



**CONSULTATION PAPER ISSUED BY  
THE INFO-COMMUNICATIONS MEDIA DEVELOPMENT AUTHORITY**

**SECOND PUBLIC CONSULTATION ON THE REVIEW OF  
THE CODE OF PRACTICE FOR INFO-COMMUNICATION FACILITIES IN  
BUILDINGS (“COPIF”)**

**20 April 2018**

**PART I: INTRODUCTION**

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**PART I: INTRODUCTION**

1. On 26 April 2017, IMDA invited views and comments on proposed key changes to the Code of Practice for Info-communication Facilities in Buildings (“**COPIF**”). These proposed key changes that need to be made to the COPIF are intended to reflect the Telecommunications Act (Cap. 323) (“**Telecoms Act**”) amendments effected in 2017, as well as to keep pace with market and technology developments.<sup>1</sup> The purpose is to enhance in-building infrastructure to enable Smart Nation initiatives in leveraging technology to better serve the needs of citizens, strengthen and empower communities and use tech-enabled solutions to boost and further support the evolving info-communication needs of users.<sup>2</sup>
2. At the close of the public consultation on 21 June 2017 (“**first public consultation**”), IMDA received comments from 11 respondents including M1 Limited, Mediacorp Ltd, NetLink Trust, Mr Harish Pillay, Sheraton Towers Singapore, Singapore Telecommunications Ltd, SP Telecoms, StarHub Ltd, SuperInternet Access, Superloop Pte Ltd and TPG Telecom Ltd. IMDA thanks the respondents for their views and feedback. We have also received 3 other responses requesting confidential treatment, which IMDA accepted.
3. IMDA has given careful consideration to the views and comments submitted in each of the responses. IMDA notes that while the views and comments received relate largely to the matters identified in IMDA’s consultation paper, some additional issues were also raised for IMDA’s consideration. These include some new market developments related to residential co-axial cabling, giving rise to modifications not previously anticipated under the first public consultation, which would require new proposed amendments to COPIF requirements as part of this second round of public consultation. Having considered these recent market developments and assessed the consultation responses together with IMDA’s overall policy objectives and purpose of the COPIF, IMDA would like to now invite further comments and views on the draft of the revised COPIF (“**Proposed Revised Code**”).
4. The next section summarises IMDA’s position on the key proposed changes to COPIF 2013 raised in the first public consultation, including IMDA’s assessment

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<sup>1</sup> On 5 August 2016, the Ministry of Communications and Information (“**MCI**”) conducted a public consultation and review of the Telecoms Act. The Telecommunications (Amendment) Bill was subsequently passed in Parliament on 10 November 2016 and the Telecommunications (Amendment) Act (“**Telecoms (Amendment) Act**”) 2016 came into effect on 1 February 2017.

<sup>2</sup> [www.smartnation.sg/initiatives/Services](http://www.smartnation.sg/initiatives/Services)

of the views and comments received in that public consultation. In order to improve clarity and ensure that the regulatory framework remains relevant to the recent market developments, IMDA has:

- (i) refined requirements on the responsibilities and obligations of respective building developers or owners ("**developers/owners**") of developments and telecommunication licensees ("**Licensees**"), in connection with the info-communication space and facilities provided pursuant to the COPIF ("**COPIF Space and Facilities**"); and
- (ii) proposed modifications to in-home co-axial cabling requirements for residential developments.

## PART II: IMDA'S POSITION ON KEY ISSUES IN THE PROPOSED REVISED COPIF

### SECTION 1 – Use and Scope of Mobile Deployment Space (“MDS”) provided within a development to provide mobile coverage

5. In the COPIF 2013, developers/owners are required to set aside a specified amount of rent-free space known as Mobile Deployment Space (“MDS”), within their developments at the request of Mobile Network Operators (“MNOs”) to facilitate their deployment of mobile equipment to ensure good in-building mobile coverage.<sup>3</sup>
6. In addition, IMDA sets Quality of Service (“QoS”) requirements to regulate the performance of mobile services provided by MNOs such that they achieve reasonable standards, and to ensure that nationwide mobile coverage, including in-building, is provided to the public.

#### Designation of rooftops as preferred location for MDS

7. In the first public consultation, IMDA had proposed that rooftops be designated as the preferred location for MDS, i.e. developers/owners of developments must provide rooftop space as MDS, upon request by MNOs who are required to provide nationwide mobile coverage. In line with current requirements, building developers and owners are to provide such IMDA-prescribed rooftop space as MDS on a rent-free basis. IMDA notes that respondents were generally supportive of the proposed designation of rooftops as the preferred MDS location, although one respondent disagreed citing that the building would not benefit from rooftop mobile deployments and that instead, it would pose an inconvenience to the building owner.
8. IMDA would like to clarify that, contrary to the respondent's comments, the nature of mobile technology in built-up environments such as Singapore's urban landscape gives rise to a situation where in-building mobile coverage for a development may be better served by mobile deployments on rooftops from an adjacent development and vice versa. As such, it would result in developments deriving mutual benefit from mobile deployments in each other's properties.<sup>4</sup> This is also the basis on which the framework effected by the Telecoms (Amendment) Act 2016 to designate rooftops as preferred MDS is formulated. Consequently, IMDA will proceed to designate rooftops as such in the Proposed Revised Code.
9. Separately, one respondent suggested that the treatment of preferred rooftop spaces to be used as MDS by MNOs should similarly be offered to the national broadcaster for broadcasting services. IMDA has since studied the needs and

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<sup>3</sup> The exact amount of rent-free space depends on the size of the building/development.

<sup>4</sup> This was explained in significant detail in MCI's public consultation on the amendments to the Telecoms Act, which resulted in the Telecoms (Amendment) Act 2016 being effected on 1 February 2017. See footnote 1.

requirements of the national broadcaster. Unlike telecommunication services which require deployments in nearly every building, be it within the building or on the rooftops, the national broadcaster's deployment is more limited and mainly confined to public housing estates. Given the increasing and competing demand for rooftop use due to other services e.g. solar panels, green spaces etc., it would not be reasonable for IMDA to require *all* buildings to comply with the COPIF to provide rooftop spaces to meet the limited request from the national broadcaster. IMDA has considered that a more effective approach to facilitate the national broadcaster's requirements would be for IMDA to work with the Housing Development Board and the respective Town Councils directly to facilitate the provision of suitable spaces at the identified buildings. Hence, IMDA will not be incorporating the respondent's proposed suggestion for same treatment as MDS, for the use of preferred rooftop spaces.

### Treatment of existing agreements for use of rooftop MDS

10. Some respondents had sought clarity on the treatment of existing/current agreements in place for the use of rooftop MDS. For example, one respondent suggested that the termination of existing agreements be allowed, so that rooftop space would be free of rental charges with immediate effect. IMDA has assessed the suggestion and holds the view that existing commercial agreements should continue to run their course until their expiration, unless developers/owners and MNOs are able to reach an alternative arrangement.
11. On how the amendments would affect existing contractual agreements between developers/owners and mobile operators for mobile deployments, the Minister for Communications and Information, Dr Yaacob Ibrahim, had emphasised in his speech on the Telecommunications (Amendment) Bill, which was effected on 1 February 2017, that:
 

*"I would like to reiterate that these amendments will not affect existing contracts, which should carry on until their expiry. In relation to the... example of a mobile operator cancelling its existing contract in order to relocate to the same building again on a rent-free basis, I understand that similar concerns were raised when the COPIF was first introduced in 2013. However, since then, IMDA has not seen such cases being surfaced. Removing and re-installing mobile equipment is indeed very expensive. Mobile operators are also hesitant to accept protracted disruptions to their mobile coverage while a new contract is being negotiated. The bottom line is, it is not in their favour to do the relocation."*<sup>5</sup>
12. The proposed framework for rooftop MDS will thus apply only after the termination or expiry of these agreements or arrangements. This is borne out of both respecting the parties' contractual rights as well as providing regulatory certainty.

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<sup>5</sup> Response speech for second reading of the Telecommunications (Amendment) Bill, Dr Yaacob Ibrahim, Minister for Communications and Information during the parliamentary sitting on 10 November 2016.

13. However, IMDA recognises that there may be agreements or contracts with unique considerations. For such cases, IMDA is cognisant that flexibility may be required to cater to such considerations where appropriate, and will advise the parties directly where required.

#### Perpetual agreements for rooftop access arrangements

14. One respondent also went on to suggest that perpetual agreements for the use of rooftop MDS be allowed, to ensure certainty in the infrastructure deployment for rooftops as well as reduce administrative burden on MNOs to review and renegotiate agreements. IMDA disagrees with such a posit. Firstly, building owners' property rights would have to be respected and weighed carefully against the public benefit of enhanced mobile coverage conferred by rooftop deployments and enhanced mobile coverage. Moreover, where pre-existing agreements for rooftop access have been made, they should continue until expiration. Going forward, the parties are free to negotiate and review the agreements depending on their needs and requirements. IMDA thus does not see a need to mandate perpetual agreements for the use of rooftops.

#### Charges incurred in connection with access to rooftop MDS

15. A number of respondents were concerned about the question of charges or fees for rooftop access; specifically, divergent views were put forward on the party responsible for bearing costs in connection with the provision of MDS. Some viewed that building owners should not be allowed to charge for providing access to rooftops or other associated costs, while others commented that MNOs should bear associated costs. IMDA has further considered the current shared responsibilities of stakeholders in connection with MDS requirements, including access to rooftop MDS, and the fundamental principles involved. IMDA's views are set forth in the subsequent paragraphs.
16. IMDA acknowledges that the provision of MDS imposes costs on developers/owners. Since the introduction of the requirement for developers/owners to provide MDS in 2013, IMDA has taken further steps to streamline the duties and obligations of developers/owners while simultaneously ensuring that the provision of MDS would facilitate MNOs' network deployment.
17. Generally, MNOs are to be responsible for any costs reasonably and efficiently incurred in association with the provision of MDS. IMDA recognises that each development would have its own specific requirements in relation to the MDS provided, e.g. the need to apply for regulatory approvals for the conversion of use of carpark lots to MDS or to meet regulatory requirements. As developers/owners already pay for the construction costs of the development and its facilities, if subsequent changes to any of these facilities are required specifically due to the MNO's choice of MDS location and thereby incurring costs, the MNO ought to bear any such costs which otherwise would not have been incurred by the developer/owner. However, developers/owners should

provide all reasonable assistance, e.g. provide plans if they are available, at their own costs, in facilitating MNOs' access for their provisioning of MDS. In order to minimise the potential disputes between the stakeholders on the responsibility for costs, IMDA has included more details in relation to the stakeholders' responsibilities in the Proposed Revised Code.

#### Expansion of scope of MDS and prioritisation of use

18. With the proposed designation of rooftop MDS as the preferred location, some respondents had suggested that IMDA assign prioritisation of use of rooftop MDS over other uses. While IMDA recognises that MNOs may continue to face various challenges on the ground even after considerable effort to obtain the use of MDS, the developers'/owners' assertion of their property rights should similarly be acknowledged. However, developers/owners should be reasonable in assessing the MNOs' request for access to MDS, including those for the expanded service scope to also serve areas beyond the development. For example, developers/owners should not reject MNOs' request for access to MDS for aesthetic reasons without providing an opportunity for MNOs to resolve the matter, or deny access requests based on the developers'/owners' reservation of rooftop space for some unknown use in the future. IMDA takes the view that MNOs ought to reasonably address developers'/owners' concerns (e.g. attend to those issues raised by the developer/owner) and in working to reasonably alleviate those concerns, access should be permitted by developers/owners to MNOs with greater ease. However, where developers/owners have excessive requests (e.g., requiring MNOs to make excessive structural and aesthetic modifications, such as a complete refurbishment beyond what is necessary), IMDA would not require such requests to be fulfilled.
19. Above all, the spirit of collaboration and principle of good faith should be guiding tenets towards achieving what is ultimately enhanced mobile coverage for every end-user, building and development, benefiting from inter-dependent rooftop deployments. In this regard, IMDA will proceed to incorporate provisions into the Proposed Revised Code that expand the scope of MDS to be used to house equipment to not only serve the property development itself, but also a wider area beyond the development (i.e. "**External Areas**"). IMDA has also refined obligations to safeguard developers'/owners' interests (e.g. by way of requirements for MNOs to reasonably address concerns raised), while requiring the developers'/owners' provision of MNOs' access to rooftop MDS in the Proposed Revised Code. These changes seek to strike a balance between reassuring developers/owners and meeting MNOs' deployment requirements, while recognising the overall benefit brought to the public by enhanced mobile coverage.

## SECTION 2 – Requirements of Space and Facilities to be provided to MNOs

### Location of MDS

20. In the first consultation, IMDA recommended that the location of MDS should be decided by the MNO seeking to deploy its mobile network, in consultation with developers/owners, subject to availability of suitable space. Most respondents welcomed the proposed change that MNOs would be the determinant of the MDS location henceforth. IMDA proposes this in recognition that, while there is a greater need for MNOs to take into consideration their larger network topology in assessing suitable locations to site their equipment, it would also relieve developers/owners of the added responsibility of selecting the location of MDS, particularly in view of the expanded service scope to also serve External Areas.
21. Notwithstanding the above, it may be useful to retain certain criteria to provide guidance as to where the MDS may be located (e.g. not locating equipment in flood-prone areas). This may assist in pre-empting disputes between the developer/owner and the MNO as to the suitability of available space; particularly as developers/owners may have little or no knowledge of mobile network topology factors, while MNOs may likewise lack practical awareness of the building's or development's full layout and its specifics. IMDA will therefore indicate such guiding criteria as to where the MDS should be located. As with existing practice, allocation of MDS (including rooftop MDS) need only be provided by developers/owners upon the MNO's request, subject to meeting the minimum requirements as set out in the Proposed Revised Code.

### Size of MDS

22. With the proposed refinements to other MDS requirements, i.e. not including the requirement on size, IMDA does not see a need to require changes to the stipulated MDS space in the COPIF 2013 (with the exception of unique projects requiring special considerations and much longer-term advance planning, i.e. train tunnels). A few respondents had claimed in their responses that with the entry of a new MNO, more space overall would be needed for MNOs to deploy their equipment. However, IMDA holds a different view as the current MNOs have ceased operating their 2G mobile networks and not every MNO may require the use of the same location in every development. Moreover, developers/owners are already having to provide preferred rooftop MDS for enhanced mobile coverage, allowing MNOs to have more deployment space options available to them under the Proposed Revised Code. On such grounds as a start, IMDA maintains the recommendation not to increase the MDS size in buildings.
23. Some respondents had sought further clarity and refinements to current COPIF requirements, in connection with various aspects and details of the sizing of MDS. We set out the respondents' main points and IMDA's position on these as follows:

- a) Each disaggregated MDS should be at least 8m<sup>2</sup>
- i. One respondent highlighted that under the COPIF 2013, each disaggregated MDS should be at least 8m<sup>2</sup>. If the floor space occupied by each antenna is considered as MDS, this would run contrary to the requirement as such space is likely to be less than 8m<sup>2</sup>.
  - ii. IMDA had prescribed a minimum size of 8m<sup>2</sup> under the current COPIF 2013 requirements to ensure that the developer/owner would provide a reasonably-sized MDS, where it is disaggregated space. IMDA understands that for technical reasons, however, MNOs sometimes prefer to install ancillaries such as antennae at different locations on rooftops to provide mobile coverage to different sectors.
  - iii. Where the disaggregated floor space is occupied by ancillaries such as floor-mounted antennae which occupy approximately 1m<sup>2</sup> for each antenna location, IMDA holds the view that it would not be practical or useful for developers/owners to provide a space of 8m<sup>2</sup> for each of such ancillaries.
  - iv. IMDA also recognises that if IMDA were to insist for each of these locations to be at least 8m<sup>2</sup>, MNOs would exceed the allocated MDS if MNOs wished to deploy their antennas in different locations to obtain the most optimal mobile coverage, or otherwise MNOs would be limited in their antenna deployment.
  - v. In considering the operational needs of MNOs to deploy equipment in different locations, IMDA further proposes not to specify nor distinguish the minimum size between single contiguous and disaggregated space, i.e. IMDA proposes to do away with the minimum 18m<sup>2</sup> for single contiguous space in the Proposed Revised Code. In order to cater for operational flexibility, allowance is to be made for the likelihood that the provision of a single contiguous MDS is not always feasible especially for smaller developments. Moreover, developer/owners are generally not made worse-off since the amount of space they would have to provide as MDS, where disaggregated, remains unchanged. IMDA reiterates that as long as the total space occupied by MNOs does not exceed the total allocation stipulated under the Proposed Revised Code, the MDS would have to be provided at no charge to MNOs.
- b) Ancillaries and associated installation, plant or system
- i. In addition, where MNOs install mobile equipment in the MDS, typically associated ancillaries such as antennae, remote radio units etc. would also be deployed. The general guiding principle IMDA adopts is that ancillaries should be wall-mounted wherever possible, for optimum use of allocated space. However, where ancillaries are floor-standing and take up footprint (except for associated installations as illustrated in paragraph 23(b)(ii) below), these would be counted towards MDS while ceiling space taken up by ceiling-mounted installations such as indoor cones would be excluded.

- ii. This is to be distinguished from associated installations such as cabling and cable trays, trunking etc. which are needed to connect the mobile equipment and thus a necessary part of the cable distribution system being deployed by MNOs, for which it is impracticable to compute towards MDS. Developers/owners should not impose charges for these associated installations, but MNOs should minimise the space used for cables/cable trays (i.e. reasonable routing of cables, placed on or close to walls etc.) as much as practicable.
- iii. For the avoidance of doubt, we have set out some examples in Table 1 below.

**Table 1: Ancillary and associated apparatus for mobile deployment**

<b>Type of ancillary/ associated apparatus</b>	<b>Computed as MDS? (only <u>with</u> footprint)</b>
Cabling/trunking and cable trays	No
Ceiling-mounted indoor cones	No
Antennae	Yes
Base transmission system (BTS)	Yes
Combiner	Yes
DB box	Yes
Remote Radio Unit (RRU)	Yes

24. There was feedback from one respondent that lamp-posts and towers ought to be included as space and facilities for mobile deployment and benefit from the MDS requirement. However, IMDA sees no need to include such a requirement in the Proposed Revised Code, as lamp-posts and towers are typically erected in public spaces and not within the developer's/owner's property boundary. Where required, Licensees should approach the relevant party or government agency for use of public space and facilities. IMDA will facilitate where needed for deployment in these areas.

#### Ascertaining and determining the size of MDS

25. For clarity, besides the proposed removal of the minimum 18m<sup>2</sup> for single contiguous space, the method for determining and ascertaining the size of MDS to be provided in the respective developments remains unchanged in the Proposed Revised Code. The MDS size requirement for residential developments is illustrated in Table 2 below.

**Table 2: Mobile Deployment Space to be provided in a development consisting of 1 or more multi-storey residential buildings**

Total number of residential units in the development	Mobile deployment space (m <sup>2</sup> )	Minimum height of mobile deployment space (m)
80 to 200	24	3
201 to 600	36	
601 to 1500	54	
> 1500	To consult IMDA	

26. Similarly, the size of the MDS to be provided in a non-residential development (all of which are not tunnels), which is determined based on Mobile Coverage Area, remains unchanged under the Proposed Revised Code.<sup>6</sup> This formula is reproduced in Table 3 below.

**Table 3: Mobile Deployment Space to be provided in a development consisting of 1 or more non-residential buildings (all of which are not tunnels)**

Total mobile coverage area ('000 m <sup>2</sup> )	Mobile deployment space (m <sup>2</sup> )	Minimum height of mobile deployment space (m)
> 2 to ≤ 6	24	3
> 6 to ≤ 20	36	
> 20 to ≤ 100	54	
> 100 to ≤ 200	72	
> 200	To consult IMDA	

**Definition of Mobile Coverage Area: Gross Floor Area (“GFA”) + Land/Site area**

27. As IMDA had highlighted in the first public consultation, the original policy objective is for mobile coverage to be made available anywhere within a property development, but not all developers/owners may have included this in their computation. Hence, IMDA had consulted on the need to clarify the definition of “Mobile Coverage Area” used to determine MDS for non-residential developments. The respondents generally noted that a clearer definition of Mobile Coverage Area would be welcomed, although few offered suggestions on what they thought it encompassed and/or how it should be ascertained.
28. IMDA had put forth the view that “Mobile Coverage Area” should be based on GFA (since it is an objective and consistent basis used in standard building plans), plus site/land area. IMDA considers that it is reasonable to continue to determine the provision of deployment space for non-residential developments

<sup>6</sup> The COPIF presently defines Mobile Coverage Area as “any area within a development which is to be served by any public cellular mobile telecommunication system”.

based on the size of the property development, because the deployment and installation of mobile network equipment (especially those for in-building coverage) will still benefit the development as a whole.

29. However, there is recognition that there may be some developments that do not consist purely of built-up buildings, but may comprise open-air areas that would still need to be served by mobile coverage.
30. For example, a building such as a sports complex with facilities within the property compound such as an open-deck swimming pool on the ground floor, or a non-residential property served by an open-air carpark within its property boundary (e.g., local polytechnic or campus-style institution) would still require mobile coverage. Moreover, consideration ought to be given to each context as developments differ in design and layout.
31. Hence the definition of Mobile Coverage Area should not just be based on the built-up areas purely with GFA, but also the adjoining open land/site area within the property boundary, i.e. GFA plus land/site area. This expanded definition was set out in the first public consultation and has now been included in the Proposed Revised Code.

## SECTION 3 – Use of and Access to Space and Facilities by Licensees

### Use of COPIF Space and Facilities: Rules of Usage

32. IMDA recognises that not every developer/owner would have the same house rules for Licensees and will largely leave it to the parties' mutual agreement. On IMDA's earlier proposal to rely on the requirements set out under the COPIF Rules of Usage as a guide to establish minimal requirements for house rules as well as to facilitate resolution of disputes over house rules between the parties, most respondents commented that the requirements set out in the existing Rules of Usage under paragraph 16.4 of COPIF 2013 were still relevant and that additional requirements ought to be included.
33. In particular, several respondents highlighted that with the proposed changes to designate rooftops as the preferred location for MDS and to give MNOs the option to select their MDS location, it follows that access for site deployment, enhancement, maintenance, surveys etc. should not be impeded. Feasibility studies and site surveys allow MNOs to assess and better evaluate the choice of the MDS location for optimal deployment. As a general requirement, IMDA recognises that developers/owners should facilitate Licensees' access to carry out feasibility studies and site surveys before any installation or deployment takes place.
34. Notwithstanding the generality of the above, where rooftops are feasible and selected for mobile deployments, IMDA expects MNOs to be mindful of the developers' or owners' requirements and concerns, while continuing to deploy their equipment efficiently on rooftops (e.g. wall-mounting equipment wherever possible, reasonable routing of cables close to the wall).
35. Another area of concern expressed by respondents pertained to the provision by Licensees of full indemnity and insurance against third party claims for the developer/owner being a condition(s) of access to COPIF Space and Facilities. IMDA does not agree with the inclusion of insurance co-naming or additional take-up of insurance as conditions for access to COPIF Space and Facilities. IMDA notes that usually, Licensees take up general public liability insurance as part of prudent business practice. IMDA would like to clarify further that under the COPIF 2013, Licensees are already required to make good any damage caused and that developers/owners should not be requiring Licensees to buy additional insurance. As for third party claims, these are legal matters which should be pursued privately and are therefore not appropriate to be addressed under the scope of the COPIF.
36. Separately, IMDA has weighed respondents' other areas of concern which warrant the inclusion of additional requirements related to the use of COPIF Space and Facilities. IMDA has not prescribed a template licence agreement, so that the parties can retain the discretion to agree on mutually acceptable terms. Having taken that view, IMDA is providing more guidance which may assist parties in reaching common ground on the terms of any licence

agreement that they choose to enter into. Such agreement would have to be consistent with provisions under the Proposed Revised Code and not derogate from it. Stipulating the additional proposed requirements would thus be a useful further guide to parties entering their own agreement, on how responsibilities and liabilities should be allocated in relation to Licensees' use of the COPIF Space and Facilities to be provided by developers/owners.

37. For example, where the MDS selected by an MNO in consultation with the developer/owner, is located in the development's carpark lot space which requires regulatory approvals for the application of conversion of such space to be used as MDS, the developer/owner being the party responsible for obtaining such requisite approvals shall render such necessary assistance in a timely manner. The MNO should bear the cost (if any) since such outlay due to the MNO's requirement would not have been incurred by the developer/owner otherwise, i.e. payment of application fee for change of use of the parking space.
38. Also, the existing COPIF Rules of Usage have been refined to address areas of concern raised by respondents, as well as to deal with matters IMDA considers as imperative in safeguarding developers'/owners' property rights (e.g. Licensees to minimise footprint taken up by any additional cable distribution system and to wall-mount ancillaries where feasible). This is balanced with Licensees' obligations to provide services promptly to end-users (e.g. developers/owners to provide necessary access and assistance in a timely manner to facilitate Licensees' installation and works). These and other requirements are set out further in the respective chapters of the Proposed Revised Code related to building developers'/owners' duties for the provision of, and access to, in-building space and facilities and Licensees' corresponding obligations on the same.
39. IMDA believes that there is overall merit in setting out in greater detail the scope of respective responsibilities, so that the parties would be aware of the considerations IMDA will take in assessing cases associated with the use of COPIF Space and Facilities. Should parties refer disputes relating to the application of any house rules to IMDA for resolution, IMDA will also generally rely on the abovementioned set out in the Proposed Revised Code as guiding principles in determination of the matter.

#### Access to COPIF Space and Facilities located at a height of more than four (4) metres above floor level

40. Under the COPIF 2013, where the Space and Facilities are located at a height of more than 4 metres above floor level ("**Height Limit**"), the building developer or owner shall provide the necessary means, including the provision of mechanised equipment (i.e. cherry-pickers, boom lifts) or facilities such as scaffoldings ("**Equipment**"), for Licensees to access such Space and Facilities in accordance with prevailing legislation or regulatory requirements on workplace safety and health, at no cost to the Licensees.

41. On IMDA's proposal to shift the obligation from developers/owners to Licensees, to provide the necessary means of access to the cable distribution systems or other COPIF Space and Facilities which are located above the Height Limit, there were mixed views. Some respondents expressed concerns over various scenarios related to the granting of access, physical constraints posed to machinery by built structure(s) and discretion on choice of contractors. Nonetheless, most respondents agreed with IMDA that it would be more practical and cost-effective for Licensees to rely on their own resources (i.e. through ownership or lease of such Equipment) to access the Space and Facilities above the Height Limit, due to the frequency with which Licensees need to rely on such Equipment at different buildings.
42. Despite this, one respondent raised further concerns with Licensees having to bear additional cost for providing their own means of access, e.g. scissor-lifts. IMDA acknowledges that the provision of own means of access may pose a burden on Licensees. With more buildings now having Space and Facilities at heights of more than 4 metres, IMDA considers it more reasonable for Licensees or their appointed contractors to own such Equipment. IMDA is of the view that such changes would allow Licensees the benefit of speedier provisioning and turnaround time to the relevant tenants obtaining their services. Moreover, the costs incurred would be recoverable by building in the cost through appropriate avenues, e.g., Licensees may recover such costs from end-users by way of one-time charge for service provisioning.
43. As such, IMDA will proceed to include provisions for Licensees to provide their own means of access in the Proposed Revised Code, as well as require developers/owners to allow Licensees their choice of contractors and not be restricted to the developer's/owner's contractors, except where warranted for security reasons (e.g. in highly secured locations, where only specific contractors are authorised to enter the premises).

#### Access to COPIF Space and Facilities – emergencies

44. From time to time, there may be instances where Licensees need to access Space and Facilities urgently to repair or replace their equipment to restore services. IMDA has made recommendations for stakeholders on Emergency Access in the first public consultation. In particular, IMDA considers it imperative to highlight Emergency Access provisions to minimise disruptions to end users when services experience downtime for one reason or another. While there was one respondent which disagreed with IMDA's proposal, citing that the recommendations would entail a difficult and lengthy process to complete and maintain, most respondents were very supportive of IMDA's recommendations, with some comments calling for a definition to be laid out for emergencies. IMDA agrees that having a specific definition in this case would be useful, and likely avoid stakeholder disputes later over what constitutes Emergency Access under COPIF. IMDA takes the view that Emergency Access is needed for situations that require restoration of telecommunication service(s), due to outage or downtime, which cannot be resolved by the Licensee remotely. Licensees should not be prevented from Emergency Access for the purpose of

service restoration, unless there are immediate safety and danger concerns. The definition of Emergency Access and its related processes have been set out in the Proposed Revised Code.

45. IMDA proposed in the first consultation that the Emergency Access to be provided by building owners to Licensees would depend on building type, i.e. manned buildings with Emergency Access to be provided within 2 hours of Licensee's notice, while unmanned buildings should be accessible "soonest possible" after notice, on a best effort basis. Most Licensees, while supportive of having Emergency Access requirements, had more stringent views of the proposed parameters, seeking an even shorter period of Emergency Access in most cases, e.g. 1 hour upon notice for unmanned buildings and immediate access for manned buildings, arguing that a greater sense of urgency is required when providing Emergency Access to developments.
46. One respondent indicated that at least for unmanned buildings, an upper limit should be defined for more certainty and proposed that Emergency Access should be provided within a maximum of 6 hours from notice. While IMDA agrees that having an upper limit for unmanned buildings would be helpful, 8 hours as an upper limit would be more reasonable, especially in consideration of incidents arising in the early hours of the morning that would need longer response times for manpower activation. In any case, building owners and on-duty building managers should also act with urgency to facilitate Emergency Access as far as possible. IMDA will monitor developments and may adjust the upper limit to better meet the needs of Licensees, while taking into consideration, the concerns of developers/owners and building managers.
47. While IMDA expects Licensees to plan for emergencies prudently and manage their emergency procedure arrangements adequately, e.g. exchange/update contact details with the relevant person(s), provide accurate information etc., building owners are also expected to co-operate in good faith to provide such Emergency Access expeditiously. IMDA has included this obligation for both building owners and Licensees in the Proposed Revised Code, as such mutual adherence to requirements for updated information would facilitate smoother access arrangements when an emergency arises.
48. In addition, IMDA will retain its recommendations for Emergency Access procedures with some refinements for clarity in the Proposed Revised Code. In particular, for manned buildings, access should be granted for emergency cases 2 hours from notice; whereas for unmanned buildings e.g. those with key-card access etc., Emergency Access ought to be granted as soon as reasonably possible but in any case not more than 8 hours from notice. As the COPIF applies to all Licensees, IMDA considers it too onerous that more stringent emergency access requirements (applicable to only a particular group of Licensees with specific obligations) are in effect imposed on all building owners. Such Licensees are to give careful consideration to their own regulatory obligations and abide by their respective commitments, as set out under other regulatory codes and standards.

49. On other comments related to Emergency Access, some respondents were concerned about treatment of costs incurred in connection with the provision of Emergency Access, e.g. paying for security escorts, and suggested that if it is allowed, such charges should be limited. While IMDA is cognisant that current COPIF provisions prescribe requirements for normal circumstances and related issues of responsibilities for costs and their recovery, the existing provisions do not address issues related to Emergency Access, e.g., recovery of costs incurred. IMDA has considered this, and finds it reasonable to allow recovery of costs for Emergency Access should it be necessary (i.e. due to regulatory requirements) that a security escort is hired, and where additional resources are incurred, to provide secured Emergency Access. Also, “out of pocket” expenses or additional costs reasonably incurred, e.g. transport cost incurred by the building manager specifically to facilitate Emergency Access for an unmanned building, may be claimed on a cost recovery basis.

## SECTION 4 – Requirements to Enhance Network and Service Resilience

### Buildings housing vital services

50. With telecommunication services becoming an integral part of business operations, IMDA has required Licensees to enhance the resilience of their network and services, e.g., through the provision of network redundancy and diversity. Such enhancement of resilience for network and services would be even more critical for those business end-users who are dependent on telecommunication services to provide vital services to the public, who cannot risk any downtime, whether based on their individual business needs or due to other regulatory requirements. It is significant for the building premises which house the vital service(s) operations to be constructed with infrastructure diversity, which would enable resilient services to be provided if required.
51. As such, and in consideration of the comments and types of buildings suggested by respondents as part of the first public consultation, IMDA has set out a list of such buildings that would require resilience and diversity provisioning in the Proposed Revised Code. These include:
- a) hospitals;
  - b) ports of entry for land, air and sea, including immigration checkpoints;
  - c) police and fire stations;
  - d) utility plants;
  - e) data centres; and
  - f) key financial centres such as the Stock Exchange.

Other types of buildings not listed above may also have diversity provisioning, if the developer/owner decides and sees fit to do so based on the development's needs.

### Resilience of networks and services

52. On the question of whether requirements of 2 sets of lead-in pipes (i.e. one set in vital services buildings and essential facilities and the other set at a different location) were sufficient, along with whether the 2 sets of infrastructure should be mandated or not, all respondents agreed that it was sufficient to have 2 sets of lead-in pipes and 2 sets of infrastructure, with most respondents in support of 2 sets of lead-in pipes and 2 MDF rooms and telecom risers. Also, the general view was that it should be left to the developer's/owner's discretion to decide if they require building resiliency needs to be met, unless it involved a vital services building. In essence, IMDA will require diversity provisioning and resilience to be catered for buildings housing vital services (a non-exhaustive list of examples of such buildings has been provided in the preceding paragraph). Therefore, such buildings will need to be provided with 2 sets of lead-in pipes and 2 sets of infrastructure (2 MDF rooms and telecom risers). For other buildings not included in the list of examples and not housing such vital services, IMDA agrees with respondents' comments that the

developer/owner may decide if they require such diversity provisioning and cater accordingly.

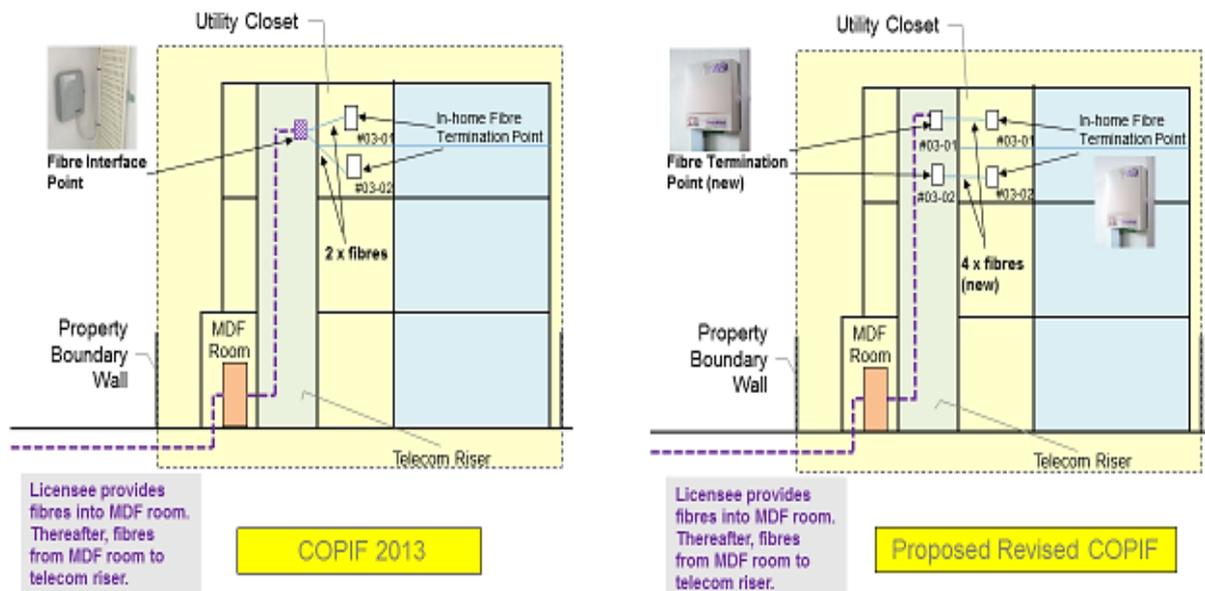
53. In addition, where diversity is required and therefore 2 sets of MDF rooms and risers are to be provided, respondents commented that the additional MDF room must be at a different location with the respective lead-in pipes leading to different roads. IMDA agrees that network resilience will be enhanced with positioning at different roads/locations. However, IMDA's view is that the second set of diversity requirements need not be equal to the first set provided by the developer/owner. Being mindful of resource allocation and avoidance of wastage, and as the requirements for the additional MDF room meant for diversity are to be provided over and above the allocated specifications, IMDA will not require that the second MDF room for resiliency be of the same size as the first MDF room. For the avoidance of doubt, however, the second MDF room is required to be of the minimum size as set out in the requirements for non-residential buildings under the Proposed Revised Code, i.e. minimum dimensions of the MDF room shall be 3m (length) by 2m (breadth) by 3.5m (height). Specifically, for larger developments more than 2,000m<sup>2</sup>, the second MDF room need not be of the exact scale or proportions as the first one to be provided by the developer/owner, as long as it is of the stipulated minimum dimensions, at a different location and offers redundancy options. Building developers/owners are encouraged to cater for the abovementioned, in view of resiliency purposes. More details on the network and service resilience and infrastructure requirements are set out further in the Proposed Revised Code.

## **SECTION 5 – Provision of Cables for Telecommunication (excluding Broadband Coaxial Cable) Systems in all Developments**

### Residential developments: requirements for optical fibre cable installation

54. Currently, cable installation requirements for residential units specify one (1) 2-core optical fibre cable to be provided. IMDA had sought feedback on whether a total of 4-core optical fibre, i.e. an additional 2-core optical fibre cable, should be provided to meet future needs of homes. The consultation responses received by IMDA were supportive of such a recommendation, welcoming the need to expand to 4-core optical fibre for each home. With the prevalent use of sensor networks and Internet-of-Things devices, coupled with the need for higher broadband speeds, 4-core optical fibre may be needed to support smart home solutions for the future.
55. Other respondents went on to suggest that an additional 2-core fibre termination point (“**FTP**”) would be needed and that the additional 2-core optical fibre should terminate at the second FTP, which itself should terminate at a second fibre interface point (“**FIP**”) in the riser. Having studied the various options put forward, including the current situation of the FIP, IMDA considers that having the FIP (with all fibre from different residential units terminating in the same box) gives rise to congestion in the box and poses maintenance issues for Licensees. IMDA proposes to do away with the FIP but will require a FTP with 4 ports to be installed in the riser for each residential unit, as it would be neater and less subjected to disruption during service provisioning and/or maintenance. Also, there would be clearer demarcation of responsibility where each unit would have its own FTP in the riser, thereby allowing easier replacement of the FTP if necessary, without disruption to services provided to other residential units served from the same riser. The following Diagram A illustrates the proposed changes at the risers to be made under the Proposed Revised Code.

### **Diagram A: FIP and FTP proposed changes between COPIF 2013 and the Proposed Revised Code**



56. IMDA will thus adopt the 4-core optical fibre for each unit in residential developments and include specifications for the 4-core optical fibre cable that comply with ITU-T G.652.D specifications. IMDA will remove the FIP requirements but will require separate FTPs in the risers for each residential unit. The 4-core optical fibre cable, entailing 4 sets of corresponding Standard Connectors/Angle Polished Connectors and FTPs, shall be provided in accordance with the requirements set out in the Proposed Revised Code.
57. For the avoidance of doubt, the existing buildings with both the FIPs and FTPs already installed in accordance with the COPIF 2013 requirements will continue to be subject to those provisions. This includes matters relating to maintenance and service provisioning, etc.

#### **RJ45 outlets and supporting power outlet requirements**

58. In addition, several respondents suggested that additional RJ45 outlets were required within a residential unit to support future needs, with these being located in the ceiling or high along the walls of the living room for the optimisation of home-networking services. To cater to the pervasive use of smart devices within the home, IMDA has assessed that it would be practical to have a RJ45 outlet at a high point within the residential unit (e.g. the ceiling) for IP cameras and Wi-Fi access points for optimal in-home coverage. The recommendations for:
- 2 RJ45 outlets for each living/dining room; and
  - 1 RJ45 outlet for each bedroom
- in a residential unit/property are thus incorporated in the Proposed Revised Code. Given that the design and layout of each residential unit/property differ,

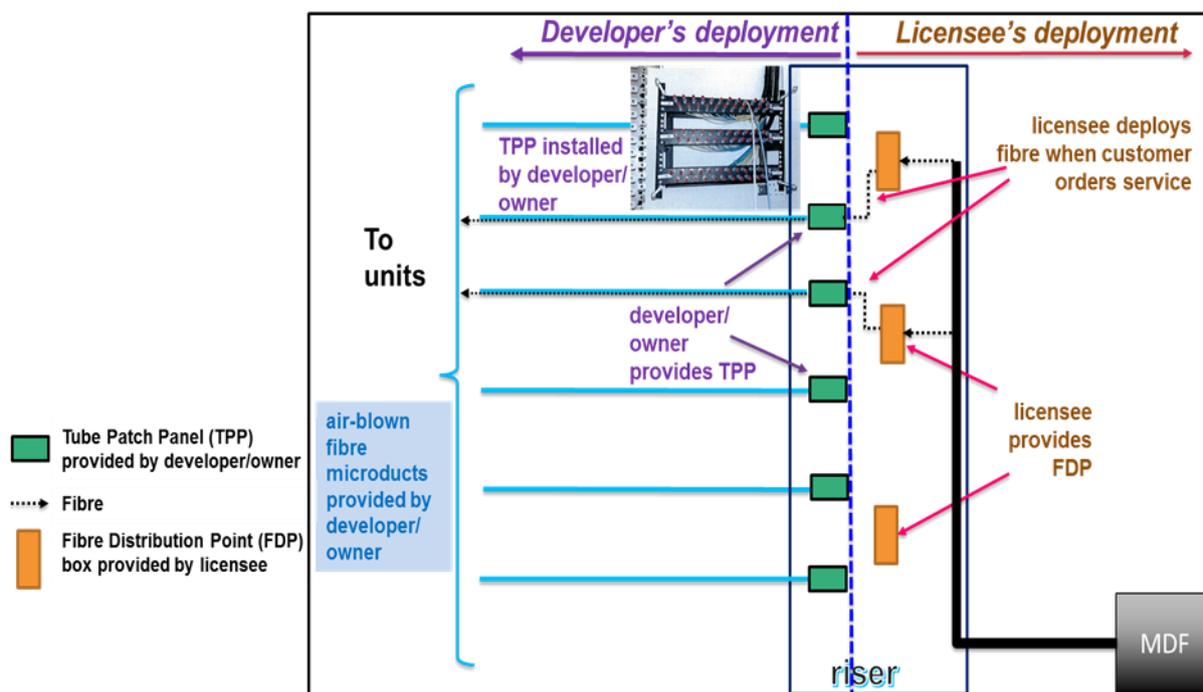
IMDA will leave it to the developer's or owner's discretion on the design of the RJ45 outlet layout within their development.

59. In anticipation of the active equipment (e.g. IP camera, Wi-Fi router, IP phone, Optical Network Terminal etc.) that would be installed beside the RJ45 outlet and FTP, the RJ45 outlet(s) and FTP would have to be placed adjacent to an electrical switch socket outlet. IMDA considers it reasonable for the developers to provide the following:
- two (2) 13A electrical switch sockets at the FTP; and
  - each RJ45 outlet to be placed adjacent to a 13A electrical switch socket.

Non-residential developments: requirements for the provision of internal telecommunication wiring

60. In response to the question of whether developers/owners should be required to carry out pre-installation of fibre or infrastructure to facilitate provisioning of telecommunication services to non-residential units, respondents mainly commented that pre-installation of infrastructure was a welcome move. One respondent suggested that internal telecommunication wiring to be pre-installed should consist of minimally 6-core fibres per non-residential unit with a 6-port outlet to be deployed within the unit's perimeter. IMDA has considered this suggestion of pre-wiring with 6-core fibre, and generally takes the view that there are several challenges.
61. Firstly, the location of FTPs cannot be determined upfront, due to the nature of non-residential units' ever-changing configuration. It is highly likely that the tenant or owner would need to relocate the FTP deployed by the developer if IMDA were to require pre-wiring of fibre. Secondly, unlike residential developments, there are likely to be more service providers deploying their own infrastructure to serve non-residential developments, and there are likely to be extensive use of the COPIF Space and Facilities, including the risers. There may be insufficient space in the telecom riser to house multiple FTPs, if IMDA were to require pre-wiring of fibre, while housing the fibre in a single FIP would pose maintenance issues, as the Licensee's connections may be inadvertently dislodged by another Licensee during service provisioning or maintenance. Delays may arise due to disagreements over the party responsible for repairing the fibre, as multiple service providers may use the same 6-core fibre.
62. In light of the above, IMDA does not recommend this approach due to the likely potential wastage of resources (as the FTP is likely to be relocated by tenants or owners of the non-residential units), maintenance issues and delays in repairs.
63. Alternatively, if fibre need not be pre-installed, IMDA has proposed other facilities such as 2-way air-blown fibre microducts ("**ABF microducts**") as another means of pre-installation of infrastructure to facilitate service provisioning in non-residential developments.

64. IMDA has considered that due to the nature of non-residential developments which are more frequently re-configured in layout when tenants move in and out of units on a short to mid-term basis, this ABF microducts solution does not require a fixed location of FTP as the ABF microducts terminating in the units will be coiled above the ceiling in the units. Concurrently, IMDA is also recommending for the ABF microducts, which are to be provided by the developer/owner, to be terminated in appropriate frames with brackets in the riser at each floor and to allow Licensees to determine the amount of fibre to deploy in the risers. Further, developers/owners need not worry about fibre repairs which they are probably unfamiliar with.



**Diagram B: Air-blown fibre microducts for non-residential developments**

65. The adoption of 2-way ABF microducts is thus recommended due to faster, simpler provisioning as fibres are blown direct to the units. More importantly for the developers/owners, such provisioning will be less inconvenient to tenants while allowing flexibility in determining FTP location. There would also be a lower likelihood of wastage of resources. Even if a unit is served by multiple Licensees, there is likely to be easier maintenance and speedier repairs as Licensees are not dependent on one another. As such, IMDA is requiring 2-way ABF microducts to be provided by the developer/owner from the riser at each floor to every unit in new non-residential developments and this is included in the Proposed Revised Code. See Diagram B.
66. This is intended to be a practical and sustainable obligation for the developer/owner to provide ABF microducts, such that even when the layout and configuration of the non-residential unit is changed to multiple units, and where tenants move in and out of the respective units and change service providers, the ABF microducts are re-usable. The fibres installed by the

previous Licensee within the ABF microducts may be easily removed (by the previous Licensee, when the service is terminated) for the new Licensee to blow in their fibre for service provisioning where required.

## SECTION 6 – Developments consisting of 1 or more Road or Mass Rapid Transit System (“MRT”) Tunnels

67. The mobile network deployed to provide mobile coverage at residential or non-residential buildings differs from the network deployed to provide mobile coverage to road or MRT tunnels. While deployment issues for road and train tunnels take many years in the making, IMDA holds the view that setting general requirements for such facilities would provide a baseline upon which the stakeholders can negotiate more specific requirements where those needs arise and take on any access challenges. This would also contribute to stakeholders’ better implementation efficiency.
68. On space requirements for mobile coverage in road and train tunnels, there were several respondents who commented that an increase of the MDS in developments consisting of MRT tunnels was required due to growth in capacity needs. They had called for an increase from the current provision of 40 m<sup>2</sup> to up to 80m<sup>2</sup> of MDS. IMDA notes that MRT developments involve long-term planning cycles typically lasting up to 10 years, which need to take into account growing future needs. IMDA agrees that an increase of MDS in such developments may be necessary, and notes that the current space of 40m<sup>2</sup> provided in MRT developments is already heavily utilised and may pose challenges for further expansion in addition to the entry of a new MNO. In considering the above and to cater for future requirements, IMDA proposes to increase the size of MDS to 60m<sup>2</sup>.
69. In addition, large-scale development projects (e.g. High Speed Railway, Changi Airport Terminal 5 etc.) may require a more customised approach to ensure that appropriate provisioning of in-building space and facilities are catered for. As these large-scale developments typically have specific in-building space and facilities needs which vary on a case-by-case basis, IMDA deems it necessary to provide for such flexibility in the Proposed Revised Code. Hence, while there are general requirements laid out for developments consisting of road and train tunnels, IMDA has also specified that stakeholders (i.e. Licensees and developers/owners) may discuss their requirements where the case may so require.
70. On the need for suitable specifications for niches, IMDA is proposing some requirements as a guide.<sup>7</sup> As it would be difficult to retrofit the tunnels with required niches once the tunnels have been constructed and are in operation, IMDA is of the view that it would be better to cater to these specifications during the design stage. Should the developer/owner and MNOs be agreeable with other intervals, the parties may negotiate accordingly. IMDA is including niche requirements for tunnels to cater for this in the Proposed Revised Code.
71. On leaky cable (“**LCX cable**”) requirements, some respondents had requested space for 4 LCX cables to be provided at the centre of road tunnels and at

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<sup>7</sup> Niches are recesses within the wall, or enclosures that are set back or indented, along both the road tunnels and train tunnels.

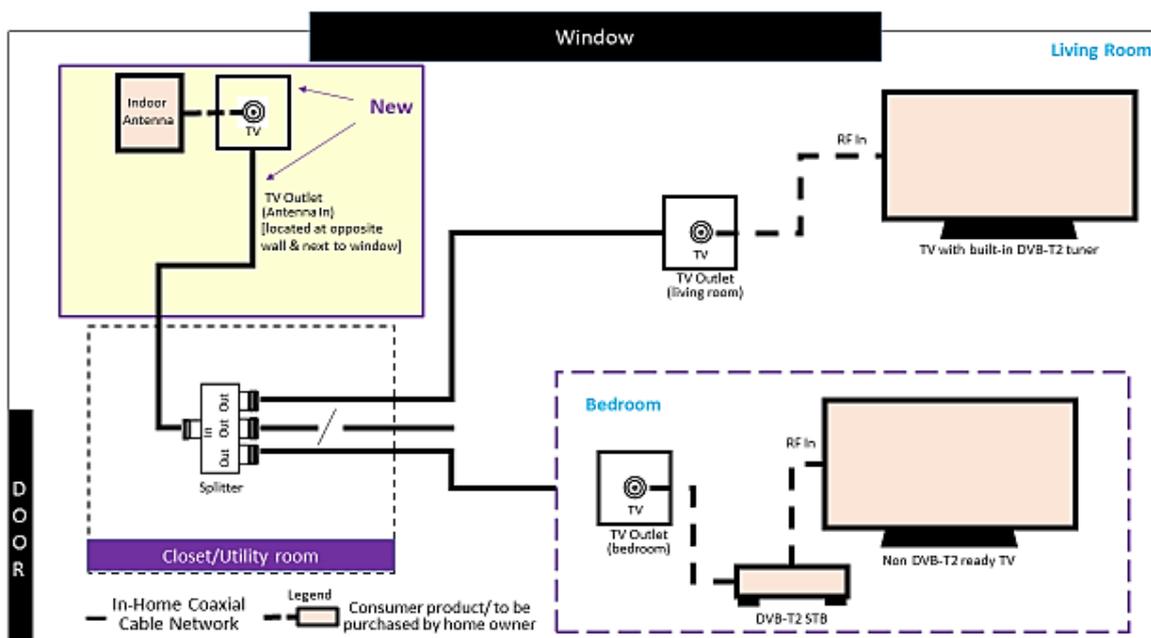
window height for MRT tunnels for ideal coverage. IMDA considers that while this may be good to have, it may be limited by other considerations, e.g. space constraints, which the developer/owner might be constrained by. Hence, to balance the needs of all parties, IMDA is including requirements for space for at least 2 LCX, while also requiring that the parties work together towards provision of space for 4 LCX where such space is available.

## SECTION 7 – Further changes introduced to the Proposed Revised Code

72. In addition to the key proposed changes discussed above in the preceding sections, IMDA is also proposing the following amendments in the Proposed Revised Code.

### Broadband Co-axial System (“BCS”) for residential developments

73. It has recently been brought to IMDA’s attention that StarHub Cable Vision has plans to cease its Hybrid Fibre Co-axial (“HFC”) infrastructure installation to new residential buildings, come May 2018. It follows that IMDA will need to assess whether the existing co-axial cabling obligation ought to be retained or modified in the Proposed Revised Code.
74. IMDA has explored the possible uses and modification of the co-axial cabling for Free-To-Air (“FTA”) TV, in support of Mediacorp Digital TV (“DTV”), to allow residential units to continue the use of co-axial cabling for the distribution of DTV signals. One of the options that IMDA has considered is to allow the home owners to attach an antenna to one of the newly-required TV inlets to distribute TV signals within the home. With this in mind, IMDA is seeking feedback on the proposed re-configuration or modification to the in-home co-axial cabling to support distribution of DTV signals within the residential unit as prescribed in the Proposed Revised Code.
75. IMDA proposes the solution, in support of Mediacorp’s DTV, as illustrated in Diagram C with the black dotted lines representing a possible connection of indoor antenna, set-top box and TV set to television outlets and connection points for end-users’ in-home co-axial cabling.



**Diagram C: Proposed re-configuration of in-home co-axial cabling**

### Other related changes included in the Proposed Revised Code

76. Other changes which have been included into the relevant sections of the Proposed Revised Code following StarHub Cable Vision's impending cessation of its HFC network roll-out include:
- (i) decrease in minimum number of switch socket outlets and isolators (from 3 to 2) to be provided in the MDF room of residential developments;
  - (ii) decrease in provision (1 less) of the number of:
    - lead-in pipes from the gate pillar to the roadside drain; and
    - underground pipes from the gate pillar of the house into the house for individual landed and strata landed dwelling-houses;
  - (iii) decrease in provision (1 less) of the number of conduits of a minimum size of 20mm in diameter from the telecommunication riser to the units, for strata landed dwelling-houses and multi-story residential buildings.

### Requirements on Manhole Cover Design

77. Natural gas emitted from the earth and town gas are lighter than air. In the event of a gas leak underground, natural and town gases will rise and dissipate in the atmosphere provided they are not trapped in any enclosed space. Underground facilities, mainly manholes and cable conduits/ducts, could be potential repositories of the leaked gas. If gas accumulated in the underground facilities is left undetected, any ignition of the gas may result in an explosion and cause severe damage to surrounding property, personal injury and/or loss of human life.
78. Recent incidents such as the explosions in Taiwan (Kaohsiung) in 2014 highlighted that such incidents can happen and the significant damage to lives and properties should they occur. The Energy Market Authority ("EMA") and IMDA have thus been studying various measures to mitigate the risk of such explosions involving underground facilities. IMDA has also studied measures deployed in overseas jurisdictions and sought views from Licensees that rollout such underground infrastructure.
79. In view of public safety concerns related to the deployment of underground telecommunication infrastructure (i.e. ducts and manholes), IMDA has required appropriate safety measures to be taken by Licensees to better safeguard life and property in connection with all underground plant and associated installations they install. In the same vein, IMDA is also proposing that some of the mitigation measures be included in the Proposed Revised Code for manholes installed by developers/owners within their property compound.
80. The Proposed Revised Code will require all new manhole covers to be designed to address the following considerations:
- (i) discharge gas from the manhole and prevent gas accumulating in the manhole;

- (ii) allow gas companies to conduct gas checks at the manhole;
- (iii) maintain the structure of the manhole cover and not compromise the current loading;
- (iv) prevent the breeding of mosquitoes; and
- (v) prevent the manhole cover from turning into a harmful projectile should there be explosions due to gas accumulation.

The Proposed Revised Code thus makes recommendations on a new manhole cover design with new features that are able to address the above considerations.

81. These recommendations for new features in the manhole cover design will be applicable to building developers/owners who deploy manholes in their development.

**PART III: PROCEDURE AND TIMEFRAME FOR SUBMITTING COMMENTS**

82. IMDA would like to seek views and comments on the Proposed Revised Code.
83. All views and comments should be clearly and concisely written, and should include a reasoned explanation for any proposed revisions. Where feasible, submissions should identify the specific provision of the Proposed Revised Code which the comments relate to. Where comments include suggesting revision to the text of the Proposed Revised Code, the respondent should clearly indicate the specific changes in language being proposed.
84. IMDA strongly discourages parties from repeating representations that have been made in the first public consultation, which IMDA has already taken into consideration in the Proposed Revised Code. Comments should focus accordingly on the specific changes proposed in this round of the consultation.
85. All submissions should be submitted in soft copy (preferably in Microsoft Word or PDF format), and should reach IMDA **by 12 noon, 17 May 2018**. Respondents are required to include their personal/company particulars as well as the correspondence address, contact number and email address, in their submissions. All views and comments should be addressed to:

**Aileen Chia (Ms)**  
**Director-General (Telecoms & Post)**  
**Deputy Chief Executive (Policy, Regulation & Competition Development)**  
**Infocomm Media Development Authority**  
**10 Pasir Panjang Road**  
**#03-01 Mapletree Business City**  
**Singapore 117438**

Please submit your soft copies, with the e-mail header "Second Public Consultation on the Review of COPIF", to this e-mail: [\*\*Consultation@imda.gov.sg\*\*](mailto:Consultation@imda.gov.sg)

86. IMDA reserves the right to make public all or parts of any written submission and to disclose the identity of the source. Commenting parties may request confidential treatment for any part of the submission that the commenting party believes to be proprietary, confidential or commercially sensitive. Any such information should be clearly marked and placed in a separate annex. If IMDA grants confidential treatment, it will consider (but will not publicly disclose) the information. If IMDA rejects the request for confidential treatment, it will return the information to the party that submitted it and will not consider this information as part of its review. As far as possible, parties should limit any request for confidential treatment of information submitted. IMDA will not accept any submission that requests confidential treatment of all, or a substantial part, of the submission.