A Public Consultation Document

on

STC draft Reference Offer for Data Access (RODA)

Issued by the CITC in Riyadh, 18/7/1427H; 12/8/2006G

Contents

1. Introduction and Process

The Telecommunications Act (the "Act") is the primary legislation governing the telecommunications sector of the Kingdom. It creates a high-level framework upon which the other Communications and Information Technology Commission (the "CITC or "Commission") statutes build in further detail.

Chapter Seven of the Act provides the CITC with a broad power to establish the terms that govern public network access in Saudi Arabia. This includes the power to generally regulate access to network facilities and to impose the specific requirement for the issuance of a reference unbundling offer ("RUO") or reference offer for data access ("RODA") by a dominant operator. The other CITC statutes, including the Telecommunications Bylaw (the "Bylaw"), contain provisions that reinforce the general power of the CITC under Chapter Seven of the Act.

Consistent with Article 3 of the Act, one of the principal guiding principles of the CITC is "to ensure creation of a favourable atmosphere to promote and encourage fair competition in all fields of telecommunications". Such a favourable atmosphere should facilitate and complement the Government's ongoing sector liberalization process. This process includes the Kingdom's market access commitments as part of its December 2005 accession to the World Trade Organization.

1.1 Process to date

One of the Government's objectives in the sector liberalization process is to promote the expansion of broadband access and services across the Kingdom. CITC Decision 1/1423 classified the Saudi Telecommunication Company ("STC") as a dominant service provider. Once so classified, STC became subject to the relevant provisions of the CITC statutes that apply to dominant service providers. This includes the provision of access to telecommunications facilities at any technically feasible point, and under the same conditions and quality as the dominant operator provides for its own services, or those of its affiliates.

As an initial step to promote the expansion of broadband access and service objective, the CITC issued Decision 52/1425 on September 5, 2004. Decision 52/1425 directed STC to prepare a proposal (i.e. a draft RUO or RODA) to provide data service providers ("DSPs") with unbundled line sharing and bitstream access to STC's local loop networks, for the provision of non-voice data services.

In response, on August 27, 2005, STC submitted a draft RUO to the CITC. In the CITC's view that draft RUO was incomplete and hence the CITC requested STC to submit another draft offer for the CITC's consideration. STC submitted a draft RODA dated March 22, 2006 to the CITC, which is included in Annex B of this Consultation Document. Decision 52/1425 also noted that the CITC intended to publish the draft RODA to request public comment before the CITC issues its decision regarding the approval of the draft RODA.

On May 13, 2006 the CITC issued Public Notice 8/1427 ("PN 8/1427") on the Proposed Policies Related to Fixed and Mobile Service Licensing. PN 8/1427 proposes that licensed Fixed and Mobile facilities based providers ("FBPs") may offer IP Telephony services[1]. It also proposes that STC's draft Line Sharing and Wholesale Bitstream[2] services should be made available not only to DSPs but also to new Fixed FBPs. Such new Fixed FBPs may supply IP Telephony services in addition to data services over said unbundled facilities. It is also expected that new Fixed FBPs may also provide other applications over such unbundled facilities, including video and other advanced services.

1.2 Consultation process

1.2.1 Objective and aim of the Consultation

The CITC invites all members of the public, whether in Saudi Arabia or abroad, including private individuals, public organizations, and commercial entities to participate in this consultation process (together, the "Respondents").

The objective of this consultation process is to provide Respondents with the opportunity to provide comments to the CITC on STC's draft RODA. The aim of this consultation process is to assist the CITC in its decision regarding the approval of the draft RODA.

1.2.2 Scope of the Consultation

The CITC is interested in examining the draft RODA from the two perspectives:

- **Chapter 2** addresses the question of whether the draft RODA meets the objectives set out in Decision 52/1425. That is, to provide DSPs with unbundled line sharing and bitstream access to STC's local loop networks, for the provision of non-voice data services.

- The CITC issued PN 8/1427 after STC produced the draft RODA. This sequence of events raises the question of whether the unbundled services proposed in the draft RODA are suitable for the wider applications, including IP Telephony services, which new fixed FBPs may provide. Therefore, **Chapter 3** addresses the question of whether the draft RODA is suitable in the context of the proposals set out in PN 8/1427.

1.2.3 Responses to Consultation Document

This Consultation Document will be available on the CITC's web site at http://www.citc.gov.sa. Respondents who wish to express opinions on this Consultation Document are invited to submit their

[1] PN 8/1427 defines IP Telephony services as those that "relate to a form of VoIP that requires gateways, telephone devices and E.164 numbers." PN 8/1427 defines VoIP as "the generic name for the transport of voice traffic using IP technology. VoIP traffic can be carried on a private managed network or the public Internet or a combination of both."

[2] The draft RODA sometimes uses the spelling "Bitstream" and in other occasions the variation "Bit Stream". For consistency, this Consultation Document adopts the spelling "Bitstream" throughout.

comments in writing to the CITC. All comments must be received by the CITC no later than 30/8/1427H, corresponding to 23/9/2006G.

Replies filed in relation to this Consultation Document may be submitted to one or more of the following addresses:

a) E-mail to: **unbundling@citc.gov.sa**

b) Delivery (hard and soft copy) by hand or by courier to:

Office of the Governor,
Communications and Information Technology Commission (CITC)
King Fahad Road, P.O. Box 75606
Riyadh 11588
Kingdom of Saudi Arabia

The CITC welcomes all comments on the draft RODA. The CITC particularly invites comments and responses to the specific numbered "Comments" set out in this Consultation Document (the "Consultation Comments"). Respondents are invited to provide detailed comments, wherever possible, and to provide relevant data, analysis, benchmarking studies, information based on the national situation or on the experience of other countries to support their comments. In providing their comments, Respondents are requested to indicate the number of the Consultation Comment(s) to which the comment relates. Respondents are not required to comment on all Consultation Comments.

2. Assessment of STC draft RODA

This Chapter provides the CITC's preliminary views with respect to the STC draft RODA included in Annex B of this Consultation Document. The CITC's preliminary views are based on a detailed analysis of the draft RODA and a review of the corresponding international practice and experience. This Chapter addresses the question of whether the draft RODA meets the objectives set out in Decision 52/1425. That is, to provide DSPs with unbundled line sharing and bitstream access to STC's local loop networks, for the provision of non-voice data services.

2.1 RODA Structure

The draft RODA is structured based on a Primary Document and a series of Annexes, Attachments and Schedules, as summarized below:

- RODA Primary Document
- Annex A: Definitions and Glossary of Terms
- Annex B: Billing Processes and Procedures
- Annex C: Technical Information

  - Annex C, Attachment 1: Bitstream ADSL CPE Specifications
  - Annex C, Attachment 2: Bitstream Access Link CPE Specifications
  - Annex C, Attachment 3: Environmental and Power
  - Annex C, Attachment 4: Tie Cable Characteristics
- Annex D: Management of Data Access Services
- Annex E: Forecasting
- Annex F: Price List
- Annex G: Services Schedule
  - Annex G, Schedule 1.1: Wholesale Bitstream Service
  - Annex G, Schedule 1.2: Bitstream Access Link Service
  - Annex G, Schedule 2.1: Local Loop Sharing Service for Line Sharing
  - Annex G, Schedule 2.2: ADSL DSLAM Site Sharing Service for Line Sharing
  - Annex G, Schedule 2.3: Wholesale Backhaul for Line Sharing Service
- Annex H: Operations and Maintenance Manual
- Annex I: Quality of Service Measures

Comment 1: Please provide comments on the structure of the draft RODA, as summarized above, including whether there should be any additional items.

2.2 RODA Primary Document

The CITC does not have any comments on the Primary Document at this phase of the process.

Comment 2: Please provide comments on the Primary Document.

2.3 Annex A: Definitions and Glossary of Terms

The CITC does not have any comments on Annex A at this phase of the process.

Comment 3: Please provide comments on Annex A.

2.4 Annex B: Billing Processes and Procedures

The CITC does not have any comments on Annex B at this phase of the process.

Comment 4: Please provide comments on Annex B.

2.5 Annex C: Technical Information

Section A, Paragraph 2

Although STC provides details of typical cable types, the CITC believes that what is more relevant is the distribution of line lengths, since this will determine the speeds that might be possible for the proposed unbundled services (shorter line lengths general allow faster speeds). Taking the above into account, the CITC is of the preliminary view that this section could be amended to provide greater detail of the distribution of line lengths in the network.

Comment 5: Please provide comments on the distribution of line lengths matter discussed above, including the CITC's preliminary view on the matter.

Section A, Paragraph 3.8

STC mentions that if a DSLAM is relocated, other licensed operators ("OLOs")[3] will be given as much notice as possible. The CITC is of the preliminary view that a defined minimum time should be given and that this should be around 7 months, as already set out in Annex D, paragraph 1.3.3.

Comment 6: Please provide comments on the notice period for DSLAM moves matter discussed above, including the CITC's preliminary view on the matter.

2.5.1 Annex C, Attachment 1: Bitstream ADSL CPE Specifications

This attachment refers to the use of micro-filters in conjunction with G.lite modems and full splitters for G.dmt modems. Experience in other countries shows that both G.992.1 (G.dmt) and G.992.2 (G.lite) versions of ADSL can in practice work with micro-filters on POTS extensions, rather than this solution being suitable only for G.lite modems. The CITC is of the preliminary view that a splitterless solution using micro-filters could be adopted on all ADSL lines.

Comment 7: Please provide comments on the technical matter discussed above, including the CITC's preliminary view on the matter.

2.5.2 Annex C, Attachment 2: Bitstream Access Link CPE Specifications

The CITC does not have any comments on Annex C, Attachment 2 at this phase of the process.

Comment 8: Please provide comments on Annex C, Attachment 2.

2.5.3 Annex C, Attachment 3: Environmental and Power

This attachment defines the Environmental and Power requirements for OLO equipment. While the standards seem to be reasonable specifications against which equipment might be procured, it appears that some items would not have any impact on STC or its buildings if the OLO chose to

[3] In Chapter 2, the other licensed operators include only DSPs. In Chapter 3, the other licensed operators include DSPs and Fixed FBPs.

adopt other standards. One example is the Shock and Drop requirements in Paragraph 4.6. While an OLO might be wise to specify this for its purchases, it is not clear that there would be any harm to STC or others if an OLO adopted different standards.

Furthermore, in Paragraph 1.1.2, reference is made to a 'proof of compliance' being required for each environmental requirement. It is important that OLOs do not face a burdensome compliance process that STC does not face.

Taking the above into account, the CITC is of the preliminary view that the Environmental and Power requirements should be modified to remove any requirements that do not affect STC or its buildings. It should be clarified that compliance with these requirements should not involve burdensome requirements on OLOs.

Comment 9: Please provide comments on the technical matter discussed above, including on the CITC's preliminary view on the matter.

2.5.4 Annex C, Attachment 4: Tie Cable Characteristics

The CITC does not have any comments on Annex C, Attachment 4 at this phase of the process.

Comment 10: Please provide comments on Annex C, Attachment 4.

2.6 Annex D: Management of Data Access Services

The CITC does not have any comments on Annex D at this phase of the process.

Comment 11: Please provide comments on Annex D.

2.7 Annex E: Forecasting

STC is proposing that OLOs submit forecasts every 6 months. These forecasts fall into two groups: (i) Short term monthly forecasts for the next six months (Advanced Capacity Order); and (ii) Long term forecasts for each quarter over the next 18 months. This covers Line Sharing, Wholesale Bitstream Service, Bitstream Access Link Service, and Wholesale Backhaul for Line Sharing. ADSL DSLAM Site Sharing Service does not require a forecast, but it is proposed that these be allocated on a first come, first served basis.

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed forecasting requirements may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 12: Please provide comments on the forecasting requirements matter discussed above, including the CITC's preliminary view on the matter.

The CITC also notes that STC is proposing that if the OLO short term forecasts are not within + or – 15% for every month, STC may claim compensation from the OLO. The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed claim for compensation may not be consistent with such international practice and trends. The CITC believes that any equipment purchased by STC as a response to over-optimistic OLO forecasts will soon be re-used as the broadband market grows. Hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 13: Please provide comments on the proposed compensation claims matter discussed above, including the CITC's preliminary view on the matter.

2.8 Annex F: Price List

This Annex sets out the proposed tariffs for the proposed RODA services. Pursuant to the Bylaw, designated dominant service providers are required to file proposed tariffs with the CITC and obtain approval from the CITC for same. In establishing proposed charges for interconnection and access, dominant service providers are required to comply with the Interconnection Guidelines (the "Guidelines"), including with respect to any pricing guidelines set out therein. STC has been designated as a dominant service provider. STC has not provided justification for its proposed RODA services tariffs.

As reflected in PN 8/1427, the general approach favoured by the CITC in these matters is to require designated dominant service providers to use a LRIC methodology to price its interconnection services. A LRIC model, however, is complex to develop and implement. As an interim measure, the CITC has used other approaches, including benchmarking and the "Retail Minus" methodology.

In the absence of the submission of a LRIC model by STC, or any other type of justification from STC for the proposed services tariffs in the draft RODA, the CITC is of the preliminary view that such proposed RODA tariffs should be evaluated on the basis of a benchmarking exercise, including in relation to Retail Minus.

Comment 14: Please provide comments on the evaluation of proposed RODA service tariffs matter, including the CITC's preliminary view on the matter.

2.8.1 Wholesale Bitstream Service (Schedule 1.1)

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed prices for Bitstream Service may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 15: Please provide comments on the proposed prices for Bitstream Service discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.8.2 Bitstream Access Link Service (Schedule 1.2)

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed prices may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 16: Please provide comments on the proposed prices for Bitstream Access Link Service discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.8.3 Local Loop Sharing Service (Line Sharing) (Schedule 2.1)

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed prices for this service may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 17: Please provide comments on the proposed prices for Line Sharing Service, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.8.4 Survey Charges (Schedule 2.2, paragraph 1)

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed prices for these services may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 18: Please provide comments on the proposed prices for the Preliminary Survey and the Final Survey services, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.8.5 ADSL DSLAM Site Sharing (Schedule 2.2, paragraph 3)

STC makes no specific proposal for the rental of space in co-location buildings, and proposes that it should be "bespoke". The CITC notes that the principle of a reference offer suggests that no terms and conditions should be left as bespoke and that all services being offered should include standard terms and conditions, including with respect to charges. In this particular case, this would serve to reduce uncertainty, simplify arriving at agreements between STC and the OLOs and avoid negotiations on a site-by-site basis. Hence, the CITC is of the preliminary view that STC should propose a specific ADSL DSLAM site sharing rental charge or charges, rather than leave it as "bespoke".

Comment 19: Please provide comments on the pricing issue discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, proposed charges with reference to international benchmarking.

2.8.6 Backhaul Service for Line Sharing (Schedule 2.3)

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed prices for this service may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same.

Comment 20: Please provide comments on the proposed prices for the "Local Service" and the "National Service" components of the Line Sharing backhaul service, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.9 Annex G: Services Schedule

The CITC does not have any comments on Annex G (in general, not including the schedules) at this phase of the process.

Comment 21: Please provide comments on Annex G (in general, not including the schedules discussed below).

2.9.1 Annex G, Schedule 1.1: Wholesale Bitstream Service

General

The CITC notes that generally around the world, two types of Bitstream access services have been offered. As summarized below, one type of service is generally referred to as "ATM Bitstream" and the other as "IP Bitstream":

- **ATM Bitstream:** The Incumbent[4] provides the DSL access link plus a Layer 2 backhaul service and hands over the bitstream to the OLO at an ATM POP. The OLO has the possibility to subdivide the virtual path further into virtual circuits in order to give individual customers different speeds and contention ratios. The OLO runs the BRAS.

- **IP Bitstream:** The Incumbent provides the DSL access link plus a Layer 3 backhaul service and hands over the bitstream to the OLO at an IP POI. The OLO has less

[4] In the descriptions below and in Annex A we refer in general to the service provider offering the unbundling services as the "Incumbent".

capability to vary the speed and contention ratio offered to end-customers. The IP traffic of the OLO goes over the Incumbent's BRAS.

The CITC believes that the Bitstream Access service being proposed by STC may generally be classified as "IP Bitstream". The CITC notes that STC is not proposing to offer "ATM Bitstream" as part of its draft RODA. The CITC is of the preliminary view that the proposed IP Bitstream service (together with the proposed Line Sharing service) may be sufficient for OLO needs at this initial stage of the unbundling process. If justified by current or future market demand, CITC could consider requiring CITC to also offer an ATM Bitstream service as well.

Comment 22: Please provide comments on the Bitstream service matter discussed above, including the CITC's preliminary view on these matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

Paragraph 3.5

STC proposes that each OLO should establish Points of Interconnection ("POIs") in each of Riyadh, Jeddah and Damman. It could be that OLOs will be content with this arrangement, but equally it should be technically possible to establish just one or two POIs initially and use the ATM 'cloud' to reach the remaining areas. The CITC is of the preliminary view that STC should, if requested, allow an OLO to interconnect at less than 3 POIs for initial service launch.

Comment 23: Please provide comments on the POIs matter discussed above, including the CITC's preliminary view on the matter.

Un-numbered paragraph 'Bitstream Profile Offerings'

STC proposes two services, providing 512 kbit/s and 256 kbit/s downstream speeds, with a statement that higher speeds will be provided in future. Based on an initial review of the international practice and trends in the matter, the CITC notes that these may be considered relatively modest speeds. Further, the CITC believes that it is important that STC provides the same speeds for its Wholesale Bitstream Service as it does for the corresponding retail service. For instance, STC currently provides a 128 Kbit retail service, but does not provide an equivalent Wholesale Bitstream Service. This may allow STC to compete in the slower speed segment of the market with a lower price than is available to OLOs.

Comment 24: Please provide comments on the proposed speeds in the draft RODA discussed above. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

STC proposes that it "will endeavour to offer a contention ratio of 20:1 and not falling below 40:1". The CITC is concerned that STC's proposal with respect to the contention ratio is not definitive. A contention ratio of 40:1 may not be adequate for the needs of some OLOs. The CITC is of the

preliminary view that it may be appropriate for STC to modify its contention ratio proposal to a definitive 20:1 or to provide full justification for its default proposed contention ratio of 40:1.

Comment 25: Please provide comments on the contention ratio matter discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

Paragraph 4.3

The initial annual order for Wholesale Bitstream Service is proposed to be no less than 60,000 lines and that subsequent minimum orders be of 1,000 lines. The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed initial and subsequent minimum order requirements may not be consistent with such international practice and trends and could constitute an unreasonable entry barrier to smaller OLOs. Hence, the CITC is of the preliminary view that it may be appropriate for STC to modify such a proposal or to provide full justification for same.

Comment 26: Please provide comments on the proposed initial annual order and subsequent order matter discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

Paragraphs 4.4 – 4.5

STC proposes its timetable for ordering for Wholesale Bitstream Service. STC acknowledges the order after 5 days, and gives its initial response 10 days after receiving the request for a bitstream service. It allows 30 days for negotiation (or 60 if more than network conditioning required). The same timescales apply to the Bitstream Access Link Service (Schedule 1.2 Clauses 4.3 and 4.4), Local Loop Sharing Service (Line Sharing) (Schedule 2.1 Clauses 4.3 and 4.4). For the DSLAM Site Sharing for Line Sharing the period for the initial response is within 15 business days (Schedule 2.2 Clauses 4.3 and 4.4). STC does not set out any timescales for the delivery of these services, although this information may appear in Annex H (Quality of Service) when it is produced.

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed delivery schedule may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such a proposal or to provide full justification for same.

Comment 27: Please provide comments on the proposed delivery schedule matter discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

Paragraph 4.8

Reference is made to "network conditioning charges". The CITC notes that the term "network conditioning" is not defined in Annex A, nor are any such charges proposed in Annex F. The CITC is of the preliminary view that the term "network conditioning" needs to be defined and added to the Glossary and that the nature of any proposed charges for this service be clarified and justified. If so justified, they should be set out in Annex F.

Comment 28: Please provide comments on the network conditioning charges matter discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, proposed charges with reference to international benchmarking.

2.9.2 Annex G, Schedule 1.2: Bitstream Access Link Service

Paragraph 3.6

The paragraph states that the Bitstream Access Link Service may use both fixed and wireless systems. In Annex C, Attachment 2, only an optical interface is defined, so the CITC is of the preliminary view that paragraph 3.6 should be clarified to make it clear that 'wireless' does not imply a wireless interface to the OLO.

Comment 29: Please provide comments on the Access Link service matter discussed above, including the CITC's preliminary view on the matter.

2.9.3 Annex G, Schedule 2.1: Local Loop Sharing Service (Line Sharing)

Figure 1

Figure 1 appears to superimpose two different network diagrams. Figure 1 appears to show the splitter being provided by STC outside the OLO's area. The CITC notes that in practice, DSLAMs usually have inbuilt splitters and it may prove more practical to use these rather than provide separate splitters at additional cost and hence the CITC is of the preliminary view that splitters in the OLO's DSLAM should be used instead of additional separate splitters provided by STC.

Comment 30: Please provide comments on the splitter matter discussed above, including the CITC's preliminary view on the matter.

Paragraph 3.4

STC proposes that the OLO ADSL service has to cease if the subscriber ceases their STC analogue telephone service. The CITC is concerned about the impact on the end user of such a proposal. Hence, the CITC is of the preliminary view that STC should modify its proposal to ensure that there is no involuntary discontinuation of the ADSL service to the end user in this instance.

Comment 31: Please provide comments on the continuity of service matter discussed above, including the CITC's preliminary view on the matter.

Paragraph 3.11

STC proposes all OLO equipment must comply with the specifications in Annex C and STC's Access Network Frequency Plan ("ANFP"). The CITC notes that it has not approved such an ANFP and that hence it may not be appropriate for STC to propose such a requirement. Hence, the CITC is of the preliminary view that it may be appropriate for STC to modify the ANFP requirement proposal or to provide full justification for same.

Comment 32: Please provide comments on the ANFP matter discussed above, including the CITC's preliminary view on the matter.

Paragraph 3.16

OLOs are required to supply STC with Technical Manuals and Specifications. The CITC is of the preliminary view that this proposed requirement may be both intrusive and unnecessary. As the OLO already has to comply with the Access Network Frequency Plan, it is not clear why STC needs to see the details of the equipment.

Comment 33: Please provide comments on the proposed Manuals and Specifications matter discussed above, including the CITC's preliminary view on the matter.

Paragraph 3.18

STC proposes that OLOs are not permitted to house equipment in the site sharing facility other than for the purpose of providing ADSL service to end user subscribers. The CITC is concerned that this proposal could be interpreted as restricting the ability of OLOs to utilize their own or a third party backhaul link.

The CITC notes that after STC submitted its draft RODA, the CITC issued Decision 113/1427 on April 19, 2006 in relation to the STC RIO. With respect to collocation of OLO transmission equipment in STC sites, Decision 113/1427 sets out that STC shall allow "other licensed service providers to use their own or third party cable links to reach STC sites". The CITC believes that STC should modify this proposal to comply with Decision 113/1427.

Comment 34: Please provide comments on the proposed site sharing restriction issue discussed above, including the CITC's view on the matter.

Paragraph 5.1

This paragraph notes that the subscriber might have services other than normal voice service which could impact on the provision of DSL service. The CITC is of the preliminary view that STC should

publish a specific list of such services and that STC and the OLOs should agree, for each service concerned, how broadband orders placed on such lines should be treated, for example, the order is rejected; or the incompatible part of the existing service is cancelled and the order accepted; or the order held awaiting the customer's decision on its requirements.

Comment 35: Please provide comments on the service provision matter discussed above, including the CITC's preliminary view on the matter.

2.9.4 Annex G, Schedule 2.2: ADSL DSLAM Site Sharing Service for Line Sharing

General

STC proposes the ADSL DSLAM Site Sharing Service to be provided by the means generally referred to as "Adjacent Collocation". For reference purposes, the possible types of Collocation services are presented in Annex A of this Consultation Document. The CITC is concerned that STC is only offering Adjacent Collocation, as this requires expensive and difficult construction of buildings within the STC site. Since this may be considered discriminatory, as STC's own ADSL equipment would be installed at much lower cost within their normal exchange equipment area, the CITC is of the preliminary view that, if feasible, STC should also offer "Co-mingling Collocation" (as set out in Annex A of this Consultation Document). If this is not feasible (for instance, if space is shown to be limited), then the CITC believes that STC's own DSL equipment should be installed in similar conditions to that of the OLOs.

Comment 36: Please provide comments on the collocation issues discussed above, including the CITC's preliminary views on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international trends and practices.

Paragraphs 4.3 and 4.4

STC proposes timescales for ordering DSLAM sites. The time for the initial response is within 15 business days, and the detailed survey will take 4 to 6 months to complete. No timescales are given for delivery of the co-location facilities.

The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed schedule may not be consistent with such international practice and trends and hence the CITC is of the preliminary view that it may be appropriate for STC to modify such proposals or to provide full justification for same and to propose specific timescales for the delivery of the co-location facilities.

Comment 37: Please provide comments on the proposed schedule matter discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

2.9.5 Annex G, Schedule 2.3: Wholesale Backhaul for Line Sharing Service

General

The proposed wholesale backhaul service for Line Sharing is described as being an ATM or IP/VPN data service. The CITC notes that where an OLO has invested in Line Sharing and the equipment necessary to provide DSL service, it is possible that the OLO also has its own ATM/IP data network and therefore may find such a service restricts their flexibility with respect to the portfolio of services they could offer to their customers. However, such OLOs may need STC or a 3rd party to provide a lower layer transmission service to connect from the Line Sharing site to their ATM/IP data network. Hence, the CITC is of the preliminary view that a lower layer transmission service may be sufficient in some instances and therefore STC should modify its proposal to offer a lower layer transmission service as well as an ATM or IP backhaul service.

Comment 38: Please provide comments on the type of backhaul matter discussed above, including the CITC's preliminary view on the matter.

Paragraph 7.1

STC proposes that the backhaul service shall be provided in accordance with ATM variable bit rate ("VBR") or MPLS IP-VPN services. The CITC is of the preliminary view that STC should include a specification for these ATM and MPLS services in the draft RODA, so that OLOs may decide whether they wish to purchase them.

Comment 39: Please provide comments on the specification matter discussed above, including the CITC's preliminary view on the matter.

2.10 Annex H: Operations and Maintenance Manual

General

The Operations and Maintenance Manual contains no process for the migration of customers between Wholesale Bitstream and Line Sharing. The CITC notes that it should be relatively easy to migrate end-customers at any exchange from Wholesale Bitstream to Line Sharing. Therefore, the CITC is of the preliminary view that STC should include in the draft RODA appropriate processes and the corresponding charges, if any, for the migration of customers between Wholesale Bitstream and Line Sharing.

Comment 40: Please provide comments on the migration matter discussed above, including the CITC's preliminary view on the matter.

Section B, Paragraph 1.13

This paragraph refers to a daily limit on subscriber activations and proposes that this constraint will be shared by all OLOs. The CITC notes that STC does not stipulate what that daily limit may be.

The CITC believes that this proposed daily limit needs to be analysed, especially if it is caused by any inefficiencies related to manual and/and paper-based systems. The only real limit in the provision of broadband may be caused by the number of technicians who can work on a single MDF simultaneously. The CITC is of the preliminary view that STC should modify its proposal and specify a daily limit, if any. The CITC believes that STC should justify any proposed daily and that any daily limit should apply to both STC's retail service and that of the OLOs collectively.

Comment 41: Please provide comments on the daily limit on subscriber activations matter discussed above, including the CITC's preliminary view on the matter.

Section B, Paragraph 2.1 (and later)

The CITC notes that much of the provisioning process proposed by STC could be automated. The paper-based system proposed by STC could put OLOs at a comparative disadvantage to STC's own retail arm providing broadband services.

The CITC believes that consideration should be given to the provision of electronic interfaces for ordering and repair processes in the mid-term. Given the time that this may take to develop, however, the CITC is of the preliminary view that initial deployment using paper based systems would be appropriate in the short-term. This is not just a matter for STC to deliver, since any electronic ordering system requires OLOs to have compatible systems to interoperate with STC. For smaller OLOs, a web-based interface (e.g. Graphical User Interface ("GUI")) may be sufficient. However, for larger OLOs, full inter-working between respective computer systems is typically recommended, using protocols which can support an extensible dialogue which could embrace both provision and repair processes.

Comment 42: Please provide comments on the provisioning process matter discussed above, including the CITC's preliminary view on the matter.

Section D, Paragraph 2.3

A limit of 100 pairs a day is proposed by STC. The CITC has examined international practice and trends in this matter. The CITC is concerned that the proposed limit may not be consistent with such international practice and trends. In any event, it would be reasonable that any overall limitation must include STC's own activations as well as those of the OLOs. Hence the CITC is of the preliminary view that it may be appropriate for STC to modify such a proposal or to provide full justification for same.

Comment 43: Please provide comments on the proposed daily limit discussed above, including the CITC's preliminary view on the matter. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

Section D, Paragraph 2.4 h)

STC proposes that it can refuse the Line Sharing request if it believes it may interfere with STC's services. The CITC notes that since all OLOs must only use equipment and configurations that comply with Annex C, there should be no reason for STC to refuse Line Sharing on such a basis. Hence, the CITC is of the preliminary view that this paragraph should be removed.

Comment 44: Please provide comments on the proposed refusal of service matter discussed above, including the CITC's preliminary view on the matter.

2.11 Annex I: Quality of Service Measures

The CITC does not have any comments on Annex I at this phase of the process.

Comment 45: Please provide comments on Annex I. Respondents are encouraged to provide justification for their comments, including, if possible, with reference to international benchmarking.

3. Suitability of draft RODA for PN 8/1427 proposals

The CITC issued PN 8/1427 after STC produced the draft RODA. This sequence of events raises the question of whether the unbundled services proposed in the draft RODA are suitable for the wider applications, including IP Telephony services, which new fixed FBPs may provide. Therefore, this Chapter 3 addresses the question of whether the draft RODA is suitable in the context of the proposals set out in PN 8/1427.

It is expected that new Fixed FBPs may also provide applications other than data and voice over such unbundled facilities, including video and other advanced services. Therefore, while this Chapter reflects the focus on voice services of the proposals set out in PN 8/1427, it also discusses the suitability of the draft RODA in the context of the provision of video services and other types of advanced services.

Sections 3.1 and 3.2 address the suitability of the draft RODA from a technical perspective for Bitstream Service and Line Sharing Service, respectively. Section 3.3 addresses other aspects of the draft RODA.

3.1 Bitstream Service

In principle, any Bitstream service provides a generic IP layer 3 transport service, so any service or application that can work over an IP based network should be able to work over Bitstream. Voice services are now often provided over such Bitstream access services.

The CITC notes that the critical issue determining the acceptability of Bitstream for use with services other than voice is the Quality of Service ("QoS"). The principal parameters that determine QoS are:

- **Bandwidth;**
- **Symmetricality**: the ratio of Downstream to Upstream speeds;
- **Contention ratio:** the ratio of the end-customer's maximum access bandwidth to the average available bandwidth over the data network;
- **Delay:** the transit time across the network; and
- **Jitter:** the variability of delay caused by queuing and processing of messages.

3.1.2 Bandwidth

STC is proposing downstream speeds of 512 kbit/s and 256 kbit/s. As noted in the previous Chapter, these are relatively modest speeds compared to what is now offered in many countries. IP Telephony services often use efficient codecs that consume less bandwidth than the traditional bandwidth assigned in circuit switched TDM networks, i.e. 64 kbit/s. Typically, around 14 kbit/s might be consumed by IP Telephony services, less if silence suppression is used. Therefore, the CITC believes that from the bandwidth perspective, the proposed Bitstream Services should be capable of supporting most typical IP Telephony services.

The proposed speed of 512 kbit/s will likely restrict what can be achieved with video services. Many web-based services for streaming short video clips use a maximum bandwidth of 300 kbit/s and often offer lower speed alternatives too. But high quality video streaming for sustained viewing of films usually needs a minimum of 2 Mbit/s, which with overheads means a transmission rate of 2.3 Mbit/s. Indeed, many film rights owners will not allow retransmission at lower speeds in order to protect the quality of their brand. Hence, the CITC believes that the proposed Bitstream service may not be suitable for full quality video services.

3.1.3 Symmetricality

Although voice is a symmetrical service, its bandwidth is much smaller than the upstream speed of 128 kbit/s, so the asymmetrical Bitstream service should be adequate. Many other services, such as video and web downloads are highly asymmetrical and the proposed Bitstream service is therefore suitable. Some business customers may wish to have a service to connect to a site-based server, which is more likely to make symmetrical demands on the network, or if used as a site for downloading to other users, highly asymmetrical in the reverse direction. Such demand typically requires the use of a symmetrical form of DSL ("SDSL") which the CITC notes is not provided in the proposed Bitstream service, nor indeed can it be supported by the proposed Line Sharing service.

3.1.4 Contention Ratio

QOS perceived by users will be affected by two sorts of contention. Generally, contention refers for the "competition" for bandwidth resources when there is more demand than available bandwidth. Contention affects services in different ways. It may delay the service (e.g. slow down the

completion of a web page) or it may create more serious problems (e.g. loss of syllables or words in speech, or in video a temporary 'freeze' in the picture or the picture breaking into pixellated areas).

The two forms of contention are:

- **User contention,** where one service is competing with another on the end-customer's own broadband access.
    - This might include a voice call competing with a high volume web download on the same computer, or one computer competing with another, where end-customers establish a "local" network behind their broadband line.
- **Network contention**, where end-customers compete for network bandwidth with each other.
    - STC proposes to "endeavour to offer a contention ratio of 20:1 and not falling below 40:1". As noted in Chapter 2, this lack of definitiveness is of concern to the CITC.
    - For instance, assuming STC does indeed provide a contention ratio of 20:1, and an end-customer has the 512 kbit/s Bitstream Service, that customer would in practice have an average of 25.6 kbit/s available. This will likely result in adequate service in most circumstances for many applications, including IP Telephony services.
    - However, if the actual contention ratio is 40:1 and an end-customer has the 256 kbit/s Bitstream Service, that customer would in practice have an average of 6.4 kbit/s available. This may not result in adequate IP Telephony services.

The proposed Bitstream service should allow OLOs to assist users with the management of their own contention issues, for example, by providing a router that gives priority for voice calls by using a separate telephone port. A 20:1 network contention ratio, especially with the proposed 512 kbit/s Bitstream Service, should be capable of adequately supporting most typical IP Telephony services, but is not likely to be suitable for the quality delivery of video streaming services. On the other hand, a 40:1 network contention ratio, combined with the proposed 256 kbit/s Bitstream Service, may not be capable of adequately supporting most typical IP Telephony services,

3.1.5 Delay & Jitter

All Bitstream services impose delays on the end-to-end transport of data. The ADSL frame structure itself imposes a delay, while the ATM/IP backhaul service may impose delays caused by contention. Because the variable delays caused by contention create jitter, all real-time services delivered over IP networks have a built-in delay buffer to absorb the effect of jitter. This buffer delay far exceeds any other delays, e.g. that caused by the ADSL system.

Generally, OLOs offering IP Telephony services have to decide what buffer delay they are going to use and if the network quality is low, the delay has to be higher, causing an unnatural feel to the conversation. OLOs will have no control over the impact that other customers have on the delays imposed to their services, which probably means that "carrier-grade" telephony is not possible.

However, video streaming does not have an interactive element and so longer buffer delays can be used to ensure uninterrupted viewing.

3.1.6 Conclusion

Taking all the above into account, the CITC is of the preliminary view that, depending on the contention ratio actually offered by STC, either one (the 512 kbit/s service) or both of the proposed Bitstream Services are likely to adequately support IP Telephony services. Neither of the proposed Bitstream Services is likely to be suitable for video services, except those deliberately offered as shorter, low quality clips. The OLOs will not have any control over the network performance parameters (to gain such control, the proposed Line Sharing service would be required).

Comment 46: Please comment on the suitability of the proposed Bitstream Service to meet the requirements of the proposals set out in PN 8/1427 as discussed above, including the CITC's preliminary view on the matter.

3.2 Line Sharing Service

With the Line Sharing service, the data service provided over the end-customer's line would be provided by the OLO. The OLOs can therefore control the speed, symmetricality and contention of the service offered to match the intended service(s). However, given that the data path shares the local loop with ordinary voice telephony provide by STC means that only ADSL services can be provided.

Another factor that OLOs will need to take into account is that faster ADSL services may be possible on shorter lines, but, as noted in Chapter 2, the draft RODA does not include any information about the distribution of line lengths in the network. This information is needed to decide whether there would be a sufficiently number of end-customers to justify launching services above the proposed 512 kbit/s service.

Taking the above into account, the CITC is of the preliminary view that for the proposed Line Sharing service, the OLOs will likely have enough control of the network parameters to offer IP Telephony services and even high quality video services. The CITC is concerned that the lack of information on the distribution of STC line lengths may make investment decisions difficult for the OLOs.

Comment 47: Please comment on the suitability of the proposed Line Sharing Service to meet the requirements of the proposals set out in PN 8/1427 as discussed above, including the CITC's preliminary view on the matter.

3.3 Other aspects

The CITC believes that there could be other aspects of the draft RODA that may need to be modified for the draft RODA to be suitable in the context of the proposals set out in PN 8/1427. For instance,

the CITC notes that the proposed service definition of the Wholesale Bitstream Service in Annex G, Schedule 1.1 is as follows:

> "Wholesale Bit Stream service is a broadband access wholesale product, which utilizes STC equipped ADSL technology in the local loops, and which is backhaul transported across the STC Data network to Points at Edge Switches/Routers from which Bitstream Access Link provide the Wholesale ADSL capacity data service to Data OLOs."

The proposed service definition for Bit Stream Access Link Service in Annex G, Schedule 1.2 is also DSP-specific:

> "A service where STC provides Wholesale Bit Stream Transmission capacity from the STC Edge Switch and/or Router to the premises of the Other Licensed Operator. (The Bit Stream Access Link Service shall only be provided to the sites of operators holding Data Service Licenses in KSA)."

The proposed service definitions associated with the Line Sharing Service are not DSP-specific, however. With a view to making the draft RODA suitable for the proposals set out in PN 8/1427, the proposed service definitions associated with Bitstream Service would have to be modified to also include Fixed FBPs. In addition to these service definitions, the CITC believes that there could be other aspects of the draft RODA that may need to be modified.

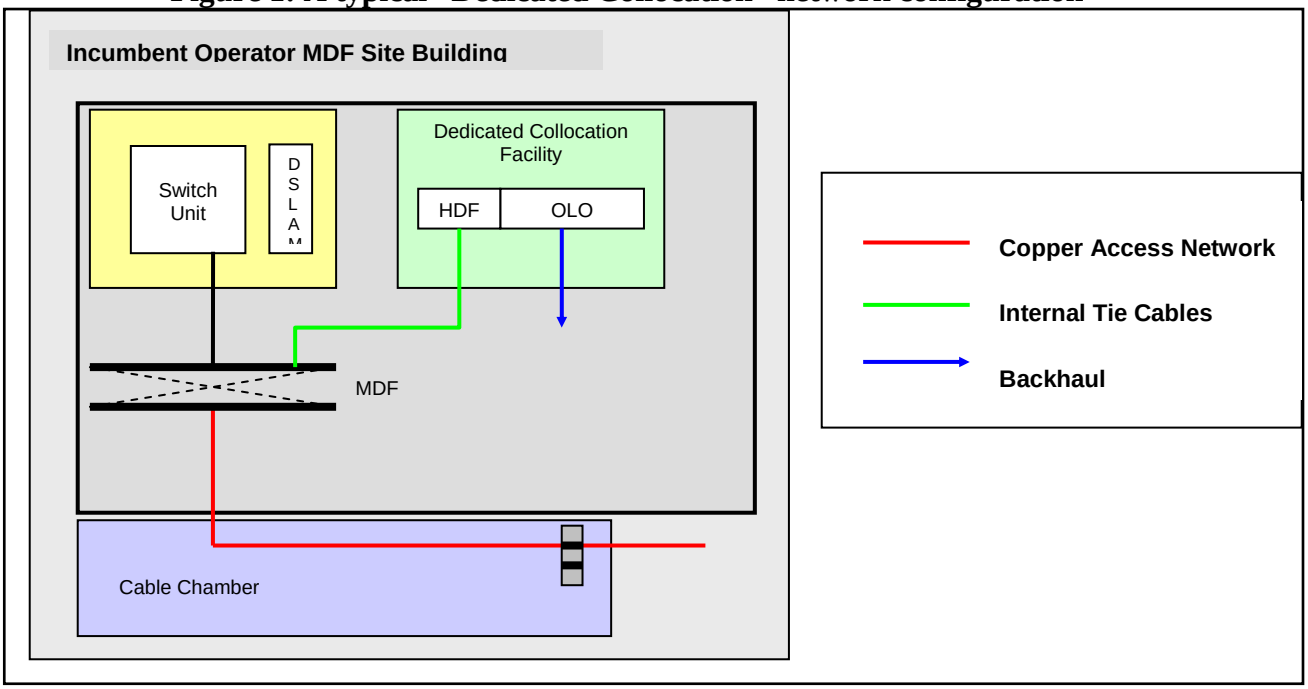
Comment 48: Please comment on the service definition matter discussed above and whether there are other aspects of the draft RODA that may need to be modified to meet the requirements of the proposals set out in PN 8/1427.

Annex A: Collocation Services

Collocation is the term used to describe the housing of DSL equipment owned and operated by an OLO inside or in the vicinity of an Incumbent's MDF site, and covers five basic configurations. This Annex describes each of these five types of collocation services in words and via a network diagram of a typical configuration. The CITC notes that this Annex is included for illustrative purpose only so that Respondents and the CITC may have a common understanding of the terminology for classifying types of collocation services. In describing these services it is not the intention of the CITC to prescribe any particular network configuration or to describe any particular service included in the draft RODA.

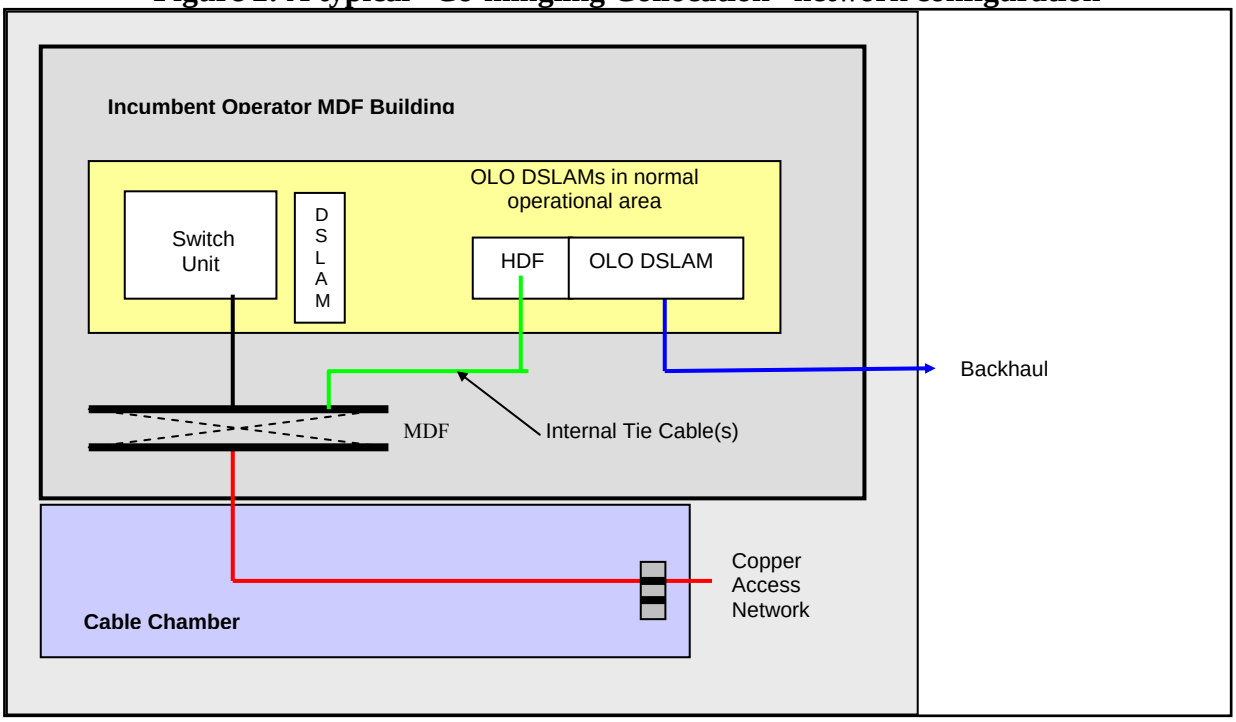
Dedicated Collocation. Generally requires that the Incumbent provide a secure equipment room inside the building housing the MDF. An internal tie cable is used to provide connectivity to the MDF, power and environmental controls being supplied by the Incumbent. A specific collocation room or caged area is constructed. This facility may or may not be shared amongst OLOs. Where it is shared, common racking may be constructed, sometimes referred to as a Collocation Hostel.

Figure 1: A typical "Dedicated Collocation" network configuration



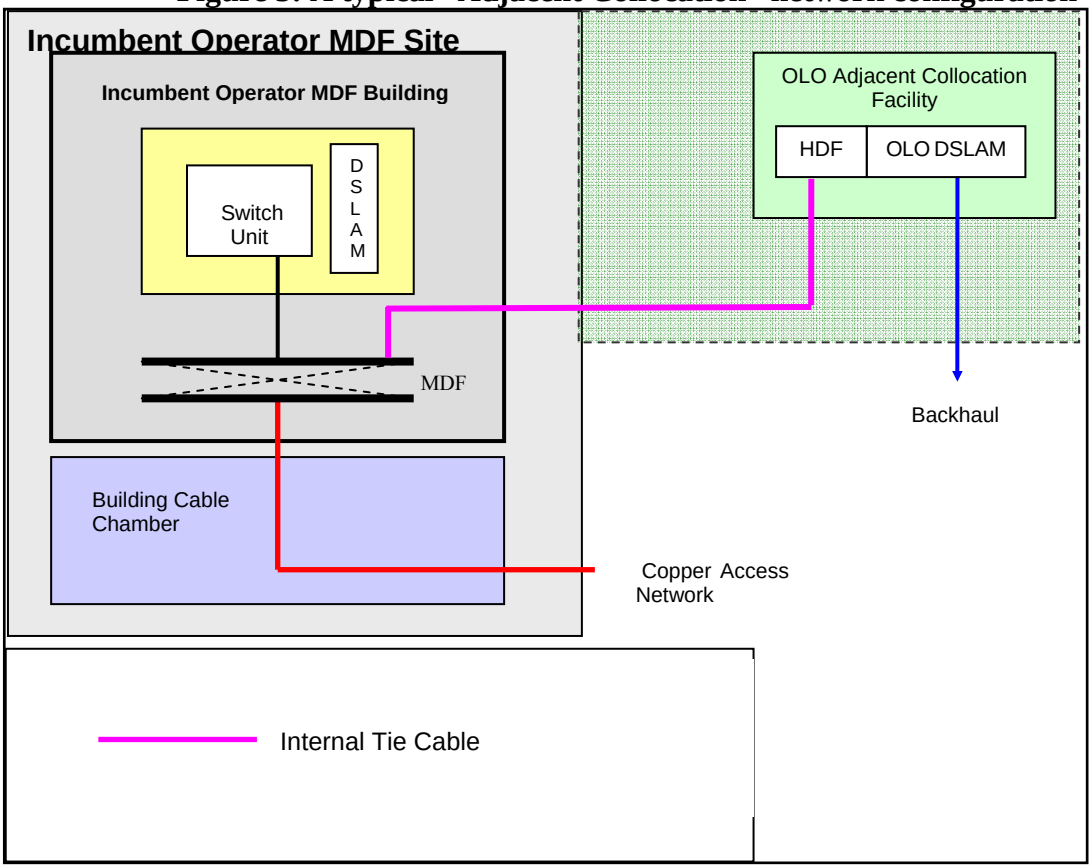
Co-mingling Collocation. Requires the Incumbent to provide common operational areas within the MDF where an OLO can install its DSL equipment. An internal tie cable provides connectivity to the MDF, with power and other controls supplied by the Incumbent. No cages or walls are used. However, a specific HDF will still be provided.

Figure 2: A typical "Co-mingling Collocation" network configuration



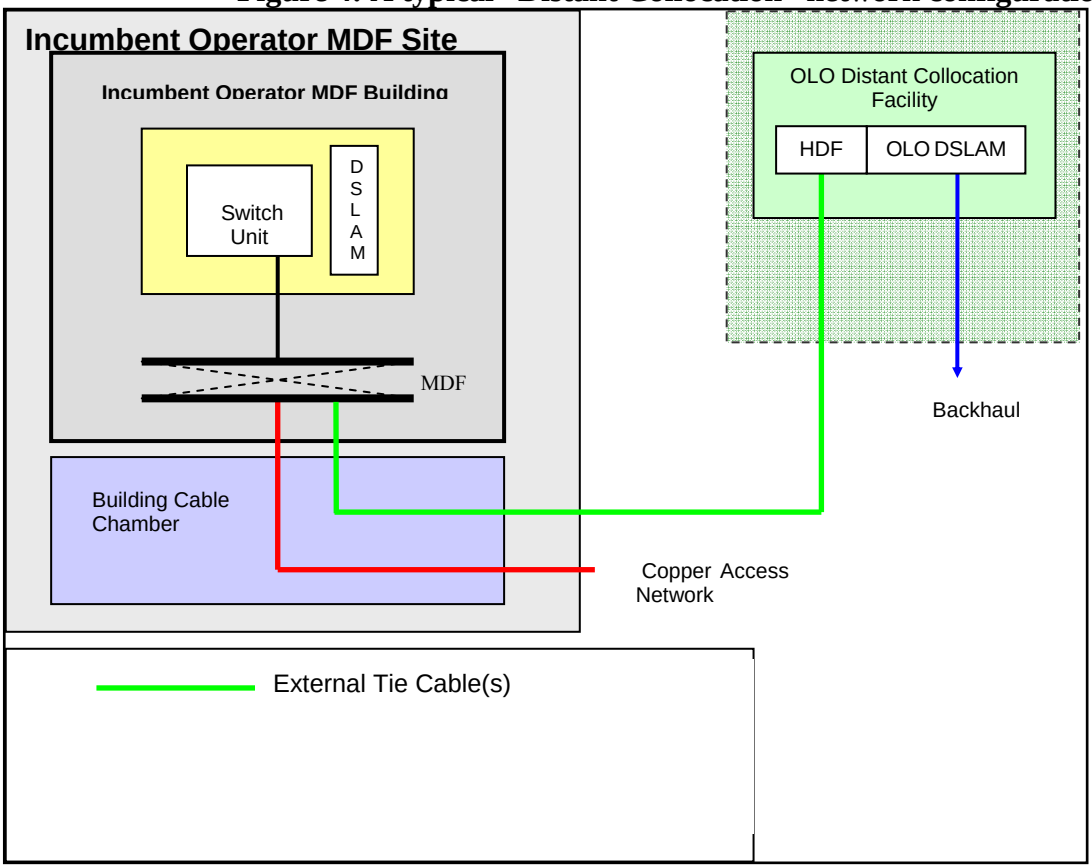
Adjacent Collocation. Used when the Incumbent has no available space within the MDF building. The OLO houses DSL equipment external to the building but still within the MDF site boundary, on land not required for operational use. The equipment may be housed in a building or cabinet and connects to the MDF building using internal tie cables.

Figure 3: A typical "Adjacent Collocation" network configuration



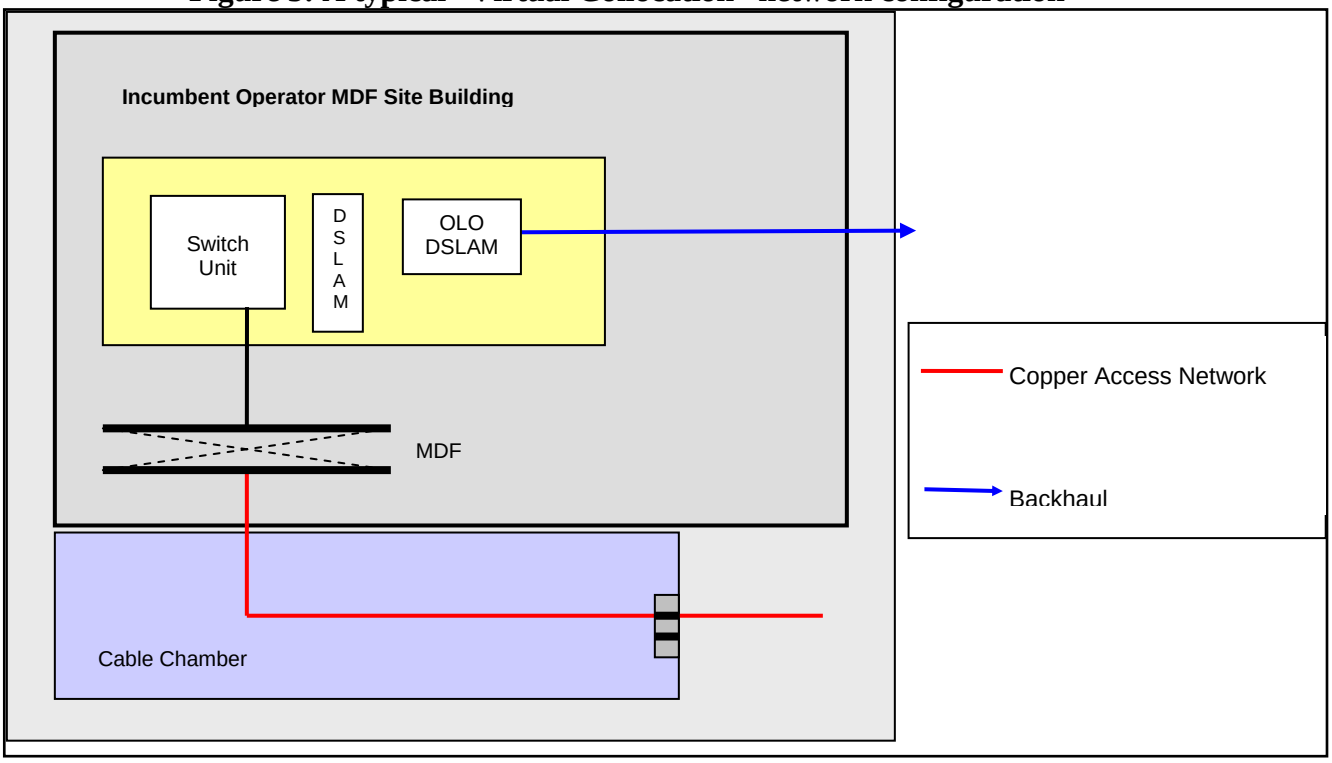
Distant Collocation. Used when the Incumbent has no available space within an MDF building and no space for Adjacent Collocation. The OLO houses DSL equipment in an external building and connects to the MDF site using external tie cables in street ducts. Since the extra loop length can affect the speed and reach of the OLO's DSL systems, this form of collocation should only be used if no other method is possible.

Figure 4: A typical "Distant Collocation" network configuration



Virtual Collocation. The OLO does not collocate its own equipment, but uses dedicated DSLAMs provided and operated by the Incumbent on its behalf and leased to the OLO, which can carry out remote configuration.

Figure 5: A typical "Virtual Collocation" network configuration



Annex B: STC draft RODA

[Please see attached PDF-format document.]