

UGM Collaboration Develops System of COVID-19 Tracing dan People Mobile Analysis


Tuesday, 31 March 2020 WIB, By: Natasa Adelayanti



UGM will launch the COVID-19 Tracing and People Mobile Analysis system. This system is a collaboration between UGM, the Indonesian Ministry of Health, Indosat Ooredoo, PT Global Data Inspiration (Datains), and PT Gamatechno. This system can provide COVID-19 deployment analysis based on historical data of cellular telephone customer moves.

With the COVID-19 Tracing feature contained in this application, the community can detect individuals identified as positive, PDP, or COVID-19 ODP. This application can also expose people around a particular individual. That is because the data acquired by searching telephone numbers of people within a certain distance from the movement of the patient's telephone position.

Historical data on the movement of cellular telephone customers processed is the output position data from the triangulation algorithm whose accuracy is quite reliable, far better than the position data based on cell phone tower location or commonly called BTS (Base Transceiver Station). This system still maintains the privacy of the owner of the telephone number because the information processed can only be accessed by the relevant state agency in an emergency.



The second feature, People Mobility Analysis, can provide more extensive information in the form of the results of the analysis of the movement of people from one region to another. This movement analysis results from identifying the flow of all cellular telephone customers in one area to another. This vital information can help the Ministry of Health and COVID-19 Task Force in evaluating and determining the next policy, for example, to see how the pattern of pandemic spread from one red zone to another and the effectiveness of regional quarantine.

Widyawan, S.T., Ph.D., Director of the Directorate of Information Systems and Systems UGM, said that the creation of this system began on March 4, 2020. UGM was invited to a discussion by the Indonesian Minister of Health to find solutions to stop the spread of COVID-19 in Indonesia. The debate resulted in a system concept that would be executed by Indosat Ooredoo along with UGM and Datains.

On Friday (27/3), the pilot version of the system was shown to the Ministry of Health and received a positive response. Widyawan said, regarding continuity of the meeting with the Minister of Health in the fourth week of March, "the plan is ready at the beginning of April. The authorities can use this big data system, both at the central and regional levels," he said.

Widyawan explained that the two systems integrated with Cared COVID-19's safety confirmation application platform. So that the operation can provide direct services to the community and enrich the data they have.

"People who download the application can do COVID-19 self-screening. Based on the results of the self-screening, local health facilities can find out the condition of the surrounding community, and follow up this information to the COVID-19 task force in the area," he explained on Tuesday (3/31).

By using the CARED application, Widyawan said the community would also benefit from the potential to be close to positive sufferers of COVID-19 based on data from the Ministry of Health. "This application is expected to foster self-awareness from the public to be more vigilant and actively participate in reporting their respective conditions. Shortly, the plan is that this application addressed to android and iOS operating systems," he explained.

This big data analytic application is a bottom-up and collaborative initiative from the academic and business realms. UGM contributes to the provision of significant data infrastructure, data scientists, and epidemiologists. Indosat Ooredoo in providing geolocation data and business expertise, Datains and Gamatechno play a vital role in data engineering, software development, and system integration.

Author: Hakam
Translator: Natasa A

Related News

- [Mini Lockdown is Ineffective in Areas with High Covid Transmission](#)
- [UGM and MC3 Collaboration in Handling Covid-19](#)
- [OTG Tracing and Testing Disciplines Must Exist in Every Regional Quarantine Center](#)
- [Supporting Smart City, UGM Develops Gamatechno Smart City](#)
- [UGM Increases the Intensity of Health Promotion to Prevent Covid-19 Transmission](#)