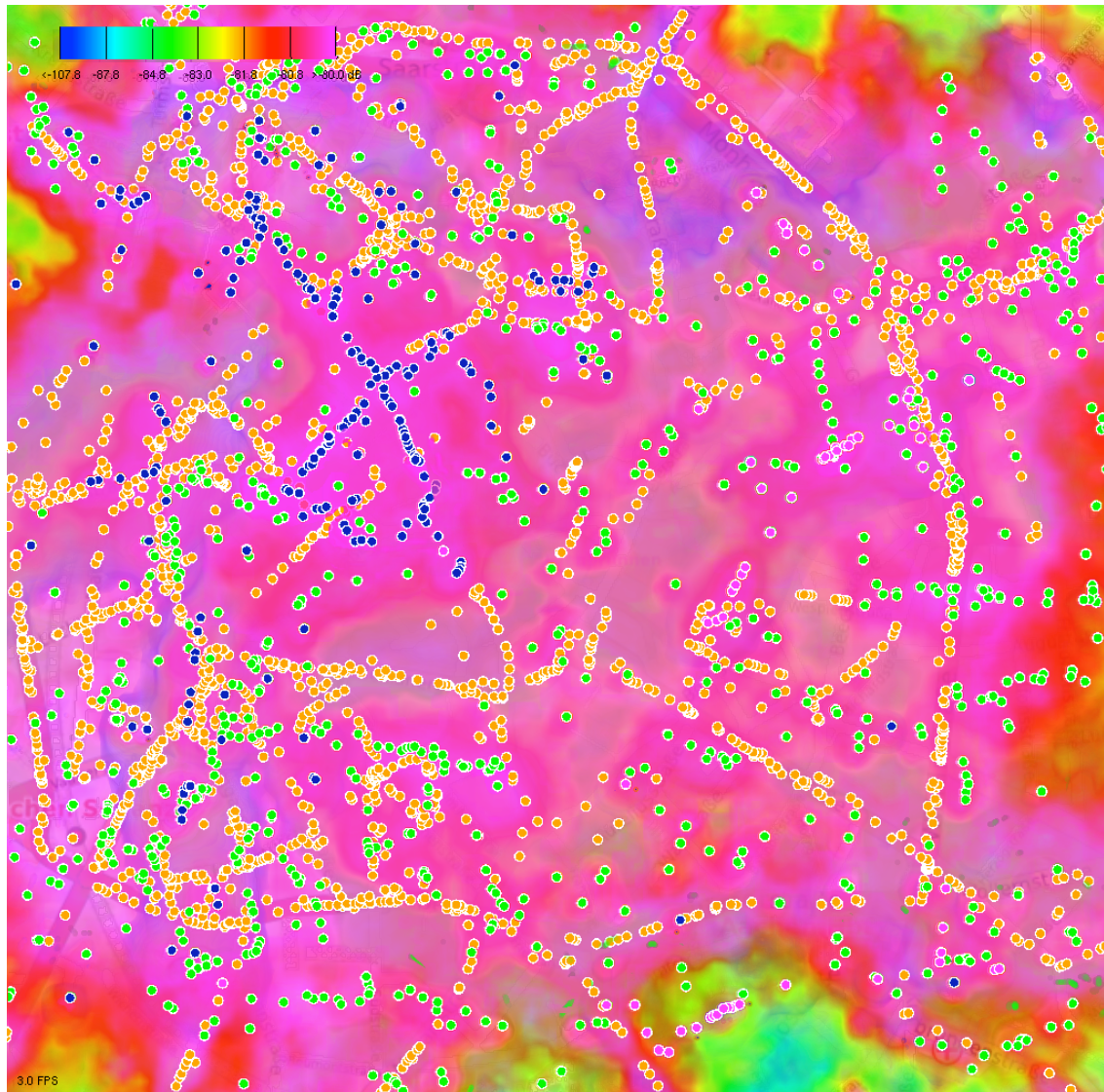


Mobile ACcess Project

RWTH Aachen University
Communication and Distributed Systems

Coverage: Wi-Fi Access Points in Aachen (city center)



#Access Points (estimated)

● T-Mobile: 67

● RWTH: 300

● ÖcherWLAN: 900

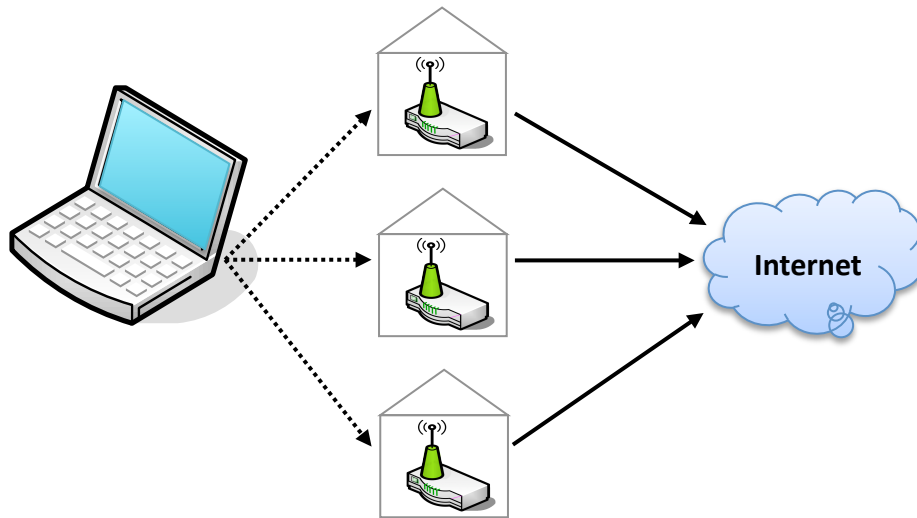
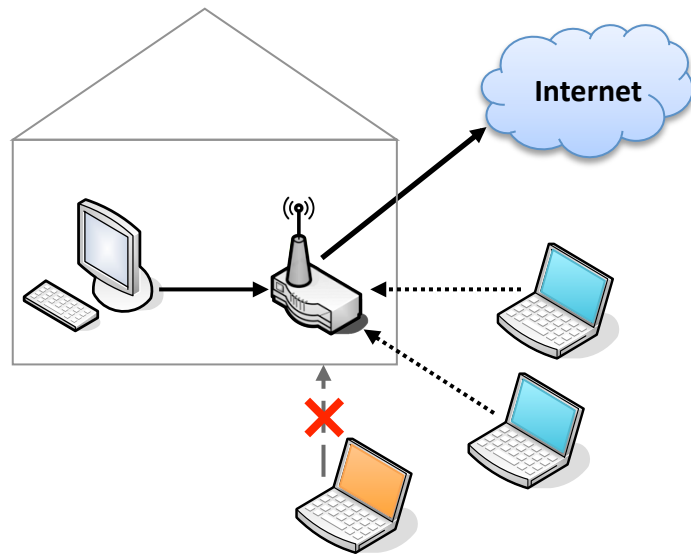
● Individuals: 2400

3.600 APs / 3 km²

→ 1 AP / 30 m

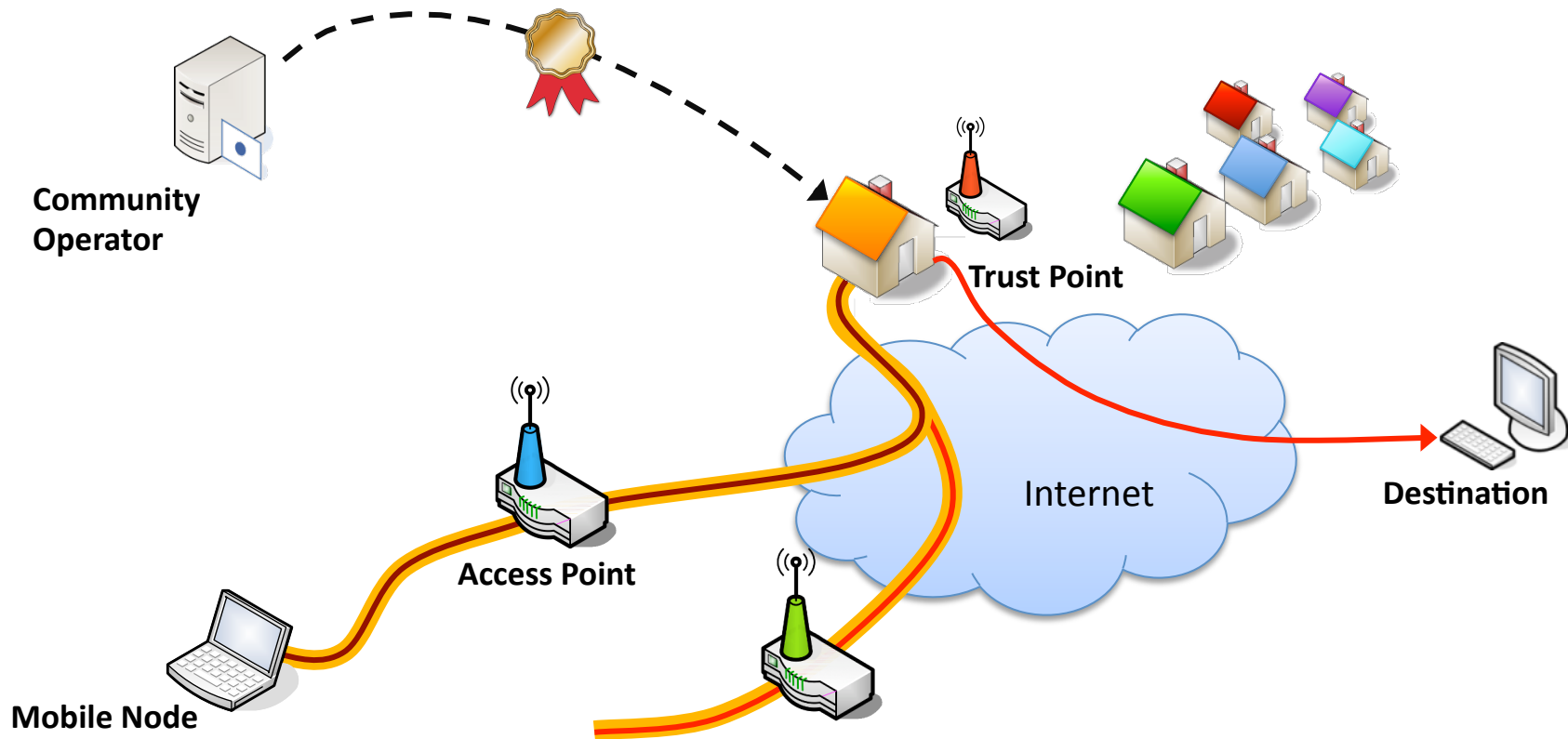
(Sources: T-Mobile, Fon, BITKOM, Oecher WLAN)

Concept of Wi-Fi Sharing Communities



- Idea:
 - Users open and share their own Internet connection to community members
 - A community member can use all other Wi-Fi access points of the community
- Initially grass-root movements
 - Freifunk
- Commercial use
 - fon
 - Wippies (Elisa)

Tunnel-based Wi-Fi Internet Sharing

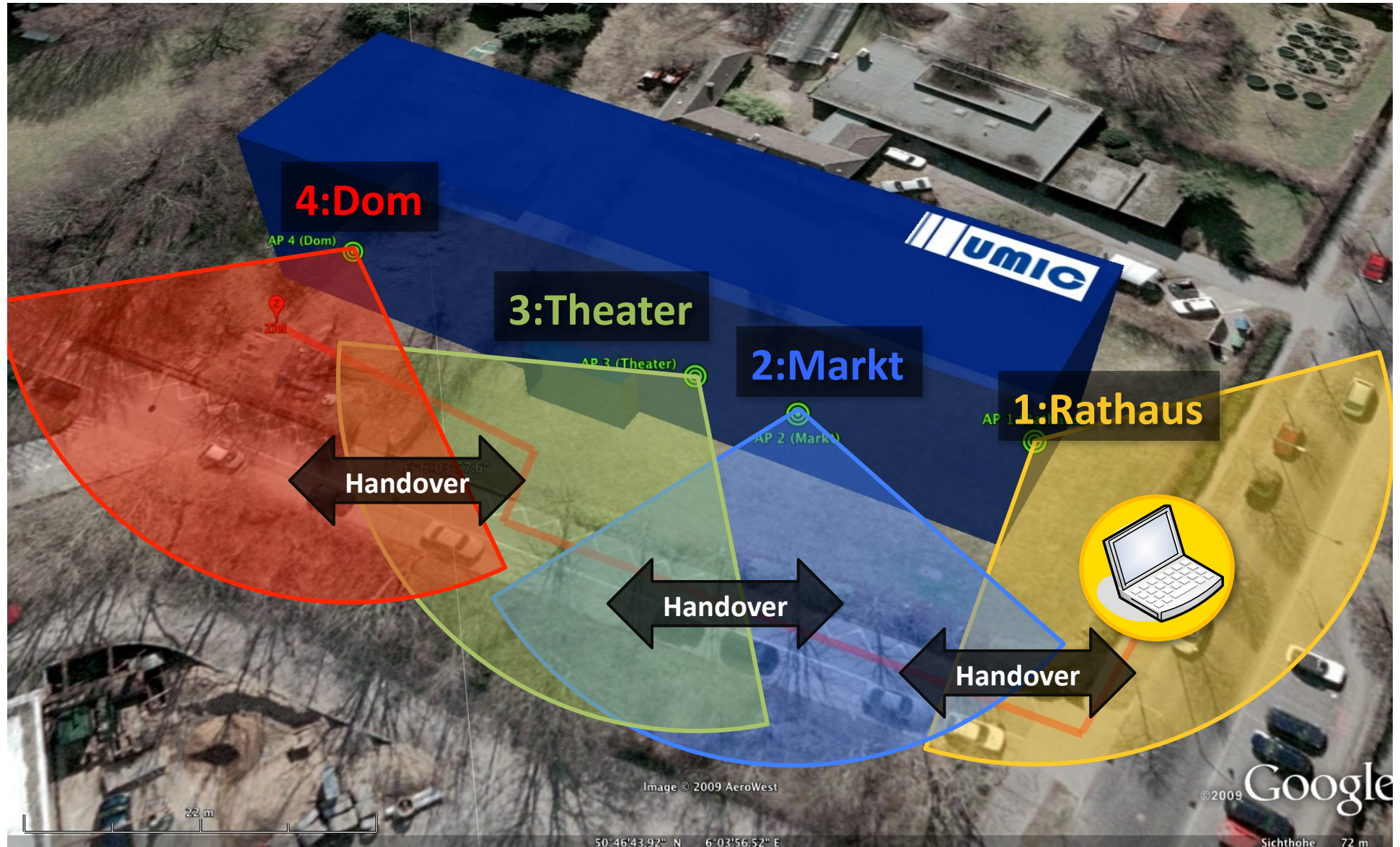


- Encrypted tunnel serves the AP owner as well as the mobile guest
 - Security and privacy for all parties
 - Solves legal liability problem
 - Transparent mobility support
 - Scalable, decentralized solution

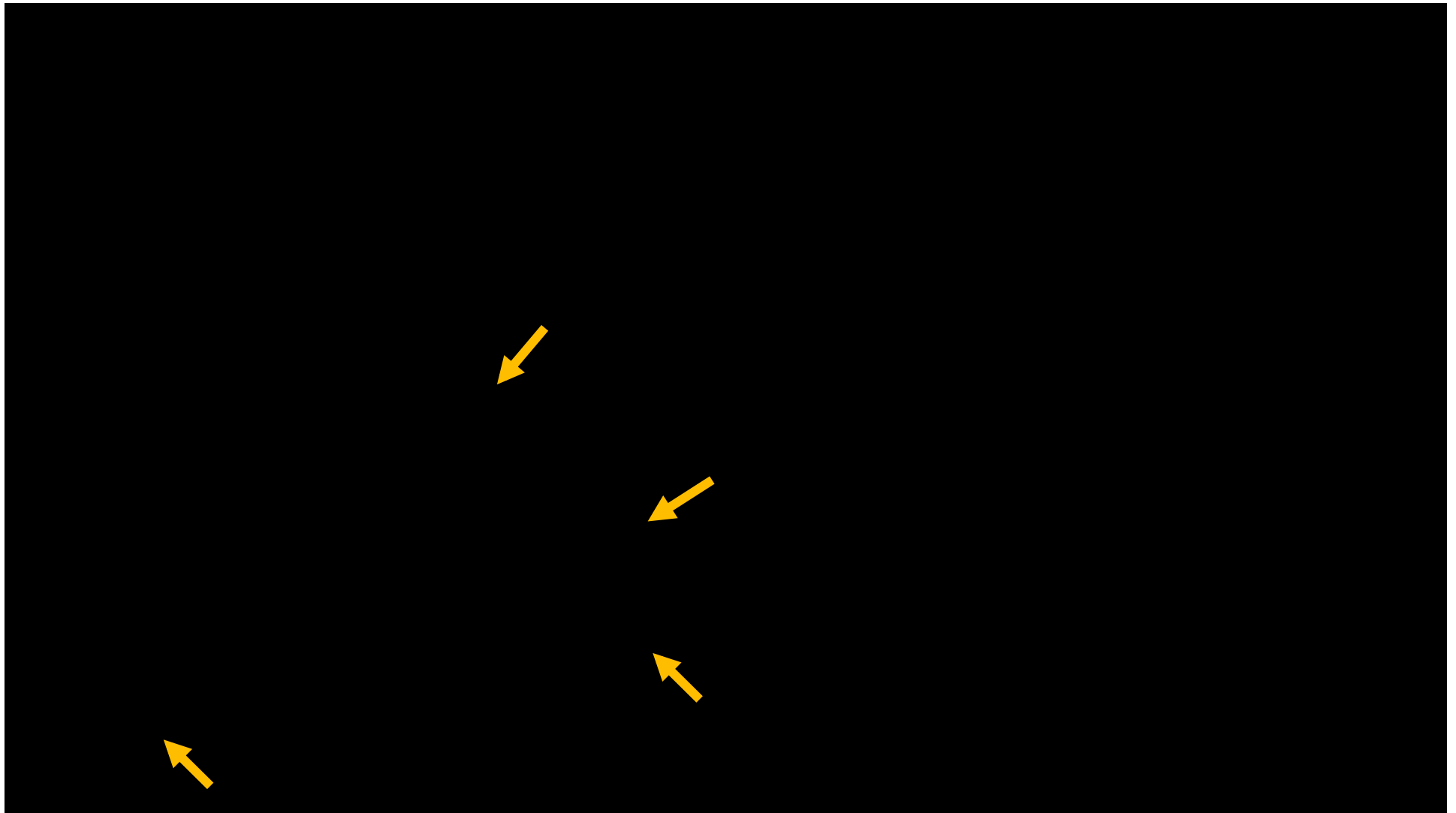
Software Components

- 2 Parts
 - HIP: Security, mobility, device identities
 - PiSA: Address space management, service access
- Software components for
 - Mobile device
 - Router / Firewall
 - Router / Trust point
 - Services (MuniFi services)

Roaming between independent APs



Technology Demo



Localize Me!

