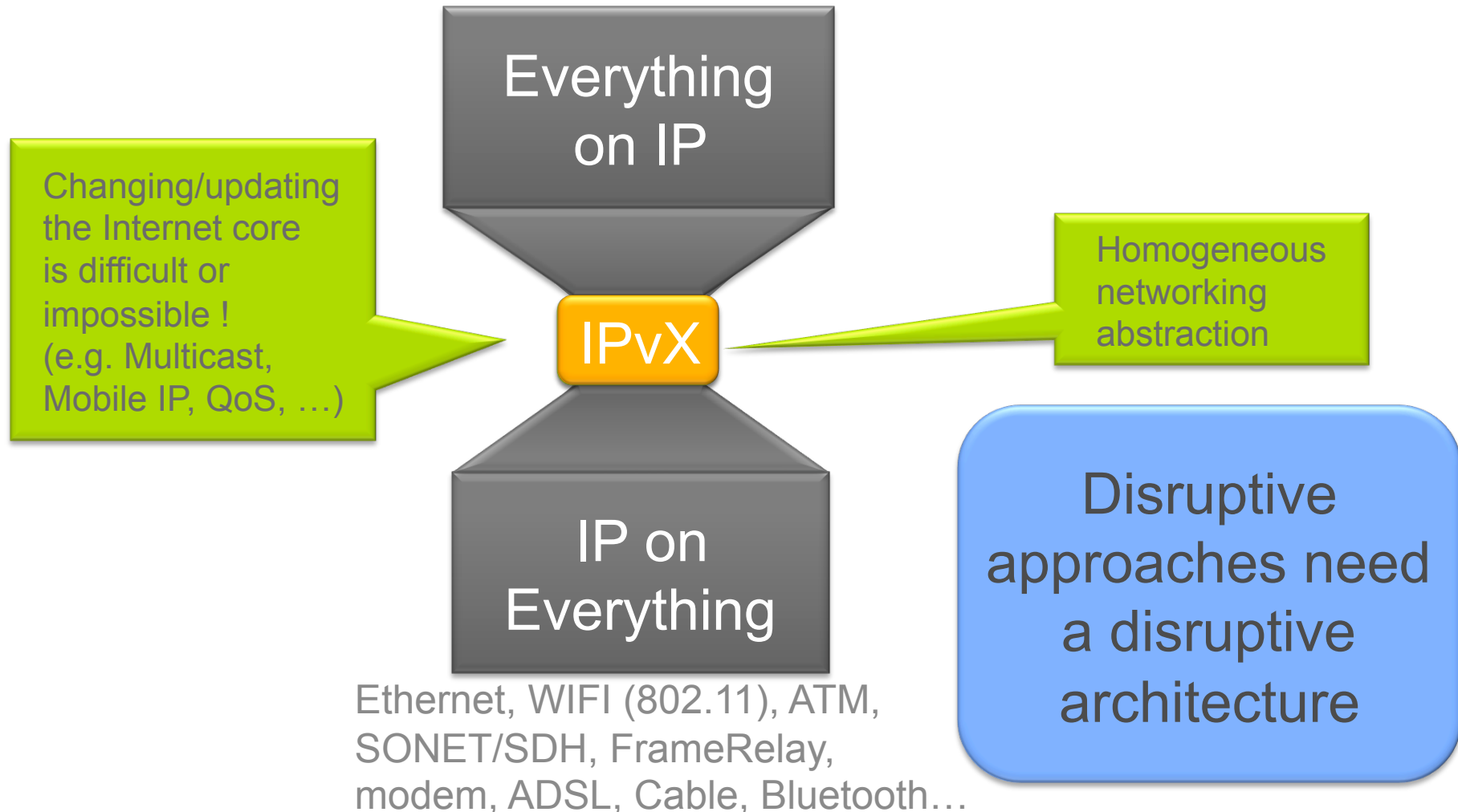


Future Internet and OneLab2

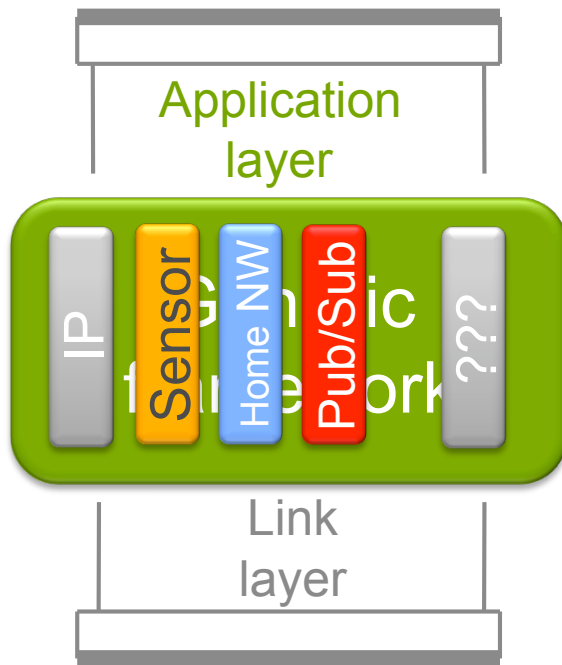
- Dr. Martin May
- Thomson, Paris Research Lab, France

The Internet Hourglass

Voice, Video, P2P, Email, youtube,
Protocols – TCP, UDP, SCTP, ICMP,...

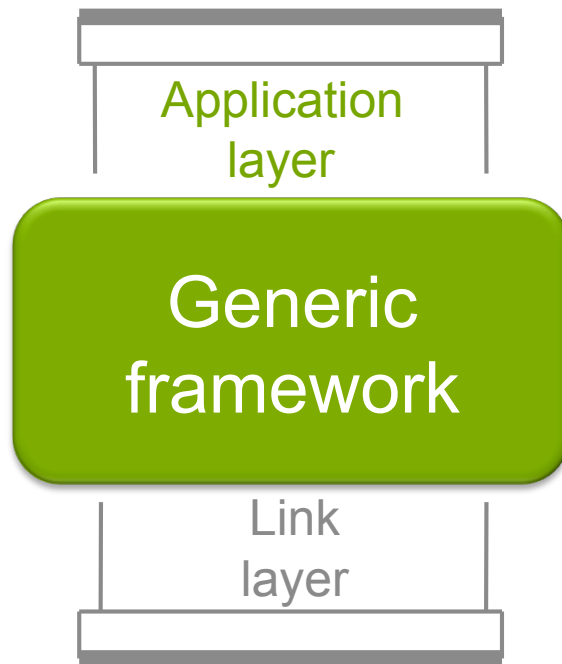


Call for Heterogeneity



- 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

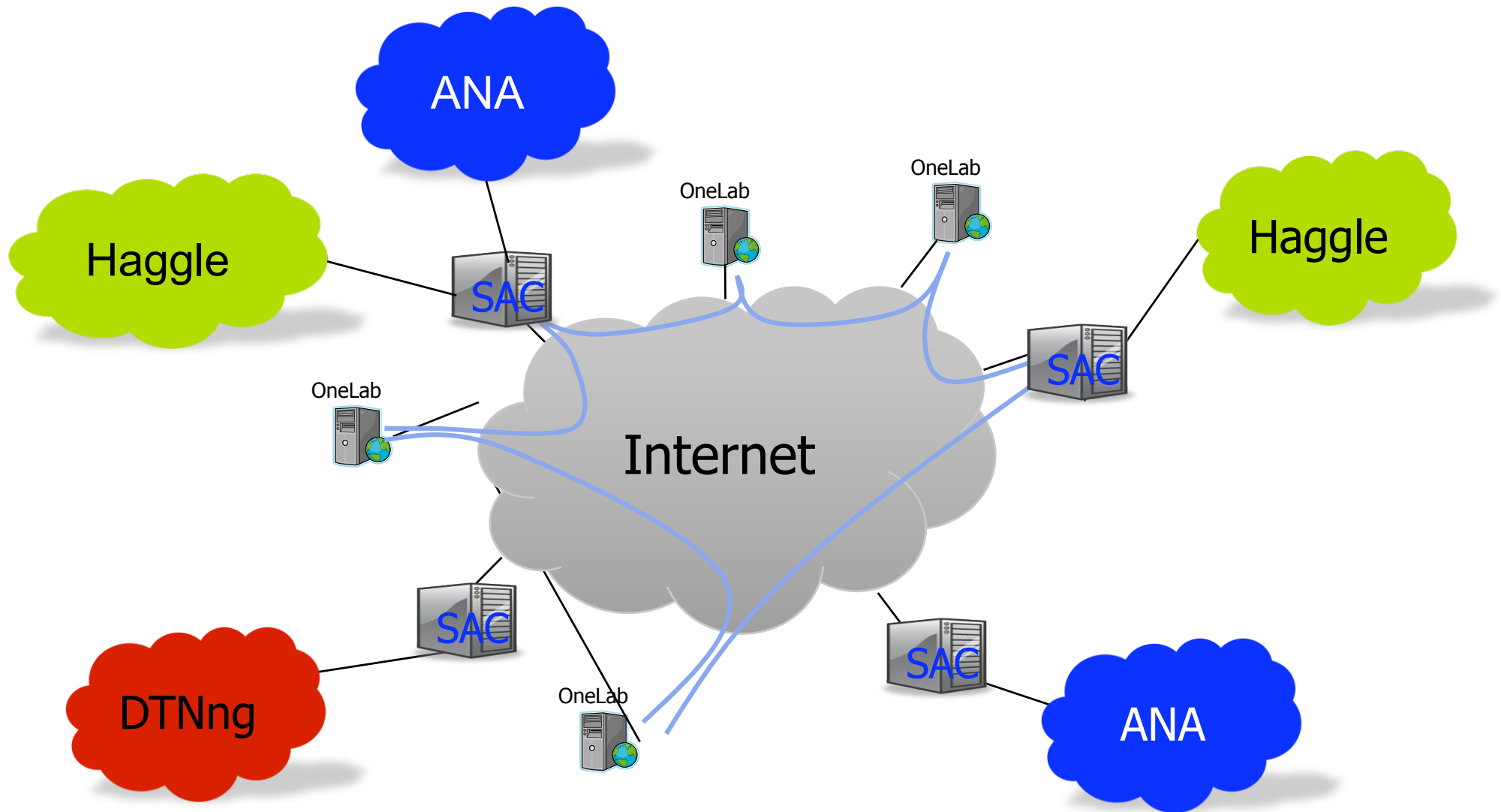
What we need next?



- Implementations of such generic frameworks
- Implementations of new protocols and network stacks
- Platforms for experimental paradigms
 - OneLab nodes
 - Embedded systems/mobile devices
- Access to these platforms

The ANA framework is such a generic framework able to host multiple networks (stacks)

OneLab2 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 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.

- Clean Slate networking approaches

- Pub/Sub
- IP
- Others

- Multiple platforms

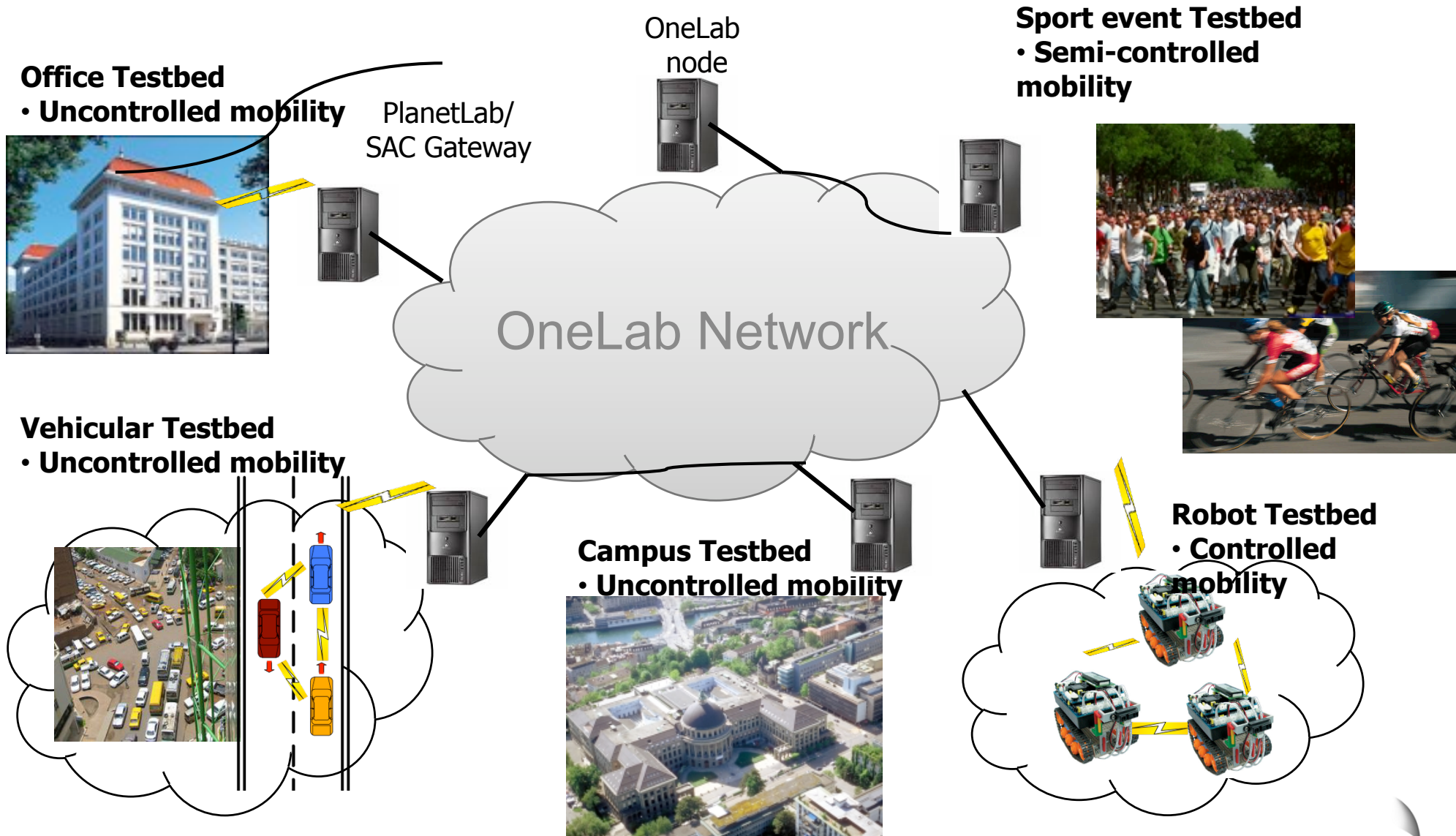
- Linux PCs
- Embedded Linux
- Mobile devices

Haggle Extension

- **Opportunistic networking platform**
 - Data-centric networking
 - Uncontrolled mobility, trace recording
 - New applications:
 - Mobiclique
 - Social networks

- **Future:**
 - Vehicular networks
 - Large scale, campus mobility
 - Semi- controlled and controlled mobility

Mobile Platforms



Challenges

- **Applications**

- Bottom-up and Top-down approaches
- new services

- **Users**

- For large scale measurements
- Privacy concerns?

- **Repeatability**

- Comparable settings, multiple measurement campaigns,...

- **Control plane**

- Multiple control planes per platform

Thank you! Any questions?

More information:

ANA: <http://www.ana-project.org/>

Hagggle: <http://www.hagggleproject.org>