

**RADIO SPECTRUM AND TECHNICAL STANDARDS**  
**ADVISORY COMMITTEE**

**Minutes of the Fourth Meeting**  
**held at 2:30 p.m., Thursday, 23 May 2013**  
**in Conference Room 2020, Wu Chung House, Wanchai**

**Present**

Mr T F So	Chairman (OFCA staff)
Mr Desmond Chan	Representative of Wharf T&T Limited
Ms Diana Chan	Representative of the Hong Kong Police Force
Mr Henry Chan	Representative of Hutchison Telephone Company Limited and Hutchison Global Communications Limited
Mr Raymond Chan	Representative of Hong Kong Cable Television Limited
Mr Y C Chan	Representative of Television Broadcasts Limited and TVB Pay Vision Limited
Mr Eric Chau	Representative of TraxComm Limited
Mr Alex Cheng	Representative of China Mobile Hong Kong Company Limited and China Mobile Hong Kong Corporation Limited
Mr H M Cheung	Representative of the Hong Kong Police Force
Mr Carlson Chu	Representative of PCCW Media Limited
Mr Clifford Ho	Representative of Towngas Telecommunications Fixed Network Limited
Mr Jimmy Lee	Representative of Telstra International HK Limited and Telstra International Limited
Mr Michael Lee	Representative of EU ICT Council in Hong Kong and Macau
Mr George Mak	Representative of Consumer Council
Mr Kenneth Ng	Representative of New World Telecommunications Limited
Ms P Y Ngai	Ad Personam
Mr Ken Sit	Representative of Local Certification Bodies as a group
Mr Johnny Siu	Representative of amateur radio societies as a group
Mr Leong Wai	Representative of Hong Kong Productivity Council
Mr Adam Wong	Representative of Hong Kong Telecommunications (HKT) Limited, PCCW-HKT Telephone Limited and Hong Kong
Mr Chris Wong	Representative of ComNet Telecom (HK) Limited

Mr Leslie Wong	Representative of CSL Limited
Dr Simon Wong	Representative of Independent Commission against Corruption
Ms Vicky Wong	Representative of Asia Satellite Telecommunications Company Limited and External FTNS / Fixed Carrier / Unified Carrier (External Fixed Services) Licensees as a group
Mr Charles Yeung	Representative of Hong Kong Broadband Network Limited
Mr C K Yuen	Representative of Civil Aviation Department
Mr L H Ting	Secretary (OFCA staff)

### **Absent with Apologies**

Mr Kenneth Chan	Representative of services-based operators (MVNO and ETS operators only) as a group
Mr Eric Fan	Representative of local industry associations as a group
Mr Simon Heung	Representative of Digital Broadcasting Corporation Hong Kong Limited
Mr Wai Ho	Representative of Asia Television Limited
Mr H C Hung	Representative of Reach Networks Hong Kong Limited
Mr S M Ko	Representative of Metro Broadcast Corporation Limited
Mr Francis Kwok	Representative of Radio Television Hong Kong
Mr Paul Lam	Representative of Hong Kong Commercial Broadcasting Company Limited
Dr C K Li	Representative of the Hong Kong Institution of Engineers
Mr K K Luk	Representative of HKC Network Limited
Mr S T Yiu	Representative of Phoenix U Radio Limited

### **Guest Speaker**

Prof Vincent Lau	Representative of Hong Kong University of Science and Technology
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### **In Attendance**

Mr P H Ma	OFCA staff
Mr Warren Kwok	OFCA staff
Mr C H Chan	OFCA staff
Mr Eric Fung	OFCA staff

Mr Kent Yu                      OFCA staff

**Observer**

Mr W K Cheung	Representative of Hong Kong Telecommunications (HKT) Limited, PCCW-HKT Telephone Limited and Hong Kong
Dr Bernard Fong	Representative of the Institution of Engineering and Technology Hong Kong
Mr W L Ho	Representative of amateur radio societies as a group
Mr Simon Kwok	Representative of SmarTone Communications Limited and SmarTone Mobile Communications Limited
Mr K L Kwong	Representative of amateur radio societies as a group
Mr Ricky Yiu	Representative of APT Satellite Company Limited

**Agenda Item 1: Matters Arising from the Previous Meeting**

**Item 5 of the minutes of the 3rd SSAC Meeting (proposed technical standard for GSM-R radiocommunications equipment)**

1.        The Secretary reported that OFCA had received no further comment on the proposed new specification HKCA 1064 after the last meeting. Accordingly, the new specification HKCA 1064 had been adopted and posted on web.

**Item 6 of the minutes of the 3rd SSAC Meeting (proposal for developing HKCA specification for multi-standard radio (MSR) base station)**

2.        The Secretary reported that there was no objection to the development of HKCA specification for MSR base station. Accordingly, SSAC paper 7/2013 proposing the adoption of the new specification HKCA 1065 that covered MSR base station would be discussed at this meeting.

**Agenda Item 2: Introduction to advanced wireless communications technology**

3.        Prof Vincent Lau introduced some advanced wireless communications technologies, which he quoted as “5G” technologies, including MIMO (Multiple

Input Multiple Output) antenna, cognitive radio, C-RAN (Cloud Radio Access Network), virtualisation, etc. These technologies would contribute to reduced power consumption and increased network capacity. MIMO antenna provided increased number of communications channels whereas cognitive radio could make efficient use of vacant spectrum in specific locations. For C-RAN, large number of small cells were deployed and connected to the cloud network via optical fibres. Small cells allowed the use of low power base stations which would cause less interference. The cloud network provided cost effective and energy efficient baseband signal processing. Virtualisation allowed easy configuration of base stations for introduction of new features.

4. Mr P H Ma asked about the current development progress of “5G” technologies. Prof Vincent Lau said that the industry (mainly the vendors) had formed forums to conduct research on “5G” technologies. Broadly speaking, the work was conducted in two phases – phase 1 was on study of the feasibility of targeted performance requirements, and phase 2 was on standardisation of such requirements. At present, work on the “5G” technologies was roughly in the boundary between phase 1 and phase 2. It was estimated that the “5G” standardisation work would be completed around 2018, and implementation would start around 2020.

5. Mr Michael Lee pointed out that equipment vendors had already deployed technologies such as C-RAN, MIMO antenna and virtualisation, etc. in the 4G networks. While there were different frequency bands released for 3G/4G services, he asked whether there were constraints in deploying “5G” at these different frequency bands. Prof Vincent Lau said that carrier aggregation technique was available, which allowed the use of non-contiguous bands. In addition, the cognitive radio technique, with radio equipment having the intelligence to detect and use vacant bands in a particular location, was under active development.

6. The Chairman asked what technologies were characterising “5G” communications. Prof Vincent Lau said that at present “5G” communications were characterised only by high level conceptual requirements such as 1000 times of the capacity of the current networks. No specific technologies had been designated for “5G” communications yet. The Chairman asked whether the small

cells employed in “5G” communications would call for new spectrum. Mr Michael Lee said that the 30 GHz band could be considered for small cell deployments, and that subject had already been under research in Europe. Prof Vincent Lau agreed that higher frequency bands would match the implementation of C-RAN, given that the required transmission path length was shorter.

7. Dr Simon Wong asked whether “5G” technologies were likened to those of ultra wideband. Prof Vincent Lau said that both technologies employed the cognitive radio technique that allowed the use of vacant bands in specific locations.

8. In response to the enquiry of Mr Adam Wong, Prof Vincent Lau said that the technologies used in the recent trial conducted by an equipment vendor on super-fast communications in the 28 GHz band might be high order MIMO with beam forming in a point-to-point application rather than a mobile one.

9. Mr Adam Wong said that for deployment of small cells, the government should take necessary measures to facilitate the use of lamp posts for installation of base stations. The Chairman said that OFCA had been liaising with other relevant government departments such as Highway Department and Lands Department, to facilitate such use.

10. Concerning new spectrum for public mobile communications including spectrum for backhaul application, the Chairman said that discussion would be initiated in forthcoming regional and international conferences, such as the coming World Radiocommunication Conference (WRC-15). The subject would be discussed further at this Advisory Committee.

### **Agenda Item 3: Overview of spectrum demand for smart meters (SSAC Paper 6/2013)**

11. Mr C H Chan introduced SSAC Paper 6/2013 that covered the deployment of some frequency bands for Radio Frequency Identification / Short Range Device worldwide for smart meter application and the current frequency assignment and allocation of these bands in Hong Kong.

12. Mr Carlson Chu said that the UK regulator Ofcom had just closed a consultation on 870-876 MHz and 915-921 MHz in end March 2013. The results of the consultation would serve as useful reference. Mr Carlson Chu asked whether there was any government initiative for a common infrastructure for smart metering in Hong Kong. The Chairman said that whether the utility companies required a common infrastructure or a common frequency band for smart meter application had yet to be determined. He welcomed industry input on that subject.

13. Mr Desmond Chan asked the rationale of focusing on the unlicensed bands for smart meter application. Mr P H Ma said that the frequency bands commonly identified for smart meter application internationally, including the 860 MHz, 920 MHz and 2.4 GHz bands, were unlicensed bands. In Hong Kong, use of radiocommunications equipment operating in the unlicensed bands in compliance with the requirements of the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap 106Z) (“the Exemption Order”) was exempted from licensing. He further advised that the public mobile networks or the fixed networks could also be used to support the backhaul of smart meter implementations. The Chairman added that on the upside no licence was required for using the unlicensed bands, but on the downside no protection against interference could be claimed from other legitimate users.

14. In reply to Mr Michael Lee’s enquiry, the Secretary said that application for type approval for radiocommunications equipment operating in the unlicensed bands and meeting the technical requirements of the Exemption Order was voluntary.

15. The Chairman welcomed comments from Members on the use of the 860 MHz and the 920 MHz bands for smart meter application in Hong Kong, and any input on related subjects such as common infrastructure for smart metering.

#### **Agenda Item 4: Proposed new performance specification for multi-standard radio (MSR) base station (SSAC Paper 7/2013)**

16. Mr Warren Kwok introduced SSAC Paper 7/2013 which proposed the new specification HKCA 1065 for MSR base station to facilitate the rollout of

MSR base stations by the mobile network operators.

17. Mr Simon Kwok requested the draft specification to also include the 850 MHz band with a view to covering the MSR equipment to be deployed by SmarTone in this band. Mr P H Ma said that the European harmonised standard for MSR base station under reference in HKCA 1065 did not cover the 850 MHz band and hence this band would not be included. Nevertheless, OFCA would separately issue type acceptance criteria to cater for certification of MSR equipment operating in the 850 MHz band. This was in line with the current practice for UMTS equipment operating at 877.5–882.5 MHz / 832.5–837.5 MHz band.

18. The Chairman invited comment from Members on the proposed new specification HKCA 1065 within two weeks, i.e. any comment should be submitted to the Secretary by 6 June 2013.

**Agenda Item 5: Proposed revision to HKCA 1039 performance specification (SSAC Paper 8/2013)**

19. Mr Warren Kwok introduced SSAC Paper 8/2013 that proposed to revise the specification HKCA 1039 for radiocommunications apparatus operating in the 2.4 GHz or 5 GHz band and employing frequency hopping or digital modulation by adding a European harmonised standard as a reference standard for conformity tests of radiocommunications apparatus operating in the 5.8 GHz band.

20. The Chairman invited comment from Members on the proposed revised specification HKCA 1039 within two weeks, i.e. any comment should be submitted to the Secretary by 6 June 2013.

**Agenda Item 6: Brief Update on ITU World Telecommunication Standardization Assembly 2012 (SSAC Paper 9/2013)**

21. Mr Eric Fung introduced SSAC Paper 9/2013 that gave a brief report on the ITU World Telecommunication Standardization Assembly held in Dubai, UAE

in November 2012.

22. The Chairman said that the WTSA covered a wide variety of topics. He welcomed Members to exchange information with OFCA on any specific topics of interest.

**Agenda Item 7: Revision to HKCA 1008 performance specification for low power radio microphones, including associated receiving equipment (SSAC Paper 10/2013)**

23. Mr Warren Kwok introduced SSAC Paper 10/2013 that proposed to revise the specification HKCA 1008 for low power radio microphones by adding a European harmonised standard as a reference standard to cover microphones using digital modulation.

24. The Chairman invited comment from Members on the proposed revised specification HKCA 1008 within two weeks, i.e. any comment should be submitted to the Secretary by 6 June 2013.

**Agenda Item 8: Any Other Business**

25. There being no other business, the meeting adjourned at 5:00 p.m.

**Office of the Communications Authority  
May 2013**