Creation of a New Licence for the Provision of Wireless Internet of Things Services

25 January 2018

OFCA
通訊事務管理局辦公室
OFFICE OF THE
COMMUNICATIONS AUTHORITY

Overview of IoT (1)

- **Internet of Things (IoT) systems** enable the various interconnected devices to generate, exchange and consume data without human intervention
- The emergence of new generations of wireless and mobile technologies is enabling the mass implementation of IoT. Common **wireless IoT** technologies include traditional mobile network (e.g. **Narrowband-IoT**), low power wide area network (e.g. **Sigfox**, **LoRa**), etc.

IoT sensors

IoT Base Stations

Radio Access Network

Network / Application Servers

2
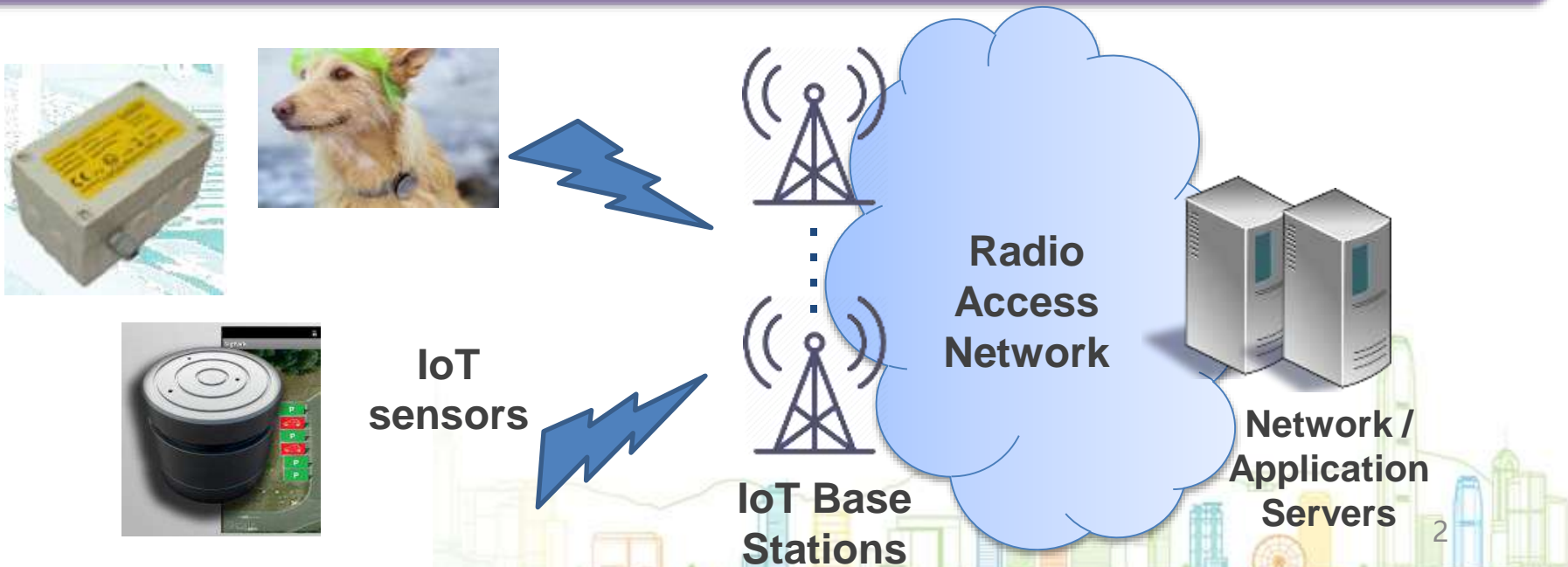
Overview of IoT (2)

Industrial forecast expects a tremendous growth of the amount of IoT devices globally. Some examples of IoT applications cover:

Global IoT Devices

Billion

23.14	35.82	62.12
2018	2021	2024

Source: HIS Technology 2016
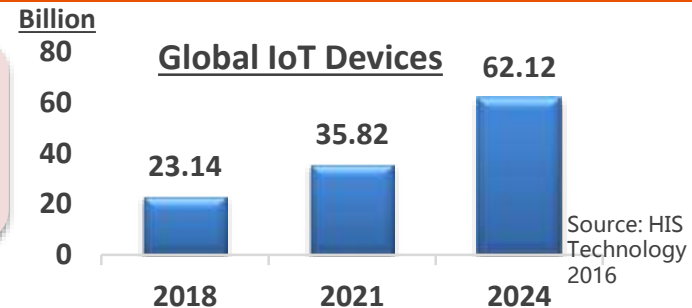
Example 1 **- Smart metering systems are deployed by public utilities e.g. electricity suppliers for collection of real-time usage data to facilitate consumption control and facility management**

IoT Base Station

Water Use Data

Water Meter and IoT Sensors

Example 2 **- IoT sensors can be installed in waste bins to monitor and evaluate their usage level for efficient waste management**

IoT Sensors

95%   28%

Waste bins
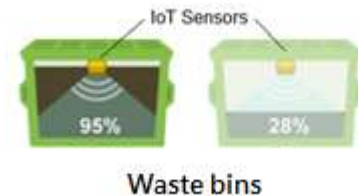
Vehicle-to-Vehicle (V2V)

Example 3 **- IoT devices can be installed for connected and autonomous cars to enable communications with each other for enhancing road safety**

3

Overview of IoT (3)

Example 4 **- Wearable sensors collecting real-time health data allow healthcare professionals to monitor patients' health condition, such as heart rate and body temperature via computers and smartphones**

Example 5 **- IoT devices for home automation are used to control lighting, security systems and electric appliances at homes, offices and classrooms**

Example 6 **- IoT sensors installed at car parks enable drivers and management companies to identify and navigate vacant parking spaces, for saving time and efficient parking management**

New WIoT Licence (1)

- The Communications Authority (CA) announced the creation of a **new licensing regime for the Wireless Internet of Things (WIoT) Services** on 1 December 2017, allowing operators to provide WIoT platforms and services using the shared frequency band of 920 – 925 MHz

  - **WIoT Licences** are subject to less stringent regulatory control and lower licence fee, in order to encourage more operators to provide IoT services

  - **Facilitate the development of emerging new technologies and IoT services in Hong Kong** in response to the market development and the industry's requests

  - Lay down the foundation for embracing **IoT and the fifth generation (5G) mobile services**, and future **smart city** applications in Hong Kong

New WIoT Licence (2)

● **WIoT Licence**

 ❑ The licence authorizes the operator to provide automated machine to machine type data communications only, but not authorise to carry any voice communications

 ❑ Operating in the shared frequency band of 920 – 925 MHz

 ❑ The validity period of the WIoT Licence is five years and, subject to the discretion of the CA, may be extended for a further period of up to five years

 ❑ Annual licence fee

 ● a fixed fee of $100,000
 ● a base station fee from $100 to $1,000 depending on the number of base stations
 ● a WIoT device fee of $2 each

New WIoT Licence (3)

- Any interested parties who intend to use the shared frequency band of 920 – 925 MHz for provision of WIoT services may submit an application to the CA

- At present, CA has issued WIoT Licences to two companies, namely Pixel Networks Limited and Thinxtra Network Limited

- When these operators complete their network rollout, various new and innovative WIoT services would be launched in Hong Kong

Provision of WIoT services by Mobile Network Operators

- Existing **Mobile Network Operators (MNOs)** can, based on their own commercial decisions, make use of their existing assigned mobile spectrum for the provision of WIoT services by using existing 3G or 4G mobile technologies (such as Narrowband-IoT) in accordance with the conditions of their **Unified Carrier Licences**

- **MNOs** can also apply for the new WIoT Licence for the provision of WIoT services by using the shared frequency band of 920 – 925 MHz
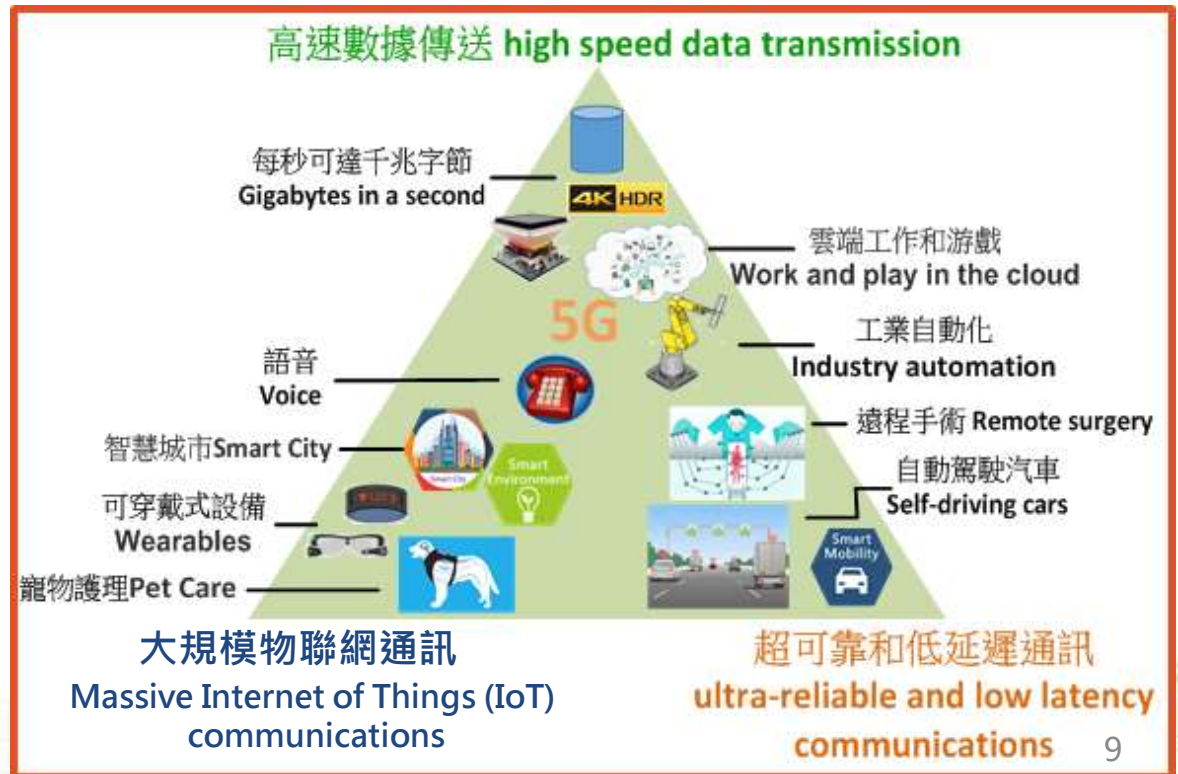
Development of 5G and IoT

- **What is 5G？**
  - ❑ **the upcoming new era of mobile technology**
  - ❑ **promote and facilitate the development of new mobile services and smart equipment**

- **Technical features of 5G (see diagram)**

- **5G technology is not only used for telecommunications and communications, but also for IoT and smart city applications**

Thank You