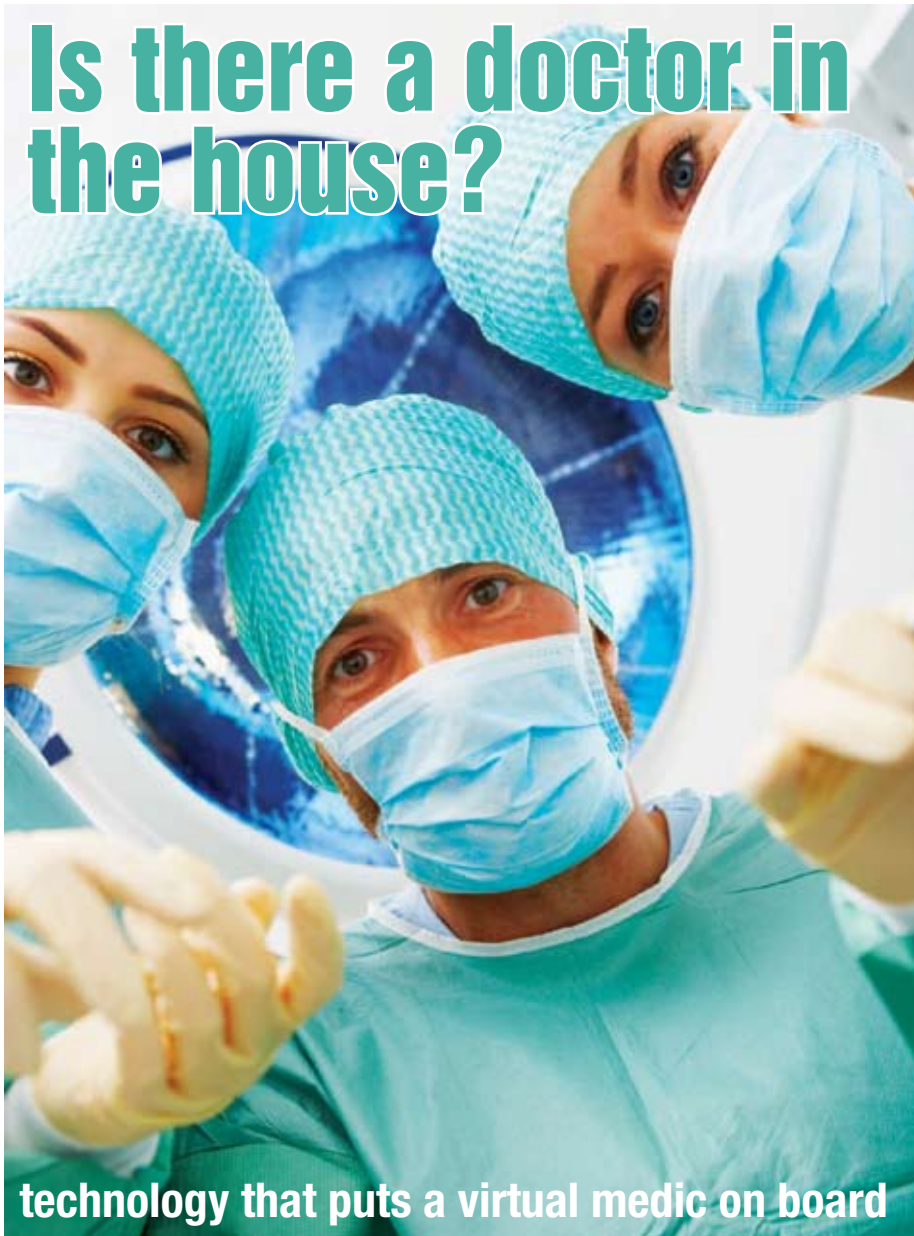


# Is there a doctor in the house?



## technology that puts a virtual medic on board

Communications technology has come on in leaps and bounds over recent years and this means that when a guest is taken ill on board, crewmembers are no longer alone when providing emergency treatment at sea. A new piece of kit from RDT Ltd takes remote medical care to new levels, here's how.

Representing the start of a new era in remote vital signs monitoring, the latest development from RDT, Tempus IC, replaces previous RDT technology that has been used on board marine vessels for nearly five years. It may sound like something from a James Bond film, but this technology is actually available for use on superyachts and, according to MedAire – which has partnered up with RDT over the years to provide the doctors that advise crew remotely – Tempus IC effectively puts the patient in an emergency room situation with all the associated diagnostic capabilities on offer. It allows even a non-medical person to collect and transmit a sick person's vital signs, such as blood pressure, pulse and heart condition, from any remote location to a ground-based medical response team.

Without a doctor on board or new technologies to communicate these vital statistics, yacht crews can only access expert medical help via the telephone. The doctor receiving the call has no clinical data or visual reference to inform his or her diagnosis. According to RDT, by providing clinical-grade medical data simultaneous with voice and video imagery, Tempus IC enables faster, more confident diagnosis and more aggressive treatment options.

### How does the new technology work?

"Vital signs monitors are typically the territory of experienced medical experts. RDT's technology enables anyone, anywhere to provide clinical-quality medical data remotely. RDT developed lots of ease-of-use features, which had to be tested to ensure everything had been thought about," RDT CEO Graham Murphy explained. "It's surprising what people will do when they are trying to use unfamiliar equipment in a stressful medical event, so we asked volunteers with no prior knowledge of the product to test it."

The company used a process of differential diagnosis – distinguishing between diseases of similar character by comparing their signs and symptoms – together with its existing wealth of real world experience to inform the product design. A medical team comprising members specialising in a range of areas, including emergency medicine, cardiology, pulmonary, occupational health and general practice, advised what information is required to enable a doctor to diagnose a wide range of conditions. Murphy comments: "It's important to note that the information required by doctors isn't just vital signs readings, it is essential for the doctor to see and hear the patient; that is why it was so important to users that the device should include integrated video and audio communication capabilities."

The system has been designed to be small and lightweight so that it can be carried easily to the patient by the crewmember. However, providing a device for the maritime industry has, by its nature, to include durability and water resistance as well. Part of the design requirement was for the unit to pass IPX6 – a water resistance test that involves spraying the unit with a high-pressure hose. However, delivering against this requirement, combined with the inclusion of medical parameters that need to draw in air to work (such as blood pressure) presented a significant engineering challenge. RDT opted for advanced polymers moulded in a bespoke two-phase process that delivered the inner rigidity required to seal out water and the outer softness to cushion the device from knocks and rough handling. They also utilised advanced gas-permeable membranes to allow air into the device, to inflate the blood pressure cuff whilst maintaining

a watertight seal, for example. RDT has also been very keen to ensure Tempus IC can be operated by someone without formal training in its uses: "We knew we'd been successful when all our volunteers were able to use the device without any training whatsoever, although naturally we do offer training to our customers," explains Murphy.

### Can we use it on my superyacht?

The communications requirements for the device were as diverse as the requirements for the hardware, but Tempus IC can transmit voice data and video images simultaneously over VSAT, Fleet, Inmarsat B, WiFi, wired Ethernet, GSM as well as old-fashioned telephone and serial connections. Tempus IC represents a new generation of vital



signs monitors. It is the world's first monitor to include GPS, IPX6 water resistance, video communication, Bluetooth™, WiFi, GSM and POTS all on the same platform. In short, having Tempus IC technology on board means guests and crew can get the best medical attention available from a source they trust, such as MedLink.

For more information on Tempus IC email Glen Taylor at [glen@rdtltd.com](mailto:glen@rdtltd.com) [www.rdtltd.com](http://www.rdtltd.com)

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