ITU Kaleidoscope 2013
Building Sustainable Communities

The 5th ITU Kaleidoscope academic conference
22–24 April 2013, Kyoto, Japan

A SUSTAINABLE INTEGRATED-SERVICES COMMUNITY LEARNING CENTER

Prof Prasit Prapinmongkolkarn,
Dr Supavadee Aramvith, Dr Chaodit Aswakul,
Department of Electrical Engineering, Chulalongkorn University

Dr Anegpon Kuama, Social Research Institute, Chulalongkorn University

Dr Sucharit Koontanakulvong, Water Resource Research System Unit,
Faculty of Engineering, Chulalongkorn University

Mr Ekachai Phakdurong, THAICOM PLC, Bangkok, Thailand
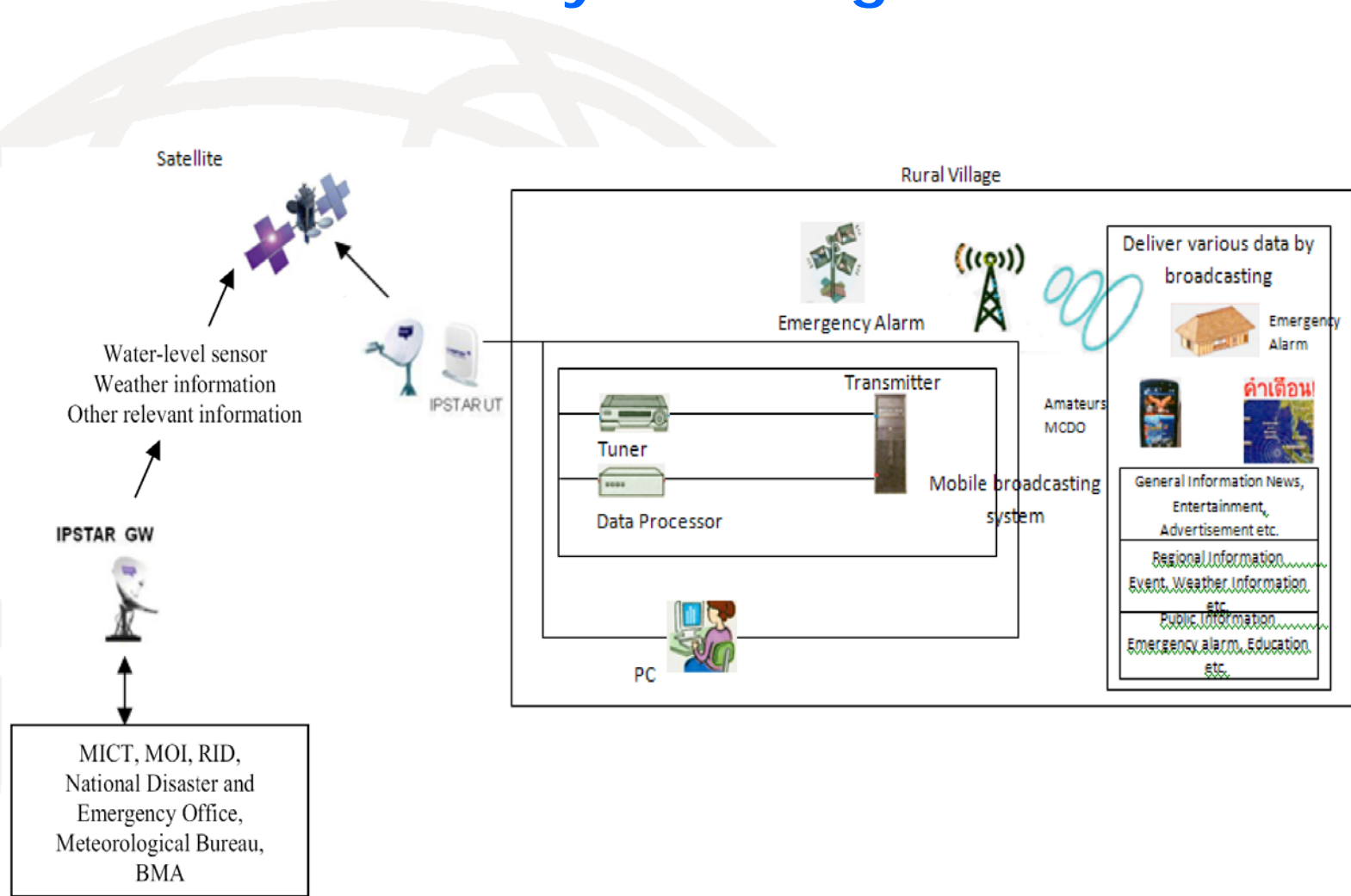
Kyoto, Japan
22-24 April 2013

PRESENTATION OUTLINE

Main Introductory Concepts

❑ **This paper proposes the concept of integrating the community learning center with e-health facility and natural disaster warning system.**

❑ **Community learning centers have been designed with the principle of sustainability, flexibility, easy-to-use, cost saving and local participation concepts.**

❑ **Such integrated-services community learning center will enhance the education of people, to improve health care and wellness of people by telehealth service, as well as to make readiness for unforeseen natural disaster crisis in the future.**

3

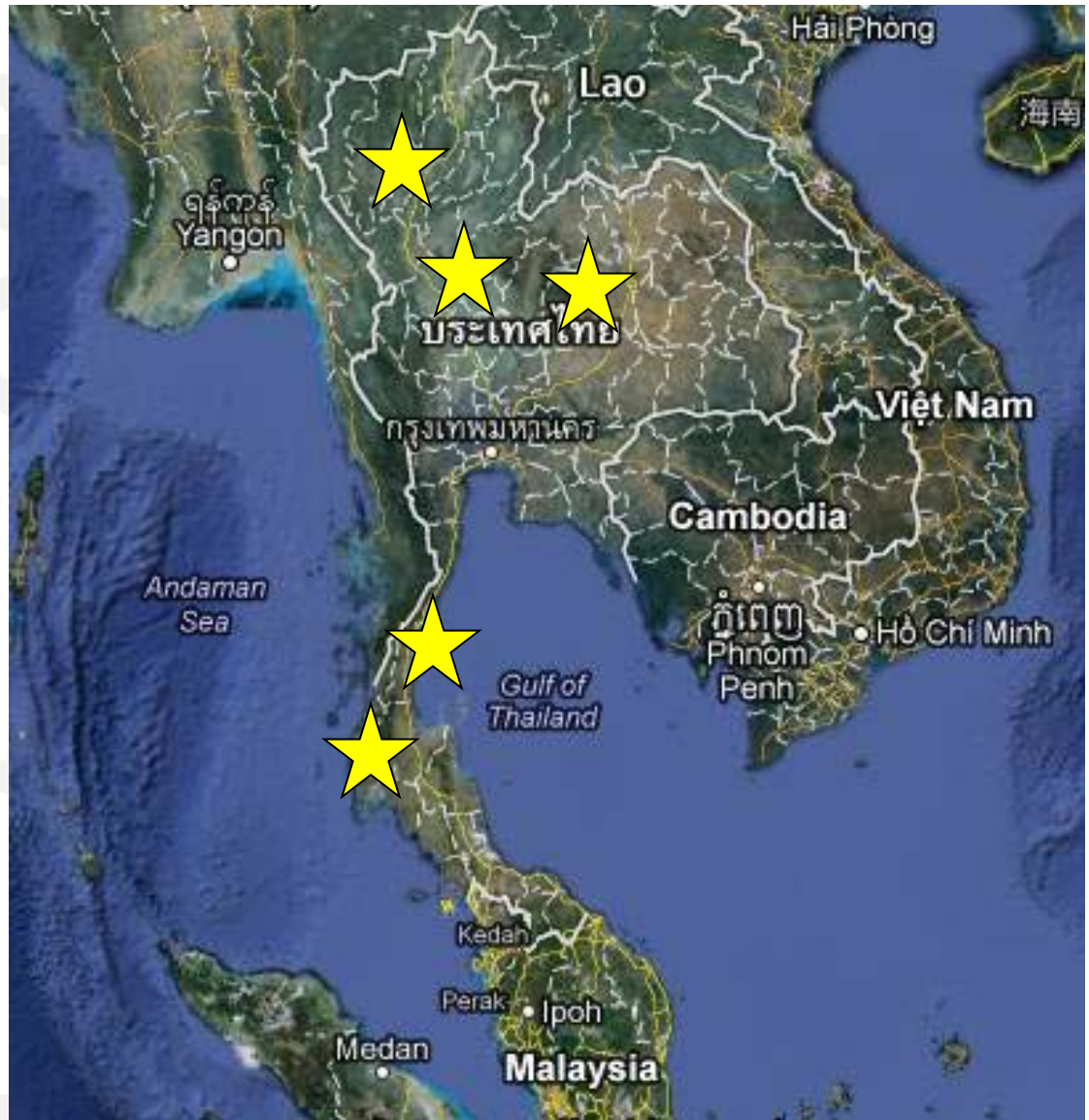# Overall Architecture of Integrated-Services Community Learning Center

Community Learning Centre Project Initiatives

❑ **To find the suitable management framework for building *self-sustainable learning centre for rural areas* (usually not revenue-generating enough for business sectors to invest, hence the need of *universal service obligation*)**

❑ ***Chula Univ team* have been granted 2 years (2010-2012), working with NBTC team, *to build five learning centres* in selected Thai rural villages**

5

Locations of community learning centre sites

Lumpoon
Pichit
Chaiyapoom
Krabi
Surat Thani

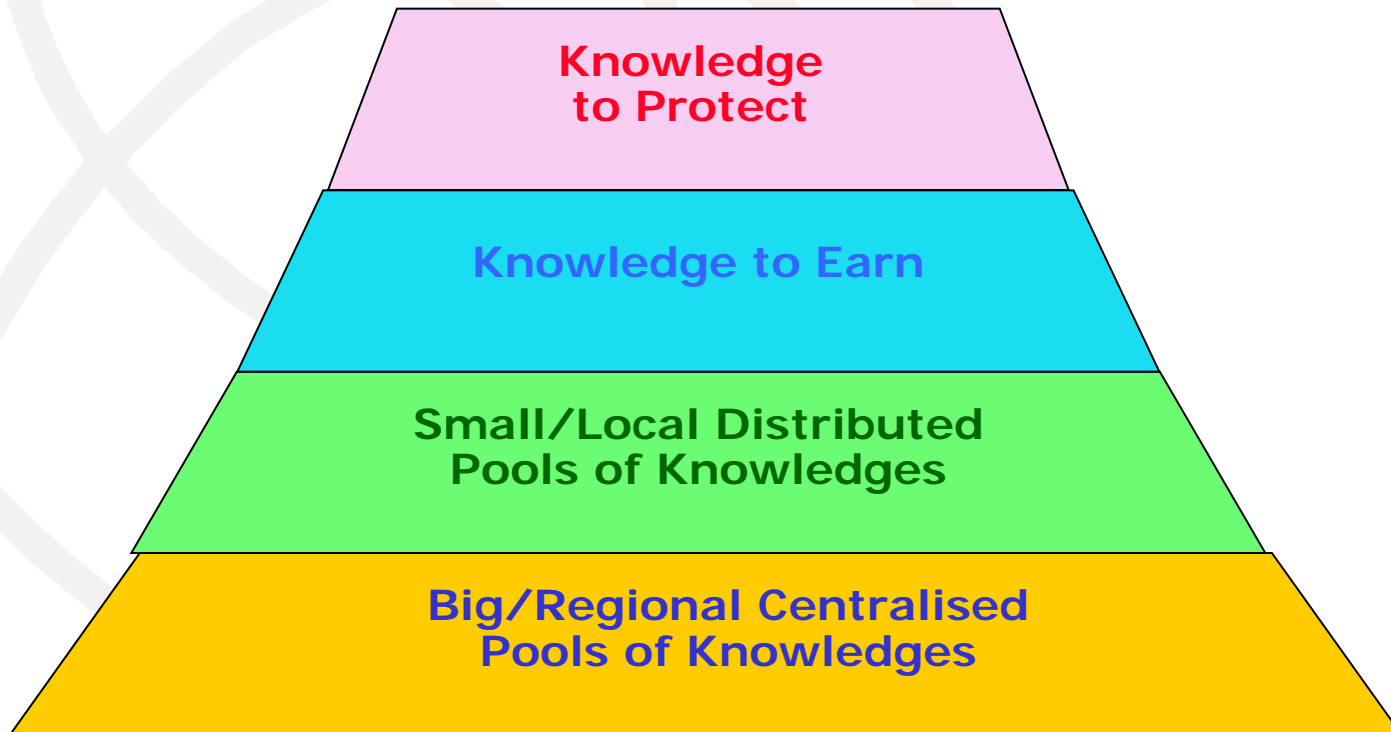# Pictures of Learning Centers

Learning Centre or Telecentre

Learning Centre = Room + Computers + Internet

What about "self-sustainable" ??

To have sustainability, villagers must find their learning centre useful, and must feel of the centre belonging to villagers as a whole (not anyone particularly)
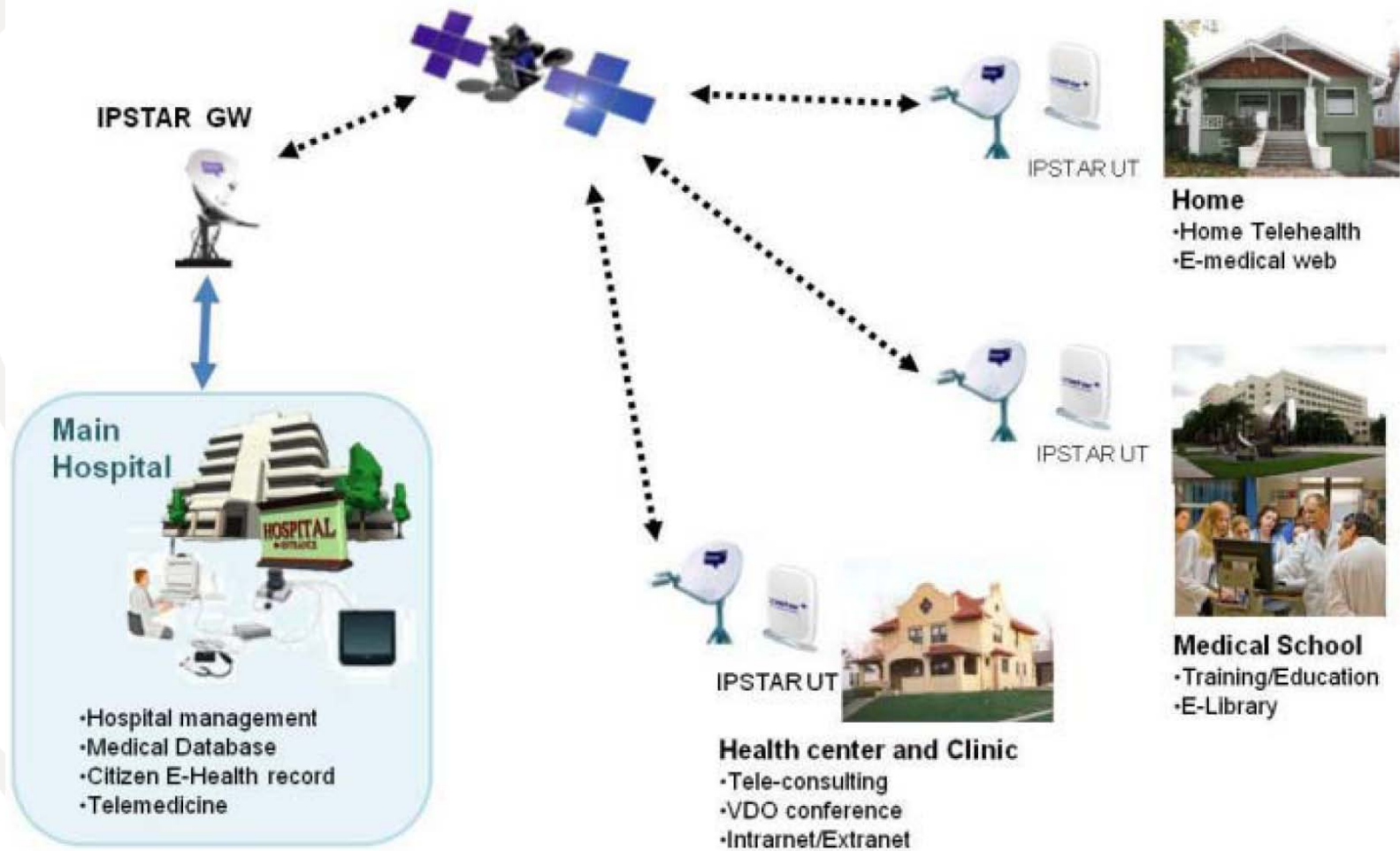
Framework of Sustainable National Learning Society

Learning Society

Knowledge to Protect

Knowledge to Earn

Small/Local Distributed Pools of Knowledges

Big/Regional Centralised Pools of Knowledges

E-HEALTH ROLE OF COMMUNITY LEARNING CENTER VIA BROADBAND SATELLITE IPSTAR

❑ **In Asia Pacific Region, most of the population is living in rural areas where medical facilities and care are either inadequate or non-existing.**

❑ **Lack of network connectivity and centralized medical database makes it difficult to provide effective service to people in rural areas.**

❑ **In this environment, IPSTAR, an IP-based broadband satellite can provide healthcare service to rural villages at very low cost.**

IPSTAR for E-health services

IPSTAR GW

IPSTAR UT

IPSTAR UT

IPSTAR UT

Main Hospital
- Hospital management
- Medical Database
- Citizen E-Health record
- Telemedicine

Health center and Clinic
- Tele-consulting
- VDO conference
- Intrarnet/Extranet

Home
- Home Telehealth
- E-medical web

Medical School
- Training/Education
- E-Library

FLOOD AND NATURAL DISASTER WARNING ROLE OF COMMUNITY LEARNING CENTER

□ **Most of the flood information systems are based on remote sensing (satellite) digital imagery, photogrammetry and field survey or sensor system-level monitoring.**

□ **Flood Risk Evaluation System for Thailand (Flood REST)**

Flood REST
- Google map
- Ground elevation data
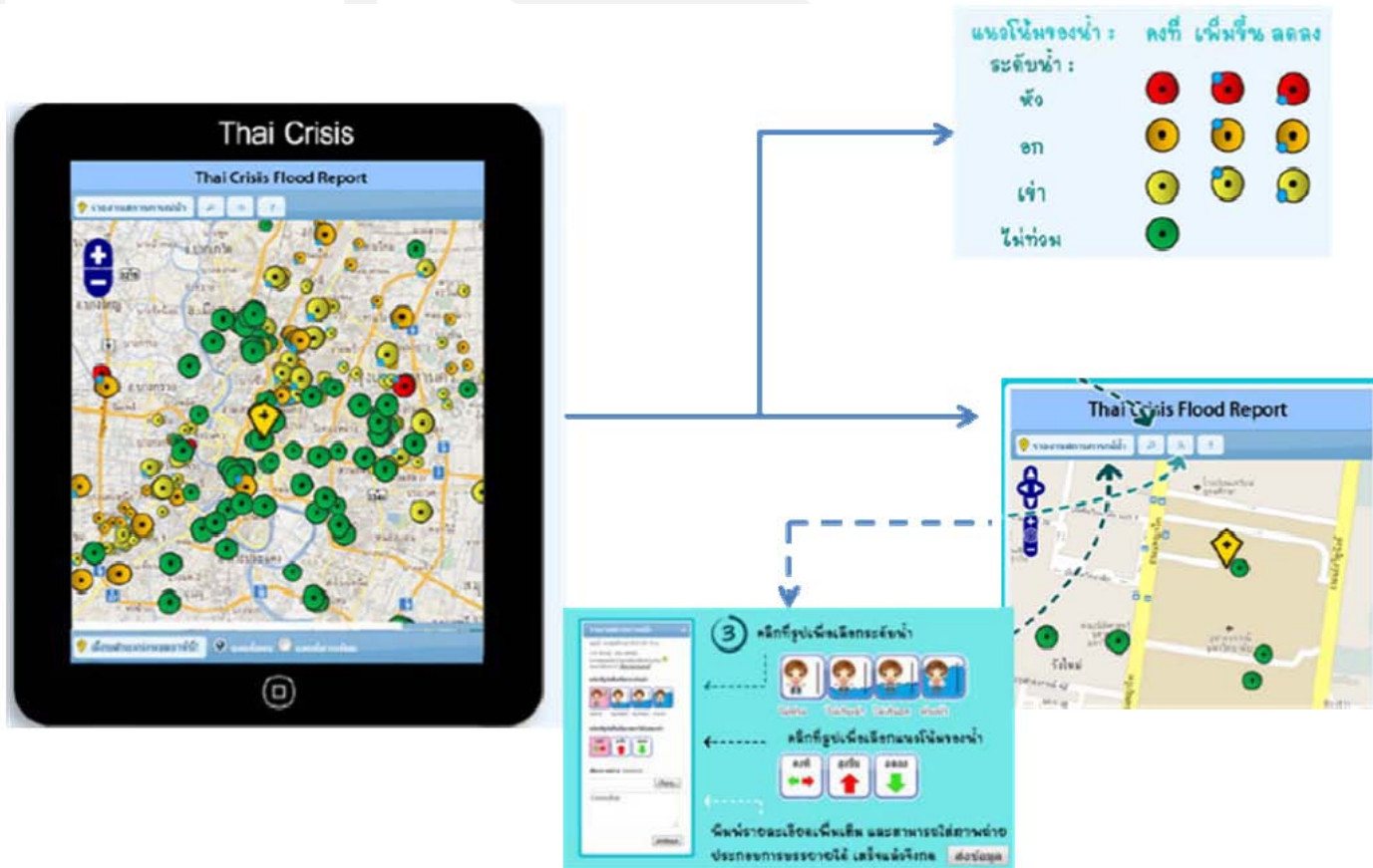- Real time monitored water level data

Social Flood Map Monitoring System + Thai Crisis Reporting Systems
- maps are marked by circles with different colors or grey scale intensity(in black and white)

Flood Information
- Remotely Sensed (Satellite) Digital Imagery
- Photo grammetry
- Field survey or sensor system level monitoring

Tablet Application of Flood REST

CONCLUSIONS

- This work presents a model of sustainable **integrated-services community learning center**, which combines
  - community internet
  - telehealth/telemedicine
  - distance learning
  - flood/natural disaster warning system

- The **success factors**
  - Local values and sense of ownership
  - Interconnected
  - Training
  - Applications of agriculture planning, marketing, lifelong education, and healthcare

Thank you for your kind attention
Questions & Suggestions

Dr. Prasit Prapinmongkolkarn

Former Chairman of NBTC (National Broadcasting and Telecommunications Commission), Thailand

Emeritus Professor
Department of Electrical Engineering Faculty of Engineering, Chulalongkorn University

Email: prasit.prapin@gmail.com