

Converting 5G Research and Development to Business Value Panagiotis Demestichas

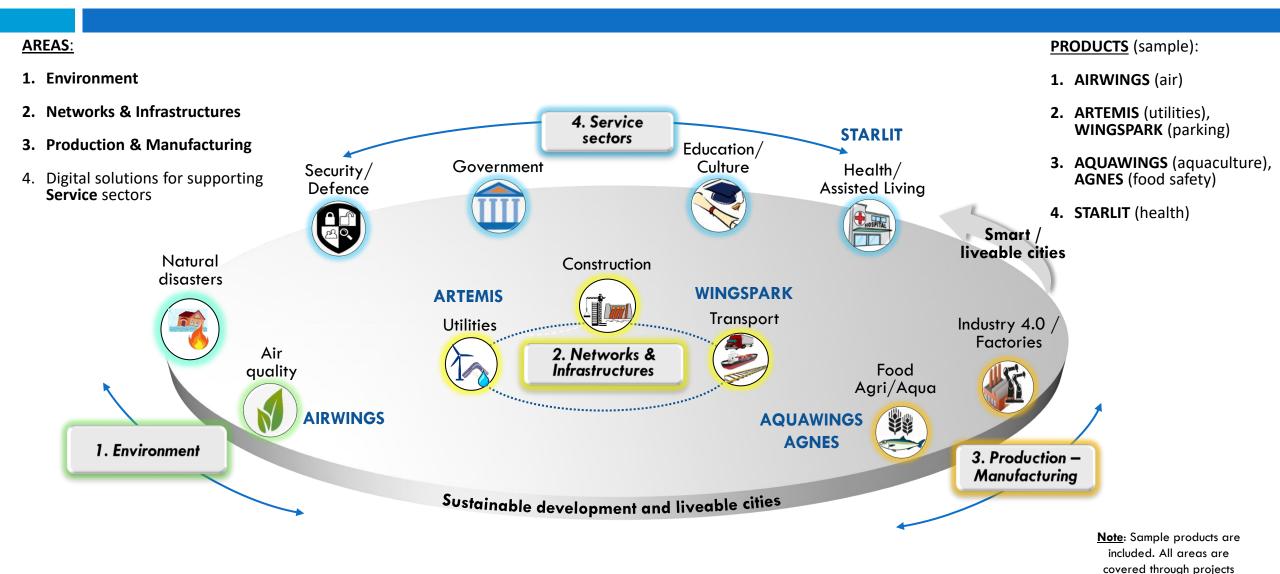
INFOCOM WORLD CONFERENCE 2020

Transforming Greece: The 5G and Fiber Enablers – The Future is Now!

4-6 November 2020

WINGS ICT Solutions P.C. WINGS © 2020

Company: Market segments



Products introduction: Reference architecture

How it works

WINGS integrated IoT Solutions are based on four pillars:

IoT Devices, Communication Technologies, Artificial Intelligence and Data Visualisation.









5G Services

enhanced Mobile Broadband <u>eMBB</u>

- Extreme throughput (1-20 Gbps)
- Extended coverage (100%)
- Enhanced spectral efficiency(x1-x3)

Wine Type Communications





5**G**



Low Latency Communications

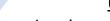
mMTC

- High connection density (1 mn
- Extended coverage
- Energy efficiency (10 years battery life for IoT)









- Low latency (1 ms)
- Ultra reliability (99.999%)
- Location precision ($<1 \,\mathrm{m}$)



Key Features

- Spectrum 3.x GHz
- NSA and SA version
- Edge, Cloud
- Artificial Intelligence (AI)





Influenced by R&S Infographic "5G is born"

5G Services

5G Enhanced Applications

- **Enrichment** of existing services
- New services transformed by 5G

Services: AR/VR, e.g., for culture, education

eMBB

- Extreme throughput (1-20 Gbps)
- Extended coverage (100%)
- Enhanced spectral efficiency(x1-x3)

Benefits

- From distinct 5G services (eMBB)
- From combining capabilities (e.g., eMBB and mMTC)

Wine Type Communications

mMTC

- High connection den
- Extended coverage
- Energy efficiency (10 years battery life for IoT)



Networks: Transportation: Parking/Charging: WINGSPARK

Production: Food: Aquaculture: **AQUAWINGS**

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- Location precision (<1 m)





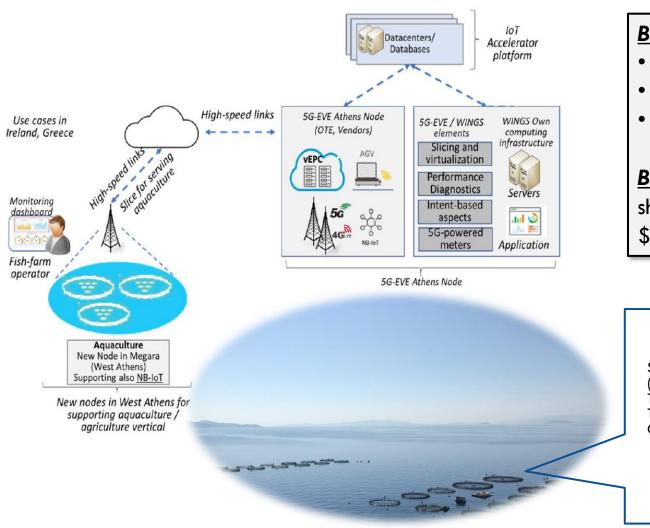






AQUAWINGS

5G for Connected Aquaculture

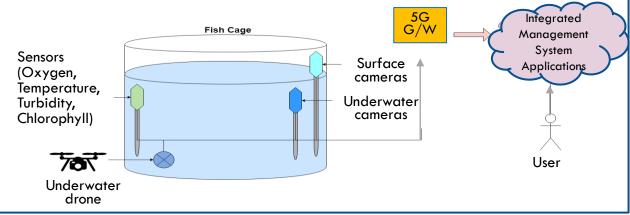


Business value proposition through 5G:

- Advanced, HD videos
- Real-time high-definition monitoring of production welfare
- Underwater drones



<u>Business value:</u> Increased turnover and potentially market share for stakeholders, 5G impacting sales of more than \$389bn* in the domain of agriculture, forestry, fishing)



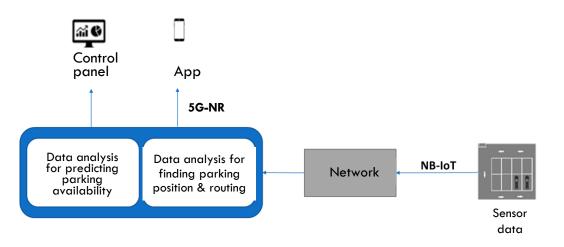
* Sales Source: Raconteur Publishing, 2020

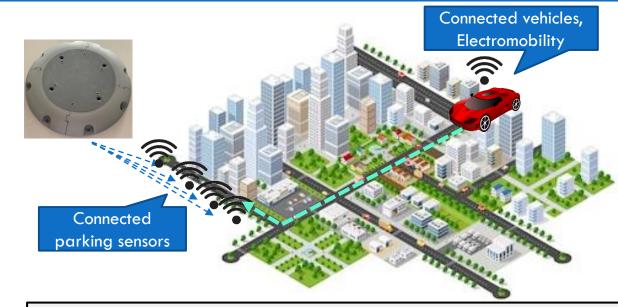
WINGSPARK

5G for Automated Driving & Parking

Architecture

- Parking sensors
 - Sensing if a position is occupied or not
- Artificial Intelligence algorithms
 - Prediction of availability
 - Routing, scheduling of drivers / vehicles
- Application for the end-user
- Front end dashboards for the manager
- ullet AUTOMATED DRIVING, AR/VR, charging station management





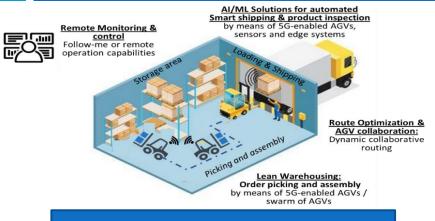
Business value proposition through 5G:

- Enhanced applications, up to AR/VR for assisting the driver
- Connected/ automated driving, navigation and smart parking around the city
- Electromobility

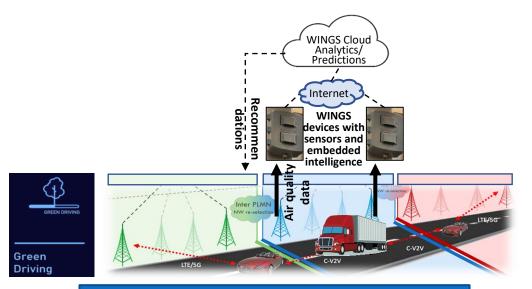


<u>Business value:</u> Increased productivity and less time for parking searching and navigation across the city, 5G impacting sales of more than \$627bn* in the domain of transport and storage)

5G-powered Services for Industry 4.0 and Logistics



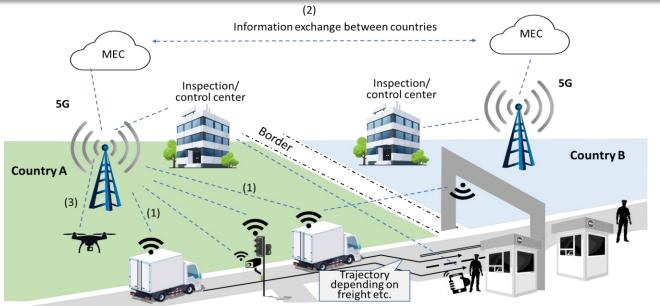
1. Warehouses



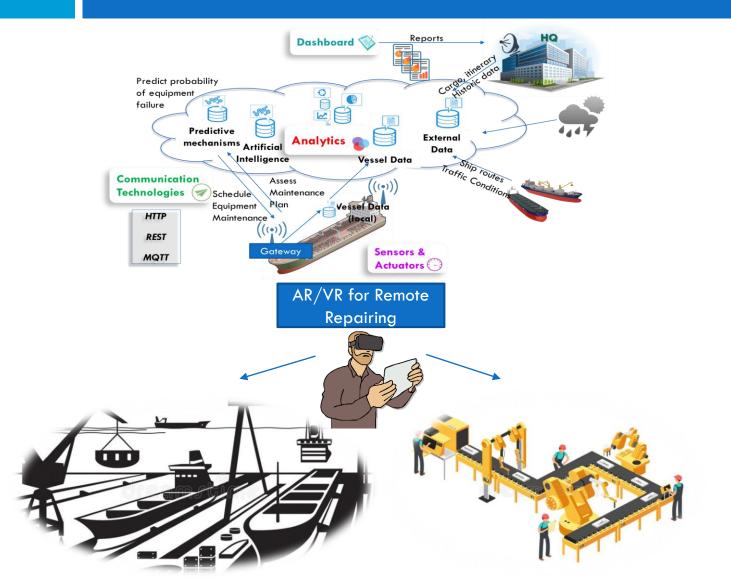
Business value proposition through 5G:

- Industry 4.0 and automated logistics
- Transform the warehouse
- Optimized driving and cargo handling

<u>Business value:</u> Increased productivity and less costs for stakeholders, 5G impacting sales of more than \$627bn* in the domain of transport-storage



5G for Industry 4.0 (e.g. Shipyards etc.)



Business value proposition through 5G:

- Remote repairing and connected maintenance for factory components
- Remote assessing of a maintenance issue from mechanics, via AR/VR
 - Enhanced awareness of the issue in conjunction with the usage of legacy sensors
- High speed and reliable networking for achieving aforementioned actions



<u>Business value:</u> Increased productivity, enhanced collaboration and less costs for stakeholders, 5G impacting sales of more than \$4tn* in the domain of manufacturing

5G for AR/VR: Enhanced Cultural Experience - Education



Business value proposition through 5G:

- AR/VR for enhanced cultural experience
- Ultra-HD images and videos



<u>Business value:</u> Preservation and promotion of culture heritage, enhanced experience for users, new stakeholders introduced in the value chain (AR/VR app providers)

Conclusions – Way Forward

- Wireless is a key component for Digital Transformations
 - NB-IoT introduces us to the 5G era
 - Synergy with IoT, AI, edge/cloud

- Novel features / services
 - Video components, large information streams, reliability

Call for action: Combination of private and public sectors

Contact information



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