VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD

Health Use cases Enabled by 5G

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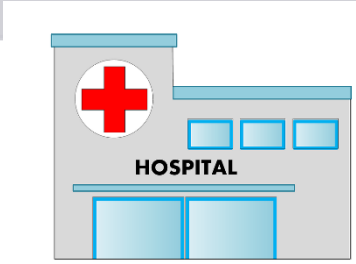
Health use cases for 5G – why?

Challenges in healthcare

Access

- Inefficient and expensive
- Primary care access, waiting time to Specialists
- Medical records
- Rural areas
- Urban areas
- Lack of time of carers



Quality

- Equal services to all
- Medical errors
- Misdiagnosis

Costs

- Costs are constantly rising
- Demographic change
- Taking care of problems and not preventing

Benefits of 5G

- <1 ms radio latency
- >10 Gbps peak data rate, 100 Mbps whenever needed
- 1 million connections/km^2
- Ultra reliability for critical communications
- Continuous access, radio access technology integration and multi-connectivity
- Running multiple logical networks on a common physical infrastructure with guaranteed private network like performance

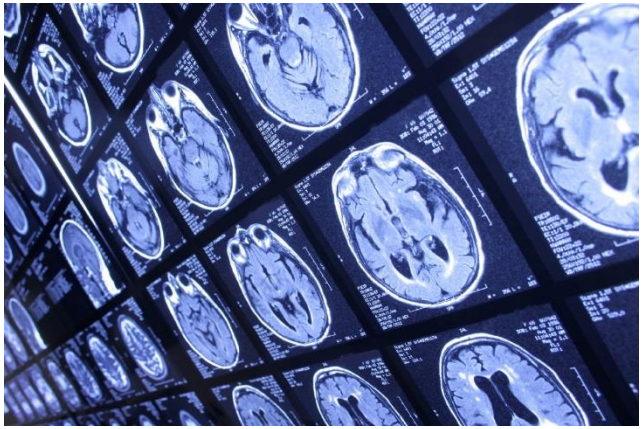
What 5G makes possible in healthcare?

- Telemedicine
- Novel treatment services
- High-resolution video, teleprecense, augmented reality, virtual reality
- Quality of care at affordable prices
- Remote care
- Better security

Possible use cases

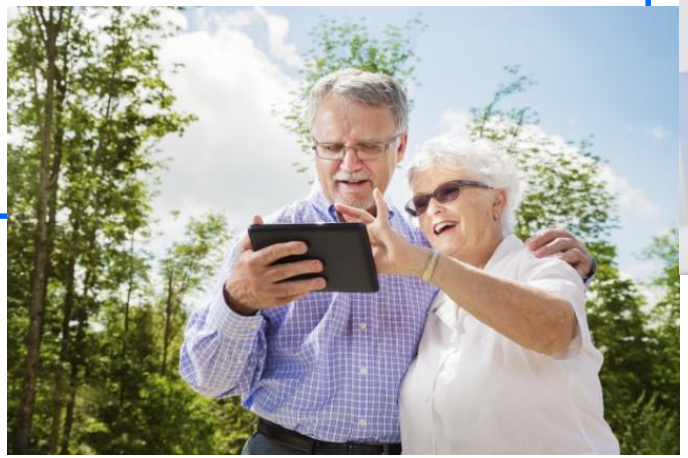
Connectivity inside the hospital

- Surgery
  - Wireless connectivity
- Remote or robotic surgery
  - High quality video, low delay, 3D images, large image data
- AR/VR aided surgery
  - High quality video, low delay, 3D images, large image data
- Collecting patient data at the ward or ICU, Medical IoT



Health@home

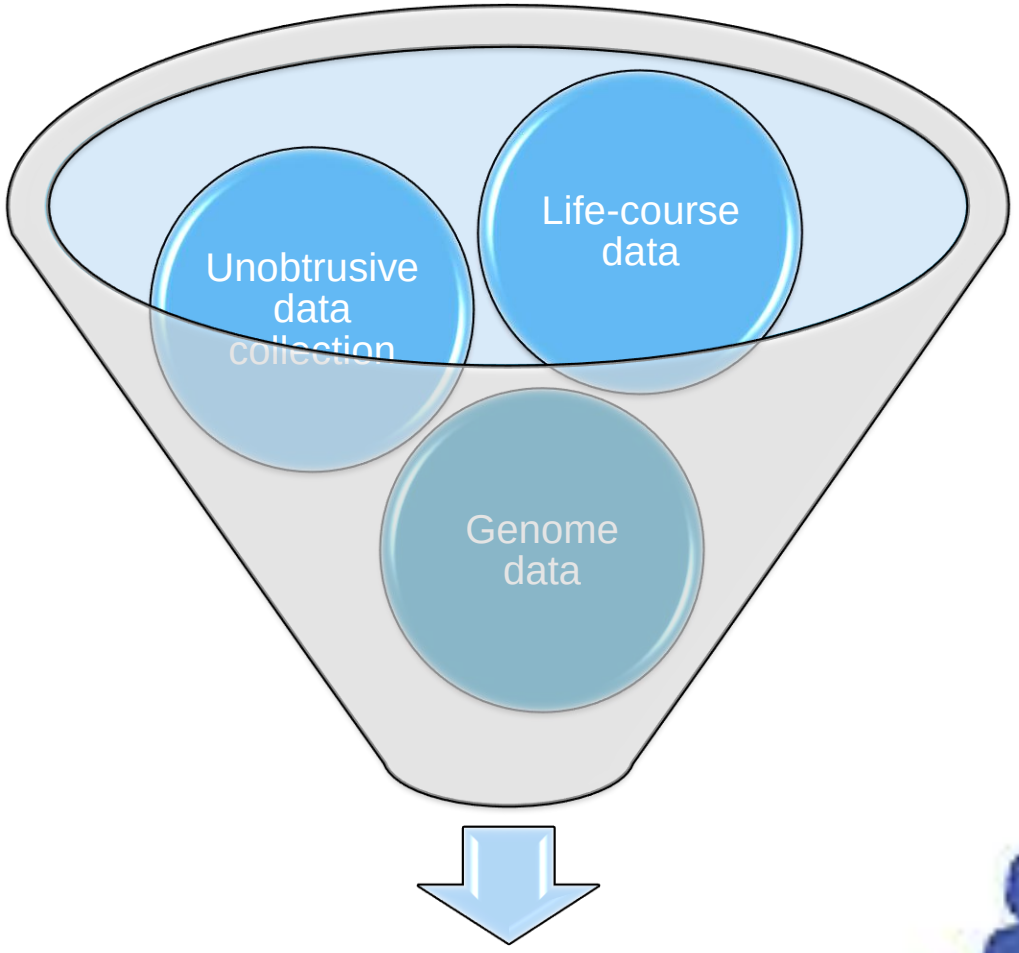
- Care at place
- Earlier return to home after hospital treatment
- Patient-generated health data (PGHD) for better diagnosis
- Independent, but more socially active living for seniors
- Collecting health data during your lifetime



Emergency situations

- Large accidents
  - Facilitating coordination
- Collecting real-time health data in mass events, for example marathon
  - Getting help quickly
- Sending vital information in advance
  - Care upon arrival more efficient
- Driver seizure

Vision



Personalised, individualised, optimal care for you

Future work - Setting up a new project on 5G and eHealth

Medical information platforms and messaging

eHealth applications

Data management for health solutions

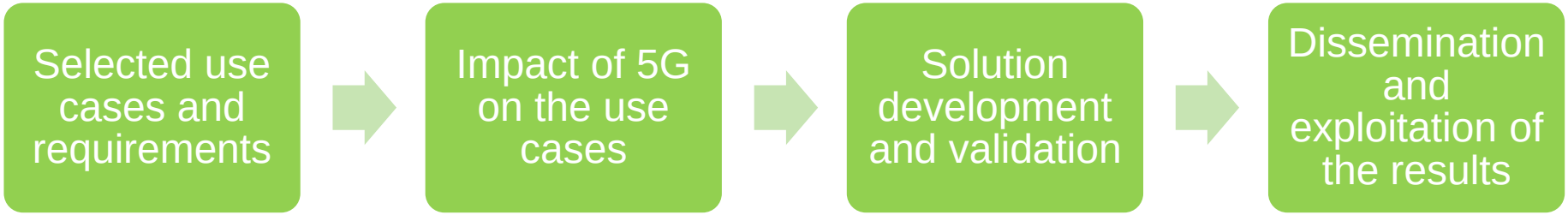
Medical and eHealth devices

Security and privacy

Network and cloud technologies and devices

Health^5G Celtic-Plus project preparation

- Timetable: Project proposal 16th of October
  - National funding applications after that
  - Planned project start: April 2018
- Partners:
  - Finland, France, Sweden, Germany, Turkey, Korea, Israel, Ukraine, Belgium, Hungary



- Still looking at strengthening the consortium with a few industrial and SME partners: Please, come and discuss about the possibilities.

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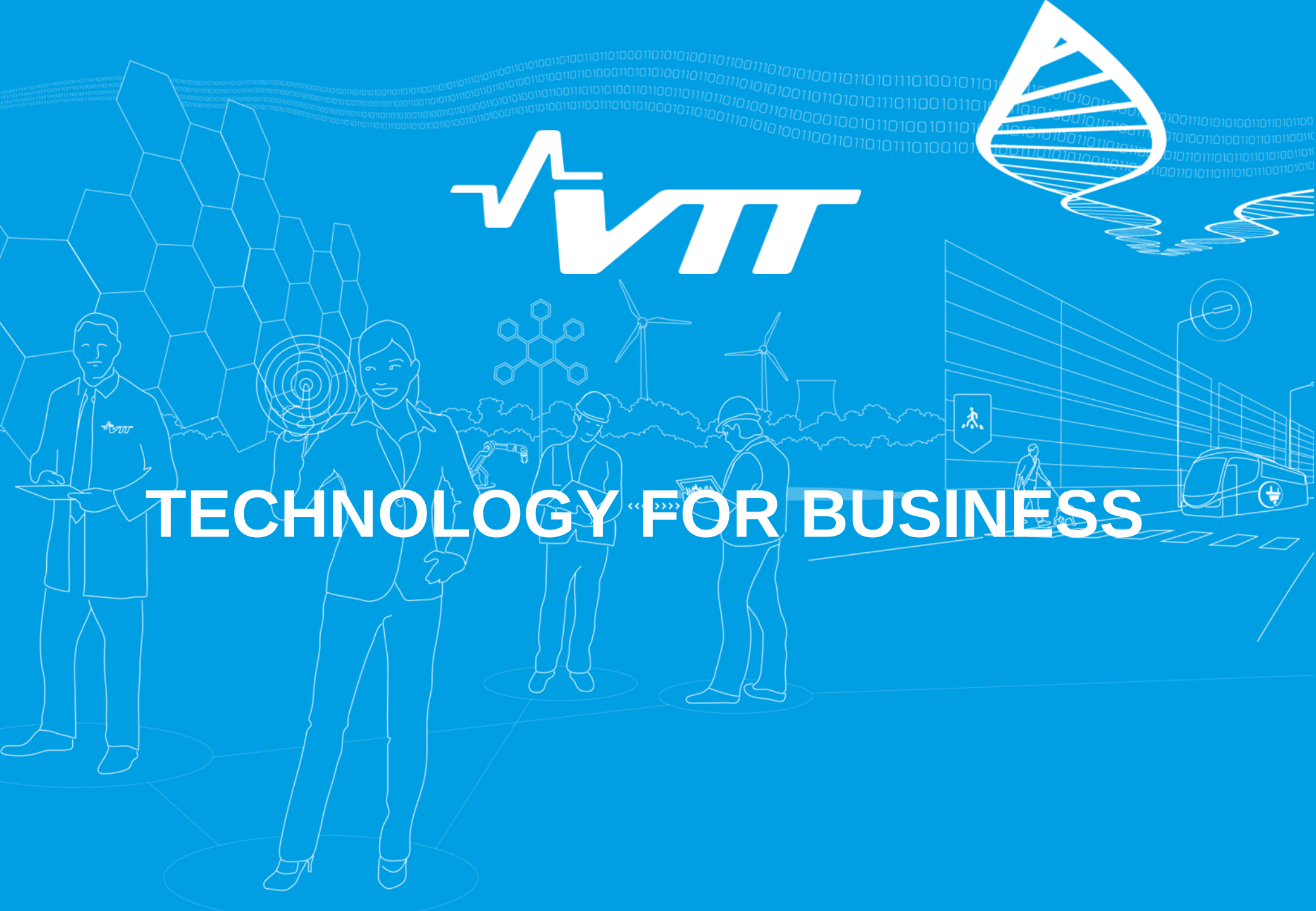
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