
**PROPOSED REGULATORY FRAMEWORK AND STANDARDS
FOR INTELLIGENT TRANSPORT SYSTEMS (“ITS”) IN THE 5.9
GHZ (5.875 – 5.925 GHZ) FREQUENCY BAND**

**Submission by StarHub Mobile Pte Ltd to the
Info-communications Development Authority of Singapore**

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Contact Details:	StarHub Mobile Pte Ltd 67 Ubi Avenue 1 #05-01 StarHub Green Singapore 408942 Phone: +65 6825 5000 Fax: +65 6721 5002 Tim Goodchild Email: timothy@starhub.com
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Introduction

1. StarHub Mobile Pte Ltd (“**StarHub**”) thanks the Info-communications Development Authority of Singapore (the “**Authority**”) for the opportunity to comment on its proposals for the framework and standards for ITS in the 5.9 GHz band. We welcome the Authority’s proposals as they will facilitate the development of ITS in Singapore. StarHub’s responses to the Authority’s questions are set-out below.

Question 1

IDA seeks views and comments on the proposed RF emission specifications for ITS deployments in Singapore.

2. StarHub agrees with the proposed RF emission specifications as they are aligned with international standards. This will facilitate the deployment of ITS in Singapore as equipment will be more readily available, and will not have to be specifically customised for Singapore’s operating environment.

Question 2

IDA seeks views and comments on the proposed 5.875 – 5.925 GHz (5.9 GHz) ITS service band plan in Table 2 above.

3. StarHub agrees with the proposed band plan as they are aligned with international standards.

Question 3

IDA seeks views and comments on the proposed plans for:

(i) co-existence between ITS and other short range devices, such as WLAN, broadband access devices, etc. in the 5.850 – 5.875 GHz band; and

(ii) operation of ITS in the 5.850 – 5.875 GHz and, which needs to comply with the existing 5.8 GHz SRD technical specifications, and to operate without spectrum fees, under non-protection and shared-use basis

should the existing local 5.8 GHz SRD band be extended to 5.725 – 5.875 GHz.

4. StarHub supports co-existence between ITS and other short range devices. We also support the operation of ITS under non-protection and shared-used basis. However, we believe that protection mechanisms must be in place to ensure that the services operating within the 5.9 GHz band can enjoy a minimum quality of service.

5. In particular, Government-based applications (e.g., traffic control and monitoring services) should be provided adequate protection from interference by other services operating in the same / adjacent bands.

6. In this regard, StarHub believes that dynamic spectrum access is best suited to coordinate usage within the 5.9 GHz band, to allow services to co-exist and minimise interference issues.

Question 4

IDA seeks views and comments on the frequency reassignment for existing service (s), such as fixed services and fixed satellite services, that are residing within the 5.875 – 5.925 GHz band, to facilitate the introduction of ITS; or alternatively, whether the existing services could operate on a non-protection basis.

7. StarHub does not have any objection to this proposal. However, as noted above, it is also important to implement protection measures for the remaining services in the band to ensure a minimum quality of service.

Question 5

IDA seeks views and comments on the allocation of interim guard bands, i.e. 5830 MHz – 5855 MHz and 5925 – 5945 MHz, to promote better harmonised spectrum usage between the initial emerging ITS applications and other existing service(s); or alternatively, whether these existing services in the mentioned guard bands could operate on a non-protection and non-interference basis.

8. We support the allocation of guard bands as an interim measure. However, as a long term goal, we believe that the proposed guard bands should also be opened-up for use. This maximises the availability of spectrum, and increases the economic benefits to Singapore.

9. As mentioned above, StarHub’s proposal is to utilise dynamic spectrum access for coordination of usage within the 5.9 GHz band.

Question 6

IDA seeks views and comments on IDA’s proposal to exempt Vehicular OBUs from spectrum licensing and adopt a full licensing approach for RSUs and non-vehicular installations.

10. We support the proposal to exempt Vehicular OBUs from spectrum licensing. We believe that RSUs and non-vehicular installations should also be licence-exempt, as long as they comply with the Authority’s equipment specifications, and operate within the power limit of 33dBm. We believe that licensing should only be required for equipment operating above 33dBm, as there would be greater risk of interference being caused by such equipment.

Question 7

IDA seeks any other views and comments on IDA's proposed ITS licensing framework.

11. StarHub supports the need for operators to be duly licensed before they can provide ITS services in Singapore. This ensures that ITS service providers can comply with the minimum requirements imposed by the Authority in Singapore.

Question 8

IDA seeks views and comments on the proposed "Technical Specification of Dedicated Short-Range Communications (DSRC) standards for Intelligent Transport Systems (ITS)".

12. StarHub has generally no comments on the specifications, but we would urge the Authority to ensure that these specifications are aligned with international standards. Such alignment will facilitate the deployment of ITS in Singapore.

StarHub Mobile Pte Ltd
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