Strategic Research and Innovation Agenda Webinar
12,13th January 2023

SYSTEM SERVICES

Holger Karl

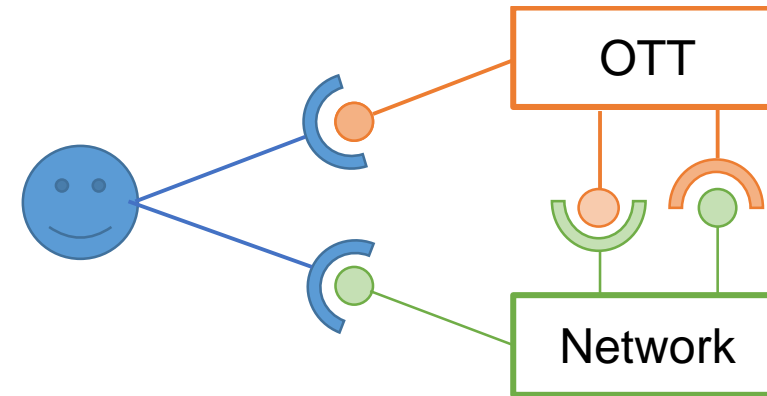*Event name, date and location*

OVERVIEW

SYSTEM SERVICES

- Communication systems will have to provide

  - Well-known services

  - Potentially new serivces

- How to:

  - Identify such services?

  - Describe them?

CHAPTER GOAL

- Trigger discussion what we want a communication system to offer

  - A single, multiple systems

- How to talk to a system to express needs

- Lay groundworks for following system architecture chapter

- Overall, a less technical, more speculative chapter

DISCUSSION AXES

- Who provides services to whom?

- Metrics and trade-offs between them

- Levels of surprise and contestation
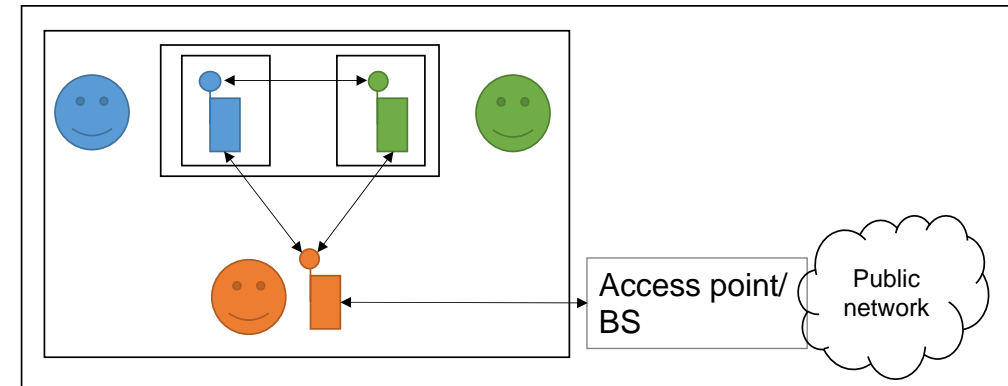
THEMES

- Scope and bootstrapping

- Architecural tenets

  - Simplicity, resist feature creep,
    explicit accountability,
    ownership vs. control, …

- Build simple, open interfaces that are easy to automate

- Forming and emering a network

  - No functional set hard-wired into an architecture

  - E.g., core-less networks

- Providing access not only to users, but to other networks as well

  - Self-accountability: e.g., API to ask for coverage area

- Network as a computer: Execute **arbitrary** services inside

  - Offer a continuum of resources

  - E.g., state management as a supporting function

  - E.g., geo-located user populations, not just individual users

- Diversity vs. convergence: **one** system for all?

- Accountability, meta-data

  - E.g., API to ask whether only secure routes are followed?

- Guarantees vs. flexibility

  - E.g., don't turn slices into a cast

- Energy consumption vs. greenhouse gas

  - E.g., networks in light of Sustainable Product Initiative

- Explicit negotiations

SERVICE FAMILIES TO CONSIDER

- Namespace management, address bindings and mappings

- Network creation

- Introspection and inspection

- General storage and compute in addition to data transport

- Support for service deployment

- Sensing and acutation as services

-

THANK YOU FOR YOUR ATTENTION

networldeurope.eu