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case study



# Broomfield Hospital selects Zinwave DAS technology for its in-building mobile phone coverage requirements



**Z**inwave's distributed antenna system (DAS) eliminates mobile blind spots caused by building materials blocking RF signals from macro networks

Mid Essex Hospital Services NHS Trust, who manage and maintain the Broomfield Hospital site; have listened to their patients and visitors concerns about the mobile phone connection problems encountered in the atrium building. And having looked into all the concerns raised, the Trust went out to the mobile technology industry to research the best solution for the hospital, and for their patients in addressing these problems.

In-building DAS technology from Zinwave was selected as the right solution for the organisation, to ensure optimal signal coverage for all major mobile networks within the atrium environment and surrounding areas.

This solution will enable the hospital to fulfil its requirement of allowing patients to keep in touch with family and friends using their mobile phones, as stipulated in Government guidelines on mobile usage in NHS facilities, published by the Department of Health in 2009.

The DAS is being installed and commissioned by Herbert Group, an established supplier of class leading productivity solutions to major organisations in the UK and Zinwave's strategic UK System Integrator channel partner for in-building DAS deployments. Zinwave has worked in collaboration with technical personnel at Herbert Group to develop a solution that satisfied NHS requirements concerning mobile communications. Herbert Group also supplies Broomfield

Hospital with printed barcode patient wrist-band services.

Broomfield Hospital is a large general hospital in Chelmsford, run by Mid Essex Hospital Services NHS Trust and covers a total area of more than 43 000M2. It has over 800 beds and offers a range of specialist services including cleft lip and palate, burns and plastic surgery.

The Trust provides local elective and emergency services to 380,000 people living in and around the districts of Chelmsford, Maldon and Braintree (including Witham).

The Trust also provides a county-wide plastics, head and neck and upper gastrointestinal (GI) surgical service to a population of 3.4 million and a supra regional burns service to a population of 9.8 million, and employs over 4,000 staff.

The hospital underwent a £148 million re-development project to centralise services and to enhance patient care and the building opened in 2010. The new atrium includes ultra-modern accident and emergency facilities, a new maternity unit, a helipad for Essex air ambulance services and a number of new wards.

Prior to the hospital's public opening it became apparent that mobile coverage inside the building was poor to non-existent; the metal construction materials used were acting as a Faraday cage and blocking the transmission of RF signals from macro networks.

Broomfield Hospital investigated the possibility of implementing in-building coverage solutions, and Suffolk based Herbert Group was selected, based on proven capability and success, to fulfil

their requirements. The company began a series of negotiations with the different operators (who were all keen to implement their own coverage solution) and obtained their commitment to connect to Broomfield's chosen solution free of charge.

Zinwave's DAS was selected as the preferred coverage solution because of its ability to support multi-operator services (e.g. 2G and 3G from O2, EE and Vodafone) on a single hardware layer, making it the most affordable option for the NHS. In addition Zinwave's DAS is based on fibre-optic cabling and can, where appropriate, be installed utilising Broomfield Hospital's existing cabling infrastructure. This results in a fast, efficient and cost-effective deployment with minimal disruption to infrastructure, services, staff and patients. It also makes the rollout of additional services (LTE for example) a straightforward process.

Zinwave's in-building wireless coverage system is the only wideband active DAS on the market globally that is frequency-agnostic, supporting multiple services and frequencies regardless of protocol or modulation scheme, between 150MHz-2,700MHz. It removes the need for complex, multi-layer infrastructures associated with conventional installations and avoids the need for expensive and disruptive upgrades to support new services, making it completely future-proof.

Says Colin Abrey, Chief Marketing Officer, Zinwave:

*“NHS organisations are under constant pressure to make best possible use of available funding. Our DAS is fibre-based so we can make use of pre-installed cabling which significantly reduces installation costs. It also supports all mobile services, including LTE, so 4G can be incorporated onto the system with no further upgrades or hardware components necessary, resulting in reduced cost with higher utility.”*

Says Mark Channen, Head of Marketing, Herbert Group:

*“Zinwave’s DAS provided a scalable, cost-effective and easy to install solution for Broomfield’s new PFI building coverage problem. Zinwave has also been very helpful in facilitating negotiations with the main MNO’s, enabling us to offer an ” install once solution” that supports all networks. Zinwave’s technical knowledge and in-building coverage design service was second to none, making it very easy for us to supply, install and maintain the system for the hospital. The DAS can also support private paging systems and TETRA networks on the same hardware layer.”*

Says Barry Stannard, IT Operations Manager, Mid-Essex Hospitals NHS Trust:

*“Herbert Group approached us regarding the technology, and following their successful tender win, we formed a close working relationship with them, based on their ability to understand and address our pain-points and facilitate discussions and negotiations with various network operators on our behalf. The key decision in us moving forwards with Zinwave as a solution was the vendor agnostic operator approach; we are not limited to one network provider and we are flexible in our approach moving forwards. The other key point is that the Zinwave solution works with our in-house Multitone paging system which means that we can carry on with business as usual, without having to replace any pagers. The low profile installation and limited infrastructure requirements has meant a seamless transition, without disruption to our day-to-day working; we have high praise for the smoothness of the installation performed by Herbert.”*

The system was initially going to be used to facilitate voice (2G) coverage only to safeguard patient privacy and medical confidentiality. However, the hospital decided to extend coverage to provide patients and staff with mobile (3G) data services and the upgrade was completed within 8 weeks of this decision.