



Telecommunications Users and Consumers Advisory Committee (TUCAC)

Follow-up of the Mobile Coverage Enquiries from Committee Members in the First Meeting

15 November 2012

Background

- In the TUCAC meeting dated 9th July, some members enquired about the mobile network coverage and mobile data service quality of their mobile operators.
- After the meeting, OFCA contacted the members to obtain more detailed information for investigation and analysis.
- The enquiries are categorized into the following:
 - Mobile Network Coverage- Fan Kam Road, Sheung Shui
 - Mobile Network Coverage-Tin Shui Wai
 - Deterioration of Mobile Network Quality-MTRC Areas
 - Unstable Mobile Data Connection-Eastern Corridor
 - Slow Mobile Data Connection Speed on Particular Spots
 - Whether 3G Network Resources are Used for Providing 4G Services

Network Coverage of Mobile Network Operators

- The Hong Kong telecommunications market has been fully liberalized. Mobile network operators are driven to continuously improve their network performance, and provide high quality telecommunications services to consumers in a competitive environment.
- The design of mobile network coverage, including the location and the number of base stations are determined by operators' commercial consideration. They take into account factors such as customer demand, traffic volume, technology and environment.
- Consumers can report the coverage problems to their own operators directly. However, consumers may ask OFCA's assistance if they think the operators do not handle the complaints properly. OFCA would refer these coverage issues and suggestions to the operators, and help them to improve their coverage.
- OFCA can assist operators to find suitable location in government premises for base station installation when necessary.
- Based on the locations provided by the committee members, OFCA has performed measurement test for the five mobile operators.

Mobile Network Coverage

-Fan Kam Road, Sheung Shui

- OFCA performed road test on the performance of 5 mobile network operators on 13 Aug
 - Fan Kam Road
 - Good coverage performance for 3 operators and fair for the other 2 operators.
 - On average, each operator has 6 to 8 base stations to provide coverage along the road.
 - Ying Pun Chuen:
 - Overall coverage performance is from fair to poor.
 - Ying Pun Chuen is located around 300m away from Fan Kam Road. Radio wave propagation may be blocked due to the hilly terrain.

Mobile Network Coverage

-Fan Kam Road, Sheung Shui

- OFCA has referred the coverage issue to the corresponding operators for follow-up.
- Operators usually face the following problems when they are looking for suitable locations in rural areas for base station installation:
 - Opposition from local residents, such as complaints about the radiation problem
 - Whether transmission facilities such as optical fiber cable can reach the location

Mobile Network Coverage-Tin Shui Wai

- OFCA performed a road test for the 5 mobile operators on 13 Aug.
 - The testing results indicated that voice quality was good in the following area.
 - Lions Clubs International Ho Tak Sum Primary School
 - Tin Shing Court
 - Tin Shui Estate
 - According to OFCA's records, each operator has over 35 base stations on average to provide coverage in that area.
 - However, some blind spots still exist, such as indoor areas.

Deterioration of Mobile Network Quality -MTRC Areas

- Call disconnection and slow data connection speed occurred in some sections along the MTRC railway
- MTRC areas are bottlenecks, and it is very difficult to maintain good voice and data connection during busy hours.
 - Many mobile users are concentrated in a confined space.
 - Many mobile users need to handover calls between base stations simultaneously.
 - Packed passengers will weaken the mobile signal reception inside the train cabinets.
- The high growth of mobile data usage within MTRC areas poses highly difficult engineering tasks for providing mobile services

Deterioration of Mobile Network Quality -MTRC Areas

- In order to cope with users' demand, all mobile operators are continuously and actively working with MTRC for the system expansion in all stations and tunnels.
- Operators encounter the following restrictions during the MTRC mobile system expansion project:
 - Lack of space for equipment installation
 - Limited daily working hours

Unstable Mobile Data Connection -Eastern Corridor

- OFCA performed a road test on the four 3G mobile networks on 13 Aug.
 - Result indicated that one of the operators has relatively weaker performance.
 - OFCA referred such issue to the corresponding operator. The operator replied that a new base station would be installed in the 2nd half of the year and the coverage was going to be improved.
- Eastern Corridor is a big challenge to radio frequency planning
 - If there is not blocking, radio waves can transmit very far in distance. The base stations along both sides of the Victoria Harbour may cause interference to each other.
 - Cars moving in relatively high speed cause the mobile phones to handover frequently between the base stations.

Slow Mobile Data Connection Speed on Particular Spots

- OFCA performed measurement tests on four 3G mobile operators' network coverage on 13 Aug
 - Area outside the Liaison Office of the Central People's Government in the HKSAR in Sai Wan
 - Nathan Road between Yau Ma Tei and Tsim Sha Tsui
 - K11 mall in Tsim Sha Tsui
- The average mobile data connection speed is:
 - Downlink speed above 1.9Mbps
 - Uplink speed above 0.6Mbps
- The actual mobile data connection speed is affected by many factors, such as the network coverage, geographical environment and usage level.

Whether 3G Network Resources are Used for Providing 4G Services

- Are 3G spectrum used for providing 4G services, leading to declining 3G service quality?
 - Based on OFCA's understanding, no incumbent 4G operator is providing 4G service with their 3G spectrum.
 - OFCA has adopted the technology-neutral approach on spectrum allocation. Operators may apply their spectrum according to their own business decisions. We cannot rule out the possibility that the operators will convert part of the 3G spectrum for providing 4G services when the demand of 4G services increases to a certain level,

Thank you

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