

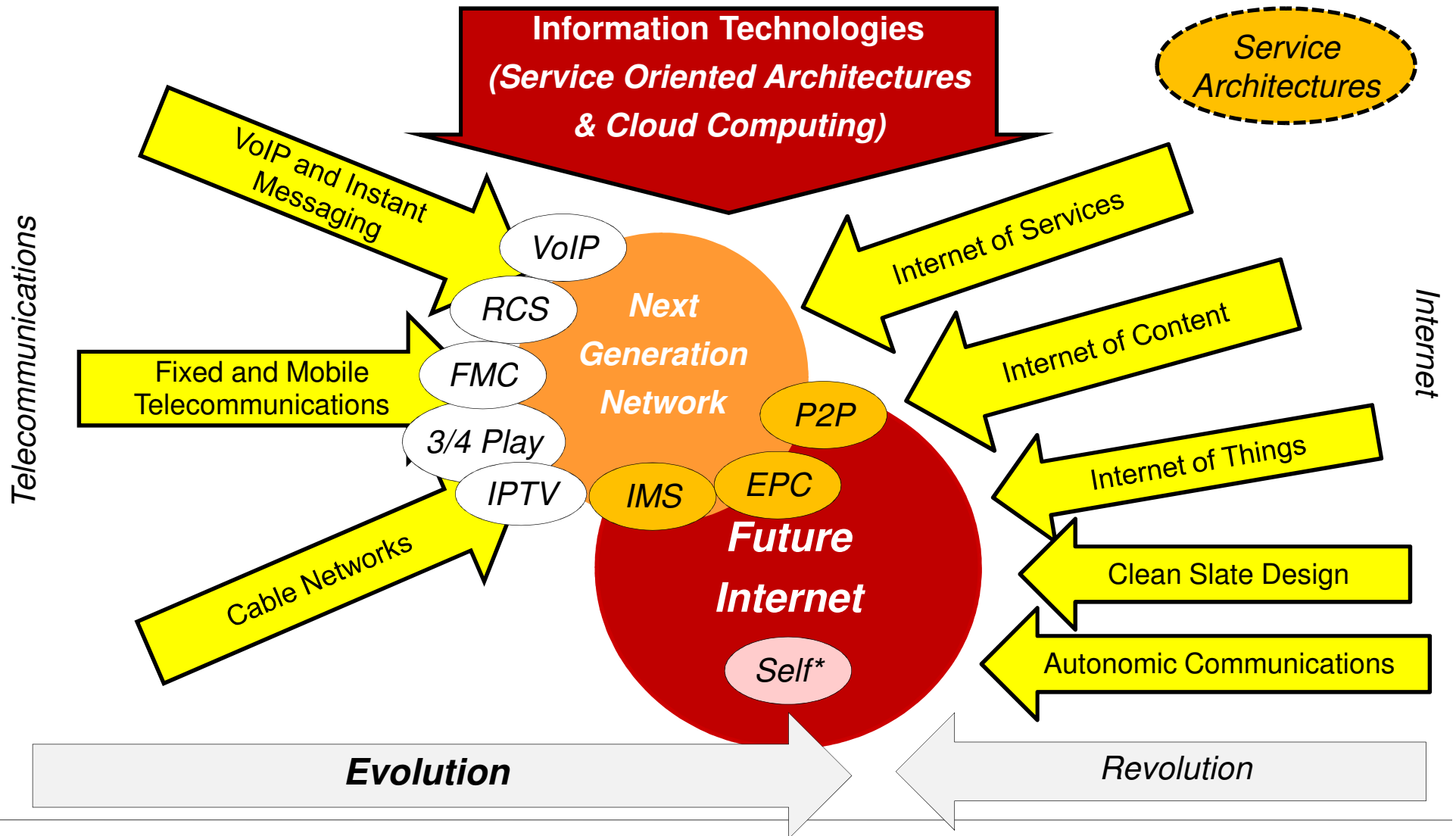
How to stimulate the use of experimental facilities

Lessons learned from the FOKUS Technology Playgrounds

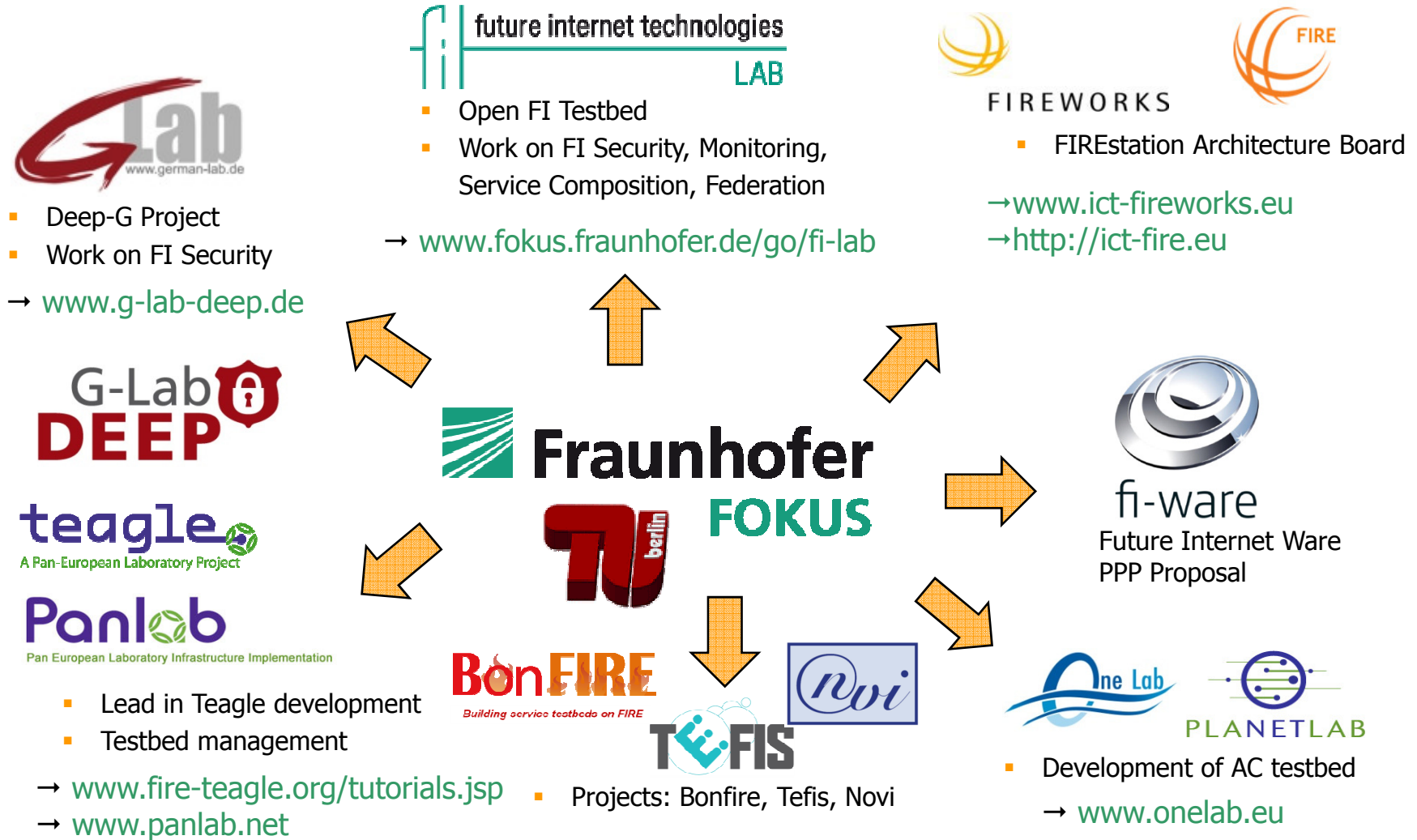
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Backward Compatibility is key: NGN Evolution toward Future Internet






FOKUS is participating in major FI Testbed Initiatives



Key to success for experimental facilities

Lessons learned from FOKUS / TU Berlin



- An experimental facility needs a clear scope and identification of the customer/users
 - Functional scope: networks, service platform, specific application domain ?
 - Time scope: long term (clean slate) vs. medium term (evolutionary) approaches ?
 - User/customer scope: support of academia or industry or both?
- Different approaches for providing a testbed:
 - Toolkits for inhouse testbeds vs. joint infrastructure offering vs. federated testbeds
 - Example: Open Source IMS Core vs. open IMS playground vs. PII 
- Importance of technology backward compatibility, standards compliance and linkage to commercial open developer platforms
 - Example Open IMS Core and OpenEPC as 3GPP reference implementations 
 - Example: FOKUS OSTP vs Open Developer Garden Portal of DTAG 
- **Lesson learned:** The closer experimentation gets to the market (*shift from "R" to "D"*) the more challenging is the use of an open platform (→ IPR Protection!)
 - Example: Connecting to the FOKUS FUSECO Playground vs. OpenEPC Toolkit to establish a private FUSECO Playground



Key to success for experimental facilities

Lessons learned from FOKUS / TU Berlin



- Provision of an Open Source Tools for testbed setup and federation
 - PII Teagle Tool
 - Example: Teagle and packet tracking tools for FIRE and national facilities
 - Teagle is planned to be used for ETSI IMS/EPC Plugtests in 2011
- How to stimulate testbed adoption
 - Create awareness via tutorials, webinars, workshops and „showrooms“
 - Example: See FOKUS IMS Workshop series and new FUSECO Forum
- Open Testbed Challenges:
 - Legal Issues – how to provide infrastructure access to third parties?
 - Payment issues - who pays for the provided testbed infrastructures
 - Company security policies (testbeds run in front of the firewall!)
 - Constrain resource sharing

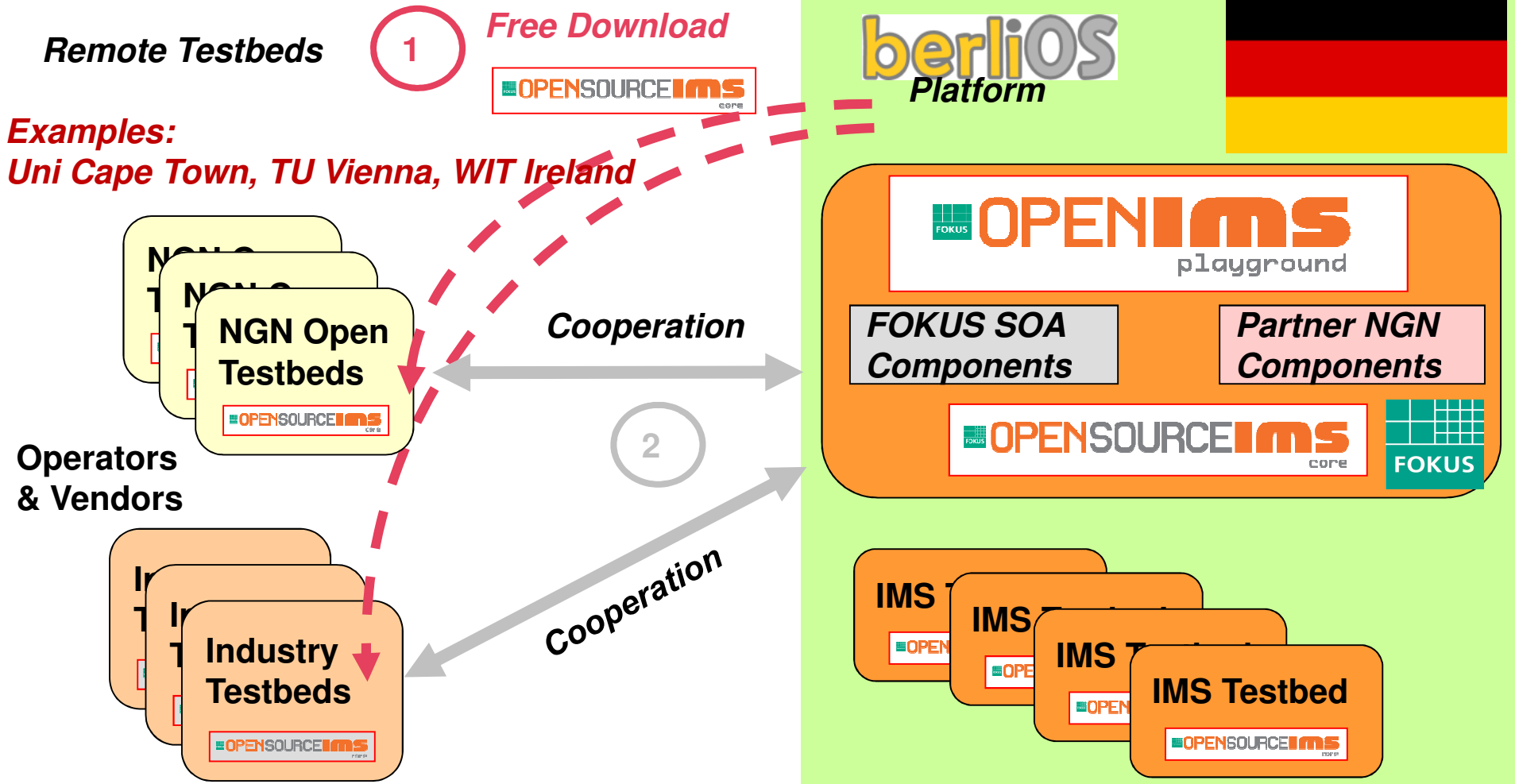


Useful Links

- Fraunhofer FOKUS NGNI Competence Center: www.fokus.fraunhofer.de/go/ngni
- TU Berlin Chair for Next Generation Networks: www.av.tu-berlin.de
- Open IMS Core Project: www.openimscore.org
- Open IMS Playground: www.open-ims.org
- Open SOA Telco Playgorund: www.opensoapplayground.org
- Open EPC Project: www.openEPC.net
- Future Seamless Communication Playground: www.fuseco-playground.org
- FUSECO FORUM: www.fuseco-forum.org
- NGN to Future Internet evolution Lab: www.ngn2fi.org
- Future Internet testbed tool Teagle: www.fire-teagle.org



Backup: FOKUS provides Testbeds to both Academia and Industry



Examples: South Africa, Korea, Indonesia, Japan, ...

Examples: O2, T-Com, Arcor, NSN, Ericsson

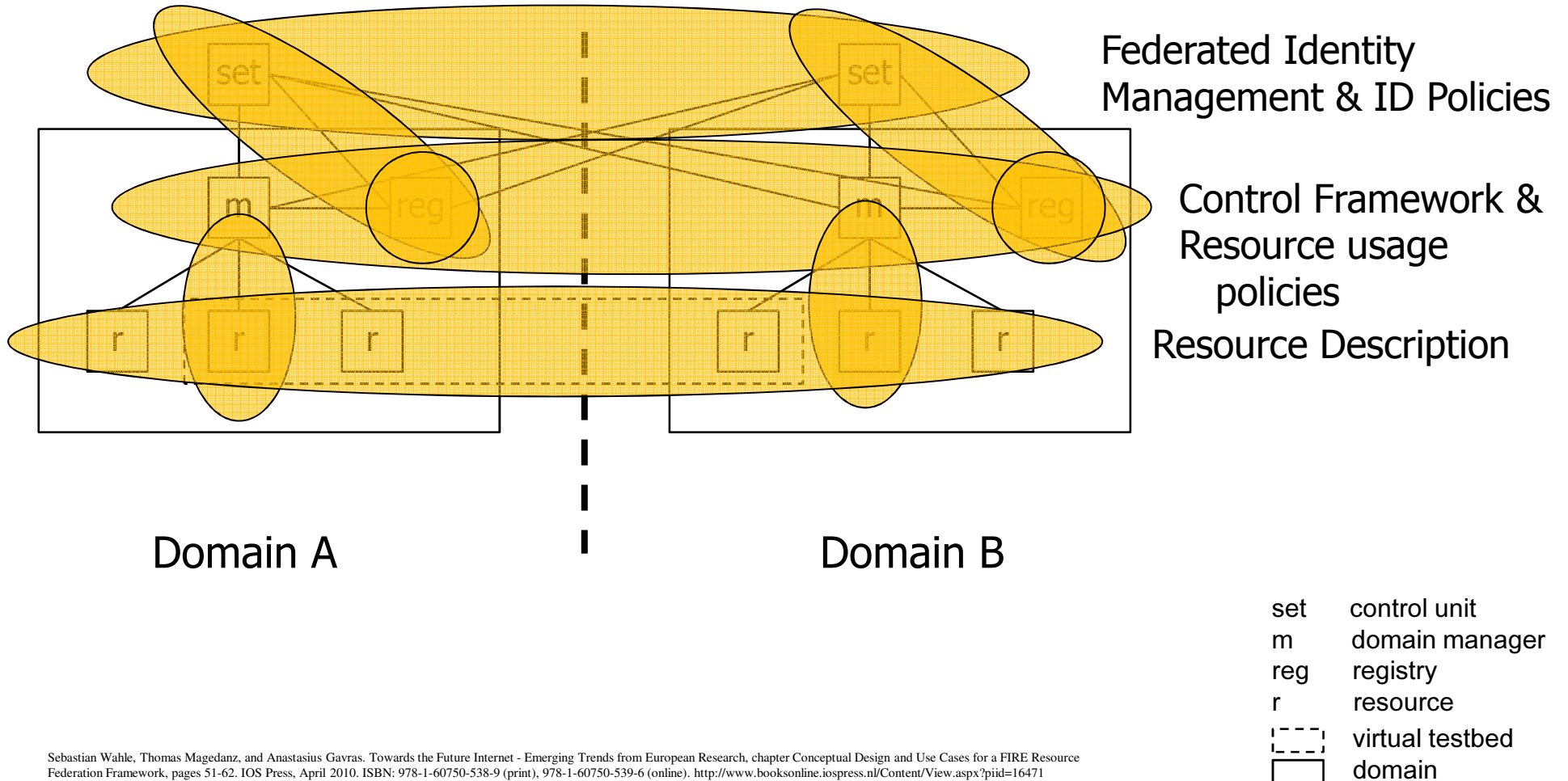


Checklist for successful FIRE experimentation

General comment: Today we already have a number of good approaches and prototypes but we have to align them and define a clear process on how to use them

- (1) Select the best testbeds (criteria: scientific citations / industry usage)
- (2) Agree on federation framework, specifically:
 - Control framework / provisioning interfaces
 - Identity Management (Ispec)
 - Policy description (Pspec)
 - Resource description (Rspec)

Federation Challenges



Sebastian Wahle, Thomas Magedanz, and Anastasius Gavras. Towards the Future Internet - Emerging Trends from European Research, chapter Conceptual Design and Use Cases for a FIRE Resource Federation Framework, pages 51-62. IOS Press, April 2010. ISBN: 978-1-60750-538-9 (print), 978-1-60750-539-6 (online). <http://www.booksonline.iiospress.nl/Content/View.aspx?piid=16471>

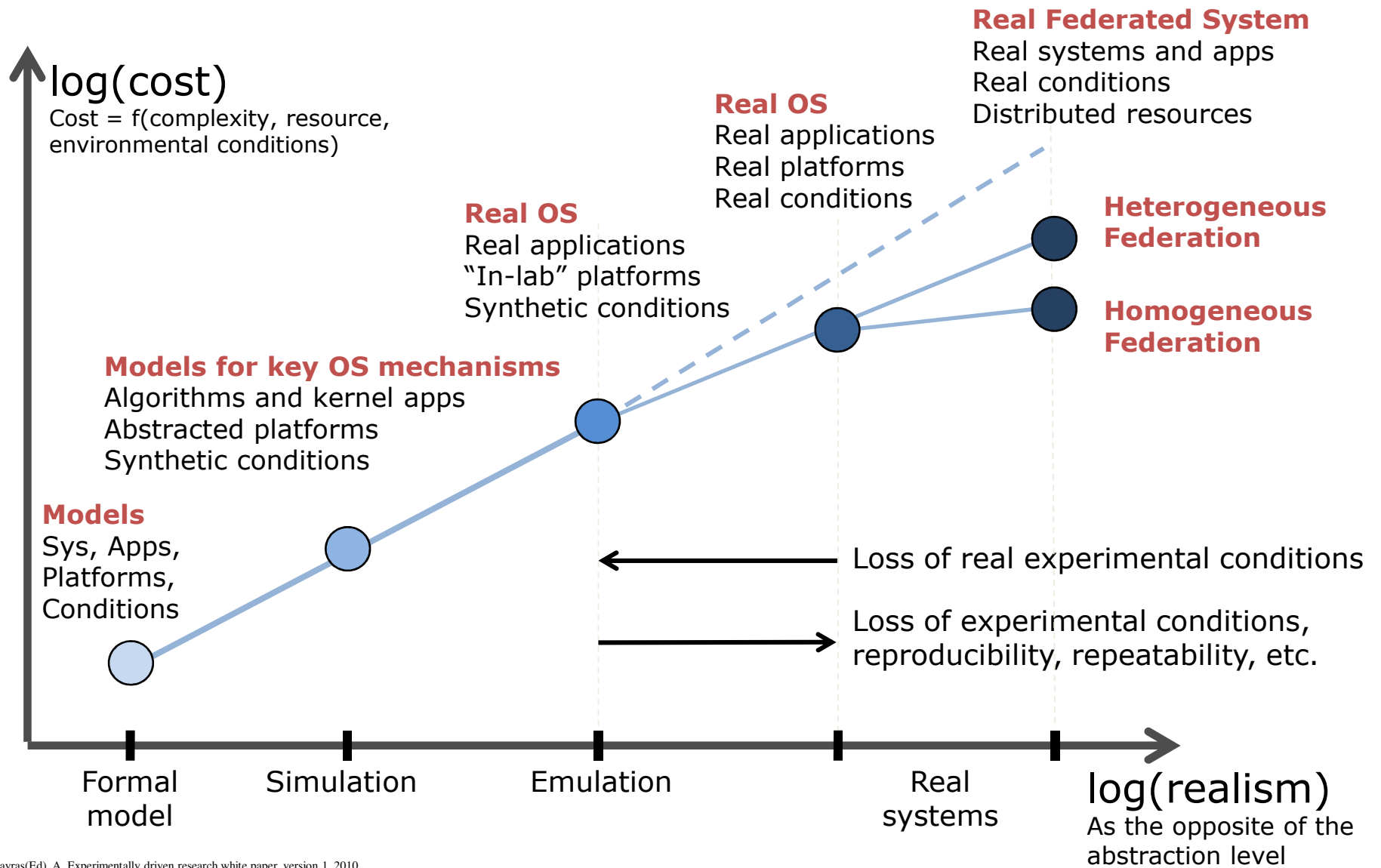


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- (3) Build a federated system based on (1) and (2). Select & implement example use cases.
- (4) Demo, Demo, Demo, Tutorials, Tutorials, Tutorials
- (5) Agree on methodology for defining & executing experiments





Gavras(Ed), A. Experimentally driven research white paper, version 1, 2010.



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- (6) Fund experiments that make use of the facility
- (7) Enable results publication and comparison -> FIRE Portal
- (8) Evaluate results (criteria: scientific citations / industry usage/exploitation)

