# Pitch Summaries
# of Celtic-Plus Proposers Day
# Oulu, 7 May 2015

https://www.celticplus.eu/project-ideas-from-proposers-days/

# Proposal Ideas Overview

| 1 | **5G Positioning technology for future mobile services** | Giuseppe Destino, Matti Latva-aho | University of Oulu |
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| 2 | **ROBust INterworking Heterogeneous networks for brOadband access, smart-grid cOntrol, and Dependability** | Nandana Rajatheva | University of Oulu |
| 3 | **Reliable Industrial Communication Over the Air (ReICOvAir)** | Marko Sonkki | University of Oulu |
| 4 | **Digital Health Services for 1. MyData & 2. Hospital** | Jarmo Pääkkönen | Centre for Health and Technology |
| 5 | **Passion for life – the digital heath preventor platform** | Jan Aidemark, Linda Askenäs Presented by Lars Gustafson, Vinnova | Linnaeus University |

# 5G Positioning Technology for Future Mobile Services (5GPLUS)

5G+ Approach:

- **Unique co-design** of communications and positioning
- **Built-in feature** of mobile network
- **Scalable** performance (1 cm -10 m)
- Minimal impact **(<1%)**
- Indoors and outdoors
- Demonstration
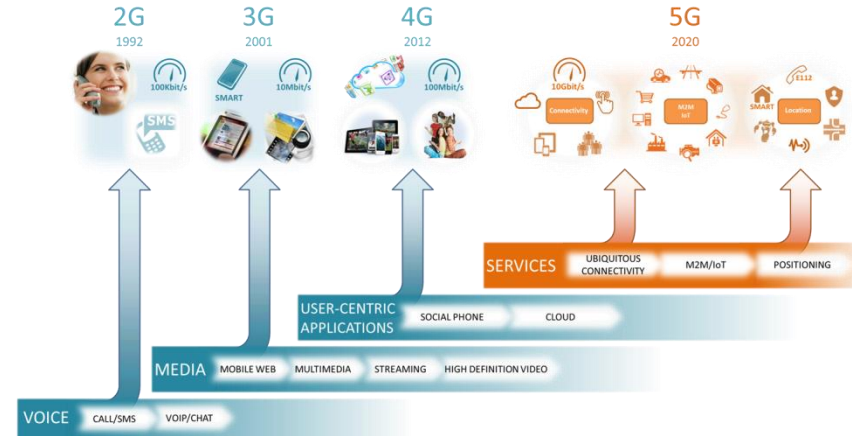
Looking for

- SME (LBS developers)
- SME (System integrators)
- Large company (Mobile network)
- Large company (Operators)

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# Robust Interworking Heterogeneous Networks for Broadband Access, Smart-Grid Control, and Dependability (ROBIN-HOOD)

- Basic idea is the exploitation of scattered wireless local access networks (gateways) to integrate mobile cellular networks
  - Beyond integration of public hot-spots
  - Capacity enhancement
  - Coverage enhancement (incl. indoor/outdoor)
- Moreover, the proposed heterogeneous system also provides
  - Dependable communication infrastructure (disaster relief)
  - Supporting backbone for smart grids control
- Gateways (e.g., WLAN, etc.)
  - Scattered
  - Connected by fibre, satellite, broadband wireless, etc.
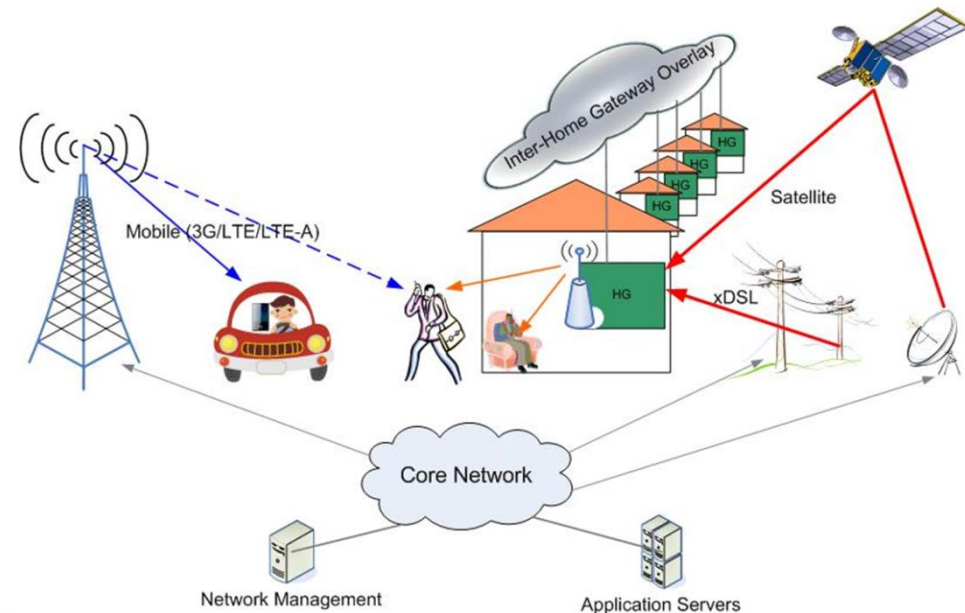
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# Reliable Industrial Communication Over the Air (RelCOvAir)

**The Plan:**
- Analyse challenging scenarios of wireless industrial automation, derive requirements, and define test cases
- Perform measurements (environments, frequencies)
- Update and validate the QuaDRiGa channel model
- Implement emulation/validation environment (testbed)
- Standardization of test-cases (rating system)

**Results:**
- Emulation/validation platform for industrial communication systems, based on:
- Channel model for industrial environments
- Software and hardware channel emulators
- Standardized rating of wireless communication systems

→ **Proven and qualified performance of wireless communication systems for the industry**

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# Digital Health Services for 1. MyData & 2. Hospital

- MyData is a human-centered approach to personal information management and processing.
- MyData integrated with health and care
  - All the data of person as Big Data
  - Not only health, even that is in our interest
- Integrate MyData and welness as one
- Looking for Big Data integration and health care piloting cases

- Integrated IoT and Location services
  - inside and outside hospitals as care service
- New location option 5G offers efficiency
- Emergency situations:
  - Abmulace arrives to hospital, care preparation
  - Situation (temperature, hart rate, feeling etc.)
  - Contact to specialists with care needs
- Care situations:
  - Patient location in hospital and between them
  - Communication to care everywhere
  - Patient situation (temp, hr, feeling, video etc.)
- Special equipment for care:
  - Moving of different devices in hospital needs located
  - Status of the equipment (battery, readiness, automatic start of device)
  - Devices attached to persons and beds when patient move
  - Rented or stolen devices to be located outside the hospital

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# Passion for life
## – the digital heath preventor platform

*Make the most of IoT, big data and sharing comunity with elderly people*

"Passion for life" is a spread concept that makes people aware of what they can do in their daily life to live healthy longer. It is about breaking common patterns, be aware of improvements, proceed from theory into action and make changes in your own life.
The program consist of six areas; empowerment, safety at home, nutrition, active living, social life, medications.
http://plus.rjl.se/infopage.jsf?nodeId=33037
Our idea is to bring this proven and spread concept to a new area were we bring the most out of ICT to assist in the goal. By co-designing and developing a platform, integrating technologies and tools we would like to support all six areas.

**Challenges:**
Individual level:
- Integration of diverse datasets, sensors, tools and applications to a common database structure (local, cloud, central), based on auto. recognitions of data.
- Video, voice, photo and picture and text conversions (to enable different impairments)
- Identifying thorough multi-analysis of IoT data unconscious problem areas (AI, agents compare different datasets)
- Group

Social level:
- Video call ability for non-connected phones (eg. voice avatar based on picture)
- Non invasive ongoing sharing and supporting each other

International Community level:
- Language translator voice and text in real-time
- Big data analysis, trends, patterns, prognosis, comparison with group of individuals with same situation.

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