



**DECT-2020 New Radio (NR);
Access Profile;
Part 1: Overview
Release 1**

Reference

RTS/DECT-00424

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document is an overview part of a multi-part profile standards deliverable. Overview part is intended to provide information of the multipart standards structure and present each part scope briefly.

The present document is part 1 of a multi-part deliverable covering DECT-2020 New Radio (NR); Access Profile, as identified below:

Part 1: "Overview";

Part 2: "Smart Metering, City and Buildings";

Part 3: "IPv6 Profile".

Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and "must not" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Executive summary

DECT-2020 NR Access Profile standards' objective is to deliver guidelines for the industry utilizing DECT-2020 NR technology. This common configuration information is benefitting DECT-2020 NR devices interoperability and conformance testing.

This release of multipart series contains profile definition for smart metering, smart city and smart building Use cases and IPv6 application profile defining how IPv6 functionality is applied with DECT-2020 NR.

Introduction

ETSI TS 103 874 standard series' objective is to recommend configuration of the DECT-2020 NR radio technology for various applications where this technology is applied. The recommendations are collected into Technical Specifications, each of which is focusing to a use case group, and/or technology applied with DECT-2020 NR. An implementation may use number of profiles.

These Technical Specifications define sets of functionalities, messages, information elements, parameters, and parameter values, which will be applied in conformance testing. This provides a foundation for the interoperability of different equipment and between different manufacturers. Peer DECT-2020 NR radio devices implementing the profiles may use functions, messages, information elements, parameters and parameter values outside of the profile recommendations in case they are supported by the peers and not contradictory for the operation according to the profile.

This series of Technical Specifications will evolve, and new parts may be introduced based on market and industry needs.

1 Scope

The present document provides an overview of the DECT-2020 NR profiles for release 1.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the [ETSI docbox](#).

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents are necessary for the application of the present document.

- [1] [ETSI TS 103 874-2](#): "DECT-2020 New Radio (NR); Access Profile; Part 2: Smart Metering, City and Buildings, Release 1".
- [2] [ETSI TS 103 874-3](#): "DECT 2020 New Radio (NR); Access Profile; Part 3: IPv6 Profile".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

- [i.1] [ETSI TS 103 636-1](#): "DECT-2020 New Radio (NR); Part 1: Overview; Release 1".

3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 103 636-1 [i.1] and the following apply:

NOTE: An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in ETSI TS 103 636-1 [i.1].

RD	Radio Device
TS	Technical Specification

4 Overview for ETSI TS 103 874 standard series

4.1 General

Each chapter in this clause provides a short summary of use cases and/or technology and reference to appropriate Technical Specification part for further details. A radio device based on DECT-2020 NR may support multiple of ETSI TS 103 874 profiles either simultaneously or separately in different configuration option. For example, an RD may support definitions of ETSI TS 103 874-2 [1] alone or definition in both ETSI TS 103 874-2 [1] and ETSI TS 103 874-3 [2].

4.2 ETSI TS 103 874-2: DECT-2020 NR; Access Profile; Part 2: Smart Metering, City and Buildings

ETSI TS 103 874-2 [1] defines a generic access profile that can be used in multiple different [mMTC] use cases with a basic assumption of large number of devices and need for multi-hop mesh networking topology for both communication coverage and reliability. Examples of such use cases are smart electricity metering, smart city applications such as outdoor and indoor lighting, and various smart building applications. It should be noted that use case list is not exhaustive.

A typical use of electricity metering is at buildings in urban and suburban areas, wherein the physical distance and density between the electricity meters varies a lot. The metering devices may be grouped in the same space of a block house e.g. in basements or dedicated building technology space which usually has concrete material walls. On the other hand, the distance between buildings may be hundreds of meters requiring robust communication. In suburban areas, smart meters are typically located in each household premises.

Smart building and emergency lighting are on premises of larger buildings, where the radio signals often face high path loss and fading caused by the concrete walls and floors. Furthermore, buildings may be equipped with modern selective windows which together with concrete and steel structures have significant radio signal attenuation from indoors to outdoors. Public buildings lighting considers high number of illumination units located both open spaces halls and corridors as well as each individual room illumination needs. The street lighting is intended for outdoors conditions with open space signal propagation characteristics. The distance between the lights mostly expected to be limited to tens of meters to hundreds of meters.

The profile details are defined in ETSI TS 103 874-2 [1].

4.3 ETSI TS 103 874-3: DECT-2020 NR; Access Profile; Part 3: IPv6 Profile

ETSI TS 103 874-3 [2] defines the interworking for IPv6 and DECT-2020 NR protocol layers. It details the mandatory and recommended IPv6 features and Internet protocol functionality for operating in DECT-2020 NR network.

Internet protocol is the most common protocol for communicating between devices, hosts and back-end systems in modern communication network environments supporting both wired and wireless use. For Internet of Things (IoT) applications IPv6 enables to connect various devices to internet, enabling data collection and device control in various systems.

DECT-2020 NR, especially in mesh network topology, is well suited for IoT needs. Due to the specific features in DECT-2020 NR and in mesh networking more generally, this specification part mandates and recommends features, operations and protocols of IPv6 technology and guides how to best integrate the DECT-2020 NR and IPv6 technologies.

The profile details are defined in ETSI TS 103 874-3 [2].

History

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V1.1.1	October 2024	Publication
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