DECT-5G: Changing Industry

ETSI has proposed DECT-5G - the latest evolution of DECT – to be part of a Set of Radio Interface Technologies (SRIT) within the global ITU standards framework, IMT-2020. DECT-5G will not just change our industry - it will enable and accelerate many others.

What is 5G? – 5th generation mobile communications, 5G, is a global development which goes beyond simply voice, video and ever-faster data. As well as enhanced mobile broadband, 5G will support massive machine-type communications (mMTC) and Ultra Reliable Low Latency Comms (URLLC). These are seen as being transformational, in terms of productivity and economic benefits. The capabilities of 5G are designed to transform existing industry verticals and expected to seed new industries. 5G offers massive commercial opportunities and benefits, not just to the telecoms industry, but to all industries and society as a whole.

The Evolution of DECT – DECT began life as a European, then Global, local-area wireless voice and data technology; its origins were within ETSI, as a lower cost, local area complement to GSM. DECT, like cellular, has continually and dramatically evolved its capabilities and applications over the years, already delivering performance close to that targetted by 5G.

1992	Legacy DECT
1999	IMT-2000
2007	NG-DECT (Next Gen)
2013	DECT Security
2013	ULE (Ultra Low Energy)
2017	HAN FUN (Home Area Network)
2018	DECT Evolution (Low Latency)
2019	DECT 5G - IMT 2020

Billions of DECT devices are in use today, in dedicated spectrum, in millions of homes and in multiple industries worldwide. DECT delivers high Reliability, Ultra Low Energy (ULE) and Low Latency (1-4ms); DECT-5G will extend these capabilities yet further. The inherent design of DECT is ideally suited to deliver URLLC and other requirements of manufacturing and other industry verticals.

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What is DECT-5G? – DECT-5G is a local area Radio Interface Technology (RIT), complementary to 3GPP, optimized as a highly compact and cost-efficient solution that will allow early implementation and deployment of 5G URLLC and local area, high density, vertical market applications. It supports the full services and features of legacy DECT, more efficiently and reliably, plus the new capabilities of 5G. ETSI TC-DECT submitted its RIT technical description to ITU in 2018; further refinement is being provided during 2019.

How will DECT-5G enable Other Industries? – Across all application verticals, DECT-5G builds on existing infrastructure – the worldwide deployments of enterprise networks and millions of home gateways, low-energy IoT-type smart home products, a growing range of integrated high quality audio/data products and an open innovation ecosystem (openD) that promises to accelerate new 5G applications.

DECT-5G builds on DECT's existing capabilities to take proven, mission-critical, highly robust, reliable and high quality communications to new levels, as well as opening up completely new opportunities – delivering a "wired-like" wireless connection – especially relevant for Industries and Organisation that might otherwise be late adopters of 5G. Examples include:

> ***Media and Entertainment*** *– DECT-5G's URLLC capabilities will enable a standard technology supporting wireless studio, conferencing, electronic news gathering (ENG), and audio (PMSE) production, with a QoS suitable for audio professionals and hobbyists with professional demands. It will enable reliable content distribution within the home, ensuring low-latency and audio synchronicity, and support of immersive 3D, augmented/mixed reality (AR/MR) and remote presence applications for home and business.*

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Enterprise, Healthcare and Hospitality *– Effective communications are essential, often mission critical, in highly competitive enterprise markets; DECT already is well established in these markets, chosen in preference to cellular for good reasons. DECT-5G offers a smooth evolutionary path for the enterprise – extending today's mission critical applications, in terms of reliability, battery life, low latency and higher bandwidth, whilst retaining low Total Cost of Ownership.*

Smart Homes and Buildings *– DECT-5G extends support for ultra-reliable, low latency, and machine-type applications and automation. Combined with its embedded support for roaming and hand-over, such services can be provided with seamless coverage across a campus of buildings. Integration of high-quality voice control for IoT devices is already part of DECT; this is becoming an increasingly important User Interface for home, enterprise and many industry verticals in the era of 5G.*

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Industry 4.0 – *Manufacturing productivity stands to see major benefits from 5G. Wireless technologies have to date seen limited deployment in manufacturing, despite the flexibility that wireless connectivity can bring; this has been because past solutions have been unable to deliver the highly robust and reliable communications needed – "a wire-like wireless connection". 5G specifications are designed to overcome this and this area is a specific strength of DECT-5G with its low latency, highly robust and reliable URLLC capabilities; indeed, its inherent structure is well suited to the important class of cyclic traffic (closed loop machine control). ETSI has already undertaken analysis of a wide range of potential use cases in defining the evolved structure of DECT-5G.*

Opportunity and Risk - Governments recognize the economic potential of 5G to transform productivity and the industrial landscape. They have however also seen that some industries have profound concerns over ceding direct operational control of their core assets (eg manufacturing infrastructure) to external operators, and the risk this poses to early adoption of 5G.

DECT-5G addresses this issue squarely, by delivering the capabilities of 5G without this constraint. It offers a route for conservative and risk-averse industries to deploy 5G at lower risk and cost, retaining core business assets under their own full control. This promises to accelerate their early investments, speed up their learning curves and secure earlier economic benefits for the organisations,

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for society and for our national/regional economies. DECT-5G provides organisations with a safe and early way to explore and prove local area, mission critical, services, including Ultra Reliable Low Latency Comms, in a variety of service verticals (e.g. eHealth) and manufacturing verticals (e.g. Industry 4.0).

A Complement to 3GPP - DECT-5G is a complement to 3GPP RITs, offering an operating model that today's industries can feel comfortable with and a low cost on-ramp into the world of 5G. In the same way that DECT drove awareness and supported the early growth of GSM, so DECT-5G can do the same for 3GPP 5G. DECT-5G supports full interoperability with 3GPP 5G infrastructure, thus offering early interoperability and a clear migration path to 3GPP network slicing and 5GNR, as confidence grows, for those who wish to take that route and a sustainable role in applications for which it is ideally suited.

Accelerating and Deepening the Economic Benefits of 5G - Many small/midsize companies and niche industries risk missing out on 5G, certainly in the early stages. The mainstream telcos and suppliers kust, understandably prioritise their larger customers, resulting in these smaller players being seriously economically disadvantaged – or even put out of business – as their larger competitors benefit from the productivity efficiences that 5G will bring. DECT-5G will give such companies an early and cost-effective route to deploy 5G services, ensuring that 5G benefits all strata of the industrial landscape.

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