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NR+ for the industrial market

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DECT World 2026 · Munich

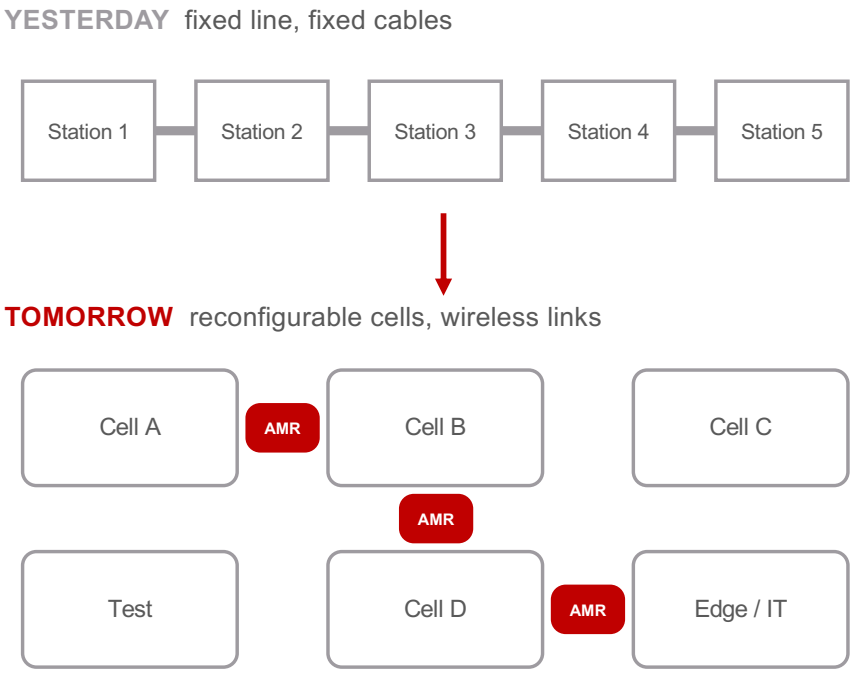
Industry is on the move

Freedom of movement is becoming an economic asset.

1. **More variants, smaller batches**
   down to lot size 1 – lines are re-planned far more often
2. **Mobile robots and AGVs**
   bring material to wherever the next step takes place
3. **Movable machines, tools, test gear**
   one asset serves several stations and new tasks
4. **IT/OT convergence**
   orders, approvals and results must reach the machine wherever it is

Industrial wireless automation market

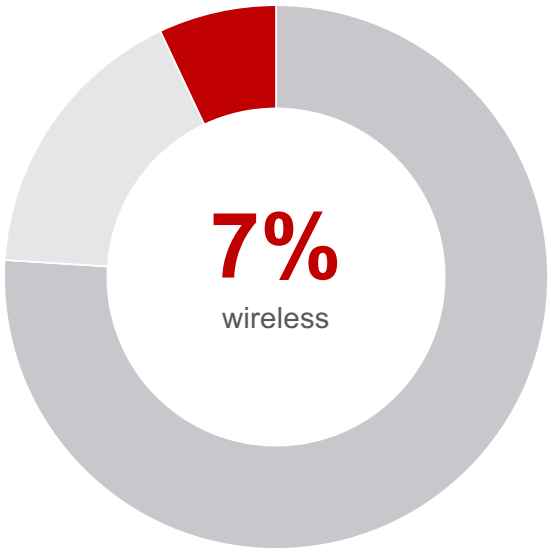
USD 5–8 bn today → **USD 10–15 bn** early/mid 2030s



AMRs and movable assets link cells over the air

Sources: DECT Forum NR+ IIG Scope and Charter v1.0 (Oct 2026), citing Market Research Future 2035 report; DECT Forum IIG white paper draft (Oct 2026); Fraunhofer IPA (matrix production).

Wireless is still the exception



- Industrial Ethernet **76%**
- Fieldbus **17%**
- Wireless **7%**

Share of newly installed industrial nodes, 2025

Why? Six barriers that kept cables in charge

Determinism
Control and safety need guaranteed latency – not "usually fast"

Long lifecycles
Plants run 15–30 years; wired is proven and paid off

Cybersecurity
Radio is perceived as more exposed than a closed cable

Fragmentation
Wi-Fi, Bluetooth, 5G, LPWAN, proprietary – which one will last?

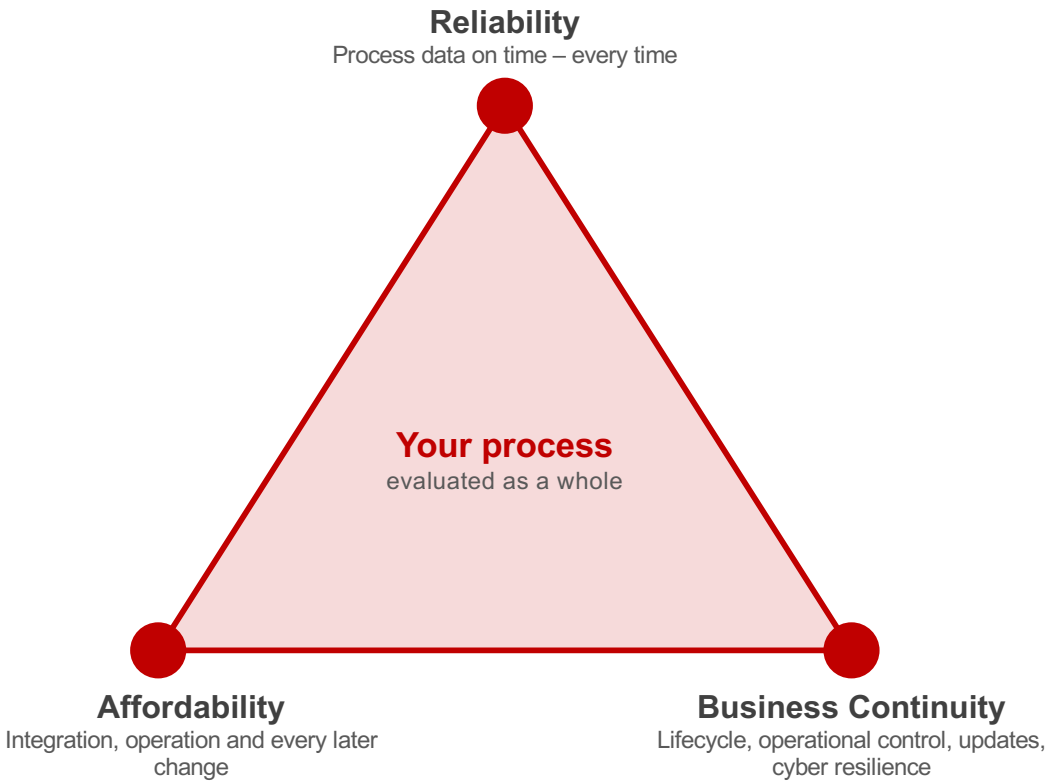
Risk aversion
Uptime beats innovation; little in-house wireless know-how

Unclear ROI
Hard to justify where cables already do the job

The opening: wireless is growing every year – and PROFINET, the #1 protocol with 27% share, is exactly what moving machines need to carry.

Source: HMS Networks, Industrial Network Market Shares 2025 (new installed nodes), as cited in the IIG Charter v1.0 and DECT Forum webinar "DECT NR+ in Industrial IoT" (29 Sep 2026); barriers: IIG Charter v1.0.

The industrial investment trilemma



Today's options each strain one corner

Cable	Reliable – but wears out on moving parts and slows down every re-layout.
Wi-Fi	Affordable – but contention-based in crowded ISM bands; time-critical use often needs special tuning, roaming optimisation and IT alignment.
Private 5G	Powerful – but needs a core network, campus planning and an operating model; often oversized for a single machine or cell.

The costly "last 5%": rare, late messages trigger protective stops and expensive restarts – and mastering them can cost disproportionate engineering and infrastructure.

Source: DECT Forum IIG white paper draft "NR+ for dynamic industrial applications" (Oct 2026), industrial investment trilemma.

Why NR+ fits: predictable by design

Contention-based access (listen before talk, shared ISM bands)



Random waits and collisions → latency grows with load

NR+ scheduled access (dedicated DECT band, coordinated slots)



Every device owns its slot in every frame → known, repeatable latency

Complements – does not replace

Wi-Fi	Private 5G	NR+
site-wide IT	campus network	machine & process cell

"Wireless that follows the machine – not the network operator."

Dedicated, clean spectrum

1.9 GHz DECT band – licence-exempt, harmonised, unlike congested 2.4/5 GHz

Hybrid MAC

Scheduled access for critical traffic, contention-based access for bursty data

Robust in industrial halls

OFDM physical layer copes with multipath in reflective, metal-rich environments

Private & industrial

Own network – no operator, no SIM; carries PROFINET/PROFIsafe, EtherNet/IP, EtherCAT, CC-Link

Typical*: one-way latency <1–2.5 ms · 200–4,000 m line of sight
Chips available: Nordic Semiconductor, Last Mile Semiconductor
Built for process and sensor data – not for video or smartphones.

Sources: IIG Charter v1.0; IIG white paper draft; DECT Forum webinar deck (Sep 2026); ETSI TS 103 636. *KPIs vary by implementation and use case; figures per Rel. 2 of the standard (VDMA Handbook 2026, pp. 36–37).

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USE CASES

Fredi de la Torre · Stratum 9
Dr. Mathias Bohge · R3 Solutions
Ben Eatts · Schneider Electric

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Industrial Use Case Examples



Motion Control

STRATUM9



Mobile Robotics & AGV

R3 Solutions



Flexible Machines

Schneider Electric

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Use Case: Motion Control



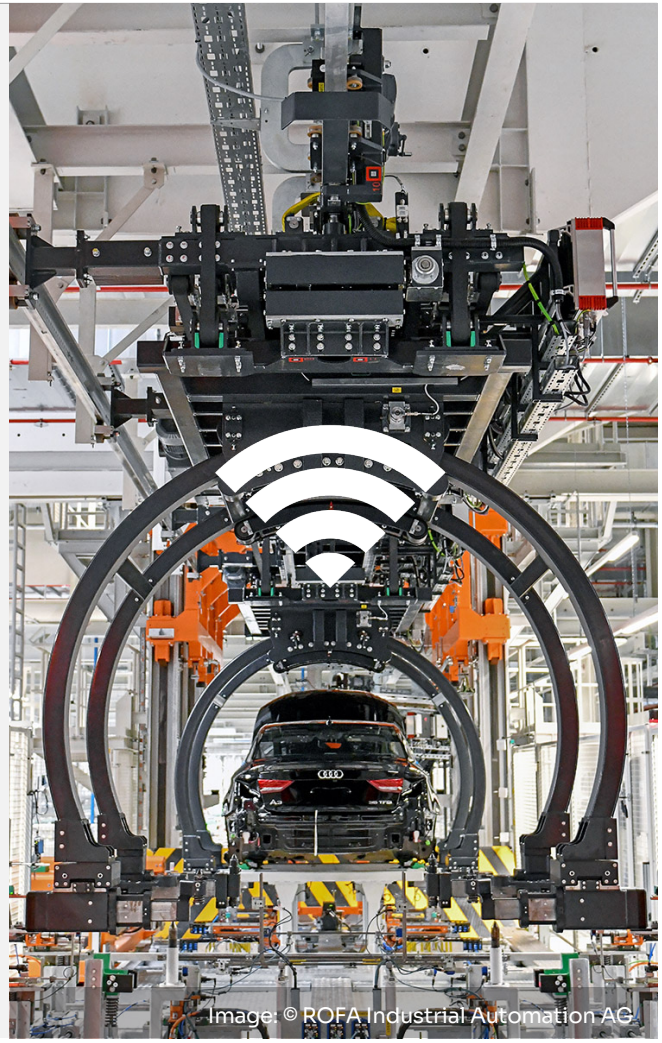
Image: © ROFA Industrial Automation AG

STRATUM9

Electric Monorail Systems (EMS)

Motion Control: Requirements

- **Use Case Basics**
  - Carriers move continuously along a rail
  - Vehicles need reliable connection with stationary automation network
  - Typical data: control commands, position/status information, diagnostics via PROFINET/PROFIsafe traffic
  - Typical industry: automotive production
- **Requirements:**
  - Low, predictable latency for time-critical controls
  - High system availability without interruptions
  - Seamless connectivity when moving between cells
  - Reliability in metal-intensive environments



Motion Control: DECT NR+ Gateway

Wireless PROFINET & PROFIsafe

- ✓ 100% transparent transmission
- ✓ No protocol conversions
- ✓ No changes to PLC needed
- ✓ Reduces system complexity
- ✓ Increases flexibility

Seamless Handover

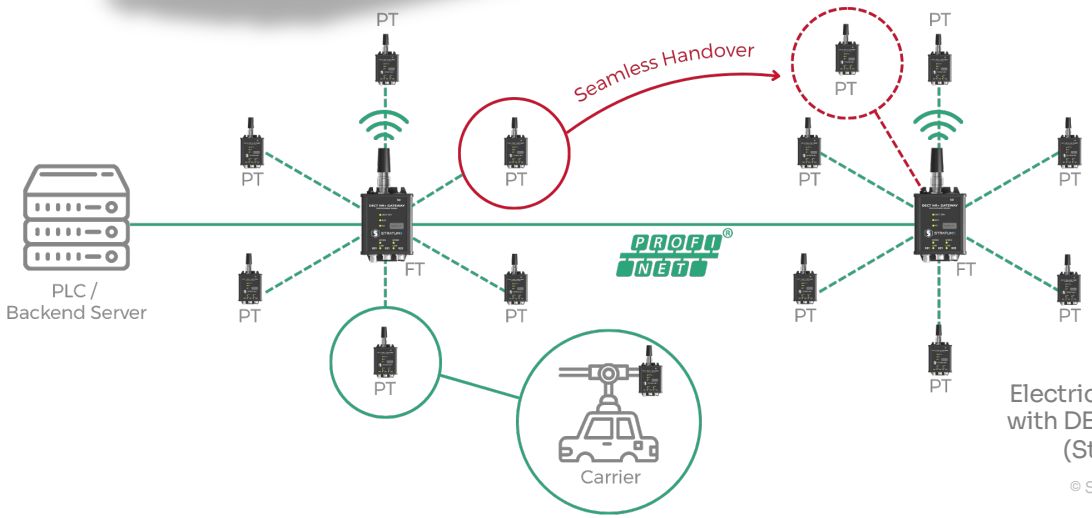
- ✓ Constant connection
- ✓ No dropouts, even at high speed
- ✓ Reduces downtime

Dual Role Device

- ✓ Same hardware for FT & PT



- Industrial-grade radio hardware
- 1.9 GHz DECT NR+
- Deterministic, scheduled star topology
- Supports scheduled/random access
- 3 Mbit/s bandwidth (extendable)
- Vibration-proof M12 and N connectors



Electric Monorail System
with DECT NR+ Gateways
(Star Topology)

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Use Case: Mobile Robotics & AGV



R3 Solutions

Autonomous Mobile Robots (AMRs)

AMR/AGV: Requirements

- Use Case Basics
  - Vehicles move autonomously
  - Transport delicate goods (aircraft wing), and. thus, need to behave “as if physically connected by an axis”
  - Safety signals, to trigger an emergency stop need to be transmitted reliably from the vicinity

- Requirements
  - D2D (device-to-device) connectivity for virtual axis movement
  - Highly deterministic data exchange for control protocol < 10ms
  - Usage of standard control- and safety protocols:



AMR/AGV: Edge D

DECT NR+ Access Point (FT) & Client (PT)

- ✓ No additional hardware needed
- ✓ Standard DECT NR+ on 1.9 GHz and 1,7MHz channel bandwidth
- ✓ Strong processor: i.MX8MPlus mit 2x 16GB
- ✓ APIs: gNMI, NETCONF, MQTT
- ✓ Connectors: 2x EtherNet (TSN+PoE), CAN
- ✓ GPIO: 4x IN, 4x OUT; 2x CAN
- ✓ Native PROFINET/PROFIsafe support
- ✓ Power management modes: Wake-on-LAN/Timer/GPI
- ✓ The powerful client device for your large AMR application

Optional Soft PLC

- ✓ CODESYS: Control Linux ARM SL
- ✓ PROFINET, EtherNET/IP, and others
- ✓ The only device you need for your small AMR application



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Use Case: Flexible Machines



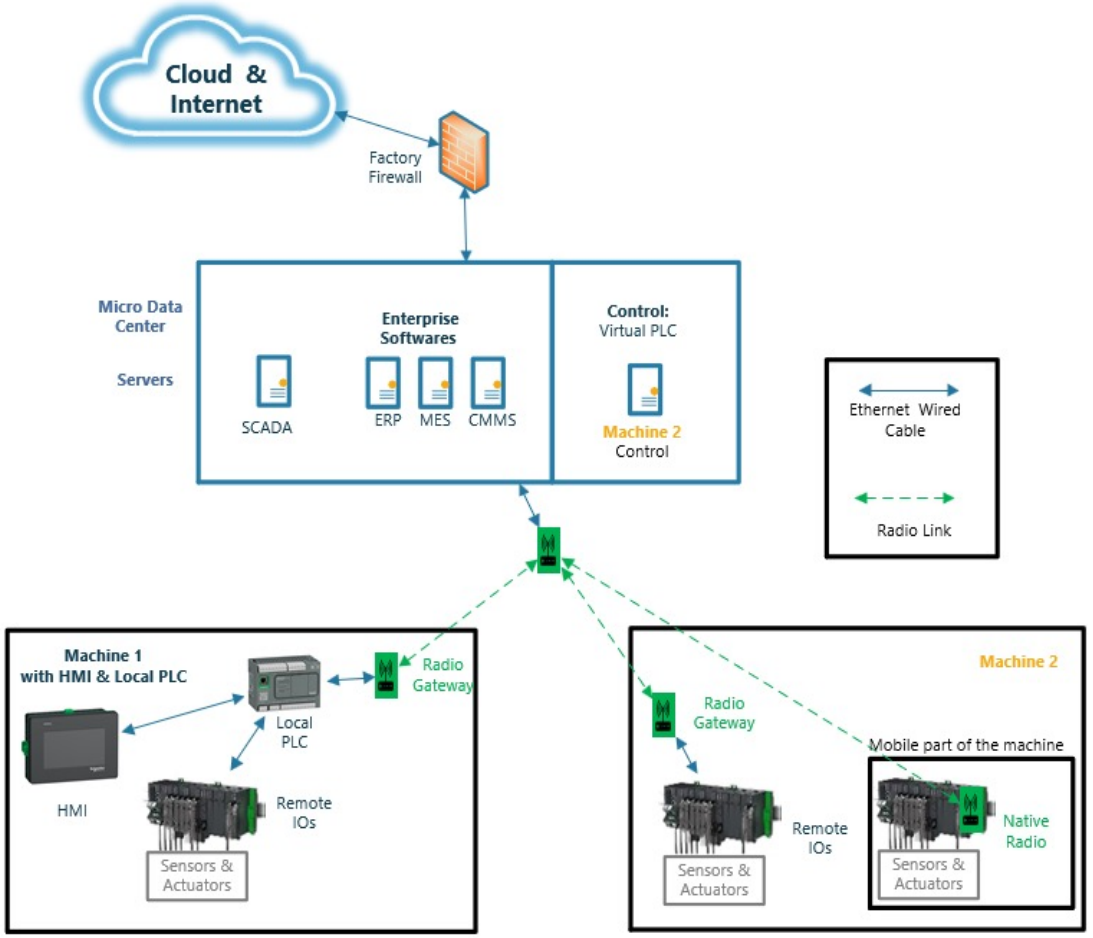
Schneider Electric

Movable Machines for fast production upgrades

Flexible Machines: introduction

Use Case introduction

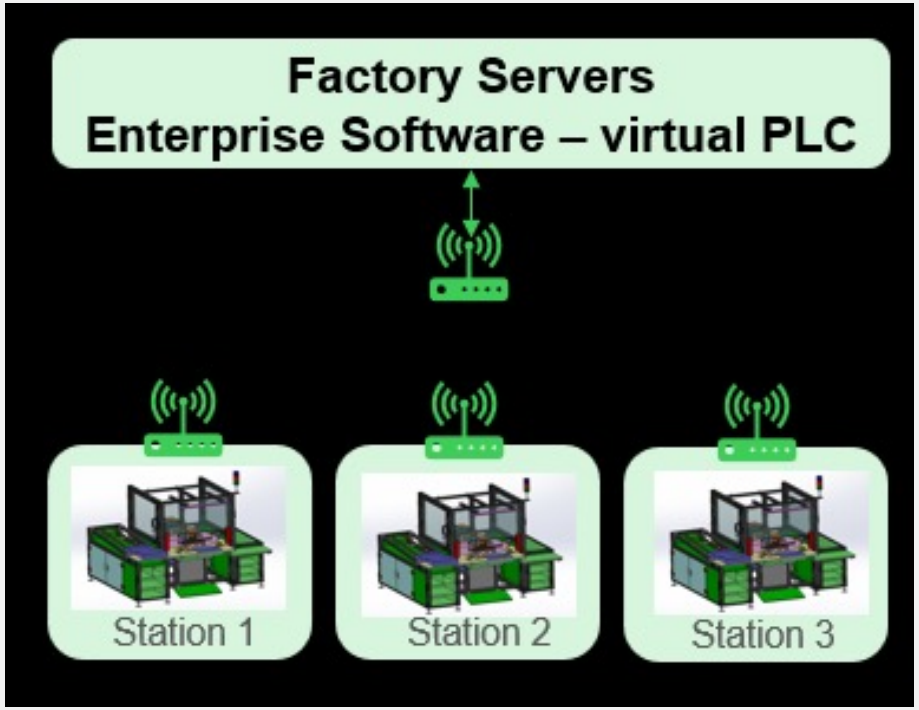
- Flexibility for upgrading production line: adding/removing movable machines (labelers, palletizers, printers, cobots, small conveyors, special-purpose machines, part counters…) for easy and fast product line reconfiguration.
- No communication wiring on the shop floor to help the cleaning and washing in Food & Bev industries.
- No wiring for the mobile parts of the Machines to avoid cable breakage: e.g. Crane's trolley.
- Software Defined Automation (SDA) with PLC that can be virtualized and deported.
- Flexibility on architecture choices : Local PLC (Machine 1) or Remote virtual PLC (Machine 2).



Flexible Machines requirements

Requirements

- Reliable connectivity and low latency for time-critical controls
- High system availability without interruptions
- Robustness to interferences, to electromagnetic pollution and to metallic environment
- Easy to install, easy to maintain
- Standardized solution and multi providers



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Industrial Interest Group

Thomas Weisshaupt · R3 Solutions

DECT World 2026 · Munich

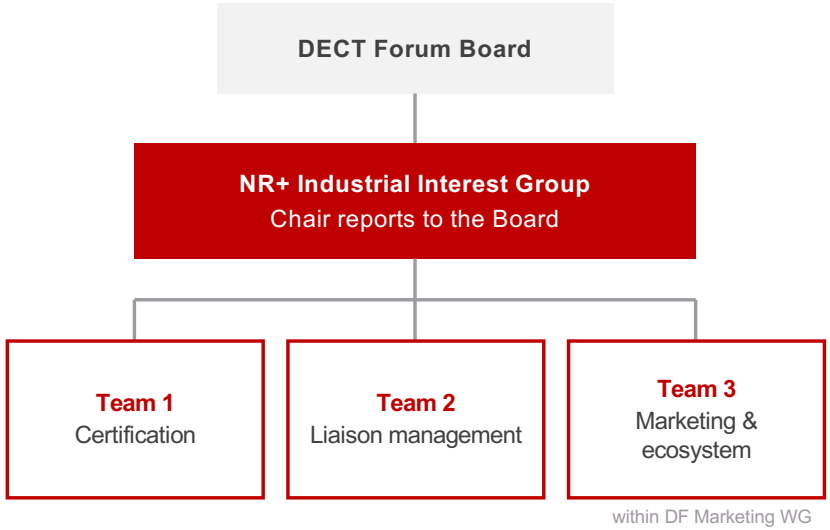
Kick-off: NR+ Industrial Interest Group

VISION
Become the no. 1 wireless technology for industrial automation – ultra-reliable, deterministic coverage for any machinery, with 10–15-year product lifecycles.

MISSION – establish NR+ as the wireless standard for industrial automation

1. **Regulation:** advocate NR+ in national and regional rules (e.g. EU, FCC)
2. **Automation SDOs:** liaise for native integration: PI, ODVA, CLPA, ETG
3. **Ecosystem & demand:** end users, device makers, integrators – jointly with bodies such as VDMA
4. **Infrastructure:** native NR+ in access points and border routers

Focus: PHY, MAC and transport interoperability – application semantics stay with the fieldbus.



Initiated by **R3 Solutions · STRATUM 9 · Schneider Electric**
Open to every DECT Forum Full Member – formally kicked off here at DECT World 2026

Source: DECT Forum NR+ Industrial Interest Group (IIG) – Scope and Charter v1.0, 12 Oct 2026, approved by the DECT Forum Board.

What's next – and how to get involved

01 White paper

Coming soon · English & German

- "DECT NR+ for dynamic industrial applications"
- For decision makers, not radio experts
- One shared argument: Reliability · Affordability · Business Continuity

02 Certification

With the DECT Forum Certification WG

- Connectivity-level interoperability: PHY + MAC / DLC / convergence incl. scheduling & joining
- Based on the ETSI Industrial Automation Profile
- 1.9 GHz and German 3.8 GHz campus band · authorised test labs
- Alongside the first DECT Forum NR+ certification program (launch Q3 2027)

03 Marketing & partners

With the DECT Forum Marketing WG

- One narrative, one voice to the market
- Joint demand creation with VDMA
- Liaisons with PI, ODVA, CLPA, ETG

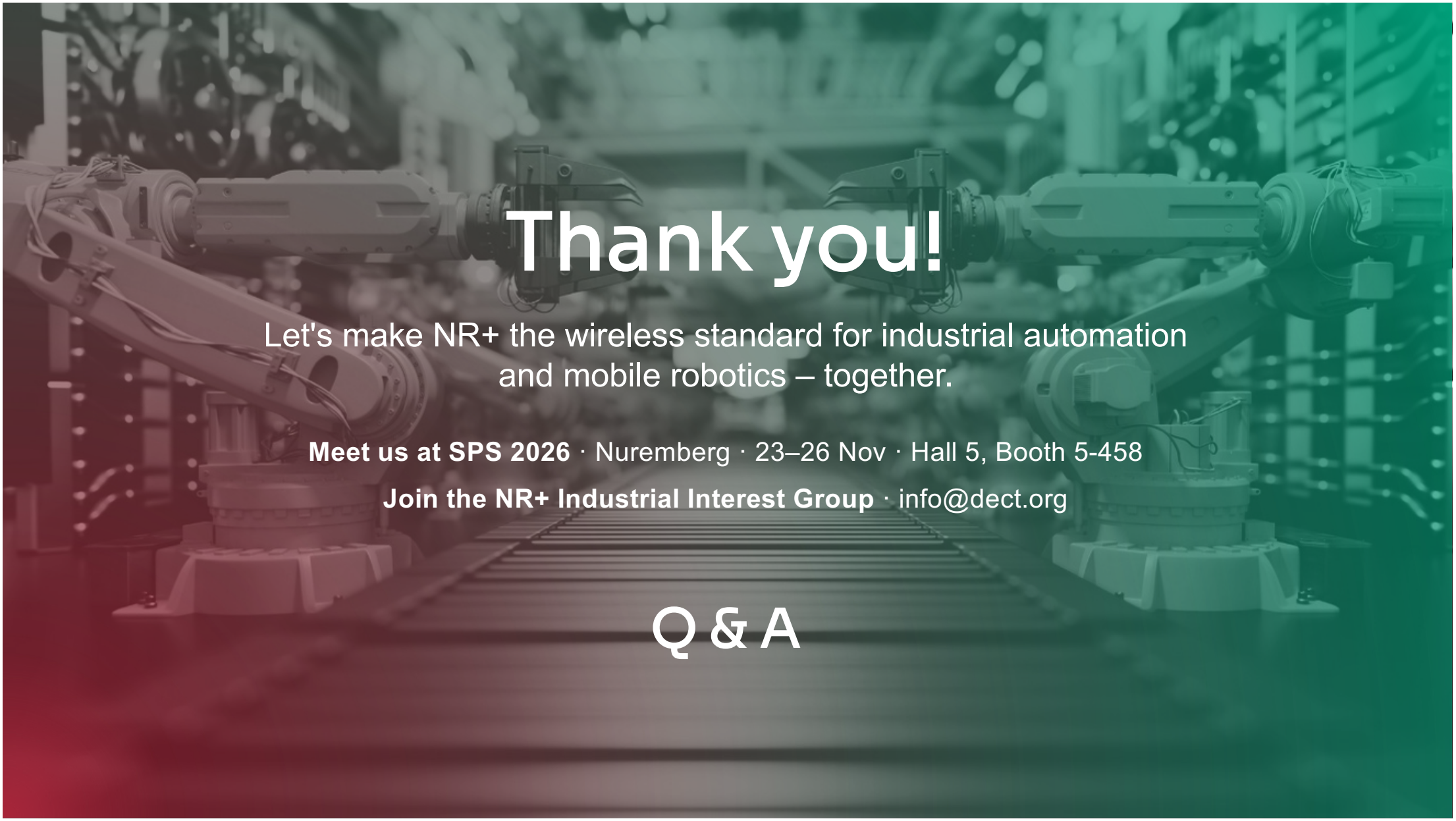
04 Meet us at SPS 2026

Nuremberg · 23–26 November

- Hall 5 · Booth 5-458
- DECT Forum @ R3 Solutions
- Live NR+ industrial solutions

Join the Industrial Interest Group – bring your use case or solution: info@dect.org

Sources: IIG Charter v1.0 (certification program, marketing & ecosystem); IIG white paper draft (Oct 2026); DECT Forum webinar deck (Sep 2026).


Thank you!
Let's make NR+ the wireless standard for industrial automation and mobile robotics – together.
Meet us at SPS 2026 · Nuremberg · 23–26 Nov · Hall 5, Booth 5-458
Join the NR+ Industrial Interest Group · info@dect.org
Q & A


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