Press release

Private 5G experimentation and healthcare: A field hospital deployed in just 24 hours after a flood

Rennes, November 21, 2024 **- The b<>com Institute of Technological Research and Rennes University Hospital are continuing their successful collaboration by leveraging the possibilities of private 5G outside the hospital premises for the first time. This experiment involves setting up a field hospital equipped with a multi-bed intensive care unit in an isolated area within 24 hours following a flood.**

One year after transforming a "conventional" care unit into a multi-bed intensive care unit in record time, b<>com and Rennes University Hospital, together with their partners[2], are taking the next step in connected medicine: rapidly deploying a field hospital following a natural disaster or other large-scale event causing numerous casualties (accident, epidemic, etc.).

This unprecedented out-of-hospital experiment represents a significant challenge due to the unique requirements of an intensive care unit: specific alarm reporting connections, continuous visual monitoring of patients, etc. The key objectives are:

- strengthening emergency medical assistance and support healthcare facilities during exceptional health situations, as was the case during the COVID-19 pandemic.

1- This experiment is being carried out as part of the Engage *5G & Beyond* research project, funded by France 2030. This project aims to build and operate a network of open, national, and sovereign platforms providing 5G services for the transformation of the healthcare, energy, automotive, and agri-food sectors.
2- Partners of the Engage 5G & Beyond project: b<>com, Rennes University Hospital, EDF, Eurecom, Images & Réseaux, Nokia, Orange.
3- *Dome* is a private 5G connectivity solution from start-up Obvios, a subsidiary of IRT b<>com.

- rapidly increasing intensive care capacities at strategic locations for healthcare facilities.
- enabling medical teams to perform their duties under optimal conditions without adding to the stress caused by the crisis situation.

The setup deployed in Roazhon Park parking lot features a temporary healthcare facility with a four-bed intensive care unit connected to the information system of Rennes University Hospital.

The interconnection of monitoring equipment and cameras is enabled by a private 5G network, powered by the Dome3 core network from the start-up Obvios, a subsidiary of IRT b<>com. The 5G infrastructure is compact and portable, designed as an easy-to-transport suitcase.

Inside, there is the core of the private 5G network connected to a 5G antenna and routers, to which all monitoring devices and cameras are linked.

Easy to use, this solution can be quickly mastered by medical staff, who are not experts in telecom networks. Thanks to its high level of robustness, it also ensures the reliable and secure transmission of medical data, including the patient's care sheet, with no interruption in transmission to Rennes University Hospital.

> "*For this use case, one of the major challenges was to guarantee the real-time circulation of patient medical information (monitoring carried out, need for specific care...) between the field hospital and Rennes University Hospital.* Thanks to the private 5G network, we were able to implement a connected care sheet that centralizes this information and thus better supports the medical journey of each patient", explains Eric Gatel, Coordinator of the Engage 5G & Beyond project at b<>com.

During this experiment, medical teams can monitor in real-time the level of agitation of patients in intensive care thanks to the b<>com *Human Pose system*. Using a camera connected to the private 5G network, it can detect the patient's risky movements and, in case of an alert, trigger an alarm to the central station and the mobile phones of the healthcare staff.

> "In all circumstances, and even more so in crisis situations, we, as healthcare staff, must be able to work under the best possible conditions, so that we can focus on our core mission and ensure the quality and safety of the care provided to patients. *This requires optimal patient monitoring, full access to our equipment, and seamless integration of our tools with the university hospital's information systems, as if we were there*", says Dr. Adel Maamar, Head of the Medical Intensive Care Unit at Rennes University Hospital.
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> "In normal conditions at the university hospital, all equipment – monitors, ventilators, syringe pumps, etc. – are connected to our specialized software, which in turn is linked to our databases, electronic patient records, and more. These tools are an integral part of the daily routine of intensive care professionals, which is why even in exceptional out-of-hospital situations, we must be able to relocate these solutions", explain Philippe Cozic and Arnaud

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Coursin, respectively Biomedical and E-health Application Engineers at Rennes University Hospital.

This new exploration of the potential of 5G in hospital settings is the third such experiment conducted since 2022, involving numerous areas of expertise at Rennes University Hospital: clinicians, specialists in exceptional health situations, network engineers, e-health and biomedical applications engineers, and research and innovation leads. It follows the connected ambulance and wireless operating room experiments, carried out respectively under the "5G Tours" and "Engage 5G & Beyond" programs.



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Its technologies are developed for critical infrastructure, defense, agri/agro, security, healthcare, Industry 5.0 as well as cultural and creative industries. Its experts develop innovative, secure digital technologies (cloud, cybersecurity, AI) that serve signal, content and network processing (connectivity, video & sound, digital twins, human factors).
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About Rennes University Hospital

Rennes University Hospital, the first university hospital in France to be awarded the "High Quality of Care" label by the French National Authority for Health in 2021, is consistently ranked among the top ten university hospitals in the France, and the Rennes subdivision is ranked second in the choices of medical interns. The facility offers a capacity of 1,940

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beds and places across four sites. Beyond a wide range of clinical excellence services, the university hospital has state-of-the-art technical facilities dedicated to diagnostics and interventional medicine. It provides local healthcare services to the Rennes and Brittany populations, as well as specialized care at territorial, regional, and inter-regional levels. In 2023, the university hospital recorded 660,310 consultations, 150,786 inpatients and 131,145 emergency room visits. Each day, the 10,062 professionals of the facility tackle public health challenges and are committed daily, both to issues related to the health crisis caused by COVID-19 and to the management of strokes, chronic diseases, cancers, cardiovascular diseases, and conditions of the elderly. Very dynamic in research, the university hospital in 2023 recorded 1,062 scientific papers, 1,856 ongoing clinical studies, and is involved in 13 joint research units, 3 certified hospital-university federations, and 9 advanced research platforms and infrastructures. Furthermore, the university hospital is engaged in health innovation projects, both in the field of health data exploitation and in harnessing the potential of 5G, as well as in the development and routine clinical evaluation of artificial intelligence algorithms.

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