

Telescience/ Geoscience:

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Pragma 29
2015 10

Agenda on Breakouts

- Day 1
 - CENTRA
 - CENTRA and COE introduction
 - How do we proceed, How do we organize, architecture?
 - What is the role of infrastructure for your application ?
Ex. Pragma-ENT, Resources
- Day2
 - Updates
 - Possibly joint with resources

Presentations & Discussions

- CENTRA introduction, Software-Defined Systems
 - Center of Excellence (CoE) on Cyber-enablement of Applications, Taiwan
 - CENTRA, UFL
 - ASEA IVO, NICT
- Tele-Science/Geo-Science Research Updates
 - Air pollution Monitoring (hour data from 72 monitoring sites), NCHC.
 - Collaborate with Nat'l Palace Museum to mitigate digital divide (w/ 3D models), NCHC.
 - Disaster Recovery Assistance with Crowdsourcing, Thammasat University.
 - Volunteer and Victims – Trust Management: evolving into a trust network! Reputation workers (good idea). Crowd movement...(Evacuation). Social modeling.
 - Software Defined Infrastructure, MIMOS
 - Sensor Network
 - Agriculture,
 - Public Safety
 - Ceph File System
 - Singapore ASTRINA (Jon Lau)
 - SDN + HPC/Viz for e-Science via SDN, Osaka University
 - SAGE & TDW/Sharing Viz. (using Openflow), Remote Lecture System with high resolution display. (Multiple content)
 - PREDICT (fmon.asti.dost.gov.ph), ASTI (Philippine)
 - Meteorological Monitoring and services
 - 105,000 sensors & external sensors providing national data for research
- Discussions:
 - Challenges: Proper Data sets , Domain Experts.
 - Collaborative discussions & Demos in SEAIP
 - Meet on SEAIP 2015 before PRAGMA 30.

Another project from Japan is proposed

The screenshot shows a web browser window with the URL www.nict.go.jp/en/asean_ivo/about_asean_ivo.html. The NICT logo and name are at the top left. Navigation links include 'Main Content', 'Contact Us', 'Access', and 'Sitemap'. A search bar is on the right. The main content area is titled 'About ASEAN IVO' and includes a 'Print' button. The text describes the ICT Virtual Organization of ASEAN Institutes and NICT, its goals, and its mission. A sidebar on the right lists related topics like 'Steering Committee', 'Members', and 'Archive'.

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NICT National Institute of Information and Communications Technology

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About NICT Press Release Events & Topics Library/Data

Home > ICT Virtual Organization of ASEAN Institutes and NICT > About ASEAN IVO

About ASEAN IVO

ICT Virtual Organization of ASEAN Institutes and NICT

"ICT Virtual Organization of ASEAN Institutes and NICT (ASEAN IVO)" is a global alliance of ICT R&D institutes and universities in the ASEAN region and Japan. The initial idea was mentioned at the first Round Table, "International Roundtable on ICT R&D Collaboration in the ASEAN Region" held in 2013, and a proposal to establish the Organization was given and approved in the second Round Table, "ASEAN-NICT ICT Round Table 2015".

Goals

The mission of ASEAN IVO is to seek and identify strategic ICT research areas in the ASEAN region, and promote collaborative projects in them.

This will provide the optimal approach to strengthen partnerships of international collaboration and cooperation throughout the ASEAN region, with the view to solving common social challenges such as communication limitations in rural areas and disaster situations, language barriers, network security, infrastructure, energy, agriculture, and more.

- ▶ ICT Virtual Organization of ASEAN Institutes and NICT
 - About ASEAN IVO
 - ▶ Steering Committee
 - ▶ Members
 - ▶ Call for Preparatory Activities
 - ▶ ASEAN IVO Forum 2015 - Call for Presentations
 - ▶ Archive
 - ▶ Round Table 2015
 - ▶ Round Table 2013

Welcome

About SEAIP

Important Dates

Sponsorship

Agenda

Registration

Invited Speakers

Venue

Visa Application

Accommodation

Gallery

Questions & Comments

Welcome to SEAIP 2015

Agenda

2015 Program(pdf)

Important Dates

Dear Colleagues,

On behalf of the National Center for High-Performance Computing (NCHC), it is our great pleasure to welcome your participation in SEAIP 2015!

Taiwan is also known as "Formosa" which means "Beautiful Island." Included in Taiwan's 19 major cities and counties are bustling metropolises like Taipei, Taichung, and Kaohsiung. Also, Taiwan's fifth largest city, Hsinchu, has one of the highest densities of hi-tech enterprises in the entire world! Natural wonders such as Hualien County's splendid ocean views and magnificent mountain scenery and Kaohsiung's port views are not to be missed! This beautiful island, full of cultural, natural, and hi-tech wonders, promises a very special meeting experience in Asia!

SEAIP is well received in the ICT community in Southeast and East Asia regions. The workshop will focus on issues of science and technology in Cloud Computing, Big Data and Internet of Things. We encourage participants to present their research to strength the connections around the Pacific Rim and develop collaborations through the exchange of research results and ideas.

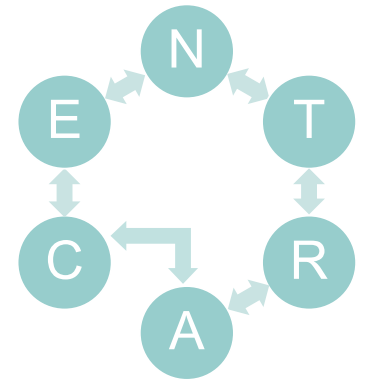
While you are here, we have arranged some social and cultural events, and hope you to feel at home and enjoy your time experiencing the cultures and beauty of Taiwan. As the great Confucius once said, "It is a great joy to welcome friends from afar!"

We welcome you to our beautiful island and hope you enjoy our warm hospitality! We bid you all a very special and rewarding experience here in Taiwan!



<http://event.nchc.org.tw/2015/seaip/>

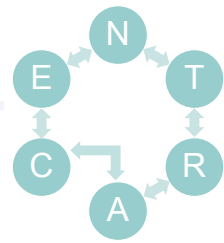
CENTRA: Collaborations to Enable Transnational Cyberinfrastructure Applications



José Fortes

**Advanced Computing and Information Systems
(ACIS) Laboratory**

University of Florida

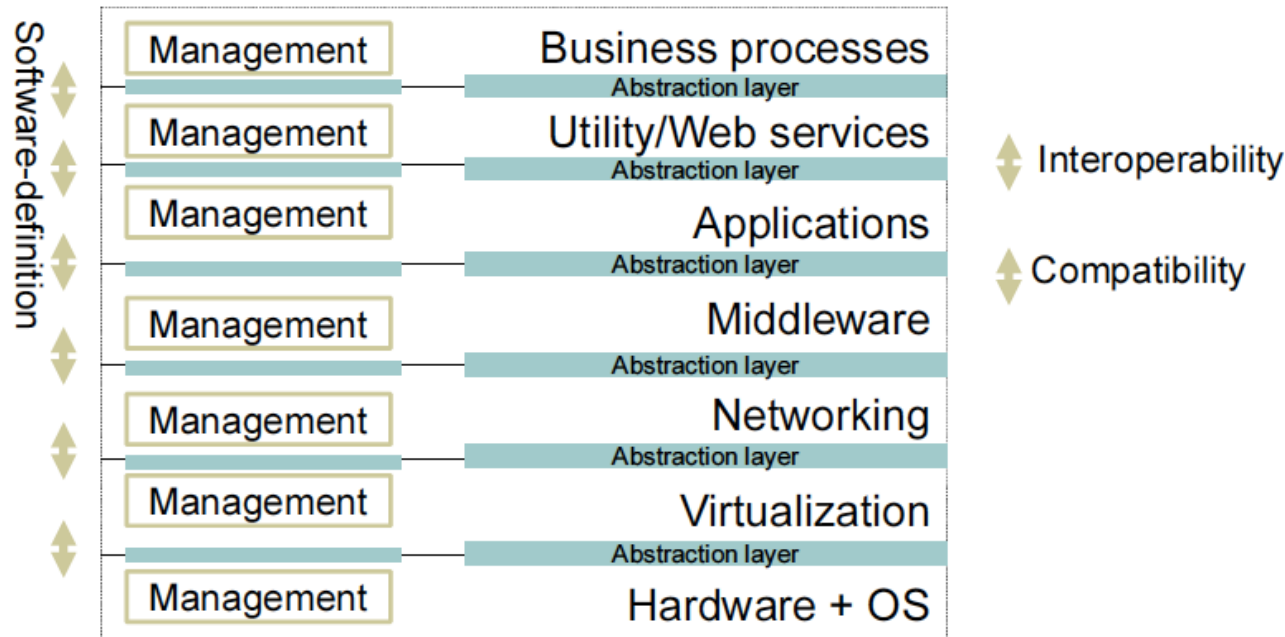


- US—East Asia Collaborations to Enable Transnational Cyberinfrastructure Applications
- Key goals:
 - Scientific advances in
 - Application domains: environmental monitoring (EM), disaster management (DM), smart cities (SC)
 - Software-defined systems: data-sharing, middleware interoperability, coordination
 - Creation of next generation of collaboration networks (of people)
 - Creation of a framework for persistent collaboration among centers/groups in US-EA

CENTRA nature

- Focused scope
 - Disaster management, environmental modeling and smart cities
- Deeper thinking within the scope
- Broader community within the scope
- Requiring long-term, frequent and persistent research collaboration activities
 - Including researcher stays at collaborating sites

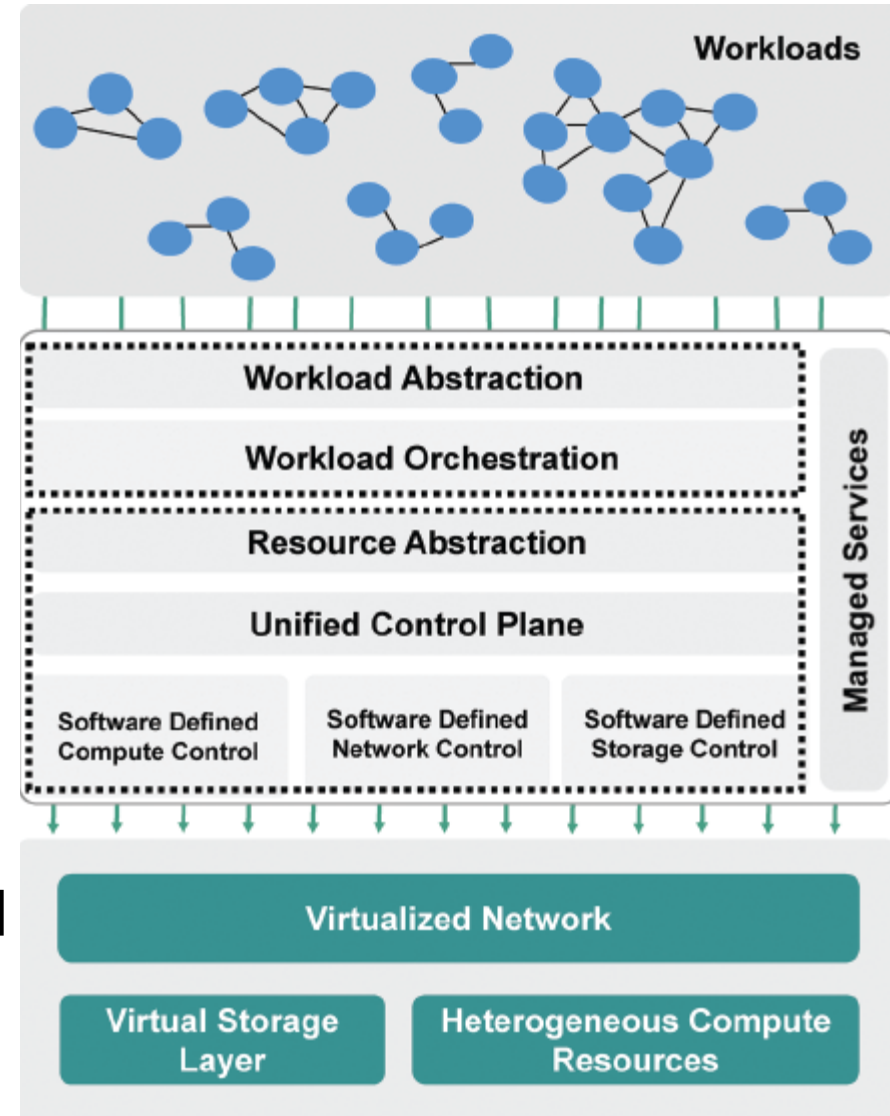
Software-defined systems stacks



Software-definition at each level can be used to build multilevel resiliency that leads to required system resiliency

Architecture of SD Environments

- Workloads
 - complex wirings of components
 - represented through abstractions.
- Given abstract resources the workloads are continuously mapped (orchestrated) into environment through unified control plane.
- Individual resource controllers program the virtual resources (compute, network, storage).
- Workloads and contexts mapped into best suited resources in heterogeneous pool



SD Application Stacks

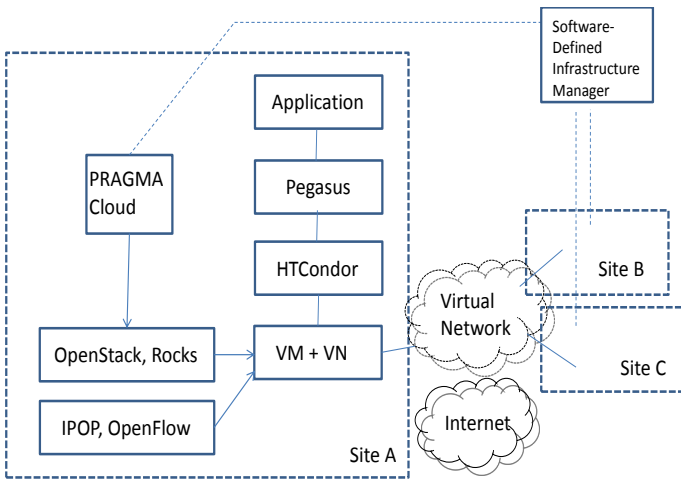


Figure 1- Commonly used HTC/HPC stack for distribution and management of computation and resources in several sites.

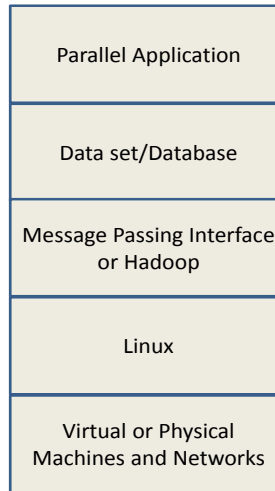


Figure 2- HPC stack with virtualization, Linux, MPI, dataset and application layers. Management components are not shown.

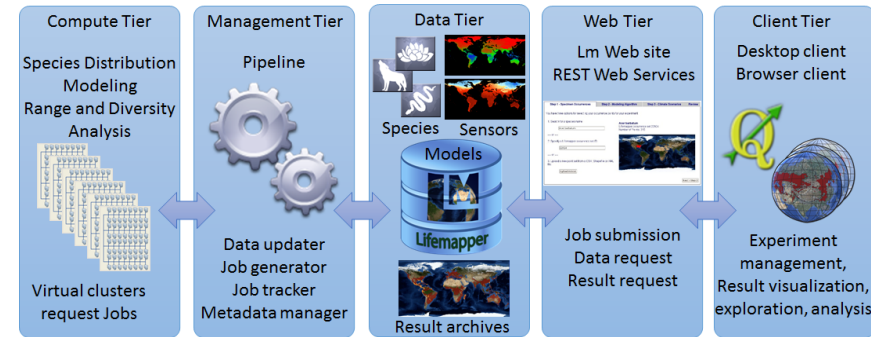


Figure 5 - Tiered view of Lifemapper's software architecture.

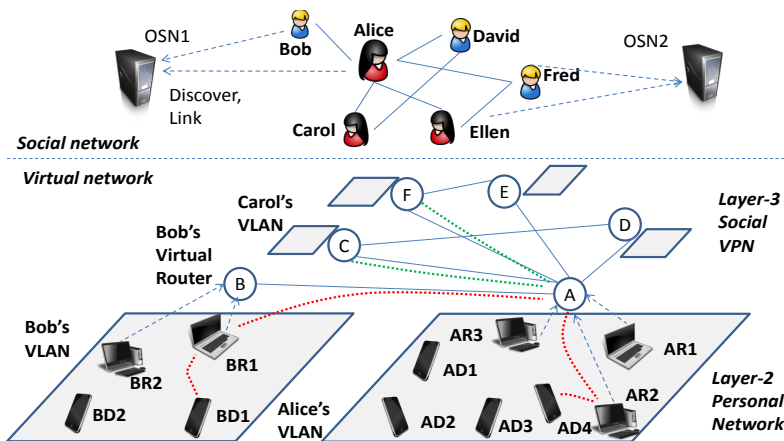


Figure 3 - Social, virtual and physical network stack in a collaborative Online Social Network (OSN)

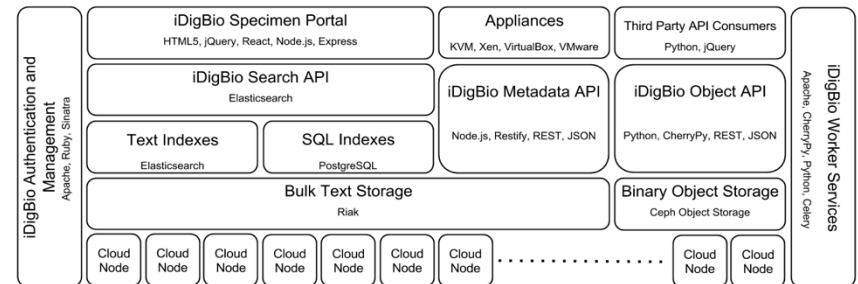
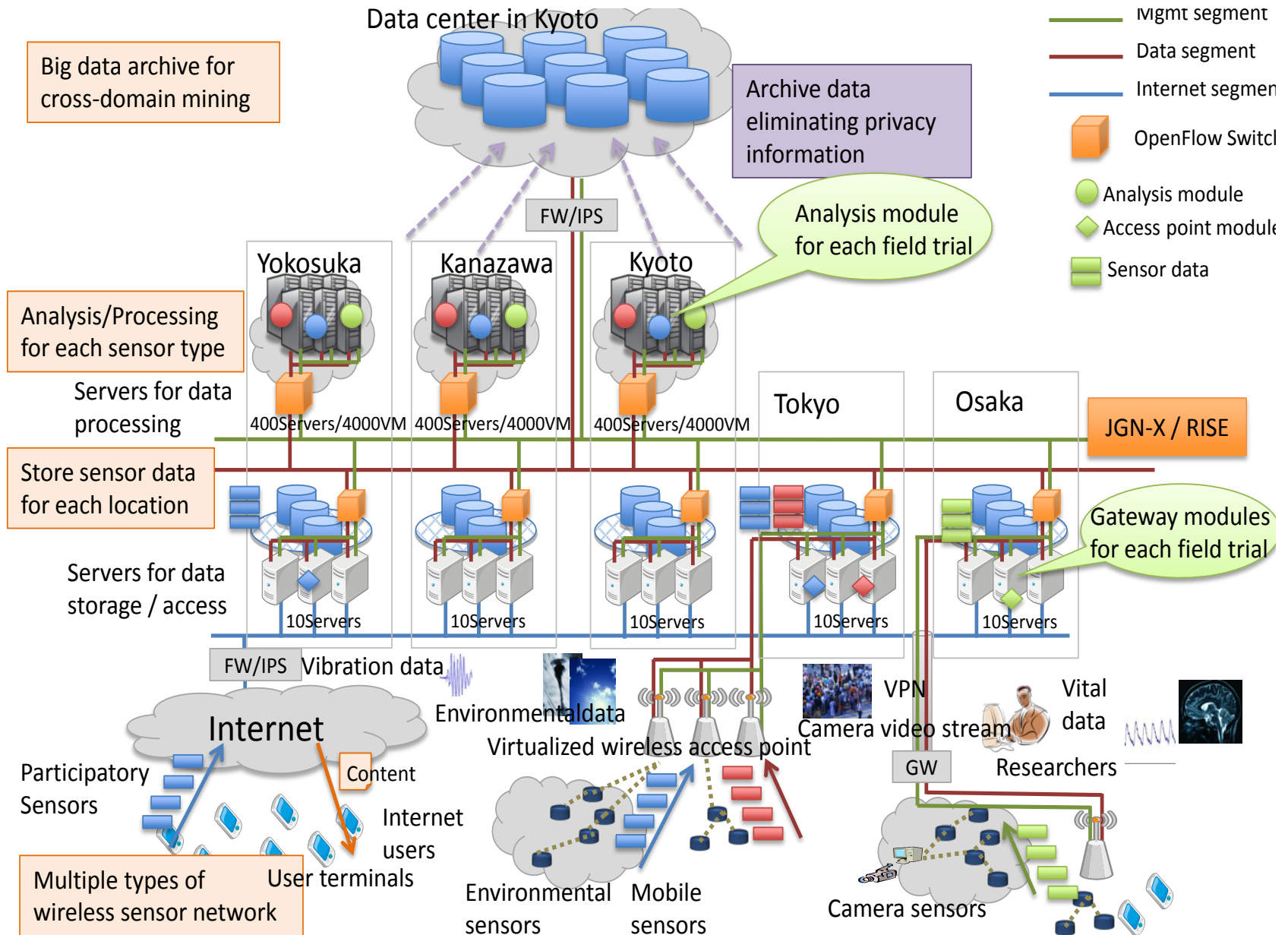


Figure 4- IT stack of iDigBio, an operational system developed by the PI's team to host large amounts of textual and media data in distributed nodes and provide web- and API-based interfaces to query and visualize data. CENTRA will have access to software, expertise and data needed to develop similar testbed systems for CENTRA research.

NICT JOSE – a testbed and a system



Requirement for Resources

- Co-existence of stable and robust resources and breakable resources
- Security and System Configuration Issues
 - Specially important that entire system can be configured repeatedly in software defined.
 - Security issue can be considered separately when we use network virtualization.
- There is a new streaming computational model coming to intention to treat realtime sensor data processing.
- Balance of requirements for data stream, computational power and communication should be carefully considered and arranged.

Attendees

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