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NSW tech company partners with universities to release a 'safe' quarantine monitoring system

The NSW Smart Sensing Network (NSSN) is collaborating with researchers and industry to deliver a quarantine monitoring system that supports the state's plan to return to normal and could be used by arrivals once state and national borders reopen.

Brought together by the NSSN, researchers from the University of Technology Sydney (UTS) and the University of Sydney are working with Pandemic Impact Control System (PAIMCOS) to further develop the company's quarantine monitoring technology.

The system addresses privacy concerns voiced in response to other quarantine monitoring applications currently in use across Australia by interacting with users through their smartphones, without storing data that could be used for mass surveillance.

PAIMCOS CEO Adrian Iordachescu said the project aims to strengthen the system by using Machine Learning (ML) and Artificial Intelligence (AI) to optimise the sequence for fraud prevention, high scalability and protection against cyber-attacks.

"While the system involves innovative technological design, the aim has been a practical one: to meet the challenges of working across a large and highly diverse population – such as the population of greater Sydney," Mr Iordachescu said.

"While PAIMCOS presents the foundational concepts, it is through collaboration with NSSN, UTS and University of Sydney that these concepts will provide a robust solution. PAIMCOS will play a central role in further securing our society after vaccination targets are reached."

[Associate Professor Yang Wang](#) from the UTS Data Science Institute said the system alleviates the security and privacy concerns often associated with other quarantine monitoring systems.

"The system does not require users to download and install an app and uses geofencing and user's voice to verify their identity," Associate Professor Wang said.

"Using advanced AI algorithms, we optimise the timing of compliance checks based on the circumstances of each individual, which minimises the risk of non-compliance and ensures interruption for the users is minimal."

[Dr Suranga Seneviratne](#) from the University of Sydney's School of Computer Science said it is of vital importance that the monitoring system collects an absolute minimum amount of data required for compliance verification.

"We're bringing our expertise in cybersecurity and data privacy to this project, ensuring the data is collected securely and it will be permanently destroyed after sometime."

In addition to home-quarantine monitoring, PAIMCOS has boundary management functions allowing for effective management of *hotspots* (areas people may wish to exit illegally) and *honeypots* (areas they may wish to enter illegally, such as sporting events).

About PAIMCOS

- Allows for immediate, electronic ring-fencing of individuals, households, housing blocks, suburbs or neighbourhoods.
- Easy-to-use among people from linguistically, culturally and social diverse backgrounds.
- The system does not require a download or opt-in procedure.
- Operates on smart phones (iPhone or Android) without the use of face recognition.

- Monitors the user with unscheduled calls that require a response. The frequency of calls can be scaled up or down.
- Recorded contacts are automatically discarded after each week of monitoring.
- If quarantine is breached, the system will notify a central point automatically (local health services, police or both).
- Designed to provide a sense of community security as vaccination proceeds.
- Highly cost-effective and instantly scalable.

Declaration

PAIMCOS is a start-up company co-founded by Adrian Iordachescu who is also a founder of VisiCase, a provider of aged care and NDIS-ready software solutions. PAIMCOS CEO Mr Adrian Iordachescu, is also the CEO of VisiCase.

The NSW Smart Sensing Network was founded by the University of Sydney and University of New South Wales in 2016 with the financial backing of the NSW Government. The NSSN brings together academia, industry and government to translate world-class smart-sensing research into compelling solutions.

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