Towards Federated European Testbed infrastructures – PII

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Some background

- ...integrate and validate, in the context of user-driven large scale testbeds, the state-of-the-art technology that is essential for preparing future upgrades of the infrastructure deployed across Europe...
- ...foster the early deployment in Europe of Next Generation Information and Communications Networks...
- ...develop roadmaps and strategic guidance for infrastructure development in Europe...
More background

- contribute towards strengthening and enhancing the European initiatives on Research Infrastructures...
- promote interoperability across heterogeneous technology domains, facilitate interoperability of solutions across different scientific and industrial communities...
- enhance, complement and exploit synergies with the relevant national and international initiatives...
Panlab Support Action in FP6

**What?**

Vision

Define vision and roadmap for the Pan-European Laboratory

**How?**

Mechanisms

Develop mechanisms to enable Pan-European Laboratory activities

**Who?**

Partners

Specify major participants (partners and customers) of the Pan-European Laboratory activities
Federation Framework

- The main result of Panlab (SSA) to date is the Panlab federation framework, which includes recommendations for
  - Legal
  - Operational
  - Technical infrastructure

Panlab Evolution

2003 - Abstract concept in EUREKA CELTIC
2006 - Panlab support action in FP6
2008 - Infrastructure Implementation (PII)
2010 - FIREworks

FP6 2002 - 2006
FP7 2007 - 2013
EUREKA CELTIC 2003 - 2011
Panlab general characteristics

- Open federation as a design principle
- Sustainable research infrastructure
- End-user role and experience
- Societal and economic impact
- Openness and dynamicity
Federation of testbeds

- Interconnection of two or more independent testbeds for
  - Creation of a richer environment for testing and experimentation
  - Increased multilateral benefit of the users and providers of the individual testbeds

- Owned by different organisations (administrative domains)
  - However, considered as being part of a single resource
Federation of testbeds

- Geographically disperse
- Technologically diverse
- Common management framework under a common management authority
- Dynamic and evolve over time based on the requirements of the users
Enable and facilitate

- Interconnection of the best laboratories to test specific systems or services
- Technology, system, and service integration in a European/global environment
- Technology and service validation/verification
- Ultimately ... certification of products
Create a market for testing facilities

- Metrics for meaningful comparison of capabilities of independent testing sites
- Transparent classification and rating
- Incentives for competition
  - Maintain high quality of testing facilities
  - Always state-of-the-art
PII = Panlab Infrastructure Implementation
High level view

SOA Test Service Composition, SOA Tools

PII Central Coordination Instance

TEAGLE

Configuration, Test Execution, Management

Publish capabilities, services, features, results
Connectivity on demand

- TB1
- GW
- NGN, open Internet, or dedicated network (GÉANT2?)
- TB2
- GW
- Virtual TB3
- Modular Gateway
- Virtual connection
Functional entities

- Resource discovery
- Resource set-up and provisioning
- Resource monitoring
- Connectivity configuration and control

Control Plane (unified messages)

Testbed A Testbed B

Resource Plane (resource specific msg.)

Transport Network

игровой анализ

Resource Plane (resource specific msg.)
Reference points of the PII architecture

Specify all protocols and procedures performed on these reference points.
Customer Portal

- Request for VCT (Virtual Customer Testbed)

Portal

TEAGLE

T1 Reference point

Common Control Plane

PTM

Panlab Testbed Manager

Resource Specific Commands

Resource Adaptors

Testbed Resources

R1 R2 R3

T2 Reference point
- TEAGLE issues provisioning requests via common control plane
- PTM (Panlab Testbed Manager) has “device-driver-like” modules for specific testbed resources
- Resources can be controlled via standard interfaces (e.g. SNMP) or proprietary interfaces (this is when “driver” is needed -> PTM adaptor must be implemented)
Demonstration scenario

DOMAIN A: FOKUS (DE)
- MONSTER IMS client framework
- Panlab Partner
- IMS Core
- XDMS
- Presence Server
- SUPS = PTM

DOMAIN B: UoP (GR)
- MONSTER IMS client framework
- Panlab Partner + Panlab Customer
- IMS Core
- XDMS
- Presence Server
- SUPS = PTM

DOMAIN C: OCTOPUS (FIN)
- MONSTER IMS client framework
- Panlab Partner
- IMS Core
- XDMS
- Presence Server
- SUPS = PTM

Search & Configure

VPN

DNS

SMS Gateway

University of Patras

BCT IMS Client

OCTOPUS

UoP

Panlab Partner

MONSTER IMS client framework
Welcome to the Teagle Portal. This is a project related to the Panlab concept. The Teagle Portal provides information about our partner testbeds and allows you to manage your Private Virtual Test Lab.

What is a Private Virtual Test Lab?

What is Teagle?

How to get started?
Contact and further information

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Upcoming events

- Demonstration of deployment capabilities at Celtic event, Paris, 11-12 March 2009
- TridentCom 2009, 6-8 April 2009, Washington D.C.
- ONIT @ TridentCom, Open NGN and IMS Testbeds
- Future Internet Assembly, Prague, 11-13 May 2009