



Enabling New Research and Federation

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TECHNICOLOR. 

Testbeds connected to Onelab

■ OneLab2 is the integrator of multiple projects

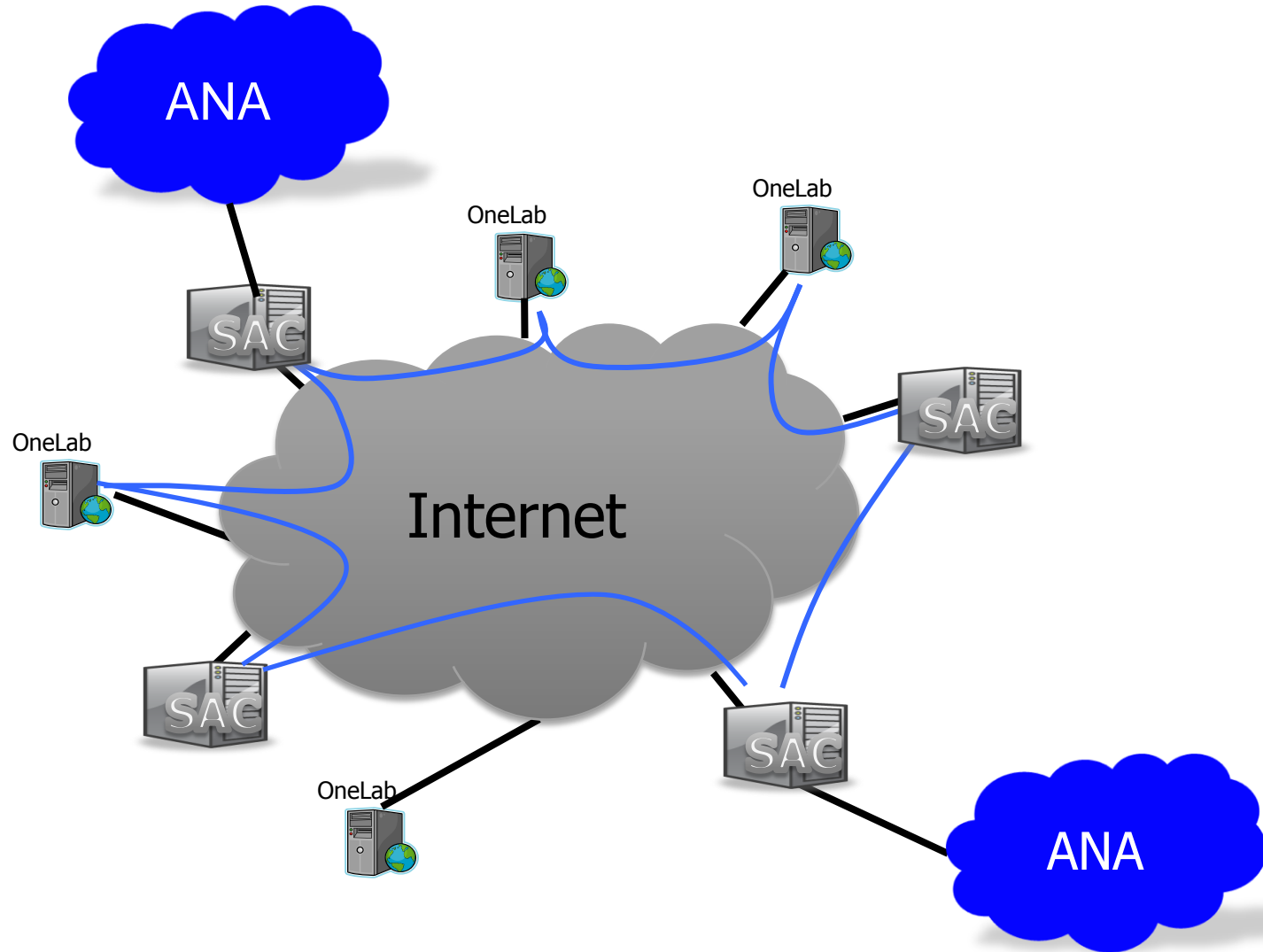
- Part of the SAC workpackage in Onelab

■ Besides connecting IP based networks, Onelab will federate with non-IP networks

- ANA (framework that allows to host multiple networking stacks – specifically non-IP network stacks)
- Hagggle (platform for opportunistic networking)
- DTNng
- Home networks / NanoDatacenters



SAC Extension



ANA Extension

Toscana Testbed v1.7
autonomic network architecture

username

Map status
Last update
Sun Dec 07 14:07:25 CET 2008

Map status

ID: 0003-492b-d497-0e42
neighbor 3 : 000a-492b-d855-ad1e
neighbor 2 : 0001-4843-c720-5c3a
hostname : UBasel-anahost-2
partner : NEC
shortdescription : Linksys testbed host at UBasel - pointing to CJs house
contact : Christophe Jelger, christophe.jelger@unibas.ch
location : Heidelberg, Germany
neighbor 1 : 0006-492b-bb8a-1b7b
Last seen on : December 2, 2008 5:31:05 PM CET

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Map information

- Green nodes are online.
- Red nodes are offline for longer than 20 seconds.
- Orange links indicate that only one node is the other node's neighbor.

■ Not only nodes, but networks

■ Clean Slate networking approaches

- Pub/Sub
- IP
- Others

■ Multiple platforms

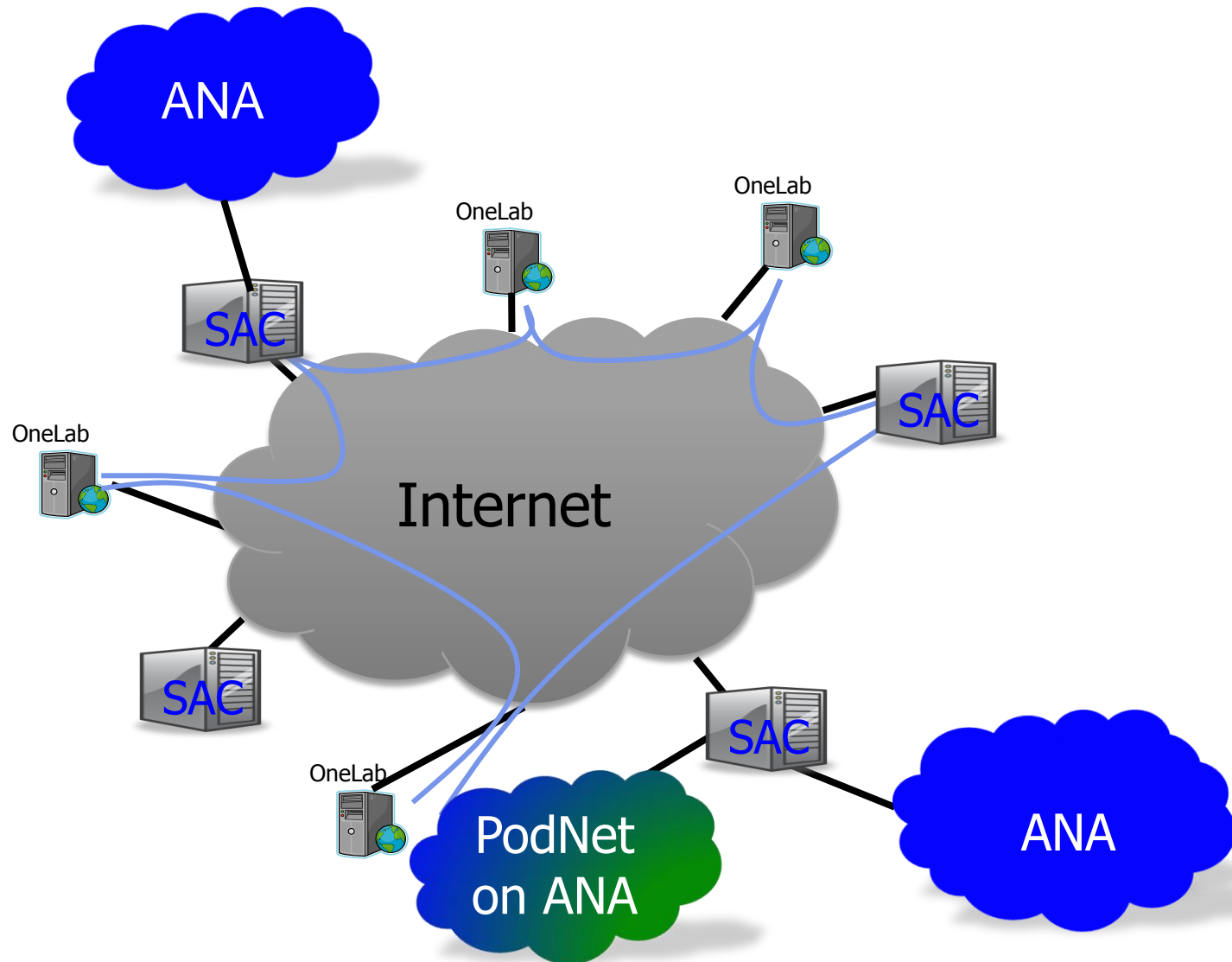
- Linux PCs
- Embedded Linux
- Mobile devices

■ New Applications

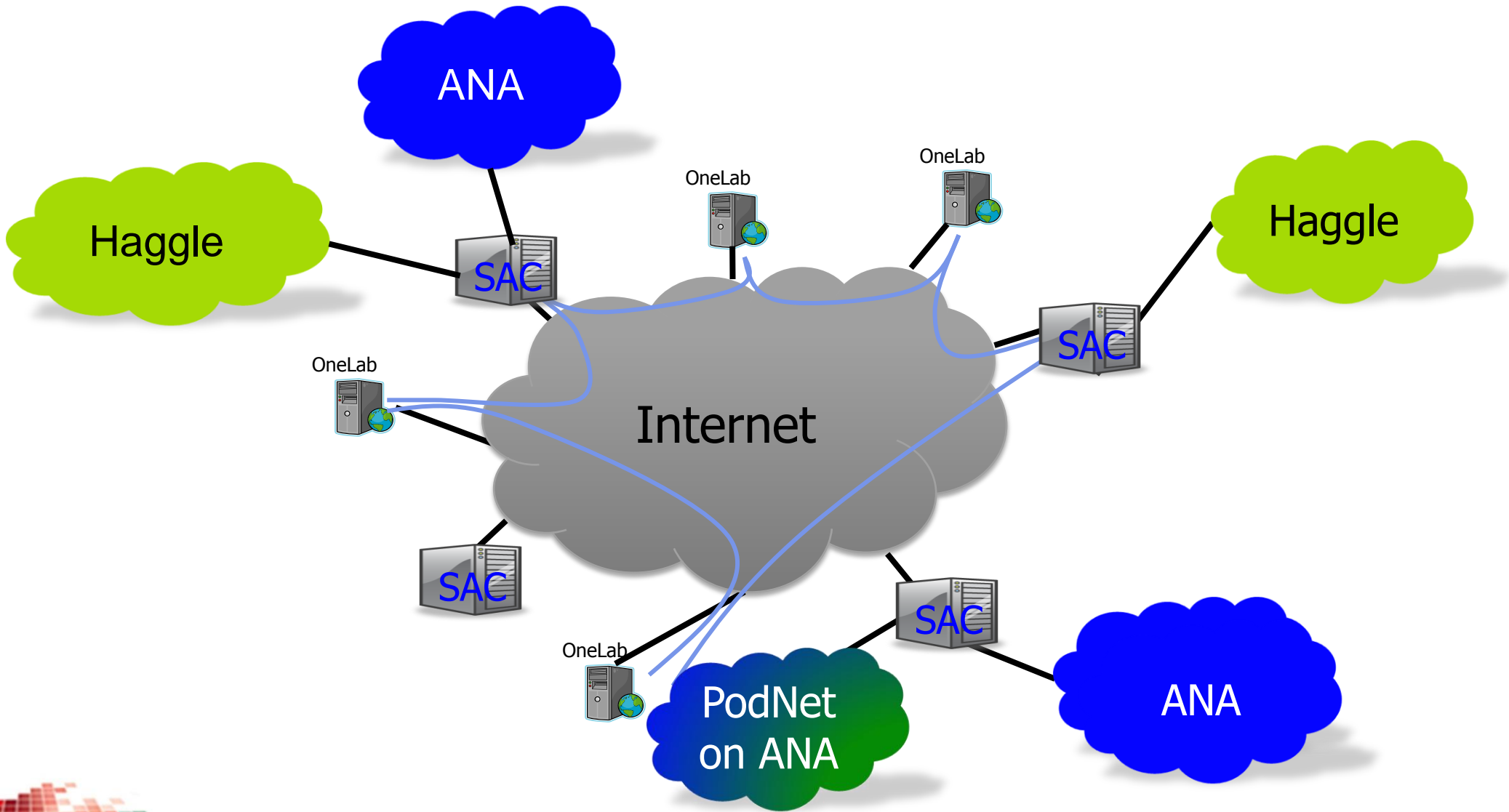
- PodNet
- Store and Forward



Applications on ANA



SAC Extension

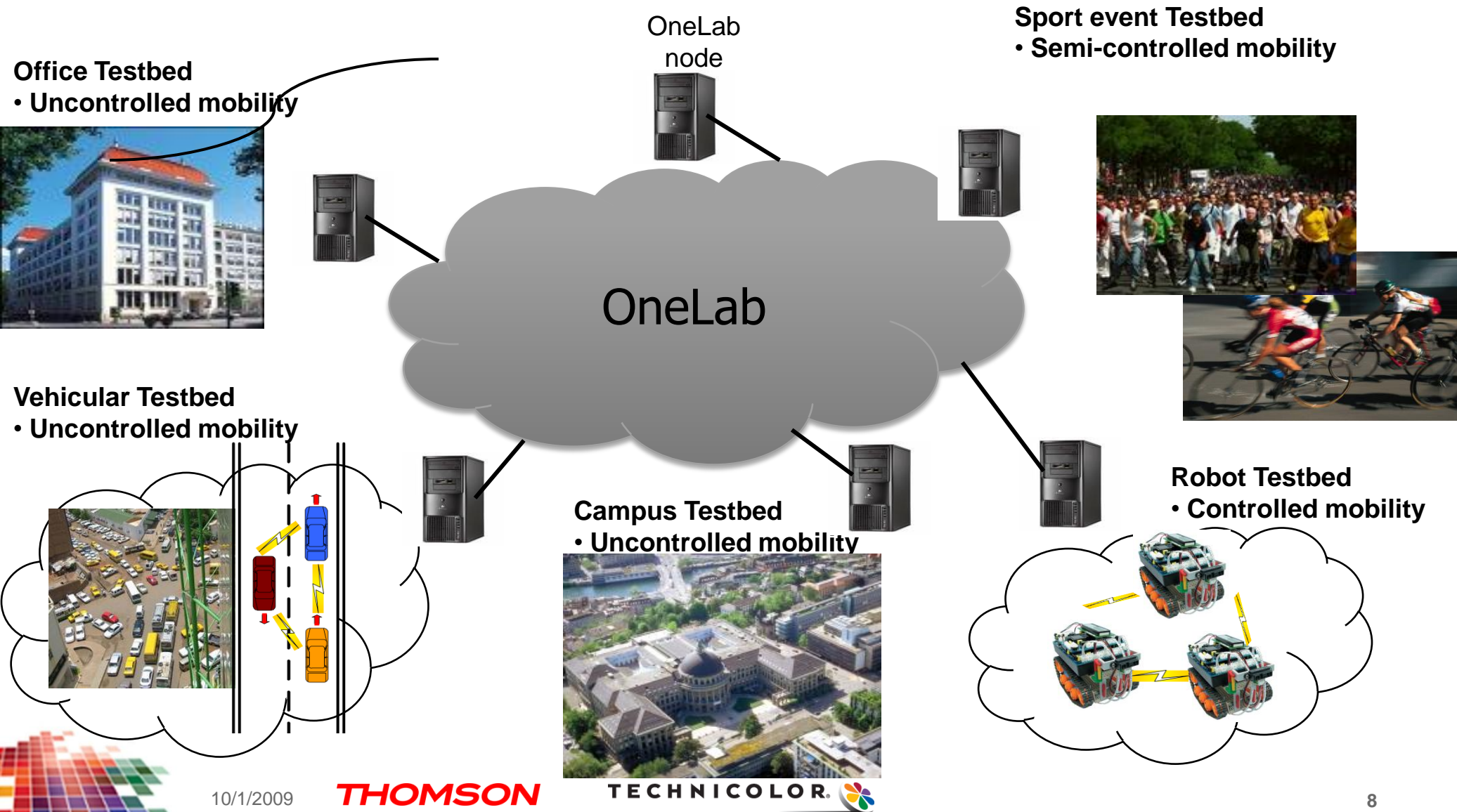


Haggle / Mobile Platform

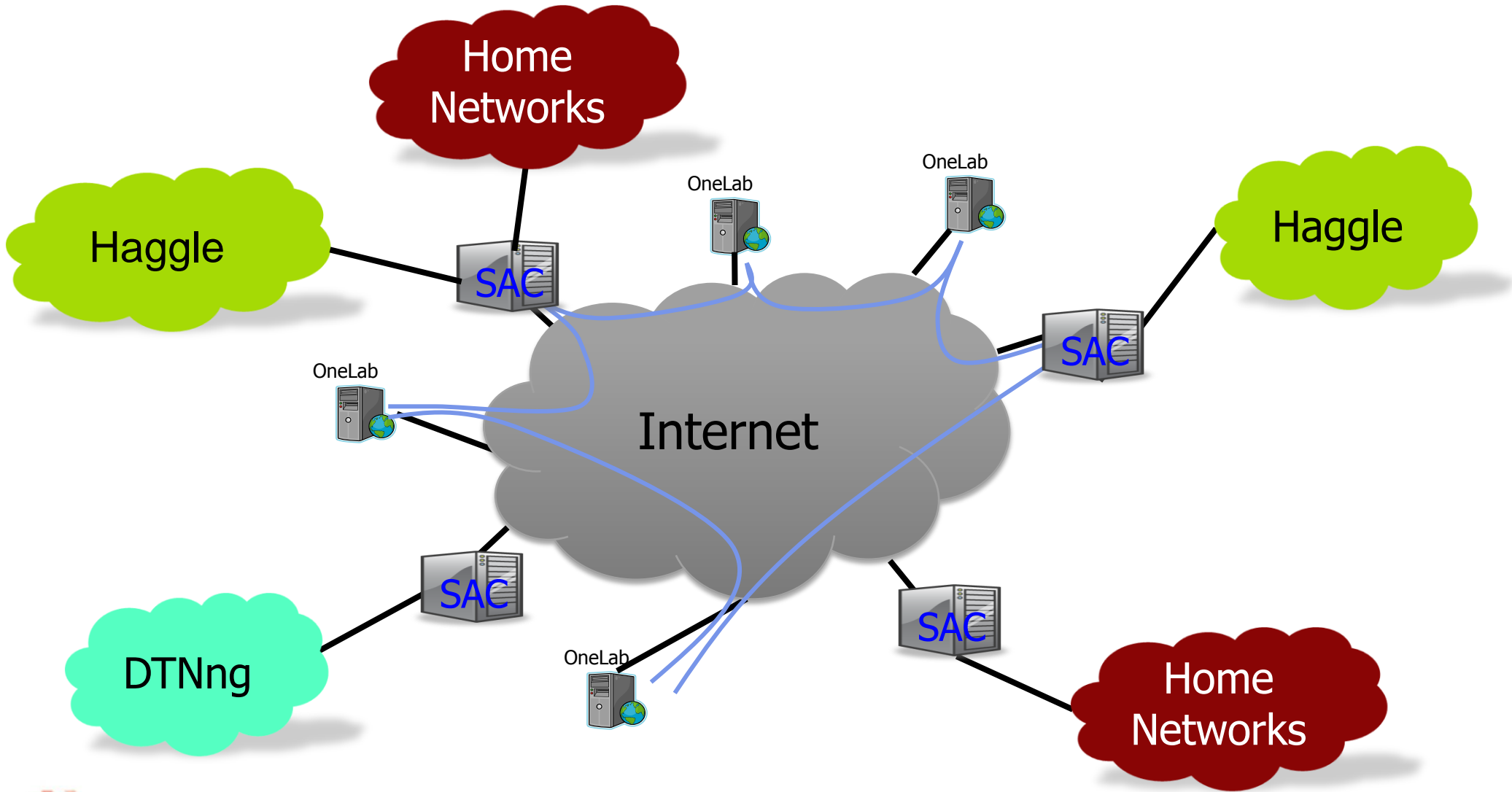
- Implements data-centric networking approach
- For mobile (and fixed) devices
- Platform demonstrated at multiple conferences
 - Infocom, Sigcomm
 - Next: Sigcomm 2009 – Mobiclique
- Implementation of connection with legacy networks is ongoing
 - Federation
- Permanent testbeds planed at ETH Zurich and KTH Stockholm



Mobile Platforms



SAC Extension



Next step: specific networking environments

■ Next customer: Home Networking Environment

- Media-centric networks
- Home automation
- Integration of sensor data
- Wireless networks
- Monitoring

■ See also NanoDatacenters project

- Virtualized gateways for new services (VoD, Gaming,...)

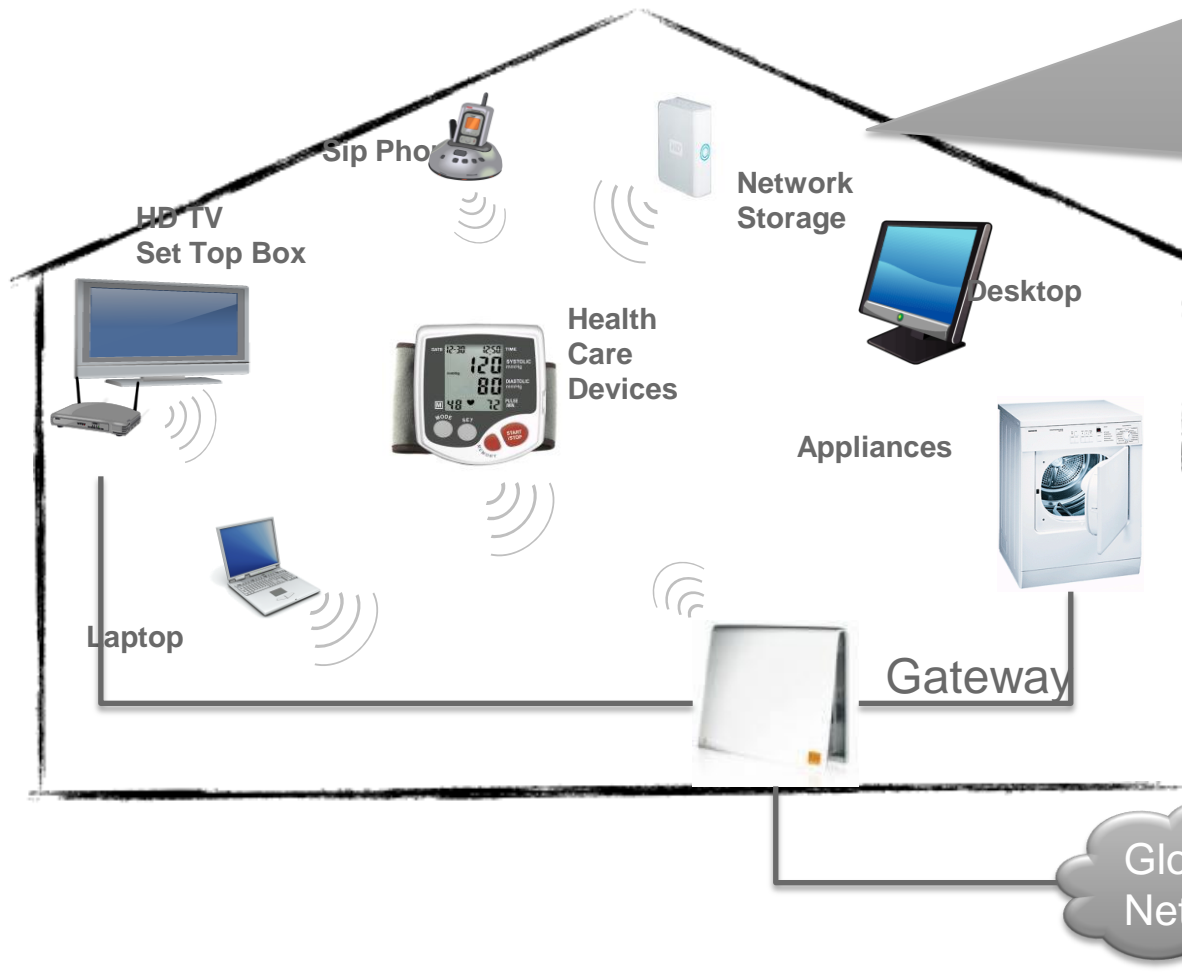
■ Home network testbeds will be available for federation

■ End-user involvement

■ Many of them will be non-IP!



Heterogeneous Home Network



Challenges:

- Heterogeneity of devices, networks, services, content
- Home Network Management
- Content management
- Content and network adaptation
- Home automation
- Remote access

Thankyou



More information:

www.ana-project.org

www.hagggleproject.org

www.thlab.net

www.nanodatacenters.eu

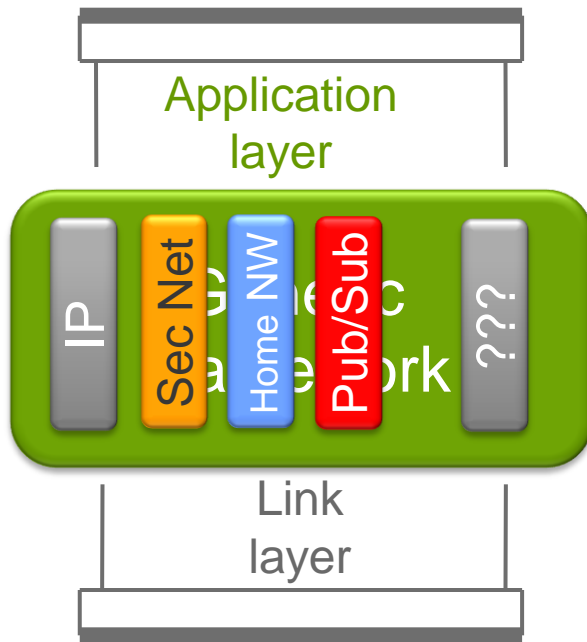
podnet.ee.ethz.ch

www.onelab.eu

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ANA



- There will be no unique future Internetworking Protocol
 - We have to extend the waist of the IP hourglass
- Future networks have to scale in size AND functionality
- **Enable network evolution**
- **Federation** instead of homogeneous abstraction