





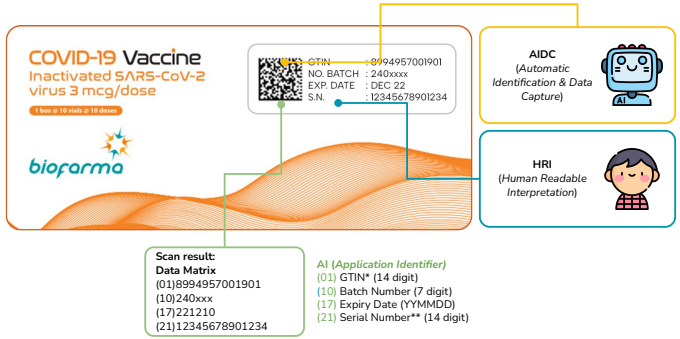
## We made it possible to overcome a cold chain nightmare: Indonesian geographical challenge

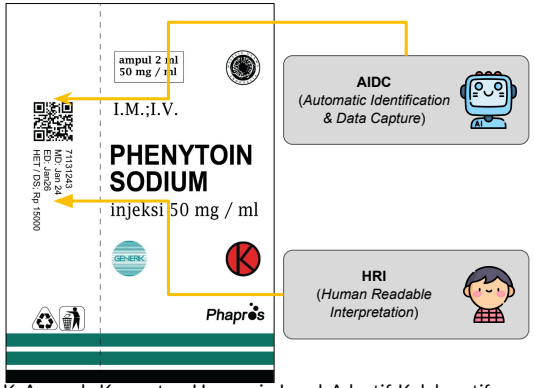
**7000+**
inhabited islands



# Medtrack: Track and Trace Serialization

**Barcodes with GS1 standards** are embedded across all packaging levels; primary, secondary, tertiary, and up to **any required level** to ensure product **authenticity** and **end-to-end traceability**




## Case 1

Bio Farma repackage the vaccine to vials and **advanced its traceability with GS1 barcode**

| Primary packaging | Secondary packaging | Tertiary packaging | N-Level Packaging |
|---|---|---|---|

## Case 2


# Medtrack: Track and Trace Distribution

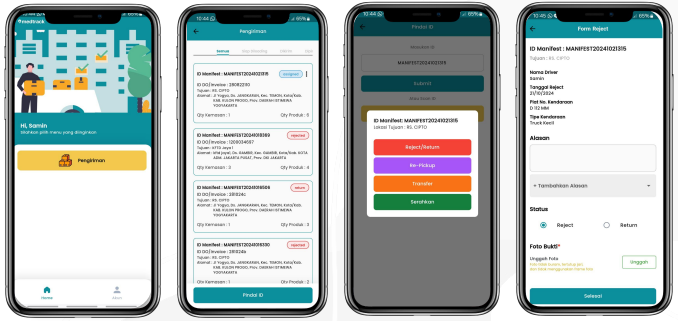
Supported by advanced technologies such as GS1 standards, IoT sensors, and mapping tools, the system ensures product authenticity and quality throughout distribution, supports efficient distribution management.

Beacon List — Engine Hours : 0

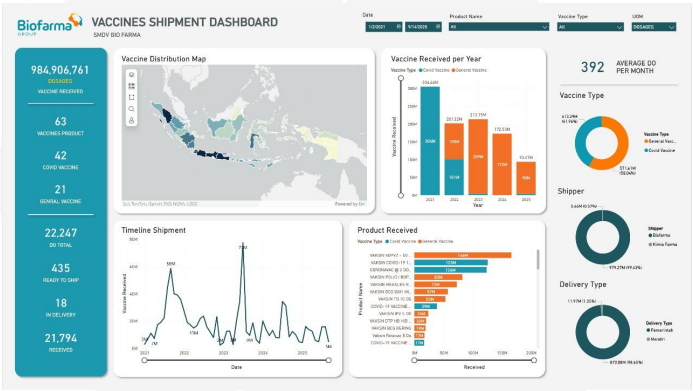
| | | | | | |
|---|---|---|---|---|---|
| Odometer | 72521.86 | Temperature | 4.50, 0.00 | GPS Sat | 12 |
| Total KM Today | | Altitude | 781 | GSM Signal | 4 |
| Fuel Used | | DIN 1,2,3 | 0, 0, 0 | Battery | 0.00 v |
| Lat, Lon | -6.8994,107.6009 | AIN 1,2 | 0.087, 0.087 | Daya Aki | 27.51 v |

Real-time monitoring, the system ensures product authenticity and quality by tracking movement, temperature, and vehicle behavior, and by generating comprehensive report.

**Tracking distribution via Mobile Apps**



**Dashboard Monitoring**



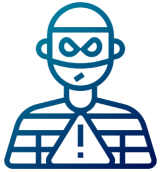
## Ensured quality

Fleet management system such as high tech IoT temperature system, ensure the quality throughout the distribution process

## No counterfeit vaccine


GS-1 serialization and barcoding system ensure vaccine authenticity

## No theft, forgery, & fraud



24/7 IoT-enabled command center and cloud infrastructure is designed to make theft, forgery, and fraud impossible

## Near-zero wastage

Immediate corrective action will be taken if there is an operational error tracked by fleet management system.

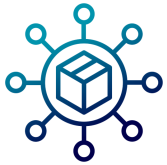
## Trusted by many

Supporting Ministry of Health's digital transformation to accelerate standardized data exchange. Non-pharma e.g. oil & gas company, and fertilizer company is also very interested to the MedTrack.

## Service level guarantee

The heart of our operation. 24/7/365 command center will monitored and ensured operational excellence.

## Gold standard of pharma distribution



MedTrack with its real-time decision support system become a gold standard in Indonesian healthcare distribution industry

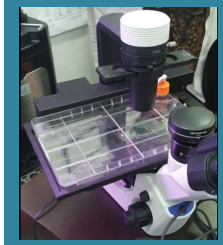
## Maximized vaccine coverage

MedTrack has proven in helping vaccine distribution to >600 points, including the remotest district in Indonesia.

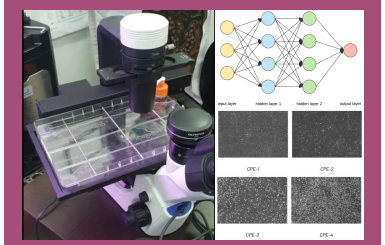
First story: ✅ Machine Learning for Polio, Tetanus, Dengue, & Covid-19 vaccines

## Machine learning reduces **Bio Farma's operational cost** by optimizing virus vaccine harvesting time and improved the quality

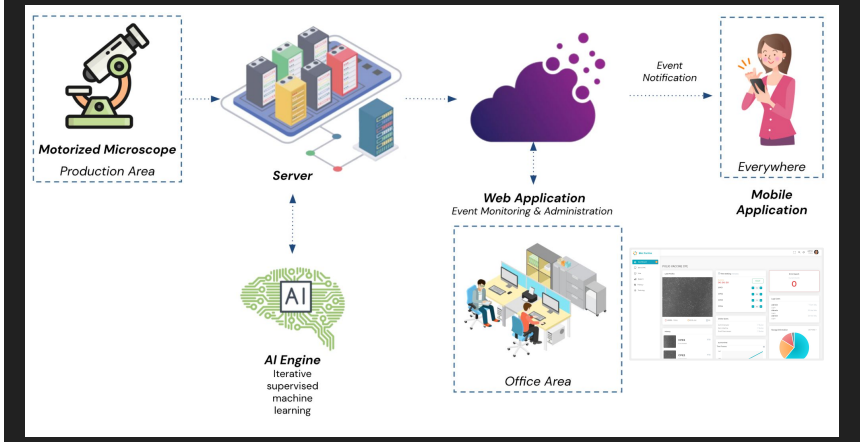
| Aspect | Conventional* | Bio Farma Polio CPE Machine Learning** |
|---|---|---|
| **Observation method** | **Manual,** operator needs to periodically going into sterile rooms | **Automatic,** can be monitored anywhere by operators |
| **Observation result** | **Subjective,** depending on the operator | **Objective,** based on data and predetermined criteria |
| **Observation interval** | 2-3 times per day | 24 hours non stop |
| **Harvest time accuracy** | **Medium accuracy,** optimum harvest time might be missed due to limited observation interval | **High accuracy,** because of the 24 hours non stop observation |
| **Cost** | 3 billion doses need 34 batches of vaccine' bulk. | 3 billion doses **only need 22-27 batches of vaccine' bulk.** |



*Conventional observation



**Observation w/ AI/ML




System Architecture of BF Polio Vaccine Harvesting Optimization System

# “The (some) Brutal facts of Digital Transformation”

1. It's not as beautiful as told by the consulting company and friends 😉
   90% of AI use cases are just for demo, majority of them are Chatbot
2. It needs a very robust and wonderful technology. But, technology is just one of the three components. The other two are very (many times, are more) important: Business Process & People
3. A good and robust technology is expensive. Confirm business values of digital transformation with pre-post evaluation.
4. Transition is very painful. Many times, you have to do both in the transition stage.
5. Done when it's done.