KCC prepares guidelines to minimize Wi-Fi interference

- The 3 communications service providers also move forward
to minimize Wi-Fi interference -

As Wi-Fi AP installations increase due to a rise in wireless Internet use according to the recent spread of smart phones, Korea Communications Commission (KCC) announced on the 18th that establishment of plans to improve Wi-Fi user environment was being carried out in order to minimize interferences between Wi-Fi access points in crowded regions and, accordingly, to prevent the increased user inconveniences in terms of the lowered Wi-Fi service speed.

The improvement measures of KCC are composite plans covering 'guidelines to 2.4 GHz Wi-Fi interference minimization', organization · operation of supporting team to improve Wi-Fi user environment and publicity activities including application development and distribution.

**- Key Contents of
Guidelines to 2.4 GHz Wi-Fi Interference Minimization -**

☐ Private Wireless LAN AP Users (Public Enterprises, Businesses, Households**)**

① At wireless LAN AP installation, it is recommended to select one of the wireless LAN channels (1 ~ 13) that are low in radio interference (1, 5, 9, 13). (#Ref. 1)

② It is recommended to set and operate wireless LAN AP channel bandwidth as 22MHz or less. (#Ref. 2)

☐ Wireless LAN AP Manufacturers

① It is recommended to release wireless LAN AP by evenly selecting channels of low radio interference (1, 5, 9, 13). In addition, a function enabling users to select and use a channel number must be provided.

② It is recommended to list and attach the measures to minimize interference in product manual or annexed paper.

☐ Wireless LAN Service Providers (Mobile Communications Service Providers)

① It is recommended to select and operate wireless LAN AP channel No. as 1, 5, 9 and 13.

② It is recommended to set the network ID of wireless LAN AP (SSID) to be easily recognizable.

※ **SKT** (T Wi-Fi Zone), **KT** (QOOKnSHOW), **LGU+** (myLGnet, U+ACN)

To support successful implementation of the guidelines and to continuously improve Wi-Fi user environment, KCC will ① organize and operate a supporting team to resolve the problems of interference in crowded regions, ② implement and publicize an exclusive website for Wi-Fi interference, ③ develop and distribute applications to search Wi-Fi channel uses in the neighboring access points and ④ publish and distribute publicity cartoons to facilitate understanding of the guidelines by March this year through cooperation with Korea Communications Agency (KCA) and Korea Radio Promotion Association (RAPA).

In response to KCC's Wi-Fi user environment improvement measures, the 3 mobile communications service providers drew up an agreement for

Wi-Fi interference minimization. With Radio Policy Officer O Nam-Seok, President Yoo Jae-Hong of KCA and Vice President Jeong Sun-Gyeong of RAPA attending, SKT, KT and LG U+ signed the 'Agreement on 2.4GHz Wi-Fi Interference Minimization' on Jan. 18, 2011 (Tue) at the Foreign Press Club located in level 18 of Press Center.

Attachment:

1. A copy of Guidelines to 2.4GHz Wi-Fi Interference Minimization

2. A copy of Agreement on Wi-Fi Interference Minimization of the Three Mobile Communications Service Providers
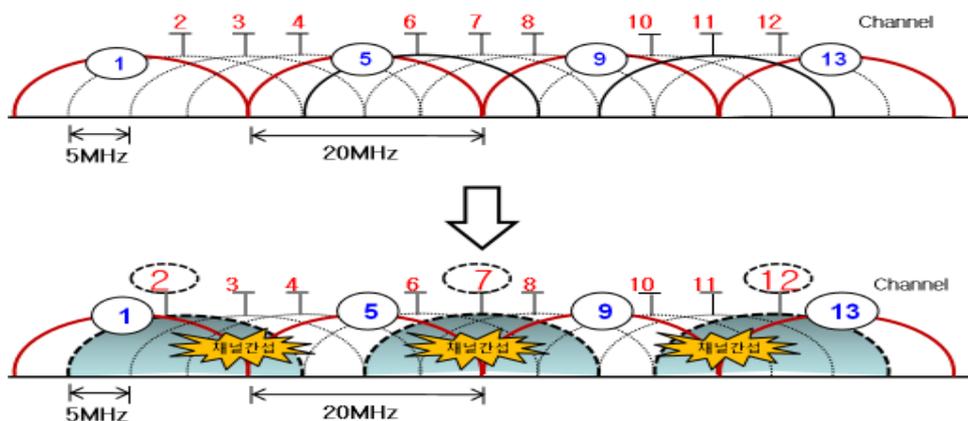
Guidelines to 2.4GHz Wi-Fi Interference Minimization

□ **Private Wireless AP (Access Point) Users (Public Enterprises, Businesses, Households, etc.)**

A. At wireless LAN AP installation, it is recommended to select one of the wireless LAN channels (1 ~ 13) that are low in radio interference (1, 5, 9, 13).

<# Ref. 1>

【 Wi-Fi Channel Use】

【 2.4GHZ Wi-Fi Channels 】

○ Wi-Fi channel consists with 13 of 5MHz unit channels.

○ To minimize interference, it is recommended to use channels that are low in channel interference (1, 5, 9, 13).

- When using neighboring channels, interference between access points may incur due to channel interference.

  Using Channel ⟨2⟩: Channel interference by the neighboring 1 and 5

  Using Channel ⟨7⟩: Channel interference by the neighboring 5 and 9

  Using Channel ⟨12⟩: Channel intereference by the neighboring 9 and 13

B. When installing wireless LAN AP, it is recommended to install and use the AP by securing sufficient distance from other wireless LAN access points in order to maximize the wireless LAN performance.

C. It is recommended to set and operate channel bandwidth of wireless LAN AP as 22MHz or lower.

<# **Ref. 2**>
【 Wi-Fi Channel Bandwidth Configuration 】

Guideline Recommendation	Guidelines Prohibition
○ **Minimizing interference by using channel 1, 5, 9 and 13 of which channel bands do not overlap**	○ **Two channels are preoccupied at channel amplification (bonding). This causes interference with other AP.** ○ **Channel amplification (bonding) restricts use by others.**

D. For interference minimization and personal information protection, it is recommended to use the latest security technologies provided with wireless LAN AP products.

E. In case of interference, transmission speed lowering and difficulty in wireless LAN access, refer to interference minimization measures in

product manual or 'Wireless LAN Channel Interference Handling' in the RAPA website (www.rapa.or.kr).

☐ Wireless LAN AP Manufacturers

A. It is recommended to release wireless LAN AP by evenly selecting channels of low radio interference (1, 5, 9, 13). In addition, a function enabling users to select and use a channel number must be provided.

B. It is recommended to release wireless LAN AP by setting the channel bandwidth as 22MHz or less.

C. It is recommended that wireless LAN AP includes an output adjustment function.

D. It is recommended to list and attach the measures to minimize interference in product manual or annexed paper. .

☐ Public Wireless LAN Service Providers (Mobile Communications Service Providers)

A. It is recommended to select and operate wireless LAN AP channel No. as 1, 5, 9 and 13.

B. To minimize wireless LAN interference, it is recommended to secure an appropriate distance between wireless LAN access points.

C. It is recommended to set the network ID of wireless LAN AP (SSID) to be easily recognizable.

　※ **SKT**(T Wi-Fi zone), **KT**(QOOKnSHOW), **LGU**+(myLGnet, U+ACN)

D. It is recommended to minimize wireless LAN interference and to promote convenience of wireless LAN users.

【Glossary】

☐ **SSID (Service Set Identifier)**

This is a unique identifier used for communication between access point and wireless LAN terminal. Wireless LAN terminals of the same SSID are allowed of network access.

※ SKT (T Wi-Fi Zone), KT (QOOKnSHOW), LGU+ (myLGnet (U+net)), U+ACN (U+zone)

☐ **Wi-Fi (Wireless Fidelity)**

As an abbreviation of wireless fidelity, Wi-Fi is a logo given by WECA (Wireless Ethernet Compatibility Alliance) to wireless LAN and PC cards mutually compatible with the 802.11b wireless ethernet standard.

☐ **Bandwidth**

Bandwidth refers to a difference between the maximum and minimum frequencies of a signal usable in network. However, bandwidth generally refers to the max. transmission speed in communication, that is, the ability to transmit information. The basic unit is bps.

☐ **AP (Access Point)**

AP is one of the devices configuring wireless LAN. It provides the service of allowing wireless LAN to access wired network so that to enable network access by user.

☐ **Radio Interference**

Radio interference is where interference takes place between devices that use the same frequency and therefore causes interference in normal operation of another radio station, access failure or lowering of transmission speed.

☐ **Channel**

Channel refers to the bandwidth of frequency occupied by a communication route or channel through which signals are transmitted between a transmitter and a receiver.

☐ **ISM (Industrial Scientific Medical)**

This is a frequency band that can be used by anyone without the government's frequency regulation or declaration for use. Communication devices, such as wireless LAN and Bluetooth, can be freely used in the band of 2.400~2.483GHz.