



FIREWORKS



ICT 2008 Lyon
Networking Session N.112:
**Integrating Future Internet Research and
Experimentation activities across Europe**

27 November 2008

at 11-12.30, room Rhône 1

http://ec.europa.eu/information_society/events/cf/item-display.cfm?id=836



FIREWORKS

Agenda

1. FIRE vision: Max Lemke, DHoU F4, EC
2. OneLab2 use scenarios: Scott Kirkpatrick, Hebrew University of Jerusalem
 - Testing and tuning today's integrated media and data applications with novel interactions
 - Testing and validating new protocols: wired, wireless, and delay-tolerant
3. PII use scenarios:
 - Concurrent testing, Jean-Claude Imbeaux, FT-Orange labs
 - UDI (User-Driven Innovation) testing, Kimmo Ojuva, DIMES
4. SEA project use scenario, Anastasius Gavras, Eurescom
5. Panel discussion, chair Susanna Avéssta, DIMES
6. eMobility Testing WG Manifesto, Brigitte Cardinaël, FT-Orange labs



FIREWORKS

Summary

- Experimentation is essential to testing innovative ideas that will have impact on the future Internet.
- The FIRE initiative and its two major testbed federations, OneLab2 and PII are in complementary ways bringing experimental capabilities to a broad range of European groups.
- This session will bring together ICT experts exploring critical issues in their testbed requirements in the area of Future Internet research and experimentation.
- We expect a dialogue between ICT experts from industry and academia.



FIREWORKS

Two main objectives

- Describing the complementary offerings and near future prospects of OL2 and PII, how customers of one or both can take advantage of the activities that each is offering through discussions of concrete use cases
- Finding common understanding among ICT experts in order to define a European Experimental Facility for future wired, wireless, mesh and delay-tolerant internet solutions meeting the evolving research needs



FIREWORKS

Comparison: Simplistic

1. FEDERICA

- Networking technology (e.g. control planes for optics rather than data plane) to be tested – Virtualising network resources, channels, routers and switches

2. PlanetLab/OneLab2

- Networks to be tested
- Virtualising computer resources




3. Panlab/PII

- End systems to be tested
- Using the network



FIREWORKS

Comparison: More in detail

			
Context	<ul style="list-style-type: none">• Converged Telecom Internet Service & Network Environments• Industry focus	<ul style="list-style-type: none">• Distributed system• IP networking• Research focus	<ul style="list-style-type: none">• Networking Research• Network technology agnostic environment• GÉANT, NRENs
Platform	SOA-NGOSS (e.g. to federate IMS based testbeds among themselves and with others)	PlanetLab – both public and private versions	Gigabit transmission equipment and computing nodes both capable of virtualization
Focus	<ul style="list-style-type: none">• Converging network, service platform and application infrastructures• Complete Control over Dedicated Resources• Reproducibility	<ul style="list-style-type: none">• Shared Resources• Real World Environment• Applications enduring over time• Partial Control• Variability	<ul style="list-style-type: none">• Virtual slices composed of networking and computing resources• Isolation of experiments in slices• Operational environment• Reproducibility & monitoring



FIREWORKS

OneLab2

PII

FEDERICA

Experimentation and Applications

PlanetLab for persistent applications, Emulab and OMF as experiment dispatchers

Services and applications, interoperability, IMS, etc.

Measurement and Monitoring

DIMES, ETOMIC active measurement tools, with user interfaces and data archives and packet tracing

Re-use of testing tools etc.

Control and Dispatch

PlanetLab functions

SOA and web services

FEDERICA main contribution

Operations and Management

Wireless, DTN, and 'beyond IP' protocols (ANA)

E.g. wireless testbeds

NRENs' network



FIREWORKS

Panel discussion

- What are the coming needs, what are the priorities for testing?
- Experimentation vs. testing
- What is large-scale?
- Real-life data into research use
- Concepts to be tested
 - In which phase customers dare to come 'out of the house'?
 - Under which terms?
- At which stage OL2/PII mature enough to start offering to any third parties?
 - Under which terms?
- What to be encouraged to be validated in FIRE Facility?



FIREWORKS

Conclusions

- Two different types of use cases
 - Testing ideas fairly close to product with the intended customers -> PII/Panlab
 - Research dilemmas -> OneLab
- Legal issues that arise from the use scenarios also vary correspondingly
 - Issues of keeping intellectual property confidential
 - Norms of the research testbeds