

# **ANNEX A: SUMMARY OF FREQUENCY ALLOCATIONS AND LICENSING FRAMEWORK**

## **SUMMARY OF SERVICES ALLOCATION**

IMDA has decided to open the 5.9 GHz (5.875 – 5.925 GHz) band for ITS applications.

While IMDA will continue to monitor the developments of the WiFi and ITS coexistence studies presently conducted by other international bodies, IMDA has decided to allow ITS usage within the 5.855 – 5.875 GHz band to operate in compliance with the 5.8 GHz SRD technical specifications and at an emission power limit of 100 mW (e.i.r.p.). These ITS applications will be operating under non-protection<sup>1</sup> and shared-use basis without spectrum fees.

Should IMDA assess that spectral separation between WiFi and ITS in the 5.850 – 5.875 GHz band is unnecessary, IMDA will amend the SRD technical framework subsequently to also allow higher powered WiFi to operate within 5.850 – 5.875 GHz. IMDA may also consider lowering the SRD operating power limit of 100 mW (e.i.r.p.) in 5.850 – 5.875 GHz, should it be found that SRD will affect future adjacent DSRC applications.

The revised frequency spectrum assignment for various services are summarised in the table below.

<b>Existing Singapore Allocation (in MHz)</b>	<b>New Singapore Allocation (in MHz)</b>
5 830-5 850 FIXED <b>RADIOLOCATION<sup>2</sup></b> SRD	5 830-5 850 FIXED SRD
5 850-5 875 FIXED-SATELLITE	5 850-5 875 FIXED-SATELLITE <b>SRD<sup>3</sup></b>
5 875-5 925 FIXED <b>FIXED-SATELLITE<sup>4</sup></b>	5 875-5 925 FIXED <b>MOBILE</b>
5 925-5 945 FIXED-SATELLITE <b>FIXED<sup>5</sup></b>	5 925-5 945 FIXED-SATELLITE

<sup>1</sup> ITS applications without the need for low latency communication could be deployed in the 5.855 – 5.875 GHz band.

<sup>2</sup> IMDA will stop new allocation for radiolocation services. Existing radiolocation service users can remain within their existing frequency assignment.

<sup>3</sup> Existing SRD technical specification for the 5.8 GHz SRD band will be extended from 5.725-5.850 GHz to 5.725-5.875 GHz.

<sup>4</sup> IMDA will stop new allocation for fixed satellite services. Existing fixed satellite service users can remain within their existing frequency assignment.

## SUMMARY OF LICENSING FRAMEWORK

Description	Vehicular OBU	RSU /Non-Vehicular Installation
Spectrum	5.875 – 5.925 GHz (“5.9 GHz band”)	
Technical Requirement	Compliance with the IMDA adopted TSAC recommended standards <sup>6</sup>	
Equipment Registration Scheme	General Equipment Registration	
Licence Approach <sup>7</sup>	Licence exempt	Localised Radio-Communication Station Licence/ Wide Area Private Network Licence
Spectrum Fees	NA	Yes
Shared Use	-	Chargeable shared-use annual frequency management fee of \$2,500* (based on per 10 MHz usage)
Exclusive Use (where applicable)	-	Chargeable exclusive-use annual frequency management fee of \$9,200* (based on per 10 MHz usage)  * Includes chargeable one-time application and processing fee of \$300. The use of control channel <sup>8</sup> (5.885 – 5.895 GHz) by RSU or non-vehicular installation will <b>not</b> be charged

<sup>5</sup> IMDA will stop new allocation for fixed services. Existing fixed service users can remain within their existing frequency assignment.

<sup>6</sup> The IMDA has adopted the TSAC recommended standard, “TSAC Technical Specification for Dedicated Short-Range Communications in ITS”.

<sup>7</sup> Where these devices are used to form a wide area network for service provisioning to third parties, the applicant will have to apply for FBO or SBO licences.

<sup>8</sup> The use of the control channel by RSU and non-vehicular installation for ITS applications under the IMDA TS DSRC will not be charged.