gang)

      8.   Design Make: NWUSAA0100

   D.   Single Call Cord Station

      1.   4 wire hardware connection to local bus (NWUSIN0160)

      2.   Call and Reset Button

      3.   ¼" Jack for Call Cord

      4.   Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

      5.   Ampacity 6mA~20mA

      6.   Overcurrent protection device 400mA (ItPTC)

      7.   Communication confirmation with IP bus every minute

      8.   Dimensions: 4.5" x 2 7/8" x 1.25" (single gang)

      9.   Design Make: NWUSAA0200

   E.   Bathroom Station

      1.   4 wire hardware connection to local bus (NWUSIN0160)

      2.   Emergency and Reset Button

      3.   Nylon Call Cord

      4.   Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

      5.   Ampacity 6mA~20mA

      6.   Overcurrent protection device 400mA (ItPTC)

      7.   Communication confirmation with IP bus every minute

      8.   Dimensions: 4.5" x 2 7/8" x 1.25" (single gang)

      9.   Design Make: NWUSAA0700

   F.   Shower Station

      1.   4 wire hardware connection to local bus (NWUSIN0160)

      2.   Nylon Call Cord

3. Voltage Rating (18Vdc~30Vdc) Typically 24Vdc

4. Ampacity 6mA~20mA

5. Overcurrent protection device 400mA (ItPTC)

6. Communication confirmation with IP bus every minute

7. Dimensions: 4.5" x 2 7/8" x 1.25" (single gang)

8. Design Make: NWUSAA0600

2.4   Cellular Voice Communicator

    1.   Provides voice communication between resident and caregiver via GSM cell network. Receives signals from transmitters to allow residents flexibility in emergency methods. Requires Cube with voice capability for proper operation.

    2.   Call and Cancel Buttons

    3.   Caller ID

    4.   10 Device Memory

    5.   Programmable Incoming Call Answering

    6.   24 Hour Battery Backup

    7.   Includes 12V Power Supply

    8.   UL 1635/1637 Listed

    9.   Design Make: RCare - RC-D5200

2.5   In Room Voice Communicator

    1.   Provides voice communication between resident and caregiver. Receives signals from transmitters to allow residents flexibility in emergency methods. Available on all SW types, except RCubes.

    2.   Call and Cancel Buttons

    3.   Speakerphone

    4.   Recordable Voice Messaging

    5.   Adjustable Volume

    6.   Caller ID

    7.   10 Device Memory

    8.   Silent Mode

    9.   Phone in and Line out ports

    10.   Programmable Incoming Call Answering

    11.   AC Power Monitoring

    12.   Programmable Phone Line monitoring

    13.   24 Hour Battery Backup

    14.   Includes 12V Power Supply

    15.   Dimensions: 7” x 5” x 1.75

    16.   UL 1635/1637 Listed

    17.   Design Make: RCare - RC-D3900

2.6   Indoor Intercom

    1.   Provides in-room voice communication between resident and caregiver; initiated by caregiver.

    2.   SIP Compliant

    3.   PoE 802.3af enabled

    4.   Environmental Noise Suppression

5. Full-duplex audio with Acoustic Echo Cancellation (AEC)

6. Will work for all cube SW form factors, except RCubes

7. Fully configurable via web interface

8. Microphone & speaker volume control

9. Design Make: RCare – IC300, IC400

2.7 Caregiver Console

1. Master Station and information hub for All Cube form factors (R, V, and B).

2. Industrial strength Caregiver Console with 15.6" touchscreen displays incidents clearly and easily for caregiver use.

3. Integrated display with optional phone attachment for private communications

4. Receives and sends text or to other caregivers around the community.

5. 15.6" resistive touch screen color LCD (1920x1080) (16:9)

6. Contrast Ratio – 800-1

7. Listed for UL 1069

8. Wall Mountable (VESA 75mm & 100mm) or table mount with optional table stand

9. Programmable Zones

10. 10M/100M/1000M Ethernet port x2

11. Built in Speaker with Stereo Audio Output and integrated mic

12. Included Power Supply: 100-240V input, Output is 19V 3.42A

13. Apollo Lake N4200 CPU (2M Cache, up to 2.5 GHz)

14. Memory: DDR3L x 1, 4GB (Configurable up to 8 GB)

15. M.2 2242 SSD (Default 64GB)

16. Debian Linux Operating System

17. Design Make RCARE - RC-CC1080

2.8 Serial to Ethernet Converter

1. Provides a reliable, cost-effective way to connect any type of serial device to the Ethernet. Its compact design delivers cost-effective performance and capability in one of the smallest form factors available.

2. Supports a wide range of protocols using serial tunneling, TCP/UDP connections or Digi's patented RealPort® COM port redirector for remote native COM port access.

3. RealPort enables existing applications to communicate, without modification, with serial devices over the Ethernet as if they were communicating over a serial cable.

4. Digi One SP is easy to install locally or remotely. The IP address can be configured using DHCP, ARP-Ping or Setup, an application included with the installation CD that automatically detects all Digi One devices on the network.

5. Using the web interface, users can configure advanced functions into their application.

6. Features:

      a)   Patented RealPort for COM/TTY port control and management

      b)   TCP/UDP Socket Services for broad device connectivity and application use

      c)   Auto-connect the serial device to networked server using raw, Telnet, rlogin

      d)   Reverse Telnet for easy access of serial devices from network

      e)   Switch selectable RS-232/422/485 for simple interfacing to any type of serial device

      f)   Modem emulation allows support for devices designed only for modem communications

7.   Management - HTTP configuration

8.   Protocols:

      a)   TCP/UDP Socket Services,

      b)   UDP Multicast, Telnet,

      c)   Reverse Telnet, RFC2217,

      d)   DHCP/RARP/ARP-Ping for IP address assignment

9.   Software - Patented RealPort for COM/TTY ports

10.   Operating Systems:

      a)   AIX, HP-UX

      b)   Linux®

      c)   SCO® OpenServer™ 5

      d)   SCO® OpenServer™ 6

      e)   Solaris™ Intel

      f)   Solaris™ SPARC

      g)   Windows XP®, Windows Server® 2003

      h)   Windows Server® 2008

      i)   Windows Vista®, Windows 7, Windows 10

11.   Status LEDs - Power, Ethernet link and activity

12.   Dimensions - (L x W x D) 3.70 in x 1.72 in x 0.93 in (9.40 cm x 4.30 cm x 2.30 cm)

13.   Weight - 2.29 oz (65.00 g)

14.   Other - Full modem and hardware flow control - Modem emulation,

15.   Wall mount kit - (optional)

16.   Interfaces:

    a)   Serial Ports RS-232/422/485 (switch selectable)

    b)   Serial Connector DB-9M

    c)   Serial Throughput Up to 230 Kbps

    d)   Ethernet Physical Layer 10/100Base-T

17.   Power Requirements

    a)   Power Input 9-30VDC @ 0.5Amps max

    b)   Power Supply Ships with a 120VAC (North America) or a 120/240VAC (International) power supply providing 12VDC @ 0.5 Amps max power

    c)   Power Consumption Typical: 4 W; Max: 6 W

    d)   Surge Protection 4 kV burst (EFT) per EN61000-4-4, 2 kV surge per EN61000-4-5

18.   Environmental

    a)   Operating Temperature 10º C to 45º C (50º F to 113º F)

    b)   Relative Humidity 5% to 90% (non-condensing)

19.   Regulatory Approvals

    a)   Safety UL 60950

    b)   EN60950

    c)   CAN/CSA C22.2 No.60950

20.   Emissions/Immunity

    a)   FCC Part 15 Subpart B (Class A)

    b)   EN55024

    c)   EN55022 (Class A)

    d)   EN61000-3-2,3

21.   Design Make: Digi Connect SP®

Designer note: remove Keltron Fire Alarm integration if this feature is not desired.

2.9   Keltron Fire Alarm Panel Integration

1. The Rcare system shall be integrated with the fire alarm system to display fire alarm events on connected RCare notification devices.

2. The Keltron LS NET922 transceiver is an Ethernet-based, IP-addressable transceiver that enables highly accurate, cost effective alarm monitoring for multi-building facilities and municipal environments.

3. A component of the Keltron Life Safety Event Management System, the Keltron LS NET922 uses both input-monitoring circuitry and secure, supervised Ethernet communication to transmit alarms to a receiving station.

4. A major advantage with all Keltron solutions, the universally-compatible Keltron LS NET922 interfaces with over 65 models of fire alarm control panels (FACPs) and transmits signals using existing standard network infrastructure.

5. Features:

  a) Uses Ethernet connections over standard networks

  b) Includes Keltron Bilateral Supervision: end-to-end monitoring of the connection network.

  c) Dedicated application architecture prevents network attacks and hijacking. Configurable password protection, remote access lockdown and firmware security ensure enhanced protection.

  d) Provides RS232 serial-input monitoring to enable detailed dispatch by addressable device. Providing exact location speeds response and enables the dispatcher to monitor fire progression through a building.

  e) XML-based communications format enables comprehensive, extensible alarm communications that can be integrated with modern communications networks.

  f) Uses efficient, event-driven protocol on high-speed networks to ensure rapid, low overhead transmission of critical life safety information.

  g) Meets the requirements of NFPA 72 2013 section 26.6.3.1 "Performance-based Technologies"

  h) UL 864 9th edition listed

  i) Automatically transmits to back-up IP address

  j) Enables remote logging for increased system visibility

  k) External LED trouble indicator

  l) Monitor application provides comprehensive view of network communications for efficient troubleshooting

  m) Locally- and remotely-accessible menu system for easy configuration. Programming includes multiple parameters to optimize the facility's specific requirements.

  n) Includes internal audible fault indicator and silence button

      o)   Compact unit is easy to install

    6.   Communications:

      a)   10/100Base-T (autosense) 802.3 compliant Ethernet

      b)   Bilateral-supervised protocol via UDP

      c)   Addressing via static IP or DHCP

      d)   Option to set at full or half duplex

      e)   Option to set at 10 or 100 Base-T

    7.   Specifications:

      a)   Mechanical - 14"H x 17"W x 4"D wall-mount enclosure

      b)   Inputs - Serial: RS232 interfaces w/ FACP serial outputs*

      c)   Power - AC 108-132VS RMS | Keltron LS NET922AC: 0.10A

      d)   Current Draw at 12VDC - AC 108-132VS RMS

        1)   Keltron LS NET922AC: 0.10A

        2)   NET922AC = .3A

      e)   Storage Temperature -0°C to 70°C (32°F to 158°F)

      f)   Operating Temperature -0°C to 50°C (32°F to 122°F)

      g)   Operating Humidity - Up to 93% non-condensing

      h)   Backup Battery - Ordered Separately from Keltron

    8.   Design Make: Keltron LS NET922

2.10   Central Station Dialer:

    1.   Keltron's Serial Digital Alarm Communicator is a UL-listed, unique solution that interfaces with the RCube

    2.   System to provide Central Stations with appropriate information to monitor life safety.

    3.   The Keltron Fire Dialer is comprised of a dedicated microprocessor, an ASCII data-to-SIA converter. This unique communicator includes both four hardwired zone inputs and an RS232 serial port. UL-listed and NFPA Compliant

    4.   Transmits signals in industry standard SIA format

    5.   Can differentiate between Normal, Emergency, Smoke Detector, or Other call types

    6.   Supervised connection to Central Station

    7.   Communicates via phone lines (2 phone lines are recommended for redundancy)

8.   Test code call-in cycles are programmable and both normal and off-normal condition test codes are transmitted as appropriate. A manual test button is also included.

9.   Additional inputs are available for loss of ac and battery fail indications that are also reported using standard SIA event codes

10. Local LEDs and audible devices clearly indicate Keltron Fire Dialer status

11. General alarm and general trouble relay outputs annunciate alarm and trouble events as received.

12. Requires 24V DC Power Supply (Altronix AL300 or similar model with battery backup is recommended)

13. Design Make: Keltron SDACT-2

Designer note: remove Elopement integration if this feature is not desired.
Choose whether door controllers are provided the system or if the integration is with controllers provided by others

---

2.11   Elopement System Integration:

1.   Provide integration to elopement system to display attempts of tag wearing patients from leaving a specified area.

2.   RCare System shall annunciate alarms and the tag wearer data (including patient photo) to selected RCare Connected notification devices.

3.   Integrate with door controllers [Provide] door controllers with the following functionality.

  a)   Door controllers shall sound an alert if tag wearers approach a protected door and lock the door. If the patient pushes on the exit device long enough for the door to open or if the patient exits by tailgating behind someone that is not wearing a tag, an alarm will sound locally and be sent to the RCare system.

  b)   Provide local bypass to allow tag wearers to temporarily pass through the door.

  c)   Door controllers communicate with each other via RS485 and to the RCare cube via a Digi Serial server.

4.   Design Make: Accutech 2400

Designer note: remove PCC integration if this feature is not desired.

2.12   PointClickCare (PCC) Integration:

1.   Provide Integration to PointClickCare database so that RCare receives instant updates from the PointClickCare system with resident/room information.

2.   As residents are admitted, transferred, and discharged through PointClickCare, the associated rooms on the Cube are kept up to date.

3.   The integration also pushes ADL data received from RCare Mobile back into the Therapy Minutes module of the PointClickCaresystem where it can be used in billing and metrics.

4.   Design Make: RCare – PCC-INT

.

2.13   LED Dome Light

1.   Dual-color LED Dome Light for corridor notification.

2.   Non-institutional look designed for a homelike aesthetic.

3.   Red and White LEDs

4.   12VDC (Maximum 32mA, .385W per segment)

5.   Fits single or dual gang standard outlet box

6.   Dimensions: 4.75"x4.75"x1.5"

7.   Connects to DLC-2400 or Dome Light Controller for power and switching

8.   Each LED light gets Homerun wiring connection

9.   Design Make RCare RC-DL12

2.14   Dome Light Network

1.   Tri-color LEF Dome light for corridor notification

2.   Non-institutional look designed for a homelike aesthetic.

3.   Red, White, and Green LEDs

4.   24VDC (Maximum 42mA, .571W per segment)

5.   Fits single or dual gang standard outlet box

6.   Dimensions: 4.75"x4.75"x1.5"

7.   Connects to DLNC or Dome Light Network Controller for power and data

8.   Daisy Chain wiring connection

9.   Design Make RCare: DLN

2.15   Dome Light Controller Board

1.   Controls up to 24 hardwired lights or sounders.

2.   Each of the 24 connections can power a device of up to 15 watts.

3.   The Dome Light Controller Board is a network device meaning it can connect to the RCube anywhere it has network access. A static IP address is required.

4.   Lights can be set to three states: Off, On, and Flashing.

5.   Certain devices can be programmed to normal or emergency call to differentiate when the light will flash. Zone lights and duty stations can also be connected and programmed.

6.   Use expander (DLC-2400XP) which attaches to Dome Light Controller if more than 24 relays are required.

7.   Power Supplies sold separately

8.   Room for wire management inside case

        9.   Requires Static IP Address

      10.   Reset Button

      11.   Design Make RCare DLC-2400 and DLC-2400XP

2.16   Dome Light Network Controller

      1.   Controls up to 64 devices

      2.   Manual Network Configuration option

      3.   Fully customizable color/states

      4.   3 States: On, Off, Flashing

      5.   3 Colors, White, Red, Green

      6.   Room for wire management inside case

      7.   24VPower Supply (Comes w/ enclosure)

      8.   Dimensions w/enclosure 12 3/8" x 12 ¼" x 4"

      9.   Requires Static IP Address

      10.   Design Make: DLNC

2.17   Smart Phone Enabled Caregiver notification and tracking system

     A.   Caregiver Mobile Device

      1.   WiFi Enabled Android/iOS Device

      2.   Capable of Near-Field Communication or QR code

> Designer note: Select one license for or each device used

      3.   Include XX RCare Rugged II devices or XX iOS device (NFC capable) licenses. (iOS devices are not included) iOS devices without NFC capability will need to use QR codes.

     B.   Application Software

      1.   Android or iOS software allows for communication between caregiver Mobile device and the MCube or BCube Server

      2.   Shall be capable of limiting number of users logged in through the use of Mobile Licensing

      3.   Shall have indicator lights indicating service availability for alerts/data updates, as well as voice connectivity. Login status is also indicated.

      4.   Shall be capable of limiting views to specific and relevant incidents per specific caregiver

      5.   Shall be capable of receiving messages of resident call via text, or voice with both audible and vibrating notification.

      6.   Shall be capable of call differential through use of multiple tones

      7.   Shall be capable of VoIP interaction between registered caregivers

      8.   Shall be capable of messaging between registered caregivers

9. Shall be capable of using the "I Got It" feature to inform other caregivers of the intent to service resident

10. Shall be capable of two-way communication with the resident

11. Shall be capable of tracking caregiver presence in a resident room through the use of NFC

12. Shall be capable of providing care information through the use of an ADL list in conjunction with NFC communication generated upon exit of the resident room

13. Server shall be capable of collecting the following information:

   a) When the call was placed by the resident

   b) Which device was used to place the call by the resident

   c) Which caregivers were notified of the incident

   d) Which caregivers accepted handling of the incident using the "I Got It" feature

   e) Which caregiver entered the resident room

   f) When the activated device was reset by the caregiver

   g) How long the caregiver was in the resident room

   h) The services or activities assisted with by the caregiver when in the resident room

   i) Caregiver notes

14. 14. Collected Information allows for the following information reporting

   a) ADL tracking per patient

   b) Time spent with residents by caregivers

   c) Response time by caregiver

   d) Call Duration

15. Design Make: RCare Mobile Application

C. RCare Mobile NFC Tags

Designer note: Place NFC Tags in locations where Caregiver presence is needed. Or include a statement such as include 1 per patient.

1. Allows RCare Mobile software to track caregiver presence

2. RCare Mobile NFC Tags use NFC (near field communication) technology in conjunction with RCare mobile to provide individually identifiable numeric values to different locations where the tags are placed.

3. Dimensions:

4.   1-3/8" Diameter

5.   Can be attached to any non-metal surface for flawless functionality

6.   Uses EMF technology to activate and deactivate

7.   Unique Identification Number

D.   Wireless network configuration Requirements

1.   1-10 simultaneous RCare Mobile connections will require a small business-class AP/Wi-Fi Network:

2.   Seamless access point handoff

3.   Full Wi-Fi coverage

4.   54Mbps bandwidth

5.   32mb ram for managing all simultaneous connections (more ram = more connections)

6.   11-35 simultaneous RCare Mobile connections will require a medium business-class AP/Wi-Fi Network

7.   All previous requirements

8.   More than 32mb (64-128mb recommended) of RAM

9.   36+ simultaneous RCare Mobile connections will require a large business-class AP/Wi-Fi Network

10.   All previous requirements

11.   512mb ram or more recommended

E.   Design Make RCare Mobile

> Designer note: Choose One of the following RCube, RCubeHD (includes receiver),VCube (includes receiver and voice to voice communications) MCube (includes receiver, voice to voice communications and mobile device support) or BCube (set includes receiver, stand, voice-to-voice communications and mobile device support).

2.18   Personal emergency response system - Cube – All cube types have the following features and functionality

1.   Monitoring System is an emergency call and monitoring system.

2.   The system uses integrated wireless components linked to the RCube System Appliance via a wireless transceiver which can be accessed from any network connected device, such as a PC or laptop.

3.   The Cube system provides verifiable information used in locating, assisting, and communicating with residents and caregivers for routine monitoring and during local medical emergencies. Incident information is stored by the system and can be used to create reports for tracking, managing, facilitating and improving ongoing site operations.

4.   Once the Cube is on a network, any network-connected web-based device can access it, including computers, tablets, smartphones, or displays.

5.   The Cube connects to the Master Receiver to receive all signals from the locator network such as alarms and maintenance signals.

6.   Debian Linux operating system

7.   Optional remote support allows authorized support technicians to troubleshoot any system remotely, resulting in fewer service calls

8.   Remote Support can also be utilized by facility staff to run reports, and search incidents.

9.   Fully supervised for system errors and issues

10.   100% Uptime in current generation models

11.   Flexibility / Interfaces with:

    a)   Computers

    b)   Tablets

    c)   Pocket Pagers

    d)   Kenwood Digital Radios

    e)   Text Messages

    f)   Central Station

2.19   Personal emergency response system – Software Types

1.   RCube - The system uses state of the art integrated wireless components linked to the R-cube System Appliance via wireless transceiver which can be accessed from any network connected device, such as a PC or laptop.

2.   VCube - This system provides voice functionality of any kind, from integration to analog phones, digital phones, IP phones, and voice to voice with the RC-3900 In-Room Communicator (sold separately). Allows caregivers to talk directly to residents to determine appropriate response and to reassure the resident that someone is on their way. VCube's may require additional Hardware to effectively communicate with the facilities phone system that isn't required for RCubes. Includes built in Voice functionality including:

    a)   Integration to analog, digital and IP phones
    b)   Digital phones
    c)   IP phones
    d)   Voice to voice communication with the RC-3900 In-Room Communicator, RC5200 In-Room Communicator, and the IC300/IC-400 Intercom (sold separately).
    e)   Utilizes a multitude of protocols such as Waveware, TAP, SMTP, SSH, SIP, and HTTP to interface with all types of healthcare communication devices.

Voice-to-Voice

    f)   Allows caregivers to talk directly to residents to determine appropriate response and to reassure the resident that someone is on their way
    g)   Requires RC3900, RC5200 or IC300 for In-Room Communication and for two-way voice connection
    h)   Unlimited call escalations

3.　　MCube - MCube also includes integration to the RCare Mobile Phones, industry-leading communication and notification devices that bring incident management, communication, and point-of-care tracking together onto one device. Mcube has all the capabilities of the Rcube and VCube's as well as the following:

Smart Phone Enabled Caregiver notification and tracking support:

　　a)　　Supports smart caregiver devices (iOS and Android) to allow device to device communication.

　　b)　　Sends alarms and alerts to caregiver smart devices.

　　c)　　Stores statistical information gathered from smart devices

4.　　BCube - The BCube runs a lighter version of our Mcube software and services to fit with its lean form factor. In addition to the built-in nurse call interface, there is also the familiar web configuration interface available by navigating your browser to the BCube IP address on the network. The BCube will work with all other notification devices such as the IC-300, Dome Light Controllers, or Page Encoders.

　　a)　　Limited to 15 client devices (i.e RCM Phones and CC-980's).

　　b)　　Limited to 128 Accounts, and 6 devices per account

2.20　　Personal emergency response system – Hardware Types

1.　　Single Rack

　　a)　　Available for RCube Software only

　　b)　　IP Addressable

　　c)　　CPU: C Rack: Intel Atom C2550 CPU @ 2.4GHz , 4 cores, 4 threads

　　d)　　Memory: 4GB RAM

　　e)　　Storage: Seagate Exos Enterprise 1TB (RAID 1)

　　f)　　Power
　　　　200W Internal Power Supply
　　　　AC Input: 100-240Vac 50-60Hz 4.0-2.0A

　　g)　　Ports & Connectors
　　　　VGA Port
　　　　3 RS-232 COM Ports
　　　　4 Ethernet Ports
　　　　1 IMPI Port
　　　　2 USB 2.0 Ports
　　　　2 USB 3.0 Port

Design Make RCare – RCubeRK-G4

2.　　Stand Alone Bread Box

　　a)　　Available for RCube and VCube Software types

　　b)　　Includes Internal MR500-G4

　　c)　　IP Addressable

　　d)　　CPU: C Box: Intel Atom C2550 CPU @ 2.4GHz , 4 cores , 4 threads

　　e)　　Memory: 4GB

　　f)　　Storage: Seagate Exos Enterprise 1TB (RAID 1)

　　g)　　Power:
　　　　450W Internal Power Supply
　　　　AC Input: 6A
　　　　110V-240V

      h)   Ports & Connectors
               VGA Port
               3 RS-232 COM Ports
               4 Ethernet Ports
               1 IMPI Port
               2 USB 2.0 Ports
               4 USB 3.0 Port

Design Make Rcare – RCUBESA-G4, VCUBE-G4, MCUBE

3.   HD

     a)   Available for any Software type except BCube

     b)   Includes Internal MR500-G4

     c)   IP Addressable

     d)   CPU: HD x 10: i3-4350T CPU @3.10GHz

     e)   Memory: 4 GB ECC RAM

     f)   Storage: 750GB (RAID 1)

     g)   Power
               600W Internal PFC Power Supply
               AC Input: 100-240V~ 10A 50/60Hz

     h)   Ports & Connectors
               VGA Port
               3 RS-232 COM Ports
               4 Ethernet Ports, 1 IMPI Port
               4 USB 2.0 Ports, 2 USB 3.0 Port

Design Make Rcare – RCUBEHD-G4, VCUBEHD-G4, MCUBEHD-G4

4.   BCube +

     a)   Can Work as an BCUBE Software type only

     b)   IP Addressable

     c)   CPU: Apollo Lake N4200 (2M Cache, up to 2.5 GHz)

     d)   Memory: DDR3L x 1, 4GB (Configurable up to 8 GB)

     e)   Storage: M.2 2242 SSD (Default 64GB)

     f)   Power

               19Vdc, 3.42 A Max

               AC Input: 1.5A, 100V-240V, 50-60 Hz

     g)   Ports & Connectors

               LAN Port 10/100/1000 RJ-45

               2 USB 2.0 Ports, 1 USB 3.0 Port

               Audio: 2 x 2-Watt Speakers

      h)   Industrial strength all-in-one with 15.6" touchscreen displays incidents clearly and easily for caregiver use.

      i)   Integrated display with optional phone attachment for private communications

      j)   Receives and sends text or to other caregivers around the community.

      k)   15.6" resistive touch screen color LCD (1920x1080) (16:9)

      l)   Optional VoIP phone attachment

      m)   Wall Mountable (mounts to VESA 75x75 mm & 100x100mm) or Table Mount stand.

Design Make RCare – BCube +-G4, BCUBE +-G4-SET

5.   HCube

      a)   Can Work as an BCUBE Software type only

      b)   IP Addressable

      c)   CPU: Celeron N335 (UTC-307G)

      d)   Memory: 1 x 204 pin SO-DIMM DDR3L 1600 MHz up to 8 GB

      e)   Storage: M.2 key 2230, M.2 key 2242

      f)   Power

              Consumption: Typical: 25W, Max 34W

              AC Input: 1.2A, 100V-240V, 50-60 Hz

      g)   Ports and Connectors

              LAN Port 10/100/1000 RJ-45

              2 USB 3.0 Ports

              2 RJ-45 COM Ports

              Audio: 2x 2-Watt Speakers

2.21   Additional System Functionality

    A.   Alert Handling:

        1.   The system receives alarms through the locator network

        2.   Alarms are sent to on site pagers or other notification devices

        3.   Multiple calls will be scrolled according to priority level and time received

    B.   Inactivity Monitoring:

1.   Inactivity monitoring and reporting shall be provided to allow the system operator to receive reports of resident inactivity within their home

2.   Homes that have been logged as "inactive" shall be listed with the resident's name, address, and last known activity time and date

3.   Reporting interval shall be selectable in intervals of 6 hours

4.   Reports shall automatically be generated at the predetermined time and emailed to designated recipient

5.   Report may be printed via a local or network connected printer

C.   Locating

1.   System shall use the RF Locator network to determine the location of a pendant wearer that has activated their alarm.

2.   A text location of the most likely room and the 2nd most likely room shall be displayed on Connected RCare notification devices.

3.   Locating capability is obtained by walk testing during the commissioning of the system. The system uses AI in order to increase accuracy of the location.

2.22   UPS

1.   Provide a standalone or rack mount UPS unit capable of full system backup for up to 1-2 hours upon loss of power.

2.   UPS unit shall also provide protection from spikes and surges.

2.23   Locator Network:

A.   Master Receiver

1.   Receives signals from locators and repeaters and transmits signals through serial cable to Cube unit for processing.

2.   Supports up to a total of 100 Locators & Repeaters

3.   Stand-Alone or integrated into Cube housing

4.   1000 ft. Maximum Receive Range

5.   Adjustable Frequency Hopping technology

6.   Power: 500mA 12V DC power supply (included)

7.   Receives at 900MHz range

8.   Design Make RCare MR-500-G4

B.   Locator Unit

1.   Receives transmissions from wireless transmitters and retransmits to a repeater (RP-990-G4) and/or master receiver (MR-500-G4).

2.   Adjustable Receive Range (400 ft maximum)

3.   1000 ft transmit Range

4.   Battery Backup

5.   14 hours of run time when fully charged

6.   Test and Reset buttons

7.   Tamper Detection

8.   Configurable Radio Group, System ID

9.   Unique 6-Digit Device ID

10.   Three LEDs for Power, Receive, and Transmit

11.   Includes mounting bracket and 12V power supply

12.   Receives at 433MHz AM and 429 MHz FM

13.   Transmits at 905-915 MHz

14.   Design Make RCare LT-490-G4

C.   Repeater

1.   The repeater is designed to increase the reach of the locator system by increasing the distance between the MR500-G4 and locators. It receives 900 MHz signals from both LT-490-G4 locators and other RP-990-G4 repeaters.

2.   Battery backup

3.   Up to 24 hours of run time when fully charged

4.   Test & Reset buttons

5.   Tamper Detection

6.   Configurable Radio Group, System ID

7.   Unique 6-Digit Device ID

8.   Three LEDs for Power, Receive, and Transmit

9.   Includes mounting bracket and 12V power supply

10.   Transmits and receives at 905-915 MHz

11.   Includes Mounting Bracket and 15V power supply

12.   Design Make Response Care RP-990-G4

D.   Weather resistant Enclosure:

1.   Light Grey molded fiberglass reinforced polyester (FRP) enclosure with integrated mounting flanges

2.   Fully gasketed vented lid with stainless steel quick release latches with padlock hasps

3.   13.32 x 11.32 x 5.60 inches

4.   NEMA Type 3R, 3X / IP24 rated

5.   Aluminum mounting plate with surge protected duplex 120 VAC Outlet

6.   Thermostat controlled heating and cooling system

7.   Indoor and outdoor installations

8.   Design Make RCare RC-WPE

E.   RF Specifications

1.   922 MHz Band

        a)   Modulation: FM

      b)   Data speed: 9.6K

      c)   Sensitivity: -102dBm

      d)   Bandwidth: 20KHZ

      e)   Channel separation: 360KHZ

      f)   Output Power: 28dBm

      g)   Frequency Tolerance: +/- 3ppm

      h)   Antenna: Dual antenna for receiver to avoid signal fade and "dead" spots. There is a separate antenna for the transmitter

      i)   Communication method: Full Duplex, units are able to transmit and receive simultaneously

      j)   Error Detection: A proprietary algorithm is used to ensure the integrity and structure of the transmitted and received data

      k)   Range: Over 1000 ft line of sight

   2.   433.92/433.82/429.82 MHz Bands

      a)   Frequency: 433.92MHz AM/ 433.82MHz (FM)/ 429.82 MHz (FM)

      b)   Modulation: AM/FM/FM

      c)   Sensitivity: -115 dBm / -110 dBm / -110 dBm

      d)   Receiving Range: Programmable from Locator by adjusting RF sensitivity. Options include: 0db /-6-10db / -14-20db / -22-30db reduction

      e)   Communication method: Full Duplex

      f)   Error Detection: A proprietary algorithm is used to ensure the integrity and structure of the received data.

PART 3 – EXECUTION

3.1   INSTALLATION AND EQUIPMENT

    A.   Device locations shall be field verified by the Bidder

    B.   Provide integration of the emergency call system with the onsite telephone system and data network.

    C.   Plug into existing 20 ampere, 120-volt critical branch circuit receptacle for the emergency call system

    D.   Install 120-volt wiring in separate conduit

3.2   TESTING AND INSTRUCTION

    A.   Provide a minimum of three hours of instruction (per caregiver shift) to the site staff and operating personnel scheduled in advance

    B.   Web based instruction shall be available at no charge for the life of the system and can be scheduled through the cube software or manufacturer web site.

    C.   Submit a written test report from an authorized representative of the equipment manufacturer that each device and overall system operation has been 100% tested.

    C.   Submit electronic Operator Manuals (pdf format) that shall include as a minimum:

        1.   Bill of Materials

        2.   Manufacturer's equipment description for each type of device and each control module type used

        3.   Provide record diagrams showing typical connection diagrams for each type of device and a complete riser diagram showing all devices, zones, and wiring requirements, as installed

        4.   Instruction report stating when instruction was given and who was in attendance, signed by those given instructions

        5.   Manufacturer's authorized representative written test report

3.3   WARRANTY

        1.   Provide a 1-year parts and labor warranty on all equipment and wiring

END OF SECTION