

RADIO SPECTRUM AND TECHNICAL STANDARDS
ADVISORY COMMITTEE

Minutes of the Eleventh Meeting
held at 2:30 p.m., Thursday, 18 February 2016
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
Ms Diana Chan	Representative of the Hong Kong Police Force
Mr Henry Chan	Representative of Hutchison Telephone Company Limited / Hutchison Global Communications Limited
Mr Tim Chan	Representative of Digital Broadcasting Corporation Hong Kong Limited
Mr Y H Chan	Representative of Asia Satellite Telecommunications Company Limited
Mr Alex Cheng	Representative of China Mobile Hong Kong Company Limited / China Mobile Hong Kong Corporation Limited
Mr Kelvin Hong	Representative of Hong Kong Broadband Network Limited
Mr H C Hung	Representative of licensees not providing domestic retail fixed services as a group / licensees providing external fixed services as a group
Mr S M Ko	Representative of Metro Broadcast Corporation Limited
Mr Cyrus Lai	Representative of SmarTone Communications Limited / SmarTone Mobile Communications Limited
Mr Michael Lee	Representative of EU ICT Council Hong Kong and Macau
Dr W C Lee	Representative of the Institution of Engineering and Technology Hong Kong
Ir Dr C K Li	Representative of the Hong Kong Institution of Engineers
Mr Keith Li	Representative of the local industry associations as a group
Mr George Mak	Representative of Consumer Council
Mr Karson Ng	Representative of licensees not providing domestic retail fixed services as a group
Ms P Y Ngai	Ad Personam
Mr S M Shuen	Representative of Hong Kong Telecommunications (HKT) Limited / PCCW-HKT Telephone Limited and Hong Kong Telecommunications (HKT) Limited / Genius Brand Limited
Mr Johnny Siu	Representative of amateur radio societies as a group

Ir Dr K F Tsang	Representative of the Institution of Engineering and Technology Hong Kong
Mr Elvin Wong	Representative of Hong Kong Productivity Council
Mr Raymond Wong	Representative of local certification bodies as a group
Dr S M Wong	Representative of Independent Commission Against Corruption
Ms Vicky Wong	Representative of Asia Satellite Telecommunications Company Limited
Mr L K Yeung	Representative of Civil Aviation Department
Mr L H Ting	Secretary (OFCA staff)

Absent with Apologies

Mr Y C Chan	Representative of Television Broadcasts Limited / TVB Network Vision Limited
Mr Francis Kwok	Representative of Radio Television Hong Kong
Mr Paul Lam	Representative of Hong Kong Commercial Broadcasting Company Limited
Mr Barry Ng	Representative of services-based operators (MVNO and ETS operators only) as a group
Mr S C Wong	Representative of Asia Television Limited
Mr Ken Yiu	Representative of Hong Kong Mobile Television Networks Limited

In Attendance

Mr P H Ma	OFCA staff
Mr Warren Kwok	OFCA staff
Mr K K Wong	OFCA staff
Mr Joe Ching	OFCA staff
Mr C H Chan	OFCA staff
Mr S Y Yung	OFCA staff

Observer

Mr Eric Chau	Representative of Traxcomm Limited
Mr Walter Foo	Representative of the Transport Department
Mr W L Ho	Representative of amateur radio societies as a group
Mr Richard Leung	Representative of New World Telecommunications Limited
Mr Johnson Li	Representative of the Motor Traders Association of Hong Kong
Mr Richard Li	Representative of APT Satellite Company Limited
Mr Andy Ng	Representative of the Marine Department
Mr Dennis Wong	Representative of Hong Kong Cable Television Limited
Mr Kenneth Wong	Representative of PCCW Media Limited
Mr Ricky Yiu	Representative of APT Satellite Company Limited

Agenda Item 1: Matters Arising from the Previous Meeting

Item 3 of the 10th SSAC Meeting (Proposed Revision to HKCA 1065 Performance Specification for Multi-Standard Radio (MSR) Base Station)

1. The Secretary reported that the Office of the Communications Authority (“OFCA”) received no further comment on the proposed revision to HKCA 1065 after the last meeting. The revised specification HKCA 1065 had been adopted and posted on OFCA’s website.

Agenda Item 2: World Radiocommunication Conference 2015 Decisions (SSAC Paper 1/2016)

2. Mr C H Chan introduced [SSAC Paper 1/2016](#) which reported the decisions of the recent World Radiocommunication Conference 2015 (“WRC-15”) of the International Telecommunication Union (“ITU”) held in late November 2015 in Geneva. He further briefed Members on the identification of some frequency bands that might potentially be allocated to the relevant services in Hong Kong as a result of the WRC-15 decisions.

WRC-15 Agenda Item 1.1 – Identification of additional frequency bands for International Mobile Telecommunications (“IMT”)

3. Mr C H Chan said that, among other things, WRC-15 identified the frequency band of 1427 – 1518 MHz (“the 1.4 GHz band”) for IMT globally. The Chairman added that, taking into consideration the development of harmonised band plans and the associated equipment support, further study would be required before this band could be considered for allocation to the mobile service for IMT deployment in Hong Kong.

4. Mr Michael Lee said that some overseas operators had adopted the use of Supplemental Downlink (“SDL”) for IMT in the 1.4 GHz band. Such use was covered by the relevant specifications of the Third Generation Partnership Project (“3GPP”) and equipment was available on the market. The Secretary noted that SDL in the 1.4 GHz band was mainly deployed in Europe. He added that while 3GPP had specified a portion of the 1.4 GHz band for SDL, it also specified a paired band arrangement for the use of the 1.4 GHz band for IMT. However, as of to date, the use of the paired band in the 1.4 GHz band was not commonly adopted internationally. The Chairman said that OFCA would take note of the development of SDL in the 1.4 GHz band when considering whether the 1.4 GHz band could be allocated to the mobile service for IMT in Hong Kong.

5. Mr Cyrus Lai enquired about the WRC-15 decisions on other candidate frequency bands as proposed for IMT. Mr P H Ma said that under Agenda Item 1.1 of WRC-15, 19 candidate frequency bands were identified for discussion, while only a few of them were eventually identified by WRC-15 for IMT use. He said that OFCA would provide further information to Members on the WRC-15 decisions on the respective candidate frequency bands after the meeting. [*Post-meeting note: The relevant information was distributed to the Members on 7 March 2016.*] In response to the enquiry of Mr S M Shuen, the Secretary said that the frequency band 3400 – 3600 MHz had been identified for IMT for use in some countries including China back in WRC-07.

WRC-15 Agenda Item 1.3 – Broadband Public Protection and Disaster Relief (“PPDR”)

6. Mr C H Chan said that, having reviewed the technical and regulatory requirements for PPDR services and applications, in particular broadband applications, as well as the frequency bands harmonised for PPDR, WRC-15 decided to remove 806 – 824 MHz / 851 – 869 MHz and 5850 – 5925 MHz from the list of frequency bands harmonised for PPDR in Region 3, leaving the 406.1 – 430 MHz, 440 – 470 MHz and 4940 – 4990 MHz bands in the list. At the same time, the WRC-15 decision encouraged administrations in Region 3 to consider using parts of the frequency range 694 – 894 MHz, as described in the most recent version of Recommendation ITU-R M.2015, when undertaking their national planning for PPDR applications. Members took note of the WRC-15 decision and raised no comment at the meeting.

WRC-15 Agenda Item 1.4 – Amateur service

7. Mr C H Chan said that WRC-15 decided to allocate the frequency band 5351.5 – 5366.5 kHz to the amateur service on a secondary basis globally with a provision that the maximum equivalent isotropically radiated power should not exceed 15W in Region 3. Mr Johnny Siu said that the 5 MHz band allows for long-range communications under different weather conditions and was suitable for amateur communications that might help in applications like emergency aids. He welcomed the WRC-15 decision and supported the said allocation in Hong Kong.

WRC-15 Agenda Item 1.5 – Use of frequency bands allocated to the fixed-satellite service for Unmanned Aircraft Systems (“UAS”)

8. Mr C H Chan said that, as per WRC-15 decision, some unplanned bands for fixed satellite service (“FSS”) might be used in Region 3 for control of UAS, subject to compliance with the respective standards to be developed by

the International Civil Aviation Organization (“ICAO”) and ITU for such use. Mr C H Chan added that the concerned frequency bands have already been allocated to FSS in Hong Kong. Mr Y H Chan said that the relevant compatibility studies were not yet completed and were still being conducted in ITU. Mr P H Ma added that ICAO was also working to develop the relevant standard on the use of the concerned frequency bands for UAS control. Members noted.

WRC-15 Agenda Item 1.9.2 – Allocation of parts of the 7/8 GHz band to the maritime mobile-satellite service

9. Mr C H Chan said that WRC-15 decided to allocate the frequency band 7375 – 7750 MHz to the maritime mobile-satellite service (space-to-Earth), on a primary basis globally. Mr Andy Ng said that the Marine Department (“MD”) would require the band for future use and they supported the said frequency allocation in Hong Kong following the WRC-15 decision.

WRC-15 Agenda Item 1.16 – VHF maritime radiocommunications

10. Mr C H Chan said that WRC-15 identified some existing VHF maritime channels for non-critical data communications using the new Automatic Identification System (“AIS”) technology and decided to allocate the frequency bands 161.9375 – 161.9625 MHz (i.e. channel 2027) and 161.9875 – 162.0125 MHz (i.e. channel 2028) to the maritime mobile-satellite (Earth-to-space) service on a secondary basis globally. Mr Andy Ng asked whether a date had been set by ITU after which channels 2027 and 2028 should be used for maritime mobile-satellite service. Mr C H Chan said that detailed information including the implementation dates would be provided to Members after the meeting.

[Post-meeting note: As specified in Appendix 18 (Rec.WRC-15) of the Provisional Final Acts of WRC-15, until 1 January 2019, channels 2027 and 2028 may be used for possible testing of future AIS applications without causing harmful interference to, or claiming protection from, existing applications and stations operating in the fixed and mobile services. From 1 January 2019, these channels are each split into two simplex channels. The channels 2027 and 2028 designated as ASM 1 and ASM 2 are used for application specific messages (“ASM”) as described in the most recent version of Recommendation ITU-R M.2092. This ITU-R recommendation specifies the technical characteristics for data exchange system in the VHF maritime mobile band, including communications via satellite. Having considered the abovementioned further details, MD supported the said frequency allocation in Hong Kong following the WRC-15 decision.]

WRC-15 Agenda Item 1.17 – Aeronautical mobile (route) service in the 4 GHz band

11. Mr C H Chan said that WRC-15 decided to allocate the frequency band 4200 – 4400 MHz to the aeronautical mobile (route) service on a primary basis globally for Wireless Avionic Intra-Communications implementation, enabling radiocommunications between two or more points within an aircraft. Mr L K Yeung said that the Civil Aviation Department (“CAD”) supported the said frequency allocation in Hong Kong which was also the position of ICAO.

WRC-15 Agenda Item 1.18 – Allocation of 77.5 – 78 GHz to the radiolocation service for automotive applications

12. Mr C H Chan said that WRC-15 decided to allocate the frequency band 77.5 – 78 GHz to the radiolocation service on a primary basis globally so as to enable the use of this band for short-range radar for ground-based applications, including but not limited to automotive applications. The Chairman said that ITU had already allocated the 77 – 77.5 GHz and 78 – 81 GHz bands to the radiolocation service. The WRC-15 decision effectively made available the whole band of 77 – 81 GHz for short-range radar for ground-based applications, including use for automotive radar.

13. Mr Johnson Li said that the Motor Traders Association of Hong Kong welcomed the WRC-15 decision and supported the allocation of the 77 – 81 GHz band to the radiolocation service in Hong Kong to facilitate the deployment of automotive radars operating in this band. Mr Walter Foo said that the Transport Department (“TD”) also welcomed the WRC-15 decision to allocate frequencies that allowed for more road safety applications. The Chairman clarified that while OFCA would consider frequency allocation of the 77 – 81 GHz band to support automotive radar applications, permission to install vehicle systems which made use of automotive radars fell within TD’s purview.

14. Mr Walter Foo enquired about the potential interference between automotive radars and other services sharing the same frequency band. The Secretary said that the 77 – 81 GHz band was allocated to the amateur service (including terrestrial and satellite applications) in Hong Kong in accordance with the decision of previous ITU World Radiocommunication Conference. In theory, when the main beam of an automotive radar, which kept rotating horizontally, coincided with the signal transmission path of an amateur station, interference might occur. Nevertheless, ITU had assessed that such worst case scenario was unlikely to occur in practice. According to the compatibility studies conducted by ITU, automotive radars would not be interfered by or cause interference to the amateur service. Mr Johnny Siu added that an amateur satellite station should have its antenna pointing upward to sky for amateur

satellite communications and it was unlikely for an amateur station to be set up on roadside with antenna pointing horizontally towards a road to cause interference to automotive radars.

15. Mr Johnson Li asked whether consideration would be given to permitting automotive radar applications in the frequency band 23.6 – 24.25 GHz (“the 24 GHz band”) in Hong Kong. The Secretary pointed out that the local law enforcement agency had been using radar speed meters operating in this band for vehicle speed detection. According to the compatibility studies conducted in Europe, 24 GHz automotive radars would interfere with the operation of radar speed meters working in the same frequency band. Due to radio interference to the existing law enforcement application, the 24 GHz band could not be allocated for automotive radar applications.

16. Noting that the 77 – 77.5 GHz band had already been allocated to the radiolocation service in Hong Kong but not so for the 78 – 81 GHz band, Mr Walter Foo asked whether OFCA would consider allocating the 77.5 – 81 GHz band to the radiolocation service in order to make available the whole band of 77 – 81 GHz for such service. The Chairman said that the authority to allocate frequencies rested on the Communications Authority (“CA”). Taking into consideration Members’ feedback, OFCA would consider recommending to the CA to allocate the 77.5 – 81 GHz band to the radiolocation service to allow for automotive radar applications in Hong Kong.

17. Mr Johnson Li enquired about the timeframe to complete the relevant frequency allocation in Hong Kong. The Secretary said that the said WRC-15 decision to allocate the 77.5 – 78 GHz band to the radiolocation service would come into force on 1 January 2017. OFCA would observe the ITU requirements when dealing with the matter.

18. Mr Elvin Wong pointed out that research and development of automotive short-range radar in Hong Kong relied on the use of imported components such as those from Europe. These components normally operated in the 77 – 81 GHz band. If only part of the band, say only 77.5 – 78 GHz, was allocated for the said application in Hong Kong, it would impede the development of short-range radars and related products by the local industry. He supported allocating the whole band of 77 – 81 GHz for automotive radar applications.

19. Ir Dr K F Tsang asked about the power level of automotive radars operating in the 77 – 81 GHz band as it would affect the successful sharing of the band with other services. Mr C H Chan replied that the limit was -3 dBm/MHz according to a European standard, and agreed to provide further details to Members after the meeting.

[Post-meeting note: The current version of the standard EN 302 264-1 on short range radar equipment operating in the 77 – 81 GHz band for road transport and traffic telematics published by European Telecommunications Standards Institute (“ETSI”) specifies a maximum radiated average power spectral density of -3 dBm/MHz. The ETSI standards are available at http://www.etsi.org/standards-search#Pre-defined_Collections.]

WRC-15 Ad hoc Item – Global flight tracking for civil aviation

20. Mr C H Chan said that WRC-15 decided to allocate the frequency band 1087.7 – 1092.3 MHz to the aeronautical mobile-satellite (route) service (Earth-to-space) on a primary basis globally to allow an aircraft to broadcast its position by transmitting the Automatic Dependent Surveillance-Broadcast signals via satellite. Mr L K Yeung said that CAD supported the said allocation in Hong Kong if there was no interference to the counterpart terrestrial service that shared the same frequency band. The Secretary pointed out that relevant compatibility studies conducted by ITU demonstrated that the angle of discrimination between the transmissions to satellites and those to the terrestrial stations was sufficiently large to avoid interference. Members noted.

Frequency allocation arising from WRC-15 decisions

21. The Chairman reiterated that the authority to allocate frequencies rested on the CA. OFCA would take into consideration Members’ comment on the abovementioned WRC-15 decisions and consider recommending to the CA to adopt the proposed frequency allocation outlined above. The Chairman invited Members to give further views and comments on these WRC-15 decisions and the concerned frequency allocations within two weeks by 3 March 2016.

Agenda Item 3: Proposed Revisions to HKCA Specifications related to the Withdrawal of Licensing Exemptions for Personal Handy Phone System (PHS) Radiocommunications Apparatus (SSAC Paper 2/2016)

22. Mr S Y Yung introduced [SSAC Paper 2/2016](#) that proposed revisions to HKCA specifications as a result of the withdrawal of licensing exemptions for Personal Handy Phone System (“PHS”) radiocommunications apparatus. With effect from 10 May 2016, the frequency band 1895 – 1906.1 MHz would no longer be designated for use by PHS apparatus and hence HKCA 1027 that set out the performance specification for such apparatus would be cancelled by that time. In addition, in the current version of HKCA 1035 which governed the technical and evaluation requirements for radiocommunications apparatus exempted from licensing, reference was made to HKCA 1027 covering the

operating frequency bands for PHS apparatus. To align with the withdrawal of frequency designation to PHS apparatus, HKCA 1035 needed to be revised accordingly.

23. The Chairman said that the proposed cancellation of HKCA 1027 and amendment to HKCA 1025 were consequential actions in respect of the commencement of the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) (Amendment) Order 2012. He invited Members to give their views on the proposed revisions within two weeks by 3 March 2016.

Agenda Item 4: Proposed Spectrum Release Plan for 2016-18 (SSAC Paper 3/2016)

24. Mr C H Chan introduced [SSAC Paper 3/2016](#) on the proposed Spectrum Release Plan (“SRP”) covering the period 2016-2018.

25. Mr S M Shuen asked about the development on potential re-farming of the 470 – 806 MHz band, which was currently allocated for television (“TV”) broadcasting, for mobile applications. The Chairman said that the frequency band 470 – 806 MHz was traditionally used for TV broadcasting service worldwide, including Hong Kong and the Mainland. In this connection, Hong Kong launched digital terrestrial TV broadcasting in 2007 and, as per recent announcement of the Government¹, the working target for switching off analogue TV services (analogue switch-off or ASO) would be the end of 2020, with a review of the target date to be conducted in 2017-18. On the other hand, OFCA noted that the band 698 – 806 MHz (“the 700 MHz band”) had been identified for mobile applications of IMT in Region 3 where China and Hong Kong resided. In this regard, OFCA had been discussing with the Mainland counterpart to explore whether and if in the affirmative, how and when the vacated radio spectrum in the frequency band of 470 – 806 MHz could be allocated for new services.

26. Mr Michael Lee said that several operators of the Asia-Pacific region had launched mobile services in the 700 MHz band and there was equipment support from many smart phone vendors in this regard. He opined that re-planning of the TV band in Hong Kong, including what spectrum might be assigned for mobile services, should be transparent and the relevant information should be made available in future SRPs for industry’s reference.

¹ See <http://www.cedb.gov.hk/ccib/eng/press/2014/pr09122014.htm>

27. Mr P H Ma said that the optimal propagation characteristics of radio signals in the 700 MHz band would facilitate good network coverage planning. On the other hand, the larger bandwidth available from spectrum in higher frequency bands, say, over 6 GHz, would support higher network throughput. He drew Members' attention to the fact that identification of spectrum for IMT in the frequency bands between 24.25 and 86 GHz would be considered in the next World Radiocommunication Conference to be held in 2019. OFCA would keep abreast of the relevant development and inform Members in due course.

28. Mr Henry Chan wished to clarify whether, after adopting the proposed SRP in question, the 1427 – 1518 MHz band would not be released in the coming three years irrespective of ITU's sharing study results. The Secretary said that the related ITU studies had not yet been completed and at this moment there was insufficient information to decide whether the 1427 – 1518 MHz band or part of it might be made available for release in the coming three years. The Secretary advised Members that SRP would be reviewed on an annual basis in consultation with the SSAC and that Members would be timely informed on the availability of this band and/or other frequency bands for incorporation in a future SRP.

29. The Chairman invited comments from Members on the proposed SRP for 2016-2018 within two weeks by 3 March 2016.

Agenda Item 5: World Telecommunication Standardization Assembly 2016 (SSAC Paper 4/2016)

30. Mr Warren Kwok introduced [SSAC Paper 4/2016](#) and gave a brief account of the World Telecommunication Standardization Assembly 2016 ("WTSA-16") to be held in the fourth quarter of 2016. He said that Members would be updated on further details of the meeting upon release of the related information by ITU.

[Post meeting note: According to the latest information from ITU, WTSA-16 would be held in Yasmine Hammamet, Tunisia from 25 October to 3 November 2016.]

31. Mr Warren Kwok said that WTSA set the overall direction and structure of the Telecommunication Standardization Bureau of ITU ("ITU-T"). It revised the work programs for Study Groups and formulated resolutions on issues for the next four-year study period. In WTSA-12 held in Dubai in November 2012, a total of six ITU-T recommendations and 50 resolutions were approved and adopted respectively.

32. Mr Warren Kwok pointed out that the coming WTSA-16 would discuss, among other things, equipment conformance, IMT-2020 (non-radio) network, Internet of Things and Software-defined networking which might concern standardisation work of Hong Kong. OFCA would monitor the development on these topics.

33. In respect of the regional preparatory work for WTSA-16, Mr Warren Kwok said that the Asia-Pacific Telecommunity (“APT”) had established a Preparatory Group for coordinating issues of interest to the Asia-Pacific region and preparing regional contributions to WTSA-16 in the form of APT Common Proposals. OFCA would participate in meetings of the APT Preparatory Group as necessary and attend WTSA-16. OFCA would update Members on the development and outcomes of APT Preparatory Group meetings and WTSA-16 in due course.

34. The Chairman welcomed inputs from Members on WTSA-16 topics. He said that OFCA would brief Members on the progress of WTSA-16 at future SSAC meetings.

Agenda Item 6: Any Other Business

35. There being no other business, the meeting was adjourned at 4:15 p.m.

**Office of the Communications Authority
April 2016**