Vaccine Storage Room Secure Access with Face Recognition and Secure Data Transaction

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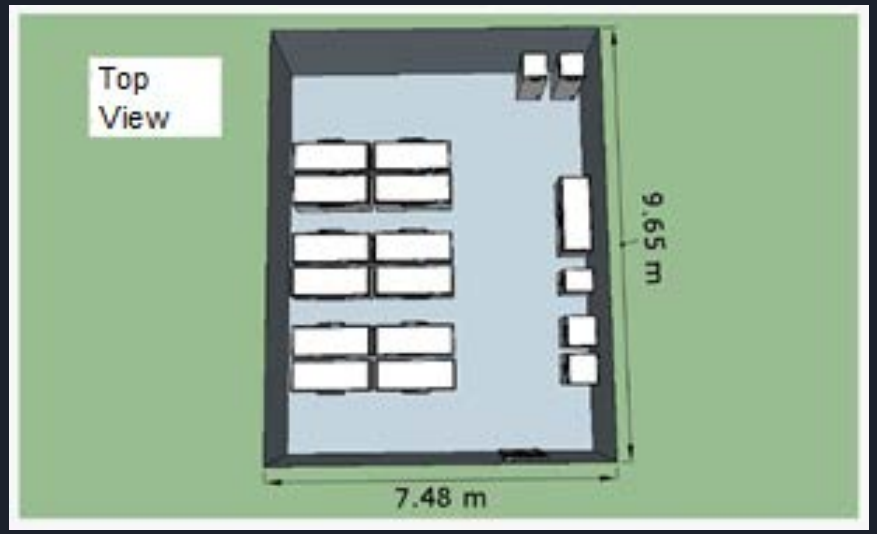
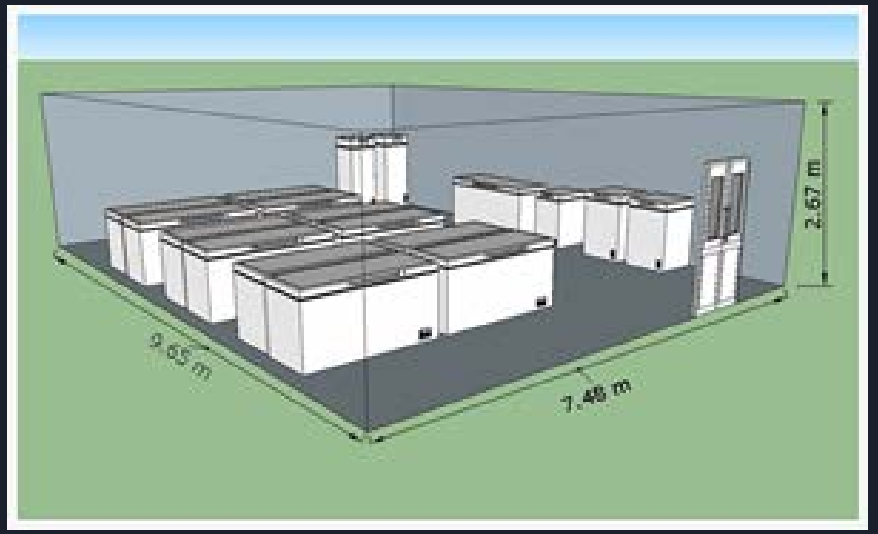
Background

- Biofarma has a virus storage room in Bandung, Indonesia. The virus that is owned by Biofarma is a virus to make an antivirus or vaccine. This virus and vaccine are a type of vaccine and polio virus.
- Currently Biofarma uses products from abroad for temperature monitoring. The product has the specifications needed for temperature monitoring. However, the IoT platform used in the monitoring system uses a server or data center external to Biofarma, even external to Indonesia.
- For security reasons, Biofarma wants to have an internal data center. So the server is physically placed in the Biofarma environment.
- In addition Biofarma wants to conduct surveillance of people who access the virus storage room. So we need sensors that can detect human movements or cameras that can be used to see the condition of the room.
- This security system will comply with WHO Standard.

Virus Storage Chamber Blueprint at PT Biofarma





Target

- System Development Documents (IoT and security devices)
- User Requirements (URS) document according to WHO standards
- Implement an IoT platform that can be deployed internally in the Biofarma environment so that data security can be maintained.
- Monitor the storage space of this virus will use several devices including temperature sensors, PIR sensors, and cameras.
- Reports regarding lessons learned from system implementation in the actual environment
- Filing of patents and publications for vaccine chamber security systems

Project Members & Duration

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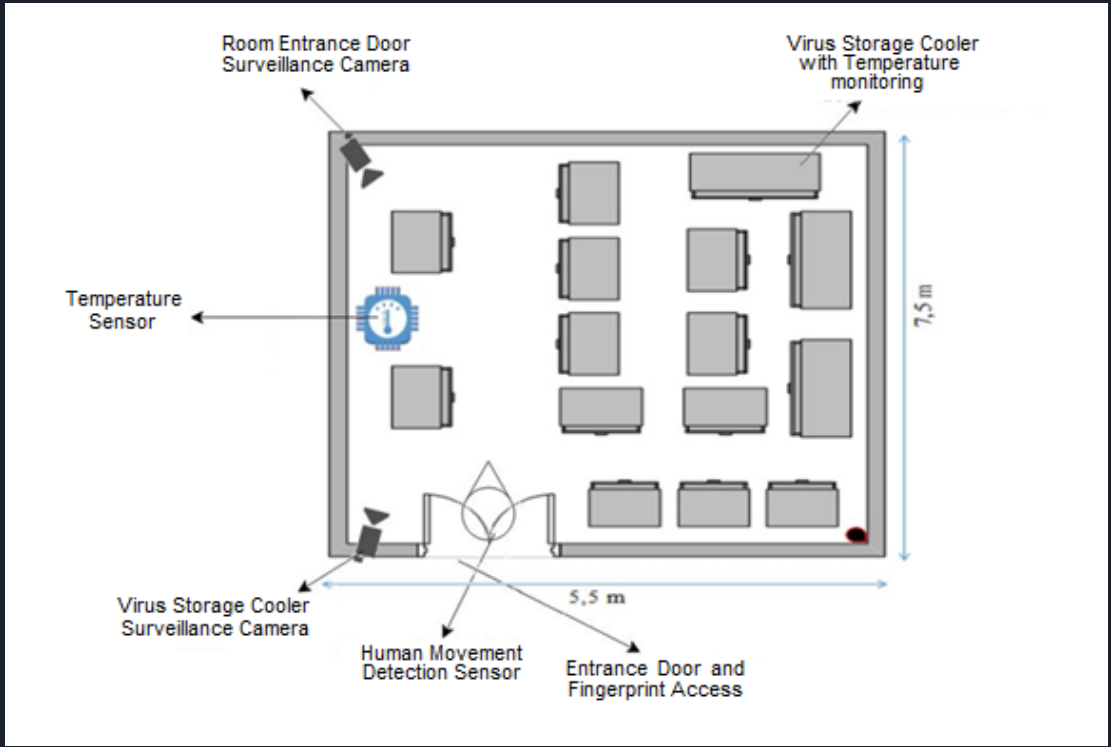
Presenter: Maman Abdurohman

Project Duration: 24 Months

Technology and Work Package (WP)
Structure



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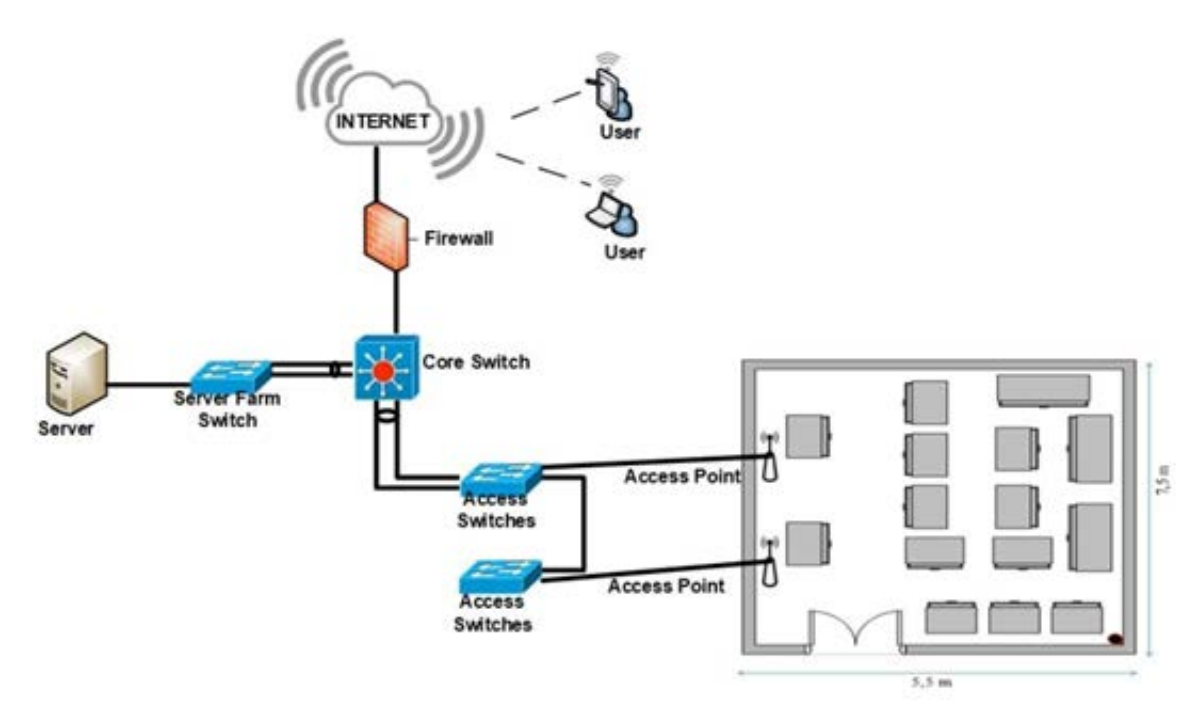


Technology and Work Package (WP) Structure

- WP1 -> Coordination and Preparation
  - Task : Manage all WP work well under good coordination and reporting
- WP2 -> Face Recognition and Motion Detection
  - Task : Focus in implementation and demonstration on face recognition and motion detection
- WP3 -> Temperature and Humidity Sensor
  - Task : Focus in implementation and demonstration on monitoring room temperature
- WP4 -> Secure Data Transaction
  - Task : Focus in implementation and demonstration on SSL for communication
- WP5 -> Finishing and Installation
  - Task : Focus in assembly, finishing, and installation at Biofarma

Scientific Contributions

No	Publication Target	Year Target
1	International Journal and/or Conference	2022
2	Intellectual Property Rights and/or Patent	2022

Roadmap

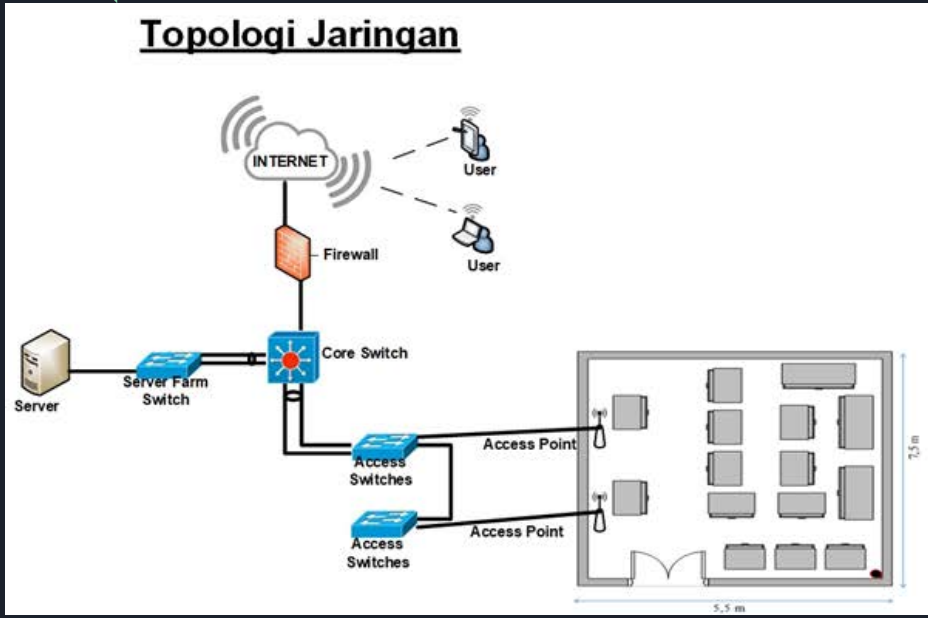
2021

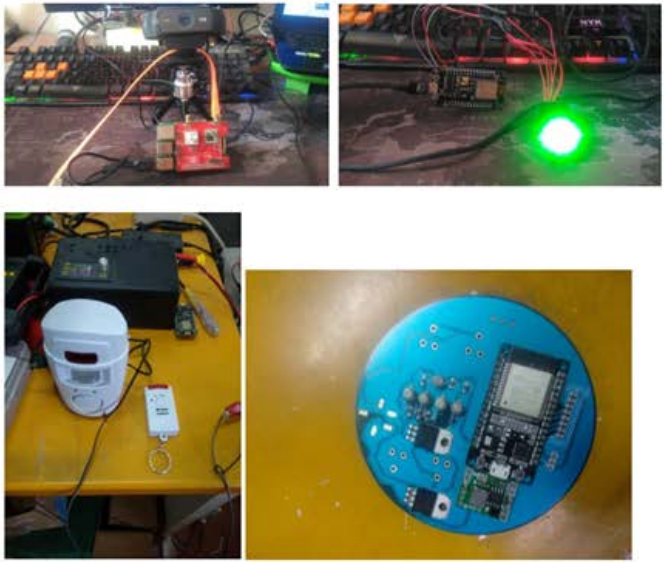
- User Requirement Document according WHO Standard for for IoT System and Security
- Development and Test in Laboratory Environment

2022

- Implementation IoT platform that can be deployed internally in the Biofarma Environment.
- Reports regarding lessons learned from system implementation in the actual environment
- Publication and Patent

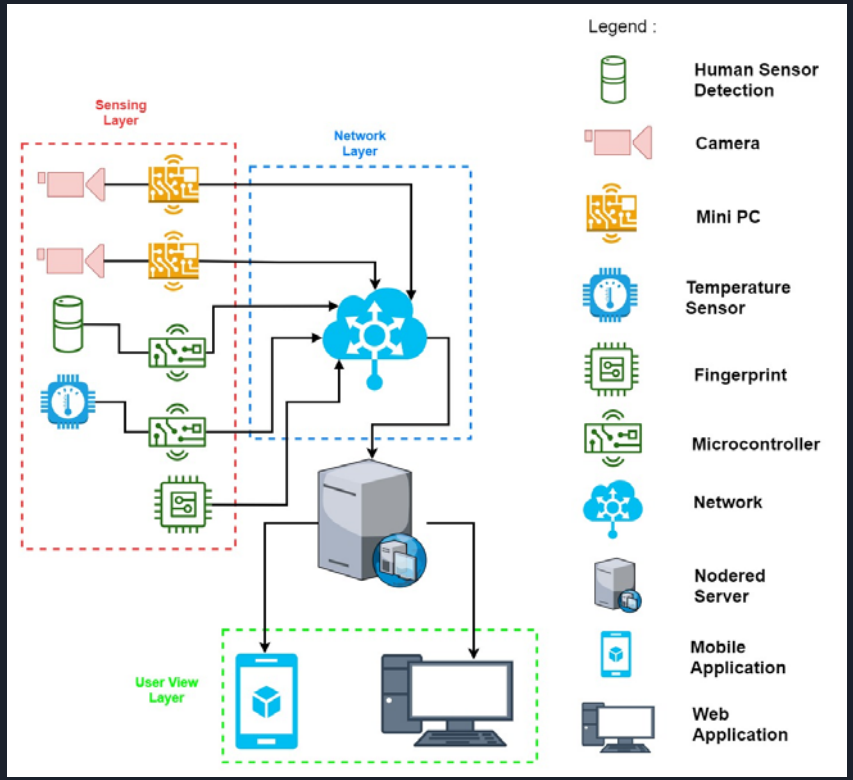
Done Progress (2019)





Current Progress (2019) Video

Current Progress (2020)



Societal Impact

- Security systems can be implemented in different environments and different levels of security in Biofarma
- All room data in Biofarma can be accessed online
- Framework for IoT-based vaccine room security standards
- This system secures important assets (vaccine storage) with safety standards according to WHO regulations

Future works (2021)

- Development of a virus room security system with WHO standards
- The system being developed can be integrated with PT Biofarma's internal system
- The data center is managed internally by PT Biofarma