



Draft Radio Frequency Spectrum Assignment Plan for IMT850

LEADING NEW ICT

CHINA



- 470~510Mhz
- ERP: 17dBm/50mw

Latin America



- 902~928Mhz
- ERP: 36dBm(>50Channels)
30dBm(<50Channels)

EU

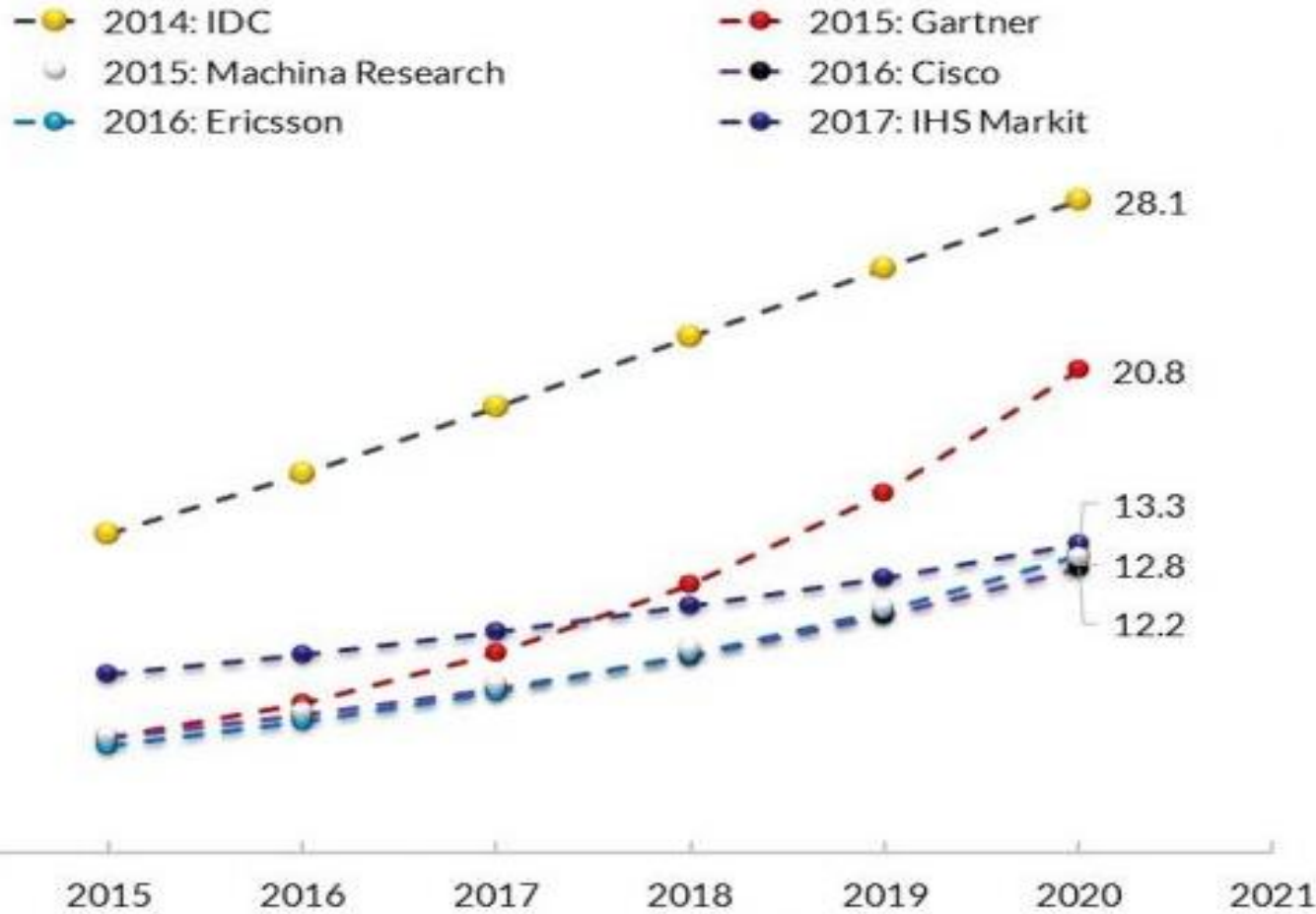


- 863-870Mhz
- Typical ERP: 14dBm

Application types which can be used in this band	
1	Non-specific Short Range Devices (Telemetry, Telecommand, Alarms and Data in general and other)
2	Tracking, Tracing and Data Acquisition
3	Wideband Data Transmission Systems
4	Railway Applications
5	Transport and Traffic Telematics
6	Radio Determination Applications
7	Alarms
8	Model Control
9	Inductive Applications
10	Radio Microphone Applications including Aids for the hearing impaired
11	Radio Frequency Identification Applications
12	Active Medical Implants and Their Associate Peripherals
13	Wireless Audio Applications

- Bluetooth devices near field communication (NFC) devices, RFID, ZigBee,
- **LPWAN** (Sigfox, LoRa, Symphony Link, Weightless and LTE based solutions)

Global IoT Devices Installed Base Forecast (billions)



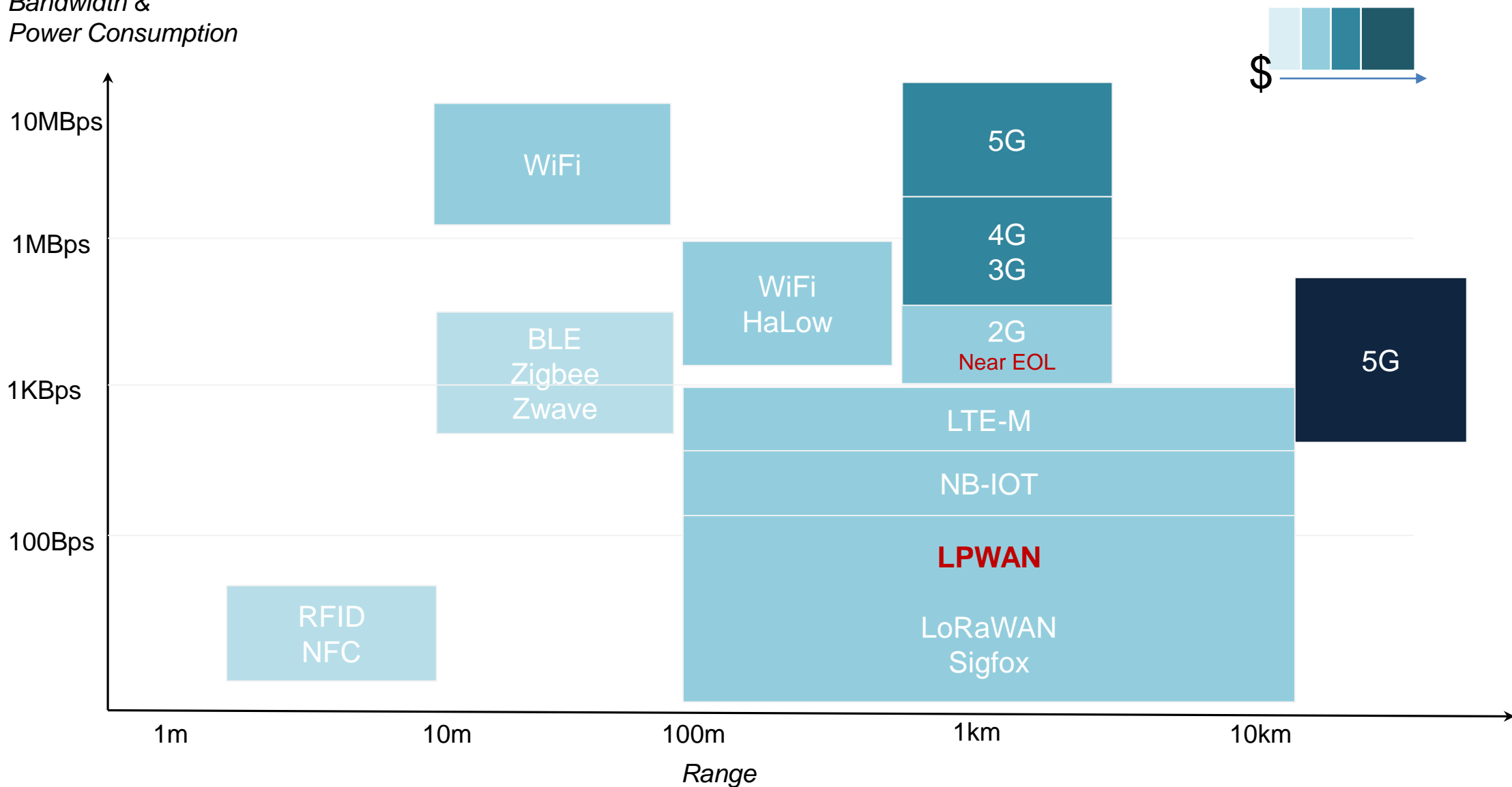
Source: Various published forecasts by the named companies.

OPEN SPECTRUM ENABLES:

- Advancement and wide adoption of new technologies
- creation of low-cost platforms as well as mass production of terminals.
- the emergence of a plethora of valuable opportunities in automation IoT sector for Machine-to-Machine (M2M), which it has been experiencing rapid growth.

LPWAN COMPLEMENTS EXISTING CONNECTIVITY TECHNOLOGIES LEADING NEW ICT

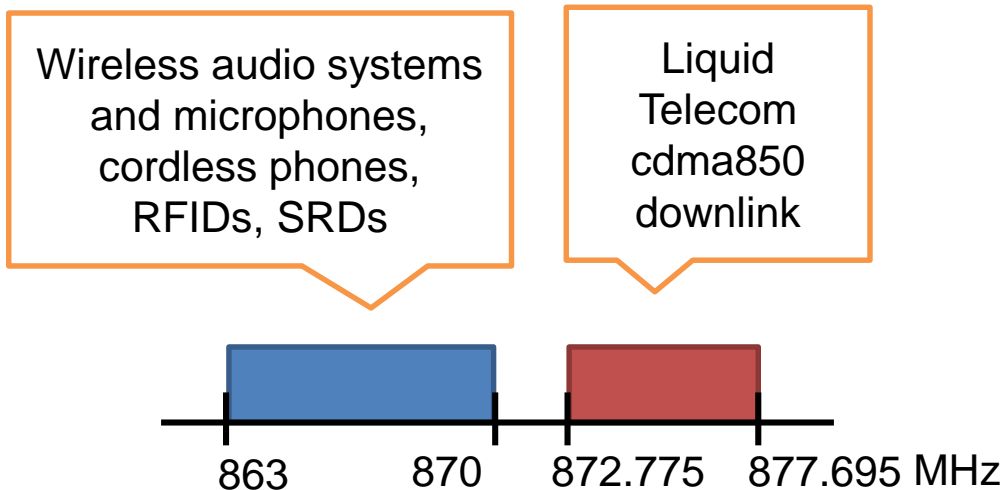
Bandwidth &
Power Consumption



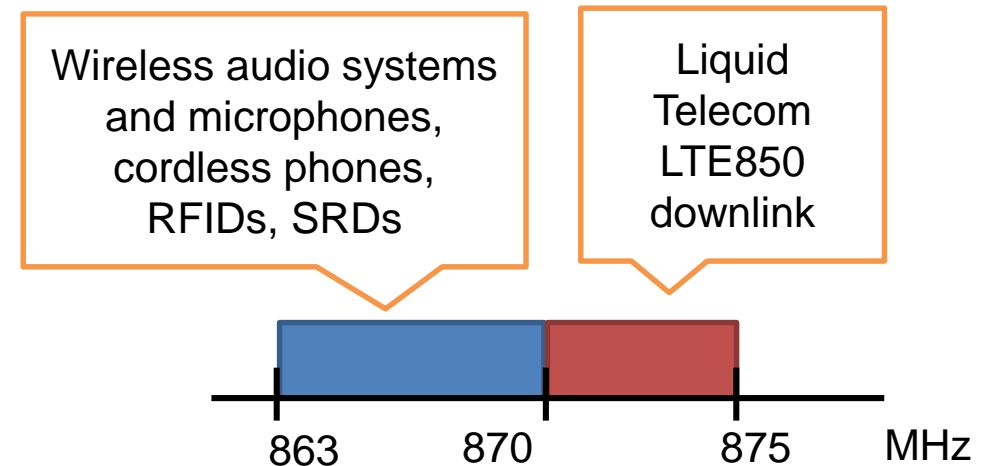
Today, there is a 2 MHz guard band between the short range devices band and Liquid Telecom's downlink band.

The proposed IMT850 channel plan removes this guard band and puts high power broadband BSs adjacent to the SRD band.

Before migration

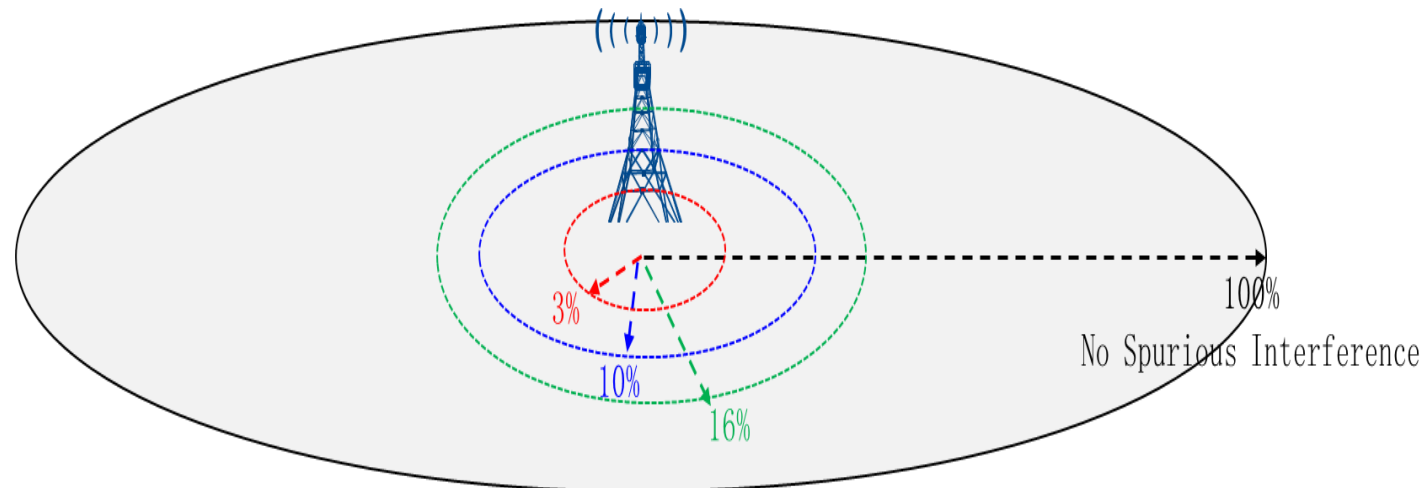


After migration



- The unwanted emissions from a 3GPP-compliant LTE BS transmitting in 870-875 MHz would be :
 - 6dBm/100kHz at 869.65MHz
 - 11.5dBm/100kHz at 868MHz
- These unwanted emissions will result in significant degradation of the performance of SRDs operating in 865 - 869.65 MHz

Distance between the LTE BS and the SRD device	Isolation (dB)	Spurious level at 869.65 MHz (at the SRD input)	Resulting coverage of the SRD system (compared to a non-interference scenario)
100 meters	60	-66dBm/100k	3%
500 meters	75	-81dBm/100k	10%
1000 meters	81	-87dBm/100k	16%



- The lowest 1.25MHz (870-871.25MHz) could be reserved as guard band, the frequency gap would ensure the availability of 5dB spurious improvement.
- In addition, it is possible for LTE equipment manufacturer to develop filters to mitigate the interference. This would bring another 10dB improvement. The total 15dB+ spurious improvement will mitigate the interference situation.
- For the new LTE BSs deployed in 870-875MHz, the spurious performance @865-870MHz should be clarified clearly by the supplier.

A bright sun with rays shining through a blue sky with white clouds. The sun is positioned on the right side of the frame, creating a lens flare effect. The sky transitions from a pale blue on the left to a deeper blue on the right, with soft white clouds scattered throughout.

THANK YOU

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