

# ***MEDICAL PATIENT EMERGENCY CALL TECHNOLOGY (MPECT)*** **BERBASIS INTERNET OF THINGS PADA RUMAH SAKIT**

**Rudi Soesilo**

Program Studi Teknik Elektro, Fakultas Teknologi Informasi & Elektro  
Universitas Teknologi Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta

## **ABSTRAK**

Teknologi *nurse call* terus mengalami perkembangan. Namun, masih banyak ditemukan kekurangan-kekurangan pada penelitian sebelumnya. Kekurangan-kekurangan tersebut disebabkan oleh beberapa hal, diantaranya arsitektur alat yang masih menggunakan banyak kabel, penggunaan modul komunikasi data yang terbatas jangkauannya seperti *bluetooth* dan *access point*, serta alat yang hanya bisa memanggil perawat saja sedangkan dalam kondisi darurat diperlukan alat untuk memanggil dokter secara langsung.

Menanggapi permasalahan tersebut, penulis membangun sistem yang dinamakan *Medical Patient Emergency Call Technology (MPECT)*. Sistem ini dapat memantau keadaan pasien lewat denyut nadi dan dapat memanggil dokter yang ditugaskan menangani pasien. MPECT dibangun menggunakan dua sensor, yaitu tombol untuk memanggil dokter dalam keadaan darurat, serta sensor modul detak jantung untuk memantau keadaan pasien. Sistem yang dibangun berbasis *Internet of Things (IoT)*, dimana notifikasi panggilan dan pemantauan detak jantung pasien akan langsung terhubung ke *smartphone* dokter.

Untuk keperluan medis, dibutuhkan alat penunjang kesehatan yang memiliki tingkat keakuratan pengukuran yang tinggi. Pada penelitian ini didapatkan hasil pengujian alat yang memuaskan. Dalam pengujian sensor detak jantung, didapatkan rerata tingkat kesalahan sebesar 1,1 %.

**Kata kunci:** MPECT, Internet of Things, Kesehatan, Dokter, Pasien

# **MEDICAL PATIENT EMERGENCY CALL TECHNOLOGY (MPECT) BASED ON INTERNET OF THINGS IN A HOSPITAL**

**Rudi Soesilo**

Electrical Engineering Study Program, Faculty of Information & Electrical Technology  
University of Technology Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta

## **ABSTRACT**

Nurse call technology continues to develop. However, there were still many shortcomings found in previous studies. These deficiencies were caused by several things, including the architecture of devices that still used many cables, the use of limited-range data communication modules such as Bluetooth and access points, as well as tools that can only call nurses. Furthermore, in emergencies, a tool is needed to call a doctor directly.

Responding to these problems, the authors built a system called Medical Patient Emergency Call Technology (MPECT). This system can monitor the patient's condition through the pulse and can call the doctor assigned to handle the patient. MPECT was built using two sensors, namely a button to call the doctor in an emergency, as well as a heart rate sensor module to monitor the state of the patient. The system is built based on the Internet of Things (IoT), where notification of calls and monitoring the patient's heart rate will be directly connected to the doctor's smartphone.

For medical purposes, it is necessary to support medical devices that have a high level of measurement accuracy. In this research, the results obtained were satisfactory testing the tool. In testing the heart rate sensor, an average error rate of 1.1% was obtained.

Keywords: MPECT, Internet of Things, Health, Doctors, Patients