

FIRE – GENI Workshop Summary Meeting Report

The FIRE – GENI Workshop was organised by the funding bodies US National Science Foundation (NSF) and European Commission (EC) in collaboration with the GENI Office and the FIREworks project. Each region was represented by ~5 representatives of the funding bodies and the organising projects complemented by representatives of major activities within the FIRE and GENI frameworks (~ 10 per side).

The objectives of the meeting were:

- To have an open exchange on the major FIRE and GENI activities;
- To discuss potential future collaboration beyond participation in conferences
 - ⇒ on common problems and technical issues,
 - ⇒ on linking / connecting FIRE and GENI (why and how);
- To identify the Framework for collaboration under the respective funding schemes;
- To agree on the next steps in collaboration.

Meeting structure and content:

After a broad overview by the representatives of the funding bodies on the respective programmes and opportunities for collaboration, key experts of the coordination projects gave a detailed overview of the major prototype projects of each initiative and their efforts to federate them. These overviews respectively were followed by presentations and discussions of these individual projects:

US - GENI:

- Cluster A – DETER-based (targeted at security research community);
- Cluster B – Planetlab-based (targeted at distributed systems and networking community),
- Cluster C – ProtoGENI/Emulab-based (Internet2 backbone, programmable edge clusters);
- Cluster D – ORCA-based (including compute resource, service-oriented),
- Cluster E – ORBIT/Winlab-based (targeted at the wireless research communities).

EU - FIRE:

- Panlab II: SOA-NGOSS based, driven by the telecommunications industry;
- Onelab2: Planetlab (Europe)-based, targeted at networking community, special focus on longer term wireless and autonomic communications research;
- FEDERICA: GEANT/NREN-based, networking research in a network technology agnostic environment;
- G-Lab: German initiative, addressing the service-aware networking community.

The meeting was concluded by several presentations from the use-perspective and a discussion on how to bring the collaboration forward.

Comments:

- Both, the FIRE and GENI initiatives can be considered as being at a similar stage and maturity. Though there is the one or the other advantage on each side, none of the initiatives is significantly ahead of the other (including as well the Japanese activities): All initiatives respectively support the building of competing prototypes for FIRE and GENI, which have different scope and therefore address testing from different perspectives. In both FIRE and GENI, chief architects are thinking about how to position these activities with respect to each other and are developing concepts for intra-initiative federation. There are first ideas like "clearing house" approaches or peer-to-peer approaches without a central instance. All of these approaches are just emerging and need to be further matured and tested.

- Use cases: During the meeting, a few presentations aimed at providing examples of use cases for the facilities. These examples were however not fully convincing, as highlighted by questions raised by other participants. There is a general agreement in the EU and US that identifying compelling use cases must be considered as a priority, to justify and drive the development of the federated experimental facilities.
- Inter-initiative federation can be discussed on different levels:
 - ⇒ Initiative-level: federation comes after intra-initiative federation and can only be discussed when internal concepts of FIRE and GENI are clear.
 - ⇒ Project-level: Federation in pairs on project-level in some cases exists or is straight forward: For example, Planetlab PLC and Planetlab Europe (as well as Planetlab Japan) are federated by design. Facilities can be used as a coherent testing facility. Facilities like Panlab and ORCA have similar design principles, probably simplifying federation.
- Most on-going projects have only just started. The current level of maturity of the respective prototypes depends on the results they are building on, which come from the respective predecessor projects. The most advanced projects on each side are related to Planetlab. Here both Onelab2 and Cluster B are offering functioning prototypes.
- All prototype projects in FIRE and GENI are currently developing basic services, components, and the management and governance structure. As all face similar problems, there is a high potential for exploitation of synergies through exchanging ideas and implementations, which do not belong to the core innovation of the respective prototypes. Related to the latter, understandable, there is probably reluctance to share at an early stage.
- Funding mechanisms and budgets are different on both sides. The US is providing around 12 M\$ per year. Consequently, the projects are rather small in terms of scope, budget and partners. In these terms EU projects (IPs) are much larger: The 4 large prototype projects receive an average funding of 5 M€ each. Duration of the projects is similar.

Next steps:

- The US-side will host the next FIRE-GENI workshop back to back with the GENI Engineering conference in Seattle in July 2009.
- Pairs of representatives of individual GENI and FIRE projects will discuss in detail federation of their testbeds. Events like TRIDENTCOM can be used to host such discussions.

Calls / Solicitations for proposals:

- Under the EU Framework Programme 7, US partners can in general participate in EU-funded projects. Participation must be of mutual benefit, funding can only be provided to US partners in well justified exceptional cases. In 2009, the following two Calls are relevant:
 - ⇒ Challenge 1, Objective 1.6, Future Internet Experimental Facility & Experimentally-driven Research. Co-ordination and Support actions addressing "international co-operation with other initiatives in industrial and emerging countries" are explicitly mentioned under 1.6c;
 - ⇒ Horizontal Support Actions, Objective 9.1a, Support to Information Society policy dialogues and strengthening of international cooperation, Coordination and Support Actions, Call 4, Tentative closing date 1 April 2009.
- The second US GENI Project Office solicitation is open for proposals for GENI development, prototyping, and integration through 20 February 2009. Partners from outside the US can participate in proposals led by US organisations (<http://www.geni.net/GS02/GS02.html>).