

[CASE STUDY]

Customer: Monash Health

Solution: Deployment of critical communications

MONASH HEALTH

Critical Communications for Monash Health's Acute, Sub Acute and Mental Health redevelopments.



Monash Health is the largest public health service in Victoria, providing care from pre-birth right across the acuity spectrum including emergency and acute mental health services. The state has a population of 5.7 million people, and Monash Health's catchment extends to around 1.2 million of these Australians.

In addition to primary, allied health, sub-acute, acute and mental health services, Monash Health delivers significant teaching, research and education functions.

Monash Health services can be found in over 40 locations across South East metropolitan Melbourne including major hospitals such as;

- Monash Medical Centre – 640 bed acute teaching and research hospital
- Dandenong Hospital – 550 bed acute teaching hospital
- Casey Hospital – 229 bed acute teaching hospital
- Moorabbin Hospital – 147 bed cancer, surgical and sub acute center
- Kingston Center – 315 bed sub acute, aged care and rehabilitation hospital

In 2010 Monash Health commenced construction of a number of high profile redevelopment projects with a combined cost of \$140m. All projects were required to deliver best practice design in order to maximise patient and staff flow, and in support of safe and effective care.

The Challenge

Ascom was required to deliver turnkey communication solutions including primary integration in mission critical, highly dynamic, and sometimes challenging environments.

The capital development project team at Monash Health identified key high-level requirements including;

- Safety – primary communication device to offer mobile personal duress alarming and reporting
- Voice Communication – solution fully integrated with hospital PABX (telephony), and with group dialing
- RTLS – capability leveraging an RTLS (Real Time Location System) engine and 802.11 Wi-Fi to track assets, patients, etc
- Silent and Efficient Environment – improve communication and nurse call response while decreasing overhead noise and distraction
- Escalation – effective distribution and prioritisation for voice and text communications, including groups
- Secondary Alarming – alarm/event monitoring for many third party systems such as building automation/management, fire panel, security/access control
- Clinical Environment Ready – end user devices that are robust and promote infection control
- Completely Wireless – a portable solution that staff would carry and use anywhere in the department throughout their entire shift
- Support Smart Flows – the ability for users to accept or reject an event, and for shift leaders to monitor
- Life Critical – a safety focused, highly redundant and resilient solution supporting business continuity
- Asset Allocation – electronic sign-in/out solution to create a virtual directory of staff on shift, and to minimise equipment loss by emphasising shift by shift responsibility for assets
- Change Support – training and support for up to 1000 staff
- Multiple Integration Points

Importantly, the key requirements were to be delivered using an all-in-one device as the end user interface.



The Solution

Management Interface

Ascom deployed the DURAsuite and ENSUREsuite software solutions. Our software solutions were developed to manage alarms and messages, and are supported 24x7x365 by our in-house Australian based software team.

An open API and intuitive graphical user interface (GUI) is complemented by enterprise level robustness. In addition to system administration, the GUI supports desktop functionality such as paging, multiple event/incident/alarm management, and graphical maps associated with duress events and other RTLS applications.

Ascom i62

The Ascom i62 Handset, referred to by Monash Health as the “PCS”, is the front-end device that enables mobile staff communications. The IP44 rated handset (dust and water resistant) enables high-quality voice calling, two-way messaging, duress notification, and the ability to be located by Ekahau's RTLS controller.

Integration

The core of the solution is DURAsuite and ENSUREsuite software, used to seamlessly integrate the “PCS” solution across not only multiple departments, but also multiple hospital campuses and third party solutions.

Integration challenges included multiple campus PBX's (both NEC Univerge IPX), Wormald and AMPAC fire panels in both master and slave configurations, multiple BMS/BAS solutions (Johnson Controls and Schneider), Nurse Call, various Cisco LAN components including 6509 and 4507 core routers, Motorola RFS7000 Wireless Controllers, and a mix of Motorola 802.11g AP300 and AP650 wireless access points.

The system has the flexibility to handle multiple communication protocols (including multiple versions), utilises a combination of hardware and software modules, and both IP and serial inputs/outputs.

Management, dispatch, forwarding and escalation of all alarms, messages, extensive system logs, voice calls and the Ekahau RTLS engine is all handled as part of the Ascom turnkey solution that is Monash Health PCS.



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Duress

If a staff member within a PCS department senses danger, they are able to escalate the emergency through numerous ways;

- pressing the alarm button on the i62 PCS handset
- pulling the alarm cord on the low profile staff tag
- activating fixed duress buttons situated around the department (including any third party buttons which are all fully integrated to the PCS solution).

Once an alarm is triggered, a message is sent to each PCS i62 handset in the associated response group. The message includes a specific text description of the duress incident including the location which is accurate to within a few meters.

The DURAAalarm module (part of DURAsuite) pushes further secondary alerts to specified computer monitoring stations, including a graphical map indicating the position of the duress event. At the same time, an open-channel call is initiated ensuring the response team en-route can silently listen in to the duress incident via the initiating i62 handset.



Monash Health embraced the concept of using the i62 as the true unified communications end user device. The Dandenong Emergency Department has 100 x i62 units available for staff, while Dandenong Mental Health has 150, and Kingston sub acute another 100. At any given time 100% of the staff on duty have an i62 device available for their protection and enhanced communication capability.

Naturally, key site management and hospital security personnel have also been empowered through the provision of i62 handsets, and the deployment of the DURAsuite software and graphical map functionality to their computers.

Notifying the Nurses

The nurse call system provides a two-button call point beside each patient's bed. Once pressed, only the nurses assigned to the particular section will get a notification via the PCS handset.



Pairing staff and a PCS handset

Ascom has developed DURApair- a software module that directs messages to the desired recipient regardless of which PCS handset they are using. This is achieved at shift change when staff swipe their RFID cards and scan the PCS's barcode at a dedicated PC to log on to the handset. Their identity is then linked to that particular phone for the duration of the shift. In addition, staff members' names and extensions are displayed in a directory on any PC running DURAsuite. This feature allows management to track any missing handsets, reducing the issue of missing equipment.

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Contacting the desired PCS handset

The directory is divided into pre-defined groups which are identified by role. If a group extension is dialed, all PCS phones in that group will be called for 30 seconds. If the call is not answered by a member of that group, it is then forwarded to the designated escalation point.



Accept/Reject

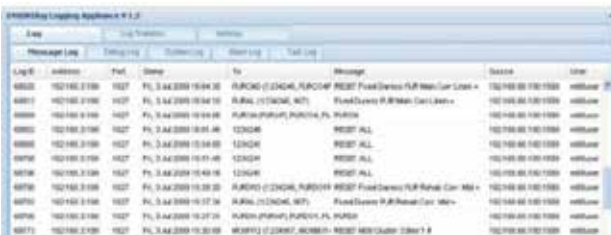
Knowing whether messages have been read by your colleagues is vital to the effective operation of any department. The PCS enables Accept/Reject messages to be sent from each nurse station via the DURApge application. An Accept/Reject message can be sent by name or extension and assures jobs are assigned to staff that are able to complete them in a timely fashion.

Assigning jobs to EDAs

Each PCS has the ability to send nine pre-formatted Accept/Reject messages to Emergency Department Assistants (EDAs) which, once sent, cycle through the four EDA PCS handsets. If the calls cycle through twice without being accepted, a message is sent to the Nurse in Charge which provides detail regarding which handset originated the request. This feature adds great efficiency to workflows in ED.

Logging

Ascom's ENSURElog feature captures information about all messages, alarms, system diagnostics, calls and handset user information. Management can easily search through these logs to make useful information more attainable.



About Us:

Ascom is an international solution provider with comprehensive technological and operational know-how in Mission-Critical Wireless Communication. The company focuses on the areas of Wireless Solutions (high-value, customer-specific on-site communications solutions) and Network Testing (a global market leader in testing and optimisation solutions for mobile networks).

Our solutions include Wireless Duress Alarm, Emergency Wireless Communication, Wireless Voice Communications, Asset/People Tracking and Infant Protection Systems, and Wireless Telemetry Systems. Ascom offers a full range of services including advice, design, deployment and ongoing support. We operate in 21 countries worldwide and have a workforce of 1,900 employees. Ascom registered shares (symbol ASCN) are listed on the SIX Swiss Exchange in Zurich (Switzerland).

