EU-South-East-Asia collaborations

in "EU-Asia collaborations on IoT for sustainable development"

IoT Week 2018
Bilboa, Spain, June 6th, 2018

Prof. Congduc Pham
http://www.univ-pau.fr/~cpham
Université de Pau, France

EU-SEA, a long history…

- EU and SEA (ASEAN) have a long history of collaborations, still very active!
- ASEAN-EU Plan of Action (2018-2022)
  - http://asean.org/storage/2017/08/ASEAN-EU-POA-2018-2022-Final.pdf
- EU FP7 and EU H2020 have periodic join calls, the last one being ICT-39-17 (*Targeted countries: Low and middle income countries in sub-Saharan Africa and ASEAN countries)*
- There have been very successful EU projects dedicated to develop EU-ASEAN partnerships

Promoting EU-ASEAN partnetship

connect2SEA	Connect2SEA (FP7). The project will contribute to the creation of strategic synergies in the ICT research, development and innovation between the EU and SEA and also between SEA countries. The activities include the transfer of experiences and cross-fertilisation in order to leverage synergies between the countries involved and lay the foundations for strategic partnerships with sustainable impacts.
SEA-EU-NET	SEA-EU-NET (FP7, https://sea-eu.net/) is an international science cooperation network deepening science and technology (S&T) cooperation between Europe and Southeast Asia. Many reports have listed ICT&IoT projects and highlighted best practice for innovation in SEA: "State of play report on Health, Food Security & Safety and Water Management", "Spotlight on: Stimulating innovation in Southeast Asia". SEA-EU-NET is issuing an open call for EU-ASEAN cooperation.
SMART ACTION	SMART-ACTION (FP7&IERC, https://www.smart-action.eu). SMART-ACTION provided support for the development of strategic research agendas as well as serve as enabler for dissemination, further integration of results into future research&industrial developments and coordinate international efforts as efficiently as possible to leverage the high level of interdisciplinary work in the research produced in the areas IoT.
BELS	BELS (H2020, http://www.belsproject.eu/). BELS implements a set of coordinated actions to promote European GNSS – EGNSS technologies in South East Asia (SEA). BELS activities span a 3-year period (2015-2018) in which the Galileo constellation is expected to move forward towards the final full configuration to pave the way for the introduction of Galileo services both for European companies that can enter a new growing market and for the South East Asian countries that can discover the potentialities of the EGNSS technology.

More to come?
Horizon Europe
(2021-2027)

More on International collaborations?

IoT in SEA

- SEA is a fast growing region!
- But many countries are still categorized as low & middle income countries
- IoT in SEA, as in many other regions of the world, is gaining incredible interest for a vast variety of applications

- Singapore, then Thailand & Malaysia should be considered separatly from other SEA countries

ICT/IoT ecosystem

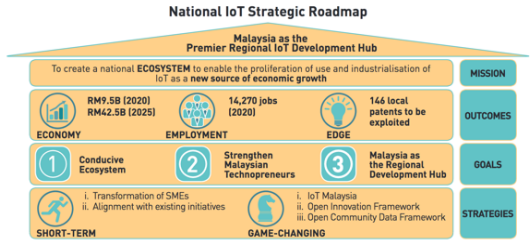
- Local ICT companies have expertise in traditional ICT domains: web development, web-based applications, mobile app,…
- The overall IoT awareness is still low but there are int'l companies pushing for IoT activities mainly on smart city and home/office automation
- SEA universities and research institutes, through their int'l research cooperations and exchange programs, have emerging IoT research
- However the translation to curriculum addressing core and innovative IoT technologies is still very weak

Needs, constraints, cost, design approach, control mechanism

Challenge: Bridging the digital divide

Some SEA ICT/IoT initiatives (1)

Malaysia 	Malaysia is exploring the use of internet of things (IoT) technologies for agriculture in the Asean region, driven by collaboration between government and the private sector. For instance, The Malaysian Institute of Microelectronic Systems (MIMOS) has created several solutions that cater to agricultural development. For example, it has developed a sensor called Mi-MSCAN TpH to collect environmental data.
Indonesia 	Indonesia aims to increase its agricultural production through the use of advanced technology. In order to meet the growing demand, they must introduce modern agricultural tools and technologies to farmers.
Philippines 	For Flood Monitoring specific case, the City of Bacolod in the Western Visayas, Philippines has a flood monitoring system within the SMILES (Smart Management of Information for Local Ecosystem Support) system. SMILES is a traffic and water monitoring system within a range of 20 kilometer radius covering the city of Bacolod.
Vietnam 	The Saigon Hi-Tech Park Incubation Center (SHTP-IC) launched the 2016 Internet of Things Startup Competition (IoT Startup 2016) with the theme 'Developing Smart Cities and Improving Quality of Life.' [...] the competition would be organized every year as a means to welcome ideas and creations for the development of a better quality life in Ho Chi Minh City. The National Foundation for Science & Technology Development (Nafosted) is funding a project on "Context-aware multi-tier architecture for the Internet of Things" (2017 – 2019) with HCMUT.



ASEAN PLAN OF ACTION ON SCIENCE, TECHNOLOGY AND INNOVATION (APASTI) 2016-2025

Implementation Plan

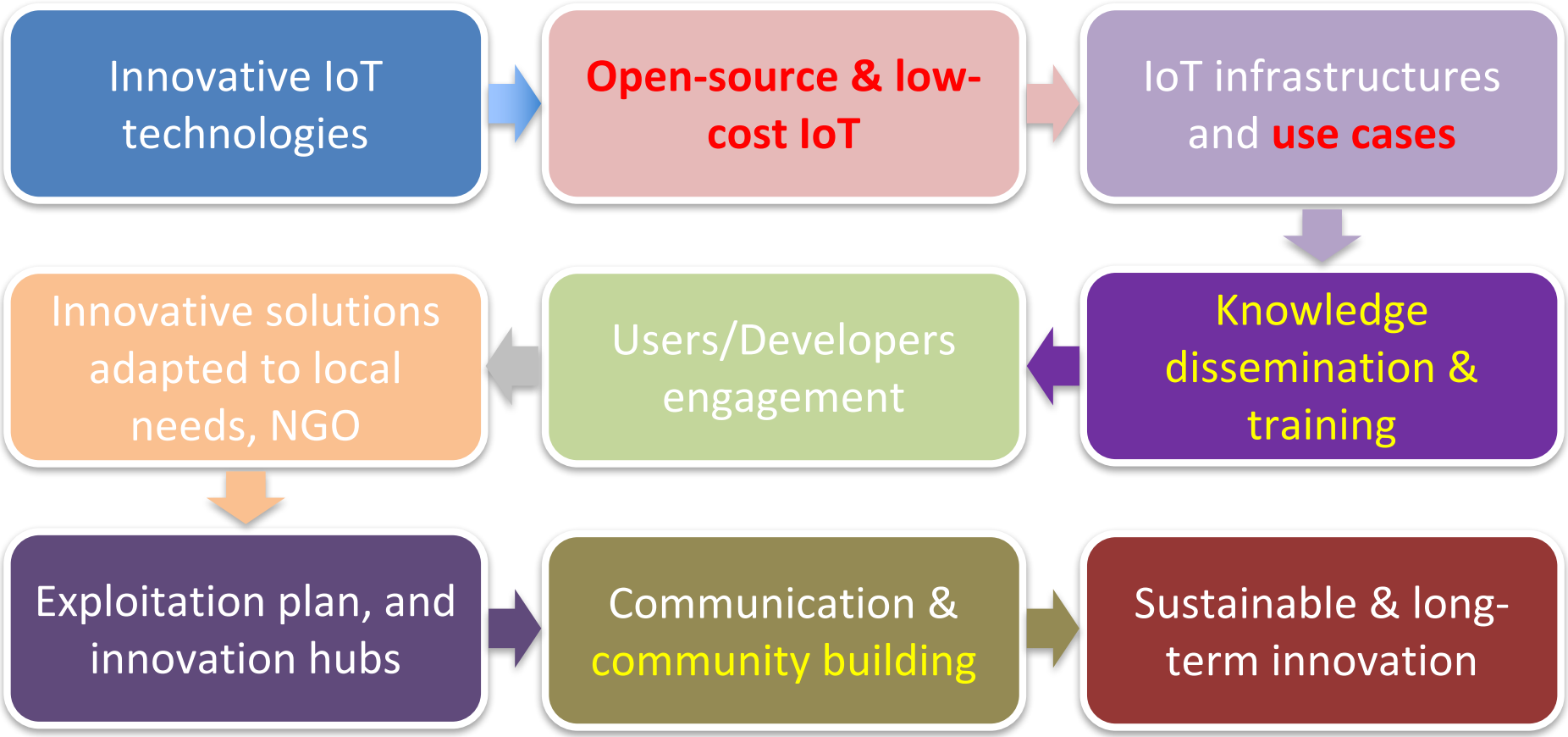
Some SEA ICT/IoT initiatives (2)

Cambodia 	Under the umbrella of the ICT Federation of Cambodia, SOMA Group has developed a foresight in constructing a new town that will take up approximately 60 hectares on a few kilometers out of Phnom Penh. In line with the Smart City concept, this new town will make use of ICT vastly in all its aspects, in order to aid economic development, boost performance and convenience, attain better cost efficiency, optimize resource consumption, actively connect with citizens, and in turn, advance Cambodia to the digital age.
Thailand 	ICT Ministry Minister Uttama Savanayana confirmed that the Information and Communication Technology Ministry is eyeing Phuket and Chiang Mai as 'smart cities' that focus on tech start-ups as part of a move to turn Thailand into the digital hub of ASEAN. Under the policy the ministry planned to roll out pilot projects to drive the country forward, with the "smart city" plan one of them.
Myanmar 	Low-cost sensors and more accurate data can transform farming in Myanmar. IDEO.org went to work in Myanmar to explore new agricultural applications for low-cost sensor where they teamed up with Yangon-based Proximity Designs to build new products that help smallholder farmers better understand their crops.

IoT verticals

- Bacolod, Yogyakarta, Kuching, Can Tho, Hanoi, Ho-Chi-Minh city

IoT strategies for sustainable innovation

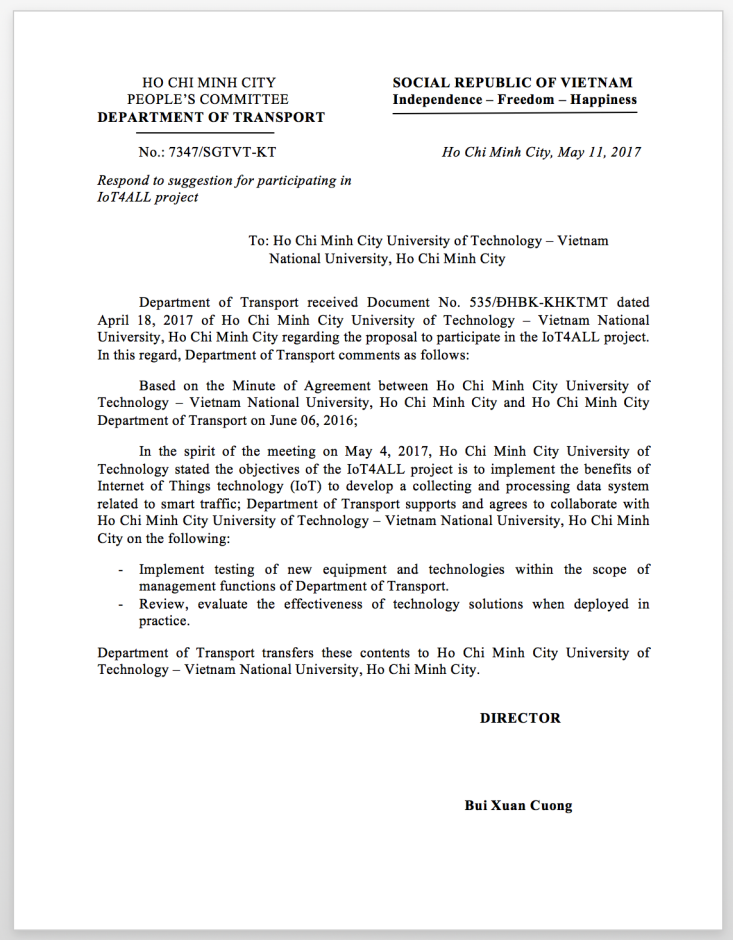


Sustainable & Long term?
FabLab, MakerSpace, NGO,…

- FabLab network
- Southeast Asia Makerspace Network (SEAMNET, http://seamakerspace.com: a network of makerspaces within ASEAN, working together towards a common mission to advocate and develop the Maker movement

Get support from local agencies

- MoU, letter of support, …



HO CHI MINH CITY
PEOPLE'S COMMITTEE
DEPARTMENT OF TRANSPORT

SOCIAL REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

No.: 7347/SGTVT-KT

Ho Chi Minh City, May 11, 2017

Respond to suggestion for participating in IoT4ALL project

To: Ho Chi Minh City University of Technology – Vietnam National University, Ho Chi Minh City

Department of Transport received Document No. 535/ĐHBK-KHKTMT dated April 18, 2017 of Ho Chi Minh City University of Technology – Vietnam National University, Ho Chi Minh City regarding the proposal to participate in the IoT4ALL project. In this regard, Department of Transport comments as follows:

Based on the Minute of Agreement between Ho Chi Minh City University of Technology – Vietnam National University, Ho Chi Minh City and Ho Chi Minh City Department of Transport on June 06, 2016;

In the spirit of the meeting on May 4, 2017, Ho Chi Minh City University of Technology stated the objectives of the IoT4ALL project is to implement the benefits of Internet of Things technology (IoT) to develop a collecting and processing data system related to smart traffic; Department of Transport supports and agrees to collaborate with Ho Chi Minh City University of Technology – Vietnam National University, Ho Chi Minh City on the following:

- Implement testing of new equipment and technologies within the scope of management functions of Department of Transport.
- Review, evaluate the effectiveness of technology solutions when deployed in practice.

Department of Transport transfers these contents to Ho Chi Minh City University of Technology – Vietnam National University, Ho Chi Minh City.

DIRECTOR

Bui Xuan Cuong

MINISTER FOR LOCAL GOVERNMENT
SARAWAK

Our Ref MLG/17-03-06

3 March 2017

Patrick Then, PhD
Associate Professor
Director, Centre for Digital Future
Associate Dean (Computing) Faculty of Engineering, Computing & Science
Swinburne University of Technology Sarawak Campus
Jalan Simpang Tiga
93350 Kuching

Dear Patrick,

Support for Internet-of-Things Pilot Test along Bengoh dam and Batu Kitang Weir

Department of Irrigation and Drainage Sarawak (DIDS) has been updating water level/flood monitoring system by leveraging on the latest advancement in Internet-of-Things (IoT) and Low Power Wireless Area Network (LPWAN). I understand from you that Swinburne University of Technology Sarawak Campus is applying for Horizon 2020 funding for pilot test of the latest low-cost IoT sensors and LPWAN for monitoring water level along rivers. For the benefit of Kuching city residents, DIDS will be able to participate in the pilot test by assisting with the provision of domain knowledge and granting permission for your experimentation along Bengoh dam and Batu Kitang weir.

"BERSATU BERUSAHA BERBAKTI"
"AN HONOUR TO SERVE"

Salam Hormat

YB Senator Datuk Prof. Dr. SIM Kui-Hian PJN
MBBS(Hons)(Monash), FRACP, FACC, FCSANZ , FAHA, FSCAI, FESC, FAPSIC, FAsCC, FAPSC, FAHA, FAMM, FNHAM
Minister for Local Government

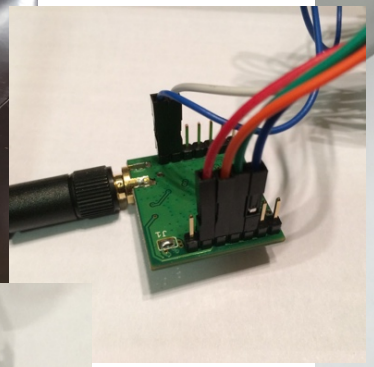
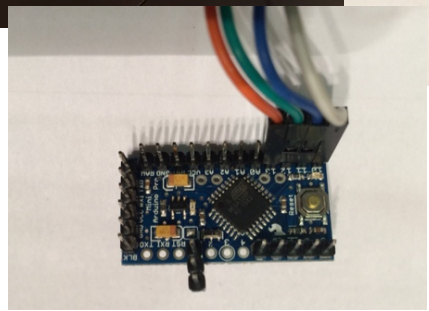
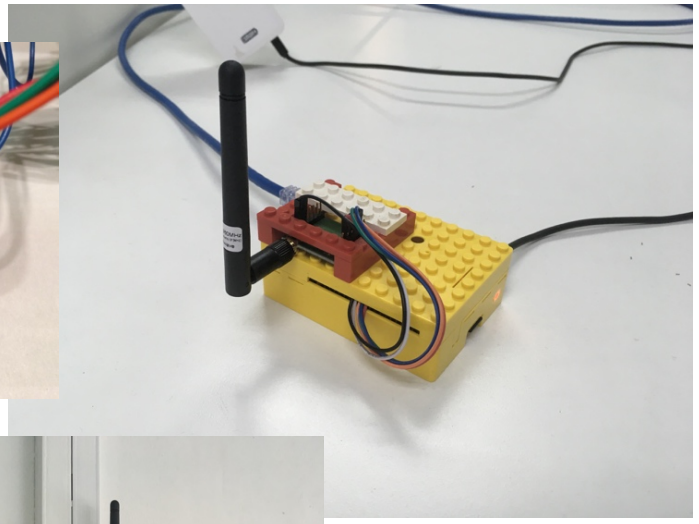
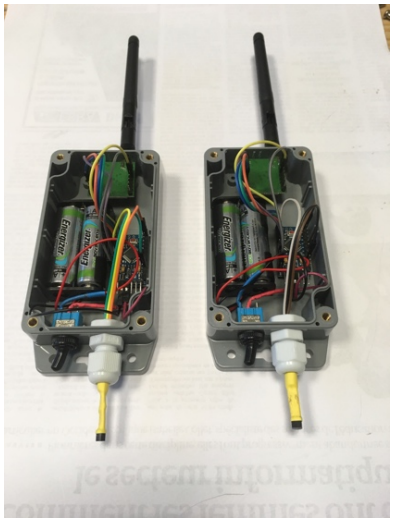
CC: Mr. Chok Moi Soon, Director of Department of Irrigation and Drainage Sarawak

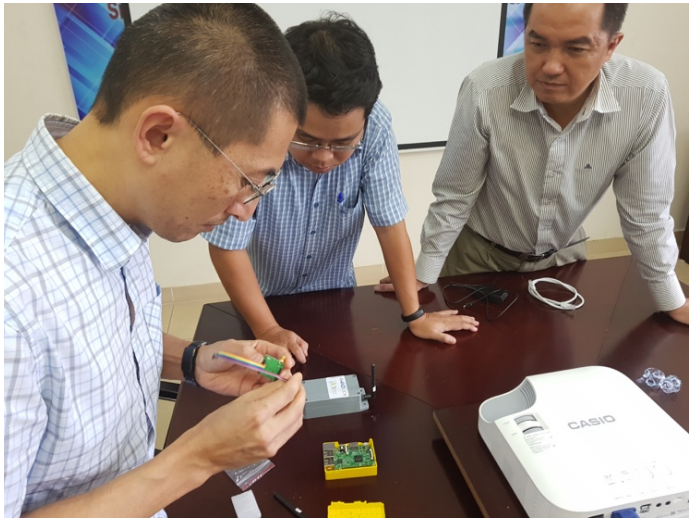
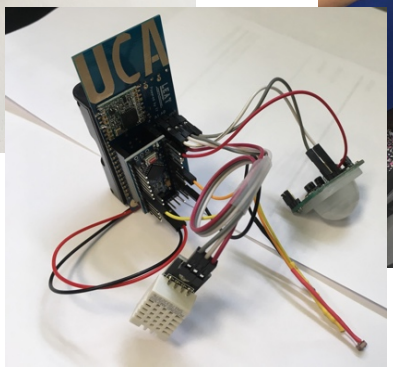
Level 17, Wisma Bapa Malaysia, Petra Jaya, 93502 KUCHING, SARAWAK, MALAYSIA
TEL : +6082-514962, 514963, 514964 FAX: +60 82-514961

Conferences not enough!

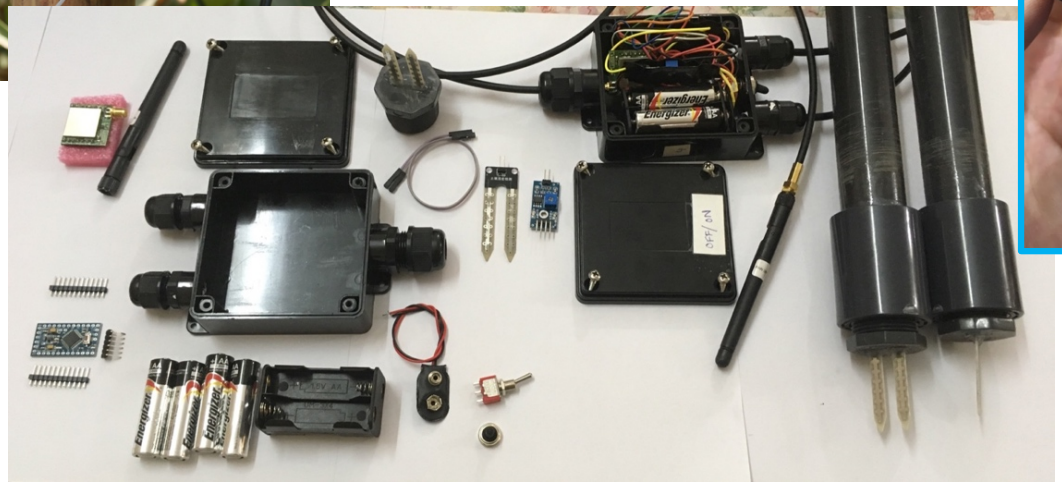
- IEEE RIVF'2015: Internet-of-Thing session
- EU-SEA Workshop on Cooperation on IoT and Open-Platforms (funded by CONNECT2SEA)

Hands on IoT!

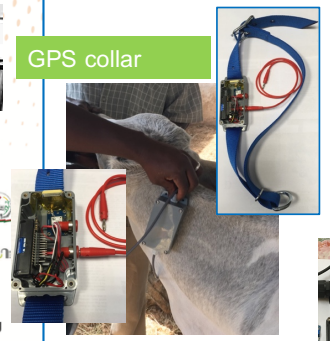
Solve problem!



Africa-SEA: same concerns!

Image sensors

GPS collar



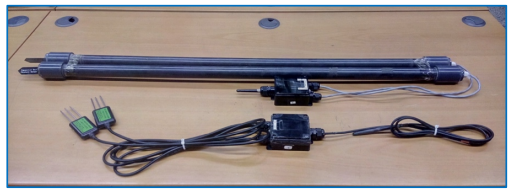


Photo from EGM

Buoy for water quality

Weather Station

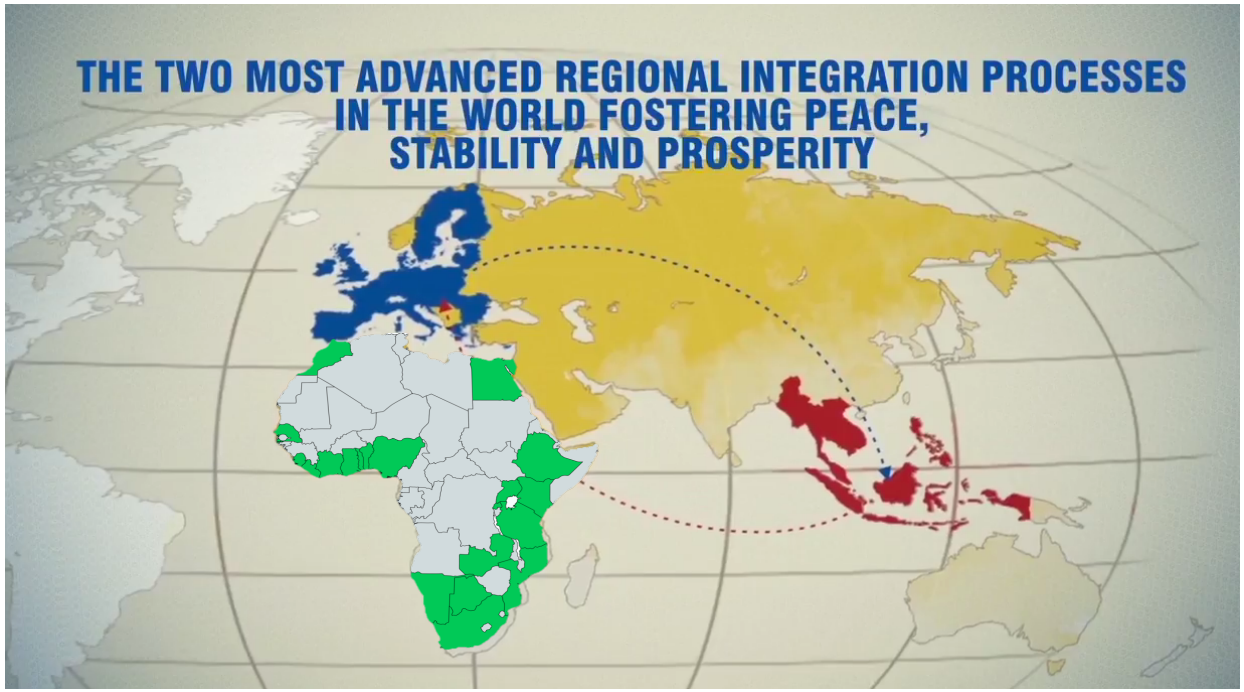
Photo from Unparallel

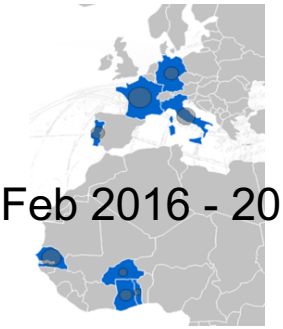
Soil Moisture

Bin presented at Woelab

Waste Mngt

EU-Africa-SEA!





Feb 2016 - 2019

WAZIHUB

May 2018 - 2021

France	**Sorbonne Université, IRD, UMMISCO, France**
	UMR 210, Eco&Sols, IRD, France
	IRD/CNRS/CNES/PS, Géoscience Environnement Toulouse, France
	Université Paris Est Créteil, LISSI, Equipe CIR
	Université de Pau et des Pays de l'Adour, LIUPPA, Equipe T2I, France
	Université de Rennes 1, IRISA, équipes GRANIT&CAIRN, France
	LORIA, Simbiot, France
	Université de Bretagne Occidentale, Lab-Sticc, CNRS UMR 6285, France
	IMT Lille Douai, Université de Lille, Ecole des Mines-Telecom, France + INRIA, RMOD, France
	Université de la Rochelle, L3I, France
Vietnam	Institut de la Francophonie pour l'Innovation (IFI), Vietnam National University in Hanoi, Vietnam
	University of Science and Technology of Hanoi (USTH), ICTLab, Vietnam
	Can Tho University (CTU), College of Information and Communication Technology, Vietnam
	Hanoi University of Science and Technology (HUST), SoICT & BKCS, Vietnam
	Bach Khoa IoT Lab, Ho Chi Minh City University of Technology, Vietnam
	JEAI WARM, Thuy Loi University/IRD, Vietnam
	Institute of Environmental Technology (IET), VAST, Vietnam
Cameroon	Université de Yaoundé 1, IDASCO/UMMISCO, Cameroun
	Ecole Nationale Supérieure Polytechnique de Yaoundé, Equipe Masecness, Cameroun
	Equipe-projet Internet of Things for Developing Countries
	(IOT4D), INRIA/LIRIMA/UY1, Cameroun
	IUT de Douala, Cameroun
	JEAI RELIFORME(Réponse du littoral Camerounais aux Forçages Océaniques Multi Echelles), IRD/Université de Douala, Cameroun
Senegal	Université Gaston Berger, Equipe LANI, Sénégal
	Université Cheikh Anta Diop, UMMISCO, Sénégal
	Centre d'Excellence Africain des Technologies de l'Information et de la Communication (CEA-MITIC), Sénégal
	UCAD, Département de Géographie, Sénégal
	LMI IEOSOL, ISRA, Bel-Air, Dakar, Sénégal

Institut de Recherche pour le Développement FRANCE Editions

Sense-South

Dr. Serge Stinckwich, IRD

on Smart Agriculture for South Countries