DECT Forum Regulatory Working Group

Request for Tender

Legal Feasibility Study: DECT in China

Background

The DECT wireless technology has been in existence for more than 20 years and today supports the most diverse range of use cases of any wireless technology. From cordless phones to home security & automation, 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 products representing the fastest growing segment.

DECT has earned its place amongst other globally-deployed short-range wireless technologies, as the technology of choice for very reliable and secure high-tier voice communication. There is simply no other wireless technology with a quality of Service (QoS) for voice, that is so high, that users see it much on a par with wired communication.

No RF technology can claim to be interference-free but the DECT technology and its highly regulated bands around the world, make interference literally unheard of! And with its rock-solid unwavering low latency which now can be as low as <5 msec, every word will be heard in the most extreme of conditions. This is why the best professional intercoms use DECT, this is why hospital campuses rely on DECT, this is why conferencing systems in corporate headquarters and conference centres around the world use DECT, and this is why call centres employing hundreds of staff on one floor of a building use DECT headsets. ***There simply isn't another technology that brings teams together and facilitates collaboration in this way*.**

DECT was and still is specified by the European Telecommunications Standards Institute (ETSI) and emerged from the same source and in the same era as GSM. Whilst not as internationally 'high-profile' as GSM, DECT is deployed globally and is very often hard at work behind the scenes keeping individuals and teams working effectively and efficiently. During the Covid-19 pandemic, alongside other communication technologies, DECT-enabled products played their part in the fight to keep our societies around the world, safe, supplied and cared for. DECT Intercoms, headsets and wireless PBXs were used extensively to keep teams well-coordinated and deal with emergencies.

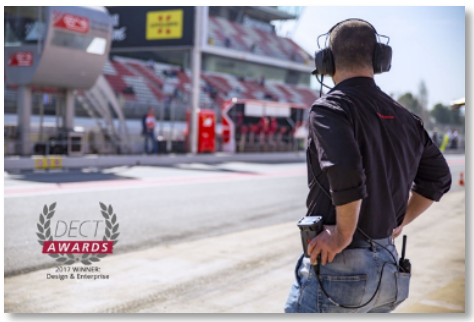
ETSI and the evolving DECT Standard

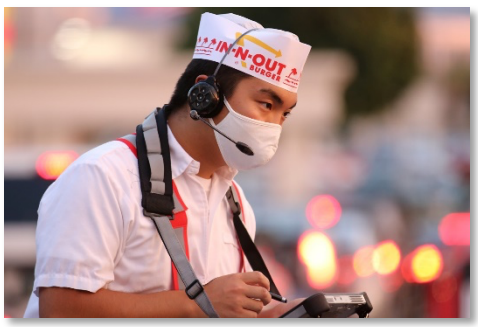
Along with cellular technologies such as 3G, DECT is part of the **IMT-2000** family of standards and employs FDMA/TDMA. ETSI members continue to work to improve and update the DECT standards and regulations. The **'DECT Evolution'** standard is aimed at further improvements in latency, audio quality and spectrum efficiency and today many high-tier DECT products support over 100 co-located 20KHz audio-bandwidth (CD-quality) channels with user densities as high as 1 per sq. m. Currently in development, the next generation of DECT, **'DECT-2020'** is planned to become part of the **IMT-2020** family and will employ a new OFDM architecture to support the **5G** vision for Ultra Reliable Low Latency Communication **(URLLC)**

The DECT Forum and growing Global deployment

The DECT Forum is an industry forum of silicon suppliers, network suppliers and manufacturers of DECT equipment, whose work includes the promotion and global exploitation of the DECT technology. Working closely with ETSI, over the last two decades, the DECT Forum has helped develop new and exciting use cases for DECT, and has overseen the growing global adoption of the DECT standard around the world. Now the standard is more Global than *European*, with very strong market deployment in the Americas and many parts of Asia.

Governments' network authorities around the world are increasingly aware of the need for a technology standard that allows for the ability to deploy at low-cost, an independent (but IP-connectable) private local-area network for very high-quality voice communication. Whilst many governments that accepted and facilitated the use of DECT in their spectrum, initially viewed DECT as supporting domestic tele-communication (with cordless phones), in the last decade countries and their citizens around the world have benefitted from a diverse range of use-cases – some shown here :





Regulatory status in China

As can be seen from the DECT World Map (above), DECT is currently not licensed for use in China. There have been some permissions granted in the past, for the use of DECT in specific sites in China, such as the Beijing Olympics, where the DECT intercom from Riedel (shown above in use Formula 1) was used in crucial behind-the-scenes communication that helped ensure the success of the event that was enjoyed by billions of viewers across the globe.

In the 1990's DECT was assigned spectrum in China for private corporate use which was subsequently re-assigned as an IMT band to China Mobile. Although DECT Forum has negotiated with the Chinese authorities through third parties to find a spectrum solution for DECT in China, a viable solution could not be found to date. There are possibly three reasons for this:

- **Messaging:** The success of DECT world-wide has been traditionally associated with cordless telephony. and although the technology is now used by a diverse set of applications, the perception is still strongly centred on cordless telephony. - As can be seen above, DECT could bring a multitude of use-cases with their opportunities & benefits to the Chinese Government and their citizens. This may have stilted discussions from the start since personal communication in China is well-served by cellular technologies!

- **Opening up discussion on options for deployment:** it is possible that DECT Forum discussions so far (made through a consultant) with the Chinese authorities did not fully explore all of the workable options for deployment

- **Appropriate Contacts:** it may be that an approach to the Chinese regulatory authorities alone is not enough without convincing the appropriate stakeholders (e.g. in economic development and international trade) within the Chinese government, of the benefits that the DECT technology could bring to their citizens and Chinese industry & commerce

The next two sections give some indication of how the DECT Forum believes that at least the first two of the above issues can be resolved / approached

Opportunities for Chinese Citizens, Industry & Commerce

- **Inward investment in China:** International companies and corporations who have become dependent on professional DECT products would be able to use the same systems in China as they use in the rest of the world. This would help to reduce the barriers and costs of investing in China

- **Improvements in services to Chinese citizens:** International manufacturers of DECT equipment would be able to access the Chinese market with a worldwide solution and help improve services to citizens (some that could be critical). *Note crucially that many of these design/manufacturers today are Chinese!* (*see the Hollyland T1000 Intercom opposite*). At the same time, Chinese service suppliers using personal communications equipment could deploy their services domestically and internationally with a single solution

- **Chinese Manufacturers of DECT equipment:** those Chinese companies already manufacturing DECT equipment in China would see a marked increase in business and perform very well in their domestic market
- **Chinese Healthcare System:** would be able access excellent DECT-based communication systems which are used in hospitals globally – and played such an important role during the pandemic
- **Chinese Government and its people:** would be able to attract more international events that rely on DECT-based communication for staging and event communication

Options for Deployment

- **Professional Use Cases:**
  - **Spectrum:** 5-10 carriers (10-20 MHz) somewhere between 1750 MHz and 2000 MHz
  - **Option to limit physical coverage:** can be restricted either by power or site license
    - **Power :** (say) 10 mW for widespread geographical use – could be indoor use only
    - **Site :** on specific licensed sites, power to be up to 250 mW for use cases like (indoor) hospital communication and (outdoor) F1 & Concerts etc.
- **Domestic:**
  - **Spectrum:** 1-2 carriers (2-4 MHz) somewhere between 1750 MHz and 2000 MHz
  - **Option to limit physical coverage:** can be restricted to indoor with power limited to 100 mW

- **Exclusive Vs Shared spectrum use:** DECT performs best in an exclusive band regulated by its comprehensive rules for sharing with other DECT equipment. However, sharing a band used by another technology has been shown to work in other parts of the world:
  - **Band-sharing example USA:** UPCS band (1920 – 1930 MHz)
  - **Band-sharing example Japan:** Shared with PHS / sXGP (1893 – 1906 MHz)

Legal Feasibility Study – Scope of Work

The DECT Forum requests proposals for a Legal Feasibility Study that lays out a researched and planned Programme of Work that will provide an acceptable probability of successful opening of a license route to the deployment of DECT products in China.

For the company providing the tender:

- This is a request for a quotation. This is not a statement of work.
- No contracts are expressed or implied. DECT Forum will not be paying for your proposal.
- Please provide a scope of work sketched out and why the suggested action plan will turn out to be successful, so that DF can decide based on your proposal
- Rough time plan / schedule with milestones
- Details of functions (not individual details) within Chinese government & regulatory authorities that will be accessed and become key actors in the successful outcome

Proposals should include:

- References and examples of successful lobbying/campaigning of BSNL
- Details of established contact points (Functions, not names) within Chinese government & regulatory authorities that will be accessed and become key actors in the successful outcome
- Details of any support required from the DECT Forum or ETSI, whether remotely or on location in China
- All costs for the feasibility study
- Terms & Conditions for the Feasibility Study