

Telescience wg update

Pragma 31

Shinji Shimojo

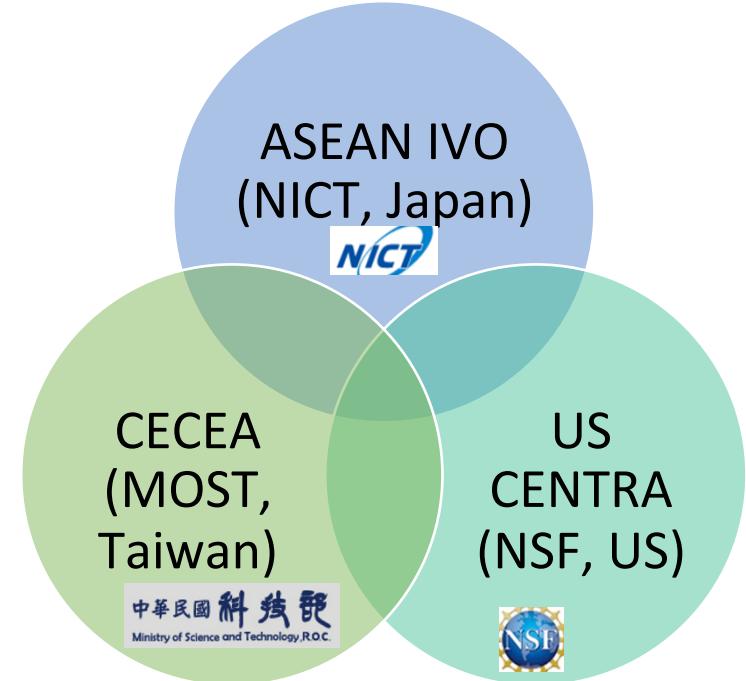
Fang-Pang Lin

Opportunities

- Community Activities
 - CENTRA collaboration
 - CENTRA Kickoff meeting March 31 – April 1, 2016 (Jose)
 - ASEAN IVO meeting (Luke)
 - SEAIP 2016 Dec 2-6, 2016 (FP)
 - PRAGMA alignment
 - PRAMGA 30 (ASTI), PRAGMA 31 (Thammasat University)
 - APAN alignment (?)
- Joint Research & Development
 - CI & Data Sharing
 - Applications Focus
 - Disaster Management
 - Environmental Simulation and Monitoring
 - Smart and Connected Communities
 - Cross Domains/Cross Working Groups development in Software Defined Systems

What is CENTRA?

- Growing framework for sustained global Collaborations to Enable Transnational Cyberinfrastructure Applications
- Key goals:
 - Scientific advances at the intersection of
 - Applications: smart and connected communities, environmental monitoring, disaster management
 - Cyberinfrastructure: software-defined systems for data-sharing, middleware interoperability, coordination ...
 - Next generation of collaboration networks (of people)
- www.globalcentra.org



Source: Jose Fortes

Brief history



- Evolution and spinoff from several international activities: PRAGMA, SEAIP and IVO (2014-2015)
- Concurrent proposals to US NSF, Taiwan MOST and Japan NICT
 - Funded October 2015
- Kickoff meeting March 30 – April 1, 2016
- Founding Institutional Members
 - Center of Excellence for Cyber-Enablement of Applications ([CECEA](#)) – Taiwan
 - ASEAN International Virtual Organization (IVO) – Japan
 - Advanced Computing Systems Laboratory (ACIS) – USA
- Currently engaging additional organizations as members

Source: Jose Fortes

Software Defined System on Disaster Mitigation and Smart Cities

ASEAN IVO
2016

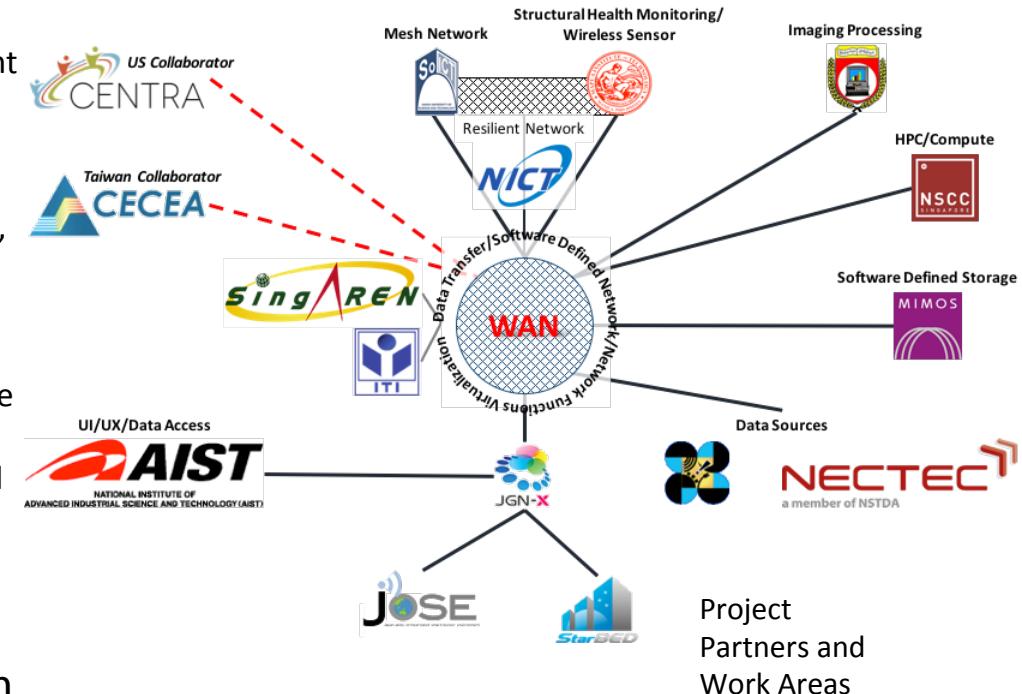
Goals: This project addresses the impact of climate change on cities and urbanization, with particular relevance to the priority area of improving environmental resilience and more specifically in disaster mitigation.

Members:

Member	Affiliate Institution	Country
1 Jason HAGA	AIST	Japan
2 Eiji Kawai	NICT	Japan
3 Hiroshi Kumagai	NICT	Japan
4 Hong H. ONG	MIMOS	Malaysia*
5 Jing Yuan LUKE	MIMOS	Malaysia
6 Myint Myint SEIN	University of Computer Studies, Yangon	Myanmar
7 Alejandro H. Ballado Jr.	Mapua Institute of Technology	Philippines
8 Jelina Tanya H. Tetangco	ASTI	Philippines
9 Bu Sung LEE	SINGAREN	Singapore
10 Kanokvate Tungpimolrut	NECTEC	Thailand
11 Hong Son NGO	Hanoi University of Science and Technology	Vietnam
12 Van Dzung DINH	Vietnam National University (Hanoi)	Vietnam

Activities:

- Develop a Software Defined System architecture blueprint for disaster mitigation, crisis communication, and emergency management that can monitor and report disaster events in near-realtime.
- Investigate programmability aspects of IoTs technologies, networking, and edge/cloud computing platforms.
- Conduct field testing of potential use cases using NICT's existing testbeds such as JGN-X, Starbed, and JOSE.
- Organise workshops with ASEAN members to disseminate R&D results.
- Dialogue with PRAGMA (NSF, US), CENTRA (NSF, US), and CECEA (Taiwan) on similar R&D challenges to accelerate project activities.



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Source: Luke Jing Yuan

ASEAN IVO first project meeting

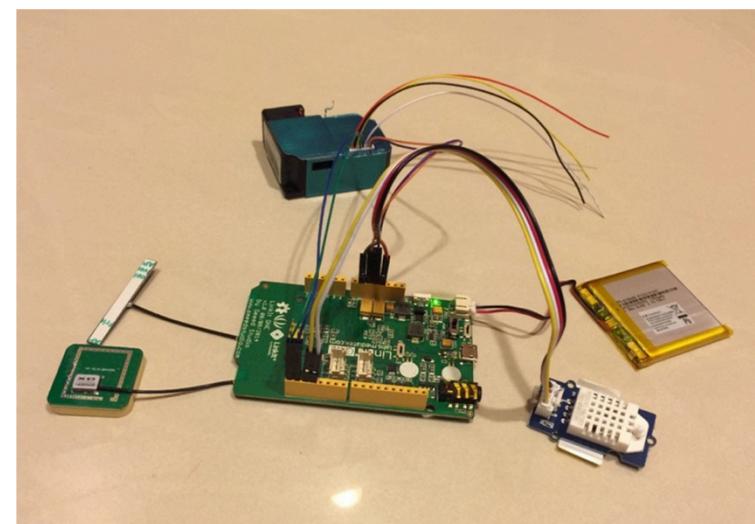
- 9 participating institutions from 5 ASEAN countries and Japan as well as other collaborators such as CECEA, Taiwan and CENTRA, USA
- 3 sub topics
 - Visualization of Distributed Environmental Data
 - Resilient transnational network with SDN-IP
 - SDN/NFV Infrastructure for Disaster Mitigation and Smart Cities



Photo: Grace Hong

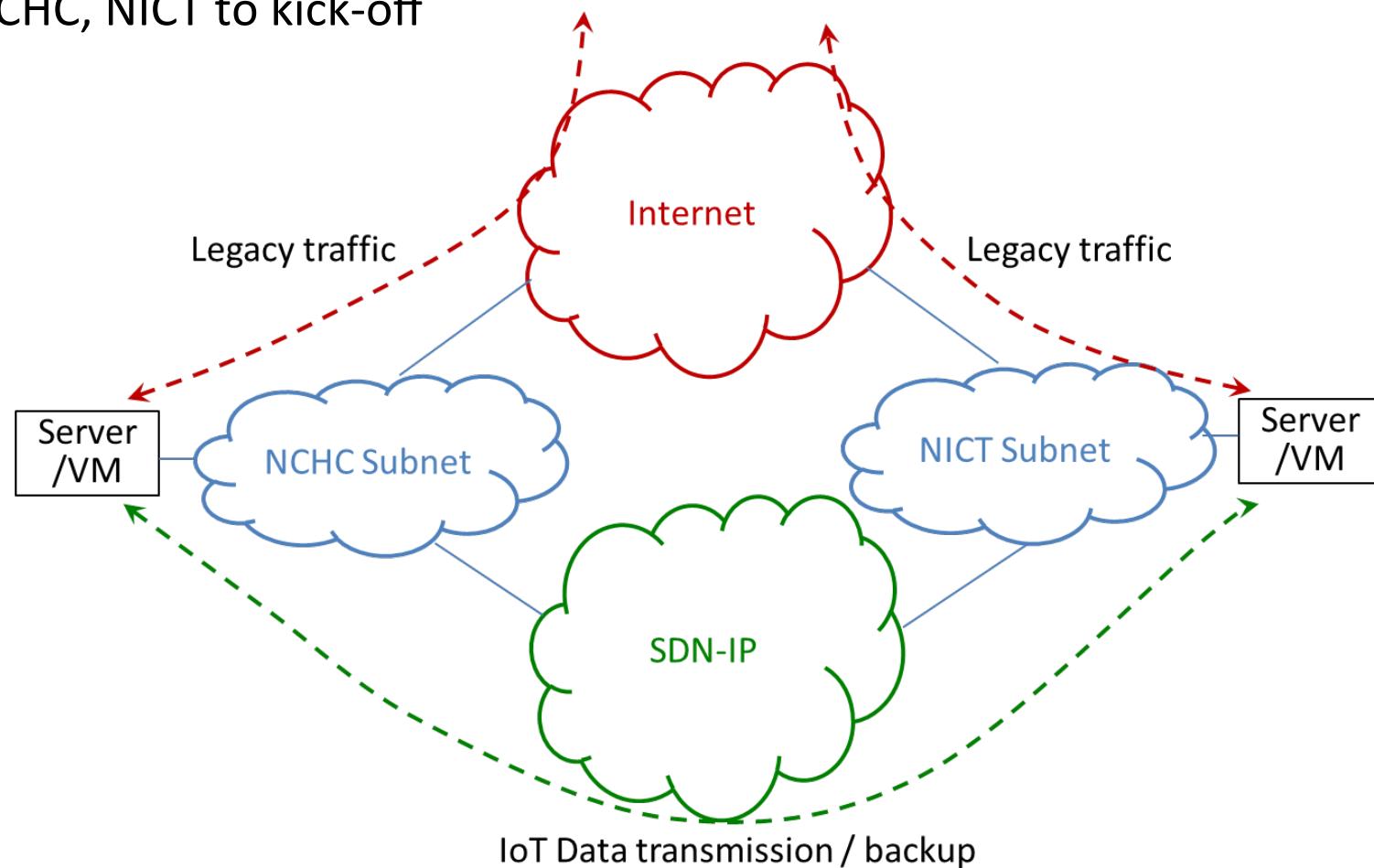
Airbox

- Led by Dr. Ling-Jyh Chen
- Grass root approach but open hardware, software, and data
- Webinar and Tutorial was held
- 13 airboxes are distributed.

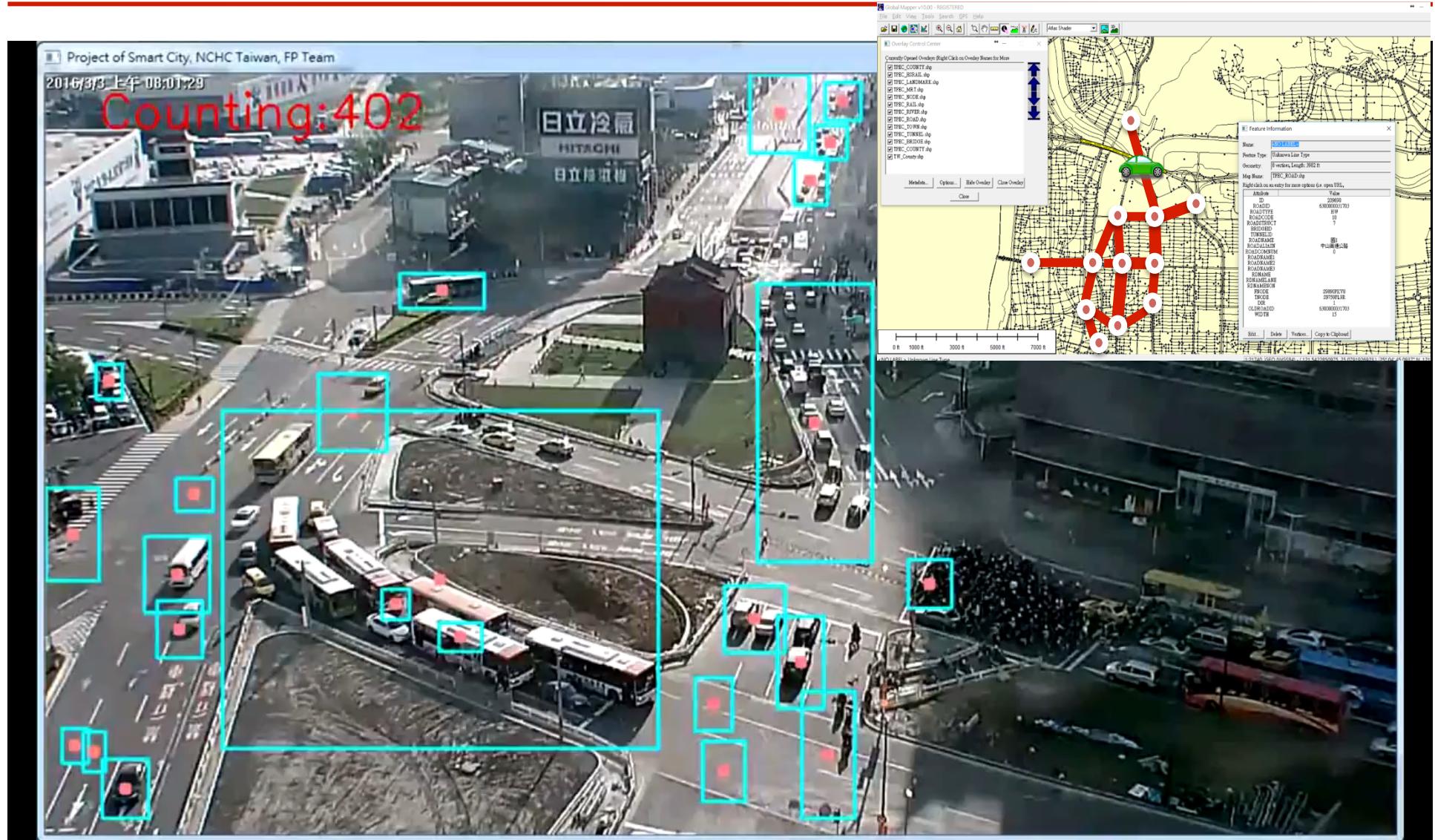


Airbox network on SDN-IP

- NCHC, NICT to kick-off



Traffic guidance and control in anomaly events



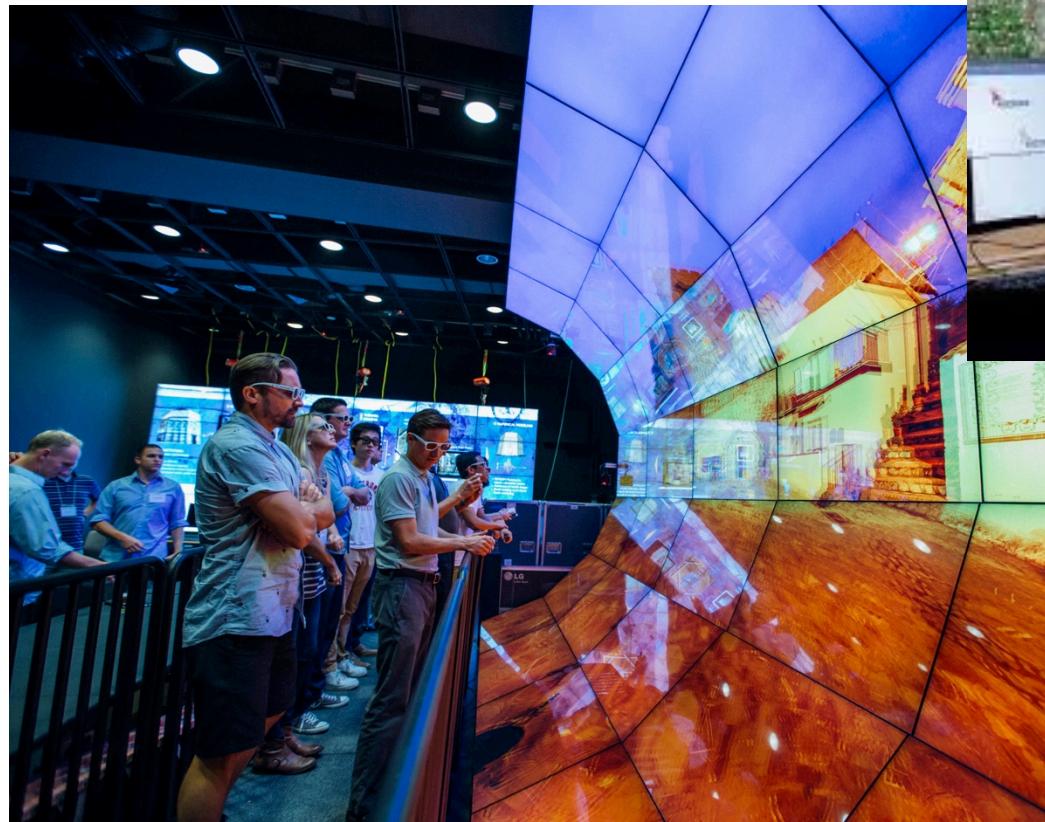
Smart Museum: Visitor Behavior Analysis

- Count, Identify and track.
- Interactive behavior with environment
- Learning behavior in Biodiversity, e.g. LifeMapper.
- NCHC, NMMST, KU, UF ...



Collaborative Visualization Environments for Disaster Management and Smart Cities.

- Hawaii University, UCSD
- Osaka U., NICT (JP)
- NCHU, NTUT, NCHC (TW)



PID-centric Data Fabrics

- Implement RDA standard and tools
- Forming collaboration between Indiana U., NCHC, UF, AIST...
- Looking for real applications:
 - Environmental database for Lower Mekong River,
 - Airbox Data Services
 - Earth Science DB



Dec.05~Dec.09 2016
CLOUD COMPUTING &
Internet of Things
雲端計算與物聯網

• Agenda plan

- Day 1 – Tutorials on system and analytics tools
- Day 2 – Future Internet
- Day 3 – Cyber Enhancement Applications, (CENTRA-CECEA specific)
- Day 4 – Cyber learning, Intelligent system and real world practices, future Computer System, data technology.
- Day 5 – Following up collaborative discussions on Environmental Monitoring & Simulation, Disaster Mitigation, Smart Cities etc.

(Incl. Institutional Presentations)

• Venues

- NCKU's Magic school, Tainan
- NMMBA, Kenting Nat'l Park.



Topics

- Visualization Jason
- More sensors
- More application