



ทปอ

ที่ประชุมอธิการบดีแห่งประเทศไทย
Council of University Presidents of Thailand



Innovation Hub - Smart City

Enabling Livable, Efficient and Sustainable Cities

Akkarit Sangpetch, Ph.D.

CUPT Smart City Innovation Hubs

1 May 2017



Smart City Innovation Hubs



Innovation Hub Smart City

- Smart Mobility
(การจราจร การขนส่ง)

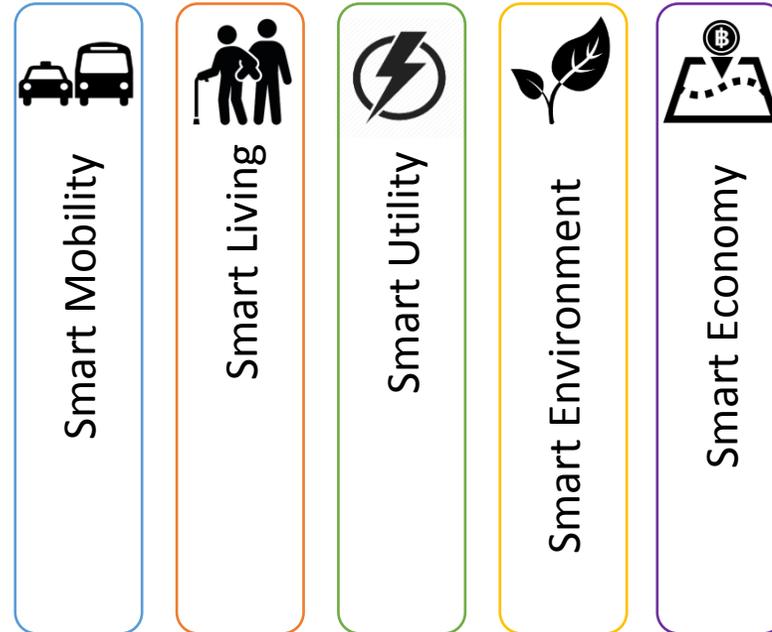
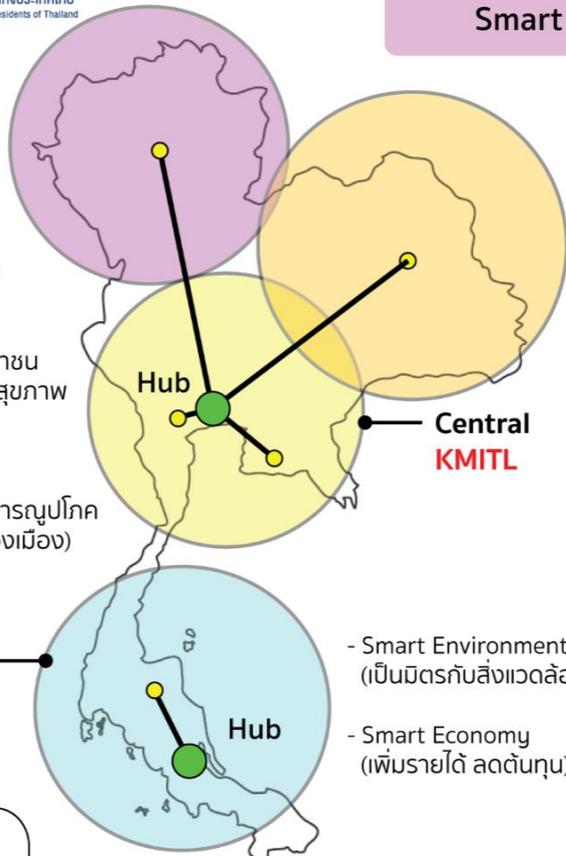
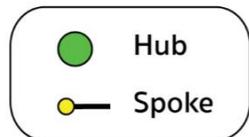
- Smart Living
(ความเป็นอยู่ของประชาชน
ในด้านความปลอดภัย สุขภาพ
การศึกษา เป็นต้น)

- Smart Utility
(การบริหารจัดการสาธารณูปโภค
และบริการสาธารณะของเมือง)

South
PSU

- Smart Environment
(เป็นมิตรกับสิ่งแวดล้อม)

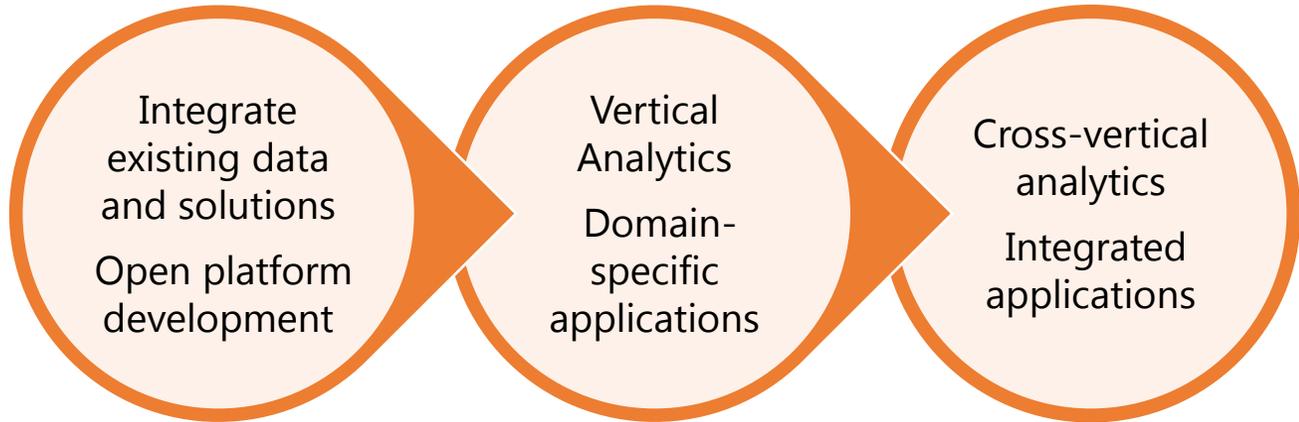
- Smart Economy
(เพิ่มรายได้ ลดต้นทุน)



Integrated Smart City Cloud Platform (Data Exchange, Analytics, City Dashboard)



Smart City Innovation Hub Development Plan



2017

2018

2019

Livable

Improve quality of life for citizens
Keep the city's culture, charm and identity

Efficient

Improve process and productivity
Reduce unnecessary waste

Sustainable

Target high impact projects
Long-term sustainability

Enabling Technologies

Integrated, open-access platform & technologies for innovative city applications

Not just IT

IoT Integration with social, cultural, and economical aspects of the city

Multi-disciplinary Teams

Technologist, urbanist, engineer, architect, regulator, economist, citizen, governor

Primary Projects & Budgets

1

Innovation Hub Translational Research

154 M Baht

(Working Prototype with Field Deployment)

- Smart Mobility
- Smart Living
- Smart Utility
- Smart Environment
- Smart Economy
- Smart City Cloud Platform

2

Smart City Startup Development

96 M Baht

(Commercialization & Deployment to municipalities)

- Acceleration Program (for startups)
- Smart City Transformation Service (for municipal government)
- Technical Workshops (for developers)

Collaboration Model for 2560 – Translational Research



Principal Investigator

Each project has a primary PI who is responsible for the project's deliverables.

Key Concepts

General ideas of the project. We are looking for highly-motivated researchers with experience in collaborating with private / municipal partners.

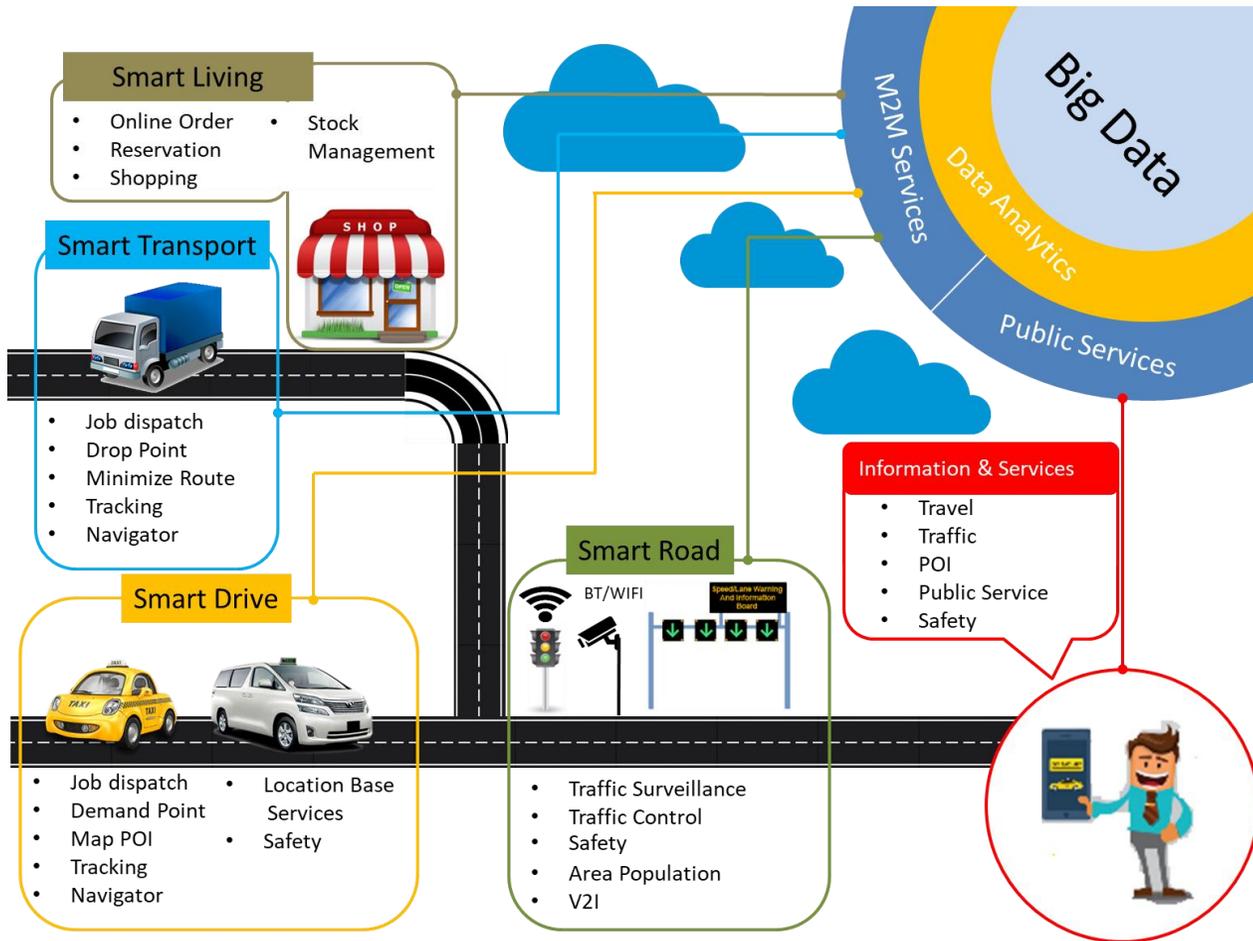
Contact PI directly to participate in the on-going projects

Open Calls

These are components related to the key deliverables of the project, but can be independently investigated before integrating with the primary project.

Submit the Seed Funding Proposals to be considered.

Smart Mobility



Principal Investigator

Assoc Prof. Agachai Sumalee

asumalee@gmail.com

Key Concepts

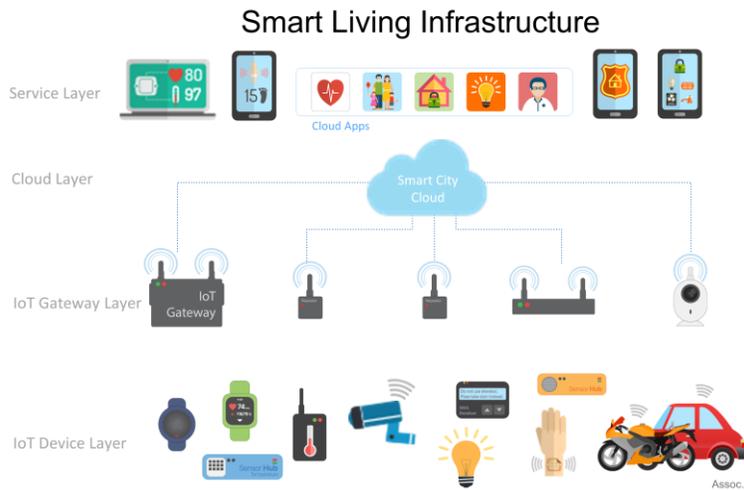
Smart Mobility Marketplace for

- Enhanced Logistics (Goods & Products delivery)
- Public Transportation
- Ride sharing
- Points of interest and recommendation

Open Calls

- Demand/supply matching scheme
- Innovative and/or automated information gathering mechanism (identifying points of interest, image-processing, recommendation analysis, NLP, etc.)

Smart Living



Principal Investigator

Assoc Prof. Wiroon Sriborirux

wiroon@eng.buu.ac.th

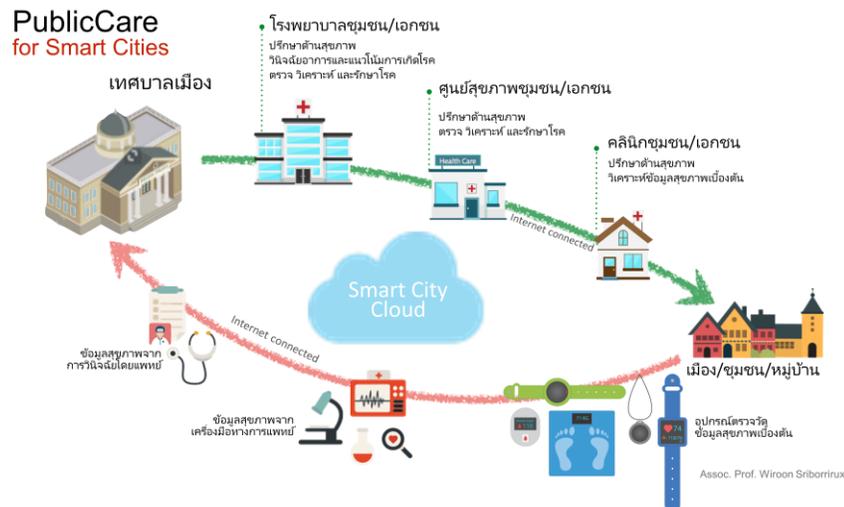
Key Concepts

Life service layer for

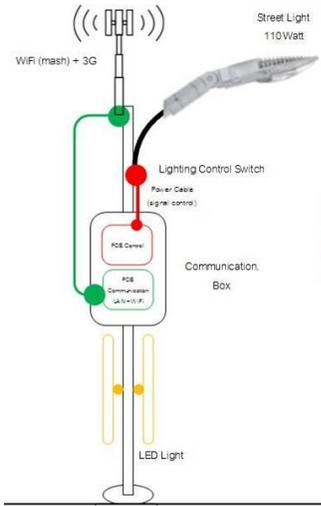
- Assisted living / wellness care (emergency alert)
- Home environmental monitoring
- Indoor security / surveillance
- Smart home applications

Open Calls

- Data Analytics for Health/Home informatics
- Portable (medical-grade) health monitoring device
- FPGA-based IP Camera / Surveillance system
- Wireless backhaul for Video/Voice streaming
- Indoor Localization / Positioning (UWB)
- Smart Air-conditioning for Healthy Living



Smart Utility



Principal Investigator

Asst. Prof. Phongsak Keeratiwintakorn

phongsak.k@eng.kmutnb.ac.th

Key Concepts

Integrated Utility Service for Public areas

- Smart street light / electrical pole / service station
- Smart meter (power / water meters)
- Other smart sensors (CCTV for ID)
- Dashboard / Analytics
- Applications (smart street lighting, criminal tracking)

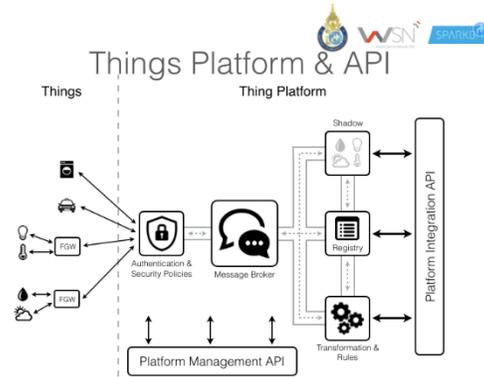
Open Calls

- Outdoor IoT Gateways / Innovative Utility stations
- Outdoor surveillance system and sensors
- Smart energy & water grid
- Utility analytics and applications



Smart Environment

Applications	Dash board สถานีโทรมาตรน้ำ (town) สถานีคุณภาพอากาศ สถานีคุณภาพน้ำ	Smart Meter waste management การตรวจวัดกลิ่นจากโรงงาน
	Data Analytics - cross function ด้านสิ่งแวดล้อม vs สาธารณสุข IoT Things Platform	Data Analytics - บริหารจัดการขยะ Data Analytics - การใช้พลังงานไฟฟ้า
Technology	Zigbee, 3G/4G, LoRa 	LoRa, NB-IoT, Long Range Communication



Principal Investigator

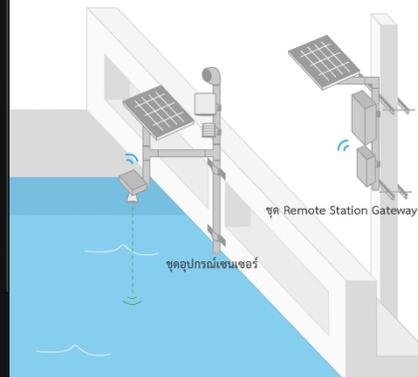
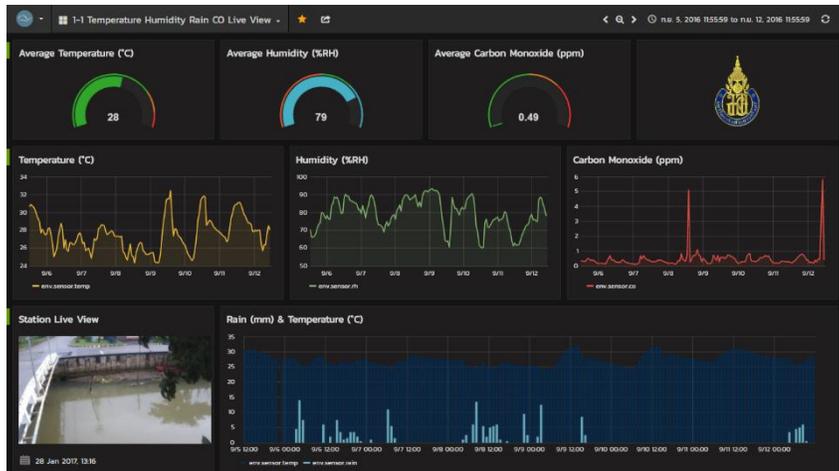
Asst. Prof. Wannarat Suntiamorntut

wannarat@coe.psu.ac.th

Key Concepts

Environmental Sensing and Management

- Water/Air-quality Telemetry
- Early flood/disaster warning system
- Health/environmental hazard area alerts



Open Calls

- Sensing telemetry and public health information system integrations and analytics
- Proactive systems and analytics from environmental data

Smart Economy

Principal Investigator

Asst. Prof. Wannarat Suntiamorntut

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Key Concepts

Urban analytics for new business and economic planning

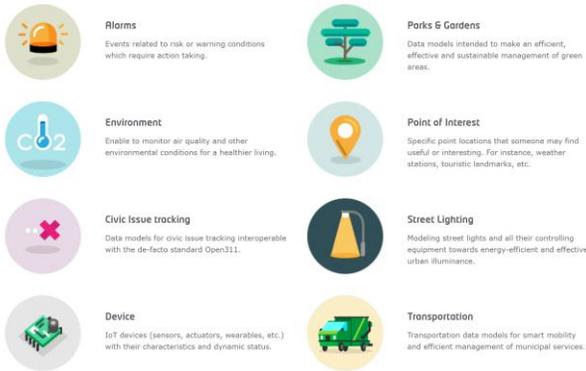
- Policy & Guideline for local economic development utilizing smart city
- Cultural-oriented economy (e.g. Halal tourism)
- Economics information gathering from industries
- Economics zoning or customization from city data
- Economics impacts of smart city projects

Open Calls

- Economics demand analysis
- Municipal budget / financial analytics (data-oriented tax, budget allocation)
- Mobile application for cultural tourism



Integrated Smart City Cloud Platform



Principal Investigator

Dr. Orathai Sangpetch
orathai.sa@kmitl.ac.th

Key Concepts

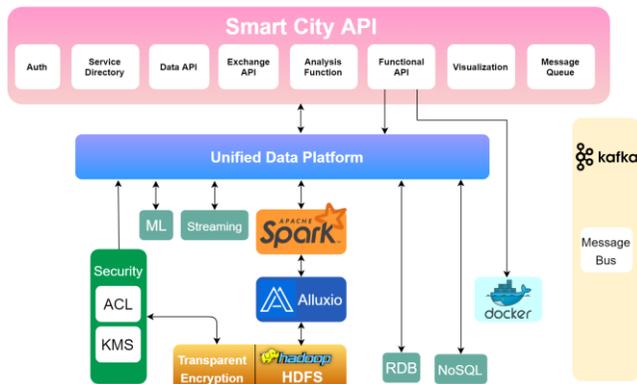
Platform for Smart City Data Exchange

- Open city API specification
- City SDK and library for data exchange
- Data / domain model
- Security, auditing and privacy controls

City operation, planning, simulation, visualization and analytics

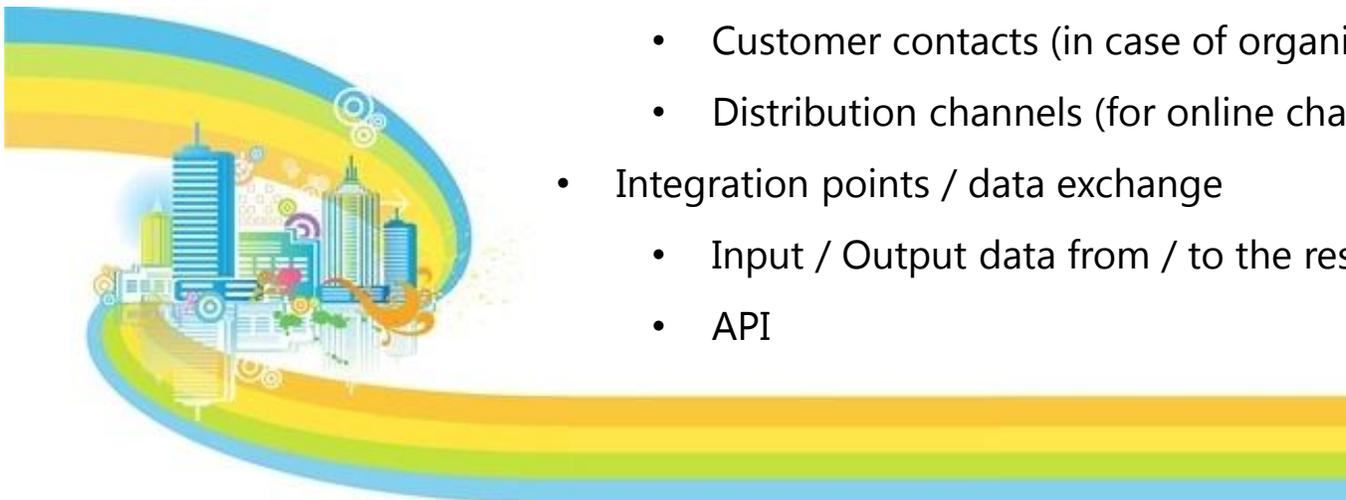
Open Calls

- Data economy / Sharing model / Incentive for sharing city data across applications
- City Visualization / 3D-modeling / Geo-map
- Integrated applications for city operations (municipality, community)



Open Call for Proposals Criteria

- Alignment with primary project concepts
 - How will the work be integrated with the primary projects
- TRL 4-7 (Target for field deployment in 3 months)
 - Provide related publications / test results
 - Result from prototype in relevant / operational environment
- Partnerships with local municipality and private organizations
 - Describe contributions and roles of each partner
- Provide target users / customers
 - Customer contacts (in case of organizational customer / user)
 - Distribution channels (for online channels: provides URLs, store/community pages)
- Integration points / data exchange
 - Input / Output data from / to the rest of the system
 - API



Smart City Startup Development



- Startup Acceleration Program
 - Startup teams work full-time toward city deployment / adoption
 - Mentorship / networking
 - Cost for prototype & proof-of-concept deployment for target cities

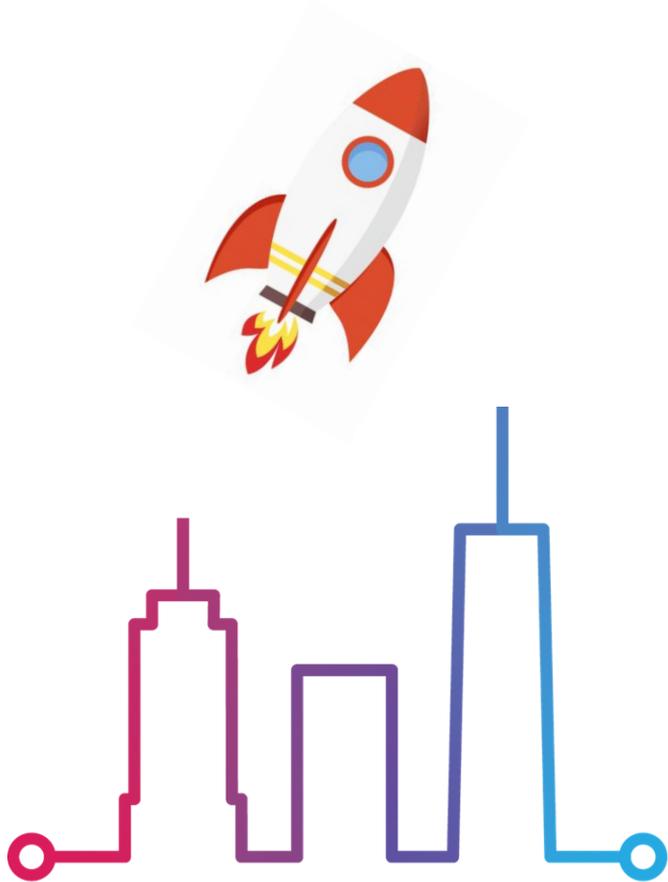


- Smart City Transformation Service
 - Expert consulting for city officials
 - Provide feasibility study / long-term deployment, budgeting plan



- Business/Technical Workshops
 - For startups / developers on smart city platforms
 - Business / Solution development

Smart City Startup Proposal Support Criteria



- Alignment with primary project concepts
 - How will the work be integrated with the primary projects
- Minimum viable product available
 - Provide prototype / demos
- Target customer adoption in 3 months
 - Provide potential customer group or municipal contacts
 - Distribution channels (for online channels: provides URLs, store/community pages)
- Partnerships with local municipality or other organizations
 - Describe contributions and roles of each partner
- Integration points / data exchange
 - Input / Output data from / to the rest of the system
 - API

Further Discussions & Contacts

- **Coordinator/Central Smart City Innovation Hub**

- Akkarit Sangpetch (akkarit.sa@kmitl.ac.th)

- **Southern Smart City Innovation Hub**

- Wannarat Suntiamorntut (wannarat@coe.psu.ac.th)

- **Call for Participations**

- Core project teams: *Contact PI directly*
- Open call for proposals: **NOW**
 - Translational research projects: innohub@kmitl.ac.th
 - Startups: innohub@kmitl.ac.th



Join the discussion!
(Smart City InnoHubs)

<http://line.me/ti/g/h2RtD6xAeU>