

Collaboration to Unleash 5G Potential

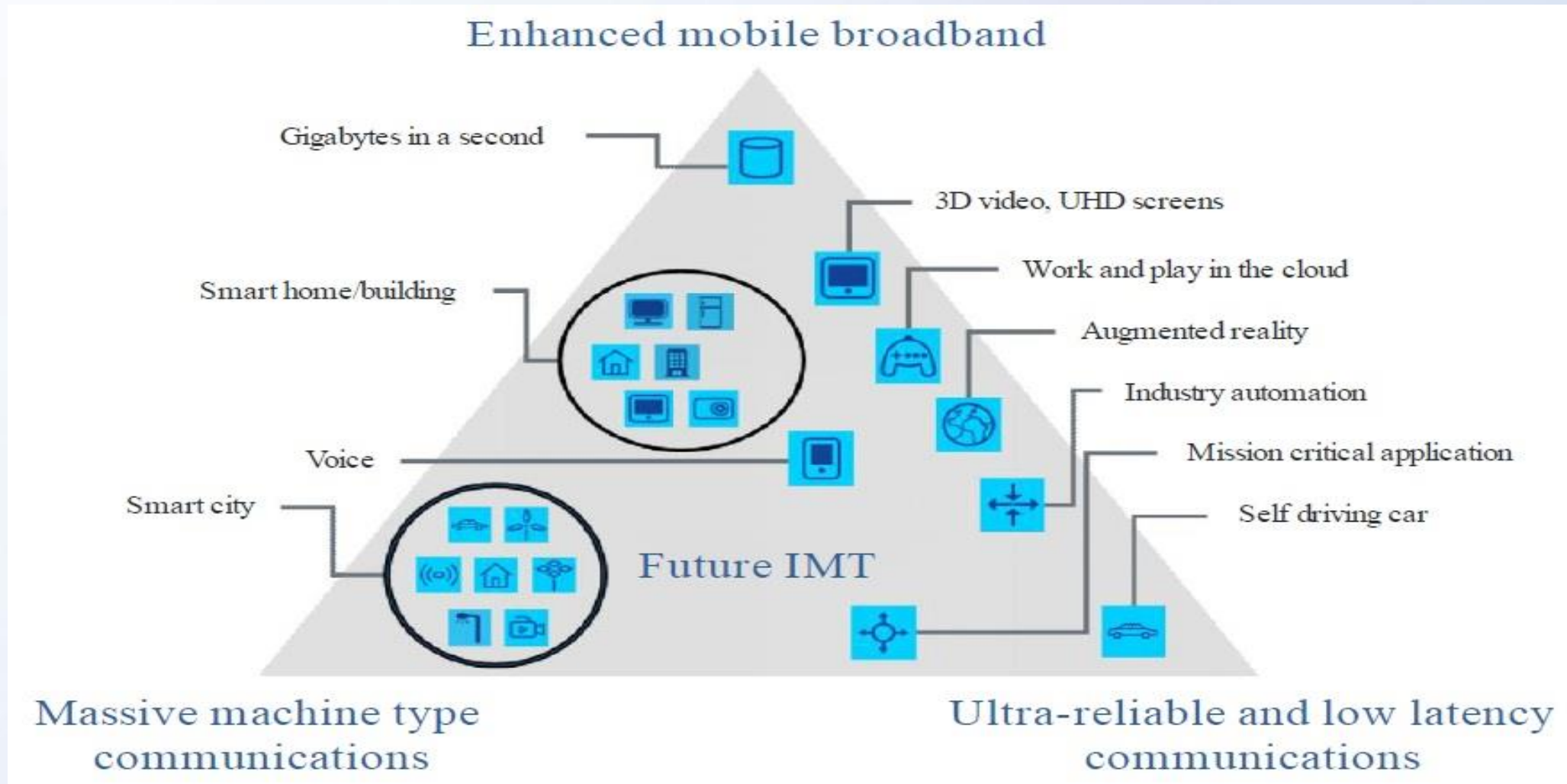
Chaucer Leung

Deputy Director-General (Telecommunications)

Office of the Communications Authority

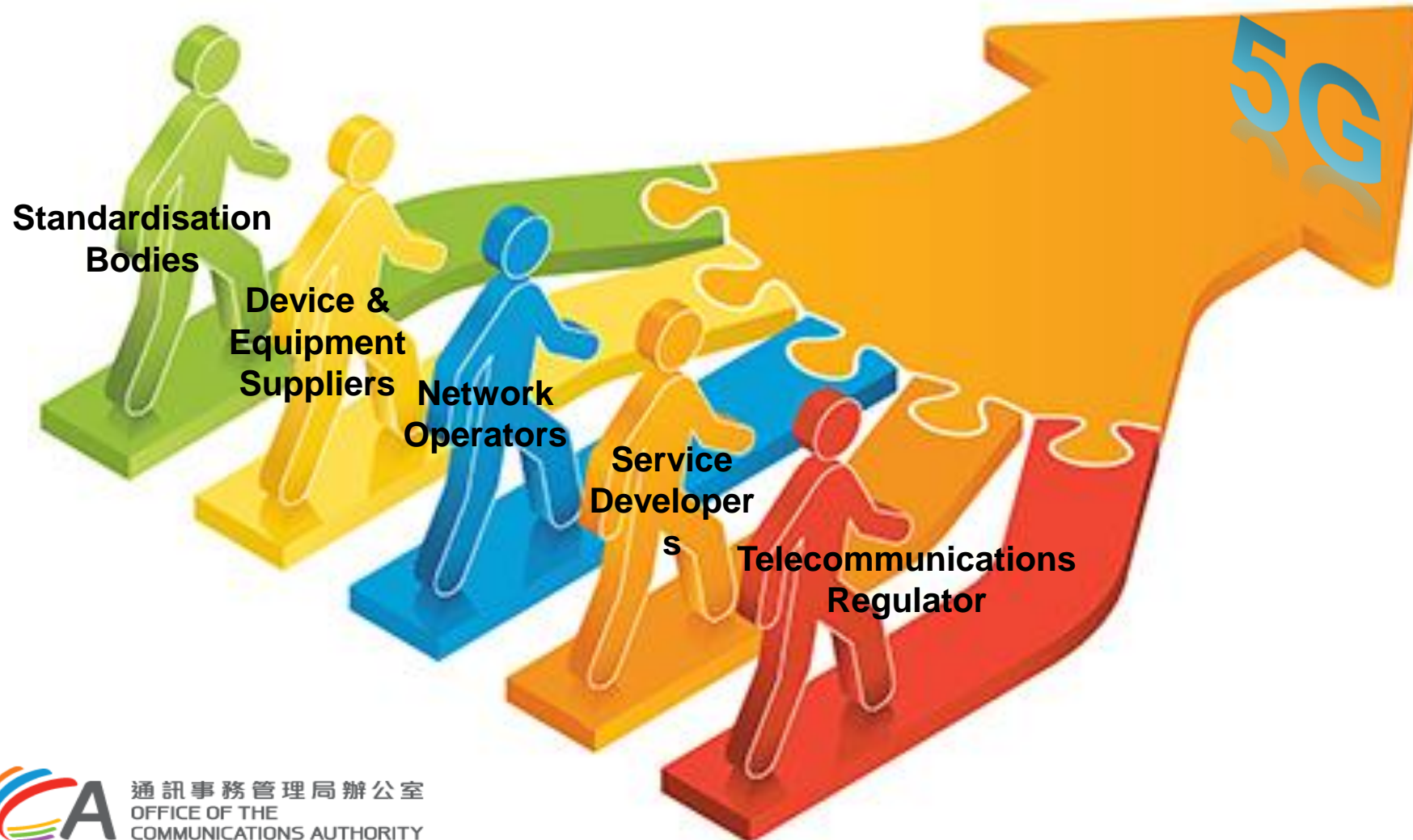
29 March 2017

5G Use Cases



Collaboration among Stakeholders

Enhanced Broadband, Low Latency, High Reliability, Internet of Things (IoT),....



Telecommunications Licensing Regimes

✓ GSM ✓ UMTS

✓ LTE ✓ ???

No restriction on the use of technologies under Unified Carrier Licences

Technology
Neutral
Licences

2017

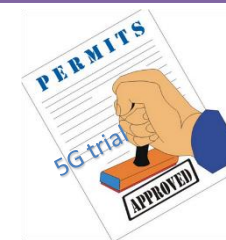
New!

Licence for the Provision of Public IoT Services with use of the Licence-exempted Bands (e.g. 920-925 MHz)



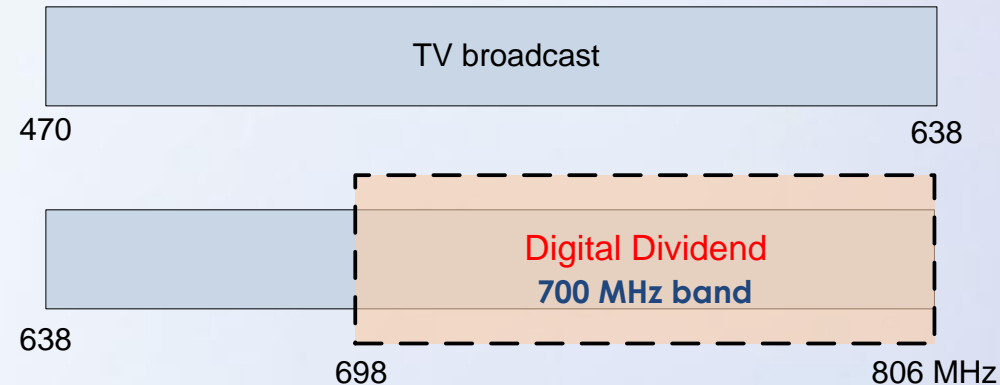
Temporary
Permits

Technical trials for 5G and IoT technologies



Potential Availability of the 700 MHz Band

- 700 MHz Band (698 – 806 MHz)



ITU identified the 698 – 806 MHz band for IMT



Analogue terrestrial TV services: being used by about **400 000 households**

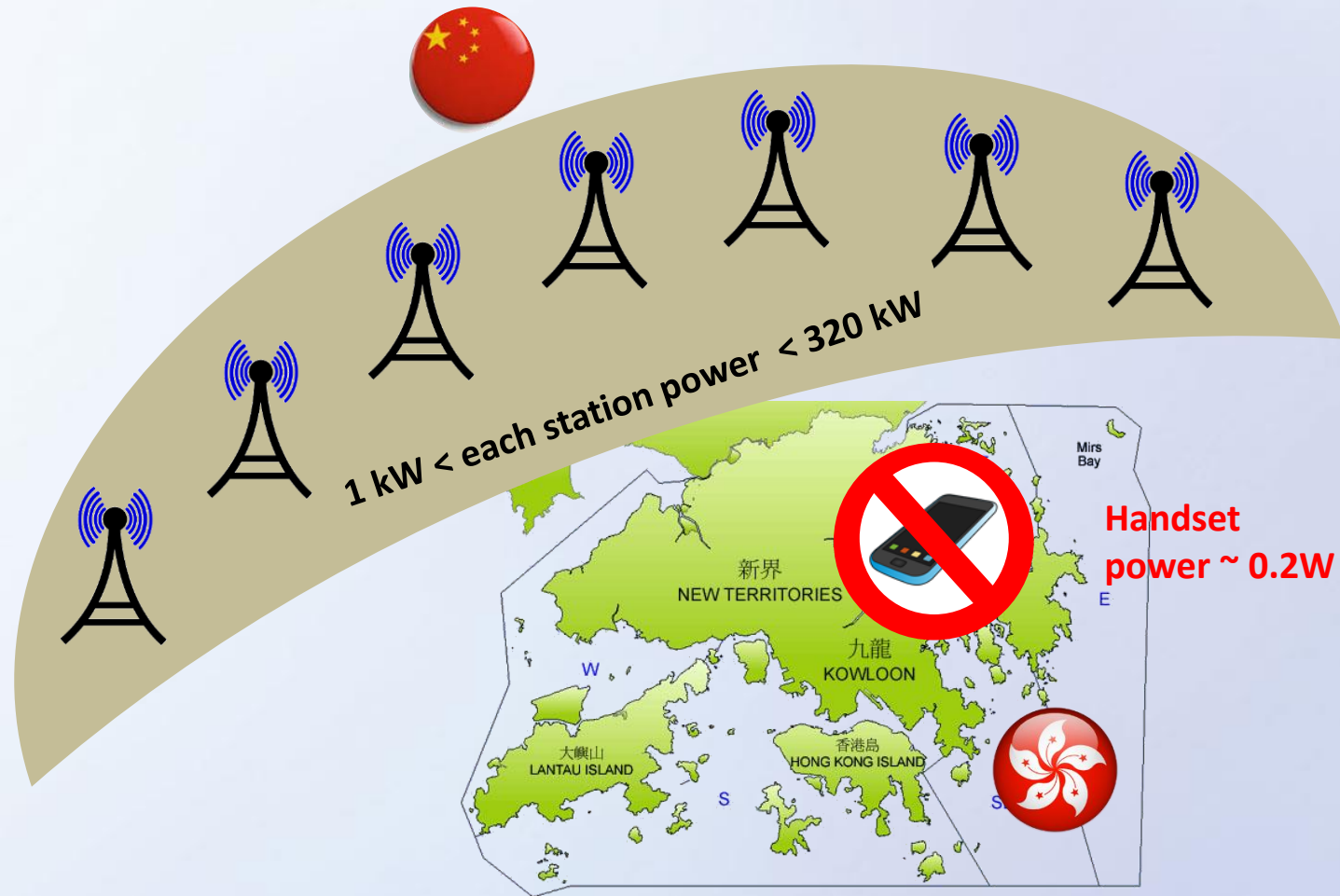


Frequency coordination with the Mainland authorities **ESSENTIAL**



Working target for analogue TV switch-off at end-2020, review of the target date to be conducted in **2017-18**

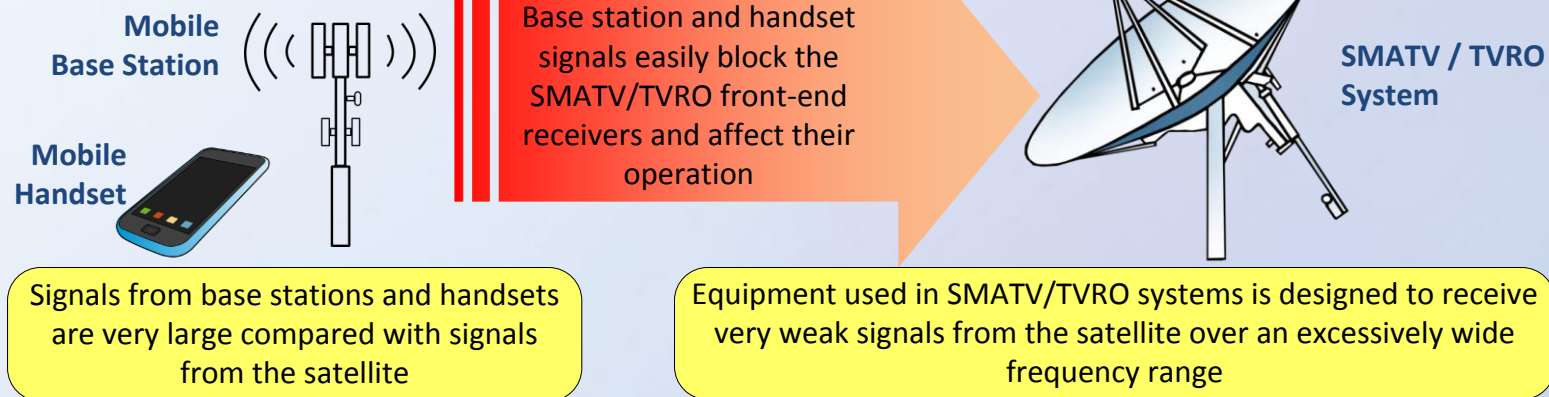
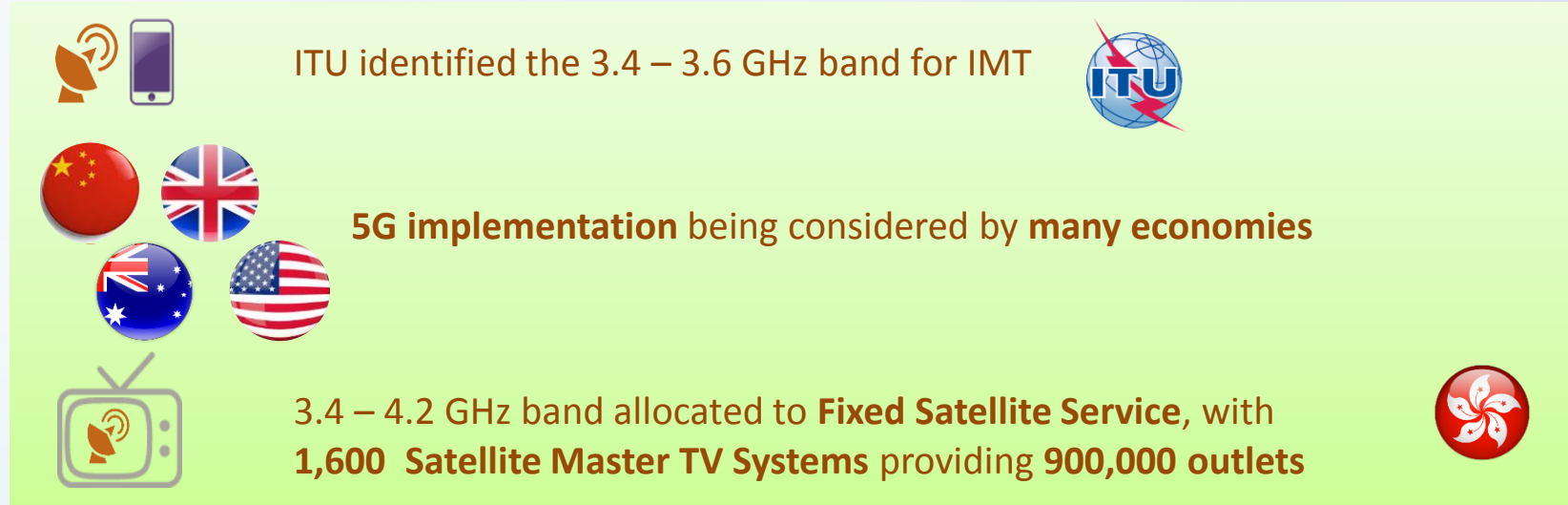
High Power TV Stations surrounding HK



Source of the map : https://www.afcd.gov.hk/english/fisheries/hkredtide/database/map_hk_water.htm

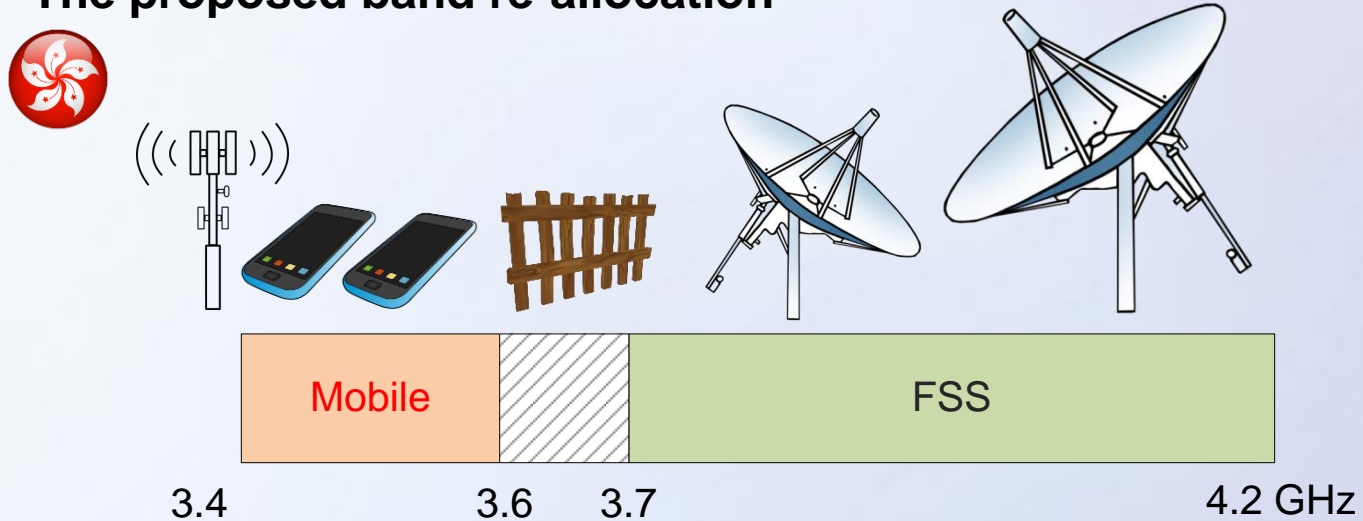
Potential Use of the 3.5GHz Band for Mobile Services (1)

- 3.5 GHz Band (3.4 – 3.6 GHz)



Potential Use of the 3.5GHz Band for Mobile Services (2)

- Co-existence of Mobile and FSS
 - The proposed band re-allocation



NEXT STEPS :



Technical consultancy study, electromagnetic compatibility (EMC) tests



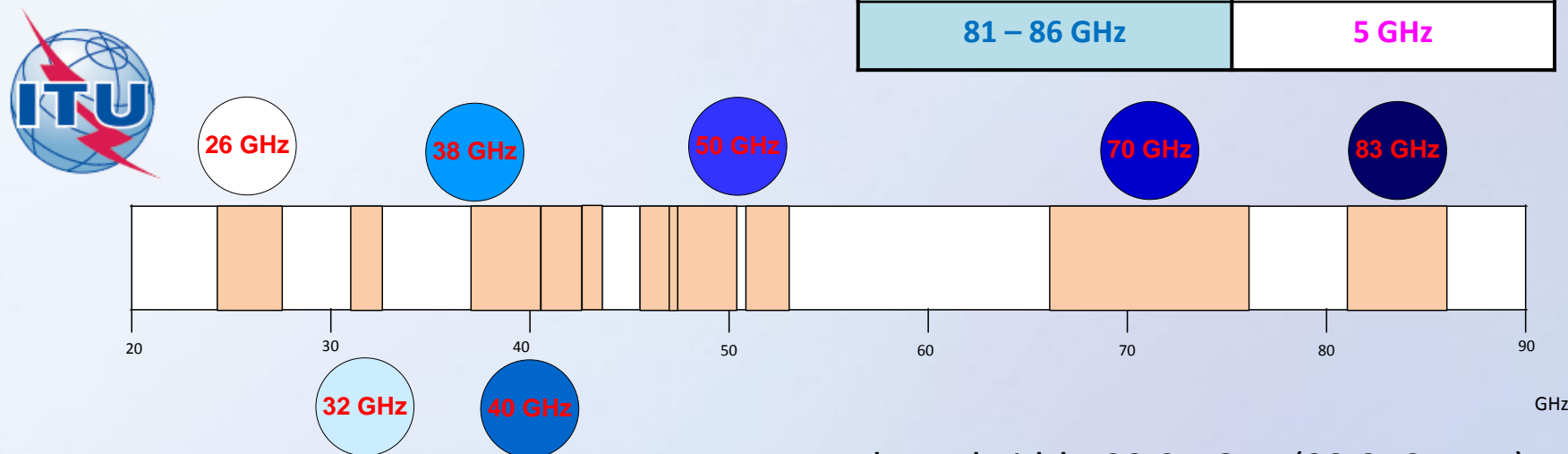
Public consultation

Allocation of High Frequency Bands for 5G Services

- ITU candidate bands to be discussed at WRC-19

Frequency Bands	Available Bandwidth
24.25 – 27.5 GHz	3.25 GHz
31.8 – 33.4 GHz	1.6 GHz
37 – 40.5 GHz	6.5 GHz
40.5 – 42.5 GHz	
42.5 – 43.5 GHz	

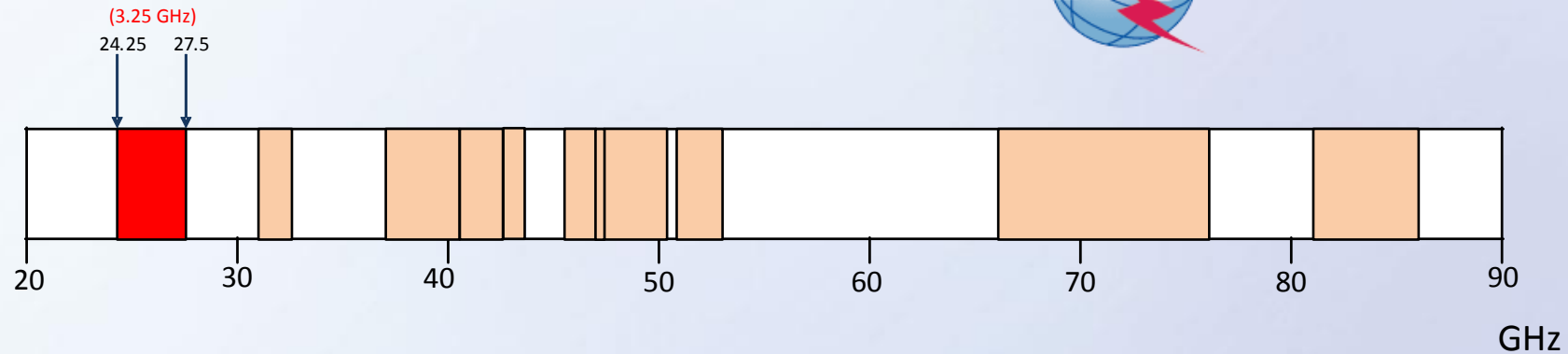
Frequency Bands	Available Bandwidth
45.5 – 47 GHz	4.7 GHz
47 – 47.2 GHz	
47.2 – 50.2 GHz	
50.4 – 52.6 GHz	2.2 GHz
66 – 76 GHz	10 GHz
81 – 86 GHz	5 GHz



Total Bandwidth: 33.25 GHz (33,250 MHz)

Availability of High Frequency Bands in HK (1)

- 26 GHz Band (24.25 – 27.5 GHz)
 - The lowest ITU candidate band



Being considered for 5G



Allocated to **fixed services in HK**, 11% utilisation as microwave links



NEXT STEP : Band vacation through relocation of existing microwave link assignments in two years

Availability of High Frequency Bands in HK (2)

- 28 GHz Band (27.5 – 28.35 GHz)



Spectrum opened up in the US; **Trials** in the US and Korea



Allocated to **fixed services** in HK, but **vacant** currently



- The 26 GHz & 28 GHz Bands

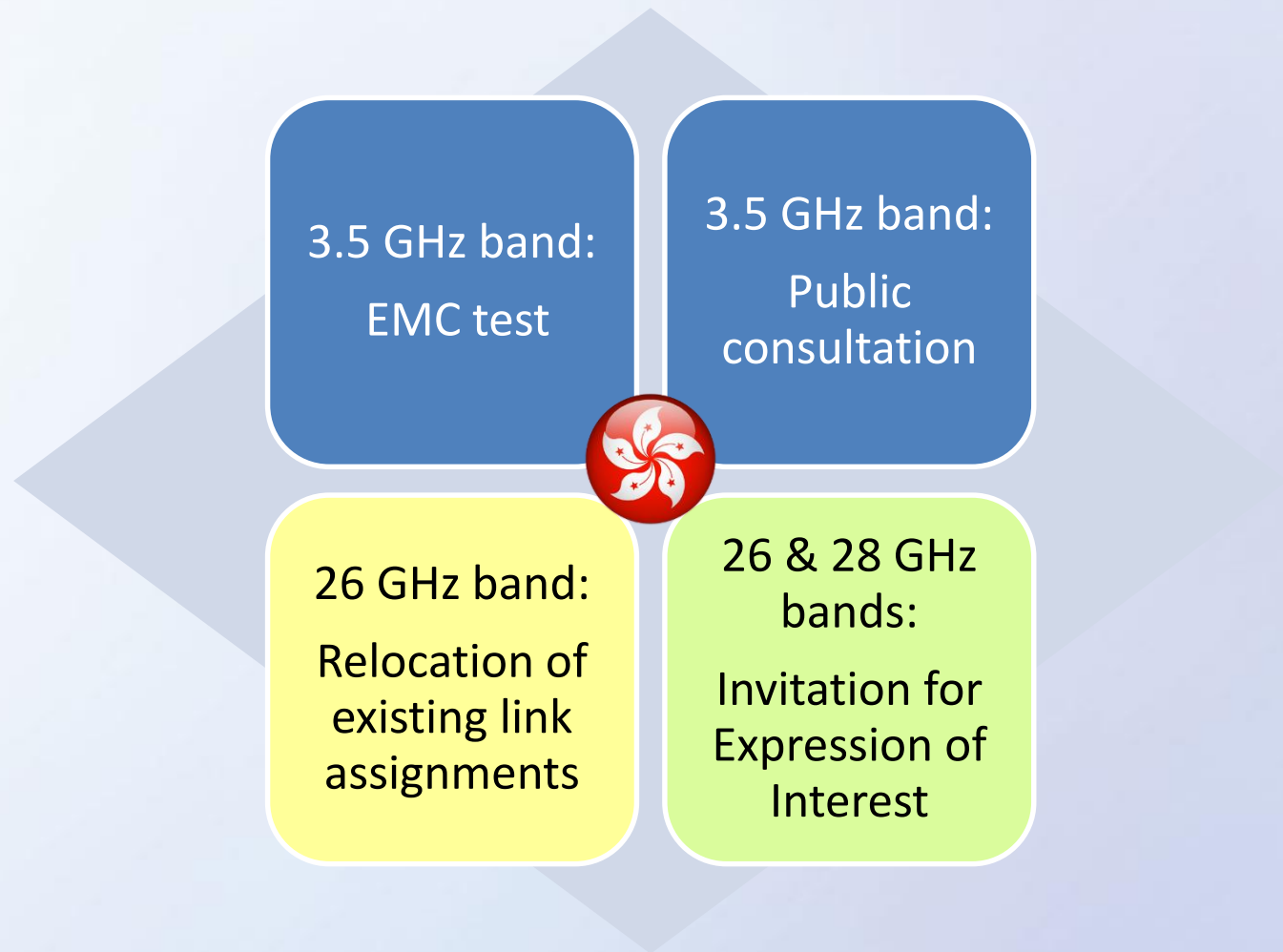


Large bandwidth of 4.1 GHz



NEXT STEP : **Invitation for Expression of Interest** to gauge the industry demand

Way Forward



Thank You