



**CONSULTATION PAPER**

**REVIEW OF THE CODE OF PRACTICE FOR INFO-  
COMMUNICATIONS FACILITIES IN BUILDINGS (“COPIF”) FOR THE  
NEXT GENERATION NATIONAL BROADBAND NETWORK**

**INFOCOMM DEVELOPMENT AUTHORITY OF SINGAPORE**

**20 November 2007**

## **PUBLIC CONSULTATION DOCUMENT**

### **REVIEW OF THE CODE OF PRACTICE FOR INFO-COMMUNICATIONS FACILITIES IN BUILDINGS (“COPIF”) FOR THE NEXT GENERATION NATIONAL BROADBAND NETWORK**

**20 November 2007**

#### **1 INTRODUCTION**

- 1.1 The current Code of Practice for Info-communications Facilities in Buildings (“COPIF”) came into effect on 15 September 2000. The purpose of the COPIF is to ensure that developers or owners of buildings (hereinafter “developers or owners”) provide adequate space and facilities within their buildings for the installation of equipment and plant used by Facilities-Based Operators (“FBOs”) to provide info-communication services to the building occupants.
- 1.2 Depending on the building type to be developed, the COPIF sets out the detailed specifications of the relevant space and facilities which developers or owners are to construct when developing their buildings. This is to avoid the situation where a building is found to lack sufficient space and facilities after its construction is already completed, thereby causing unnecessary delays to the provision of services, additional costs to developers or owners in carrying out remedial works and unsightly alterations that may mar the aesthetics of the building. A review on COPIF was undertaken in 2005 to ensure its continual relevance. However, the review was put on hold to take into consideration the additional space and facilities requirements that might be required for the Next Generation National Broadband Network (NGNBN).
- 1.3 The NGNBN will be a new network capable of ultra high speed of symmetric 1 Giga bits per second (Gbps) or more, with initial provisioning of 100 Mega bits per second (Mbps). The NGNBN project is currently at the Pre-Request-for-Proposal (RFP) Competitive Dialogue stage.
- 1.4 Upon completion of competitive dialogue with various consortia who are qualified for the pre-RFP stage of the NGNBN project, IDA has obtained inputs from them and arrived at these additional space and facilities that would be needed to support the deployment of NGNBN. It is therefore timely for IDA to review the COPIF to ensure that the requirements specified therein are updated to meet the additional needs for rolling out the NGNBN into new buildings. For the avoidance of doubt, the proposed

changes highlighted in the following paragraphs are changes in addition to those that have been proposed in the Draft COPIF 2005 public consultation. The details of Draft COPIF 2005 public consultation and public comments can be viewed and accessed at the following website:

<http://www.ida.gov.sg/Policies%20and%20Regulation/20060926180955.aspx>

## 2 PROPOSED CHANGES

### (A) Internal Wiring & Cabling Distribution System for Single or Multiple units of Landed Residential properties

- 2.1 Currently, for single-unit landed residential property, IDA has **recommended** that the property owner provides 3 number of 50mm diameter uPVC lead-in pipes between the gate pillar and the road-side drain, 2 number of underground 50mm diameter uPVC pipes from the gate pillar to the utility room (or closet), internal wiring and horizontal distribution system for telephone services and broadband coaxial cable system (BCS). For a building development consisting of 2 or more units of landed residential properties, IDA requires the above-mentioned facilities to be provided by the developer or owner as a **mandatory** requirement.

#### Proposal

- 2.2 To facilitate the deployment of NGNBN, IDA proposes that the revised COPIF will include a **mandatory** requirement on the developer or owner of single or multiple units of landed residential properties to install the following additional facilities:

- a) one number of empty 50mm diameter underground uPVC pipe from a utility room (or closet) of each landed residential property to a point 1 meter beyond the road-side drain. The bending radius of this pipe shall not be less than 300mm to facilitate the laying of next generation cable into each landed property. This pipe in the utility room (or closet) is to be terminated into an empty 160mm (H) x 80mm (W) x 25mm (minimum internal depth) (2-gang) box on a wall with a blank face plate. A drawn-rope will be provided in this empty underground pipe to facilitate the NGNBN cable to be pulled in. Where the above-mentioned uPVC pipe is provided directly into the property, the required number of lead-in pipes between the gate pillar and the road-side drain will be reduced from the existing recommendation of 3 pipes to 2 pipes;
- b) a minimum installation of one unshielded twisted pair (UTP) Category 6 cable, which complies with the TIA/EIA 568-B specifications, from a wall-mounted RJ45 outlet in a utility room (or closet) to a wall-mounted RJ45 outlet at the living room or a bed room to facilitate deployment of Ethernet-to-the-home for high-speed broadband services and other advance telecommunication services to each unit of the residential properties; and
- c) two electrical 230V 13A switched socket outlets (i.e. power points) at the location where the above-mentioned empty 50mm pipe is terminated. These outlets are for the purpose of providing electrical power supply to the NGNBN equipment and home networking equipment (e.g. router, LAN hub/switch, etc).

2.3 While IDA only mandates the installation of one UTP Category 6 cable to the living room or a bed room, IDA recognises the merit of having the entire property be cabled up with Category 6 cables. IDA therefore **strongly recommends** building developers/owners to install Category 6 structured cabling between a RJ45 patch panel in the utility room (or closet) and RJ45 outlets in all rooms for broadband home networking within each unit of the residential properties. Where a patch panel in the utility room (or closet) is installed, the RJ45 outlet as stated in paragraph 2.2 (b) should be incorporated in the patch panel.

(B) **Internal Wiring & Cabling Distribution System for Multi-storey Multi-tenanted Residential Properties**

2.4 Currently, for multi-storey multi-tenanted residential developments (e.g. public housing, apartments, etc.), the building developers are required to

install BCS for cable services and internal wiring for telecommunications services from the outset. This is to ensure that tenants are able to subscribe to cable and telephone services if they so choose to after they purchase their units from developers.

### Proposal

2.5 To facilitate the deployment of NGNBN, IDA proposes that the revised COPIF will include a mandatory requirement on developers or owners to install the following:

- a) an empty 20mm diameter uPVC conduit in straight run from the telecommunication riser to each residential unit (preferably be terminated in the utility closet). The conduit may be concealed in walls and/ or floor slab and the bending radius of the central line of the conduit shall not be less than 100mm to facilitate the installation of next-generation broadband cable(s). The conduit in the residential unit is to be terminated into an empty 160mm (H) x 80mm (W) x 25mm (minimum internal depth) (2-gang) box on a wall with a blank face plate. A drawn-rope will be provided in this empty conduit to facilitate the NGNBN cable to be pulled in;
- b) a minimum installation of one unshielded twisted pair (UTP) Category 6 cable, which complies with the TIA/EIA 568-B specifications, with a wall-mounted RJ45 outlet from the location where the empty 20mm conduit is terminated to a wall-mounted RJ45 outlet at the living room or a bed room to facilitate deployment of Ethernet-to-the-home for next-generation broadband services and other advance telecommunication services to the residential unit; and
- c) two electrical 230V 13A switched socket outlets (i.e. power points) at the location where the above-mentioned empty 20mm conduit is terminated. These outlets are for the purpose of providing electrical power supply to the NGNBN equipment and home networking equipment (e.g. router, LAN hub/bridge, etc.).

2.6 While IDA only mandates the installation of one UTP Category 6 cable to one room, IDA recognises the merit of having the entire unit cabled up with Category 6 cables. IDA therefore **strongly recommends** building developers to install Category 6 structured cabling between a RJ45 patch panel in the residential unit and RJ45 outlets in all rooms for broadband home networking within the residential unit. Where a patch panel is

installed, the RJ45 outlet as stated in paragraph 2.5 (b) should be incorporated in the patch panel.

### **3 TRANSITION TO REVISED COPIF**

- 3.1 In respect of building developers/owners, the revised COPIF, which will include the above-mentioned requirements for NGNBN, shall apply to all building developers/owners who obtain the requisite permission from the URA (i.e. Provisional or Written Permission, Acknowledgement from Plan Lodgement Scheme or Planning Clearance) to develop their buildings, on or after the date on which the revised COPIF comes into effect (the "Effective Date"). The Effective Date is expected to fall within the 1<sup>st</sup> half of 2008.
- 3.2 Building developers/owners whose buildings are under construction or have already been fully developed prior to the Effective Date of the revised COPIF shall not be required to provide the additional space and facilities as stated in paragraph 2. However, building developers/owners will be required to comply with the revised COPIF when they carry out addition or alteration work to their existing buildings after the Effective Date.

### **4 REQUEST FOR COMMENTS**

- 4.1 IDA hereby invites interested parties to submit comments regarding the proposed amendments to the COPIF. Respondents must identify the specific provisions of the revised COPIF on which they are commenting. Where appropriate, respondents are encouraged to suggest proposed changes to the COPIF, including drafting language, and the proposals should be accompanied by an explanation of the reasons for the changes.
- 4.2 All comments should be submitted in writing, in both hard and soft copy (preferably in Microsoft Word format). The submissions must reach IDA by **12 noon, 4 December 2007**. Respondents are required to include their personal/company particulars as well as the correspondence address in their submissions to this Consultation Paper. Submission should be addressed to:

Mr Andrew Haire  
Deputy Director-General (Telecoms)  
Infocomm Development Authority of Singapore  
8 Temasek Boulevard  
#14-00 Suntec Tower Three

Singapore 038988  
Fax: (65) 6211-2116

AND

Please submit your softcopy via e-mail to: [IDA\\_Consultation@ida.gov.sg](mailto:IDA_Consultation@ida.gov.sg).

- 4.3 IDA reserves the right to make public all or parts of any written submissions made in response to this Consultation Paper and to disclose the identity of the source. Any part of the submission, which is considered commercially confidential, should be clearly marked and placed as a separate annex. IDA will take this into consideration when disclosing the information submitted.