

*Future Internet **R**esearch and **E**xperimentation*

FIRE / PPP Experimentations

Serge Fdida

Université Pierre et Marie Curie (UPMC)

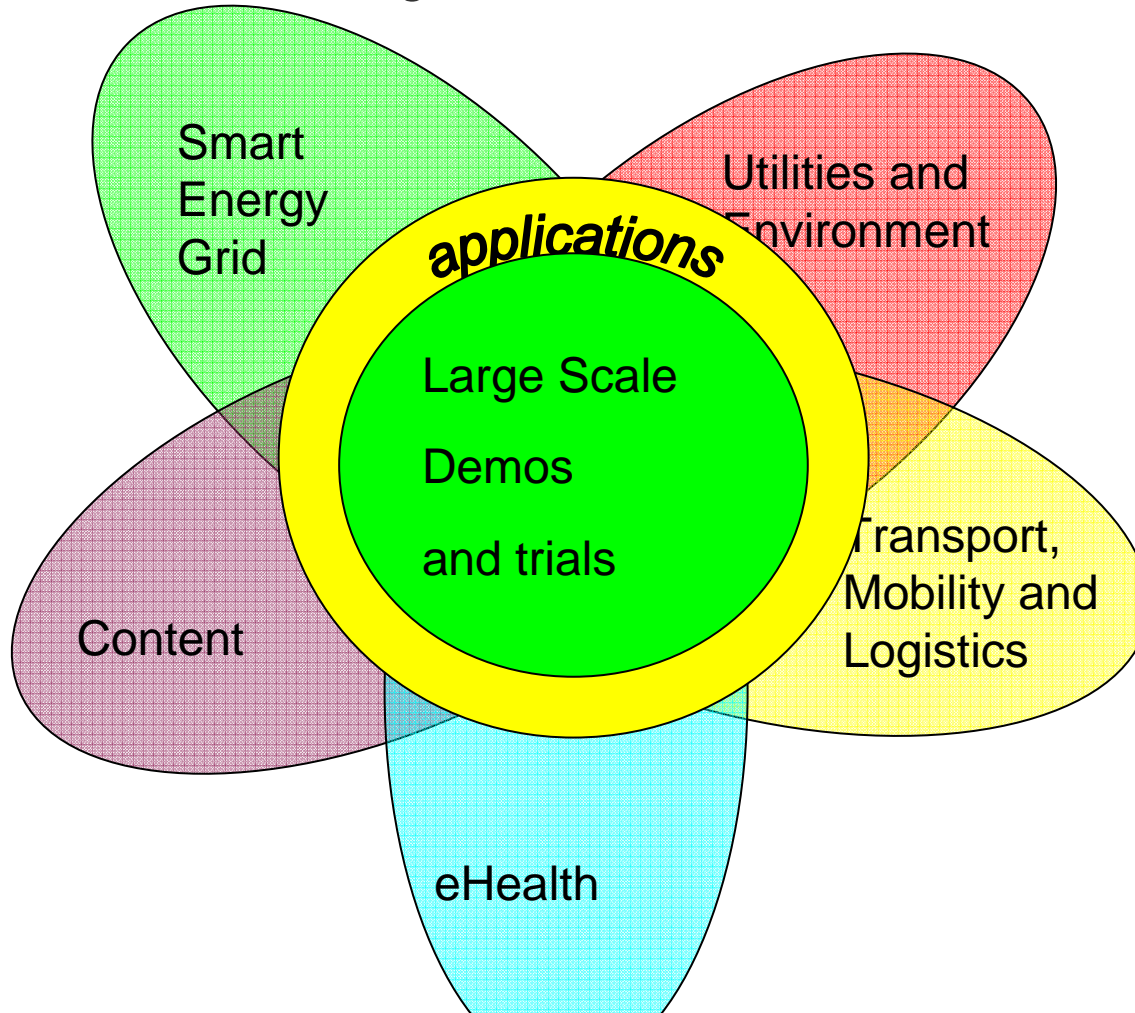
Laboratoire LIP6 – CNRS

France

<http://www.onelab.eu/>

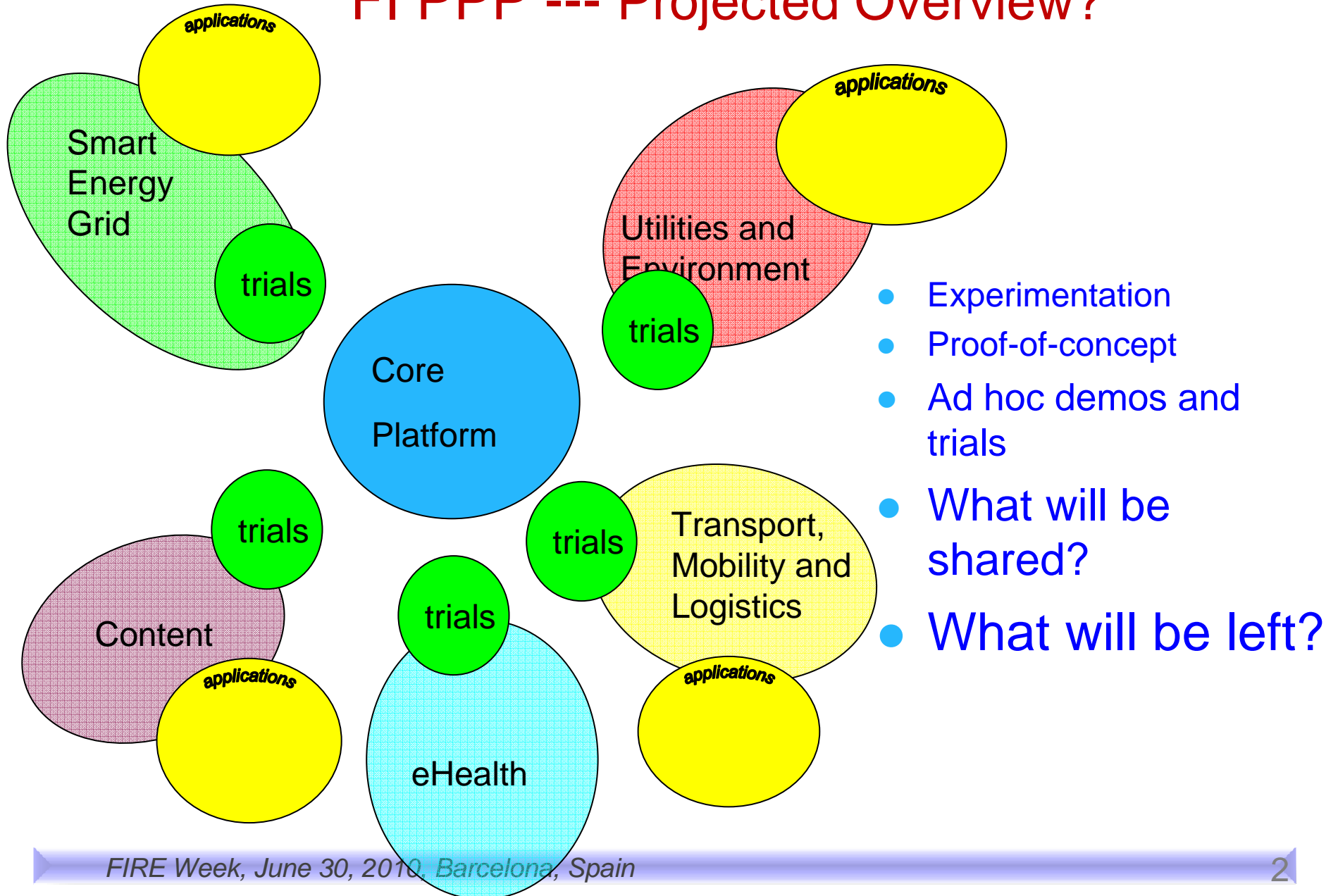
FI PPP Program & Projects – Global Overview

FI PPP – Maximizing the Common Enablers



- Examine the basic enablers in each area
- Determine the common enablers
- Determine the enhanced enablers
- Work out how to provide a core platform that supports the enablers
- **Build it and show the world**
- **Use it in large scale trials and tests**
- **Use existing advanced infrastructures to test future Internet functions**

FI PPP --- Projected Overview?



- Experimentation
- Proof-of-concept
- Ad hoc demos and trials
- What will be shared?
- What will be left?

PPP foundation

source: L. Rodriguez Rosello presentation

- « **Integration** will not happen in many small projects »
- « The PPP target is to enhance **all sectors** with the future Internet »
- « Lead by example: **large scale trials and demos** »
- « **Synergy**: build on existing results and resources »
- « Timing » and « International Impact »

Onelab Contribution The « Glocal » approach



Federation in OneLab

- **Single sign-on** (legal chain between actors)
- Each testbed to master its own **policies**
- **Resource description** up to underlying testbeds
- Access **ALL** available resources (modulo policies)
- Federate **monitoring** tools
- **Incremental** growth
- It's all about managing **complexity**
 - Complexity is an ultimate limitation of testbeds capability and size

OneLab approach to federation

- Control plane (provisioning):
 - SFA (Slice-based Federation Architecture)
- Experimental plane (handling experiments and data):
 - Leverage on OMF
- Monitoring (observing the environment):
 - Developed OneLab-specific tools
 - Others are available out there as well

OneLab Contribution (1)

The Onelab Federation of Testbeds

<http://www.onelab.eu/index.php/testbeds.html>

- PLE : PlanetLab Europe (1000+ nodes) and others (6PUOA, PKK, PLJ, PLC, Emanics)
- Wireless testbeds access (Nitos testbed already out there, 50+ wifi nodes, Wimax soon)
- Soon SensLab (Sensing testbed thanks to the newly funded FLab Project)
- Strong cooperation with FEDERICA
 - See also the FIRE NOVI project

Onelab Contribution (2)

The Onelab Expertise

- Best practices
- Tools (Monitoring),
- Operation (including legal)
- International peering (China, Japan, Korea, USA, Australia, ...)
- **Free Open Source Software**
 - MyPLC into CDN
 - OMF into Wireless
 - SAC for DTN based networks

Onelab BIG future

We believe that the FEDERATION concept provides the *foundation* for the future internet

The Facility as one open shared virtualized resource

A transition plan

Therefore, a source for PPP Components



See Federation Workshop (Fire-NSF. Princeton, May 2010)

Onelab Federation of Testbeds

Established since 2007



- **BACK-UP SLIDES**