RESPONSE TO CONSULTATION PAPER

Date : 27 July 2017

From

Office of the Communication Authority

Consultation Topic:	Proposed Change in the Allocation of the 3.4 – 3.7 GHz Band from Fixed Satellite Service to Mobile Service
Organization:	Pacific Satellite International Limited
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I. BASE CONSIDERATION

We responses to this consultation based on the following consideration:

1) To balance the benefit of satellite TV audience and mobile service user as well as industry concerns
2) To smoothen the change-over to minimize the impact on customer
3) To resolve the additional cost of system enhancement due to the proposed change

II. INTRODUCTORY COMMENTS

It is not the first time the Hong Kong Government plan to take away Radio Frequency from the broadcasting use for land mobile use. In year early 2000, the then OFTA had taken away certain portions of VHF and UHF frequencies for land mobile use, either by reassignment or auction out the frequencies to mobile operators.

Although we do not object to the relocation of the public resource - the radio frequencies under discussion, we have to raise our concerns as a part of the industry. We make our introductory comments below:

1) More than 50% of our existing customers receiving satellites that carry transmissions with the spectrum of 3.4-3.6 GHz.

Satellites	Involve no. of Household
Asiasat 5	10,337
Asiasat 7	181,618
Thaicom	182

   Our SMATV user can choose their preferred programs from the above satellites anytime. The proposed change may impact the reception of signal of these customers now or in the future.

2) The proposed re-allocation of frequencies is the extended C-Band frequency, with reference to C-band (IEEE) – Wikipedia, below is the frequencies for use in various parts of the world. The Extended C band frequencies should be 3.400 – 3.625 GHz, with the proposed 100 MHz guard band, therefore the frequencies for re-allocation should be 3.400 to 3.525 GHz.

C-Band Variations Around The World		
Band	**Transmit Frequency (GHz)**	**Receive Frequency (GHz)**
Standard C-Band	5.850–6.425	3.625–4.200
Super Extended C-Band	6.425–6.725	3.400–3.625
INSAT	6.725–7.025	4.500–4.800
Russian C-Band	5.975–6.475	3.650–4.150
LMI C-Band	5.7250–6.025	3.700–4.000

3) With reference to the past experience of re-allocation of broadcasting frequencies 837.5-870 MHz in years ago, we found the utilization after re-allocation is very low (details refer to the information from OFCA's website as below).

Hong Kong Allocation	Band Plan and existing utilization	Utilization Rate
837.5-870 LAND MOBILE	837.5-851	Vacant
	851-863 Conventional or Trunked Mobile Radio Systems & Mobile Data Systems 851-863 MHz (repeater transmit) paired with 806-818 MHz 25 MHz channel spacing 100 W erp maximum	27% of frequency channels in the band are vacant.
	863-864.1 Cross border Trunked Radio System 863-864.1 MHz (repeater transmit) paired with 806-818 MHz 25 MHz channel spacing 100 W erp maximum	54% of the frequency channels in the band are vacant.
	864.1-868.1 Telecommunications Apparatus 864.1-868.1	
	868.1-870 2-Way Paging 868- MHz (repeater transmit) paired with 806-818 MHz 25 MHz channel spacing 100 W erp maximum	33% of the frequency channels in the band are vacant.

This under-utilization situation is same for some other re-allocated VHF and UHF

frequencies for Land Mobile use. We therefore urge for more thoughtful planning or delay in re-allocation of the RF resources.

4) If the government will to go ahead with the re-allocation, there shall be sufficient and precise notification to the public, including the related industry parties and the Building Management organizations whom deal with end users, to minimize the impact, complaints and misunderstanding of the proposed change.

5) Proper consideration on financial impact to the public is important and to assign budgetary resources to remedy the adverse impact and for the work and hardware required for preventing signal interference, the necessary field technical work, changing to alternate signal reception, etc. This is important factor to ensure for the smooth transition for this proposed change.

III. ANSWER TO THE QUESTIONS

Q1: What are your views on the above Proposed Re-Allocation?

As a SMATV system provider, the satellites currently broadcasting between the frequency band ranges of 3.4-3.7GHz are in high demand from our customer. Some famous international TV channels are broadcasting at the frequency range to audience. There is no evidence shown that the channel owners intend to migrate or move to other higher band frequency instead.

Accord to the proposed reallocation, allocation of the frequency band 3.4-3.7 (0r 3.625) GHz to allow public mobile provider operate for mobile service will cause serious interference to exciting SMATV system receiving the TV channels at this frequency range even thought a 100 MHz guard band has apply at 3.6 GHz. From the past industry experience in to dealing with signal interference and related customer complaints. The problems were not be easily fixed, even with repeated effort and with visit and interference testing carried out by OFCA personnel.

Q2: Do you agree with the principle of protecting existing SMATV/EFTNS/SPETS systems operating in the adjacent band of 3.7 – 4.2 GHz with the implementation of the mitigating measures?

Agree. To protect existing SMATV system normal operation, the mobile base station must be restricted their radiated power for the public mobile service, minimize the harmful interference to the SMATV system. Otherwise, the high power signal output from mobile station will interfere the SMATV antenna. Of course, 100 MHz guard band is playing an effective role to minimize the interference. Furthermore, we earnestly hope that the authorities can delay the allocation as late as possible and give sufficient time for preparation and adapting for the transition.

Q3: For implementation of the Proposed Re-Allocation, please suggest or give your views about any mitigating measures to be implemented for the existing systems and services as well as any precautions to be taken for the operation of the new mobile base stations to be operating in the 3.4 – 3.6 GHz band.

As part of the industry, we may encounter many queries or consultation from our customers. A series of work will need to be carried out for all the satellite reception

(SMATV) sites:

- Update information to notify the change
- Site inspection and provide solution
- Provide technical work and supply equipment to:
  - Replace suitable LNB
  - Precision signal filter installation
  - Dish relocation
  - Frequencies re-assignment

The Government and the recipients of the allocated resources should provide financial resources for all the above mentioned works. This should be referred as a budget in the policy of the proposed re-allocation of frequencies.

Q4: What are your views on affecting the Proposed Re-Allocation in the early 2020, giving on advance notice period of two years if the relevant decision of the CA is made in early 2018?

The advance notice period of two years may not be enough time for all SMATV system providers to modify their system discontinue downlink any satellite TV channels from the frequency range. Moreover, it will take time to send notification to inform existing SMATV system end user, and amend the terms of agreement with customer. Suggest to give longer advance notice period, such as three to four years.

Q5: What are your views on the need to protect the TT&C channels of the licensed satellite networks at their specific locations from any harmful interference to be caused by public mobile services?

Yes. Nowadays, Satellite is a very important communication way for public to enjoy more international entertainment and information. Hong Kong is the metropolis of Asia, we need to safeguard earth station facilities and the satellite industry, the right of public to watch satellite television and industry development space. It is important to keep Hong Kong as a leading position as advance metropolitan and as advance satellite hub.

Q6: Do you have any views on other aspects of or issues relevant to this consultation?

No comment.

PACIFIC SATELLITE INTERNATIONAL LIMITED (PSI)

Pacific Satellite International Ltd. was established in 1989 in view of the development in the Satellite TV and Cable TV field, and with the eventual breakthrough in Digital Broadcasting in this region. With headquarter in Hong Kong and branch offices in Australia, Singapore, Philippines, Indonesia and China to cater to the needs of new technology.

Through the years, Pacific Satellite has gained expertise and now specializes in the design configuration, installation, engineering and maintenance service. We also had developed the Fibre business and Broadband Internet Access Service since 1994 and 2000 respectively. Digital and smart building technology is our major direction in 2017 and forth coming.

We fully understand the important of providing the best possible customer service, even at difficult times. We had qualified as the company with Customer Service Quality Standard (CSQS) in 2005. The service provided by PSIL will be superior in many ways – speed, reliability and professionalism.