

The Role of Test-beds in the NG Internet and Services Evolution

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Test-beds' Objectives
EMANICSLab
Gaps



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Test-beds' Objectives

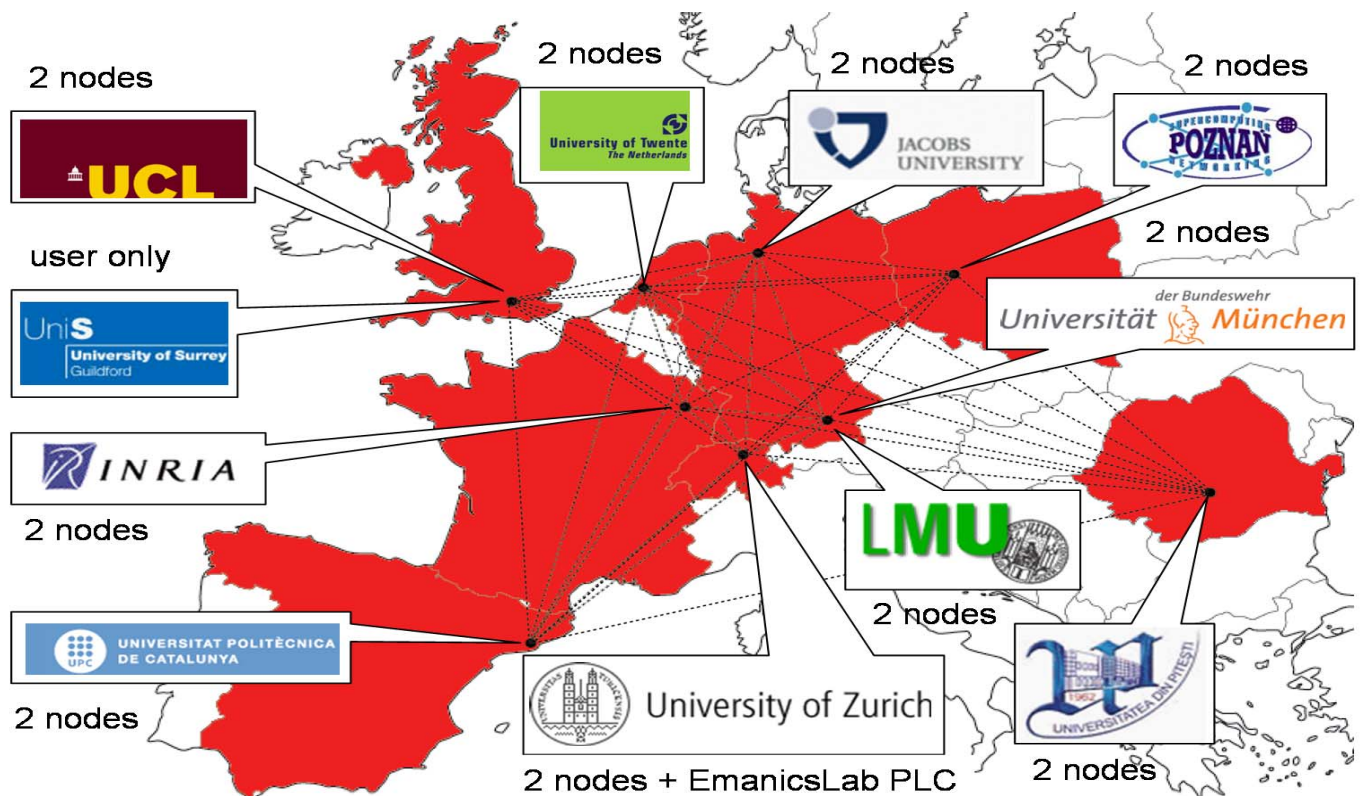
- Test and experiment **new/advanced networking aspects**
 - Devices, protocols, mechanisms, control, services, ...
 - Independent of productive operations, but accessible
- Checking on **clean slate and migratory approaches**
 - “Better” than simulative investigations, but complementary
- Serving as “**realistic**” (application-dependent)
 - Topology, parameterization (delays, link speed, error rates, ...)
- Easy-to-use, but **controlled infrastructure** assumed
 - Defined node characterizations (minimal standards)
 - Centralized operations management
 - Clear technical and legal guidelines
 - Open for registered users or user groups

“Test“ used in terms of tests and experiments!

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<https://emanicslab.csg.uzh.ch/>



Today's Gaps of Test-beds

- There are **too many and too few** test-beds in place!
 - Too many similar ones (IP, optical, project-driven)
 - Too few different/open ones (services at different layers)
- Test-beds major **drawbacks**
 - Too many unknown “availabilities” of nodes (node failures)
 - Too heavy load (interference) depending on users’ activities (too large)
 - Missing heterogeneous measurement comparisons and “assessments”
 - Lack of federations (but this is a “research” topic on its own)
- Urgent **needs**:
 - Separated, but federated test-bed(s) for optics, services, and control with a homogeneous access and usage scheme
 - Combination of test and experimental infrastructure
 - 4-6 year funding of operation after initialization periods

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