Dual-use technologies

DECT NR+ Beyond Civilian Applications

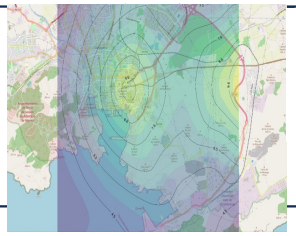
Presented by the QARTIA/UPCT team

Munich, November 2026

QARTIA CLOUD



Artificial Vision



Air Polution
Spacio-Temporal
Predictions

Predictive
Maintenance





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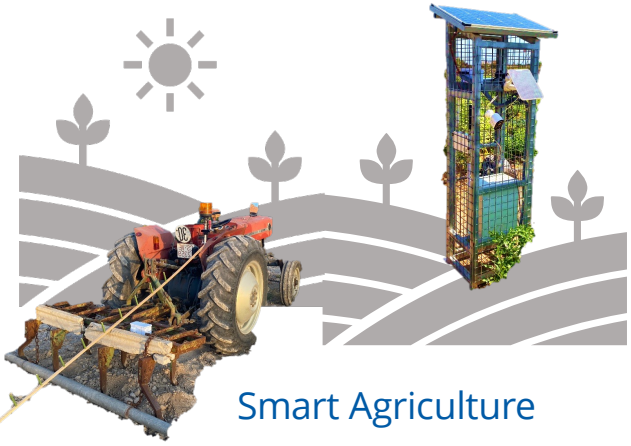
5G

LoRa

WiFi



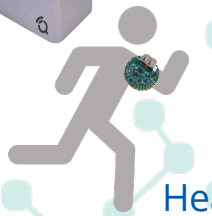
Air Quality
in Smart Cities



Smart Agriculture

Industry 5.0
Remote monitorization in critical assests





Health and Sport Wearables

Universidad Politécnica de Cartagena

MIEMBRO DE EUT+ EUROPEAN UNIVERSITY OF TECHNOLOGY

About QARTIA

A technology spin-off of UPCT, based in Cartagena.

Research and engineering for connected monitoring.

Help businesses and public organisations understand their surroundings and turn technical data into information that supports decisions.



QARTIA and UPCT engineering capabilities

Hardware and firmware	Proprietary electronics, sensor integration and embedded software.
Private connectivity	DECT NR+ networks and integration with customer systems.
Data and applications	Monitoring platforms, analytics and access to technical knowledge.

Project delivery and support

Design	Define monitoring needs and adapt the system to the site.
Deployment	Install sensors and communications, then integrate data services.
Ongoing support	Maintain equipment and help customers use operational information.

AI, RAG and digital twins

AI	Analyse measurements, identify anomalies and predict diagnostics.
RAG	Answer questions using manuals, records and connected information.
Digital twins	Link an asset or site representation to sensor data and operating history.

https://youtu.be/g3N5FCAJUdI

QARTiA
smart technologies

Our services

Application areas

Industry and predictive maintenance

Environmental monitoring

Agriculture and agrivoltaics

Civil infrastructure

Technology and delivery

Sensors and embedded systems

Private wireless networks

AI, RAG and digital twins

Integration and maintenance

https://youtu.be/IJyQG3NY9hk

QARTIA and dual-use technology

Research foundation	UPCT expertise supports technology development and transfer.
Civilian experience	Industrial, environmental, agricultural and infrastructure projects.
Defence potential	Adapt monitoring and private connectivity to facility and equipment needs.

DECT NR+

A non-cellular wireless technology in the 5G IMT-2020 family.

Private networks without dependence on a mobile operator.

Mesh networking and support for reliable, low-latency communications.

QARTIA's technology stack

Miniature hardware and embedded software.

MAC/DLC development, IPv6 routing and mesh networks.

Connected sensing, video and command-and-control applications.



Remote Monitoring of Critical Assets

Critical firefighting motor pump in Escombreras, Cartagena.

Operating data, remote supervision and alerts.

Equipment-condition information for maintenance planning.



Vibration-based diagnostics

Continuous assessment of rotating machinery.

Identify imbalance, misalignment and bearing wear.

DECT NR+ for transmiting spectrum and temporal data



https://youtu.be/tKtnFuy05EQ

Industrial Park

Three air-quality stations and environmental noise monitoring.

Continuous measurements over a private DECT NR+ network.

Environmental information visible on a public display.



https://youtu.be/B6rd5sHDSZ8

Civil infrastructure

Connected sensing for infrastructure supervision.

Seismic monitoring near Cala Cortina, Cartagena.

DECT NR+ connectivity and integration with 112.



Dual-use opportunities

Civilian experience	Potential defence applications
Predictive maintenance	Monitor auxiliary machinery
Environmental monitoring	Supervise facilities and logistics assets
Critical-Asset Supervision	Battlefield Connectivity with DECT NR+

https://youtu.be/tPU_JK4_r2M

Some Qartia/UPCT partners



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SCAN ME