

WELCOME

5G-HEART Webinar on 5G for healthcare



09:30-09:40	Welcome and Introduction. What are 5G-HEART healthcare experiments, and why do we do this?
09:40-09:55	5G Heart Experiences with wearable video in pilots with Oslo Ambulance Service and AmbulanceZorg Groningen.
09:55-10:10	Robotic ultrasound examination over 5G network. Challenges and benefits.
10:10-10:25	What's in it for us? Whose problems are 5G empowered solutions addressing in the case of congenital heart disease?
10:25-10:40	Questions and Answers. Closing

5G HEalth AquacultuRe and Transport validation trials
5gheart.org



5G HEART

5GHEART.ORG

INTRODUCTION TO 5G- HEART HEALTHCARE USE CASES

Per H Lehne

Telenor

5G-HEART Healthcare Webinar

12 Oct 2020 - online

5G HEALTH AQUACULTURE AND TRANSPORT VALIDATION TRIALS

What is 5G-HEART?

- **“5G Health Aquaculture and Transport Validation Trials”**
- Phase 3 project of the 5G Public-Private Partnership (5G PPP) of the EU Horizon 2020 Framework Programme
- Runs from June 2019-November 2022
- The overall objective of the 5G-HEART is to define and validate the cost efficient 5G converged network concepts, which enable an intelligent hub supported by multiple vertical industries
- 22 partners, includes major vertical players, research/academic institutions and SMEs



Why are healthcare and 5G a good match?

e-health:

- **WHO defines e-health as:** «... the use of information and communication technologies (ICT) for health»
- e-health is identified as **a priority in the European Digital Agenda**
- e-health puts **strict requirements on ICT:** Latency, reliability, bandwidth, security, mobility

5G:

- 5G can **provide essential levels of connectivity** to enable a new health ecosystem
- 5G could **transform and improve** all of the critical components of healthcare
- 5G can support the transformation of the healthcare sector from volume-based to value-based care with **global savings of \$650 billion by 2025**
- 5G is essential **to build the «digital base» in healthcare**
- 5G networks can provide **network security and data privacy**, which are paramount for healthcare



European Commission Infographics on Digital health and care



eHAction – Joint Action supporting the e-Health Network

Which problem to solve?



Our healthcare use cases are defined from real clinical scenarios, where obvious pain points are identified

Three major use cases for e-health which will challenge the performance and availability of 5G services.

Vision: 'hospitals without walls'

Use case H1: Remote interventional support

Using remote assisted or controlled ultrasound, advanced video and augmented reality in different clinical situations

- Educational surgery
- Remote ultrasound examination
- Paramedic support
- Critical health event



Use case H2: Automatic pill camera anomaly detection

Colon wireless capsule endoscopy with automatic polyp detection for early detection of colon cancer with high mortality

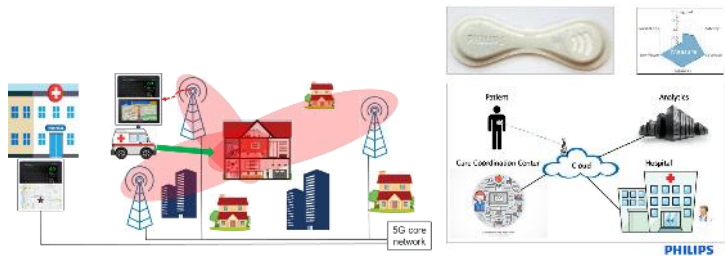
- Pill based endoscopy for early anomaly detection
- Remote wireless capsule polyp detection



Use case H3: Vital-sign patches with advanced geo-location

Developing a prototype single-use vital-sign patch and accurate geo-location technology using current and future versions of NB-IoT and/or LTE-M

- Vital-sign patch prototype
- Localizable patch



E-health experiments are performed in four locations



- Platform: 5G-VINNI
- Location: Oslo, Norway



- Platform: 5Groningen
- Location: Groningen, Netherlands.

- Platform: Philips lab
- Location: Eindhoven, Netherlands.



- Platform: 5GTN
- Location: Oulu, Finland

- Platform: CEA-LETI labs
- Location: Grenoble, France



Today's programme

Time	Title	Presenters
09:40-09:55	5G Heart Experiences with wearable video in pilots with Oslo Ambulance Service and AmbulanceZorg Groningen.	Donal Morris, CEO and founder, RedZinc Services Limited
09:55-10:10	Robotic ultrasound examination over 5G network. Challenges and benefits.	MohammadReza Sajadi, Håvard Solvin, Researchers, Oslo University Hospital
10:10-10:25	What's in it for us? Whose problems are 5G empowered solutions addressing in the case of congenital heart disease?	Ewout Brandsma, Senior Architect Digital Systems, Philips, Hanne-Stine Hallingby, Senior research scientist, Telenor
10:25-10:40	Questions and Answers. Closing	

THANK YOU FOR YOUR ATTENTION



Marine Institute
Foras na Mara



5GHEART.ORG



epitomical®



UNIVERSITY OF
SURREY



This project received funding from the European Union's Horizon2020 research and innovation programme under grant agreement No 857034