



Q&A

1. What is NR+ and why is it important for smart building technology?

NR+ is a wireless connectivity standard under ETSI*. This technology allows gap-free wireless coverage across entire buildings or campuses with minimal infrastructure, enabling true digital transformation for enhanced energy efficiency and automated operations.

NR+ has received the 5G endorsement from the ITU-R, as the first non-cellular 5G technology. NR+, where every node also acts as a router, was specifically developed to support large-scale wireless networks in buildings, metering, industrial and smart city applications. Unlike cellular 5G, NR+ does not depend on telecom operators, allowing users to run their own private networks at a lower cost.

NR+ is designed to offer ultra-resilient, interoperable, and scalable wireless connectivity that can accommodate high device density while remaining reliable and cost-effective. NR+ operates in a dedicated 1.9GHz band (avoiding congestion in 2.4GHz and Sub GHz bands) and offers a unique combination of range and performance.

ETSI specifications

- [TS103.636-1](#) : Part 1: Overview; Release #1
- [TS103.636-2](#) : Part 2: Radio reception and transmission requirements; Rel #1
- [TS103.636-3](#) : Part 3: Physical layer; Release #1
- [TS103.636-4](#) : Part 4: MAC layer; Release #1
- [TS103.636-5](#) : Part 5: DLC and Convergence layers, Release #1

2. What challenges in the building sector does the NR+ standard address?

Buildings today often rely on siloed systems that lack interoperability, making it difficult to achieve efficient, cohesive building management. NR+ offers a single, standardized wireless mesh network that is resilient and adaptable, reducing operational inefficiencies and supporting real-time adjustments to user needs. Additionally, the number of wirelessly connected devices in a building is expected to grow exponentially to meet the energy efficiency and security regulations. This massive number of connected devices drives important requirements in terms of range, density, throughput and reliability for the wireless communications protocols in use. NR+ was specifically designed to meet these requirements.

NR+ offers a robust, pervasive transport layer. Application layer interoperability and backend connectivity is offered by Internet protocol and application protocols like Matter running on top of NR+.

3. What is driving NR+ wide adoption in buildings?

The interest group was launched by three global leaders in smart building technology – Legrand, Schneider Electric and Siemens. This partnership is driving NR+ adoption in buildings, ensuring both technological and market support needed for its widespread success.

They are joined by wireless technology experts Kudelski, Last Mile Semiconductor, Nordic Semiconductor, DSR Corporation and Wirepas. Together, these companies aim to establish NR+ as the global standard for building digitization, operating under DECT Forum.

The group is working directly with regulators, standards organizations, and other industry stakeholders to align NR+ with the future needs of the global smart building sector. By creating an interoperable and open platform, they are setting the stage for a global standard that all players in the industry can adopt, helping to avoid vendor lock-in and fostering compatibility across various smart building solutions.

4. Why is this collaboration significant, and how will it impact the smart building industry?

This collaboration brings together key players in smart building technology and wireless communication, creating an ecosystem to accelerate NR+ adoption and interoperability across devices and platforms. By establishing NR+ as a common standard, the group will make it easier for building owners and operators to adopt digital solutions, resulting in smarter, more responsive, and energy-efficient buildings worldwide.

This interest group will drive device certification and help new players adopt, develop and deploy compatible products.

5. What role will the DECT Forum play in this interest group?

The 2.4GHz band is crowded with various technologies, and the increasing number of devices operating within it leads to congestion and interference. The DECT Forum oversees the 1.9GHz band globally, ensuring that IoT and audio technologies can operate harmoniously. The NR+ interest group will operate within the DECT Forum, and leverage its support in collaborating with regulatory bodies, silicon vendors, stack providers, and access point developers to drive NR+ forward as a recognized, standardized connectivity.

6. What benefits can building owners and operators expect from adopting NR+ technology?

NR+ delivers a scalable and resilient wireless network designed to support real-time building management while effectively replacing wired infrastructure for most building use cases. Building owners and operators benefit from exceptional wireless reliability, streamlined installation, and simplified lifecycle management. Additional sensors can be easily integrated into existing NR+ systems, enabling improved energy efficiency, lower operational costs, and enhanced user experiences. With its robust connectivity, NR+ enables seamless integration of diverse systems and devices, providing better control over environmental conditions, security, and energy consumption.

7. What does the partnership with companies like Wirepas, Kudelski, and Nordic Semiconductor add to the group's efforts?

These wireless industry experts bring essential knowledge and solutions for building the NR+ ecosystem. Companies like Wirepas, with expertise in large scale, reliable RF mesh technology, and Kudelski, with security expertise, provide the technical foundation and security infrastructure needed to make NR+ a secure, reliable standard for smart building connectivity.

8. What is the potential scale of NR+ adoption in the smart building market?

As buildings are expected to incorporate hundreds of millions of connected devices in the coming years, the demand for reliable, scalable, and standardized connectivity is enormous. NR+ is positioned to become the backbone for these devices, with a potential reach into smart buildings across all global markets, driving unprecedented growth and adoption.

NR+ is IPv6-capable and supports secure over-the-air updates, ensuring state of the art performance and future adaptability.

9. How standard and interoperable is NR+?

NR+ is an open, interoperable standard, and no single company owns it. The interest group's members are committed to advancing NR+ technology, while maintaining interoperability. The focus is to build a sustainable and neutral technology ecosystem that benefits the entire industry. The open nature of NR+ means that any vendor can participate in and adopt this connectivity solution, ensuring that it remains accessible and cost-effective for all stakeholders, from building owners to equipment vendors.

10. How can industry stakeholders get involved with the NR+ standard?

The NR+ interest group is open for all DECT Forum Full members. Application for membership can be done here: <https://www.dect.org/members-benefit>

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