SIGFOX SINGAPORE PTE LTD

RESPONSE TO CONSULTATION PAPER ON INPUTS FOR FORMULATION OF NATIONAL TELECOM POLICY - 2018

1. INTRODUCTION

1.1. Sigfox Singapore Pte Ltd ("Sigfox") refers to the Telecom Regulatory Authority of India ("TRAI") on the Consultation Paper "Inputs for Formulation of National Telecom Policy – 2018" ("Consultation Paper"). Sigfox welcomes the opportunity to make this submission on the White Paper by TRAI.

1.2. Sigfox would be pleased to clarify any of the views and comments expressed by the company in this document, as appropriate.

1.3. Sigfox contact person: Mary Lim at mary.lim@sigfox.com.

1.4. Internet of Things ("IoT") is considered as the next revolution of communications, which will play a significant role in improving the efficiency of human and energy resource management. Sigfox views that IoT can ignite India's productivity growth and usher in a new era of global competitiveness for its industries, but this opportunity can be hindered without the right enabling spectrum (licensed and unlicensed), technical specification and conditions. Therefore, Sigfox's responses pertain to policies that encourage the development of networks especially suited for IoT and associated services.

2. SIGFOX'S COMMENTS ON CHAPTER II SECTION D: COMMON STRATEGIES TO LEAPFROG INDIA AMONGST TOP-50 NATIONS IN INTERNATIONAL RANKINGS IN TERMS OF NETWORK READINESS, COMMUNICATIONS SYSTEMS AND SERVICES

2.1. Sigfox agrees that point (a) "*by recognising communication systems and services as essential connectivity infrastructure for development of India*". This concept should apply on IoT connectivity, to attract investment and increase the IoT connectivity in India. IoT covers a huge range of industries and use cases that scale from a single device up to massive cross-platform developments of embedded technologies and cloud systems connecting in real-time. Government of India ("GOI")'s role in supporting industry is to remove barriers to investment, to cut the red tape that increases the cost of rollout, and to ensure suitable regulatory framework that support implementation of different type of communication systems for different services.

2.2. Sigfox supports point (v) "*by earmarking unlicensed frequency bands periodically for operation of low power devices for public use*". Unlicensed spectrum serves as an important medium for inexpensive connectivity in rural / remote areas and source of innovation, for implementing new technologies such as Low Power Wide Area Network ("LPWAN"). GOI's role in supporting industry is to ensure not requiring operators to obtain a costly license and special permission for deploying LPWAN in the unlicensed frequency bands, to create a barrier-free option for meeting communication requirement.

2.3. Sigfox supports point (u) "*by ensuring adequate availability of contiguous, broader and globally harmonised spectrum*". This concept should be applicable for all spectrum bands, especially the unlicensed spectrum. This will foster the growth of wireless communication systems (e.g. IoT devices) in India, which in-turn facilitate initiatives services such as (i) telemedicine; (ii) soil moisture monitoring and environment monitoring in agriculture environment; (iii) asset tracking; and (iv) water and electricity metering in utilities industry. This will provide significant benefits for India.

3. SIGFOX'S COMMENTS ON CHAPTER II SECTION G: STRATEGIES TO ENABLE ACCESS FOR CONNECTING TO 10 BILLION IOT / M2M SENSORS / DEVICES

3.1. The conception of light regulation of spectrum, a loosen stringent allocation of spectrum to specific technologies or services, is gaining acceptance among European countries. The reduced regulatory burden in the unlicensed spectrum will foster development of new innovative technologies, in-turn growth of IoT devices, innovative services and business models. This will also encourage start-up companies to entry the IoT market.

3.2. The prescription of a dedicated licensing and regulatory framework for IoT / Machine-to-Machine ("M2M") service should not impede the successful development of IoT either by limiting the emergence of new stakeholders bringing complementary or competing solutions to the incumbent operators or by adding administrative burden to innovative providers. Hence, it is important for TRAI / GOI in setting an appropriate licensing and regulatory framework, especially for unlicensed spectrum. It should be granted through either simple notification procedure or light licensing regime, and should only impose a minimum set of legal duties, for IoT services using the unlicensed spectrum.

3.3. Sigfox supports input (b) "*by earmarking of suitable licensed and unlicensed spectrum for IoT / M2M services*". The emergence of LPWAN, both cellular and non-cellular based, has brought innovative solutions for overall IoT market. Hence, Sigfox supports TRAI's recommendations[1] on the unlicensed spectrum allocation for IoT / M2M of additional unlicensed spectrum at 867 MHz – 868 MHz and a chunk of 6 MHz of unlicensed spectrum at 915 MHz – 935 MHz band. Indeed, these sub 1-GHz spectrum bands are essential to reach affordable and national IoT coverage in both urban and rural areas, echoing the missions indicated in Chapter II Section B of this Consultation Paper "*to develop state-of-the-art secured communication infrastructure for delivering high-quality quality services to man and machines in urban as well as rural areas*".

3.4. This earmarking of IoT spectrum should include appropriate technical specification, certification and type approval regime for IoT / M2M operating, in particular for unlicensed spectrum. Sigfox proposes to set a favourable technical specification for IoT / M2M operating in the unlicensed spectrum, leveraging on International standards in place and exploited worldwide by the IoT industry, in particular, (i) European Telecommunications Standards Institute ("ETSI") GS LTN 001 for low throughput network ("LTN") and ETSI EN 300 220-2-2016 for short range device ("SRD"); (ii) Internet Engineering Task Force ("IETF") on end-to-end IP-based

[1] Reference to TRAI's recommendations on "Spectrum Roaming and QoS related requirements in M2M Communications"

connectivity for ultra-low power devices and applications; and (iii) Federal Communications Commission ("FCC") rules for devices operating in the 902 – 928 MHz frequency range.