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10TH EDITION
FUTURE
INTERNET
ASSEMBLY
DUBLIN | 2013

8TH-10TH MAY 2013

www.fi-dublin.eu

Session Title: EU and US Innovation Platforms for Future Internet

Session organiser(s):

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Purpose & Audience

The Future Internet is currently addressed by several large R&D programs in the different regions and related countries. This session focused on the EU and US approaches for Innovation Platforms and was directly building on the Aalborg FIA session “Open Platforms for Innovation” that was analysing the differences and complementarities in approaches, business, challenges and involved stakeholders.

The targeted audience was:

- 1) Researchers and developers from industry and academics engaged in Future Internet programmes and projects, e.g. FI PPP program, FIRE projects, eInfrastructures projects, Living Labs projects and KIC ICT Labs programme.
- 2) Innovation leaders and entrepreneurs interested to know more about the developments of Future Internet programs and projects and participate to the discussion on the potential innovation and business opportunities ahead.

Key message(s):

The major key messages addressed during the session were the following ones:

- EC Future Internet Public Private Partnership (FI PPP) and FIRE programs and related projects are key pillars for the development of Future Internet infrastructures, services and applications in EU.
- GENI and IGNITE programmes and related projects are further developing in US and IGNITE ambitions to develop 60 next-generation applications, reach 200 community test beds and coordinate best practices.
- Federation strategies will play a key role in creating the most effective and efficient venues for innovation.
- The similarities and main differences in the approaches followed in EU and the US were discussed, mostly with respect to the funding mechanisms, the dissemination, the grand challenge and the cooperation models (GENI/IGNITE, FIRE/FI PPP).
- The sustainability issue was also addressed mostly from the angle of the missions as perceived in EU and US.
- GENI and FIRE are the two worldwide leading initiatives of Internet experimentation. This is now time to make collaboration between GENI-FIRE more operational, also to the benefit of

global experimentation. The two leading projects for this collaboration will be SAVI (US NSF) and Fed4FIRE (EU EC).

- US IGNITE and FI PPP are also running somewhat parallel courses in developing advanced applications. US IGNITE will be featuring one of the FIA programmes at its Applications Summit on 24-26.07.13 in Chicago. This is the “Augmented Reality Collaborative Workspace Using Future Internet Videoconferencing Platform for Remote Education and Learning” using the TEFIS infrastructure. A relationship with Smart Santander is also expected.

Summary

The session was focusing on the EU (Future Internet Public Private Partnership and FIRE) and US (IGNITE and GENI) perspectives, analysing the differences and complementarities in the approaches, business, challenges and involved stakeholders. The session gathered up to 50+ participants in the room, providing the opportunity of a well-balanced mix of presentations, discussions and Q/As. The session contributed to further develop detailed mutual understanding between the EU and US approaches and identify synergies and convergence points. The discussion will be continued in the context of the forthcoming EC and GENI Engineering Conferences.

The session was kicked-off by **Serge Fdida** who explained the context and ambitions of this session, introduced the speakers and panellists and highlighted the US and EC approaches for Future Internet research. It has to be noted that **Didier Bourse** could not join the session due to personal issues.

Per Blixt introduced the latest developments on EC programmes and projects related to Future Internet with a specific focus on Future Internet Public Private Partnership (FI PPP) and FIRE. He detailed the current status of the FI PPP and in particular the 6 new Phase 2 projects. He then explained the forthcoming Phase 3 Call for proposals for (1) SMEs & Web entrepreneurs and (2) sustainability and take-up. He stressed the up-to-date FIRE ambitions and status, FIRE having the ambition to measure, compare and validate scientific results on realistic large scale testing platforms. He finally detailed the FIRE and FI ecosystem and the connections between projects.

Mark Berman introduced the latest developments on GENI. He reminded the GENI principles (slices and deep programmability) and explained how GENI is currently developing, e.g. through the development of sites (deployment of GENI racks on campuses), the experimenters uptake and the international collaborations.

Glenn Ricart detailed the latest developments in IGNITE. He stressed the IGNITE goals and the related involved stakeholders. The supporting funding is originated from National Science Foundation (NSF), Industry Partners, Mozilla-Ignite and Mission agencies. He explained the tight connection between IGNITE and GENI. He then provided examples of applications in the US IGNITE target domains of healthcare, public safety, education, transportation, advanced manufacturing, and clean energy.

The panel was then introduced by **Serge Fdida**. The panel was focusing on the following questions:

- 1) What are the key progresses achieved and the main issues faced?
- 2) What are the next challenges ahead?
- 3) What are the key lessons learnt by the different stakeholders (industry, research centers, funding agencies...)?

- 4) What are the forecasted innovation and business ahead?
- 5) How can we further develop synergies and cooperation between EU and US in the next period?

Piet Demeester detailed the Fed4Fire project that is developing a federation of FIRE testbeds supporting infrastructure (fixed, mobile, computing), service and applications experimentation. He explained the objective of supporting the whole experimentation lifecycle, from detecting the required resources up to analysing the experimental results. He also stressed the importance of leveraging the many international initiatives by adopting and adapting existing tools (developed both in EU and US). He also described the mechanisms to incentivize the utilisation of the Fed4Fire testbeds through open calls, the potential to support international cooperation and the importance of education and SME involvement.

Juanjo Hierro detailed the FI PPP Core Platform and Generic Enablers and stressed the challenge of building an open application platform. He insisted of the value that should be provided by the FI PPP, different but complementing the FIRE offering. He also exposed the means that they are developing to provide a broader dissemination of the FI PPP as well as be able to reach a large set of potential users.

Maurizio Cecchi provided the first set of public information on the newly contracted FI PPP Phase 2 XiFi project. He detailed the project scope and objectives and highlighted the initial five sites for experimentations. The initial XiFi approach is a two steps approach, (1) building the backbone between the 5 initial core sites with the support of GEANT and (2) enlarging the network to reach the Use Case Pilots, which may be using FIRE testbeds, EIT KIC ICTLabs or private infrastructures.

The panel discussion covered many aspects related to mid and large scale infrastructure-funding, mechanisms to involve stakeholders and users, sustainability, target of the projects as perceived on both side of the Atlantic. In addition, specific questions were raised towards the developments and rationale of IGNITE as this was the first presentation of IGNITE in EU. Likewise, there were many questions related to the involvement of SMEs. Finally, some points were stressed about how these projects can developed a tighter integration either locally (FIRE and FI PPP) or across continents (EU and US).

The panel closed with the announcement of the very promising collaboration between GENI-FIRE under the coordination of the two leading projects SAVI (US NSF) and Fed4FIRE (EU EC). The discussion will be furthered in the context of the forthcoming EC and GENI Engineering Conferences.

Want to know more about this session, read <http://www.fi-dublin.eu/eu-us-innovation-platforms/>

Recommendations

GENI and FIRE are the two worldwide leading initiatives about experimentally-driven internet research. This is now time to make collaboration between GENI-FIRE more operational, also to the benefit of global experimentation. The two leading projects for this collaboration will be SAVI (US NSF) and Fed4FIRE (EU EC). US IGNITE and FI PPP are also running somewhat parallel courses in developing advanced applications. US IGNITE will feature one of the FIA programmes at its

Applications Summit on 24-26.07.13 in Chicago. This will be the “Augmented Reality Collaborative Workspace Using Future Internet Videoconferencing Platform for Remote Education and Learning” using the TEFIS infrastructure. A relationship with Smart Santander and US IGNITE should also be developed. The session was very informative as to show the various paths taken in EU and US and match the objectives and potential impact.