



Liaison Statement

Liaison Statement Title:	LS to 3GPP on the GSMA Mobile IoT initiative to improve time to market of licensed Low Power Use Case solutions operating in licensed spectrum.
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Action Required by Recipient	
Internal Recipients:	Connected Living – Mobile IoT initiative
External Recipients:	3GPP GERAN Plenary, 3GPP RAN Plenary, 3GPP SA Plenary

1 Introduction

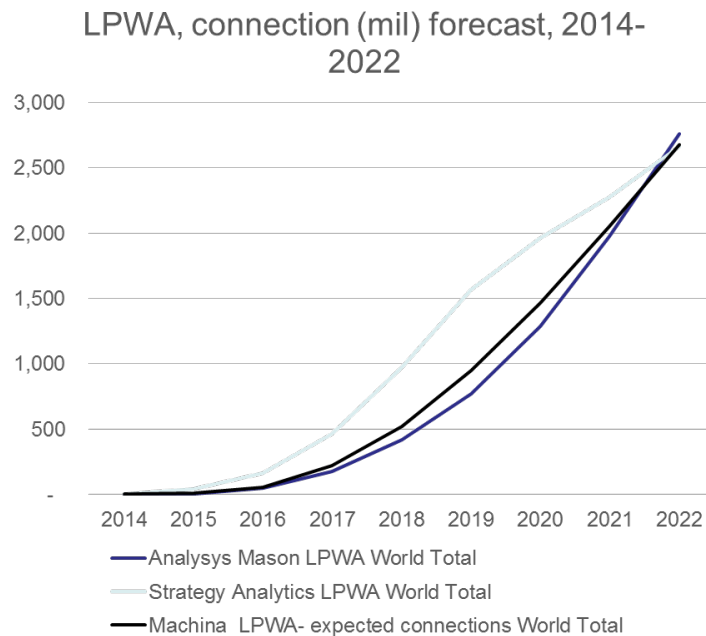
The GSMA's Connected Living Programme would like to inform 3GPP about the ongoing work to help mobile operators to understand whether the existing mobile networks can meet the segment requirements for low power use cases. The project also conducts a SWOT analysis of multiple low power technologies, including:

- Some already commercially available solution in the unlicensed spectrum,
- LTE for MTC, and
- Ongoing proposal part of the study item GP-150354 ("Study on the Cellular system support for ultra low complexity and low throughput Internet of Things", TR 45.820).

2 GSMA Connected Living Programme - Preliminary Analysis and conclusion

The following preliminary conclusions are derived from the GSMA's analysis of the market situation and technical solutions:

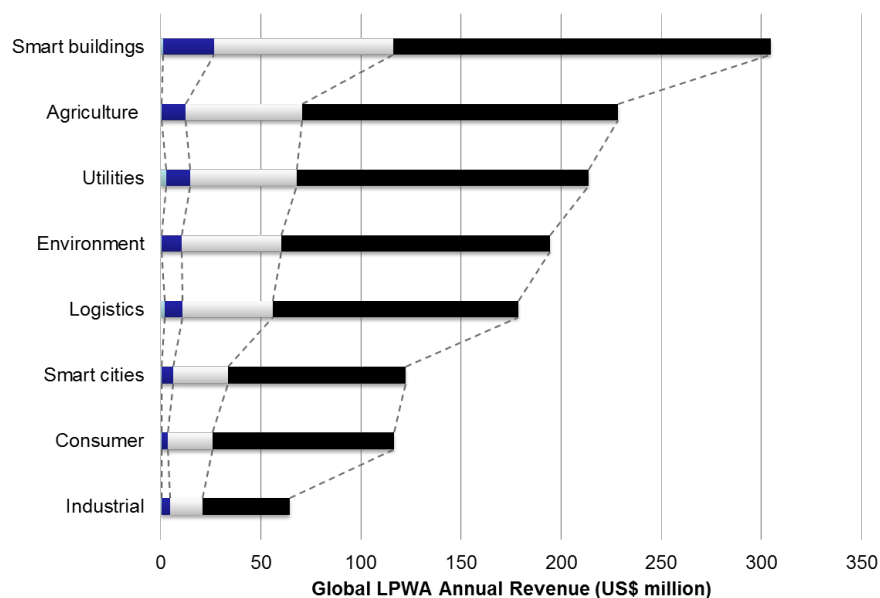
1. The Market Opportunity for LPWAⁱ is significant, operators need a solution in a short timeframe in order to capture the forecast market opportunities:



Source: Analysys Mason, Strategy Analytics, Machina Research

- a. Total LPWA connections will reach 2.7 billion by 2022, by industry consensus [Analysys Mason, Machina Research, Strategy Analytics as shown in figure below].
- b. Annual connectivity revenue will reach US\$7.5 bn by 2022.
- c. Cumulative LPWA revenue between 2015-2018 is forecast at \$1.4bn (see figure below). This opportunity will not be addressable by such technologies

Cumulative LPWA Revenue for 2015-18 Equals \$1.4bn



Source: Analysys Mason, April 2015, GSMA

as LTE-MTC, if it will be commercially available only after 2017.

2. More than one technology in licensed spectrum is needed to cover all IoT use cases, however the industry also needs to avoid fragmentation.
 - a. Due to the limitations of LPWA technologies in unlicensed spectrum, such as: capacity, scalability, security and regulatory constraints; operators have a clear preference to utilise standardised LPWA technologies operating in licensed spectrum to enable a sustainable long term global IoT market presence.
 - b. LPWA technologies in licensed spectrum can be deployed in a simplified and cost effective manner, without sacrificing key customer requirements, for example battery lifetime and security.
 - c. The mapping of LPWA technologies to IoT use cases according to the main requirements such as: coverage, battery lifetime, mobility and location information as well as expected costs, shows that a single technology is not capable to address all of the analysed use cases.
 - d. LTE for Machine Type Communication (LTE-MTC) alone is not capable to address all the analysed IoT use cases, it will however benefit from a worldwide support.
 - e. The technical options in consideration under the technical study “Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things” (i.e. NB-CIoT and EC-GSM) are expected to be capable of complementing LTE-MTC by providing the connectivity needed for some of the most stringent IoT use cases. Furthermore, the two approaches under consideration offer one or two evolution paths for operators reflecting the different maturity of their local IoT Market. NB-CIoT is a solution for IoT communication (see in TR 45.820v140), which is the merged uplink of NB-M2M and downlink of NB-OFDMA.

The full operator members and associate vendor members of the GSMA believe that it is imperative that the industry focuses on avoiding fragmentation and accelerating the time to market of a limited number of LPWA technologies in licensed spectrum, to avoid losing significant IoT market opportunities. While LPWA technologies in unlicensed spectrum are already commercial, the current expectation of commercial available licensed standardised LPWA technologies is as late as 2018.

3 New “Mobile IoT Initiative”

The GSMA has taken the lead in convening the whole industry in order to accelerate time to market for selected LPWA technologies in licensed spectrum. At a meeting during the Mobile World Congress Shanghai on July 14th, a new “Mobile IoT Initiative” has been proposed and agreed by the GSMA full and associate members listed below to achieve the objective of accelerating the commercial introduction of such technologies. In order to reach the proposed objective, three key work areas have been defined:

1. Align Industry- by convening the key industry partners – chipset, device, network manufacturers and IoT vertical OEMs
2. Support standardisation of mobile IoT technologies in 3GPP via:
 - a. Identifying priority on working areas, requirements, features for operators
 - b. Provide feedback about requirements from the industry to 3GPP via liaison statements.
 - c. Feedback results from demos, PoCs and trials.
3. Reset Market Perceptions - driving the industry to adopt a common vision for mobile IoT

For the work area to support standardisation, we would like to work with 3GPP to achieve the following targets:

- Mobile IoT initiative to confirm the focus on selected 3GPP technologies – Oct 15
- 3GPP agreement of specs – Dec 15
- 3GPP freezes specs – Jan 16
- Pre-commercial solutions – Jan 16
- 3GPP Official Release 13 – Mar 16
- Full commercial solutions – e/o 2016

4 Action

The GSMA Mobile IoT Initiative members (listed below) requests that 3GPP prioritise their work on the listed Low Power Wide Area WIs as part of Release 13 in order to help improve the time to market of such solutions. This is felt by the industry to be of vital importance.

The GSMA also asks 3GPP if there are any other ways that the “GSMA Mobile IoT initiative” can assist 3GPP in order that 3GPP can deliver the required technology in a timely manner as proposed in the above target dates, so that the required technologies based upon LTE MTC, GSM evolutions (for example EC-GSM), Clean Slate technologies (for example the non-GSM NB-CLoT), are included in 3GPP Release 13.

Regards,

GSMA Connected Living programme

The GSMA Connected Living Mobile IoT initiative has been approved and is supported by : AT&T, Alcatel-Lucent, Bell Canada, China Mobile, China Telecom, China Unicom Deutsche Telekom, Ericsson, Etisalat, Huawei, Intel, KDDI, KT, KPN, LG U+, Nokia, Ooredoo, Orange, Qualcomm, Sierra Wireless, Singtel, Softbank, Taiwan Mobile, Telefonica, Telit, u-blox, Vodafone and ZTE

ⁱ The term LPWA (Low Power Wide Area) used below refer to any solution providing a Wide area coverage and compatible with the use of constraint low power devices able to work on battery for several years under some specific traffic model.