NetLinkTrust

the fibre of a smart nation

NLT/REG/0617/074

21 June 2017

INFO-COMMUNICATIONS MEDIA DEVELOPMENT AUTHORITY ("IMDA")
10 Pasir Panjang Road
#10-01 Mapletree Business City
Singapore 117438
Via email: Consultation@imda.gov.sg

Attention: Ms Aileen Chia
Director-General (Telecoms & Post) &
Assistant Chief Executive (Connectivity & Competition Development)

Dear Ms Chia

PUBLIC CONSULTATION ON THE REVIEW OF THE CODE OF PRACTICE FOR INFO-COMMUNICATION FACILITIES IN BUILDINGS

We write in response to the Consultation Paper issued by IMDA on 26 April 2017 with regards to the review of the Code of Practice for Info-communication Facilities in Buildings ("COPIF").

NetLink Trust welcomes the opportunity to offer our views and comments on IMDA's proposals detailed in the Consultation Paper. NetLink Trust has reviewed the proposals, and is pleased to submit herewith our views and comments for IMDA's consideration.

For IMDA's ease of reference, the salient points of NetLink Trust's submission are as follow:

- IMDA's proposal to remove the obligation on building developers/owners to provide the necessary means for Licensees to access cable distribution systems or other space and facilities that are located at a height of more than four (4) metres will lead to an increase in the costs incurred by Licensees (to provision and maintain their services at buildings and developments). Such costs will have to be recovered through the price review framework under the Code of Practice for Next Generation Nationwide Broadband Network NetCo Interconnection.

- IMDA's proposal to require building owners/managers to agree with Licensees on emergency access arrangements will ensure timely restoration of services for all end-users (including end-users who are residing at external properties) during emergencies, especially during non-office hours or public holidays and where the building is a non-residential building. IMDA should devise a set of principles and guidelines to guide building owners/managers and Licensees in their discussions/negotiations on the arrangements for emergency access to the former's premises.

NetLinkTrust

the fibre of a smart nation

- NetLink Trust supports IMDA's proposal to require the pre-installation of internal telecommunication wiring in non-residential developments and into each non-residential unit. NetLink Trust agrees with IMDA that the medium for the internal telecommunication wiring should be fibre-based.

- Where internal telecommunication wiring could not be pre-installed, NetLink Trust agrees with IMDA that building developers/owners should be required to pre-install air blown tubes in non-residential developments and to each non-residential unit (or to the nearest feasible point connecting to the non-residential unit).

- NetLink Trust proposes to relieve building developers/owners of the requirement to install broadband coaxial cable systems in new residential developments. As fibre increasingly becomes the preferred medium for consumers to serve their broadband needs, it would be prudent of IMDA to re-evaluate the relevance of broadband coaxial cable systems in new residential developments.

- Removal of the requirement for building developers/owners to pre-install broadband coaxial cable systems in new residential developments will lead to more effective use of the space and facilities made available by building developers/owners (by other Licensees); it will also avoid wastage of building resources that are required to support the deployment of broadband coaxial cable systems.

- The last-mile network topology for fixed-line networks is typically configured in a hub-and-spoke topology. Operational efficiencies and cost savings derived from the efficient design of this topology (which necessitates the use of a development to provide telecommunication services to a cluster of external properties outside of that development) benefit all end-users, in the form of lower regulated prices and hence lower costs for end-users, and more efficient service deliveries and operational maintenance of these services.

- Consistent with IMDA's proposal to allow Mobile Network Operators to use Mobile Deployment Space to provide mobile coverage to External Areas, IMDA should amend the relevant provisions in COPIF to require that space and facilities made available by building developers/owners must by default be available for use by Licensees (in particular, fixed-line network operators) to serve both their developments and external properties outside of the developments.

- Licensees should not be required to pay an access charge, or any other charges, to the building developer/owner for accessing and using the space and facilities provided by the building developer/owner to serve external properties outside of its development.

NetLink Management Pte. Ltd.
Company Registration No.: 201704784C
(as Trustee-Manager of NetLink Trust)
Business Trust Registration No.: 2011003

750E Chai Chee Road #07-03
Viva Business Park
Singapore 469005

T 65 6718 2828
F 65 6449 0221
www.netlinktrust.com

NetLinkTrust

the fibre of a smart nation

Please do not hesitate to contact the undersigned if IMDA should require any clarification or additional information with regards to this submission.

Yours sincerely,

Lee Khoon Aik
Director (Regulatory & Interconnect)
NetLink Trust
(managed by NetLink Management Pte Ltd as its Trustee-Manager)

Enc.

NetLink Management Pte. Ltd.
Company Registration No.: 201704784C
(as Trustee-Manager of NetLink Trust)
Business Trust Registration No.: 2011003

750E Chai Chee Road #07-03
Viva Business Park
Singapore 469005

T 65 6718 2828
F 65 6449 0221
www.netlinktrust.com

NetLinkTrust

the fibre of a smart nation

PUBLIC CONSULTATION ON THE REVIEW OF THE CODE OF PRACTICE FOR INFO-COMMUNICATION FACILITIES IN BUILDINGS

1. NetLink Trust appreciates this opportunity to submit our views and comments on IMDA's Consultation Paper on the Review of the Code of Practice for Info-communication Facilities in Buildings ("COPIF").

2. Set out below are NetLink Trust's views and comments on the proposals put forth by IMDA in its Consultation Paper.

3. IMDA may wish to note that the views and comments presented in this submission are primarily focused on proposals that are deemed more directly relevant to NetLink Trust's business and operations. If there are any other matters and/or proposals that IMDA would like NetLink Trust to comment on, please do not hesitate to let us know.

Section 3 – Use of and Access to Space and Facilities by Licensees

(a) Access to Space and Facilities Located at a Height of More Than Four (4) Metres Above Floor Level

4. In its Consultation Paper, IMDA has proposed to remove the obligation on building developers/owners to provide the necessary means for Licensees to access cable distribution systems or other space and facilities that are located at a height of more than four (4) metres above floor level ("Height Limit").

5. NetLink Trust has studied IMDA's proposal, and notes that the removal of the said obligation on building developers/owners will lead to an increase in the costs incurred by Licensees in provisioning and maintaining their services at buildings and developments. Licensees will incur additional deployment and access costs to deploy mechanised equipment such as cherry pickers, scissors or boom lifts, or facilities such as scaffoldings.

6. The consequent increase in costs will have to be recovered through appropriate avenues. In NetLink Trust's case, this recovery of cost will be achieved through the price review framework set out in the Code of Practice for Next Generation Nationwide Broadband Network NetCo Interconnection ("NetCo Code"). NetLink Trust submits that IMDA must not deny Licensees the right to recover the additional costs that they would have to incur as a consequence of the proposal to relieve building developers/owners of their obligation to provide the necessary means of access to cable distribution systems or other space and facilities that are located above the Height Limit.

7. Furthermore, where relevant legislation and/or regulatory requirements on workplace safety and health are updated or amended, Licensees may have to incur more costs (i.e. in addition to the costs that they would have to incur arising from the aforesaid IMDA proposal) in accessing cable distribution systems or other space and facilities provided by building developers/owners, in the course of provisioning and/or maintaining services for their customers at buildings and developments. Similarly, IMDA must allow Licensees

to recover such additional costs through appropriate price adjustments. In the case of NetLink Trust, such price adjustments would be effected through the price review framework under the NetCo Code.

8. NetLink Trust further proposes that for buildings that are under construction, building developers/owners should continue to provide Licensees with the necessary means to access cable distribution systems or other space and facilities that are located above the Height Limit.

9. During the construction stage, the site may not be readily accessible to Licensees and their contractors. Deploying mechanised equipment such as cherry pickers, scissors or boom lifts, or facilities such as scaffoldings, at a site that is still under construction may pose a danger to the safety of Licensees and their contractors, as well as to the safety of other workers at the site. Notably, the mechanised equipment (i.e. cherry pickers, scissors or boom lifts) or scaffoldings required by Licensees would already have been deployed at the site by the construction contractors for their use. These equipment and facilities should be made available to Licensees for deployment of telecommunication installation, plant or system in the buildings.

(b) Access to Space and Facilities: Emergencies

10. IMDA has proposed to require building owners/managers and Licensees to secure pre-agreed access arrangements for service restoration during emergencies, particularly where Licensees are using the space and facilities to serve external properties. In the Consultation Paper, IMDA has recommended that for buildings that are managed on a 24x7 basis, a notification period of two (2) hours to be provided to building owners/managers prior to emergency access would be reasonable. For buildings that are unmanned and/or with key card access, building owners/managers are to provide emergency access to their premises soonest possible upon notification by Licensees.

11. NetLink Trust welcomes IMDA's proposal to require building owners/managers to agree with Licensees in advance on emergency access arrangements to their premises. Such pre-agreed arrangements between building owners/managers and Licensees for urgent or immediate access to the latter's premises will ensure timely restoration of services for all end-users (including end-users who are residing at external properties) during emergencies, especially during non-office hours or public holidays and where the building is a non-residential building.

12. NetLink Trust would like to counter-propose that for buildings that are managed on a 24x7 basis, emergency access by Licensees to these premises should be granted immediately upon request by the Licensees.

13. As IMDA is aware, Licensees are subject to very stringent "safe harbour" periods, being the maximum time durations afforded to Licensees to resolve service difficulty incidents beyond which prescribed financial penalties may apply, under IMDA's regulatory framework on telecommunication service resiliency. Crucially, the speed of Licensees' service restoration and recovery efforts depend on the cooperation that they receive from third parties such as building owners/managers, in the form of prompt access to third party premises housing Licensees' installation, plant and/or system (for Licensees to carry out

the necessary service restoration or recovery work). Any delay by building owners/managers in granting Licensees access to their premises for emergency service restoration and/or recovery work will inevitably prolong the duration of the service disruption to end-users. For buildings that are manned on a 24x7 basis, NetLink Trust's counter-proposal of immediate access to such premises during service emergencies is reasonable and practicable, given that there will be personnel on-site (who are manning the buildings) to attend to Licensees' requests for emergency access.

14. For buildings that are unmanned and/or with key card access, building owners/managers should be required to provide emergency access to their premises soonest possible upon notification by Licensees.

15. NetLink Trust further proposes that IMDA should devise a set of principles and guidelines for building owners/managers and Licensees to adopt in their negotiations to put in place an agreement to secure emergency access to the former's premises. For instance, parties should be guided by the principle of ensuring that the negotiated outcome would lead to an efficient escalation procedure for emergency access, whereby Licensees would be able to promptly escalate to a higher authority in the event access could not be procured on an urgent basis, or if the primary contact person provided by the building owner/manager could not be reached in a timely manner.

Section 4 – Requirements to Enhance Network and Service Resilience

16. In its Consultation Paper, IMDA has requested for views and comments on whether the current requirement of two (2) sets of lead-in pipes (i.e. one set in vital services buildings and essential facilities, with an additional set at a different location) is sufficient for resilience purposes.

17. For added resiliency, NetLink Trust would like to recommend that different sets of lead-in pipes be positioned at different locations/roads (where practicable). Such diversity in location of the lead-in pipes will minimise the risk of single point of failure at the entry points to vital services buildings and essential facilities.

18. NetLink Trust also agrees with IMDA's proposal to expand the diversity requirements for buildings that accommodate vital services, to mandate the provision of an additional Main Distribution Frame ("MDF") room, telecommunication riser and cable distribution system in such buildings.

Section 5 – Provision of Cables to Telecommunication (Non-Broadband Coaxial Cable) Systems in all Developments

(a) <u>Requirements for the Provision of Internal Telecommunication Wiring for Non-Residential Developments</u>

19. In its Consultation Paper, IMDA has discussed the merits of requiring building developers/owners to pre-install additional infrastructure during the construction of non-residential developments to facilitate the provisioning of telecommunication services to

the non-residential units. In this regard, IMDA has made clear that it is only considering to require building developers/owners to pre-install fibre or infrastructure that supports fibre (such as air blown tubes from the MDF room to each non-residential unit).

20. NetLink Trust agrees with IMDA's assessment in regards to the need for a more efficient and cost-effective framework to support the provisioning of telecommunication services to non-residential developments.

21. As IMDA righty pointed out in its Consultation Paper, the existing arrangements whereby Licensees have to separately liaise with building developers/owners to access cable trays and cable distribution systems pre-installed by the latter, each time the Licensee receives a service request from an end-user in a non-residential development, is inefficient, disruptive and time-consuming. Building developers/owners and Licensees are required to incur additional costs and resources repeatedly owing to the need to: *(i)* open and reinstate access panels to access cable trays and cable distribution systems concealed by false ceilings/panels; and *(ii)* remove and reinstate fire-stop seals in telecommunication risers between floors, each time the latter receives a service request from an end-user.

22. NetLink Trust strongly supports IMDA's proposal to require the pre-installation of internal telecommunication wiring in non-residential developments and into each non-residential unit, and agrees with IMDA that the medium for the internal telecommunication wiring should be fibre-based. Where internal telecommunication wiring could not be pre-installed, NetLink Trust further agrees with IMDA that building developers/owners should be required to pre-install air blown tubes in non-residential developments and to each non-residential unit (or to the nearest feasible point connecting to the non-residential unit).

23. In addition, NetLink Trust proposes that as part of the submission of building plans by building developers/owners to the Telecommunication Facility Coordination Committee ("TFCC"), building developers/owners should be required to provide the following information as part of their submissions:

(i) Pre-installation of cables in Strata Buildings (with pre-determined units in accordance with records lodged with the Inland Revenue Authority of Singapore ("IRAS")) –

Building developers/owners shall include the unit assignment per riser per floor for proper recording and cable allocation.

(ii) Pre-installation of cables in Non-Strata Buildings (without pre-determined units in accordance with records lodged with IRAS) –

Building developers/owners shall include the proposed number of units per riser per floor for proper cable allocation.

(iii) Building developers/owners shall provide a schematic diagram/plan indicating the specific units that will be served from each telecommunication riser.

Additional Comment – Use of Space and Facilities within a Development for the Provision of Telecommunication Services to Properties Outside of the Development

24. In putting forth its proposals to: *(i)* designate rooftops as the preferred location for Mobile Deployment Space ("MDS"); and *(ii)* allow the use of MDS to not only serve the property development itself, but also allow Mobile Network Operators ("MNOs") to use the MDS to house equipment to serve External Areas, IMDA has noted that *"[with] increasing demand for pervasive mobile services in land scarce Singapore … it is not feasible for MNOs to rely solely on public areas to deploy equipment to provide mobile coverage to areas outside the property developments ("External Areas")."* [1]

25. NetLink Trust submits that IMDA should take cognisance that the same concern on scarcity of land in Singapore also applies to the provision of fixed-line telecommunication services by Licensees.

26. The last-mile network topology for fixed-line networks is typically configured in a hub-and-spoke topology. Such network topology is widely employed by telecommunication network operators in rolling out large-scale nationwide networks due to its efficient design. This design approach is particularly relevant and beneficial to Singapore given that land is scarce in Singapore. Importantly, the efficient design of the hub-and-spoke topology ultimately translates to a lower and more optimal cost structure for the provision of telecommunication services in Singapore, thereby benefitting end-users as the cost efficiencies feed through to lower regulated prices and hence lower costs for them.

27. In adopting the hub-and-spoke topology for their last-mile access networks, Licensees select a development that would serve as a hub, and in turn use that development to provide telecommunication services to a cluster of external properties outside of that development.

28. Currently, Licensees are required under COPIF to pay an access charge to the building developer/owner, whenever they access its development to carry out any activity relating to the installation, plant or system that is deployed to serve external properties outside of that development. Licensees are also required to notify the building developer/owner in advance of their intent to use the space and facilities in its development to serve any external property.[2]

29. NetLink Trust respectfully submits that IMDA should not, on the one hand allow the use of MDS by MNOs to provide mobile coverage within a particular development and its External Areas, but on the other hand require that space and facilities made available by a building developer/owner (pursuant to its obligations under COPIF) to fixed-line network operators to primarily serve the telecommunication needs of that development only. Where the fixed-line network operators require the use of the space and facilities to serve

---

[1] Page 3, paragraph 12 of the Consultation Paper

[2] Chapter 17 of the Code of Practice for Info-communication Facilities in Buildings 2013 – *"Use of Space and Facilities within a Development for the Provision of Telecommunication Services to Properties Outside of the Development"*

external properties outside of the development, IMDA is currently requiring these operators to take on the additional obligations outlined in the preceding paragraph.

30. NetLink Trust's position is consistent with IMDA's proposal to allow MNOs to use MDS to provide mobile coverage to External Areas. Accordingly, IMDA should amend the relevant provisions in COPIF to require that space and facilities made available by building developers/owners (pursuant to their obligations under COPIF) must by default be available for use by Licensees (in particular, fixed-line network operators) to serve both their developments and external properties outside of the developments. Furthermore, Licensees should not be required to pay an access charge, or any other charges, to the building developer/owner for accessing and using the space and facilities provided by the building developer/owner to serve external properties outside of its development.

31. It is important to note that the operational efficiencies and cost savings derived from the efficient design of the hub-and-spoke topology (which necessitates the use of a development to provide telecommunication services to a cluster of external properties outside of that development) ultimately benefit all end-users, in the form of lower regulated prices and hence lower costs for end-users, and more efficient service deliveries and operational maintenance of these services.

Additional Comment – Enhanced Security Measure for Main Distribution Frame Rooms and Telecommunication Equipment Rooms

32. For added security, NetLink Trust proposes that Chapter 12 (Main Distribution Frame Room, Telecommunication Equipment Room & Mobile Deployment Space) of COPIF 2013 should be amended to incorporate an obligation on building developers/owners to provide security locks for MDF rooms and Telecommunication Equipment Rooms ("TERs").

Additional Comment – Ensuring Efficient Use of Space and Facilities by Licensees

33. In its Consultation Paper, IMDA noted that copper infrastructure had been phased out for new residential developments and increasingly, tenants in non-residential units no longer rely on the copper network for telecommunication services. NetLink Trust agrees with IMDA's observations, and would like to propose that with the cessation of copper-based services in most developments, Licensees should be required to remove their copper infrastructure and associated equipment as and when these are no longer required for the provision of telecommunication services in a particular development.

34. NetLink Trust further proposes that IMDA should consider imposing a timeframe for the Licensee's removal of its copper infrastructure and associated equipment, such that the space and facilities (including but not limited to space in MDF rooms, telecommunication risers and lead-in pipes) occupied by these infrastructure and equipment could be made available for use by other Licensees in a timely manner. This is especially crucial for older developments (typically located in mature housing estates and non-residential developments in the Central Business District), where the shortage in space and facilities provided by building developers/owners is more severe.

Additional Comment – Provision of Broadband Coaxial Cable System

35. Building developers/owners are currently required to install broadband coaxial cable systems in all residential developments, including the provision of RG6 coaxial cables terminating into a multi-way splitter at one end, and into an F-type TV outlet each in the living rooms and bedrooms (of each residential unit) at the other end.

36. In view of IMDA's proposal to require building developers/owners to provide an additional 2-core optical fibre cable in each residential unit of all residential developments (in addition to the minimum of one (1) 2-core optical fibre cable that they are currently required to provide under COPIF 2013), NetLink Trust would propose to relieve building developers/owners of the requirement to install broadband coaxial cable systems in new residential developments.

37. Fibre is increasingly the preferred medium used by consumers to serve their broadband needs. In light of this pervasive use of fibre (for broadband services), NetLink Trust believes that it would be prudent of IMDA to re-evaluate the relevance of broadband coaxial cable systems in new residential developments. Clearly, removing the requirement for building developers/owners to pre-install broadband coaxial cable systems in new residential developments will lead to more effective use of the space and facilities made available by building developers/owners (pursuant to their obligations under COPIF); it will also avoid wastage of building resources that are required to support the deployment of broadband coaxial cable systems in residential developments.