

5G will improve medical care at sea

- **‘Pediatric Emergencies in Maritime Environments’, thanks to 5G technology, aims to improve medical care in the first minutes of a maritime medical emergency, a key period for saving lives**
- **In the pilot, a minor is fitted with a subcutaneous device that sends an alert to SEM when it detects an anomaly in their heart rhythm**
- **So as to assist the patient, SEM connects in real time with a Cardiologist from the Hospital Sant Joan de Déu (HSJD) via a 5G-enabled tablet**

Barcelona, 29 June 2021.- This Tuesday, within the framework of the MWC21, the ‘Pediatric Emergencies in Maritime Environments’ project was presented, marking a leap forward in care in pediatric emergencies in a maritime environment thanks to 5G technology. This way of using it is driven by [Mobile World Capital Barcelona](#) through the initiative [5G Barcelona](#), the Hospital Sant Joan de Déu (HSJD), Vodafone, the Port of Barcelona and the Maritime Safety and Rescue Society (SASEMAR), with the collaboration of Philips and Bitronik. It also has the support of the Generalitat de Catalunya.

In the pilot test, a minor suffering from a cardiac emergency on a vessel close to the Port of Barcelona is simulated. The child is fitted with a subcutaneous pediatric device which sends an alert signal to the Sistema de Emergencias Médicas (SEM – Medical Emergency System) when it detects an anomaly in their heart rhythm. Thanks to this warning, SEM can activate the protocol for these cases.

The alert also goes to the Cardiology Department of the HSJD, who call the family to get first-hand information on the situation. It examines the device remotely and, on confirming that there really is danger, requests SEM to activate the relevant resources to attend to the patient.

Once the SEM high-complexity pediatric ambulance reaches the port, is taken to the boat in a SASEMAR vessel. To provide care, SEM contacts the HSJD using a high-resolution 5G-enabled tablet, transmitting data in real time and managing to stabilise the patient. Subsequently, with a 5G-enabled mobile, an echocardiography is conducted so as to assess their condition in greater detail.

The child then moves to the SASEMAR vessel, returning to the Moll de la Fusta of the Port of Barcelona. Once on land, they are cared for in the pediatric ambulance and taken to the hospital.

According to the CIO and director of 5G of Mobile World Capital Barcelona, Eduard Martín, this project is “another example that showcases the advantages and opportunities offered by 5G technology in the healthcare and medical assistance field. This pilot aims to set a clear before and after for emergency care in maritime environments, and at the end of the day, save lives thanks to technology”.

In the words of Dr. Antoni Encinas, manager of SEM: “The tests in which we have had the opportunity to participate show that the SEM plays an essential role. The introduction of 5G technology in these types of emergencies would allow us, once again, to be a key piece in the gear of this entire system to give urgent support to a potentially critical type of patient and to quickly connect with the necessary specialists activating the precise resources in order to save lives”.

On the other hand, Dr. Sarquella, pediatric cardiologist at the Arrhythmias and Sudden Death Unit of the Cardiology Service of the Sant Joan de Déu Hospital, highlighted that “remote monitoring allows continuous monitoring from anywhere on the planet. Having tools such as 5G allows this to be done immediately, thus facilitating immediate action in serious cases. The Sant Joan de Déu Hospital is a pioneer in the remote monitoring of heart rhythm control devices in patients around the world. The centralization of all this information makes it possible to offer high-level medicine from distance”.

“It is not the first pilot project on 5G connectivity that we have developed at the Port of Barcelona and as such, we are aware of the possibilities opened up by this technology in areas as diverse as healthcare, safety and maritime and port operations, to mention just a few. It is very important that we work from now on to make the possibilities offered by 5G a reality and doing so via public-private partnerships is the way forward”, declared the chairperson of the Port of Barcelona, Mercè Conesa.

In addition, Alejandro Carballo, the Sales Director Public Administrations at Catalunya and Aragón at Vodafone, has emphasized that “5G is driving industry and services as we know them today to unimaginable levels. One of the most benefited by this technology is the health sector: the Vodafone 5G Network already connected in 2019 surgeons from all over the world in a pioneering project in telemedicine, we also bet on connected ambulances to help in accidents and now it is the time of medical emergencies on the high seas. A pilot project capable of caring for a child with heart problems in international waters and that using 5G will connect with the medical center and they will do an ultrasound in the middle of the sea”.

For its part, Biotronik has highlighted that “rapid medical intervention in patients with cardiac arrhythmias saves lives. For Biotronik, remote monitoring has always been one of its priorities in patient care. In 2001, we launched the first device compatible with this technology worldwide and today, with the advancement of new technologies, the patient with a transmitter similar to a smartphone is capable of sending a cardiac alert to the doctor in less than 3 minutes”.

Likewise, Almudena Martí, Business Strategy Consultant at Philips Ibérica has specified that “the ultra-portable Philips Lumify Ultrasound, in conjunction with 5G technology, is set up to be a key catalyst in the tele-ultrasound revolution. Its extreme portability, the minimalism in terms of its hardware (it consists of just a probe and a smart device such as a phone or tablet) and the simplicity of the software interface make this product an indispensable tool in emergency clinical applications. Lumify also offers the added value of having a telemedicine platform (IIT REACTS) integrated into its software, allowing a physician to receive support in real time, wherever they may be, both in the acquisition of ultrasound images and for their clinical interpretation. This is the feature that makes the product a comprehensive solution to the limitations that the healthcare professional may encounter when it comes to using ultrasound in complicated clinical situations or cases, eliminating obstacles and favouring the efficient integration of technology”.

Finally, the Director General of Innovation and Digital Economy of the Generalitat de Catalunya, Daniel Marco, assures that “5G technology gives us very high quality connectivity in real time, allowing healthcare to be brought closer to where patients need it. Projects such as the one we present today are an example of the transformation of the health system thanks to the emergence of digital technologies”.

About 5G Barcelona

5G Barcelona is a public-private initiative to position Barcelona and Catalonia as an innovative and open environment for the validation and adoption of 5G technologies and applications in a real-life environment.

The initiative will create synergies within the 5G ecosystem and offer an experimental infrastructure to test, create prototypes and implement new digital solutions. 5G Barcelona aims to stimulate and consolidate the already extant innovation in Barcelona and Catalonia, helping to attract foreign investment, encouraging new technological companies and generating a complete industry around 5G technology.

*The initiative driven by the **Generalitat de Catalunya, Barcelona City Council, Mobile World Capital Barcelona, i2CAT, CTTC, Atos and the UPC.***

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