FIRE-GENI COLLABORATION WORKSHOP
SEPTEMBER 17-18, 2015

Grand Hyatt, 1000 H St NW, Washington, DC

WIRELESS NETWORK CONNECTION

Network Name: Hyatt Meeting
Network Key/Passkey: SAVI2015

Thursday September 17th

8h00 - 9h00 Registration and Breakfast (Burnham Room/Constitution Level)

9h00 - 9h15 Welcome (Latrobe/Bulfinch Room/Constitution Level)

- Chip Elliott, GENI Project Office
- General Introductions
- Jim Kurose, CISE Assistant Director
- Erwin Gianchandani, CISE Acting Deputy Assistant Director
- Jack Brassil, NSF
- Per Blixt, EC

9h15 - 10h30 Session 1 (Latrobe/Bulfinch Room/Constitution Level)

Chairs: Jack Brassil (US) and Per Blixt (EU)

Report, demonstrations and discussion on funded collaborations and possible future work from there.

- Ilya Baldin/Chrysa Pappagiani: Resource Management and Topology Embedding in Distributed Networked Infrastructure Environments
- Rob Ricci/Brecht Vermeulen: Health and Availability Service for User Tools
- David Margery/Marshall Brinn: Collaboration on GENI Control Framework (aggregate manager)
- Brecht Vermeulen/Kaiqi Xiong: FGRE Summerschool 2015
- Violet Syrotiuk/Ingrid Moerman: Wi-Fi Conferencing System: Locating Array
- KC Wang/Jerry Sobieski/Paul Muller: From GTS to CloudLab: on OpenFlow, NSI, and GTS-GENI Federation

11h00 - 13h00 Session 2: Cloud (Latrobe/Bulfinch Room/Constitution Level)

Chairs: KC Wang (US) and David Margery (EU)

- Introduction to the session.
- Joe Mambretti, Northwestern University - Federating the Chameleon Cloud Testbed with Multiple Other Research Cloud Testbeds Around the World
- Rob Ricci, University of Utah - CloudLab
- Yan Luo, UMass at Lowell - How do we plan to use NSFCloud to save the world?
- Dana Petcu, West University of Timisoara, Romania - Multi-Clouds -- challenges, achievements and opportunities
- Ada Gavrilovska, Georgia Tech - AppFlux: Taming App Delivery: a project on development of infrastructure for more scalable and timely distribution and delivery of apps for client and IoT devices

- Suman Banerjee, University of Wisconsin - Designing and Deploying a City-wide Wireless Infrastructure with Edge Programmability
- KC Wang, Clemson University - From Federated SDI to Future Internet Architecture
- Lucas Nussbaum, LORIA - Thought After Using Grid'5000, Cloudlab and Chameleon

Opening the discussion (David Margery):

- Deploying infrastructures over cloud testbeds (e.g., a ceph cluster over any cloud testbed?): Any commonalities that can be shared?
- Describing cloud testbeds (hardware, or network/compute/storage combination, or higher level service available)?
- Federating IoT, wireless clients and cloud testbeds: (e.g., how to bridge the XML-RPC authentication of SFA and https based authentication of cloud services)?
- Cloud specific metrics for users: Good way to break the virtual/physical barrier to give insights to experimenters?

Instructions to presenters:

- All speakers please consider highlighting your talk's relevance to the list of questions identified for discussion above.
- Unless otherwise specified, we expect talks to last at most 10 minutes with at most 5 minutes for questions afterwards.

13h00 - 14h00 Lunch (Cabinet Room/Declaration Level)

14h00 - 15h30 Session 3: Wireless (Latrobe/Bulfinch Room/Constitution Level)

Chairs: Doug Sicker (US) and Ingrid Moerman (EU)

- Ingrid Moerman: Intelligent Control in Wireless Networks
- Luiz DaSilva: Virtualization of Wireless Networks
- Raymond Knopp: Flexibility of Software Radio Architectures
- Ivan Seskar: Wireless Cloud
- Suman Bannerjee: Wireless Testbeds
- Kobus Van der Merwe: Wireless Monitoring
- Yahya Al-Hazmi: The FUSECO 5G Playground - For Growing Together the 5G Technology

16h00 - 18h00 Session 4: Ontologies (Latrobe/Bulfinch Room/Constitution Level)

Chairs: Ilya Baldin (US) and Paola Grosso (EU)

- Paola Grosso and Ilya Baldin: Introduction to the session
- Paola Grosso: General Overview of the OMN Ontology Motivation and Progress
- Yahya Al-Hazmi: On the OMN Ontologies, Their Hierarchy and Tooling
- Chrysa Papagianni: Concrete Usecases: on Lifecycle Ontology and on Wireless Ontology (to be presented on her behalf by P. Grosso)
- Ilya Baldin: Building Efficient Support for Semantics in Networked Infrastructure Systems
- Ivan Seskar
- Marshall Brinn: First experiences when implementing and discussion questions
- Open discussion based on questions. Focus on next steps. (Moderated by Paola and Ilya)

19h00 Dinner: NoPa Kitchen + Bar, 800 F St. NW, Washington, DC

Friday September 18th

8h00 - 9h00 Breakfast (Burnham Room/Constitution Level)

9h00 - 10h30 and 11h00 - 12h30 Session 5: Federation (Global Federation, Policies, SDX, Connectivity, Common Federation APIs) (Latrobe/Bulfinch Room/Constitution Level)

Chairs: Rob Ricci (US) and Brecht Vermeulen (EU)

- Federation success stories (mention problems that have arisen and were solved, problems that need to be solved)
  - Rob Ricci: Strategy of Federation + GENI + Cloudlab + emulab
  - Brecht Vermeulen: Fed4FIRE
  - Timur Friedman: Planetlabs over the World

- APIs: short presentations on use and standardization of the APIs around the world and what the future should bring
  - Brecht Vermeulen: AM api + Federation api
  - Bartek Belter: EU-Japan, NSI (Felix project)

- Future of federations: Clear proposals of how we could solve particular problems on this, or what is foreseen in the specific work by the speakers
  - Rob Ricci on behalf of Marshall Brinn: GENI Policy Work
  - Tom Lehman: Prototype of SDX with Policies at WIX
  - Rob Ricci: Cloudlab Federation
  - Joe Mambretti: Chameleon Federation
  - Brecht Vermeulen: Fed4FIRE
  - Michael Enrico: Vision Geant on External Use and End-to-end Multi-domain Bandwidth-on-demand
  - Jerry Sobieski: Geant Testbed as a Service and Federation
  - Mauro Campanella: Multi-domain Federation

12h30 - 13h30 Lunch (Cabinet Room/Declaration Level)

13h30 - 15h05 and 15h30 - 16h45 Session 6: Monitoring (Latrobe/Bulfinch Room/Constitution Level)

Chairs: Jim Griffioen (US) and Scott Kirkpatrick (EU)

- 13:30 - 13:40 Introduction: Jim Griffioen and Scott Kirkpatrick
- 13:40 - 14:10 Monitoring Wireless Infrastructure (Discussion Leader: Ivan Seskar)
  - Ingrid Moerman - Emphasizing 5G Systems Measurement
  - James Miller - Measuring Broadband to the Sidewalk
- 14:10 - 15:05 Monitoring the Internet as a Whole (Discussion Leader: Scott Kirkpatrick)
  - Yan Luo - Privacy Preserving Network Measurement
  - Timur Friedman - Smart Cities
  - Collin Anderson - Internet Misbehavior as Seen from M-Lab
  - Scott Kirkpatrick - Crowd-sourced Data Demo
- 15:05 - 15:30 Break
- 15:30 - 16:45 Monitoring Testbed Networks, Clouds, Clusters, and Slices (Discussion Leader: Jim Griffioen)

- Mike Zink - Power and Temperature Measurement Infrastructure for CloudLab
- Yahya Al-Hazmi -- Monitoring Ontologies -- Demo
- Brecht Vermeulen/Chrysa Papagianni - Facility Monitoring for Federations and Measuring Reputation in Testbeds
- Dana Petcu - Monitoring in Multi-clouds
- Bartek Belter - Monitoring of Multi-domain Slices in FELIX
- Lucas Nussbaum - Kwapi Monitor for GRID 5000
- Jim Griffioen - Monitoring Experiments vs Testbeds

16h45 - 17h00 Conclusion (Latrobe/Bulfinch Room/Constitution Level)

Jack Brassil and Per Blixt