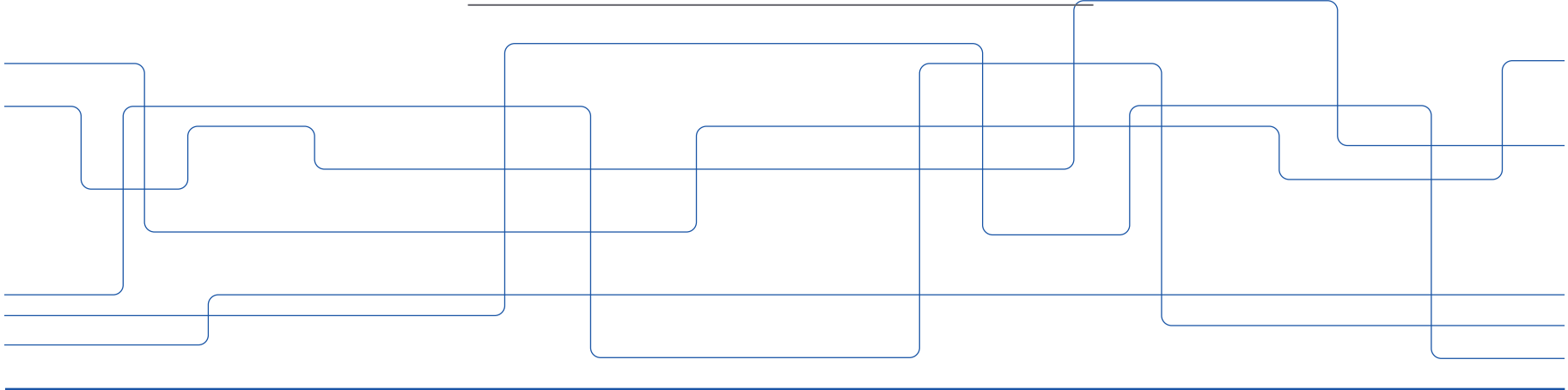# Security & Privacy for Future Wireless Networked Systems
Panel C - EECS Research & Impact Day, August 19, 2024

Panos Papadimitratos

www.eecs.kth.se/nss
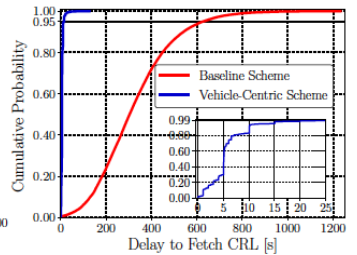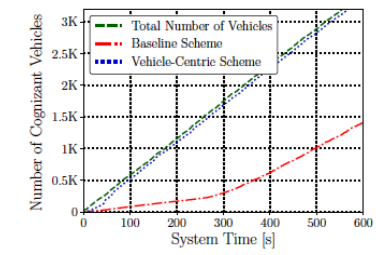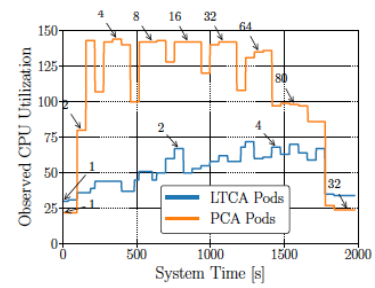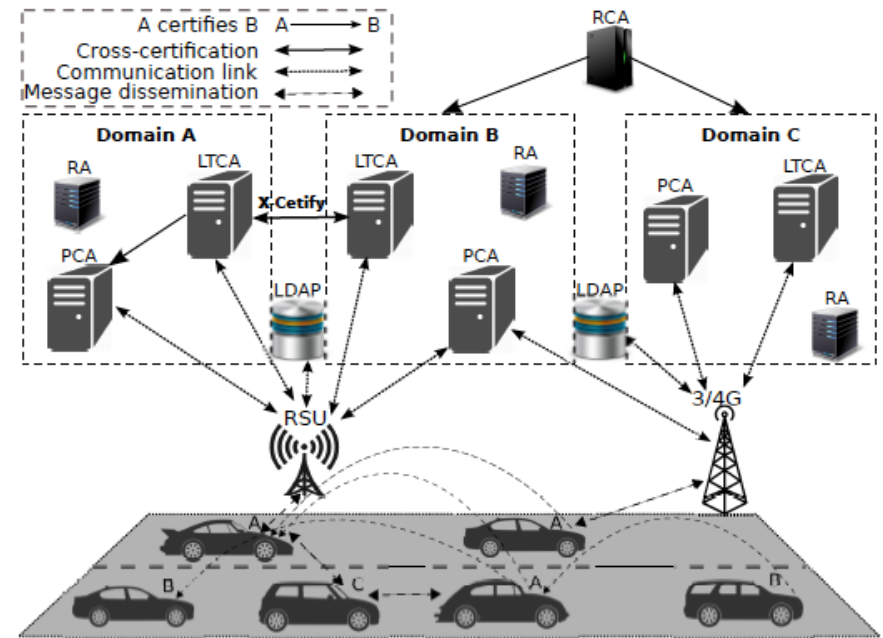
Trust management
Scale up credential management

- Credential provisioning, revocation, resolution

- Balancing act: security, privacy, and efficiency

- Scalable cloud-based systems

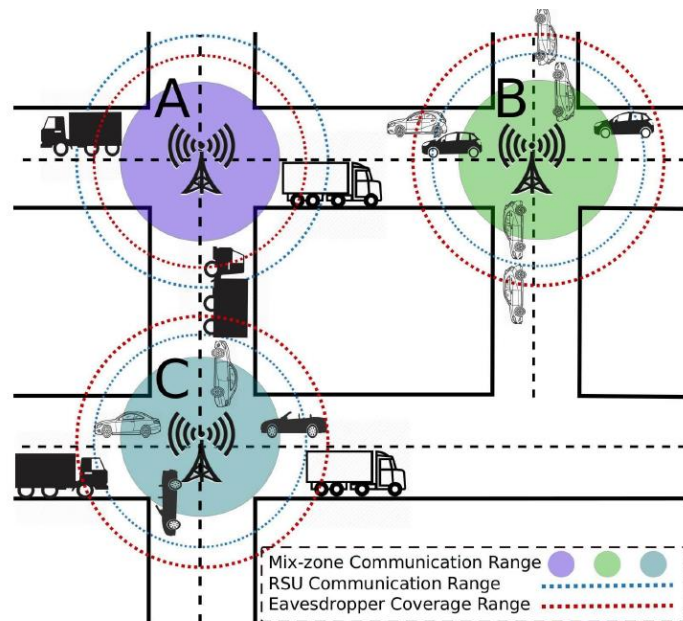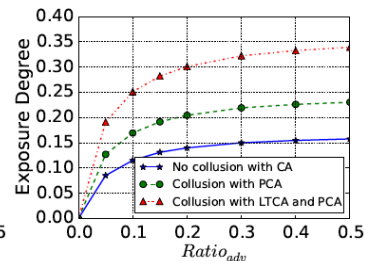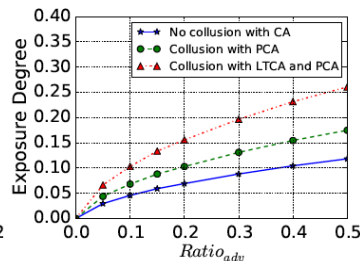**Internet Society/IRTF Applied Networking Research Prize 2018**

[**IEEE TCC 2024, IEEE TMC 2021, ACM WiSec 2019, IEEE ITS 2018**, ACM WiSec 2018]

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Privacy
Reduce user exposure

- Protection against
  - Attackers
  - Curious service providers
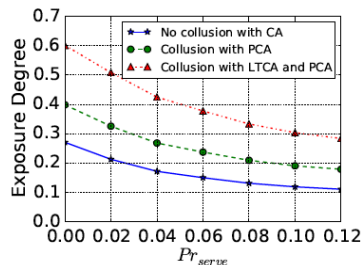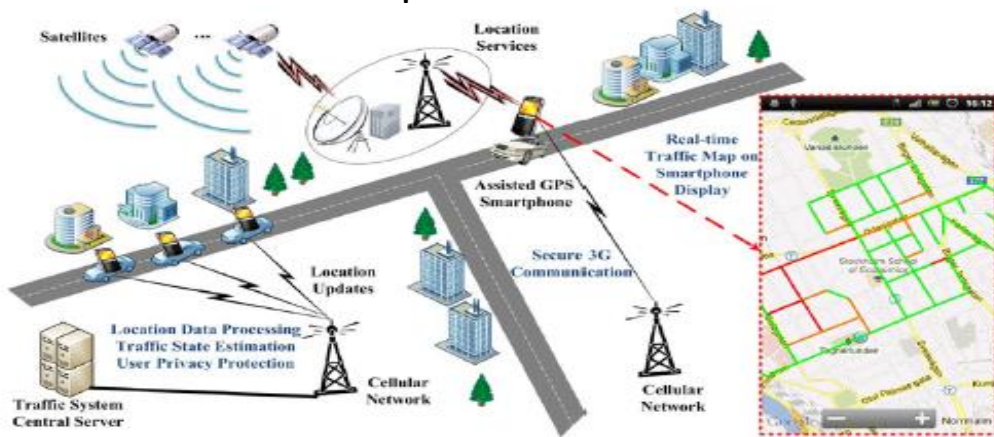
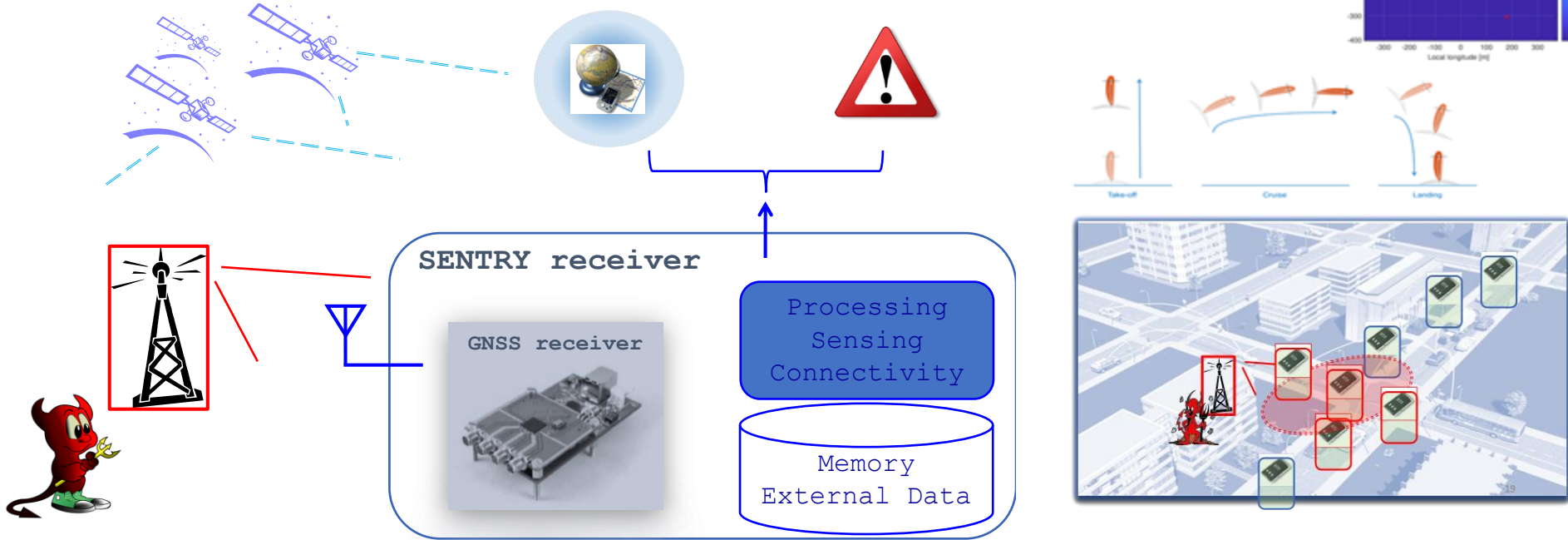[**IEEE TDSC 2014**, **ACM TOPS 2019, IEEE IoT 2021**]
ACM WiSec Best Paper Award 2014

[**ACM WiSec 2014,** IEEE ITS 2015, **IEEE IoT 2016**]

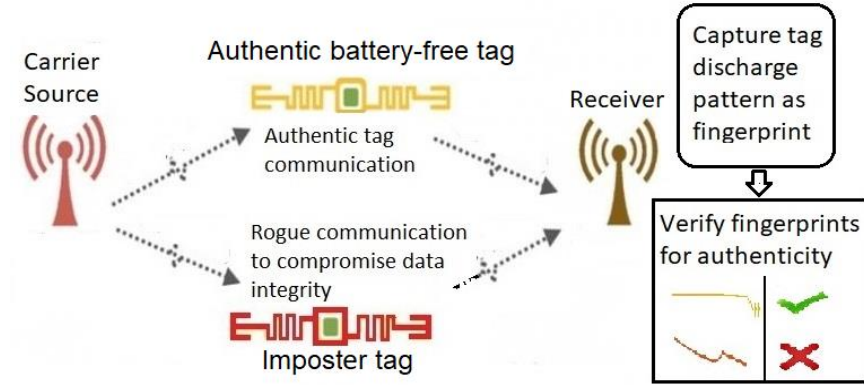Panos Papadimitratos

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3

Secure location and time
Secure Global Navigation Satellite System (GNSS) receivers

SENTRY receiver

GNSS receiver

Processing
Sensing
Connectivity

Memory
External Data

[**IEEE Aero 2024, IEEE/ION PLANS 2023 x3, IEEE TAES 2022**] [**USPO 2012**, ICL-GNSS, IS-GNSS 15, IEEE Aero 2019, **ION ITM 2019**, **ION GNSS+ 2019**, **ION/IEEE PLANS 2020**, **ION GNSS+ 2020**, IEEE OJCOM 2021, **ACM WiSec 2021, ION ITM 2022, IEEE Aero 2022**] [**IVA 100 List**]

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4

Device & physical layer security
Battery-less; MIMO NOMA; Scaling laws

Massive MIMO-NOMA Systems Secrecy in the Presence of Active Eavesdroppers
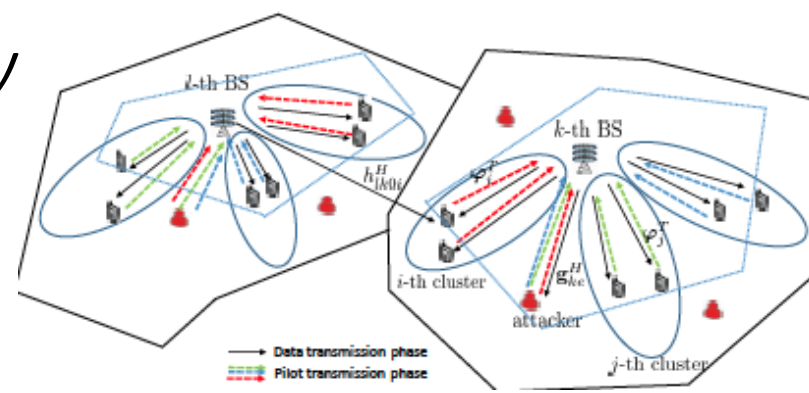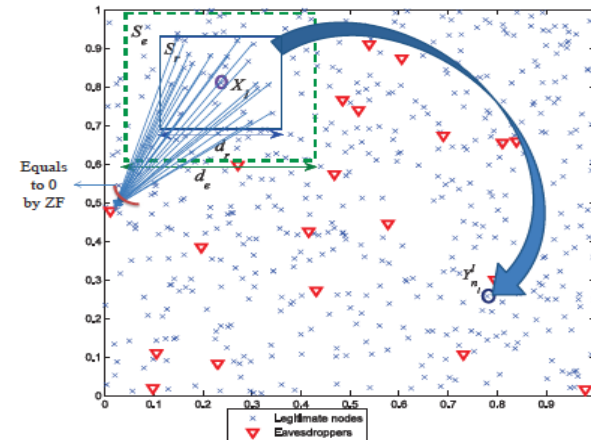
Monitoring oscillator discharge patterns: security for battery-free backscatter tags

Scaling laws: Secrecy capacity: Secure communication for free as the network grows

[**IEEE INFOCOM 2014,** Allerton 2015, IEEE ISIT 2016, **IEEE Trans. on Information Theory 2017,** IEEE ICCCN 2021, **ACM HotNets 2021, IEEE TWC (under review)**]

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