

SUBMISSION IN RESPONSE TO THE PROPOSED MODIFICATIONS TO THE INTERCONNECTION OFFER FOR THE PROVISION OF SERVICES ON THE NEXT GENERATION NATIONWIDE BROADBAND NETWORK – REVIEW OF OPENNET PTE LTD’S INTERCONNECTION OFFER

1. INTRODUCTION

1.1. Singapore Telecommunications Ltd (**SingTel**) is pleased to respond to the Info-communications Development Authority of Singapore (**IDA**) request for submissions in respect of the review of OpenNet Pt Ltd (**OpenNet**) Interconnection Offer (**ICO**) set out in the consultation paper issued by the IDA on 8 November 2011 (**Consultation Paper**).

1.2. SingTel’s submission in response to the Consultation Paper is structured as follows:

Section 1 – Introduction

Section 2 – Executive summary

Section 3 – Main body

Attachment A – Table of comments on specific clauses of ICO

2. Executive summary

2.1. In summary, SingTel submits that:

- The ICO should be revised to include fibre access to OpenNet’s Connectivity Points as a service to enable a Requesting Licensee to access OpenNet’s Mandated Services without compelling the licensee to acquire additional services (e.g. segment services).
- Majority of the manual operational processes in the ICO are outdated since OpenNet has implemented access to the OpenNet Platform. Operational processes in the ICO should be updated to include details of automated processing.
- Many of the operational processes within the ICO are currently undefined and difficult to carry out in practice. The ICO should be revised to provide greater clarity in respect of operational processes and more definitive terms and conditions relating to these operational processes.

- The ordering and provisioning processes, as currently drafted, provide little operational certainty. The ICO contains numerous examples of operational processes specified at a high level, but without any applicable or appropriate timeframes or sufficient detail (e.g. installer appointment management). These operational processes should be revised to provide greater clarity and certainty.
- 2.2. In addition to the main body of this submission (Section 3), SingTel has made detailed comments in relation to specific clauses in the ICO, which it considers need to be revised, in Attachment A of this submission.
- 2.3. Unless SingTel has stated otherwise, comments in relation to a specific clause within a specific Schedule should be taken to apply to clauses that are similar within other Schedules of the ICO.
3. **Main body**

ICO should be revised to offer fibre access to OpenNet’s Connectivity Points

OpenNet must offer access to Mandated Services at all technically feasible Connectivity Points

- 3.1. As the IDA is aware, interconnection for Requesting Licensees who wish to deploy their own infrastructure (i.e. fibre cables) to OpenNet’s Central Office to connect to the OpenNet network is not currently provided for under OpenNet’s ICO. This is a serious shortcoming in the current OpenNet ICO that must be addressed.
- 3.2. The Code of Practice for Competition in the Provision of Telecommunications Services 2010 (**Telecom Competition Code**) requires the Dominant Licensee to offer and allow interconnection to occur at any technically feasible point, including fibre distribution frames¹:

“...a Dominant Licensee must offer to allow interconnection to occur at any technically feasible point.”; and

“A Dominant Licensee must also offer to provide Facilities-based Licensees with access to UNE at the following points of access (“POA”) in its exchange MDF, building MDF and outdoor cabinets (if controlled by the Dominant Licensee):

¹ Code of Practice for Competition in the Provision of Telecommunication Services 2010, Appendix 2 Schedule of Interconnection Related Services and Mandated Wholesale Services, Section 3.3 and 6.5.

- (a) *Distribution frames;*
- (b) *Fibre distribution frames; and*
- (c) *Digital cross connect frames”.*

3.3. Furthermore, the IDA has required OpenNet to offer access to its passive infrastructure at any technically feasible Connectivity Point in the Code of Practice For Next Generation National Broadband Network NetCo Interconnection (**NetCo Code**)²:

“The ICO shall state that access to the Licensee’s infrastructure will be offered at any technically feasible Connectivity Point in order to access Mandated Services provided by the Licensee. At a minimum, the Licensee shall offer to allow interconnection at the following Connectivity Points:

- (a) *MDFs at the CO;*
- (b) *DFs at TERs/MDF Rooms of Residential Premises and Non-Residential Premises;*
- (c) *1st TPs of Non-Residential Premises and Residential Premises; and*
- (d) *any other Connectivity Points that the Licensee may propose.”*

3.4. The IDA should require OpenNet, and OpenNet has an obligation under both the Telecom Competition Code and the NetCo Code, to offer access to its passive infrastructure at any technically feasible Connectivity Point.

3.5. This is consistent with international best regulatory practice.

3.6. The WTO *Regulation Reference Paper*, to which Singapore is a signatory, requires signatory countries to ensure interconnection at any technically feasible point³.

3.7. In light of the above, the IDA’s position over more than 10 years and international best regulatory practice, OpenNet must be required to offer interconnection at any technically feasible Connectivity Point under the ICO, including at:

- (a) the OpenNet Co-location Space; and
- (b) OpenNet’s Fibre Distribution Frame (**FDF**) at OpenNet’s NetCo Room.

Services under the ICO should be modular

3.8. A Requesting Licensee should be able to acquire access to Mandated Services without being forced to acquire additional services such as segment services or Co-location Services from OpenNet.

² Code of Practice for Next Generation National Broadband Network NetCo Interconnection, Section 6.1.

³ WO, *Telecommunications Services Reference Paper*, 24 April 1996, Article 2.2.

- 3.9. Currently, the ICO does not require OpenNet to offer cost-based access to a Requesting Licensee to enable it to connect to Mandated Services acquired under the ICO (e.g. Residential End User Connection). This creates significant inefficiencies by forcing Requesting Licensees to acquire a number of unnecessary network elements from OpenNet to connect to the OpenNet network to access Mandated Services.
- 3.10. For example, SingTel, as a Requesting Licensee, is forced to acquire segment fibre services and Co-location Services to connect to the OpenNet network to access Mandated Services. These additional elements unnecessarily increase the costs borne by the Requesting Licensees requiring access to the OpenNet network.
- 3.11. Forced acquisition of Co-location Services as well as segment fibre services to establish interconnection between the OpenNet network and the Requesting Licensee's network means that the fibre requires patching at several locations. Currently, the fibre needs to be patched at 7 different points, required on a per end-user connection basis. Each additional and unnecessary fibre patching point introduces an optical loss rate of -0.4 to -0.5 dB as well as an additional point of failure.

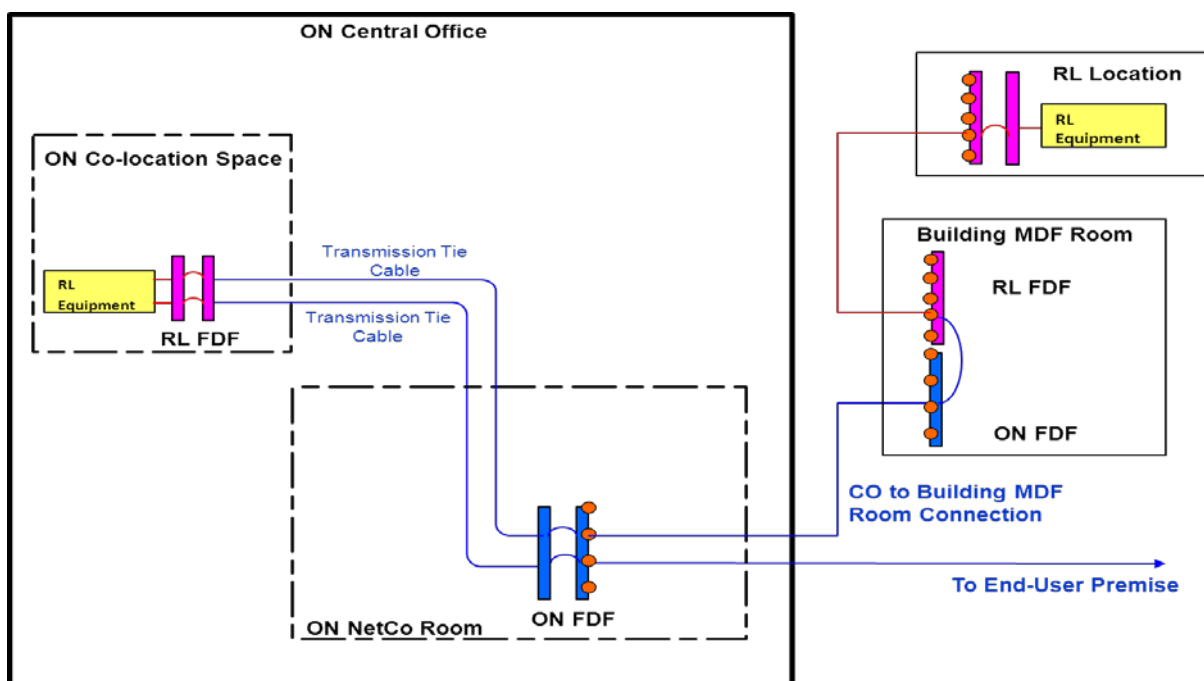


Figure 1: Current network configuration to access End User Connection Service

- 3.12. This is squarely inconsistent with the NetCo Code.

- 3.13. Sub-section 2.3(c) of the NetCo Code provides that the ICO shall be “*modular, allowing a Qualifying Person to purchase only those Mandated Services it wants to obtain*”.
- 3.14. The principle of modularity equally applies to the SingTel Reference Interconnection Offer (**RIO**). Section 6.3.2 of the Telecom Competition Code requires that the RIO be:
- “(iii) ... modular, allowing a Requesting Licensee to purchase only those Interconnection Related Services and Mandated Wholesale Services that it wants to obtain;”*
- 3.15. This is consistent with the IDA’s comments in favour of modularity of services being offered under the RIO.
- 3.16. The IDA has stated that⁴:
- “...it is IDA’s requirement that SingTel’s RIO must be modular, thereby allowing a Requesting Licensee to purchase only those Interconnection Related Services that it wants to obtain under any of the separate schedules to SingTel’s RIO If the Requesting Licensee decides not to accept SingTel’s offer of co-location under Schedule 8D of SingTel’s RIO and instead concludes an alternative agreement with SingTel for co-location at SingTel’s cable landing station by any other means, SingTel must not deny the Requesting Licensee connection to the Cable System by accepting Schedule 4B of SingTel’s RIO (our emphasis).”*
- 3.17. Further, the IDA has commented that⁵ “*the RIO should expressly state that a Requesting Licensee need only purchase, on an unbundled basis, those IRS that it wants to use.*”
- 3.18. This is consistent with international best regulatory practice.

⁴ IDA, *IDA's Direction to SingTel to Submit Revised Proposed Amendments to SingTel's RIO to Offer Connection Services, Schedule 1 (General Concerns)* 24 June 2002, available at [http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/proposed_amendments_cable_landing_stations/Schedule1_\(general_concerns\).pdf](http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/proposed_amendments_cable_landing_stations/Schedule1_(general_concerns).pdf)

⁵ http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/proposedRIO/Required_Elements.pdf

3.19. The WTO *Regulation Reference Paper* states that interconnection must be provided⁶:

“...and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided (our emphasis).”

3.20. Article 9(2) of the same Directive provides that⁷:

“2. In particular where an operator has obligations of non-discrimination, national regulatory authorities may require that operator to publish a reference offer, which shall be sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested, giving a description of the relevant offerings broken down into components according to market needs, and the associated terms and conditions including prices (our emphasis).”

3.21. SingTel submits that, in line with the fundamental principle of modularity applicable to the ICO, the RIO, the IDA’s specific direction that the RIO should be modular and with international best regulatory practice, the ICO should be revised to require OpenNet to offer fibre access at cost-based charges to enable a Requesting Licensee to deploy its own fibre to access OpenNet’s Mandated Services at the OpenNet Co-location Space or at OpenNet’s FDF within OpenNet’s NetCo Room.

OpenNet must be required to allow a Requesting Licensee to deploy its own fibre in the same way that SingTel is required under its RIO

3.22. For the purpose of establishing interconnection and/or access to Interconnection Related Services or Mandated Services under the SingTel RIO, SingTel is required to offer the price, terms and conditions on which Requesting Licensees can deploy their own fibre to SingTel Exchange Buildings and co-locate their equipment, including access to and the use of lead-in ducts and lead-in manholes.

3.23. SingTel submits that the ICO should be amended to allow a Requesting Licensee to deploy its own fibre to either connect to its own FDF at the OpenNet Co-location Space or to connect to OpenNet’s FDF within OpenNet’s NetCo Room. This is consistent with the IDA’s requirements in its recent review of, and subsequent modifications to, SingTel’s RIO.

⁶ Ibid, Article 2.2(b).

⁷ EC, *Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP)*, Official Journal L 199, 26/07/1997 P.0032 – 0052.

- 3.24. In its recent review of the RIO, the IDA required SingTel to propose modifications to the RIO to enable licensees, whose mandated services can only be accessed at SingTel's Exchange Building (**Mandated Licensees**), namely OpenNet to offer access to these Exchange Buildings to other operators who wish to deploy their own fibre cables for the purpose of accessing the Mandated Licensee's (i.e. OpenNet) services.
- 3.25. The IDA directed that SingTel be required to offer access to enable Mandated Licensees (i.e. OpenNet) to offer other licensees access to lead-in ducts and lead-in manholes, and necessary cabling and trunking, for the purpose of acquiring the Mandated Licensee's (i.e. OpenNet) services – in effect, directing SingTel to offer access to OpenNet's connectivity points / locations within SingTel's Exchange Buildings, to enable the other licensees to deploy their own fibre to these points.
- 3.26. In the same paragraph regarding the above decision, the IDA stated that such services for connection to OpenNet's connectivity points should be dealt with in the ICO. The IDA stated that:
- “... services for connections to the Mandated Licensees' connectivity points / locations should be addressed in the Mandated Licensees' interconnection offer and not in the RIO (our emphasis).”*
- 3.27. In line with the IDA's requirement above, SingTel has recently proposed modifications to Schedule 8B (Access to Mandated Services) for the IDA's review. In the new Schedule 8B, SingTel has proposed to provide the Mandated Licensee (i.e. OpenNet) with access to SingTel's Exchange Building for the purpose of enabling the Mandated Licensee (i.e. OpenNet) whose Mandated Services can only be accessed at SingTel's Exchange Building to enable other FBO licensees to access the Mandated Licensee's (i.e. OpenNet) connectivity points / locations for the purpose of acquiring Mandated Services.
- 3.28. SingTel has proposed to achieve this by providing the Mandated Licensee (i.e. OpenNet) with, either:
- (a) access from the lead-in manhole of SingTel's Exchange Building to the Mandated Licensee's (i.e. OpenNet) location within SingTel's Exchange Building (option 1 in Figures 2 and 3 below); or
 - (b) access from a location nominated by the other FBO Licensee that is within SingTel's Exchange Building to which the other FBO licensee has already

acquired access, to the Mandated Licensee's (i.e. OpenNet) location within the same SingTel Exchange Building (option 2 in Figures 2 and 3 below),

to access OpenNet's Mandated Services at the OpenNet Co-location Space (Figure 3 below) or at OpenNet's FDF within OpenNet's NetCo Room (Figure 2 below).

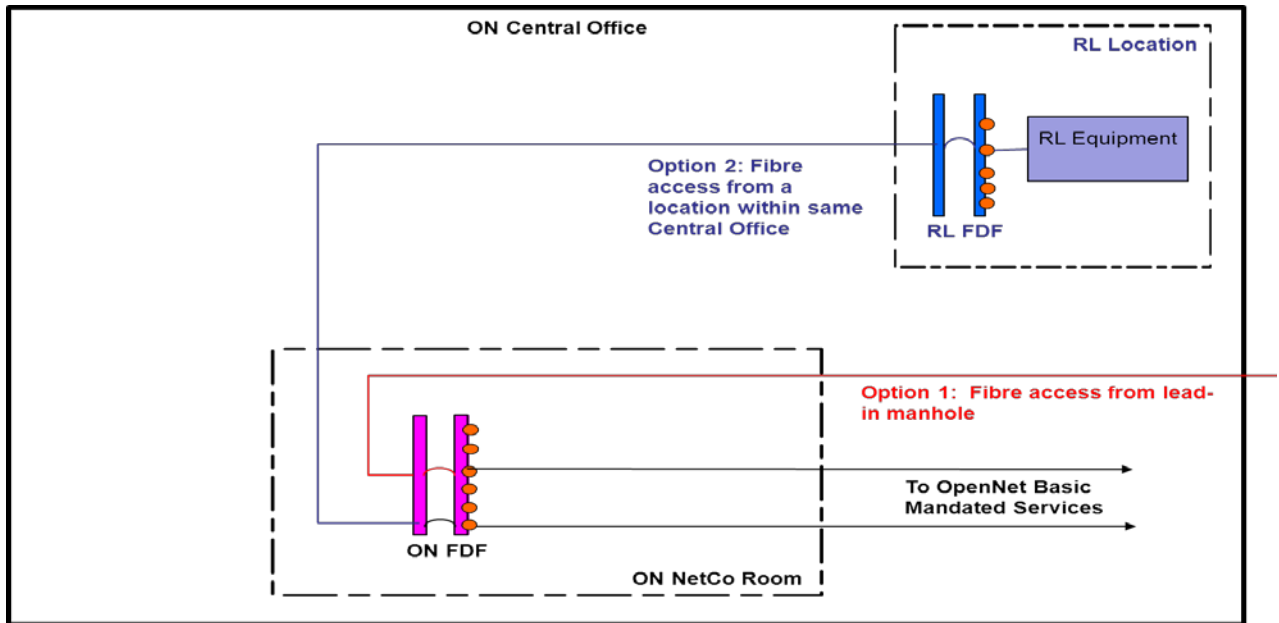


Figure 2: Fibre access to OpenNet's FDF at OpenNet's NetCo Room

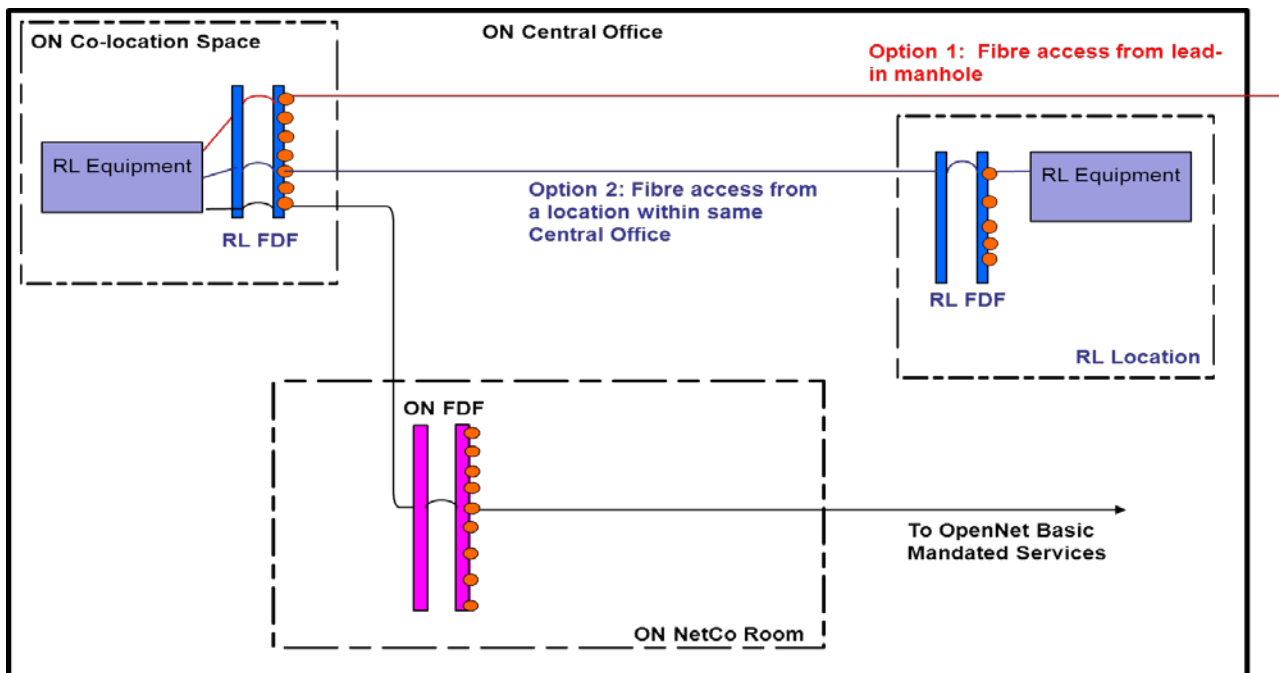


Figure 3: Fibre access to the OpenNet Co-location Space

- 3.29. SingTel submits that, in the same manner as is required of SingTel under the RIO, the ICO should be revised to require OpenNet to offer services for connection to OpenNet's connectivity points / locations to enable a Requesting Licensee to deploy its own fibre to access OpenNet's Mandated Services under the ICO at cost-based charges without having to acquire additional services (e.g. segment services).

ICO should be updated to include automated processes

- 3.30. SingTel submits that the operational processes contained within the ICO should be updated to reflect that the OpenNet Platform is operational.
- 3.31. As currently drafted, the majority of the operational processes, in particular the processes related to ordering and provisioning in the ICO are still based on manual processes. For example, clause 4.1 of Schedule 1 (Residential End User Connection) provides that a Requesting Licensee must request a Residential End User Connection via submitting a form set out in Annex 1A manually, whereas in reality, a request for Residential End User Connection is currently submitted online, either through the OpenNet Service Portal or OpenNet's B2B Web Services Interface.
- 3.32. Maintaining such manual processes as the default process within the ICO will give rise to confusion among the Requesting Licensees when placing orders and raising faults.
- 3.33. Furthermore, the fact that operational processes are currently being conducted over the OpenNet Platform without being properly described and documented in the ICO means that there is little guidance available on the details of the automated processes to assist Requesting Licensees with using the platform.
- 3.34. The implementation of automated processing is envisaged in the NetCo Code. Section 7.1 of the NetCo Code provides that:

“Within 2 years from the Closing Date, the Licensee shall provide a website and online provisioning platform relating to the Mandated Services as described below:

(a) the Licensee shall create and host a publicly accessible, user-friendly website for the provision of information (which shall not include pricing information) relating to the Mandated Services (the “Website”). The Website shall allow End Users and owners or management committees of Buildings to verify the Licensee's roll-out of the Network and the locations

to which the Licensee was (i) granted access, and (ii) denied access, during its planned roll-out of the Network; and

(b) the Licensee shall provide a real-time, on-line information and ordering platform (the “Platform”) which can be accessed by the persons specified in section 7.2 via the Website and directly through an open standards interface to the Licensee’s OSS and BSS. The Platform shall provide access to Mandated Services Information, including without limitation, the descriptions of the services available, the technical specifications of the Wireline being offered (such as for dark fibre, the threshold of loss, attenuation co-efficient, the mode of the fibre and its dispersion, where applicable), the prices, terms and conditions thereof, and the provision of fault repair and any other commercial and technical services and enable ordering of Mandated Services on an unbundled basis (our emphasis).”

3.35. Further, section 10.9 of Appendix 1 of the NetCo Code provides that:

“The ICO shall state that once the Qualifying Person has signed an ICO agreement, orders for the Mandated Services available to that Qualifying Person may be entered and accepted entirely online through the Platform.”

3.36. Given operational processes are currently supported by the OpenNet Platform, the ICO should be accordingly revised to describe the online ordering and fault management functionality and automated processing flow in sufficient detail.

3.37. Further, SingTel submits that the ICO should include provisions for when the OpenNet Platform is unavailable. This is consistent with the requirement under subsection 10.9 of Appendix 1 of the NetCo Code, which provides that:

“The Licensee shall provide alternative means of ordering Mandated Services to cater for situations where the Platform is unavailable or access is impeded and the ICO terms and conditions shall cater for this.”

3.38. Despite clause 9.16 of Schedule 14 of the ICO, which provides that in cases of unavailability of the OpenNet Platform, OpenNet will continue to accept requests via a dedicated email address and fax number, the ordering and provisioning processes contained within each Schedule do not include specific details relating to the continuity of operational processes when the OpenNet Platform is unavailable.

- 3.39. Sole reliance on the OpenNet Platform for performing operational processes will give rise to significant operational difficulties for Requesting Licensees if and when the OpenNet Platform becomes unavailable.
- 3.40. SingTel submits that the ICO should also include clear instructions on the back-up means for operational processes related to ordering, provisioning and fault management on which Requesting Licensees can rely on when the OpenNet Platform is unavailable.

ICO should include more definitive terms and conditions

- 3.41. SingTel submits that the ICO should contain more definitive terms and conditions in respect of the operational processes.
- 3.42. SingTel is concerned that, in its current form, the ICO lacks sufficient detail to deal with operational processes, including ordering, provisioning and fault management. As currently drafted, many operational processes are ambiguous and difficult to carry out in practice.
- 3.43. The ICO has been operational for almost 2 years (since 27 April 2010). OpenNet has had sufficient time and opportunity to observe its current operational processes in practice. It has undoubtedly developed a greater understanding of how to better define its operations through collective learning from the Requesting Licensees carrying out these operations over almost 2 years. It is time that the ICO was reviewed to define operational processes with greater clarity and certainty to achieve a higher quality of service.
- 3.44. SingTel's detailed comments in relation to specific clauses within the ICO are contained in Attachment A. The following issues represent some of the key areas of concern in respect of which SingTel considers more definitive terms and conditions are required within the ICO.

Information relating to Mandated Services is insufficient

- 3.45. SingTel is concerned that the information provided by OpenNet to the Requesting Licensees in relation to the Mandated Services is insufficient.
- 3.46. The information that OpenNet currently provides to a Requesting Licensee upon the provisioning of a Residential End User Connection is insufficient to ensure successful service provisioning by the Requesting Licensee to the End User.

- 3.47. SingTel submits that OpenNet must be required to provide the following minimum information to a Requesting Licensee under the ICO:
- a) the fibre distance of each Residential End User Connection (fibre distance between the OpenNet Central Office and the Termination Point) when OpenNet provides a Residential End User Connection; and
 - b) the fibre distance between the OpenNet Central Office and OpenNet's splitter in the Building MDF Room when OpenNet provides a Residential End User Connection on a new splitter.
- 3.48. The above information is essential for the configuration of the Starting Distance of the Ranging Window of SingTel's Optical Line Termination (**OLT**) equipment in the Central Office (in accordance with the ITU-T standard) to ensure successful interworking and communication between the OLT and the Optical Network Termination unit (**ONT**) within the End User premises.
- 3.49. The lack of such information poses significant operational difficulties for SingTel when troubleshooting to resolve a fault because the ONT is unable to communicate with the OLT, in which case significant time and resource is wasted investigating the fault through trial and error. Further, once the cause of the fault is diagnosed as due to the configuration of the Starting Distance of the Ranging Window, the OLT port must be rebooted upon amending the Starting Distance of the Ranging Window, which causes service interruptions for up to 24 End Users that may be connected to that OLT port.
- 3.50. Furthermore, certain information is necessary to enable a Requesting Licensee to plan and manage network resources efficiently. SingTel submits that OpenNet must be required to provide the following information under the ICO:
- a) Building MDF room, FDF rack and splitter mapping information, on a bi-monthly basis and via the OpenNet Service Portal or via OpenNet's B2B Web Services Interface; and
 - b) the associated splitter information when OpenNet provides a Residential End User Connection.
- 3.51. It is imperative for Requesting Licensees that offer mass market residential services to have visibility of OpenNet's network topology in order to plan and prepare adequate network resources.

- 3.52. The lack of this information means that a Requesting Licensee faces great difficulty in planning for GPON network resources in advance. OpenNet's current network topology is comprised of different FDF racks in a particular Building MDF Room being pre-assigned by OpenNet to each serve a subset of the buildings/units served by the Building MDF Room. Therefore, the Requesting Licensee cannot assume that a splitter in a particular Building MDF Room would be completely allocated for its use (based on 1:24 split ratio for Residential End User Connection) before a new splitter (and therefore, a new OLT port) will be used.
- 3.53. In fact, even within the same FDF rack, a Requesting Licensee currently has no means to counter-check whether the assignment of splitters by OpenNet is optimal. For example, a Requesting Licensee is unable to ascertain whether OpenNet has finished allocating one splitter (12 ports) before assigning a new splitter to the Requesting Licensee within the same FDF rack.
- 3.54. In the absence of such information, the Requesting Licensee will incur significant inefficiencies and higher costs because new OLT ports will be used unnecessarily if OpenNet makes an error in assigning the splitters.
- 3.55. The provision of associated splitter information is necessary to facilitate efficient network resource management by the Requesting Licensee, resulting in greater efficiencies and lower costs incurred by Requesting Licensees. This ultimately leads to lower prices for End User services.
- 3.56. In addition, there is no provision in the ICO that requires OpenNet to notify a Requesting Licensee of splitter utilisation rates.
- 3.57. Sub-clause 3.1(A) of Schedule 1 (Residential End User Connection) of the ICO provides that unless reasonably considered necessary by OpenNet, OpenNet shall utilise at least 90% of the connection in each splitter before it provides an additional splitter. However, there is no provision to ensure that the Requesting Licensee is kept informed of the relevant utilisation rates. This means that the Requesting Licensee has not way of verifying whether a splitter has in fact reached the 90% utilisation threshold.
- 3.58. SingTel submits that the ICO should be revised to include a mechanism for OpenNet to update the Requesting Licensee of splitter utilisation rates, and for the Requesting Licensee to verify the utilisation rate of each splitter.
- 3.59. Furthermore, clause 4.5 of Schedule 1 (Residential End User Connection) provides that, information relating to network outages will be available on OpenNet's website,

and after the OpenNet Platform is operational, via that platform. However, the clause provides no details in relation to the specific types of information that will be provided via these platforms.

3.60. Information relating to network outages is critical for Requesting Licensees from a network and service monitoring and management perspective. Requesting Licensees should have greater visibility of the kind of information that OpenNet will make available to them relating to outages via the relevant platform. Typically, this information should include:

- start time of the outage;
- length of time for which the outage is expected to continue;
- services affected by the outage;
- steps being taken to remedy the outage; and
- steps (if any) that the Requesting Licensee may be required to take to assist with the rectification of the outage.

3.61. Furthermore, the ICO should contain details in relation to how OpenNet will manage network outages and communicate with the Requesting Licensees in a timely, effective and meaningful way. This is necessary to ensure that the Requesting Licensee can manage outages to the extent they affect End User services.

3.62. SingTel submits that the ICO should be revised to provide greater certainty on the type of information relating to Mandated Services, including network outages, that OpenNet will make available to Requesting Licensees via the various platforms.

Fault rectification processes are insufficient

3.63. SingTel does not consider that the fault management provisions in the ICO are adequately detailed. Generally, detailed processes relating to fault diagnosis, investigation and rectification timeframes should be set out in the ICO.

3.64. In its current form, the fault rectification processes in the ICO offer little operational certainty for Requesting Licensees. This is demonstrated in various ways:

- obligations are often inappropriately couched in investigating a fault in a ‘diligent and responsible manner’ rather than imposing absolute commitments on OpenNet;

- numerous processes are specified without applicable timeframes or mechanisms for ultimate resolution of the relevant process; and
- the process for closure of Trouble Tickets is unsatisfactory given the Requesting Licensee has no recourse if it considers the fault not to be resolved except to submit a new Trouble Ticket.

3.65. The lack of clear processes and timeframes has meant that fault rectification results have been suboptimal with SingTel experiencing inadequate resolution of its reported faults as well as lengthy delays in the process.

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3.66. This is particularly concerning for Requesting Licensees in light of the current Trouble Ticket closure processes. Currently, after a Requesting Licensee has raised a Trouble Ticket to OpenNet, OpenNet will investigate and resolve the fault, after which it will update the Trouble Ticket status to “resolved” pending acknowledgement by the Requesting Licensee that the fault has been successfully rectified. If the Requesting Licensee determines – after its own investigations – that the fault is not properly rectified, the Requesting Licensee has no recourse for re-opening the same Trouble Ticket to dispute OpenNet’s findings relating to that fault. Instead, the Requesting Licensee is forced to raise a new Trouble Ticket for the same fault.

3.67. In effect, OpenNet’s current operations mean that it is able to meet the standard Mean Time to Recovery (MTTR) of 8 hours⁸ in respect of each fault regardless of whether or not the fault has been successfully rectified.

3.68. SingTel submits that in circumstances where a fault has not been properly rectified, the relevant Trouble Ticket should remain open until both parties agree that the fault has been successfully rectified. If a fault is not rectified within the MTTR of 8 hours, OpenNet must provide the relevant Requesting Licensee with a status update and indicate the time within which the fault will likely be resolved.

3.69. Further, OpenNet must be required to perform additional investigation and testing upon being notified by the Requesting Licensee that a fault has not been successfully rectified. Such testing and investigation should continue, with the relevant Trouble

⁸ For example, for Schedule 1 (Residential End User Connection), as set out in clause 11.13 of that Schedule.

Ticket remaining open until the fault has been properly rectified. Only after this has been achieved should OpenNet be permitted to close the relevant Trouble Ticket.

- 3.70. In addition, if OpenNet has investigated a fault and found that there is no fault up to the final distribution point, OpenNet must be required to arrange an appointment with the End User to attend the premises to investigate and rectify the fault. Similarly, the relevant Trouble Ticket should remain open until such event has occurred and the relevant fault has been resolved.

Process and timelines for Termination Point requests should be amended

- 3.71. SingTel considers that the following provisions contained within the newly proposed clause 19 of Schedule 1 (Residential End User Connection) should be amended:

Sub-clause 19.1(a)

- 3.72. The proposed sub-clause 19.1(a) of Schedule 1 (Residential End User Connection) provides that the Requesting Licensee may acquire “*for a Residential End User Connection of 1:24 Split Ratio for the purpose of providing GPON services, one separate fibre strand from OpenNet’s splitter at the Building MDF Room to the Second Termination Point at the Residential Premises.*”
- 3.73. SingTel submits that, for Residential End User Connections only, separate fibre strands (whether connected or not to the same Termination Point) should be connected to different 1:24 splitters. Therefore, where the Requesting Licensee requests 2 Residential End-User Connections in the same Residential Premises, they should be provisioned over separate splitters. This will optimise service resiliency and minimise the occurrence of single point of failures for separate connections into the same residential End User premise.

Clause 19.2

- 3.74. Clause 19.2 of Schedule 1 (Residential End User Connection) provides that “*OpenNet shall have the right to reject a Request for Second Termination Point if all the fibres at the First Termination Point are not in use.*”
- 3.75. SingTel submits that the degree of utilisation of the fibre strands within a Termination Point should not constitute grounds for rejection of the request for an additional Termination Point.

- 3.76. A request to establish an additional Termination Point within a Residential Premises may be submitted for other reasons apart from fibre strands being in use within a Termination Point. For example, a Requesting Licensee may wish to set up a Second Termination Point if the First Termination Point has been installed at the wrong location and the End User does not wish to request a relocation of that Termination Point.
- 3.77. SingTel submits that this clause 19.2 be deleted.

Clause 19.3

- 3.78. Clause 19.3 of Schedule 1 (Residential End User Connection) provides that the *“Requesting Licensee may submit a Request for Second Termination Point provided the Requesting Licensee has submitted a Request for a Residential End User Connection to this Termination Point.”*
- 3.79. Given that clause 19.1 already stipulates that a request for a Residential End User Connection to a Second Termination Point shall be submitted in the form of Annex 1A, which is the same form that is used to request for any other Residential End User Connection, SingTel submits that there is no reason that the Requesting Licensee should be required to submit two separate requests – a request for Residential End User Connection, and a separate request for Second Termination Point.
- 3.80. The same form in Annex 1A is used to request Residential End User Connections. Having to submit two separate requests using the same form to acquire a Residential End User Connection at an additional Termination Point at the same premises will create unnecessary confusion and administrative burden.
- 3.81. SingTel submits that this clause 19.3 should be removed and OpenNet must enhance the OpenNet Platform and amend Annex 1A to include an option for the Requesting Licensee to request an additional Termination Point at the premises in respect of which the Requesting Licensee is seeking a Residential End User Connection.

Clause 20

- 3.82. Clause 20 of Schedule 1 (Residential End User Connection) contains provisions regarding fibre handover processes. These fibre handover processes, as currently drafted, lack sufficient detail to ensure that the handover process occurs smoothly and in a coordinated fashion.

- 3.83. More coordination is required from OpenNet to ensure a seamless and smooth handover process. For example, the current drafting does not require OpenNet (and does not contain provisions around OpenNet ensuring the existing Requesting Licensee or the new Requesting Licensee) to ensure continuity of End User services.
- 3.84. After OpenNet has deployed a truck roll to perform the handover from the existing Requesting Licensee network to the new Requesting Licensee network, the End User's services are likely to become unavailable until services on the new Requesting Licensee's and the new RSP's network become fully functional.
- 3.85. Further, it is unclear what happens to End User services if and when the existing Requesting Licensee disputes a notification by OpenNet that a service is to be deactivated for switchover to a new Requesting Licensee's network. There are no provisions within this Schedule 1 to ensure continuity of End User services during the time a dispute is on foot in relation to a handover.
- 3.86. SingTel submits that a more robust approach should apply to the process for fibre handover, including tighter coordination between the parties to minimise interruptions to End User services. To this end, SingTel submits that since OpenNet is the central party with full visibility of requests for activation and deactivation from all Requesting Licensees, OpenNet must be responsible for co-ordinating the fibre handover process to ensure a smooth handover. In particular, SingTel submits that the ICO should be revised to include provisions relating to the following:
- the new Requesting Licensee shall submit the request for fibre handover to OpenNet, stating the requested date of the fibre handover;
 - OpenNet must be required to relay such request to the existing Requesting Licensee to obtain its approval for the fibre handover;
 - OpenNet must be required to maintain a record of such requests and whether or not approval has been granted;
 - after the existing Requesting Licensee has granted its approval in response to a fibre handover request from the new Requesting Licensee, OpenNet must notify the new Requesting Licensee of the confirmed date for the fibre handover, and deploy a truck roll to carry out the switchover of services (i.e. patching the circuit to the other Requesting Licensee) within 3 Business Days; and
 - given OpenNet has full visibility of the utilisation of the Residential End User Connections, OpenNet must be responsible for resolving any disputes in relation to the fibre handover with the relevant Requesting Licensees.

- 3.87. Further, SingTel submits that clause 20 should be amended to include provisions regarding liability for termination and early termination charges. Given the existing Requesting Licensee is not the party who initiates the fibre handover request, it should not have to bear any charges associated with the fibre handover process.
- 3.88. SingTel notes that while OpenNet's 'Proposed Fibre Handover Process'⁹ provides that the new Requesting Licensee is liable for Cancellation Charges as set out in Schedule 15 (Charges), the ICO should be revised to include similar provision within the relevant Schedule.

Order fulfilment processes should be enhanced

- 3.89. SingTel submits that the ordering and provisioning processes contained within the ICO must be amended to enhance the current ordering and provisioning processes and ensure better service delivery for End Users.
- 3.90. SingTel's detailed comments in relation to specific clauses within the ICO are contained in Attachment A. The following issues represent some of the key areas of concerns in respect of which SingTel considers more definitive terms and conditions are required within the ICO.

Definitive timeframes for acceptance or rejection of Requests

- 3.91. SingTel submits that the current ordering and provisioning processes and timeframes around the acceptance or rejection of orders are inappropriate. For example, clause 5.4 provides that:

“Within three (3) Business Days of the Request Date and subject to clause 5.2, OpenNet must notify the Requesting Licensee (and shall provide the Requesting Licensee with a unique reference number or a similar form of identification in the notification) whether its Request is accepted, or if rejected, for any one of the following reasons, except where there is insufficient capacity, OpenNet must also notify the Requesting Licensee within three (3) Business Days of the Request Date that there is insufficient capacity and the timeframe to notify the acceptance or rejection of the Request shall be extended to within ten (10) or forty (40) Business Days of the Request Date;”

⁹

Available at
http://www.ida.gov.sg/doc/Policies%20and%20Regulation/Policies_and_Regulation_Level2/20111104_151240/Info_GuidanceFHP.pdf

- 3.92. Under this clause, the timeframe within which a Request can be accepted or rejected is 3 Business Days unless there is insufficient capacity, in which case the timeframe for accepting or rejecting a Request is extended to 10 or 40 days.
- 3.93. SingTel submits that this timeframe is inappropriate and overly lengthy. OpenNet must be required to provide a definitive response in respect of whether it accepts or rejects a Request within the 3 Business Day timeframe. The extended timeframe is not necessary for simply accepting or rejecting a request when there is insufficient capacity – this extended timeframe should only apply to the establishment of a connection if there is insufficient capacity and additional works may need to be performed to enable a connection. The current drafting in clause 5.5 appropriately deals with this.
- 3.94. Accordingly, SingTel submits that the following amendments be made to clauses 5.4 and 5.5:
- clause 5.4 be amended to provide: *OpenNet must also notify the Requesting Licensee within three (3) Business Days of the Request Date that there is insufficient capacity and the timeframe to ~~notify the acceptance or rejection of the Request shall be extended to within ten (10) or forty (40) Business Days of the Request Date~~ provision the Request shall be in accordance with clause 5.5.*
 - clause 5.5 be amended to provide: *~~If there is sufficient capacity to provide the Residential End User Connection pursuant to clause 6.1,~~ Where OpenNet accepts the Request pursuant to clause 5.4, OpenNet shall advise the Requesting Licensee within three (3) Business Days whether the Residential End User Connection has been successfully set up pursuant to clause 6.1.*

Appointment Management

- 3.95. SingTel considers that current provisions relating to appointment management, including missed appointments, are insufficient. The ICO should contain greater details around the processes for communication and feedback avenues with the Requesting Licensee, including for rescheduled and additional appointments and timeframes.
- 3.96. In particular, the ICO should be revised to provide greater clarity of processes relating to missed appointments, especially in circumstances where OpenNet (or its installer) misses an appointment at the End User's premises, or where OpenNet (or its installer) is unable to access the premises due to unavailability of an End User at the time of the appointment.

Missed appointments due to a fault by OpenNet

- 3.97. For example, when an End User notifies the Requesting Licensee that OpenNet (or its installer) has missed an appointment, the Requesting Licensee should be required to notify OpenNet, upon which notification OpenNet must be required to ensure that its installer attends the End User's premises within 1 hour of being notified, for the purpose of performing the installation.
- 3.98. In circumstances where an End User is unable to wait an additional 1 hour for the installer to attend, OpenNet must be required to offer the Requesting Licensee a window of available appointments (during business hours on business days) within which the Requesting Licensee can schedule an alternative appointment with their End User. Such re-scheduling of appointments should not be subject to the constraints of the Maximum Quota.
- 3.99. If an End User seeks to terminate their Residential End User Connection as a result of an OpenNet installer missing a scheduled appointment for installation at that End User's premises (i.e. a service cancellation due to a fault of OpenNet), the Requesting Licensee should not be required to bear the Cancellation Charges or the Pre-mature Termination Charges (as applicable) given the termination has arisen directly from a fault by OpenNet.
- 3.100. Furthermore, SingTel submits that the Service Level Guarantees that apply in respect of the delivery of services should continue to apply in circumstances where the installer misses an appointment due to the fault of OpenNet.

Missed appointment due to OpenNet being unable to access premises

- 3.101. SingTel submits that if OpenNet (or its installer) is unable to access the premises of an End User due to that End User (or their authorised representative) not being available at the premises, OpenNet must be required to immediately contact the Requesting Licensee to notify them of such event.
- 3.102. Upon such notification, the Requesting Licensee should be required to contact the End User to verify that the missed appointment is indeed due to a fault by the End User. If OpenNet fails to notify the Requesting Licensee, the Requesting Licensee should not be required to bear the Missed Appointment Fee.
- 3.103. Upon confirmation or acknowledgement by the Requesting Licensee that the End User is unavailable at the premises, OpenNet must reject the order for Residential End

User Connection, stating clearly the reason for its rejection. For the avoidance of doubt, Installation Charges and Patching Charges should not apply in respect of any missed appointments.

- 3.104. In the above circumstances when an appointment is missed, the ICO should contain clear communication options for OpenNet (or its installer) to contact the Requesting Licensee to notify them of such events, and vice versa.

OpenNet must provide daily reporting on rejected and postponed orders

- 3.105. Presently, the ICO does not contain provisions to ensure that OpenNet informs Requesting Licensees in a timely manner of rejected orders or delays to the provisioning of orders for basic Mandated Services. This is critical especially in relation to orders requiring End User appointments, as RSPs have to ensure that End Users are contacted in time to provide sufficient advance notice of any cancellation or postponement of the appointment, and to reschedule the appointment where necessary.
- 3.106. SingTel submits that OpenNet must be required to provide daily reporting on rejected and postponed orders to Requesting Licensees.
- 3.107. Reporting is necessary to ensure effective and timely communication occurs between the Requesting Licensee and the RSP in relation to rejected and postponed orders, which in turn enables the RSP to notify the End User of any delays in activating their service in a timely manner.
- 3.108. The ICO should be revised to include clear provisions regarding reporting requirements by OpenNet. SingTel submits that OpenNet must be required to provide reporting on rejected and postponed orders in accordance with the following workflow:

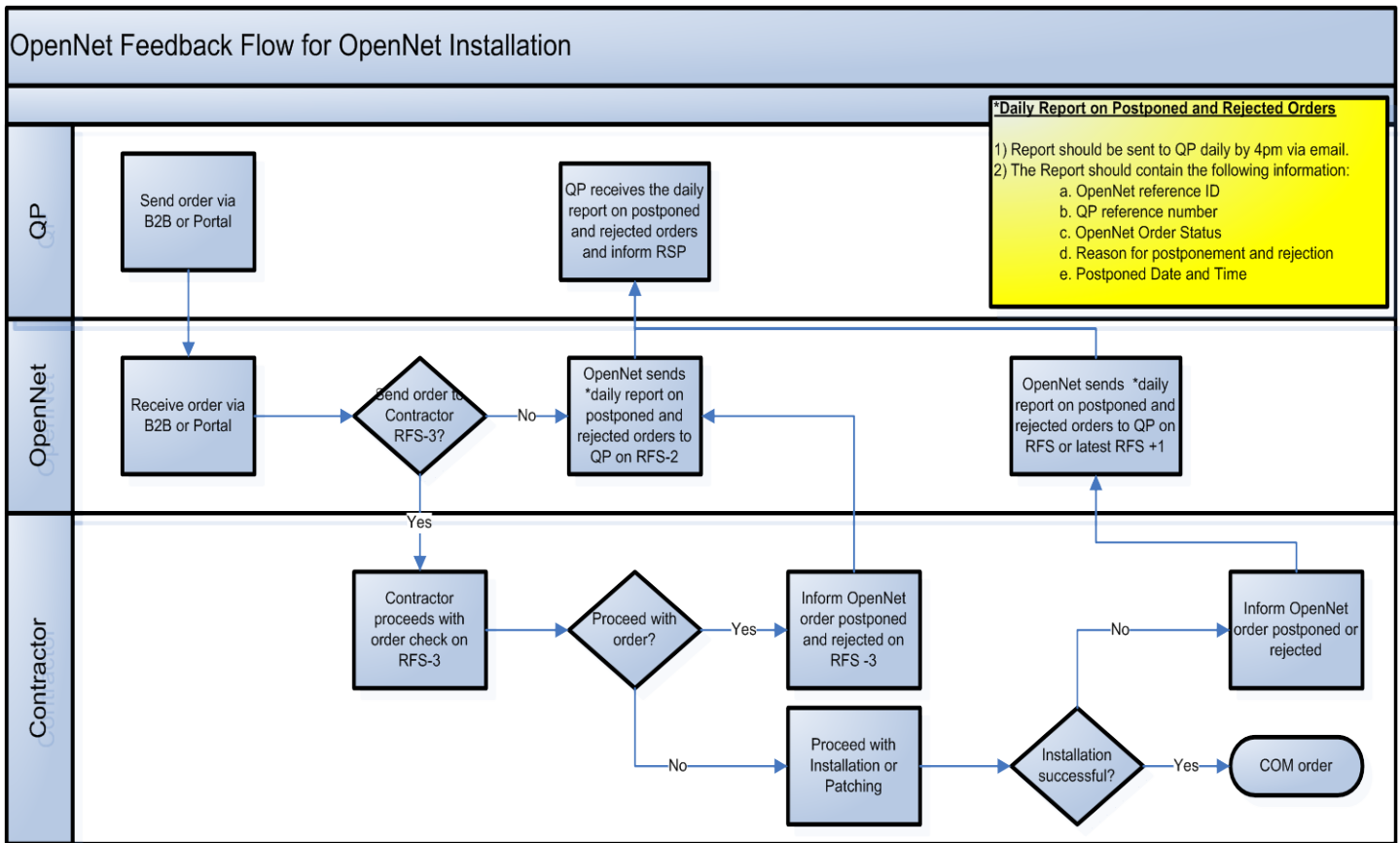


Figure 4: Proposed reporting workflow for rejected and postponed orders

Attachment A – Table of SingTel’s comments on specific clauses of ICO

The following table sets out SingTel’s detailed comments in respect of specific clauses within the ICO that SingTel considers should be amended.

Unless otherwise stated, comments in this table that relate to a particular clause within a specific schedule should apply to any other clause that is similar to the specified clause within other schedules.

No.	Schedule reference	Clause reference	SingTel’s concerns	SingTel’s recommendation
1	All	All	Many of the cross references within the ICO are incorrect (e.g. in sub-clauses 11.7(a) and 11.7 (b) in Schedule 1 (Residential End User Connection), the reference to clause 6.8 should be to clause 6.7 instead).	All Schedules within the ICO should be reviewed to correct cross-referencing issues.
2	All	All	Charges proposed by OpenNet or certain existing charges in the ICO are not commensurate with the cost of work incurred by OpenNet. An example of this is the Cancellation Charge for Residential End User Connection.	If it is necessary for OpenNet to pay its contractor to carry out works, it is reasonable for OpenNet to recover such cost from the Requesting Licensee. However, all new charges proposed by OpenNet must be on a cost-based and pass-through basis without any additional mark-up by OpenNet, until such time the ICO prices are audited and reviewed by the IDA in accordance with the NetCo Code.
3	Main Body	18.8	The proposed criteria for the Annual Review of the Security Requirement in sub-clause 18.8(a) are either too subjective or unreasonable. The criteria should be based on objective evidence and assessment. For example, “public news or market intelligence” is subjective, speculative and unreliable to be used as a basis for conducting an Annual Review of the Security Requirements.	SingTel proposes that the criteria should be amended as follows: a) sub-clauses 18.8(i) and (ii): these sub-clauses should be replaced with “whether the Requesting Licensee had paid OpenNet more than 1 month after the due date on 3 or more occasions in the past year, and no valid reasons

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
				<p>were given for the late payment"; and</p> <p>b) sub-clause 18.8(iv): this sub-clause should be deleted.</p>
4	1	2.2	<p>Given the complexity in collating and verifying whether specific orders or faults are eligible for rebates, the timeframe for making a claim should be longer than 30 Calendar Days following completion of the relevant calendar month in which the Service Level Guarantees are measured.</p>	<p>SingTel submits that this timeframe should be extended to 60 Calendar Days following completion of the relevant calendar month in which the Service Level Guarantees are measured.</p>
5	1 15	4.2 (sub-clause 4.2(c)) 1.14	<p>There have been many instances whereby the First Termination Point is installed at a location that is not in accordance with OpenNet's Standard Operating Procedures and render it difficult or impossible for Requesting Licensees to provide service to the End User e.g. not within proximity of a power source or the television. Where the End User refuses to pay for Relocation of the Termination Point, Requesting Licensees are caught in the dispute between the End User and OpenNet in relation to which party is responsible for the wrong location of the Termination Point.</p> <p>The Requesting Licensee should not be liable for Relocation Charges where the End User claims that the Relocation is due to OpenNet's fault or error.</p>	<p>OpenNet must be required to manage any dispute in relation to the location of the Termination Point directly with the End User.</p> <p>Charges for removal of the Termination Point and fibre cables should be a one-time charge independent of cable length and trunking.</p> <p>Given the level of effort and resources required for removal and Relocation are different, OpenNet must propose different charges for the different circumstances.</p> <p>Requests for the Relocation of a Termination Point should be supported on the OpenNet Service Portal and the OpenNet B2B Web Services Interface.</p>
6	1	5.2	<p>The system for managing appointments is not clear.</p>	<p>In order to provide greater certainty for the RSP when selling End User services, OpenNet must be required to provide greater clarity on its appointment booking</p>

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
				and management systems. SingTel submits that OpenNet must provide a selection of appointments and activation dates for a period of at least six (6) weeks from the earliest date with available appointment slots via the OpenNet Platform.
7	1	5.3(e), 6.2 and 19	<p>Installation of an additional Termination Point is tantamount to the scenario where there is insufficient capacity to provision a connection, as specified in clause 6.2.</p> <p>Usage of the first and second fibres of the First Termination Points should not constitute grounds for rejecting a Request.</p>	Where the first and second fibres of the first Termination Point are in use, OpenNet must provide the Residential End User Connection pursuant to clause 6.2. SingTel proposes that clause 19 be subsumed under clause 6.2.
8	1	5.12	<p>Given that OpenNet is able to provide express service activation within one (1) Business Day, SingTel is concerned about the cut-off period of at least two (2) Business Days for changing an appointment. Changing an appointment should require less effort than scheduling an entirely new appointment.</p> <p>Further, given the service activation period is within three (3) Business Days, OpenNet's proposed cut-off period of two (2) Business Days before the original appointment date is too stringent. Moreover, it is typical for End Users to request a change of appointment time the day before the scheduled appointment date.</p> <p>In addition, this clause deals with changes to</p>	<p>SingTel proposes that the change of appointment without Cancellation Charges should be allowed up to 10 am the Business Day before the scheduled appointment.</p> <p>Similar provision to this clause should be added to allow changes to be made to End User details (e.g. contact number and address details).</p> <p>The ICO should clearly state that the Requesting Licensee should not be charged for changing an appointment.</p>

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
			<p>appointment dates only. However, there are no provisions dealing with change of End User details. There should be a similar process for changes to End User details (e.g. contact number or address details.)</p>	
9	1	6.3	<p>If the End User requires installation of internal cabling exceeding 15 metres, there is no need for a new appointment or revision of the implementation timeline. OpenNet must proceed to install the internal cabling at the time of the appointment provided the End User agrees to this.</p> <p>In circumstances where the End User requires a deployment technique other than open ducting, OpenNet must reject the order stating clearly the reasons for such rejection, and only charge the Missed Appointment Charge.</p>	<p>This clause should be amended to take account of SingTel's concerns.</p>
10	1	6.11(g)	<p>Greater clarity is required in respect of OpenNet's applicable testing measurements.</p>	<p>The last sentence in this clause should be deleted because it does not seem applicable.</p>
11	1	6A.1	<p>End Users who schedule the appointment for the initial installation of the Requesting Licensee's equipment on a later date (beyond 7 Calendar Days after OpenNet's handover of the Termination Point to SingTel) should not be disadvantaged or discriminated against. The 1-hour fault response applicable during the Requesting Licensee's initial installation should apply to all End Users, regardless of when the Requesting Licensee's initial installation occurs.</p>	<p>OpenNet must provide the 1-hour fault response time for all End Users regardless of when the End User requests the initial installation of the Requesting Licensee's equipment.</p> <p>The ICO should clearly state that joint investigation of faults under such circumstances does not require any charges to be borne by the Requesting Licensee.</p>

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
			<p>[Start of Commercial-In-Confidence]</p> <p>[End of Commercial-In-Confidence]</p>	<p>If OpenNet does not arrive within 1 hour, the Requesting Licensee may at its own discretion inform OpenNet to treat the case as a normal fault and not be subject to any charges or penalties.</p>
12	1	6A.5	<p>The Requesting Licensee should not be required to pay any Charges for the End User Connection if the Requesting Licensee elects to cancel a faulty Residential End User Connection (e.g. Patching Charges, Installation Charges, Cancellation Charges or any Pre-Mature Termination Charges).</p>	<p>This clause should be amended to take account of SingTel's concerns.</p>
13	1	9.3	<p>Formatting error.</p>	<p>A space needs to be inserted between 'actual' and 'or'.</p>
14	1	9.15	<p>This clause is too broad. For example, onsite charges should not be applicable if, pursuant to the Requesting Licensee's request for removal or establishing a Residential End User Connection, OpenNet must be 'onsite' to perform removal or installation of the Termination Point.</p>	<p>This clause should be amended to clearly define the circumstances where onsite charges are applicable.</p> <p>This amendment should be made to all similar clauses within other Schedules of the ICO.</p>
15	1	11.5	<p>The last two sentences of this clause are contradictory.</p>	<p>This clause should be amended to state: "If, following investigation, OpenNet determines that the fault is at the Patch Cable at the Building MDF Room, OpenNet will replace with another Patch Cable(s) and charge the Requesting Licensee a Patching Charge(s) in accordance with Schedule 15 (Charges). OpenNet will charge the Requesting Licensee a Patching Charge if the Requesting</p>

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
				Licensee was responsible for the fault at the Patch Cable at the Building MDF Room.”
16	1	11.7	Power loss should not be the only criterion for ‘no fault found’. There are multiple scenarios where the Residential End User Connection does not work due to a fault by OpenNet. For example, OpenNet may have patched the End User’s fibre to the splitter of the wrong Requesting Licensee. In this scenario, the fibre reading will be found to be within range, but the service will remain down.	The steps in sub-clause 11.7(b) should be carried out in addition to the power loss test before concluding ‘no fault found’.
17	1	11.7(c)	Sub-clause 11.7(c) implies that a joint investigation is always required for fault investigation by OpenNet. This is not the case.	<p>OpenNet must not require sign-off on the “Fault Rectification Service Report” for all faults. Such sign-off is only reasonable where both parties are present onsite for fault rectification i.e. for cases where OpenNet calls for a fault identification coordination meeting or where joint investigation is initiated by the Requesting Licensee. In such cases, a carbon copy of the “Fault Rectification Service Report” should be provided to the Requesting Licensee.</p> <p>In all other circumstances, OpenNet must provide the cause of the fault when it closes the Trouble Ticket via the OpenNet Platform.</p>
18	1	11.8	OpenNet’s proposed amendments in sub-clauses 11.8(a), (b), (c) and (d) apply in general to both OpenNet-initiated fault identification coordination meeting and Requesting Licensee-initiated joint investigation.	OpenNet’s proposed amendments in sub-clauses 11.8(a), (b), (c) and (d) should be in a separate clause. Clauses 11.8 and 11.10 should be subject to these sub-clauses 11.8(a), (b),(c) and (d).

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
19	1	11.10		Clause 11.10 should be amended to provide that sub-clauses 11.8(a), (b), (c) and (d) apply.
20	1	18.2	To minimise downtime for the End User, OpenNet must not deactivate the existing Residential End User Connection at the old premise until the services at the new premises are active.	Given that Requesting Licensees or RSPs require time to provision the service to the new premises after OpenNet provisions the Residential End User Connection, with the objective of minimising downtime for the End User, the Requesting Licensees should be able to specify a deactivation date that is later than the activation date.
21	12	4.1	The word "Schedule" is missing.	The clause should be corrected to state "specified in Schedule 15 ".
22	12	5.4	There are no criteria for rejection of a Co-Location Modification Request.	This clause should be amended to clearly state the criteria used by OpenNet to reject a Co-Location Modification Request.
23	12	7.10	Unavailability of the Co-location Service will have a negative impact on the service availability of the Requesting Licensee's services.	<p>SingTel submits that more clarity should be provided in respect of the impact that unavailability of the Co-Location Service will have on the Requesting Licensee's services.</p> <p>OpenNet must propose mitigating measures in order to minimise outage and downtime in the event that the Co-location Service is unavailable.</p>
24	12	Annex 12D,	Currently, there are Requesting Licensees that have installed 45U racks in the Co-Location Space physically,	OpenNet must allow at least 45U racks to be used in the Co-Location Space.

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
		1.1.2	but they are required by OpenNet to block the top 3U by using a blank panel. This is an inefficient use of resources and space.	
25	12	Annex 12D, 1.4	There are no processes or any Service Level Guarantees that apply to the processing of a request for additional Transmission Tie Cables.	Processes and Service Level Guarantees for requests for additional Transmission Tie Cables should be included within the ICO. 30 Business Days should be a reasonable time to carry out the works required to provide an additional Transmission Tie Cable.
26	12	Annex 12D, 1.5.2 (a)	OpenNet's initiated changes indicate that the Requesting Licensee can only acquire a 20, 32, 60 amp DC fuse. If this is the case, a Requesting Licensee may be over-charged if they don't need such a fuse (e.g. if the Requesting Licensee only needs a 40 amp DC fuse, it will be forced to purchase a 60 amp DC fuse).	A typical OLT equipment requires around 40 amp DC fuse. If a 60 amp DC fuse is used, there is a risk that a power surge would damage the equipment. SingTel proposes that OpenNet must provide additional options of 40, 63 and 100 fused amps for DC to Requesting Licensees.
27	12	Annex 12D, 1.5.2 (b)	32 amp single-phase AC is insufficient for a typical rectifier. A minimum of 63 amp AC is required. Typically, 32 amp AC can only support the power requirement for 4 OLTs.	SingTel proposes that OpenNet must offer: <ul style="list-style-type: none"> i. 63 amp fuse for single phase AC; and ii. 40 amp fuse for 3-phase AC (able to support 12 OLTs).
28	12	Annex 12D	It is necessary to secure the racks that the Requesting Licensee installs in the Co-Location Space.	SingTel submits that drilling services should be included in the ICO and the Requesting Licensees should be able to request the service. OpenNet must

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
				be required to complete the requested drilling within 10 Business Days of the request. A rebate shall be applicable for failure to meet this Service Level Guarantee.
29	12	Annex 12F 1.8.1(f)	This clause is applicable for non-service affecting emergencies as well.	This clause should be amended to read "clause 1.8.1 will not be applicable to requests for emergency physical access, regardless of whether the emergency is service affecting or non-service affecting."
30	14	N/A	Where there are changes in the Requesting Licensee's software, a re-test or regressive testing of OpenNet's B2B Web Services Interface with OpenNet is required. There is currently no mention of such a service in Schedule 14, despite SingTel having repeatedly requested OpenNet to implement such a process to enable Requesting Licensees to request for end-to-end testing with OpenNet.	SingTel submits that access to OpenNet's testing environment for the purpose of re-test and regression testing should be included as a standard service under Schedule 14. OpenNet must be required to provide access to testing environments with the test data for such testing.
31	14	10.3	The maintenance period for the OpenNet Platform and Service Portal of 11pm to 8am daily is excessively long.	SingTel submits that the maintenance period should be shortened to 12am to 6am, and OpenNet must make available OpenNet's B2B Web Services Interface API for retrieval functions (e.g. coverage check) even during the maintenance window.
32	15 1	1.3.2, 1.4.1 19.4	Clauses 1.3.2 and 1.4.1 contradict each other. The Installation Charge already includes patching at the Building MDF Room.	Clause 1.4.1 should be amended to reflect that additional patching charge is not applicable where the Installation Charge under clause 1.3.2 is applicable.

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
				The same amendment will need to be made in clause 19.4 of Schedule 1.
33	15	1.4.1	The Patching Charge at the Building MDF Room of \$160 is excessive and unreasonable.	OpenNet must be required to pass through its contractor costs to Requesting Licensees without adding a mark-up. Even where OpenNet proposes to recover a mark-up, the mark-up should be minimal.
34	15	1.7.1	There are circumstances where a Cancellation Charge should not be charged.	Cancellation and early termination Charges should not be applicable in the following circumstances: <ul style="list-style-type: none"> - cancellation occurs before 10am 1 Business Day before the scheduled activation date; and - where the activation of the Residential End User Connection is delayed and order is pending for more than 24 hours.
35	15	1.7.2 1.13.1	Charges should be commensurate with the costs incurred.	Cancellation Charge should reflect the cost incurred, rather than always being equivalent to the Installation Charge. Where installation works have not occurred, we propose that the Cancellation Charge should be equivalent to the Missed Appointment Charge.
36	15	1.10.1	If a fault is found to be caused by OpenNet, the joint investigation charge should not be chargeable.	This clause should be amended to provide that "OpenNet will charge for a joint investigation visit where applicable".

No.	Schedule reference	Clause reference	SingTel's concerns	SingTel's recommendation
37	15	1.17 18.4	SingTel is concerned about the basis for the Relocation Charge, since the work done is simply equivalent to a deactivation and an activation request.	Please refer to SingTel's comments in item 2 above.
38	18	N/A	The definition of "First Termination Point" needs to be amended to reflect that it is the first point installed at the premises (to distinguish it from any additional ones being installed).	The definition of "First Termination Point" needs to be amended to qualify that it is the first termination point installed into the premises.