

RADIO SPECTRUM AND TECHNICAL STANDARDS
ADVISORY COMMITTEE

Minutes of the Fourteenth Meeting
held at 2:30 p.m., Thursday, 23 March 2017
in Conference Room 2020, Wu Chung House, Wanchai

Present

Mr C K Cheng	Chairman (OFCA staff)
Mr Desmond Chan	Representative of Wharf T&T Limited
Mr Henry Chan	Representative of Hutchison Telephone Company Limited / Hutchison Global Communications Limited / Genius Brand Limited
Mr Eric Chau	Representative of licensees not providing domestic retail fixed services as a group
Mr Brian Cheng	Representative of Consumer Council
Mr Alan Choi	Representative of Hong Kong Cable Television Limited / Fantastic Television Limited
Mr Carlson Chu	Representative of PCCW Media Limited / HK Television Entertainment Limited
Mr H M Ho	Ad Personam
Mr Joseph Ho	Representative of Civil Aviation Department
Mr S H Hung	Representative of amateur radio societies as a group
Mr Dickson Ip	Representative of external FTNS/ fixed carrier licensees/ unified carrier (external fixed services) licensees as a group
Mr Kan Kan	Representative of the Hong Kong Police Force
Mr Allan Kwan	Representative of PCCW Media Limited / HK Television Entertainment Limited
Ir Wilson Kwok	Representative of the Hong Kong Institution of Engineers
Mr Cyrus Lai	Representative of SmarTone Communications Limited / SmarTone Mobile Communications Limited
Mr S H Lam	Representative of licensees not providing domestic retail fixed services as a group
Mr Michael Lee	Representative of EU ICT Council in Hong Kong and Macau
Dr Tony Lee	Representative of the Institution of Engineering and Technology Hong Kong
Mr M K Li	Representative of local certification bodies as a group
Ms C Y Lo	Representative of Hong Kong Broadband Network Limited / HKBN Enterprise Solution Limited
Mr Karson Ng	Representative of licensees not providing domestic retail fixed services as a group
Mr S Y Ngan	Representative of Radio Television Hong Kong

Mr T L Or	Representative of SmarTone Communications Limited / SmarTone Mobile Communications Limited
Mr Mike Pan	Representative of China Mobile Hong Kong Company Limited
Ir Wallace Poon	Representative of the Hong Kong Institution of Engineers
Mr S M Shuen	Representative of Hong Kong Telecommunications (HKT) Limited / PCCW-HKT Telephone Limited and Hong Kong Telecommunications (HKT) Limited
Mr Jing Su	Representative of APT Satellite Company Limited
Dr S M Wong	Representative of Independent Commission Against Corruption
Ms Vicky Wong	Representative of Asia Satellite Telecommunications Company Limited
Mr Sheldon Yau	Representative of Hong Kong Telecommunications (HKT) Limited / PCCW-HKT Telephone Limited and Hong Kong Telecommunications (HKT) Limited
Mr Man Yuen	Representative of Television Broadcasts Limited / TVB Network Vision Limited
Mr Rui Zhang	Representative of Asia Satellite Telecommunications Company Limited
Mr L H Ting	Secretary (OFCA staff)

Guest Speaker

Mr Y H Chan	Representative of Asia Satellite Telecommunications Company Limited
Dr Henry Wong	Representative of Hong Kong Telecommunications (HKT) Limited / PCCW-HKT

Absent with Apologies

Mr Y P Cheung	Representative of the local industry associations as a group
Mr S M Ko	Representative of Metro Broadcast Corporation Limited
Mr Paul Lam	Representative of Hong Kong Commercial Broadcasting Company Limited
Mr C T Wong	Representative of services-based operators (MVNO and ETS operators only) as a group
Mr Ken Yiu	Representative of Hong Kong Mobile Television Network Limited

In Attendance

Mr P H Ma	OFCA staff
Mr Warren Kwok	OFCA staff
Ms Gladys Ng	OFCA staff
Mr Penny Lo	OFCA staff

Ms Yvonne Lee	OFCA staff
Mr C H Chan	OFCA staff
Mr S Y Yung	OFCA staff

Observer

Mr Alan Choi	Representative of SmarTone Communications Limited / SmarTone Mobile Communications Limited
Mr W L Ho	Representative of amateur radio societies as a group
Mr Richard Li	Representative of APT Satellite Company Limited
Ms Angel Wong	Representative of Hong Kong Productivity Council
Mr K H Yip	Representative of licensees not providing domestic retail fixed services as a group

Agenda Item 1: Matters Arising from the Previous Meetings

Item 2 of the 12th SSAC Meeting (Proposed Performance Specification for Radiocommunications Apparatus Operating in the 60 GHz Band)

1. The Secretary reported that the specification HKCA 1074 was adopted and posted on OFCA website on 6 January 2017, and the Class Licence for 60 GHz Device came into effect on the same day.

Item 3 of the 12th SSAC Meeting (Proposed Performance Specification for Short-Range Radar Equipment Operating in the 79 GHz Band)

2. The Secretary reported that the specification HKCA 1075 was adopted and posted on OFCA website on 6 January 2017, and the Class Licence for 79 GHz Automotive Radar came into effect on the same day.

Item 3 of the 13th SSAC Meeting (Proposed Spectrum Release Plan for 2017-2019)

3. The Secretary reported that OFCA received no comment from Members on the proposed Spectrum Release Plan for 2017-2019 after the last meeting. Subsequently, the Communications Authority (“CA”) approved the Spectrum Release Plan for 2017-2019 which had been posted on the websites of CA and OFCA on 21 February 2017. On the same date, a press release was published on the CA website announcing the publication of the Spectrum Release Plan and providing additional information on OFCA’s work on the quest for spectrum for public mobile services.

Item 4 of the 13th SSAC Meeting (Proposed Performance Specification for Mobile Communications Onboard Aircraft System)

4. The Secretary reported that OFCA received no comment from Members on the proposed specification HKCA 1077 for mobile communications onboard aircraft systems after the last meeting. Accordingly, the revised specification HKCA 1077 was adopted and posted on OFCA website in November 2016.

Agenda Item 2: Compatibility of Mobile and Satellite Systems in the C-band : Presentation by Asia Satellite Telecommunications Company Limited

5. Mr Y H Chan introduced the views and findings of Asia Satellite Telecommunications Company Limited (“AsiaSat”) on the compatibility of mobile and satellite services sharing the 3.4 – 4.2 GHz band (“C-band”). He highlighted the importance of the C-band to satellite services in the Asian region, results of studies of the International Telecommunication Union (“ITU”) and the Asia-Pacific Telecommunity on the compatibility between the mobile service in the 3.4 – 3.6 GHz band (“the 3.5 GHz band”) and the satellite downlink service in the C-band.

6. The Chairman said that Hong Kong Telecommunications (HKT) Limited (“HKT”) would give another presentation on the same subject and proposed that agenda 2 and 3 be discussed together after HKT’s presentation, to which all Members agreed.

Agenda Item 3: Compatibility of Mobile and Satellite Systems in the C-band : Presentation by Hong Kong Telecommunications (HKT) Limited

7. Dr Henry Wong introduced the views and findings of HKT on the subject matter. He briefed Members on the decisions of ITU on the identification of harmonised spectrum including the 700 MHz and 3.5 GHz bands for public mobile services, the anticipated deployment of mobile broadband services in the 700 MHz and 3.5 GHz band in other countries/economies, and industry’s support on the accelerated 5G roadmap to enable large-scale 5G trials and its deployments as early as 2019. Mr S M Shuen further introduced HKT’s trial in the 3.5 GHz band in an MTR underground station in Hong Kong.

8. Dr Henry Wong asked OFCA on the existing utilisation of the 3.5 GHz band for satellite services in Hong Kong. The Secretary said that the C-band had been extensively used by Satellite Master Antenna Television (“SMATV”) systems for reception of satellite television signals, among others. In this regard, there were satellite television signals in the 3.5 GHz band originated from a few foreign satellites of Asian countries. In addition, the 3.5 GHz band was also used in some satellite earth stations of the satellite-based external fixed telecommunications network services providers.

9. Mr Y H Chan pointed out that some satellites were operating their Telemetry, Tracking and Control (“TT&C”) functions in the 3.5 GHz band. Such TT&C signals were critical for the operation and control of the satellites and might cause serious consequences if they got interfered. He said that if a licence would be required for the operation of SMATV system, it might be possible to derive from the licence records the number of SMATV systems affected by the proposed mobile broadband services in the 3.5 GHz band. However, as he understood it, there were Television Receive-Only (“TVRO”) systems which did not require a licence and he doubted whether information on the number of affected TVRO systems might be readily available. In addition to causing interference to the existing SMATV and TVRO systems, the proposed provision of mobile services in the 3.5 GHz band would also impede future deployments of such systems. He opined that any restriction on the use of C-band for satellite services would undermine Hong Kong’s position as a telecommunications hub in the region.

10. Dr Henry Wong said that many countries including Mainland China were considering the use of the 3.5 GHz band for mobile broadband services. According to the information presented by AsiaSat, the separation distances for protecting a satellite earth station from interference caused by mobile base stations could be up to 150 km. Given that, such interference problem was actually a regional problem not necessarily restricted to within Hong Kong. Irrespective of whether mobile broadband services in the 3.5 GHz band would be launched in Hong Kong, if Mainland China launched the services in the future as anticipated, all C-band satellite systems in Hong Kong would be adversely affected. In addition, Dr Henry Wong considered that as there were competing demands for spectrum in the 3.5 GHz band, it would be necessary to have information on the utilisation of satellite services in this band. The Chairman said that in view of the extensive impacts to the satellite industry and the public, the CA had announced that a public consultation would be conducted to solicit views of stakeholders before a decision on re-allocating the 3.5 GHz band would be made.

11. Mr Carlson Chu said that there was 800 MHz bandwidth available in the 3.4 – 4.2 GHz band. In comparison, the total bandwidth allocated for public

mobile services in Hong Kong was about 550 MHz only. The benefits to the society in respect of making available 200 MHz bandwidth in part of the C-band for mobile services warranted further consideration.

12. Mr Y H Chan pointed out that the 3.5 GHz band was identified by ITU for International Mobile Telecommunications only in several countries in Region 3, including Mainland China, but not in the whole Region 3. Meanwhile, the time schedule of launching mobile services in the 3.5 GHz in Mainland China had not yet been confirmed, and there had been complications in its compatibility test between mobile and satellite services in the 3.5 GHz band. Mr Y H Chan considered that, if mobile services in the 3.5 GHz band were to be launched in Mainland China, OFCA should coordinate with the relevant authority of Mainland China beforehand. Mr Jing Su added that, in Mainland China, studies on the compatibility between mobile and satellite services in the 3.5 GHz band had been started a few years ago. However, as he understood it, no agreement to the test procedures had been reached because there was no consensus on the test locations, the test equipment to be used, and the satellite to be selected for testing. He understood that the authority of Mainland China was working on a compatibility test to be conducted in Shenzhen later this year but the test procedures had yet to be confirmed. Mr Jing Su opined that in addition to measuring the attenuation of the mobile signals, the interference level acceptable to the satellite systems should also be established in order to make the compatibility test a meaningful one.

13. Mr Michael Lee said that both Mainland China and India were considering the allocation of frequency bands within the range from 3.3 GHz up to above 4 GHz to the mobile service. He opined that the public consultation on the 3.5 GHz band to be conducted could cover these frequency bands as well. The Secretary responded that Mainland China was discussing internally on the possible allocation of the 3.3 – 3.4 GHz band and a frequency band above 4 GHz to the mobile service and that no decision had been made so far. Nevertheless, he stressed that the 3.6 – 4.2 GHz band would continue to be used for the satellite service. Ms Vicky Wong supplemented that the concerned frequency bands being considered for the mobile service in Mainland China were 3.3 – 3.4 GHz and 4.8 – 4.9 GHz which were outside the satellite operating bands.

14. Mr Michael Lee pointed out that while there was much attention focused on the use of the 3.5 GHz band for 5G services, this band could actually also be used for 4G services which had already had a well-developed ecosystem. He asked whether the local satellite operators would join the 5G trial to be conducted by HKT in the MTR station. Mr Y H Chan said that AsiaSat could witness the test hosted by HKT but failed to see what purposes the tests could achieve. Mr S M Shuen explained that one purpose of the trial

was to evaluate whether, and if so how, the use of the 3.5 GHz band for mobile services or Wi-Fi backhubs might affect the satellite service. In this regard, HKT had proposed different satisfaction levels for assessment on the matter. He welcomed AsiaSat's comments on the proposal. Dr Henry Wong added that HKT's trial in the MTR station was not meant to test the compatibility between the mobile and the satellite services in the 3.5 GHz band. Instead, it aimed to evaluate the feasibility of a special case of using the 3.5 GHz band for mobile services or Wi-Fi backhubs in an indoor environment, with due consideration to the potential impacts to satellite reception.

15. Mr Carlson Chu said that, in some countries, spectrum in the 700 MHz band was made available for mobile services before switching off their analogue television services ("ASO"). He asked whether such arrangement would be feasible in Hong Kong. The Chairman responded that as analogue television services in the 700 MHz were still in operation in Shenzhen, it would be technically very difficult, if not impossible, for Hong Kong to use the band for the mobile service unilaterally. In this regard, OFCA had been coordinating with the counterpart authority of Mainland China on the use of the 700 MHz band by public mobile services post ASO in Hong Kong.

16. The Chairman said that OFCA would engage a technical consultant to advise on the feasible mitigation measures to enable the co-existence of SMATV systems and mobile services in the C-band. Mr T L Or asked whether the industry had a chance to comment on the results of the consultancy study. The Chairman said that the public consultation and the consultancy study would be conducted separately in the same timeframe and that OFCA would share with Members the findings of the consultancy study. The Secretary added that, among other things, one major objective of the consultancy study was to identify suitable low-noise block downconverters/low-noise amplifiers that operated in the 3.7 – 4.2 GHz band, instead of the full C-band (i.e. 3.4 – 4.2 GHz) commonly used by existing SMATV systems, which were more capable of withstanding the adverse effects of adjacent band interference and receiver saturation due to the comparatively strong terrestrial mobile network transmissions.

Agenda Item 4: Proposed Performance Specification for Radio Equipment Operating in the 920 – 925 MHz Band for the Provision of Public Telecommunications Services (SSAC Paper 1/2017)

17. Mr S Y Yung introduced [SSAC Paper 1/2017](#) that proposed the adoption of a new HKCA 1078 specification which set out the performance specification for radio equipment operating in the 920 – 925 MHz band for the provision of public telecommunications services. He said that the 920 – 925

MHz band was covered in the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap. 106Z) (“the Exemption Order”). Under the Exemption Order, persons using radio frequency identification (“RFID”) equipment operating in this band were exempted from licensing if the equipment complied with HKCA 1049 specification which adopted the technical requirements in “Code of Federal Regulations (USA); Title 47 Telecommunication; Chapter 1 - Federal Communications Commission, Part 15 Radio Frequency Devices; Section 15.247” (“47 CFR Part 15.247”) applicable to frequency hopping spread spectrum modulation. Given that OFCA had recently received licence applications for using radio equipment operating in the same band to provide public telecommunications services, the proposed HKCA 1078 specification was required to cover the concerned radio equipment by drawing reference to 47 CFR Part 15.247 for ensuring co-existence with RFID equipment. In line with the arrangement of RFID equipment governed by 47 CFR Part 15.247, it was proposed that radio equipment to be covered by the proposed HKCA 1078 specification be classified under the Voluntary Certification Scheme.

18. The Chairman invited Members to provide comments on the proposed new specification HKCA 1078 within two weeks by 6 April 2017.

Agenda Item 5: Any Other Business

19. Dr Henry Wong briefed Members on a HKT’s proposal of allocating the 5855 – 5925 MHz band (“the 5.9 GHz band”) for Intelligent Transport Systems (“ITS”) in Hong Kong. He introduced the objectives of ITS for road safety, updated Members on the Cellular Vehicle-to-Everything standard being developed by the Third Generation Partnership Project, and the status of development in the United States, Europe and Mainland China.

20. The Chairman said that ITS were on the agenda items of the World Radiocommunication Conference of ITU to be held in 2019 (“WRC-19”) with a view to identifying globally or regionally harmonised frequency allocations for ITS. OFCA would keep Members updated on ITS development in due course in preparation of its attendance to WRC-19.

21. There being no other business, the meeting was adjourned at 4:10 p.m.

**Office of the Communications Authority
May 2017**