

## **ABSTRAK**

### **RANCANG BANGUN ALAT *SECURITY SYSTEM* PADA OBJEK KAIN TAPIS DI MUSEUM LAMPUNG BERBASIS TEKNOLOGI *INTERNET OF THINGS (IoT)***

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Museum Lampung memiliki banyak koleksi bersejarah salah satunya kain tapis. Koleksi kain tapis di Museum Lampung masih belum aman dikarenakan tata letak yang masih terbuka dan jarak yang jauh dari CCTV. Penelitian ini bertujuan merancang rangkaian *security system* menggunakan input dua sensor *Passive Infra Red (PIR)* serta output buzzer dan Kamera VC0706 di Museum Lampung yang bisa dipantau secara langsung dari jarak jauh dengan notifikasi pada *platform Telegram*. Metode penelitian yang dilakukan berupa perancangan dan pengujian (pengujian subsistem dan pengujian sistem keseluruhan). Data hasil penelitian ini berupa hasil perancangan sistem, cara kerja sistem keamanan pada objek kain tapis dan sistem keseluruhan. Sistem keamanan dilakukan pengujian menggunakan provider Telkomsel, Indosat dan Tri. Didapatkan hasil untuk kualitas gambar 640 x 480 Pixel didapatkan rata-rata waktu pengiriman dari provider Telkomsel selama 25.2 detik, provider selama Indosat 27.4 detik dan provider Tri selama 28.6 detik. kemudian dilakukan percobaan dengan 3 kualitas gambar berbeda yaitu 640 x 480 Pixel, 320 x 240 Pixel dan 160 x 120 Pixel dengan provider Telkomsel dengan nilai rata-rata pengiriman untuk kualitas gambar 640 x480 Pixel selama 25.2 detik, kualitas gambar 320 x 240 Pixel selama 20.5 detik dan kualitas gambar 160 x 120 Pixel selama 17.7 detik. Kemudian pengujian pengiriman notifikasi *Telegram* jarak jauh dari alat sistem keamanan dan didapatkan waktu terkirim notifikasi dari *serial monitor Arduino IDE* sama dengan waktu diterima notifikasi pada *platform Telegram* yang artinya pengiriman notifikasi berlangsung secara *real time*.

**Kata kunci:** Sistem Keamanan, Sensor PIR, Kamera VC0706, Kain Tapis, Museum.

## **ABSTRACT**

### **DESIGN OF SECURITY SYSTEM ON TAPIS FABRIC OBJECTS IN LAMPUNG MUSEUM BASED ON INTERNET OF THINGS (IoT) TECHNOLOGY**

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*The Lampung Museum has many historical collections, one of which is tapis cloth. The tapis cloth collection at the Lampung Museum is still not safe because the layout is still open and the distance is far from CCTV. This study aims to design a series of security systems using two Passive Infra Red (PIR) sensor inputs with buzzer and VC0706 camera outputs at the Lampung Museum which can be monitored directly remotely with notifications on the Telegram platform. The research method used is design and testing (subsystem testing and overall system testing). The data from this research are the results of system design, how the security system works on filter cloth objects and the overall system. The security system was tested using Telkomsel, Indosat and Tri providers. The results obtained for image quality 640 x 480 Pixels obtained an average delivery time from Telkomsel providers of 25.2 seconds, providers for Indosat 27.4 seconds and Tri providers of 28.6 seconds. then an experiment was carried out with 3 different image qualities, namely 640 x 480 Pixels, 320 x 240 Pixels and 160 x 120 Pixels with Telkomsel provider with an average sending value for image quality 640 x 480 Pixels for 25.2 seconds, image quality 320 x 240 Pixels for 20.5 seconds and 160 x 120 Pixel image quality for 17.7 seconds. Then testing sending Telegram notifications remotely from a security system tool and obtained that the time sent notifications from the Arduino IDE serial monitor is the same as the time received notifications on the Telegram platform, which means sending notifications takes place in real-time..*

**Keyword:** Security System, PIR Sensor, Camera VC0706, Tapis Cloth, Museum.