



## FIRE Session in FIA Valencia

Susanna opened welcomed people to the session. The session is divided to parts; what is happening now in FIRE and how FIRE 2.0 will look like, based on portfolio analysis.

Around 50-60 people participated in session.

### Seminar program and presenters:

- Session 1 9-10 FIRE until today  
White Paper on Experimentally-driven research (Tasos Gavras)  
FIRE Portfolio analysis (Scott Kirkpatrick, Dirk Trossen, Jerker Wilander)  
FIRE internationally (Serge Fdida)
- Session 2 10-11 FIRE 2.0  
FIRE plans (Representative of call 5 projects)  
Create European market for testing and experimentation facilities (Esteve Afmiral)  
Including end-users (Michael Nilsson)

### Objectives of Sessions:

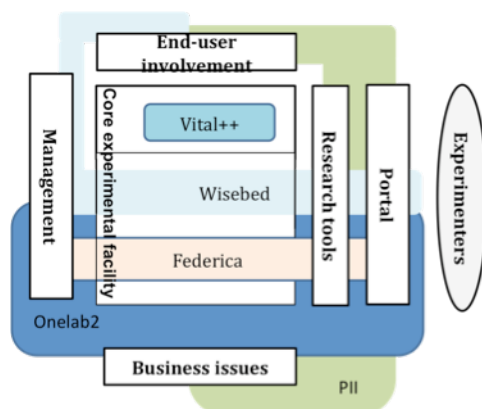
#### 16.4.2010 at 9-11

The FIRE is evolving from it's first phase into second, more extended and developed bouquet of research and supporting facilities to be offered. This is reflected in the organization of the FIRE session for FIA Valencia: the first half of the session is dedicated to the current state and result of FIRE; the second half looks forward and gives first insight to FIRE 2.0 and plans in phase 2 from projects.

#### Part 1

Firstly, the concept of multi-disciplinary experimentally-driven research has been elaborated in the FIRE community and conclusions of this are published.

Secondly, there are 12 research and facility projects that have been running for soon two years. Another set of FIRE projects has been selected and will be launched autumn 2010. The status of the running projects, the approaches taken, maybe somewhat evolved scope and course during the projects' life-time, but also the overall landscape of experimentally-driven research and its supporting facilities including both "old" and new projects as the first achieved milestone within the FIRE initiative has been analysed. This analysis on the new landscape of FIRE, both in terms of research and the facility has been carried out by four experts, with close cooperation of projects.



Thirdly, FIRE has strong links beyond Europe, and the



## FIREWORKS

every-day co-operation with American and Asian counterparts gives important leverage and hook to the FIRE activities, yet it is demonstrated that the global development of experimental facilities and their federation is strongly anchored in Europe.

### **Part 2**

The current set of FIRE facility projects covers much of the basic structure. Second wave projects will fill some gaps, moving the experimental facilities focus on higher layers, i.e. on services (BonFIRE, TEFIS), also on converging technologies in terms of transport and taxonomy (Openflow), filling the gaps of the physical world, with e.g. testbeds dedicated to cognitive radio (CREW). All facility providers are preconditioned to work for the common interface and a portal of FIRE experimental services and to be open for all research customers in a transparent way. FIRE-wide federation and sustainability concerns remain challenges for the new projects and customers to tackle for. Aspects needing for further contribution from the community are common high-level federation model (in practice, operational terms), standardization, business cases for the addition of commercial test-beds as well as brokering and common management FIRE testbeds.

### **Overview and discussion topics in each presentation:**

#### **White Paper on Experimentally-driven research: Tasos Gavras, Eurescom**

- FIRE is multi-disciplinary research environment, dynamic environment
- Systematic experimentation, no theoretical experimental model does not exist, it is in own
- Crystallizing experiment, in which environment experiment will run; 4 priority issues; verifiability, reliability, repeatability and reproducibility
- What is experimentation, what is testing? ETSI has defined what is testing. Experiment can be reproduced.
- Two views of distinction: testing and experimentation, draw line btw testing and experimentation, can we agree these definitions?

#### **FIRE Portfolio analysis: Scott Kirkpatrick, Hebrew University of Jerusalem**

- What we have achieved in earlier calls, what is missing, what needs to be addressed in future calls
- FIRE landscape/projects (slide):
- “Wise mens’ report”: what’s missing, suggested collaboration structure (map/ figure), addressed the fact that end-users and researchers are very different people, different technical issues came up
- Call2; bad news, 15 projects, does not produce “federated FIRE facility” some yield only architecture, not sustained after project, 5 projects in 2009 FIRE offering; 2 roads: new technology, old technology more usable to users, new technology builders are keeping technology by themselves
- Call2 good news were; there are users and use cases available; Federica; PlanetLab Europe;
- Improved understanding of federation; peer to peer access, heterogeneous federations; creating hierarchy; much debated what is federation, what can be won through federation? What kinds of needs arise, gains? Cost savings, prototype federation in the future, legal and operations difficulties

#### **FIRE internationally: Serge Fdida, UPMC-LIP6**



## FIREWORKS

- European strategy to testbeds is important, but more important is international collaboration
- Important to develop testbeds
- Limited usage of testbeds
- Going “Glocal”; it is not enough to do alone, competition, share best practices, federation
- GENI-initiative, cost acceleration, continues process of development, deploying different technology over the USA
- Brazil CpQP, support of FUNTTEL; phase 2 of project GIGA
- China, important, CERNET2; 3TNET, terabit optical, interested to cooperate
- ASIAFI; to coordinate R&D on FI ; includes, education, events, asiafi.net
- Joint workshop on Federation (Princeton, May 2010)
- Annual joint EU/Japan seminar in October
- Joint Brazil /EU/US workshop on Testbeds for future internet; ongoing process, interested partners involved
- What is federation? It is also about managing complexity, the reasons for federation revolve around mutual benefits, but in practice are quite different...
- Many federation forms; standards...
- Building a facility; continuity is important! Something sustainable, depending on funding mechanisms, different funding mechanisms in different places, intensive international collaborative effort required, federation concept, it’s a lot about users!
- Comment by audience; Users are different everywhere, different kind of federations; users are rich source of experimental

### FIRE plans: FIREStation, Jerker Wilander, Dimes

- Over-lapping efforts, also in Call5 (5 IP projects); opportunity for collaboration, what we should share and not, strategies are how to run experiments, all projects are doing experiment data storage, also portal is same issue, lot of to do in business/policies, if we should federate, only one agreement/agreement
- Do not do use experimental research; because it is difficult built experimental research, “not ready to put users in system”, long term building experience, requires lot of money, PlanetLab connections/facilities are used, but not European? Why?
- Test objectives; testing novel architectures (most of projects are ding that), discouraging is user-facing testing (not enough time spend), long process to get users involved
- Comment form audience: Collaboration with US?

### Bonfire, Test brokering with Teagle: Florian Schreiner, Fraunhofer Fokus

- Service domain, analyze how to federate with Federica etc..., Targeting service research community
- Facility for large scale testing; experimentally facility resource federation with Teagle [www-fire-teagle.org/](http://www.fire-teagle.org/)

### Living Labs Lessons learnt: Esteve Almirall, Universitat Pompeu Fabra

- New societies
- Living labs as open innovation intermediaries; open innovation; who invented mountain bike? Source of new ideas and innovation; users, value chain of the project; TELEICTUS-project (2007-now)



FIREWORKS

- Why users? R&D; innovations come from; innovation as a societal process ....
- We want sophisticated users

Including end-user: FIREBALL, Michael Nilsson, CDT

- Who can be involved? Project should select what kind of users they want; there is not method to be available; testing technology, or end users tested in testbed;
- Users role? Level of control? Responsibility? Suitable structures
- Benefits of testbeds; user involvement and showing that
- Challenges; listen to users

More information on all FIRE projects at <http://www.ict-fireworks.eu>

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