



Spontaneous Virtual Networks

A Brief Overview

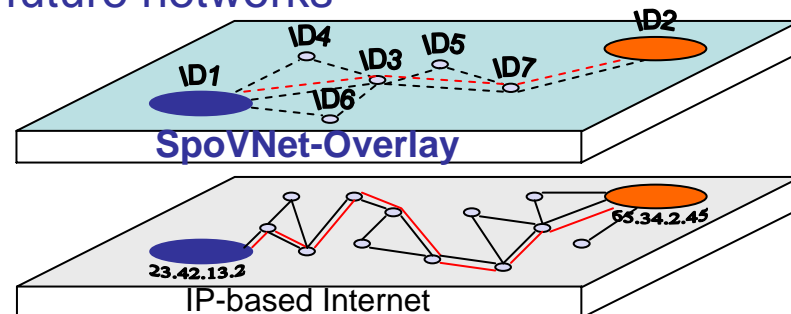
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- Internet has evolved from 4-node network to ubiquitous, global communication network
 - But ... is it flexible enough for the future?
- Patchwork design and deployment problems
 - “half” layers: IPsec, MPLS (2.5); TLS (3.5) ...
 - TCP adaptations to wireless, mobile etc.
 - Multicast, MobileIP → Deployment?
- How to improve flexibility?
 - Calls for new architectures !?
 - Clean slate ... time horizon of 10 years and more?
 - Overlay-based architecture ... the way SpovNet goes!

- SpoVNet's Contribution: **Spontaneous Virtual Networks**

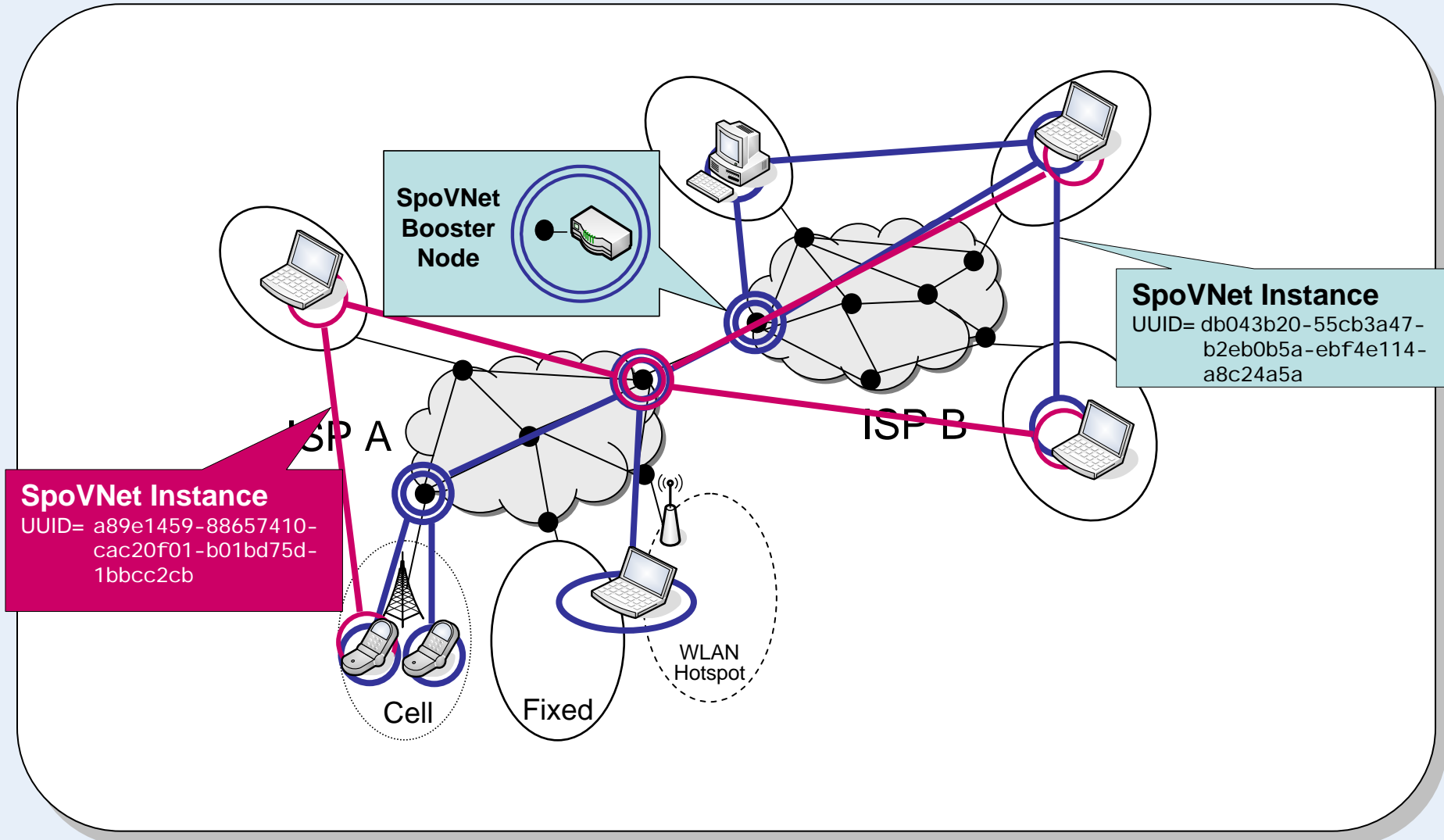
- **Flexible, adaptive** and **spontaneous** provisioning of services across heterogeneous networks
 - Application- and network-oriented services
 - E.g., event notifications, group communications
- **Seamless transition** from current to **future networks**



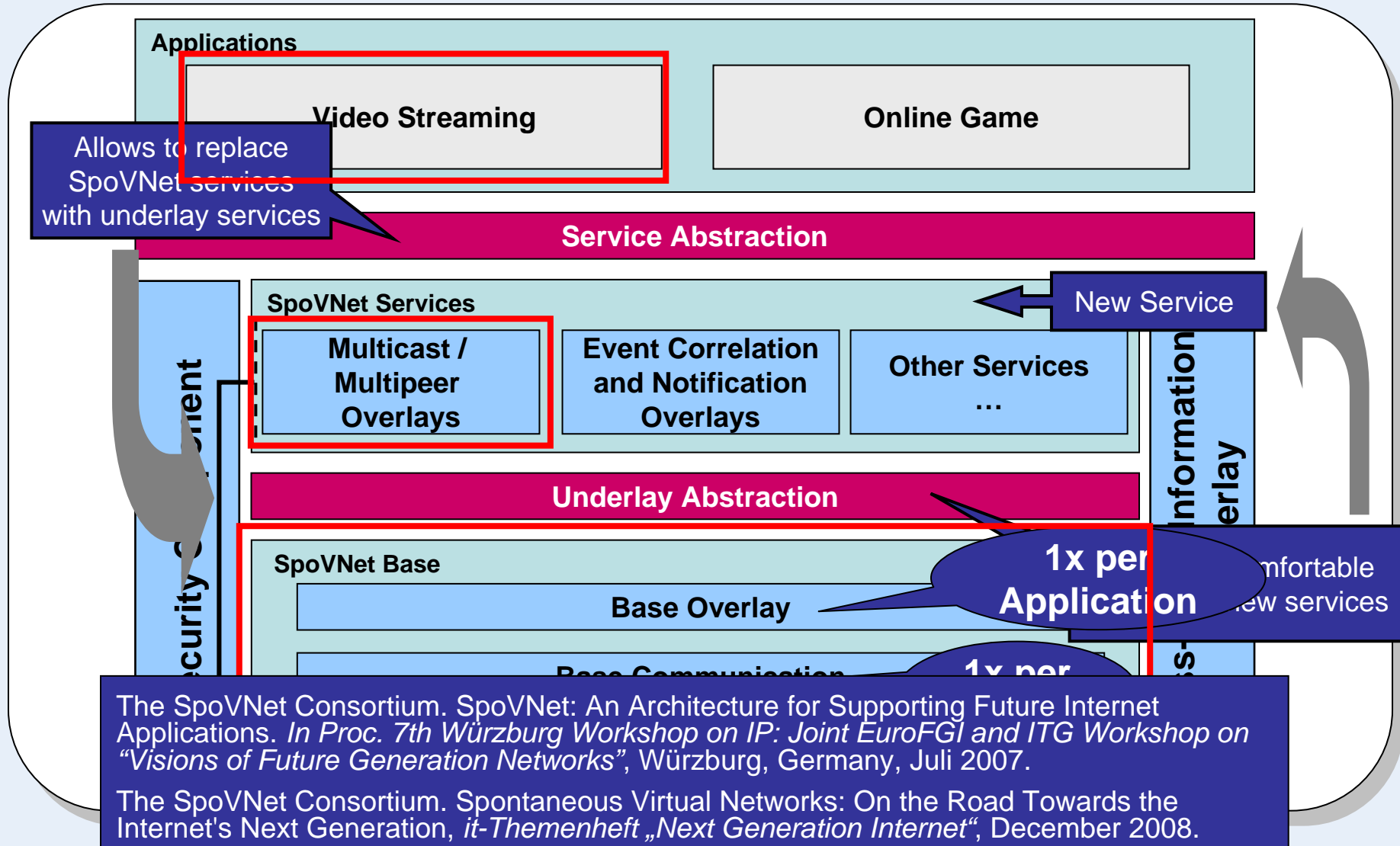
- **Overlay-based Approach**

- No dedicated infrastructure required
- Decentralized, self-organizing, extensible
- Can be incrementally deployed on top of IP-based networks
 - Test and deployment of new services on top of **Layer 4**

SpoVNet in a Nutshell (2)



SpoVNet Architecture



SpoVNet Team



Prof. Dr. Kurt Rothermel
Universität Stuttgart

- Event-Correlation and Notification in Self-Organizing Networks

Prof. Dr. Paul Kühn
Universität Stuttgart

- Cross-Layer Optimization

Prof. Dr. Martina Zitterbart
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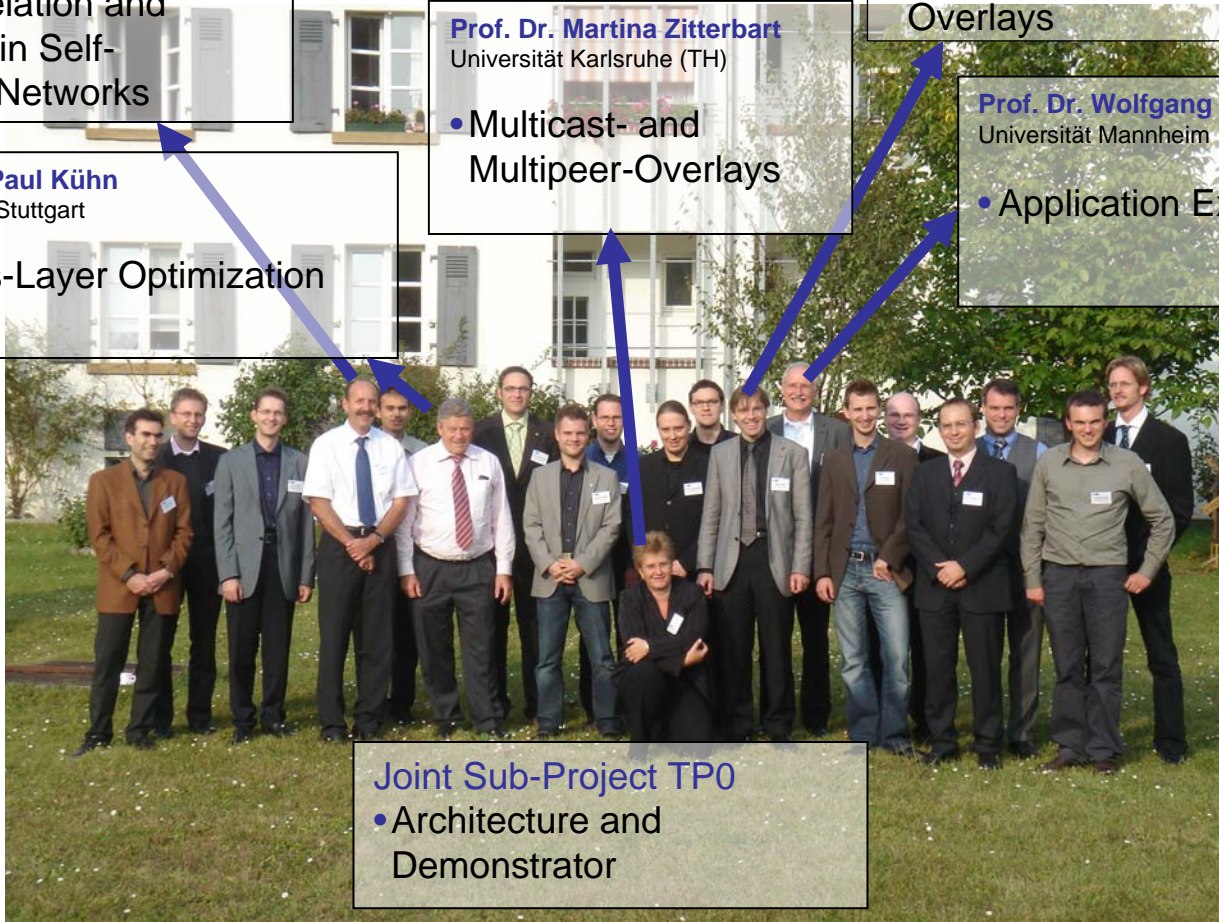
- Multicast- and Multipeer-Overlays

Prof. Dr. Georg Carle
Universität Tübingen

- Cross-Layer Information for Overlays

Prof. Dr. Wolfgang Effelsberg
Universität Mannheim

- Application Examples



Joint Sub-Project TP0
• Architecture and Demonstrator