
**PUBLIC CONSULTATION ON THE
PROPOSED CODE OF PRACTICE FOR THE PROVISIONING
OF COAXIAL CABLE HOME NETWORKING SOLUTIONS**

**Submission by the StarHub Group to the
Info-communications Development Authority of Singapore**

15 April 2013

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Statement of Interest

StarHub Ltd is a Facilities Based Operator ("**FBO**") in Singapore, having been awarded a licence to provide public basic telecommunication services ("**PBTS**") by the Telecommunications Authority of Singapore ("**TAS**") (the predecessor to IDA) on 5 May 1998.

Nucleus Connect Pte Ltd, a wholly-owned subsidiary of StarHub Ltd, incorporated on 14 April 2009, is the appointed Operating Company of the Next Generation Nationwide Broadband Network.

StarHub Mobile Pte Ltd is a wholly-owned subsidiary of StarHub Ltd. StarHub Mobile Pte Ltd was issued a licence to provide public cellular mobile telephone services ("**PCMTS**") by the TAS on 5 May 1998. StarHub launched its commercial PBTS and PCMTS services on 1 April 2000.

StarHub Ltd acquired CyberWay (now StarHub Internet Pte Ltd) for the provision of Public Internet Access Services in Singapore on 21 January 1999.

In July 2002, StarHub Ltd completed a merger with Singapore Cable Vision Limited to form StarHub Cable Vision Ltd. StarHub Cable Vision Ltd holds a FBO licence and offers broadband and cable TV services.

StarHub Online Pte Ltd is a wholly-owned subsidiary of StarHub Ltd. StarHub Online Pte Ltd was issued a licence to provide Public Internet Access Services in Singapore on 22 February 2005.

This submission represents the views of the StarHub group of companies, namely, StarHub Ltd, StarHub Mobile Pte Ltd, StarHub Internet Pte Ltd, StarHub Online Pte Ltd and StarHub Cable Vision Ltd.

1. Introduction

StarHub welcomes the opportunity to provide comments to the Authority's public consultation on the proposed code of practice for the provisioning of coaxial cable home networking ("**CCHN**") solution. StarHub is a Broadband Coaxial System ("**BCS**") operator providing cable TV, broadband and voice services over the BCS to customers.

StarHub supports the introduction of a code of practice for the implementation of CCHN solution, and the conversion of the Reference Specification to the Technical Specification ("**IDA TS CCHN**") for the CCHN equipment. These steps are critical in ensuring that all parties will comply with the regulatory framework and that the deployment of CCHN solution will not affect services carried over the BCS.

StarHub also welcomes the Authority's proposal to require the dealers of CCHN equipment to supply the equipment to the licensed CCHN solution providers only. This will further minimise the risk of interference caused by the CCHN equipment.

StarHub has carefully reviewed the proposed code of practice ("**the proposed Code**"). StarHub's specific comments on the proposed code of practice are set out in the following section.

2. Specific Responses

Chapter 2: Installation Practices

Suitability of Home Configurations and Minimum Conditions for Deployment of CCHN Solution

Section 2.1.3

StarHub is very concerned with this Section of the proposed Code, as it appears to contradict and negate the policy intent of the proposed Code – namely: to ensure that the CCHN solution is provisioned in accordance with the mandatory Technical Specification and with minimal disruption to the services carried over the BSC.

StarHub is of the view that concerns over BCS Operators denying access to the distribution taps are unjustified. StarHub is prepared to facilitate access to the distribution taps, subject to agreed terms, as all parties will need to comply with the proposed Code (and the necessary operational procedures) to ensure that services on the BCS will not be affected by the deployment of the CCHN solution.

This Section of the proposed Code would create ambiguities and potential disputes between a BCS Operator and a Solution Provider on whether the isolation filter should be installed at the distribution tap or within the in-home premises. In particular, it is not clear from this Section what other specific events would render the installation of the isolation filter not feasible at the distribution tap (apart from insufficient physical space in the tap box), and what would constitute an “inability” by Solution Providers to obtain reasonable access to the distribution tap box. Such vagaries will encourage a Solution Provider to choose to install the isolation filter within the in-home premises, simply when they find it convenient to do so, regardless of the resulting impact on services carried over on the BCS.

StarHub would highlight that a BCS Operator must not be placed at a disadvantage when providing services to the customers. It would be unreasonable and inequitable for a BCS Operator to be made to bear the burden of additional time, effort and resources to handle and resolve end-user complaints, or to be wrongfully perceived by end-users as the party responsible, for any service degradation, disruption or interference experienced by end-users at their in-home premises, as a result of Solution Providers’ implementation of CCHN solution within the in-home premise.

StarHub strongly believe that the concerns raised over access to the distribution taps do not justify providing the option of installing the isolation filter within the in-home premise under the proposed Code. It is essential for the proposed Code to specify (as acknowledged by the Authority) that installing the isolation filter at the distribution tap remains the sole option.

General Setup Process

Section 2.2.1

StarHub submits that apart from informing the end-user, Solution Providers must also obtain from the end-user a written consent or acknowledgement of:

- ➡ The implications arising from the installation for CCHN solution at the end-user's in-home premise; and
- ➡ The obligations of the end-user (e.g. the end-user should not remove or re-locate the isolation filter), as set out in Section 2.2.1(a) to (c).

The written consent or acknowledgement should be made available to the BCS Operator to facilitate the BCS Operator's investigation and resolution of any complaint on the quality and performance of services carried over the BSC that may be caused by the installation of the CCHN solution.

StarHub also notes that the installation of the CCHN solution will result in the cable services delivered over the BCS in the adjacent frequency band immediately after the frequency band used by the CCHN solution becoming unavailable. Based on the technical specifications of the isolation filter (i.e. the isolation filter requirements have specified signal attenuation up to 85MHz), cable services delivered over the frequency bands of 69.25MHz and 76.25MHz would be affected. StarHub would highlight that StarHub is currently carrying its preview channel on frequency band of 76.25MHz. Therefore, StarHub submits that Solution Providers should still adopt isolation filters that minimise the signal attenuation beyond 75MHz, otherwise the CCHN solution would affect the end-users viewing of this channel. This result would result in significant customer dissatisfaction.

Section 2.2.9

StarHub submits that it is also important for Solution Providers to: (i) keep records of the post-installation verification process; and (ii) share the records with the BCS Operator to facilitate the resolution of end-user complaints on interference to cable services carried over the BCS.

In addition, if the results of the post-installation verification process fail, Solution Providers should be obliged to inform the end-user that: (i) the in-home premises was not suitable for the use of CCHN solution, and (ii) the installation of the CCHN solution will not be carried out.

Section 2.2.11

StarHub submits that this Section should also provide that there should be no disruption or degradation to the services carried over the BSC during the course of installation and on-going maintenance or upgrading of the CCHN solution, in addition to the operation of the BSC itself.

Section 2.2.12

StarHub proposes that the Solution Provider should notify the relevant BCS Operator(s) of the address of the relevant in-home premises **prior** to the installation of isolation filter at the premises. This is to allow the BCS Operator to facilitate access, and to be aware of any interference that may be caused by the CCHN, at the earliest possible time.

Section 2.2.13

StarHub notes that Solution Providers must serve as the single point of contact for any performance and interference issues or disputes which may arise from the implementation of their respective CCHN solutions (including co-ordinating and resolving such issues or disputes among the relevant parties).

It is necessary for the proposed Code to clarify that Solution Providers must serve as the single point of contact to not just end-users, but also to BCS Operators. This is because the first point of contact for end-users, when faced with performance or interference issues to the services delivered over the BCS, would highly likely to be the relevant BCS Operator.

Chapter 3: Responsibilities of Recognised Telecommunication Licensees that are delivering services over the BCS and Access to BCS Facilities

General Obligations

Section 3.1.1

Section 3.1.1 states that “... *Where there is a need to alter or disconnect the CCHN configuration at the BCS riser, telecom riser, or common corridor in the course of such works, the BCS Operators shall work with the relevant Solution Providers*”. While StarHub agrees that it would be necessary for the BCS Operators to work with the

Solution Providers in such circumstance, it is essential for the proposed Code to state that the Solution Providers will: (i) render co-operation; and (ii) not do anything that would impede or prevent the BCS Operator from carrying out its installation, upgrading or maintenance works to the BCS. This step is needed for satisfactory and efficient operation of the BCS.

Chapter 5: Resolution of Issues and Disputes

Disputes between the End-User and the Solution Provider relating to service degradation issues arising from the installation or use of the CCHN Solution

Section 5.1.1

Section 5.1.1 provides that where the Solution Provider is unable to resolve any service degradation issue arising from the installation or use of the CCHN solution, the Solution Provider shall inform the end-user, and where the end-user decides to remove the CCHN solution, the Solution Provider shall uninstall the CCHN Solution from the in-home premise and restore the in-home coaxial cables to their original configuration.

StarHub would highlight that it is unclear what the available recourse is for the BCS Operator or the Solution Provider should the end-user decide not to remove the CCHN solution. StarHub submits that the proposed Code should clarify that if the Solution Provider is unable to resolve any service degradation to the services carried over the BCS, the Solution Provider shall inform the end-user that the in-home coaxial cable system is not suitable for the use of CCHN solution, and the Solution Provider shall remove the CCHN solution and reinstate the in-home coaxial cable system to their original configuration. The BCS Operator should not be burdened to resolve the service degradation as a result of the end-user's refusal to remove the CCHN solution. This requirement is consistent with the proposed process under Section 2.1.7.

Disputes between the Solution Provider and BCS Operators relating to interference issues arising from the installation or use of the CCHN Solution

Section 5.2.1

StarHub submits that, to the extent the BCS Operator and Solution Provider are unable to resolve any service degradation or interference issue and the services carried over the in-home coaxial cables and/or the BSC are affected, the Solution Provider must be obliged to: (i) inform the end-user that the in-home coaxial cable system is not suitable for the use of CCHN solution, (ii) uninstall the CCHN solution, and (iii) reinstate the in-home coaxial cable system to its original configuration.

However, where the CCHN solution is not uninstalled and it is only affecting the cable services of the end-user whose in-home premises has been installed with the CCHN solution, the end-user should be made aware of the implications of this (i.e. the services carried over the BCS to their in-home premises will be affected) by the Solution Provider. Furthermore, in this situation, the BCS Operator should not be held responsible for **any** service degradation as a result of the Solution Provider's failure or end-user's refusal to uninstall the CCHN solution.

In addition, where the CCHN solution is affecting the cable services of other end-users, the Solution Provider must be required to promptly uninstall the CCHN solution from the in-home premises and restore the in-home coaxial cables to their original configuration. Without this step, the services to "innocent" end-users could be subject to disruption and degradation.

StarHub also submits that, should the Solution Provider fail to uninstall the CCHN solution from the in-home premises and restore the in-home coaxial cables to their original configuration, the BCS Operator shall be entitled to do so and recover the full costs from the Solution Provider. Such a failure to act by the Solution Provider should also be taken as a breach of the Code.

Appendix A: Post-installation Verification Process

StarHub submits that that the Internet data test on the quality of experience for cable broadband services should be conducted via utilities.starhub.com, where the BSC Operator is StarHub. This will prevent any dispute on the quality experience of StarHub's cable broadband services.

3. Conclusion

StarHub supports the introduction of the Code and the mandatory compliance of the CCHN equipment with the Technical Specification (IDA TS CCHN). These steps are critical in ensuring that all relevant parties will comply with the regulatory framework, and that the deployment of CCHN solution will not affect services carried over the BCS. StarHub also welcomes the Authority's proposal to restrict the supply of the CCHN equipment by the dealers to FBOs and SBOs only. This will help to minimise the risk of interference caused by the CCHN equipment and tighten the control over the deployment of CCHN solution.

We appreciate the Authority's acknowledgement that the preferred option is to install the isolation filter at the distribution tap, and this is consistent with the standard practice for efficient fault localisation and isolation. This will help achieve the objective and intent of the Code which is to ensure that CCHN solutions are deployed with minimal disruption to the services carried over the BSC.

Accordingly, StarHub strongly submits that the Authority should not provide the option of installing the isolation filter within the in-home premises. Installing filters within the in-home premises would create potential disputes between BCS Operators and Solution Providers, particularly on the specific circumstances in which the isolation filter may be installed within the in-home premises. In addition, if the isolation filter is installed within the in-home premises, BCS Operators and Solution Providers may not be able to access the filter in a timely manner, in the event of any service degradation to other end-users is caused by the CCHN solution.

StarHub would also highlight that the Solution Provider must be responsible for informing end-users of any technical incompatibility of their in-home coaxial cables with the CCHN solution intended to be installed at their in-home premises. In such a situation, the Solution Provider must not be allowed to proceed with the installation of the CCHN solution or as applicable, must uninstall the CCHN solution. The BCS Operator should not be burdened with the responsibility of resolving the service degradation or interference due to the end-user's refusal or the Solution Provider's failure to remove or uninstall the CCHN solution.

StarHub strongly believes that, in line with the principle of cost-causality, BCS Operators should not be required to absorb costs (or accept disruptions to their services) due to the actions of the Solution Provider. Rather, the Solution Provider must take responsibility for the costs and service disruptions that their actions create.

StarHub is grateful for the opportunity to comment on this matter. In the event that the submissions from other parties, particularly potential Solution Providers, raise new issues or are likely to affect responses given by StarHub under this submission, we would appreciate it if we could be afforded the opportunity to comment further on the matter.