

Self-* Breakout Session - Part 2

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Use-cases for self-* network

- ▶ Community networks
 - ▶ Promising use-case
 - ▶ Maintenance requires time and human efforts from volunteers
 - ▶ Infrastructure: WiFi access points and repeaters + backbone
 - ▶ Other example: IoT networks based on LoRa
- ▶ WiFi access points
- ▶ Interaction with human, stakeholders
 - ▶ Ask human in case there's a problem which can't be fixed, but propose a guess
 - ▶ Crowdsourcing vs. technician/highly skilled expert: example check antenna
 - ▶ Bounds? How to define that there's too much uncertainty
- ▶ Firewall
- ▶ Self-* network → self-* cloud?

Timeline for deployment

- ▶ Going from manually managed network to fully automated network
 - ▶ What are the steps?
 - ▶ Incentives for commercial uses?
 - ▶ How to convince ISPs and companies?
- ▶ How to collect data?
 - ▶ Look at what operators are doing and replicate?
 - ▶ Propose options to an operator for fixing a network
 - ▶ Rank options based on predictions

Definition of a safe state

- ▶ Safe state for self-driving cars: slow down to a stop
- ▶ **What is the equivalent for a network?**
- ▶ What is the damage which may happen in case we keep the network going in an “unsafe” state?

Architecture

- ▶ Decision process
 - ▶ Local, distributed, centralized?
- ▶ What do we replace exactly?
 - ▶ Keep existing tools/protocols and only automate configuration
 - ▶ Propose new protocols in case no existing one fit the use-case

Open questions

- ▶ Ethics
 - ▶ Great Firewall of China
 - ▶ Discovering Tor connections

- ▶ GDPR / Privacy protection
 - ▶ Potential solution: measure only relevant information (eg. RTT, packet loss) without attaching identifier