Advances in Automobile Engineering

Extended Abstract

Advanced Robotics 2018 : S2T (Skin-to-Thing) solutions for design & engineering R&D: What wearable device developers must consider for their IoMT device?

Edith Bianchi

Abstract

The internet of things (IoT) is allowing collected data from "things" to be connected to the cloud, where artificial intelligence (AI) can be used to identify trends and enable decisions to be made accordingly. This platform has been integrated into the medical field and is known as the internet of medical things (IoMT). This shift can potentially transform medical field as we know it today. By using this platform, we can generate and analyze the collected medical data in a way that was not possible otherwise. This holds a tremendous value to improve patient personalized care. It also carries the potential of creating an efficient way of health monitoring, promoting wellbeing, allowing real-time interventions, progress treatment and adherence and improving the management of chronic disease. IoMT devices are often presented in a concept of a wearable device and mobile healthcare applications. These devices are enabling and enhancing possibilities of home-care as well as access to medical experts anywhere. In a world with aging population and massive health expenditures, IoMT may be the very desired mean to cope with many of the challenges. Analysts are estimating the IoMT market to continue its growth trend and simultaneously the worldwide wearables market continued its upward trajectory. The starting point of every wearable medical device is always the patient. Whether it is a monitoring device, a diagnostic system, a drug delivery infusion pump or a nerve stimulation tool - in most cases the device would be attached to the skin

The patient's "Skin" interface to the "Thing", has been described in the term S2T (Skin-to-Thing). This crucial element is often overlooked by medical device developers, left for a later stage of design although at times, it may be the determining factor of implementation of the entire device or technology. Most of the focus of IoMT is rightfully directed to the device itself, to the computing and cloud technologies, to the electronics and to the gateways apps of the data. Yet, engineering teams must be aware of S2T and assume responsibility to understand its challenges and acquire the necessary expertise that is required for their specific skin-to- thing solution. The intended wearing location, duration, target population and many other considerations, should dictate the solution, its components and design. Indeed, engineering teams are becoming more and more familiar with factors that are critical to S2T ("Skin to Thing") required solution and its challenges to adhere the device to the patient's skin. Challenges such as biocompatibility and regulation requirements, the possible material interactions due to manufacturing technologies and comfortability to the end user

??? these aspects of body/machine interface should be given their deserved attention in order to assure the successful usage and benefits of current technological breakthrough is medical device, fitness, healthcare & pharmaceuticals industries.

2nd International Conference on Advanced Robotics, Mechatronics and Artificial Intelligence. December 03-04, 2018 | Valencia, Spain

Edith Bianchi
Business Development & International Sales Manager, Israel, E-mail: edithbianchi73@gmail.com