

ICT Virtual Organization of ASEAN Institutes and NICT
ASEAN IVO Forum 2016
Call for Presentations

Submission and Registration Form

I. Title—Title of presentation:

Safety Monitoring for Vulnerable Citizen Using Ubiquitous Location Tracking System

II. Author(s)—Full name (First name family name):

1. Dr. David Chieng (MIMOS)
2. Dr. Alvin Ting (MIMOS)
3. Dr. Seh Chun Ng (MIMOS)
4. Dr. Trung Kien Dao (MICA)
5. Dr. Huan-Bang Li (NICT)

III. Organization(s):

MIMOS, Malaysia (MIMOS)

MICA Institute, Hanoi University of Science and Technology, Vietnam (MICA)

National Institute of Information and Communications Technology, Japan (NICT)

IV. Topic selection:

Smart Community – Hazard mitigation, ICT for Safety, E-health

Smart City – Location-based applications in dense-populated metropolitan cities, smart homes

IV. Abstract:

(Describe the purpose, background, objectives, content, plans for connected projects, expected results/outcomes, etc.)

Public safety has always been a key concern in some ASEAN countries. According to Numbeo, Malaysia and Vietnam are regarded as the two most unsafe countries in ASEAN. In today's highly digitized society, ICT technologies can play a critical role to preserve the safety of vulnerable citizen especially women, children and the elderly. Over the last few years, there is a growing needs for tracking the real-time location of close family members. At present most solutions solely rely on GPS. This is not effective in hot and humid ASEAN countries as people are spending most of their time indoor. Therefore, it is vital to have a device which is able to perform tracking even when GPS signal is not available.

Objectives:

1. To design devices which enable location tracking anytime, anywhere based on commercially available smartphones or specially designed, low-cost and energy-efficient wearable devices.
2. To apply the state of the art multimodal geospatial localization technologies which opportunistically harvest heterogeneous signals available for

localization such as GPS, GSM, WiFi, Bluetooth, UWB, sensors in order to realize ubiquitous location tracking anytime anywhere.

3. To develop server-end modules to monitor and analyze vulnerable citizen's location data.
4. To carry out trials in selected ASEAN cities such as Hanoi and Kuala Lumpur.

Content and Plans for connected project:

1. Design and prototyping of wearable devices and systems – MIMOS & NICT
2. Design and implementation of multimodal geospatial localization algorithms and protocols – MIMOS, MICA, and NICT
3. Design and development of server-end data harvesting and analytic modules – MIMOS, MICA and NICT
4. System trials – MIMOS (Kuala Lumpur) and MICA (Hanoi)

Expected results/outcomes:

- Low cost, small form factor and energy-efficient wearable locator or smartphone applications which provides localization function anywhere, anytime
- Real-time safety monitoring and analytic system for vulnerable citizen based on location data
- Innovative indoor/outdoor location-based safety services
- Insights & lesson learnt from pilot trials with industry such as local mobile operators

V. Speaker information:

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VI. Support for speaker—circle or underline any that you wish to request:

- Round trip fare at discount economy class
- Accommodation
- Local travel (Kuala Lumpur & Hanoi)