# HC2017 X-Gen Wi-Fi Solution

## 1. Overview

With the popularization of smart terminals, Internet of Things (IoT), cloud computing, and other emerging industries, wireless network becomes a necessity for mass terminal connections and huge data transmission.

➢ **Emerging mobile services require that wireless networks can provide high bandwidth and large capacity.**

The explosive growth of mobile applications requires higher data transmission speed. The rapid evolution of Wi-Fi products from 2 Mbit/s in the 802.11 era to 1.7 Gbit/s in the 802.11ac, enabling the wireless network speed to be faster and faster. With the wide use of 4K Ultra High Definition Television (UHDTV), AR, VR, and other applications in many industries including education, office, and healthcare, each terminal requires 50 Mbit/s or higher bandwidth. In stadiums, waiting halls, and other high-density scenarios, Wi-Fi products need to provide a concurrent access capacity twice of that in normal cases. Currently, a single 802.11ac AP can provide concurrent access for 100 persons, with 2 Mbit/s bandwidth each person. However, such speed and capacity can hardly meet service requirements in the future. As a result, Wi-Fi products with higher bandwidth and greater capacity are required.

➢ **In the world of connectivity of everything, wireless networks must be able to provide converged access to increasing IoT terminals.**

The number of IoT connections will increase by 300% every five years in the future. By 2025, two million sensors will be deployed and connect to networks per hour or the total number will reach 47 million per day. IoT connections are ubiquitous. Wi-Fi products can be used as the access gateway for IoT terminals, facilitating rapid development of IoT services.

➢ **Huawei releases the future-oriented, multi-service, and large-capacity X-Gen Wi-Fi Solution to cope with the challenges.**

Huawei X-Gen Wi-Fi Solution includes two core products: AP7060DN based on the latest 802.11ax Wi-Fi standard and multi-rate Ethernet switch S6720-SI.

## 1.    X-Gen Wi-Fi AP7060DN

Huawei X-Gen Wi-Fi AP7060DN is used for wireless access. This AP is the first in the industry that introduces the 8x8 MU-MIMO design, space-division multiplexing technology through orthogonal frequency division multiple access (OFDMA), and 1024QAM modulation and demodulation algorithms. With the rate of a single 5G radio up to 4.8 Gbit/s, X-Gen Wi-Fi AP7060DN increases the wireless bandwidth to 3 times that of available APs, and the number of concurrent users by 4-fold. In addition, AP7060DN also provides hybrid access through integration of Wi-Fi, Bluetooth, ZigBee, and RFID, making more innovative service experience possible.

## 2.    Multi-rate Ethernet switch **S6720-32C-PWH-SI**

The S6720-32C-PWH-SI, the industry's first commercially available multi-rate switch, is used as the upstream device for AP7060DNs. This switch has the industry's richest Ethernet ports and supports GE/2.5G/5G/10G auto-negotiation and PoE power supply over a distance of 200 meters, which is a perfect choice for 802.11ax high-speed APs.


The X-Gen Wi-Fi Solution will revolutionize the end-user service experience and break the spell that the access capacity and user bandwidth in high-density scenarios cannot achieve the optimal at the same time, allowing users to enjoy the wireless network anytime, anywhere. In the future, the X-Gen Wi-Fi Solution will be widely used in VR/AR interactive classroom teaching, interactive remote diagnosis in hospitals through 3D imaging, all-telepresence wireless office, and many other interactive scenarios that we cannot imagine today.


**2. Media Roundtable Agenda**

**Topic: Huawei Launches the X-Gen Wi-Fi Solution**

**Time:** Undetermined

**Place:** Undetermined

**Speaker:**

**Agenda:**

| Time | Topic | Speaker |
|------|-------|---------|
| | **Introduction to the X-Gen Wi-Fi Solution** | |
| | Q&A | |

**3. Key Messages**

**Three major advantages of Huawei X-Gen Wi-Fi Solution:**

Huawei X-Gen Wi-Fi Solution has three major advantages: higher speed, IoT convergence, and cloud-based management.

**[Key capability 1 and ROI]**

**Higher Speed — X-Gen Wi-Fi APs Provide Three-fold Bandwidth and Support Four-fold Concurrent Users**

➢ **[Max speed, 3x bandwidth, "4K" experience everywhere]**

Bandwidth three times of an 802.11ac AP: This AP uses the 8x8 MU-MIMO design and 1024QAM modulation and demodulation algorithms. With the rate of a single 5 GHz radio increased from 1.7 Gbit/s to 4.8 Gbit/s, it will support not only various indoor/outdoor mobile applications, but also wireless applications requiring higher bandwidth, such as 4K video, AR, and VR.

**[Typical applications]**

AR/VR interactive teaching scenario: The AR/VR technology enables the 3D teaching model anytime, anywhere, improving the students' learning interests on the one hand, making the teaching more attractive on the other hand. In this scenario, each AR/VR terminal requires 70 Mbit/s or higher bandwidth.

Office scenario: With the continuous increase of wireless network bandwidth, wireless voice conference has become popular and wireless video conference is emerging in enterprise office scenarios. For those multi-branch enterprises, full HD or 4K UHD video conferencing has become the trend for communication between the headquarters and branch as well as between branches. To realize all-telepresence at any time, the wireless network needs to provide 50 Mbit/s or higher bandwidth for each terminal.

➢ **[Max connections, 400 users per AP]**

Access capacity four-fold of an 802.11ac AP: X-Gen Wi-Fi AP7060DN effectively avoids conflicts using the multi-user intelligent scheduling mechanism. In a high-density scenario, the network capacity is increased by 30% and the number of concurrent access terminals increases from 100 to 400 while ensuring 2 Mbit/s bandwidth for each terminal. One X-Gen Wi-Fi AP is sufficient to provide high-density coverage to hundreds of people.

**[Typical applications]**

High-density stadium scenario: In a high-density stadium, there are four to six people in each square meter. The number of access users may be up to several hundred in the coverage area of an AP. Each AP needs to provide access for more than 200 concurrent users, while ensuring sufficient bandwidth for each user.

**[Key capability 2 and ROI]**

**IoT Convergence — X-Gen Wi-Fi Implements Converged Wi-Fi and IoT Access**

1. The X-Gen Wi-Fi AP can have an IoT module installed to support converged Wi-Fi and IoT access, implementing integration between Wi-Fi and IoT networks.

2. The large-bandwidth and large-capacity of X-Gen Wi-Fi APs enable a large number of IoT terminals to access wireless networks, meeting the wireless requirements in the future.

**[Typical applications]**

In the new campus of Wuhan Asia Heart Hospital, 7000+ RFID terminals need to connect to the networks. If a traditional solution is used, an IoT network and a wireless network need to be deployed simultaneously. If Huawei CloudCampus hybrid wireless access solution is used, only 1400 APs equipped with RFID cards need to be deployed to implement innovative IoT functions, such as baby anti-theft, asset management, and wireless infusion.

**[Key capability 3 and ROI]**

**Cloud-based Management — X-Gen Wi-Fi Solution Supports Cloud-based Management for the Entire Wireless Network**

1. X-Gen Wi-Fi APs support local and cloud management modes. The management mode can be smoothly switched using software, protecting customer investment.

2. The cloud management platform used in the X-Gen Wi-Fi Solution can manage not only wired and wireless network devices, but also IoT devices and office devices, implementing All-Cloud network management.

**[Typical applications]**

Huawei Cloud Managed Network Solution is deployed for multiple dealerships of Dongfeng Honda, the leading automobile manufacturer in China, and provides the following three advantages:

**Fast deployment**: Non-IT personnel can deploy devices quickly using the plug-and-play function. The deployment period in one store is reduced from several weeks to several days.

**Simplified management**: The solution provides cloud-based planning, deployment, and optimization, and O&M platform. O&M of the entire network can be completed by five persons in the headquarters.

**Abundant applications**: The solution provides open APIs for quick interconnection with the mobile O&M systems of dealerships.

With these core advantages, Huawei X-Gen Wi-Fi Solution improves both the network access rate and the access experience, enabling an innovative 10G network integrating wired and wireless access, IoT, and cloud-based management.