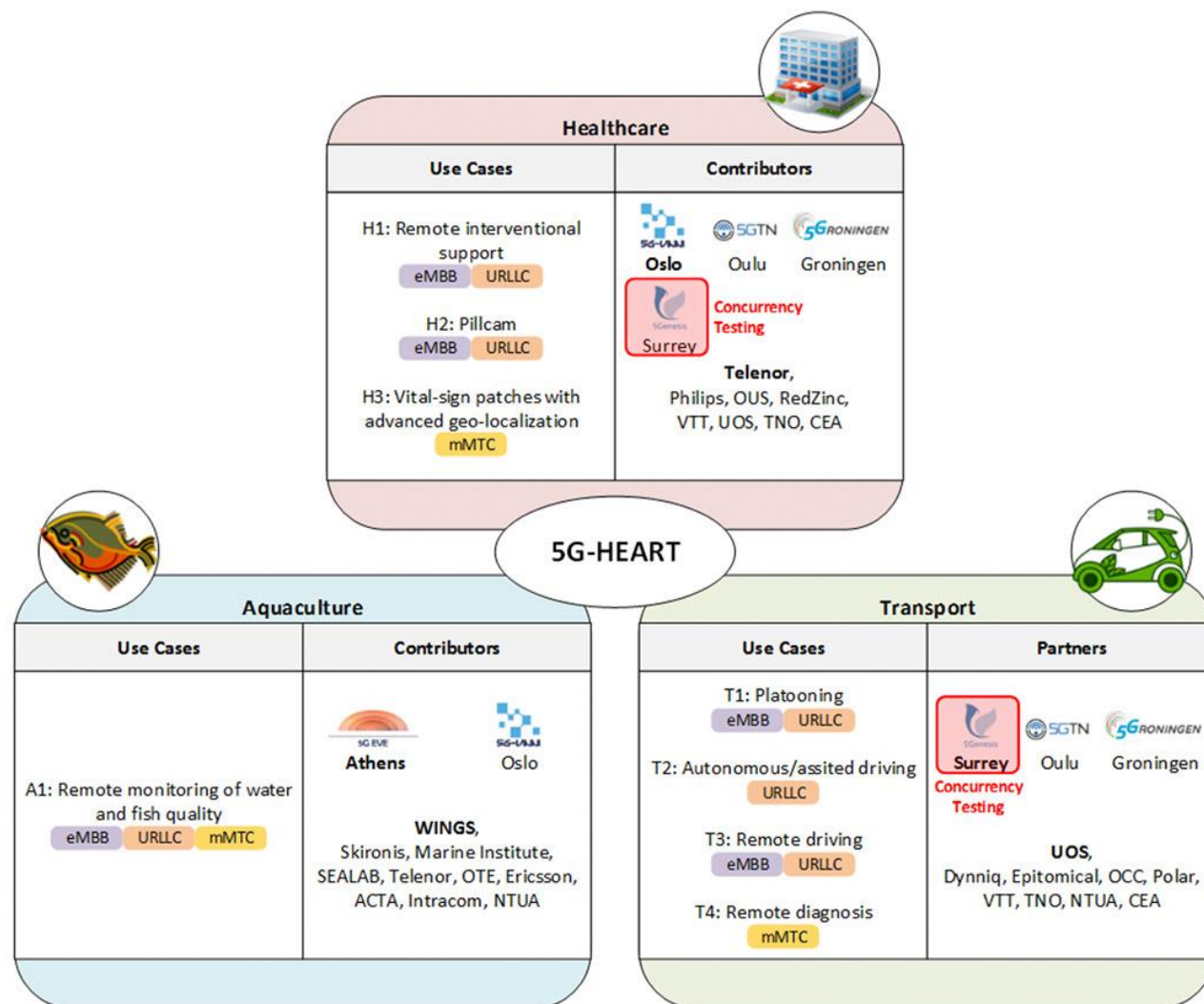5G-HEART.EU

Measuring Key Performance Indicators of 5G Networks

Panayiotis Verrios

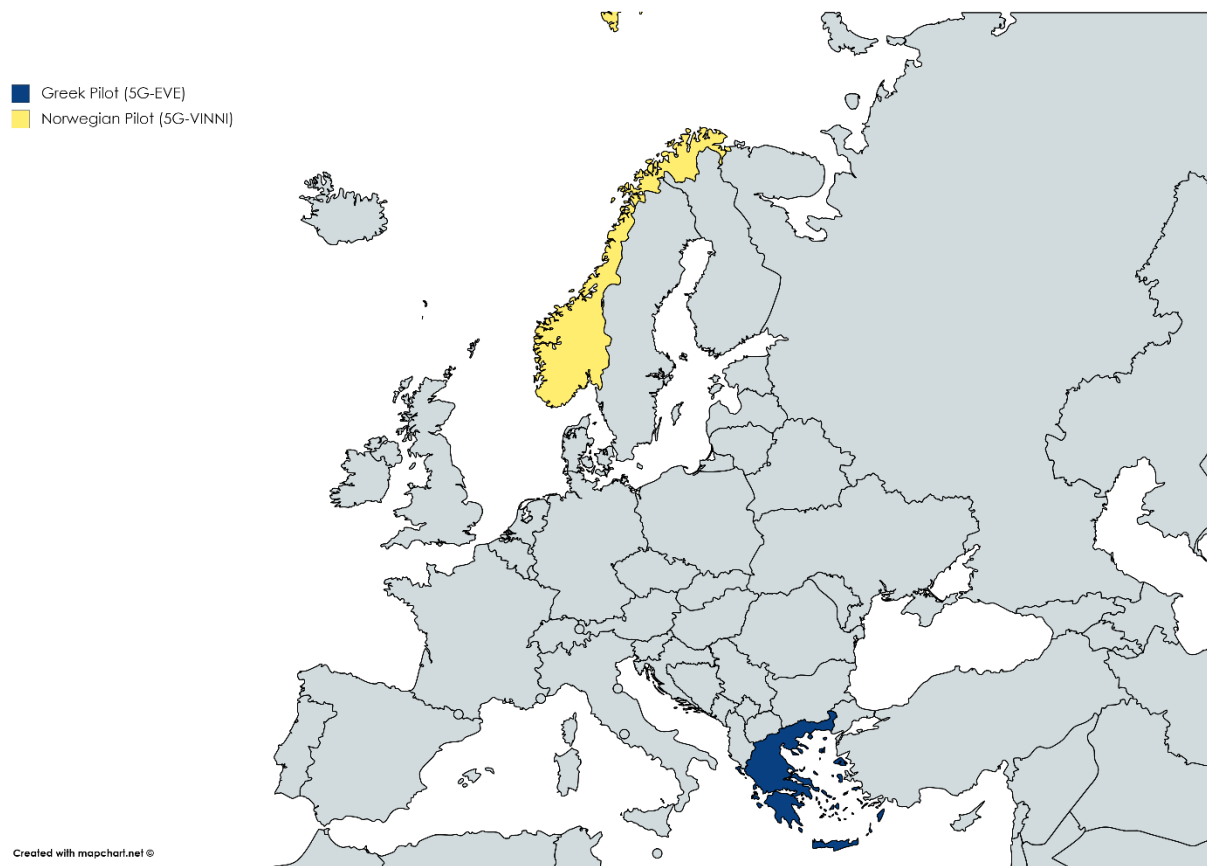**5G HEART: Health, Transport and Aquaculture validation trials**

5G HEART: Ecosystem

5G HEART: Aquaculture vertical cartography

Greek Pilot (5G-EVE)
Norwegian Pilot (5G-VINNI)

Created with mapchart.net ©

The aquaculture vertical will build a cross-border aquaculture use case with one pilot in a Greek fish-farming unit on floating facilities of fifty thousand (50000) m^3 in the area of "Kato Aloni", Megara Bay, and one in Norway.

5G HEART

5G HEART: Aquaculture vertical monitoring
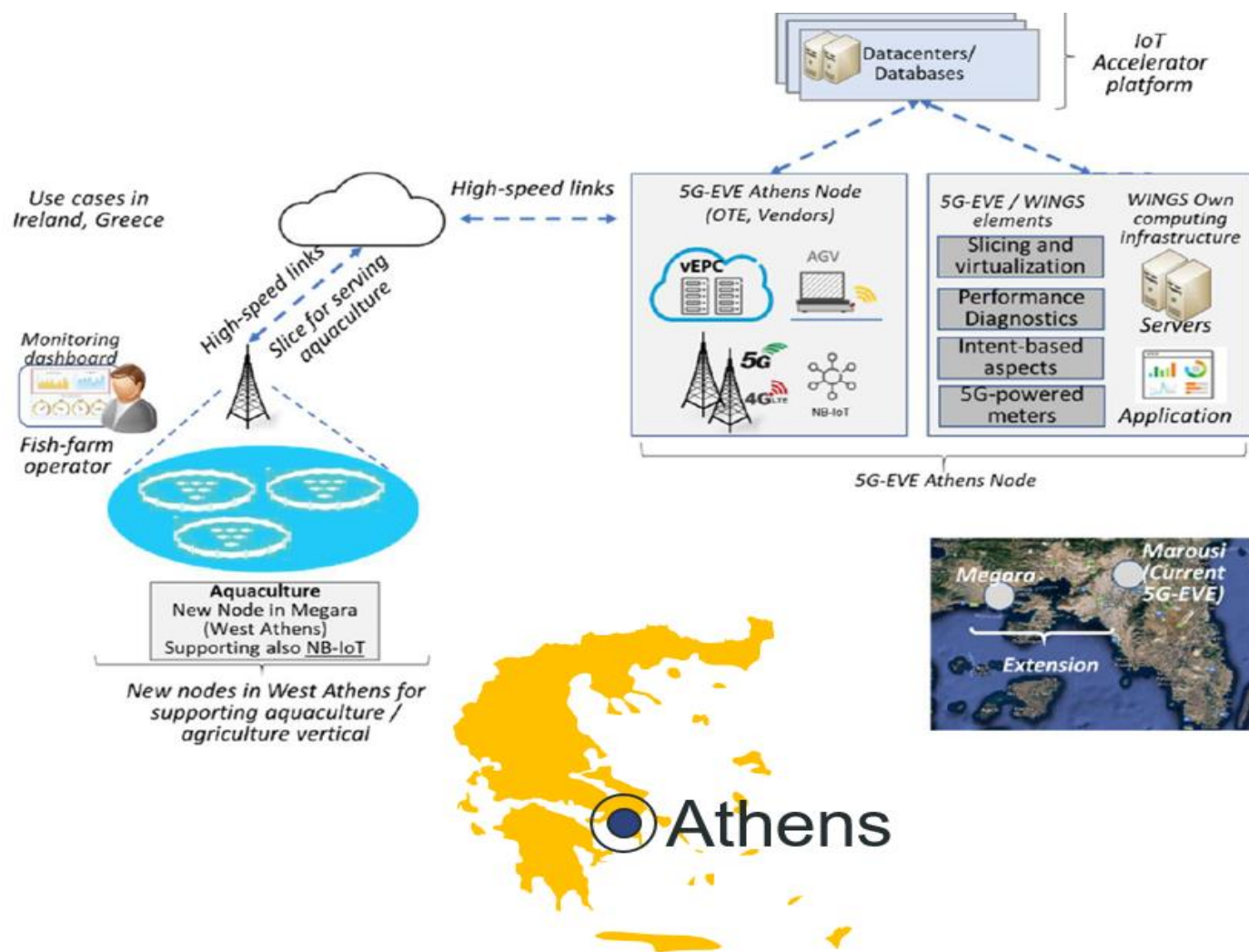
The main features that will be tested and are:

- Remote monitoring of physical conditions at site

- Security and Infrastructure Maintenance

- Fish monitoring

- Autonomous/Remote functionality

5G HEART: User requirements

| Use Case A1 Remote monitoring of water and fish quality	Sensor Data Monitoring	Camera Remote Monitoring	Drone and ROV Automation and Monitoring
HD-Video (Up/Down)	No	High	High
Data (Up/Down)	Low	Medium	Medium
Voice	No	No	No
Mobility	No	No	Yes
Location Information	No	No	High
Edge Computing	No	No	Yes
Edge Storage	Yes	Yes	Yes
Fast Response (Low Latency)	No	Medium	Medium
Traffic Type	Sustained Low	Sustained medium	Sustained medium
Reliability/Availability	High	High	High
Interactivity	Low	Medium	Medium

5G HEART

5G HEART: Aquaculture scenario architecture

- Water quality sensors for measuring at real-time parameters like oxygen, temperature, salinity, current, meteorological data
- Underwater cameras for monitoring fish behavior in the cages
- Over the surface cameras for security
- 360 on-surface camera for infrastructure monitoring
- Underwater drones for infrastructure monitoring
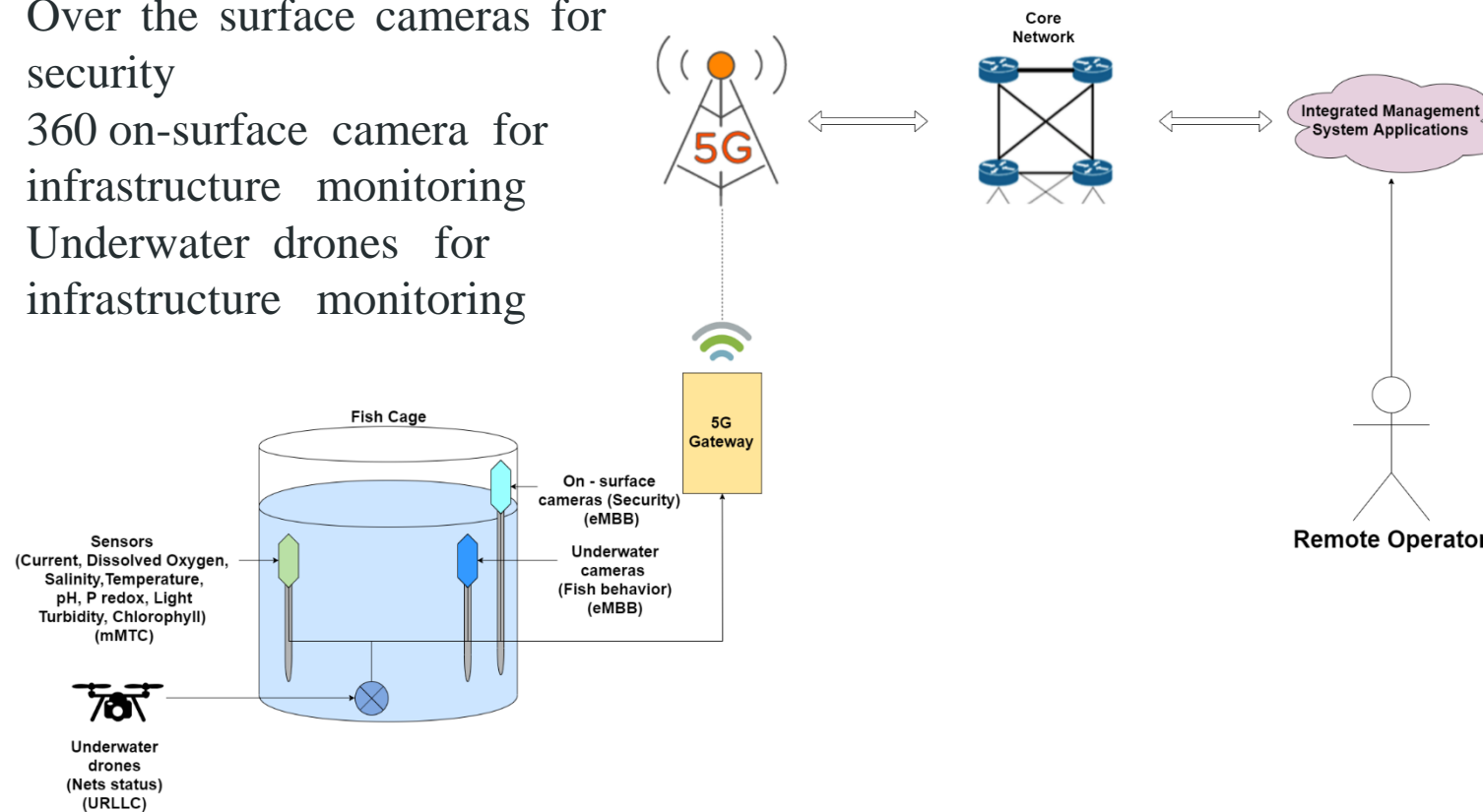
5G HEART: Aquaculture Involved Sites
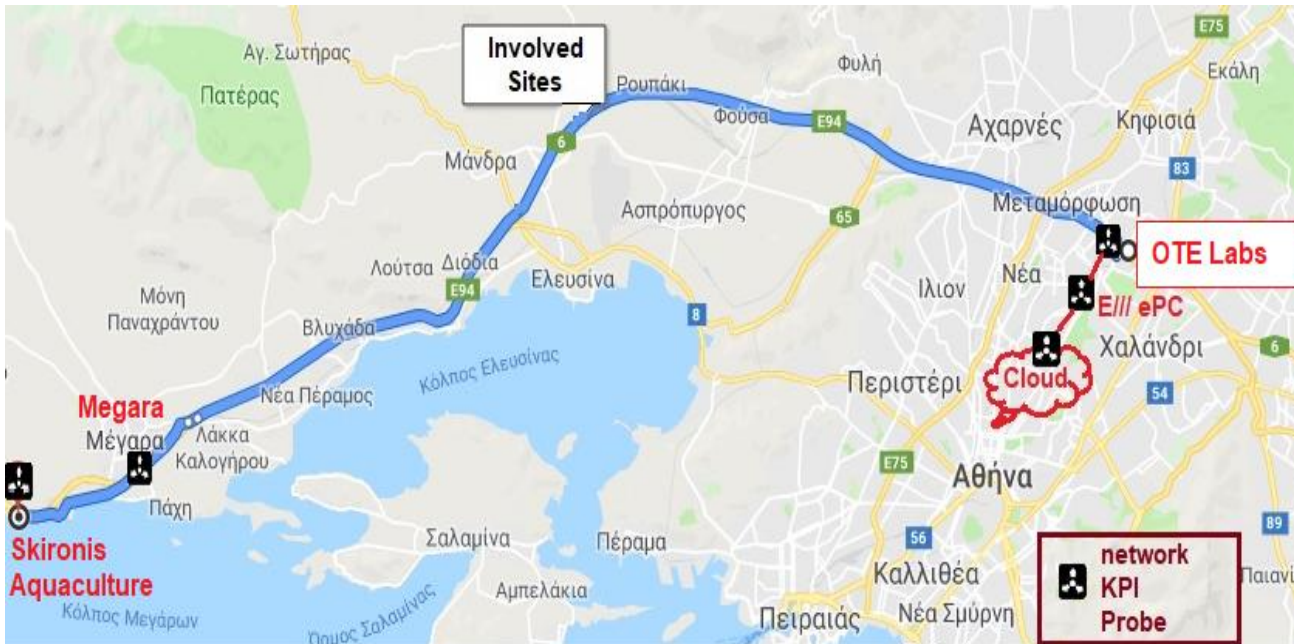
- 5G network implemented over fiber optics and 10 Gbps connection.
- The Skironis Aquaculture site will be connected, via the OTE premises at the City of Megara, to the OTE LABs in the OTE-Academy location.
- From there, there will be a connection to the Ericsson ePC and finally reach the Cloud and the application (WINGS).
- ACTA will install probes for 5G network KPI measurements.

5G HEART: IoT network KPI measurements
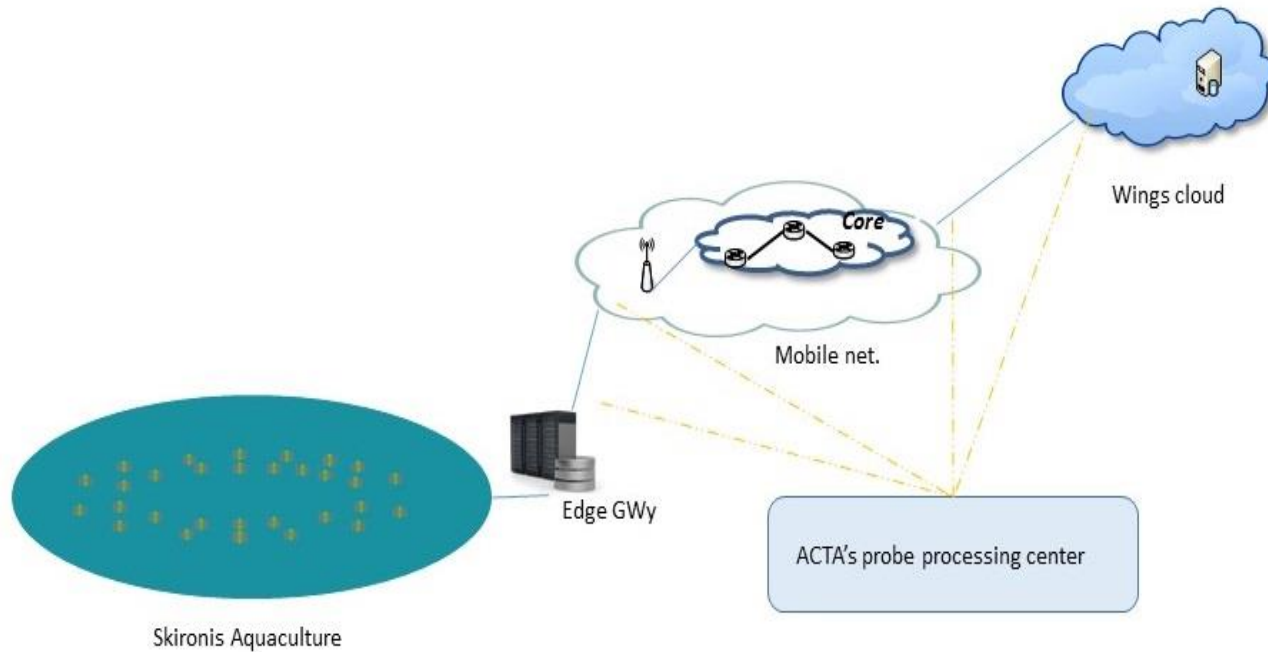
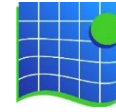
ACTA will measure 5G Network KPIs that include:

- Latency - round trip
- RAN latency
- Max/Attainable/Min BitRates (Data Rates)
- Jitter
- Packet Loss
- Throughput – sustained demand
- Availability

THANK YOU
FOR YOUR ATTENTION

5G-HEART.EU