Enabling the next level of a digitalized aquaculture

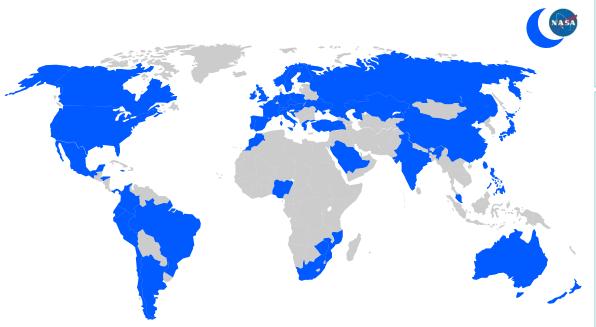
Why 5G is a key enabler?

alfredo.gonzalez_herrero@nokia.com Manufacturing Latin America Head of Sales Punta Arenas, March 26th, 2025



850+ private LTE/5G wireless customers

Uncontested market leader in private wireless*



Public references

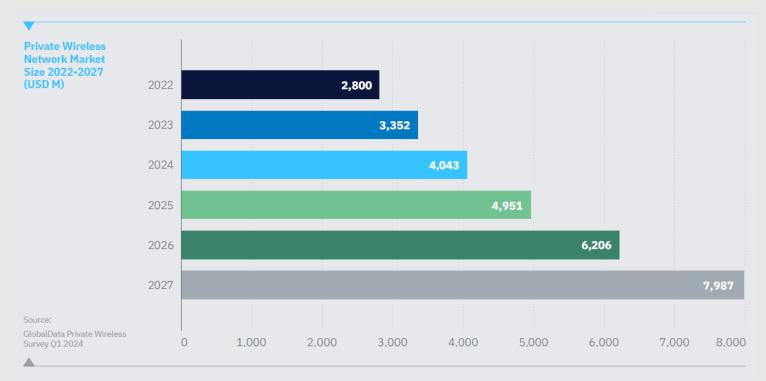






By 2027 the private wireless market will have grown by 100% vs. 2024

By the end of 2024 it grew by 44% compared to 2022





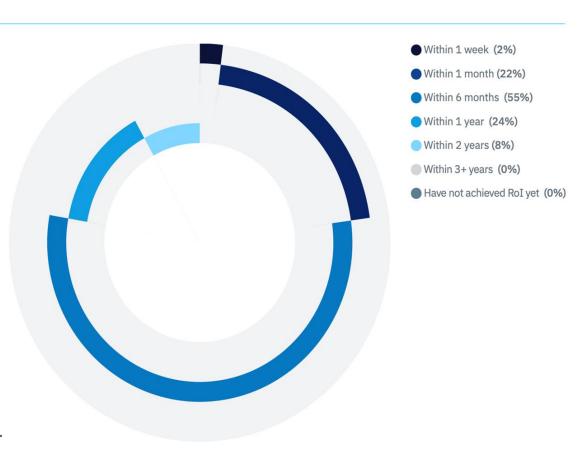




78% of early adopters see ROI within 6 months, 93% in 1 year!

Within how long did you achieve a Return on Investment (ROI) on your private wireless solution (including industrial applications)?

- 100 pLTE/p5G early adopters interviewed in manufacturing, transportation and energy industries in 6 countries: USA, Germany, France, UK, Japan, and Australia
- All are using pLTE/p5G networks in additional locations, or have expanded their use by launching more use cases in existing locations



p5G for Industry 4.0 is delivering real-life business benefits

% of industrial companies surveyed which quantified improvements in more than 10%

 \rightleftharpoons 79% 75% 65% 90% 73% +10% increase in **Improvement** operational costs +10% in worker +10% emissions +10% increase reduction over workers' safety collaboration reduction in productivity 10% Robotics&mechatronics Connected worker **Condition Monitoring** Connected worker Geofencing and alarms Industrial IoT Critical team comms Drones Video analytics Connected worker Condition monitoring Industrial IoT Worker safety apps Robotics Analytics







Today's data and voice connectivity challenges in aquaculture

Connectivity needs and business benefits

A People and assets safety and security

Safety and security of workers, production and assets

- Thefts, vandalism
- Accidents
- Video surveillance in remote areas

- Reduce losses related to thefts
- Reduced human involvement in hazardous operations
- Reduce injuries

B Precision farming /
Aquaculture monitoring

Automated, monitored and optimized production

- Breeding, growing, harvesting...
- Fertilization, plague monitoring
- Feed, water quality (O2), temperature
- Meteorological monitoring

- Increase productivityIncrease efficiency
- Save in inputs (mainly food)

C Connected worker / Serve people Augmented, connected and assisted worker incl. human-machine interaction

- Connect offices & fish tanks, ponds, aquaponics or raceways
- Support labor requirements
- Quality of living

- Improve efficiency
- Reduce staff rotation
- Avoid labor penalties

D Smart asset / machinery monitoring

Monitored, tracked and digitally managed manufacturing machine, robot or asset

- Complete lack of information/visibility
- Inefficiency in machines logistic
- Less waste with fertilizers / insecticides

- Predictive / Condition-based maintenance
- Higher return on machine investment
- CapEx optimization

Industry 4.0 use cases in aquaculture processes

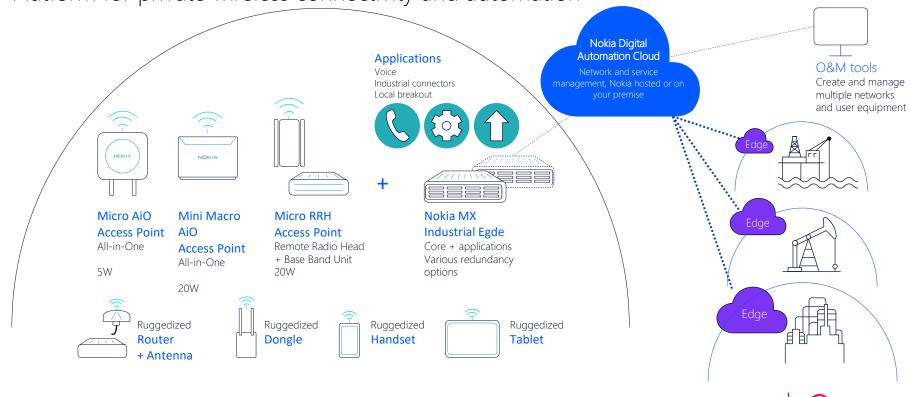
Customer confidential

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p5G Nokia Digital Automation Cloud

Platform for private wireless connectivity and automation







Private LTE/5G – Best of Wi-Fi and fixed DNA

Fixed (IP-MPLS) Private LTE/5G Wi-Fi Fix (length of cable radius) Wireless (50m radius) 1 cable per machine 30 active connection per AP up to 1M devices (5G) per AP Interferences Very low interferences affect coverage Reliable (QoS) Best effort Reliable (QoS) Service prioritization Service prioritization (8x) No prioritization Low and predictable latency Unpredictable latency Secure Medium security Good capacity, but High capacity high peak rate





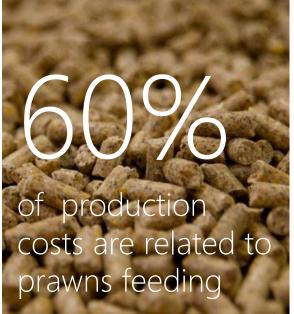
Grupo Nuevo Pescanova

GRUPO NUEVA PESCANOVA

Prawn farming reference case



Pain







Grupo Nuevo Pescanova

Prawn farming reference case





Industrial IoT

Feeders

- Motor
- Support

- Parametrization SW via APP
- Sensors (temperature, O2, saturation, etc.)

- WiFi / LTE AP

Sensors

- Temperature
- WiFi / LTE AP





Collaborating with entire ecosystem to drive Industry 4.0



Telecommunications experts

Expertise in building & operating mobile network or public clouds





Industrial bodies and ecosystem players

More LTE/5G industrial connected things and use cases by industry





System integrators and consultants

Deeper industry expertise and specialised channel to market







Questions?

Punta Arenas, March 26th, 2025

alfredo.gonzalez_herrero@nokia.com Manufacturing Latin America Head of Sales Nokia









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