

CONNECTIVITY



THE CONNECTIVITY SECTION

DEPARTMENT OF ELECTRONIC SYSTEMS
TECHNICAL FACULTY OF IT AND DESIGN, AALBORG UNIVERSITY

Delivering reliable connectivity for humans and things. From traditional cellular systems to low power long range networks, satellite and drone systems as well as smart city and smart energy systems; 5G and beyond-5G systems.

RESEARCH

KEY RESEARCH AREAS

Our research applies communication and networking theory, signal processing and statistical modelling in Internet of Things, 5G and beyond 5G systems, satellite communications, as well as areas related to communication, such as machine learning, blockchain and data analytics.

WHAT WE DO

- › Principles for design and optimization of flexible communication systems that can adapt to future, not yet utilized, connectivity types
- › Reliable communication for mission-critical use cases such as remote surgery or wireless industrial automation
- › Realistic estimation of lifetime for battery-powered sensors, e.g. health sensors or water meters that are difficult to assess
- › Support connectivity for operation and transactions in a smart energy grid
- › Efficient communication of IoT devices with LEO satellites

COLLABORATION

WHO BENEFITS FROM OUR RESEARCH

The group's research on new concepts and system design drives the fundamental research in the area of communication engineering and is often done in collaboration with companies.

EXTERNAL PARTNERS

INDUSTRY:

Huawei, Bosch, Kamstrup, Intel, FORCE technology, Keysight, Mitsubishi Electric Research Lab.

ACADEMIA AND RESEARCH:

KCL (UK), Uni. Bremen, DLR, TUM (Germany), Kansai U (Japan), U. Sydney (Australia), Chalmers (Sweden), Oulu, Aalto (Finland), Padova (Italy), ASU (USA).

PUBLICATIONS

IMPORTANT PUBLICATIONS

- › [Ultra-Reliable Communication in 5G Wireless Systems](#)
- › [Wireless Access for Ultra-Reliable Low-Latency Communication \(URLLC\): Principles and Building Blocks](#)
- › [5G Wireless Network Slicing for eMBB, URLLC, and mMTC: A Communication-Theoretic View](#)
- › [Millimeter Wave Cellular Networks: A MAC Layer Perspective](#)
- › [Analysis of the Communication Traffic for Blockchain Synchronization of IoT Devices](#)

KEY PROJECTS

EU FP7 METIS

The largest EU project on 5G wireless that defined the foundations of 5G.

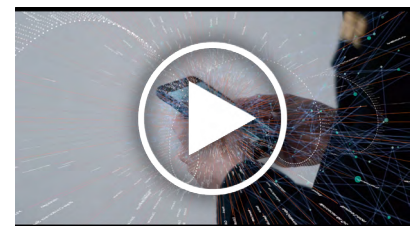
EU FP7 SUNSEED

This project deals with investigated and trialed convergence of telecoms and power distribution. The project has received the EC's innovation radar award.

EU H2020 WILLOW

The project is an ERC Consolidator Grant, which is the most prestigious research funding in Europe and currently the only project of this sort in the department.

VIDEO PRESENTATION



CONTACT

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