



# 5G First Steps

*A truly connected tomorrow*

**Ingeborg Øfsthus** | CTO Telenor Norway

**Average speed  
Telenor Norway  
today: 72.05  
mbps**

*Global average  
speed:  
22.93 mbps*



8002 base stations  
80% of all data  
traffic in Norway  
runs through Telenors infrastructure



NB-IoT  
Coverage

99,3%  
population

77%  
area

LTE-M  
Coverage

99,4%  
population

81%  
area



LTE-M & NB-IoT



# Why do we need 5G?





A photograph of a crowded museum gallery. On the left, a large oval painting is displayed on the wall. To the right, the Mona Lisa is visible in a glass case. A large crowd of people is gathered in the center, many holding up phones to take pictures. The text '5000%' is overlaid in the center of the image.

# 5000%

Aggregated data growth from 2013 to 2023



# Three unique qualities of 5G



Faster and more efficient



Reduced latency



Customized network quality  
with slicing



# Network Slicing enables different verticals on a shared physical network



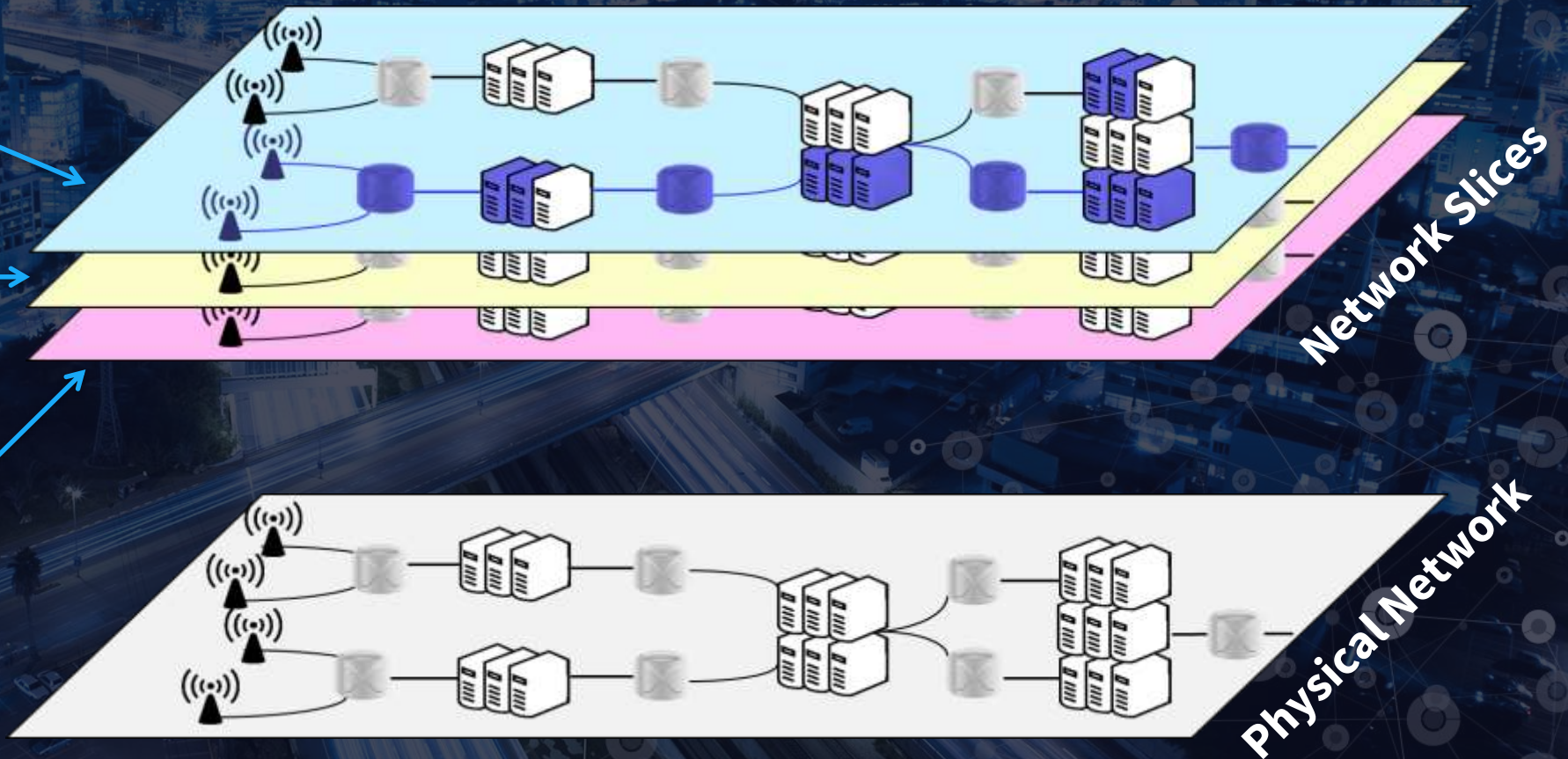
Enhanced Mobile  
Broadband



Ultra-reliable



Massive IoT





# The Kongsberg Pilot

Opened November 8th

Three 5G-basestations

100 MHz @3,5 GHz customized for 5G  
NR

10 MHz @1,8 GHz redistributed for the  
pilot-network

The world's  
fastest mobile  
network will  
get even faster!





A photograph showing three emergency responders at an outdoor scene. In the foreground, a man with grey hair, wearing a firefighter's jacket with a red and white checkered pattern and a tan hood, is speaking into a black handheld radio. Behind him, a police officer in a dark blue uniform and cap is also looking towards the left. To the left, another responder in a red and white uniform with a green helmet is visible. The background is slightly blurred, showing a white tent and some greenery.

**Emergency network**



A man in a black shirt is operating a robotic surgical system. He is standing at a console, with his hands on the controls. A large projection on the wall behind him shows a close-up of the robotic arm and the surgical site. The robotic arm is holding a surgical instrument, and the projection shows the man's hands manipulating the instrument. The scene is dimly lit, with the projection providing the main source of light. The text "Remote healthcare" is overlaid on the bottom left of the image.

# Remote healthcare



**Testing out new possibilities with  
The Norwegian Air Ambulance Foundation**





**5G enables further development of autonomous vessels and vehicles**

AK

**New business opportunities**





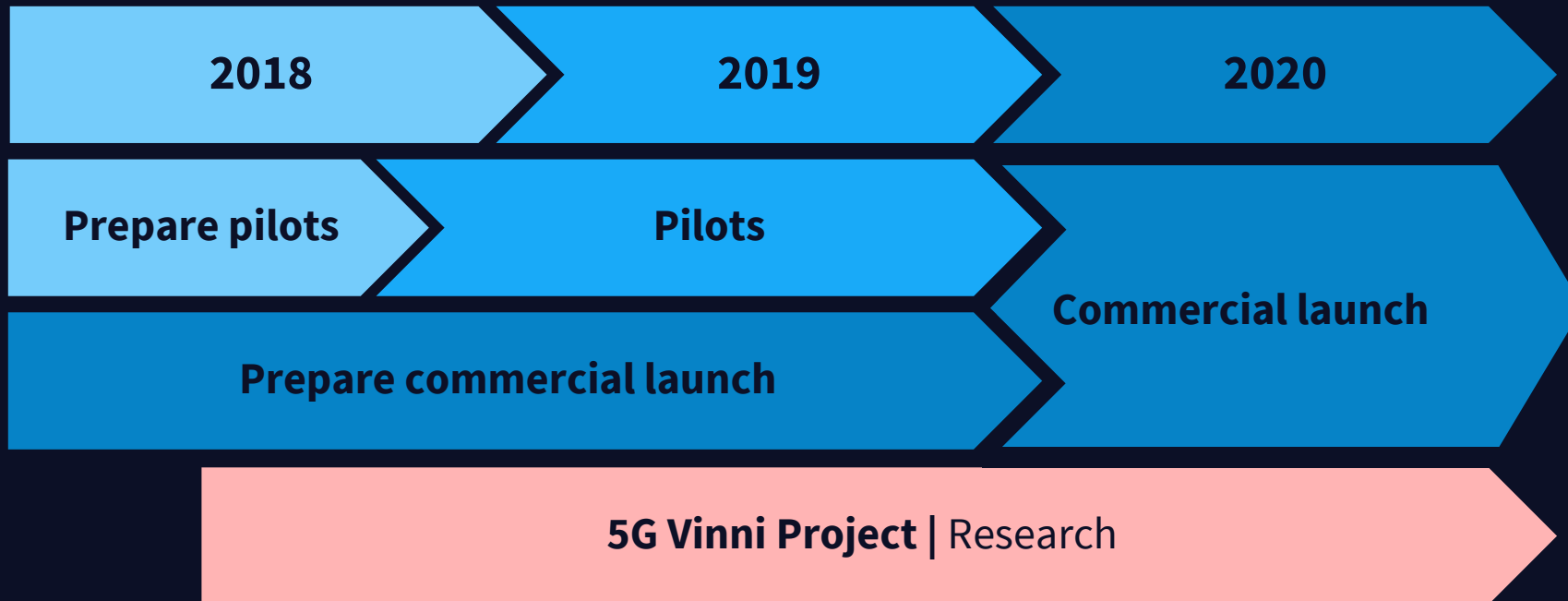
# Meet the Ruud family

One of the 5 families in Kongsberg  
to test 5G at home



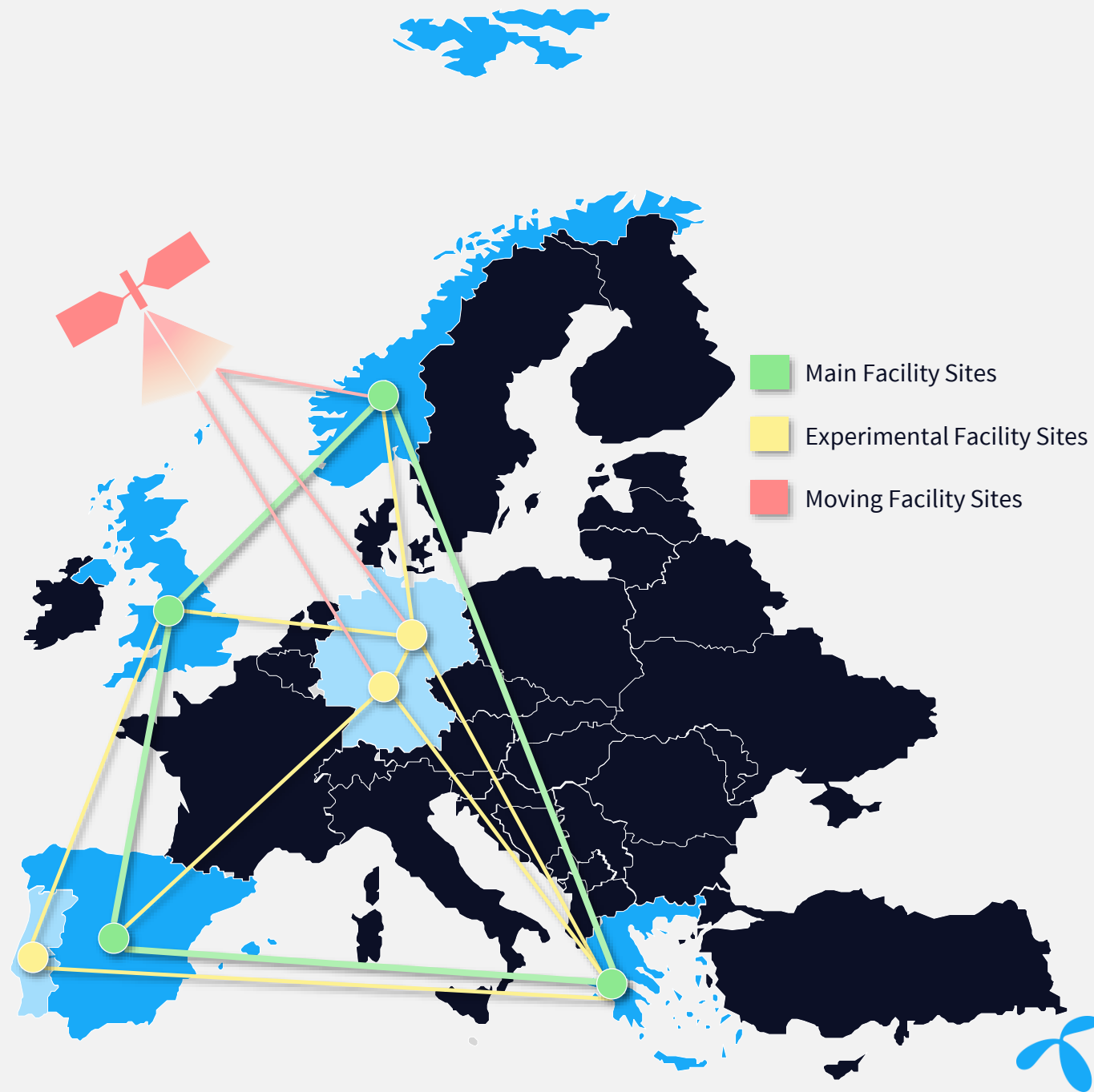
# The 5G timeline

**First 5G  
Connection  
in Kongsberg**  
24<sup>th</sup> September  
2018





# Telenor leading the way for a pan-european research project



# Key beliefs



More efficient way to  
meet capacity growth



Needed for new services  
and verticals



Replace legacy services



First mover-position  
gives greater  
commercial potential





The world's  
fastest mobile  
network will  
get even faster!



**Thank you!**