BlueLine-IP Nurse-Call System

FEATURES & BENEFITS

- **AUSTRALIAN DESIGN AND MANUFACTURE** (Using latest technology and components)
- **MULTI-TASKING CALL-POINTS** (Being a communications 'Hub' allowing up to 10 separately identifiable hard-wired or wireless trigger inputs)
- **CHOICE OF CALL-POINT PROTOCOL** (Including 'True-IP', Unicode Protocol & ISM Wireless all with seamless System Integration)
- **INBUILT PIN-POINT DURESS** (System calculates location of Carer's Bluetooth duress trigger)
- **INBUILT RTLS LOCATION TRACKING SYSTEM** (Allows Real time Person and/or Asset tracking)
- **INBUILT ROOM DEMENTIA FACILITES** (Multi-tasking call-points allow initial or future application of bed exit, door exit, bed-wet & ensuite monitoring)
- **IP NODE CONNECTION FOR NON-IP DEVICES** (Door reeds, relay contacts etc are given IP Address functionality via RJ45 IP Node connections)
- **WIRELESS ADD-ON/OVERLAY TO SYSTEMS** (Ideal for seamlessly enhancing existing systems)
- **CALL, CANCEL & ASSIST VIA 2 BUTTONS** (All Call-Points (including Slave versions) provide Staff Assist by pressing both call and cancel buttons)
- **'HEARTBEAT' INTEGRITY** (System monitors call-point 'Heartbeat' transmissions)
- **INFECTION CONTROLLED CALL-BUTTONS** (Antibacterial/Antifungal call-buttons including call lock-out cleaning facilities)
- **PLUG-&-PLAY SYSTEM DESIGN** (System Head-End and Nodes (if used) are delivered as a fully working and tested system)
- **3-YEAR WARRANTY + 10-YEAR SERVER MTBF** (System components includes 3-year Warranty & Server has 100,000 hour 'Mean Time Between Failure' Certification)

SYSTEM HEAD-END DESIGN

The central head-end comprises a high quality solid state Server it having no moving parts and an MTBF (Mean Time Between Failure) Certification of 100,000 hours or 11 years.

It is the overall system centre including the Winwatch nurse-call software program. The system will also revert to an alternative and fully maintained software program in the event of system failure. All such important diagnostics are recorded and can be automatically emailed to appropriate service providers.

SMARTCOM-05 SERVER

Other head-end devices typically include its power supply and associated battery back-up plus Annunciator and Paging controllers in addition to Fire and perhaps other high level interfaces. To exploit the benefits of having a site-wide wireless overlay the central equipment may also include a Blueline-ISM Wireless Input Controller.

CALL-POINTS - A SEAMLESS CHOICE OF TECHNOLOGIES

A unique benefit of the ***BlueLine-IP*** nurse call system is its wide range of call-points all of which have the same appearance and operational functions but are able to exploit different technologies for different outcomes. Each model has corresponding splash-proof and waterproof versions, the latter using Resin encapsulation of its circuit and components.

Irrespective of the application (as identified by button colour) the range of models include:-

- **H4-IP-01** Hard wired & totally IP based connecting to system POE switches/routers
- **H4-SS-01** Smart Slave Call Point (network up to 7 per IP call-point)
- **H4-ISM** Long Range ISM wireless call-point
- **H3-COM** Hard-wired suitable for connection to a Node or Area Controller

H4
CALL POINT

Various of the above models are able to act as a room controller typically providing up to 10 separate and identifiable nurse-call database Server inputs for call logging and processing.

Similarly one or more latest technology Bluetooth-LE plug-in Locators can be fitted to accommodate RTLS, Duress, Falls detection or other potential applications such as may be required for such as cleaning or maintenance staff activities etc.

The ability to accommodate seamlessly combined technologies within a single system also significantly enhances system flexibility whilst also accommodating add-on requirements and reduced installation costs. All versions of the 'H4' Series call-point include Call, Cancel and Assist plus 'Heartbeat' monitoring whilst also having the same high degree of anti-bacterial/antifungal infection control and temporary call-lockout required during call-point cleaning procedures.

BENEFITS OF USING NODES

Whereas a subnet of H4-IP 'True-IP' call-points may connect directly into the Ethernet LAN via its POE (Power Over Ethernet) the deployment of one or more hard-wired (and/or wireless) Nodes allows those less sophisticated devices such as door-reeds and relay contact devices to be integrated into the overall IP network. This occurs via connection to a Node's RJ45 patch panel whereby each connection accommodates up to two separate nurse-call circuits each with its IP address and separate database identification.

128-INPUT TCP/IP NODE

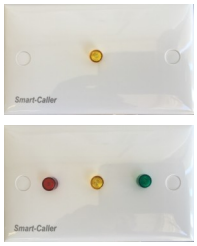
The optional deployment of 128 and/or 64 input TPC/IP Plug-and-Play Nodes therefore offers an important benefit to an overall IP nurse-call system design. Simply connect as many Nodes as required to the Head End via the nurse-call LAN and unlike the distance limitations of IP such connections via a Node can extend device connection beyond 300 Meters without supplementary intervention.

BENEFITS OF DEPLOYING WIRELESS OVERLAY

Although each version of IP and Smart-Slave call-point has a 'short-haul' wireless trigger capability the ***BlueLine-IP*** hard-wired system has the ability to include site-wide wireless reception using elements of the ***BlueLine-ISM*** long range wireless system.

This offers the perfect solution to accommodating temporary or future call-point requirements where additional cabling is either impracticable or excessively expensive. It also allows the use of roaming pendants where perhaps certain low care Residents may be encouraged to roam the premises or gardens and may fall or otherwise require assistance.

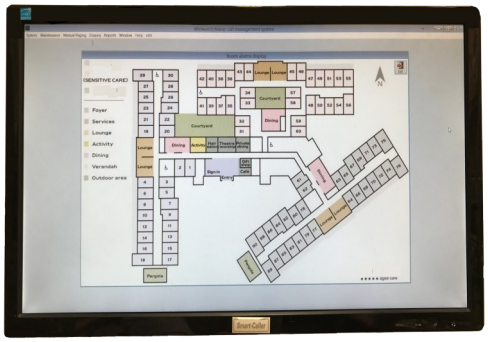
CORRIDOR (OVER-DOOR) LED DISPLAY UNITS



Designed to accommodate up to three 5mm 'Superbright' LEDs these low profile call indicator units are intended to avoid a Hospital Environment when used for Aged Care applications. However, larger Tricolor versions are also available to satisfy typical Hospital applications.

ANNUNCIATOR DISPLAYS

The Annunciator display uses an attractive housing and is available as either single or double-sided display. They feature a high intensity LED matrix providing 16 segment 50mm high alphanumeric multicolor characters. However, half width versions (i.e. being 8 x 50cm) are also available. Displays are capable of being independently addressed with specific call traffic applicable to each unit's location within the overall network.



Whereas Annunciators are hardwired from a distribution hub at the Head-end it is also possible to control remotely located Annunciators in separate buildings throughout the site. Each display includes a speaker with local volume control, however the system head-end is also capable of globally controlling the day and night volume levels in order to avoid Resident discomfort.

One benefit of the alternative LCD screen version is its ability to display either a 'line by line' display of all call traffic in progress. This also shows the number of repeat calls and elapsed time in appropriate color along with priority listing of each call in progress. Alternatively the screen can display a real time graphic display identifying 'Alarmed Locations' this also being particularly useful for Duress and RTLS applications.

Depending on the priority level of displayed calls the Annunciators use the appropriate color and tone beep cadence to suit Standard AS3811. Higher priority calls will take precedence over other calls until cancelled. One or more displays can also be programmed to identify a 'System Down' message in such event.

PORTABLE COMMUNICATION DEVICES

Clients choose the portable display devices that best suit their needs. Smart-Caller systems are compatible with most DECT, Wi-Fi , 3G, Vocera and traditional VHF and UHF POCSAG alphanumeric pocket paging systems.

The tendency to deploy the site's Wi-Fi infrastructure to provide text and voice communication is rapidly gaining acceptance.

Accordingly ***BlueLine's*** economically priced, robust and waterproof Android Smart-Phones can form an integral part of the overall nurse call system whilst also allowing site-wide and external access as necessary.

The special Android icons use the Australian Standard AS3811 colors and associated audio tones thereby identifying the priority level of each incoming call.

The system's head-end server also supports popular message center options such as Mobicall, ConnexAll and Cisco middleware programs including sub-system integration via a single platform.

Smart-Caller
Smart Systems Saving Lives

The ***'BlueLine-IP*** Nurse Call System can include an inconspicuous fully integrated and wireless based ***'Minder'*** Room Monitoring System. In addition to providing a curtain PIR above the door to detect a departing 'Wanderer' the system typically comprises dual (or single) wall-mounting 'floor scan' PIR Bed-Exit sensors. Alternatively it will accommodate traditional floor mat or the latest 'within bed' occupancy sensors located above or even below the mattress.

Other optional functions include Ensuite and Room PIR movement sensors along with automatic light switching arrangements plus some smart programming capabilities to ensure on-going precise requirements to suit the ever changing behavioral profile of each Resident within the dementia wing.

This room 'safe containment' facility is controlled via the ***'Minder Control Panel'*** which is typically located at the entrance to the room. It provides a multi-tasking function which is also capable of automatic switching of ensuite and/or room lighting if fitted with an optional wireless controlled Light Switch Relay.

MINDER SYSTEM
SHOWING A SINGLE INVISIBLE FLOORSCAN BEAM

Pair of Floor Scan PIR

Door Curtain PIR

Corridor Arm/Disarm & Control Panel

MINDER OPTIONS

BED EXIT

- Floor-Scan PIRs
- Floor & Chair Mat Sensors
- Crash Mat sensors
- Above Mattress Sensors
- Under Mattress Sensors

OTHER

- Door Exit (Curtain) PIR
- Ensuite occupancy PIR
- Room Space PIR
- Light Switching
- Bed wet (Enuresis) alarm

SELECTION OF ACCESSORIES (WIRELESS & HARD-WIRED)

There is no practical limit to the range of Assistive Care Accessories that may be applied to a 'MINDER' room monitoring system or indeed to communicate directly with an H4-ISM call-point or over-door Light Assembly. In fact, if preferred wireless Pendants and other wireless enabled devices are capable of communicating direct to the head-end or via a Node without the use of other intervening devices. An ever increasing range of up-to-date accessories with prices, videos and other supporting information can be found at www.safelfe.com.au.

TYPICAL WIRELESS ACCESSORIES

- Pendants & Wrist transmitters
- Door Reed Transmitters
- Ceiling pull cords for showers
- Smoke & Heat sensors
- Flood sensors
- PIR motion sensors
- Bed-Exit Sensors
- Bed-Wet Sensors
- Floor mat Sensors
- Chair mat Sensors
- RTLS & Wanderer Tags
- Duress & OH&S Devices

SITE-WIDE 'SMART-PENDANT'

ISM call points can deploy their fitted UHF short range receivers to provide a cordless bedside environment, in particular to provide the Resident with a personal wireless pendant.

The ***BlueLine-IP*** nurse call system, in addition to accommodating the above short range wireless devices also accommodates the new long range ISM Smart-Pendant. These communicate directly to wireless Nodes and or the head-end wireless Node/Repeaters.

This latest addition to the range has special and unique attributes whereby it provides the normal and identifiable Resident/Patient 'Call' plus the ability for the Staff to 'Cancel' the call or to despatch a high priority 'Staff Assist' call. It also includes the latest technology 'Accelerometer' Falls Detection Sensor as an optional inclusion. In other words it has much the same total capabilities as an ISM wall mounted wireless call-point plus the ability to detect a 'Fall' incident.

Like its short haul equivalent version this wireless Pendant features total waterproof certification to level IP67 (immersed) and the ability for the end user to replace the battery once it commences to send its low battery reports.

SITE-WIDE DURESS & RTLS MONITORING

The ***BlueLine*** systems features valuable additional benefits whereby it is able to provide the option of a site-wide Staff Duress and RTLS (Real Time Location Tracking) capability.

This is achieved by initially (or at some future date) plugging in a Bluetooth-LE (Low Energy) 'LOCATOR' module into pre-prepared connections within the call-point or over-door assembly. This miniature plug-and-play facility will accept and pass on any Bluetooth RTLS or Duress call traffic to the head-end for algorithmic processing, logging, reporting and displaying if, where and when desired.

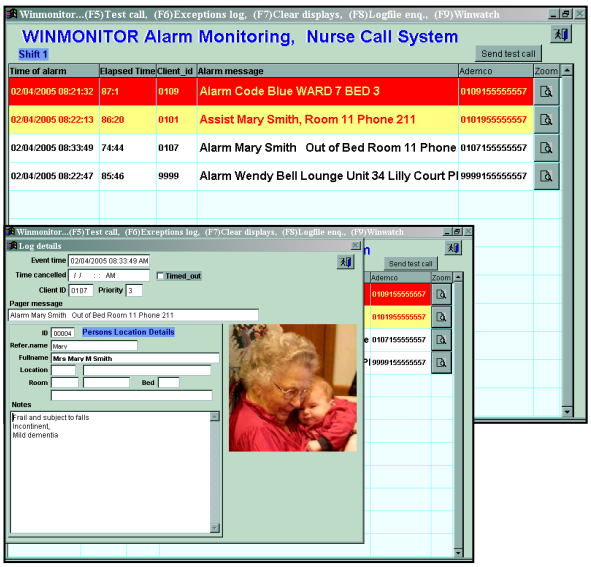
A typical Bluetooth tag worn by a Resident/Patient or Staff member can be programmed to simply send periodic RTLS transmissions (typically every 2 seconds).

Depending on the choice of device being worn the wearer pressing a button on the tag can change that call to a 'Help' call. i.e. Staff Duress or perhaps a Resident/Patient call for help. Reliable 'Falls Detection' is also accommodated in various of the tag devices now becoming available.

The Bluetooth monitoring infrastructure also accommodates 'Safe Containment' by protecting those that tend to 'Wander' beyond the perimeter unaccompanied or by prohibiting persons from entering 'no-go' locations.

A wide range of portable devices are possible including those intended for key rings, name badges, wrist tagging in addition to those devices intended to affix to Plant and Equipment to assist location and/or to prevent unauthorised removal.

WINWATCH NURSE-CALL SOFTWARE PROGRAM



The Winwatch software program provides a 'single operating platform' to accommodate the seamless overall on-site and/or off-site monitoring requirements. Accordingly Winwatch fully complies with, and significantly exceeds Australian Standards AS3811 and AS4607.

Monitoring functions include monitoring of Resident/Patient events plus Staff Duress, Building Management Services and RTLS (Real Time Location Tracking). It also provides comprehensive logging and reporting facilities. We illustrate over-page the power of Winwatch Mk5 Software by showing one of the many Report templates being readied for automatic periodic delivery by email to interested parties.

In other words its the perfect software solution for Ageing-in-Place and Smart-House objectives whilst also caring for Staff and safeguarding 'tagged' persons or assets.

SAMPLE 'WARD/WING ACTIVITY REPORT' PREPARATION & RESULT

In this example we have created a 'Wing Activity Report' for all Resident/Patient calls from those rooms within that selected location (Wing). Having recorded the 'True Elapsed Time" Performance you can then change the "Set Response Time" (perhaps to 10 minutes) to then identify response problems both individually and as an average for all call responses that exceeded 10 minutes.

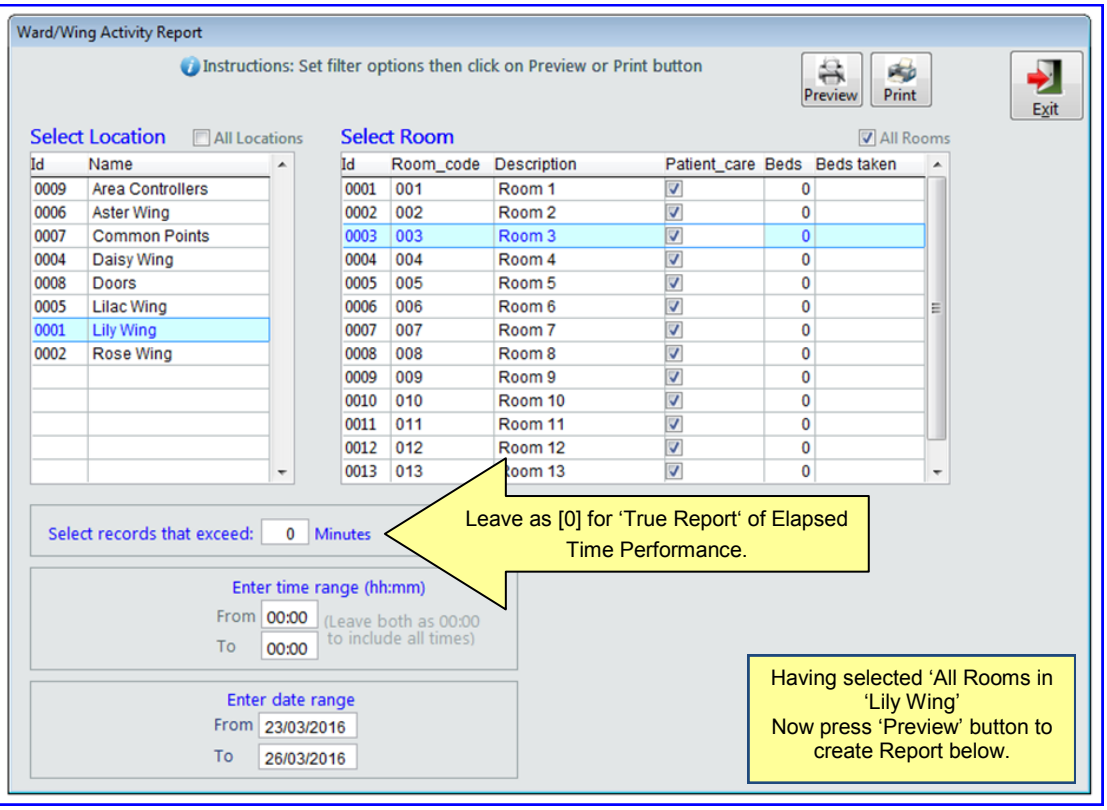
Select one room, all rooms or all locations

(or) Select Wing

Set Response Time

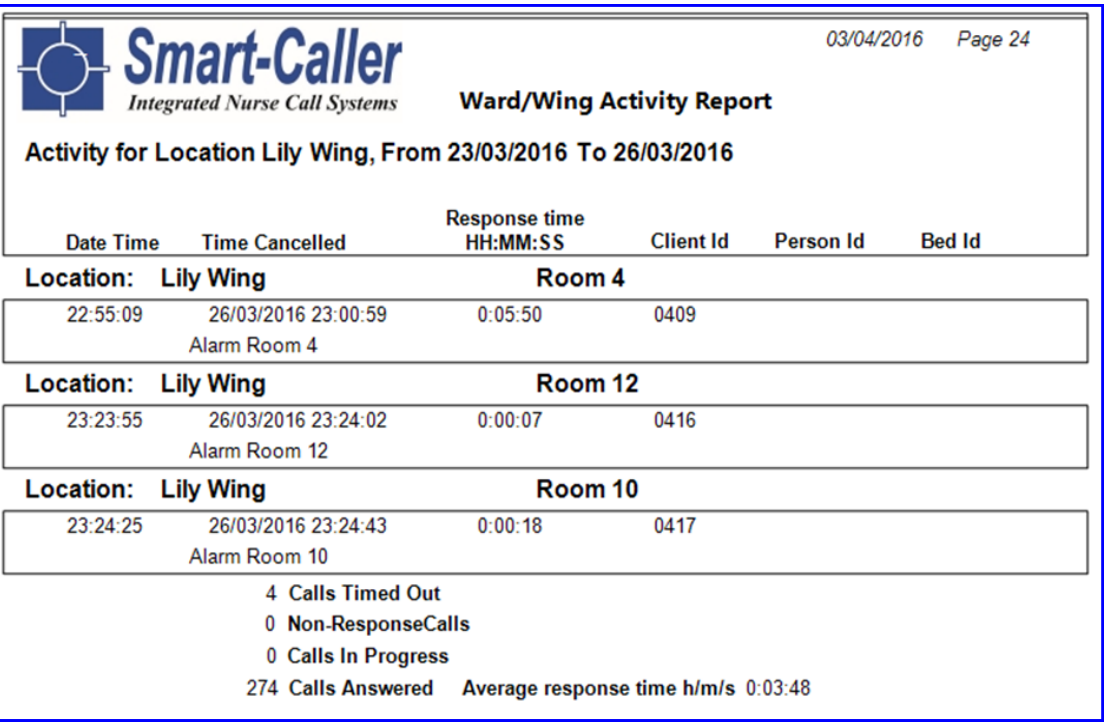
Set Time Range

Set Date Range



Final Page of the 24 page PDF formatted & Emailed Report

A Single Page 'Summary Report' is also available

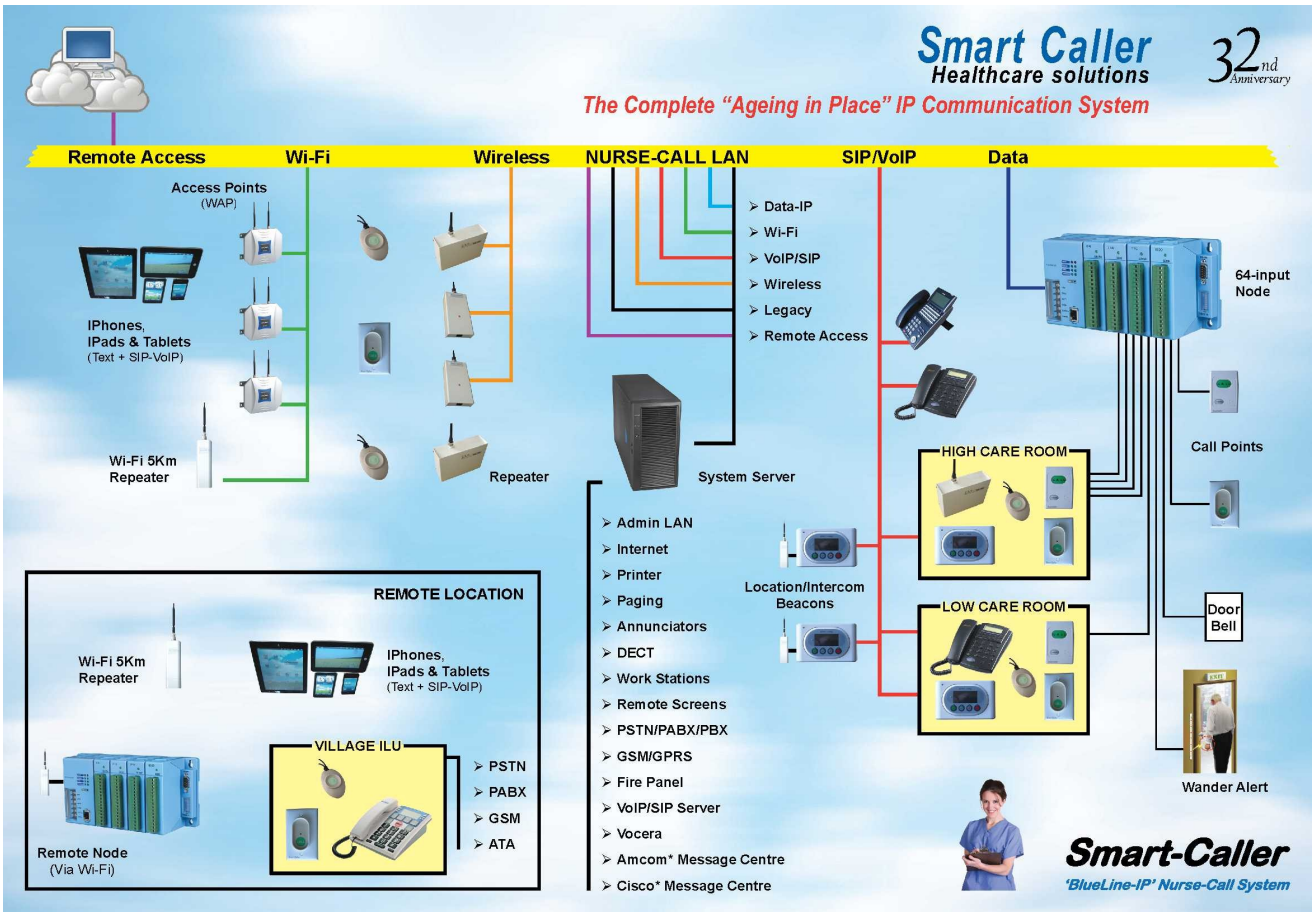


SUMMARY OF EMAILED REPORT

All calls where attended except for 4 calls that timed out . (Time/Out for this sample site is set for 30 minutes (adjustable). A total of 274 calls were received and responded to within an average elapsed time of under 4 minutes.

If this same Activity Report set-up was then repeated with the Response Time setting changed to 10 minutes it would show that 26 such calls occurred within that same time and date space with an average response time of those 26 calls being 16 minutes where 10 minutes is the maximum allowable time objective.

CONCLUSION:-Investigate the two 'Timed Out' and the 26 excessive response time for improved Duty of Care Staff performance.



Smart-House possibilities using BlueLine-IP, Blueline ISM Wireless and/or BluePhone PERS

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