



Press release

## **3 Hong Kong will deploy Huawei's advanced network technologies in preparation for the high-speed and high-capacity 5G era**

- **5G technology trials and research help 3 Hong Kong prepare for the 5G era.**
- **2100 MHz spectrum to be completely re-farmed by the end of 2017, with gradual roll out of carrier aggregation (CA) technology with five component carriers (5CC) during the year.**
- **FDD-TDD network with 5CC achieves a peak network rate of over 1.2Gbps using CA technology in live demonstration.**
- **The development of a full cloud network begins; Field tests validated Massive MIMO technology for the 5G era.**

**Hong Kong, 10 April 2017** - 3 Hong Kong, the mobile communications division of Hutchison Telecommunications Hong Kong Holdings Limited (HTHKH, stock code: 215), and Huawei today announced plans for a series of network upgrades. Deploying Huawei's advanced technologies over the next few years, 3 Hong Kong will boost its network capacity and coverage to meet rising customer demand for data and prepare for the high-speed and high-capacity 5G era.

### **Enhancing network capacity, coverage and speed to prepare for a 5G world**

The coming 5G era will enable virtual reality, augmented reality and Internet of Things (IoT) applications, driving data usage to new heights. According to a global forecast by Huawei Wireless X Labs<sup>1</sup>, average data usage is expected to increase rapidly from 8GB per user per month in 2020 to 1GB per day in 2025. Network operators will have to boost network capacity and speed to cope with this surge in data volume in the new 5G era.

"As we move towards the 5G and IoT era, 3 Hong Kong is actively deploying 5G technologies and upgrading its existing network architecture," said Mr Cliff Woo Chiu-man, Executive Director and Chief Executive Officer of HTHKH. "In addition to using CA technology with 5CC, we have conducted research and carried out trials for various technologies, such as small cell installations, network cloudification, network function virtualisation (NFV) and Massive MIMO towards the 5G era. These efforts will enable the timely launch of services to meet market demand as soon as the 5G standard and Hong Kong's spectrum plans are confirmed."

"As a leading ICT player, Huawei has been researching relevant technologies since 2009 and increasing our investment in this area. Network cloudification has been a recent focus for us, as this is a prerequisite for the future deployment of 5G networks. We have gained extensive experience in network cloudification and commercial applications of the technology," said Dr

Zhou Yuefeng, Chief Marketing Officer, Wireless Network Product Line of Huawei Technologies Co. Limited. "Huawei is honoured to collaborate with 3 Hong Kong to create a full cloud network."

**Completing the re-farming of 2100 MHz spectrum in 2H 2017, with planned deployment of CA technology with 5CC by year-end. Maximum network speed can reach over 1.2Gbps with compatible handsets.**

3 Hong Kong is currently the only mobile operator in Hong Kong with 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2600 MHz spectrums in service. 3 Hong Kong has been re-farming spectrum to maximise bandwidth efficiency as customer data usage patterns change in recent years. Having already re-farmed its 900 MHz spectrum for 4G last year, 3 Hong Kong intends to complete the re-farming of its 2100 MHz spectrum for 4G service in the second half of this year. By that time, all five bands of spectrum will be available for 4G service, meeting customers' increasing demand for data services.

Against this backdrop, 3 Hong Kong will leverage CA technology to deploy an evolved network with 5CC. This will give customers a superior mobile service experience. To provide the necessary higher bandwidth, 3 Hong Kong will combine 1800 MHz, 2100 MHz, 2300 MHz x2 and 2600 MHz spectrums with Frequency Division Duplex (FDD) and Time Division Duplex (TDD) 5CC CA technology, along with 4 × 4 MIMO and 256 Quadrature Amplitude Modulation (QAM) technology. With compatible terminals that support the relevant technologies, customers will be able to enjoy data download speeds of over 1.2Gbps, which is several times faster than the current network. For example, this will allow users to download a 90-minute Blu-ray film in as little as five minutes. 3 Hong Kong plans to launch the respective network by the end of 2017. The new network is expected to better meet demand for innovative applications in the IoT era as devices that can support 5CC FDD and TDD standards become available.

**Conducting field tests and validations for Massive MIMO technology and developing a full cloud network for the 5G Era**

While continuing to enhance its 4.5G network, 3 Hong Kong has also begun planning for the deployment of 5G technologies in order to facilitate the swift launch of services as soon as the relevant technology standard is confirmed. Global best practice in development planning for 5G technology emphasises network cloudification and network capacity.

Huawei is making network cloudification possible with the introduction of advanced technologies such as CloudEdge, CloudRAN and CloudAIR.

- CloudEdge brings core network resources to the cloud, helping operators flexibly adjust network configurations to meet demand for new services and maximise network efficiency.
- CloudRAN centralises the management of baseband configurations on the cloud, reducing network construction and allowing customers to use smooth mobile services anytime, anywhere.
- CloudAIR cloudifies the air interface cloud to dynamically adjust spectrum formats and allocates spectrum resources based upon fluctuations in network traffic, helping operators meet customer demand for data and improve cell edge performances with more efficient use of spectrum resources.

These three technologies help network operators integrate core networks, wireless access networks and spectrum, and quickly set up new network architectures and specifications to meet current and future demand for communications services while maximizing network efficiency.

3 Hong Kong and Huawei have already deployed CloudEdge technology on the 3 Hong Kong core network, and they are now applying CloudRAN technology to its wireless access network. The deployment of CloudAIR technology is also in the pipeline to ensure complete cloudification.

3 Hong Kong is also developing Massive MIMO technology, which serves to enhance network capacity. A Massive MIMO base station with 2300 MHz TDD was built in Causeway Bay and numerous field tests were conducted on this 5G technology during a large-scale public event. Test results show that Massive MIMO base stations offer more than six times the capacity of traditional 4G base stations with the same spectrum specifications on a TDD single carrier of 20 MHz bandwidth. Through a number of tests and validations, the technical team has become proficient in deploying the Massive MIMO technology in a densely populated environment with heavy data traffic, as well as adequately controlling dramatic fluctuations in footfall and data volume in a real-life setting. 3 Hong Kong plans to continue the deployment of this technology in prime locations within the year, and will work closely with Huawei to explore the feasibility of deploying FDD Massive MIMO to enhance spectrum efficiency.

3 Hong Kong will continue to work with Huawei to conduct research on network cloudification and Massive MIMO technology to lay a solid foundation for the 5G era.

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### **About 3 Hong Kong**

3 Hong Kong is a leading mobile communications service provider and the only local operator to own blocks of spectrum across the 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2600 MHz bands. 3 Hong Kong offers cutting-edge data, voice and roaming services under the "3" brand via far-reaching advanced 4G LTE, 3G and 2G networks. 3 Hong Kong also works with renowned partners to offer a wealth of innovative mobile devices and value-added services, while providing high-speed Wi-Fi at "3HKWiFiService" hotspots to serve Hong Kong's major areas. 3 Hong Kong is the mobile division of Hutchison Telecommunications Hong Kong Holdings Limited (stock code: 215), a group member of CK Hutchison Holdings (stock code: 1).

For more information on 3 Hong Kong, please visit [www.three.com.hk](http://www.three.com.hk).  
For more information on HTHKH, visit [www.hthkh.com](http://www.hthkh.com).

### **About Huawei**

Huawei is a leading global information and communications technology (ICT) solutions provider. Our aim is to enrich life and improve efficiency through a better connected world, acting as a responsible corporate citizen, innovative enabler for the information society, and collaborative contributor to the industry. Driven by customer-centric innovation and open partnerships, Huawei has established an end-to-end ICT solutions portfolio that gives customers competitive advantages in telecom and enterprise networks, devices and cloud computing. Huawei's 180,000 employees worldwide are committed to creating maximum value for telecom operators, enterprises and consumers. Our innovative ICT solutions, products and services are used in more than 170 countries and regions, serving over one-third of the world's population. Founded in 1987, Huawei is a private company fully owned by its employees.

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<sup>1</sup> "The Future of Mobile Broadband Report" issued in February 2017