



DECT Forum

29 January 2024

Reply to the consultation on SRD regulation

And the Annex:

ANEXO ÚNICO

**ANTEPROYECTO DE DISPOSICIÓN TÉCNICA IFT-016-2023.
DISPOSITIVOS DE RADIOCOMUNICACIÓN DE BAJA POTENCIA:
DISPOSITIVOS QUE HACEN USO DE BANDAS DE FRECUENCIAS DEL
ESPECTRO RADIOELÉCTRICO EN EL INTERVALO DE 30 MHz A 3 GHz-
ESPECIFICACIONES, LÍMITES Y MÉTODOS DE PRUEBA.**

To:
Instituto Federal de Telecomunicaciones
mailto: horacio.villalobos@ift.org.mx

Dear Madam or Sir

DECT Forum thanks Mexican Instituto Federal de Telecomunicaciones for being able to express the views of our members, the global DECT community.

Our reply starts with some general comments. After that we focus on the Annex of the consultation on the specific technical questions. DECT technology is deployed in your country as DRBP (SRD) in the band 1920 -1930 MHz (UPCS).

We kindly request that DECT is considered in your spectrum strategy outlook recognizing the development of DECT (UPCS) to support the high potential of DECT for the citizens of Mexico.

This document has the following structure:

- Introduction – supported applications and use cases
- Comments to specific sections to the Annex of the consultation
- Further Questions and Answers on DECT

Please do not hesitate to contact us for further questions.

Yours sincerely

DECT Forum



DECT is well known for its world-wide use in cordless phones, but today it also supports the most diverse range of professional use cases of any wireless technology. From high-quality corporate conferencing to professional intercom, from critical healthcare communication & monitoring to emergency support for the elderly and disabled, DECT has been the technology of choice for many years, due to its unequalled quality and reliability. More than 135 million DECT devices are sold every year, with professional DECT representing the fastest growing segment.

World economies rely on the many thousands of large businesses and the millions of SMEs that generate wealth, and it is these businesses that the DECT technology, has been supporting with communication and collaboration solutions, often behind the scenes!



This response focuses firstly on **preserving DECT Quality of Service (QoS) for incumbent users** in the 1880-1900 MHz band. It is also crucial that any new technology in the overall spectrum 1880-1920 should not generate interference and disturbance to these existing DECT users and their businesses.

However, this response also presents an exciting opportunity for DECT, together with the next generation of DECT, **DECT-2020 NR** to bring new applications to the entire 1880 – 1930 MHz spectrum in Mexico, with considerable economic and user benefit.

DECT-2020 NR (or **DECT NR+** as it will become known) has been designed to be **spectrum-compatible with DECT**, and hence this opportunity comes with a very **high level of co-existence** – in sharp contrast to the prospect of new technologies sharing the band that are not compatible with DECT, and that would likely cause interference, degrading the existing Quality of Service.



DECT-2020 NR is not targeted to replace all original DECT applications but will be an extension bringing new capabilities, such as Ultra-Reliable Low-Latency Communication (URLLC) and Massive Machine Type Communication (mMTC). DECT-2020 NR will open up unprecedented opportunities for professional service providers, and will help meet some of the big challenges facing governments and technology innovators as we approach the mid-21st century:

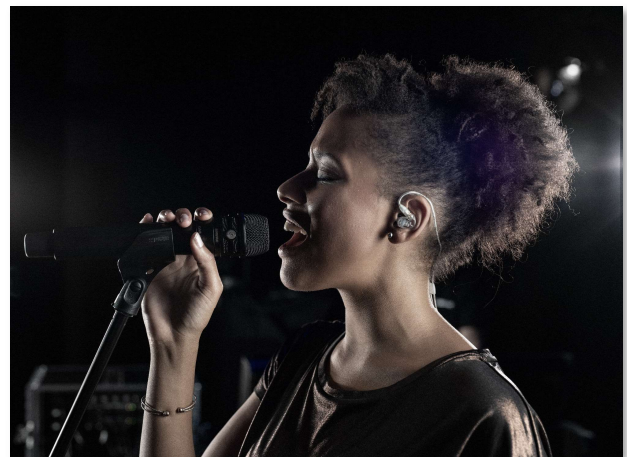
Smart Cities : an evolutionary step forward from Smart Homes and Smart Buildings, Smart Cities will be one of the World's frontiers in the battle to combat Climate Change, by reducing carbon emissions using an array of applications such as traffic management, finding parking spaces, optimizing refuse collection and street lighting, smart energy storage etc. All of these applications require literally millions of remote sensor & control (IoT) nodes connected through networks to cloud-based control centres. Such network complexity is only feasible and practicable with wireless mesh networking covering metropolitan and rural areas – coverage that until now was the domain of the cellular network. DECT-2020 NR has been designed to incorporate highly reliable high-performance wireless mesh networking, that will make deployment of such massive machine communication not only possible but economically attractive.



Industrial IoT (Industry 4.0) : One of the key technologies that will enable the new industrial revolution (Industry 4.0) is Ultra-Reliable Low Latency wireless IoT solutions for industry, that will be able to orchestrate fast-moving unmanned vehicles and operations across huge factory floors and warehouses. Bringing together DECT's historic ability to send and receive messages with microsecond-synchronism with DECT-2020 NR's lower latency and IoT capabilities, opening up great opportunities for DECT-2020 NR in this industrial sector



Pro-audio / PMSE market : DECT-2020 NR has been designed to deliver the higher performance and lower latency required for microphones used by touring bands, recording studios, theatres and for broadcasting (including electronic news gathering). **DECT-2020 NR** will have improved indoor performance, able to deal with a wider range of venue constraints and challenges. The use of **DECT-2020 NR** for performance microphones will facilitate the ever-increasing demand for wireless microphones in all live & recorded entertainment as well as media streaming sectors.



Already deployed with DECT, Intercoms (Talk-back) will benefit from higher user densities increasingly needed for large festivals and sporting events such as The Olympic Games. And both microphones and intercoms systems will have the ability to be deployed in other IMT-2020 frequencies since special touring events (sporting, rock tours & music festivals etc.) need to be deployed world-wide.



Additional information to the above can be found in the Annex

Comments to specific sections to the Annex of the consultation

To 7.3 CORDLESS PHONES

7.3.1

As indicate in the introduction and in the Annex A of this document, DECT has evolved and is already in use for many more applications than just 'Cordless Phones'.

Therefore, we would like to ask you to rename the DRBP to DECT and not limit to cordless phones. Since all DECT devices do follow the DECT specific politeness protocol, all devices do coordinate themselves automatically. There is no need for any specific frequency management system by IFT.

DECT applications are deployed globally supporting the frequency bands 1880 -1930 MHz. We kindly ask to consider assigning the complete band 1880 -1930 MHz. In case other services are already deployed int eh band 1900 -1920 MHz, DECT Forum would be happy to conduct sharing studies.

Please keep the bands 1880 – 1900 MHz and 1920 -1930 MHz as minimum.

Please see also the report on DECT NR+:

[ETSI TR 103 943 V1.1.1 \(2024-01\)](#)

System Reference document (SRdoc); DECT-2020 NR technology operating in frequency bands below 6 GHz

7.3.2

DECT devices are following the European Norms

- EN 301 406-1 (legacy DECT)
- EN 301 406-2 (DECT2020, also known as DECT NR+)

as well the ANSI/IEEE C63.17-2013 standard.

DECT Forum would appreciate if IFT would refer to the European standards since they are commonly used.

Note: The standard EN 301 406-2 is published on ETSI and intended to be listed in the Official Journal of the European Union, which is currently in process.

7.3.2 – 7.3.5

DECT devices do follow the standards as listed above. Please consider if a reference to that existing standard could be used.

Please find below some typical questions, which are asked by regulators:

1. What is the interest in the use of DECT to provide a service?

DECT and introducing DECT-2020 NR: We believe that the evolutions of the DECT technology and the introduction of DECT-2020 NR present the best spectrum-efficient use of the dedicated bands 1880-1900 MHz and 1920-1930 MHz and by extending this to the complete band 1880 -1930 MHz, both DECT and DECT-2020 NR will bring the opportunity to welcome entirely new and important large-scale 21st-century applications in rapidly growing markets to Mexico. These include Programme Making and Special Events (PMSE), Smart Cities and Industrial IoT (Industry 4.0). There is already a continuous growth and variety of uses of the DECT technology as the attached annex A shows, many of which operate behind the scenes in professional communication and collaboration systems, helping to deliver crucial services in areas such as Security, Emergency Response & Rescue, Retail (traditional, online and drive-thru), Programme Making and Special Events (PMSE), and more generally, Content Production.

PMSE ‘Talk-Back’: The already heavy increase in use of the DECT band by the content production sector has been caused by the reduction in the 470-862 MHz band available for PMSE Talkback¹ which previously used that spectrum. Remaining spectrum in the 470-862 MHz band where available, is regarded as “clean spectrum” and reserved for radio microphones. Many touring productions use DECT as a universally available license exempt spectrum within Mexico. Content production sector includes web, theatre, adverts, films, sports, concerts and public and cultural events.

DECT-2020 NR and Programme making Special Events (PMSE) Performance Microphones: DECT-base microphones are already in use in Mexico, but the new DECT-2020 NR technology has been designed to deliver the higher performance required for microphones used by touring bands, recording studios, theatres and broadcasting (including electronic news gathering). The use of DECT-2020 NR for performance microphones would facilitate the ever-increasing demand for wireless microphones in the live & recorded entertainment and media streaming sectors.

DECT-2020 NR and Smart Cities : Smart Cities will become one of the World’s frontiers in the battle to combat Climate Change. Smart Cities will reduce carbon emissions using an array of applications such as; traffic management, finding parking spaces, optimizing refuse collection and street lighting, smart energy storage etc., All of these applications require remote sensor & control (IoT) solutions connected through a network to control centres. DECT-2020 NR has been designed to incorporate

¹ the ability for duplex communication between directors/organizers and those supporting the production, engineers video operator’s “talent” control

highly reliable high-performance wireless mesh networking, that will make deployment of such massive machine-type communication possible and practicable.

DECT-2020 NR and Industry 4.0: One of the key technologies that will enable the new industrial revolution (4.0) is Ultra-Reliable Low Latency IoT solutions for industry, that will be able to orchestrate unmanned operations across huge factory floors and warehouses. Bringing together DECT's historic ability to send and receive messages with microsecond-synchronism with DECT-2020 NR's lower latency and IoT capabilities, opens up great opportunities in this industrial sector.

In general: DECT-2020 NR as a technology foundation is targeted for local area wireless applications (Non-Public-Networks), which can be deployed anywhere by anyone at any time. The technology supports autonomous and automatic operation with minimal maintenance effort. Where applicable, interworking functions to Wide Area Networks (WAN). e.g. PLMN, satellite, fibre, and internet protocols foster the vision of a network of networks.

DECT-2020 NR (IMT2020 technology) can be used as a foundation for:

- Very reliable Point-to-Point and Point-to-Multipoint Wireless Links provisioning (e.g. cable replacement solutions);
- Local Area Wireless Access Networks following a star topology as in classical DECT deployment supporting URLLC use cases; and
- Self-Organizing Local Area Wireless Access Networks following a mesh network topology, which enables to support mMTC use cases.
- Please note that DECT-2020 is a 'Wireless Broadband Radio Interface', see TS 103 636 part 3.

a) How much spectrum is required to provide the service?

We believe that the evolutions of the DECT technology and the introduction of DECT-2020 NR present the best spectrum-efficient use of the dedicated bands, both DECT and DECT-2020 NR will bring the opportunity to welcome entirely new and important large-scale 21st-century applications in rapidly growing markets to Mexico.

High density DECT applications, such as enterprise (business) communication, call centres, event team communication and corporate conferencing tend to occupy the majority of the bands in the proximity of the installation, and demand is increasing.

European regional administration group CEPT is currently working on developing a spectrum coordination regulation for the band 3.8 – 4.2 GHz. This band is identified for 5G private network

use, which is one of the prime use cases for the IMT2020 recognized 5G technology DECT 2020 (DECT NR+).

b) What interservice considerations need to be undertaken for the service to be deployed?

DECT-2020 NR has been designed to be **spectrum-compatible with DECT**, and hence this opportunity comes with a very **high level of co-existence** – in sharp contrast to the prospect of new technologies sharing the band that are not compatible with DECT, and that would likely cause interference, degrading Quality of Service.

DECT & DECT-2020 NR present the Mexico government with an unmatched ability to add entirely new services, that if compliant to the DECT standards, will mutually self-organize and share the DECT band with no need for governmental spectrum management.

c) What are the deployment scenarios for the service?

DECT is very well-liked by installers as there is rarely anything to be done (beforehand or at the customer site) as far as frequency management is concerned. All DECT technologies revisions and variants have been designed for user-driven, self-organizing local deployment – anywhere, at any time and by anyone. Services are specific to the user applications to be served. An update to Government policy and class license for license-free use of the band would be helpful, to appropriately recognise the breadth of applications that can make use of the band.

d) Are services still using DECT or are they transitioning to DECT-2020 NR?

DECT 'DECT-2020 NR' is not targeted to replace all original DECT applications but will be an extension. DECT2020-NR is a technology bringing new capabilities, such as Ultra-Reliable Low-Latency Communication (URLLC) and Massive Machine Communication (MMC). DECT-2020 NR will open up unprecedented cost-effective opportunities for professional service providers, and will help meet some of big challenges facing innovators as we approach the mid-21st century.

2. Are there any applicable coexistence scenarios not identified? Are there any scenarios that are unlikely to be practically achievable (and hence the associated planning scenario should be discounted), or are there any that are readily achieved?

DECT-2020 NR has been designed to be **spectrum-compatible with DECT**, and hence this opportunity comes with **high level of co-existence** – in sharp contrast to the prospect of new technologies sharing the band that are not compatible with DECT, and that would likely cause interference, degrading Quality of Service. Coexistence with other technologies is only possible if they share the same medium access principle, e.g. LTE and DECT cannot share spectrum without interference.

Annex follow



For Professional Applications

DECT today supports the most diverse range of professional use cases of any wireless technology. From high-quality corporate conferencing to professional intercom, from critical healthcare communication & monitoring to emergency support for the elderly and disabled, DECT for years has been the technology of choice, due to its unequalled quality and reliability. More than 135 million DECT devices are sold every year, with professional DECT representing the fastest growing segment.



Recent evolution in the technology has pushed the boundaries and further extended the already impressive range of use cases that DECT can support. With lower *fixed* latency, three-times higher user densities, and an impressive Quality of Service, more manufacturers and their customers are moving to DECT to meet critical local-area wireless audio and voice communication needs. Every year at the Integrated Systems Europe (ISE) and Infocom trade shows, the list of manufacturers exhibiting new DECT products grows, as does the market penetration.



The latest and most exciting variant of DECT, **DECT NR+** is an IMT 2020 wireless technology and in the coming years, will help private enterprises and 5G service providers solve one of the biggest and fastest-growing challenges facing the communications industry's quest for URLLC (ultra-reliable, low-latency communication): ***how to provide a wireless local-area solution for very high densities of extremely robust, high-quality, low-latency voice and low-medium data-rate communication.***

The DECT technology has steadily evolved to meet the demands of its expanding market. The main capabilities driving the increasing use of DECT for professional applications include :

Very high densities of users : In call centres, corporate conferencing, and enterprise communication, DECT is the technology of choice for wireless headsets, microphone systems, and handset/pagers, as no other technology can support such a high density of live users without drop-outs or interference. Recently, higher-level modulation support has tripled the already high density of users. User density with live, independent audio can reach one user per 2 square meters!



Robustness & Security : Due to its highly regulated license-free band, available in more than 100 countries at around 1.9 GHz, DECT is *the* choice for intercom systems – many of which require very high levels of reliability for **secure & safety-critical** use cases. Also, DECT is unique in its ability to support complex hierarchies of call groups – essential for clear and precise intra-team and inter-team communication such as in PMSE (shown opposite), rescue, and oil and gas. DECT-enabled intercom types have a wide range of uses, but a common requirement unites them all - **the ‘high-stakes’ communication where failure is not an option.**



High Audio Quality : Since 2010, DECT has enabled networked conferencing microphone solutions providing ‘Super-wide-band’ audio (CD quality 50Hz–20kHz). Using DECT’s built-in QoS features, these systems can avoid other in-band DECT interferers before any audio artefacts result, giving a **communication quality experience unparalleled by any other wireless technology.**



Low / Fixed Latency : DECT provides a low-latency wireless audio streaming performance further enhanced by the consistency of its TDMA structure. This attribute is attractive to live voice and live audio streaming use cases, where end-to-end acoustic/RF latency has been driven down towards 5 milliseconds.



Total in-building/campus/outdoor range : DECT’s band at 1.9 GHz can provide 300m range Line Of Sight (LOS), while its multi-cell capability enables total campus coverage, regardless of size. Compared with RF frequencies of 5GHz and greater, which suffer from through-wall propagation losses, DECT provides the perfect balance of range and data rate, enabling comprehensive enterprise capability. Typical installations include; hospitals, TV and radio broadcasting studios, supermarkets & drive-thru outlets, manufacturing plants, power stations, R&D facilities, large commercial office buildings, conference centres, hotels, penitentiaries, schools and university campuses.



The future of DECT : It is often said by users that “**DECT is the next best thing to a wire.**” In the next evolution, **DECT-NR+**, will drive the above-mentioned five primary user benefits even further and add new capabilities in **mesh networking and low-power wireless IoT**. With the advent of DECT-NR+, DECT’s professional applications will become even more unique in their ability to collaborate and support **IMT2020’s** goals. The latest DECT NR+ performance projections show that DECT will continue to be the technology of choice for its current wide range of users, and in addition, ‘NR+’ will enable important new use cases :

Smart Cities :

An evolutionary step forward from Smart Homes and Smart Buildings, Smart Cities will be one of the World’s frontiers in the battle to combat Climate Change, by reducing carbon emissions using an array of applications such as; traffic management, finding parking spaces, optimizing refuse collection and street lighting, smart energy storage etc. All of these applications require literally millions of remote sensor & control (IoT) nodes connected through networks to cloud-based control centres. Such network complexity



is only feasible and practicable with wireless mesh networking covering metropolitan and rural areas – coverage that until now was the domain of the cellular network. DECT-2020 NR has been designed to incorporate highly reliable high-performance wireless mesh networking, that will make deployment of such massive machine communication not only possible but economically attractive.

PMSE (Program Making and Special Events):

By reducing acoustic/RF latency to < 5 milliseconds for more than ten coexisting channels and keeping DECT’s extremely high QoS performance, DECT is poised to deliver a viable supplement to UHF Band wireless microphones, where the available TV spectrum is gradually being reduced.



Industry 4.0 (next generation factory automation) :

The unparalleled robustness of DECT combined with DECT-5G's over-the-air **fixed** digital latency of less than one millisecond will make DECT the only wireless control and sensing solution fast enough and reliable enough for semi-autonomous vehicles working in the Industry 4.0 "Factories of the Future."



Seamless Collaboration :

As organisations of all shapes and sizes seek ways to globalise and become as responsive, and agile as customers increasingly demand, and at the same time strive toward a carbon-neutral future, the need to be highly effective and secure collaborators in the real world *and* in cyberspace will become one of the biggest challenges to be faced in the decades to come.



And in the post-Covid world, **Hybrid Working** will further transform collaboration needs. The universal challenge for the first half of the 21st century will be to make collaboration intuitive and effective, regardless of location, making **communication and information sharing, a seamless experience for all individuals and teams.**

Powered by DECT and DECT NR+, professional collaboration applications promise to *further* eradicate the dual frustrations of **a) lack of integration and b) a lack of 'inclusiveness'** faced by physical present and remote collaborating participants – especially those with disabilities.



The future for DECT and DECT NR+ for professional applications holds great promise, to innovatively adapt to future customer needs. This was clearly evident during Covid-19 Pandemic, when behind the scenes, DECT-enabled products played their part in the fight to keep our societies safe, supplied and cared for! DECT Intercoms & headsets were used extensively to keep teams well-coordinated and deal with emergencies. The DECT technology and the ingenious engineers behind DECT Professional products will strive to exceed all expectations of their customers, users, and those of us that sometimes without knowing, depend on this extraordinary technology!



DECT Professional Gallery



