



A Consultative Document

Draft
Standards and Guidelines for the
Development of
Reference Access Offers

Version 0.2

Maintenance History		
Date	Notes	Version
June 2014	First draft for consultation	0.1
August 2013	Second draft for consultation	0.2

Contents

1. Executive Summary.....	1
2. Introduction	2
2.1 Rationale	2
2.2 Objectives.....	4
2.3 Regulatory Framework.....	4
2.4 Review Cycle	6
2.5 Consultation Process.....	6
3. Main Elements of the RAO.....	7
4. Guidelines for Development of Legal Framework	8
5. Guidelines on Minimum Requirements for Service Descriptions.....	10
6. Guidelines on Minimum Requirements for Technical Specifications	12
7. Guidelines on Minimum Requirements for Access Charges.....	15
7.1 Regulatory oversight.....	15
7.2 Access to facilities charges.....	15
7.3 Additional service charges	16
8. Overview of the Standards and Guidelines.....	18
8.1 Minimum Requirements for the Legal Framework of the Access Agreement	19
8.2 Minimum Requirements for Service Description	20
8.3 Minimum Technical Requirements.....	21
8.4 Minimum Requirements for Access Charges.....	23
Bibliography	24

1. Executive Summary

Access to facilities is a term used by the Authority to describe the sharing of facilities among operators. While the actual elements which comprise facility where sharing is mandated by the regulator may vary from jurisdiction to jurisdiction, the underlying principle of facility sharing remains the same. Facility sharing is required to promote competition and to develop the sector. To achieve this, it is imperative that such be done in a fair, transparent, timely and non – discriminatory manner.

The Authority in its continued attempt to further enhance competition in the sector and to stimulate investment, has developed this tool – **Draft Standards and Guidelines for Development of Access Offers** which will provide concessionaires with the minimum requirements for the development of **Reference Access Offers (RAO)**. The intent is to encourage fair and timely commercial negotiations between parties.

This document seeks to identify the main elements of the RAO. Specifically:

1. Legal Framework
2. Service Description
3. Technical Specifications
4. Access to Facilities Charges

Additionally, like the IRIO (Indicative Reference Interconnection Offer), the Indicative Reference Access Offer (IRAO) seeks to provide the minimum requirements in each of the above aspects, thus providing greater transparency and predictability to the Authority of a submitted RAO. These requirements are based on international best practices and relevant provisions in the Authority’s regulatory framework. These include but are not limited to:

- The Telecommunications Act, Chap 47:3;
- The Telecommunications (Access to Facilities) Regulations 2006; and
- Draft Telecommunications (Pricing) Regulations 2008.

2. Introduction

2.1 Rationale

The Telecommunications Act Chap 47:31 hereinafter referred to as “the Act” contains provisions which address the necessity of telecommunications and broadcasting concessionaires to provide access and share facilities which it owns or controls.

Section 26 (1) stipulates that a concessionaire shall be required to provide other concessionaires with access to facilities which it owns or controls.

“Subject to the provisions of this section, it shall be a further condition of a concession for a public telecommunications network and broadcasting service that the concessionaire be required to provide other concessionaires with access to the facilities that it owns or controls, such access not to be unreasonably withheld.”

To support this mandate the Telecommunications (Access to Facilities) Regulations, 2006 was promulgated which served as a regulatory tool, together with the Telecommunications (Interconnection) Regulations, to encourage sharing of facilities and interconnection respectively which are key levers in promoting competition and stimulating investment.

It is worth noting that some of the aforementioned objectives have been met as evidenced by increased infrastructure growth and greater investment in the Telecommunications and Broadcasting sectors. As a result, consumers have benefited from increased competition in the sector through reduced prices, enhanced quality of service and the availability of a wider variety of telecommunications services.

However, while acknowledging that these are impressive developments within the industry, the Authority recognizes that even more can be accomplished to the benefit of the wider society. Specifically, the Authority is of the view that through the development of an effective facility sharing system within the sector, the following can be achieved:

- Faster and wider roll-out of networks into new and currently underserved geographical areas;
- Increased broadband penetration;
- Stronger competition;
- Reduction of the proliferation of cell towers;
- Reduced costs for operators, making it possible to lower subscriber prices;
- Reduced barrier to competitive entry;
- Removal of the burden of acquiring rights of way;

- Enhanced focus on service and product innovation; and
- Reduction of negative environmental impact.

It is proposed that the benefits intimated above can be addressed by means of effective facilities sharing, not only between new entrants and the incumbent but between existing operators as well. As such, the Authority recognizes the importance for concessionaires to make publicly available their network components through the development of Reference Access Offers.

Section 26 (4) of the Act empowers the Authority to regulate the terms and conditions for access to any facility. Facilities as defined by the Act, refer to a physical component of a telecommunications network other than a terminal equipment. These components constitute both the passive and active elements of networks. However, the Authority firmly believes that now is the opportune time to implement regulatory measures to ensure that the **passive components**¹ or **facilities**² of networks are shared effectively and efficiently amongst operators to facilitate site sharing.

These components which are used for supporting or carrying telecommunications facilities as outlined in Regulation 4 (h) of the Telecommunications (Access to Facilities) Regulations include but are not limited to:

- ✓ Towers
- ✓ Poles
- ✓ Ducts and manholes
- ✓ Space (building, land)

It is proposed that facility sharing can be accomplished most efficaciously if access to such facilities is managed and administered through the development of an Indicative Reference Access Offer (IRAO) which would provide concessionaires with the minimum requirements for the development of a Reference Access Offer and which would ultimately facilitate the prompt and efficient conclusion of an Access Agreement pursuant to Regulation 11 (1) of the Access to Facilities Regulations. It is also the intention of the IRAO to provide guidelines that would ensure that access to facilities is negotiated on a non-discriminatory and equitable basis.

¹ Passive components refer to the non-electronic components of the network.

² For purpose of this document, facilities shall refer to the passive infrastructure or passive components of the network. The Authority reserves the right to amend this document as it deems necessary to incorporate other facilities as defined by the Act.

2.2 Objectives

This draft Standards and Guidelines for the Development of Reference Access Offer (RAO) for access to facilities is a tool designed to facilitate fair and commercially negotiated facility sharing arrangements between service providers. It seeks to:

- Provide guidelines for the preparation of a RAO, so that there is predictability in the Authority's assessments of a RAO;
- Set advanced guidelines which would facilitate timely commercial negotiations whereby expediting sharing arrangements;
- Define the Authority's minimum requirements for the technical and commercial aspects of access to facilities;
- Ensure that there is efficient use of resources (passive physical infrastructure);
- Improve transparency between concessionaires;
- Lower the possibility of discrimination between applicants for access to facilities;
- Ensure that the concessionaire has all the necessary internal mechanisms in place so as to efficiently and effectively negotiate an access agreement; and
- Ensure that Section 26(1) of the Telecommunications Act, Chap 47:31 is effected.

2.3 Regulatory Framework

Section 3 of the Act outlines the objectives of the Act which include *inter alia* the establishment of conditions for:

- (a) Promoting access to telecommunications services;
- (b) Ensuring that these services are affordable;
- (c) Promoting the interests of customers and purchasers in respect of quality and variety of telecommunications services; and
- (d) Promoting the telecommunications industry by encouraging investment in and the use of infrastructure to provide telecommunications services.

Additionally, the Authority seeks to establish a framework through which the prices for access to facilities and access to essential facilities are regulated pursuant to Section 26 (4) and 29 (2) (c) of the Act.

To support the Authority in accomplishing the aforementioned objectives, Section 26 (1) of same, requires that it be a condition of a concession that a concessionaire provides other concessionaires with access to facilities which it owns or controls, as this plays an integral role in achieving said objectives.

“Subject to the provisions of this section, it shall be a further condition of a concession for a public telecommunications network and broadcasting service that the concessionaire be required to provide other concessionaires with access to the facilities that it owns or controls, such access not to be unreasonably withheld.”

Section 26 (1)

Section 26 (4) of the Act empowers the Authority to adopt necessary and appropriate procedures to facilitate access to any facility and to regulate rates, terms and conditions for access to such.

“The Authority may regulate the rates, terms and conditions for access to any facility, such rates, terms and conditions to be just and reasonable and it may adopt procedures necessary and appropriate to facilitate, by such means as the Authority deems appropriate, the determination of complaints concerning such rates, terms and conditions.”

Section 26 (4)

Section 29 (2) (c) empowers the Authority to establish a price regulation regime in any case where-

“the Authority detects anti-competitive pricing or fair acts of unfair competition.”

Section 29 (2) (c)

To facilitate the Authority in its aim of regulating access to facilities as mandated by the Act, the aforementioned mandate is further bolstered by Regulation 3 of the Telecommunications (Access to Facilities) Regulations.

Regulation 3

“A holder of a concession for the provision of a public telecommunications network or broadcasting service shall-

(a) “...provide access to facilities...”

(b) “negotiate in good faith...”

(c) “neither withdraw nor impair access...”

The following regulations of the **Access to Facilities Regulations** provide further regulatory obligations of concessionaires with respect to access to facilities:

- **Regulation 4** mandates that a concessionaire provide access to its facilities. More specifically **Regulation 4(h)** mandates the sharing of the passive infrastructure components:
“Ducts, poles and towers used for supporting or carrying telecommunication facilities.”
- **Regulation 5(1)** mandates that access be provided in a non-discriminatory manner. It states:
“A concessionaire shall provide access under the same terms and conditions and of the same quality as it provides for its own networks and services, the networks and services of its subsidiaries and partners or the networks and services of any other concessionaire to which it provides access.”
- **Regulation 11(1)** mandates that an access agreement be concluded within forty-two days of receipt of an access request.
- **Regulation 16(1)** requires that every access agreement be submitted to the Authority for review.

2.4 Review Cycle

This document will be modified periodically by the Authority, with a view to adapt to the needs of the telecommunications industry and to meet changing and unforeseen circumstances. When such a need arises, the Authority will announce its intention to review the document thereby allowing for input from personnel in the telecommunications sector or any other pertinent stakeholder.

Questions or concerns regarding the maintenance of this Draft Standard and Guidelines for the Development of Access Offers should be directed via email to policy@tatt.org.tt

2.5 Consultation Process

The consultation process adopted by the Authority in this Draft Standards and Guidelines for Development of Reference Access Offers is in accordance with the Authority’s *Procedure for Consultation in the Telecommunications Sector of Trinidad and Tobago.*”

The document will be revised with considerations given to the comments and recommendations made during the consultation process.

3. Main Elements of the RAO

The RAO is a tool which provides a means where by access providers can make available their network components to an interested party in a transparent manner. Additionally, it is a medium which can facilitate the timely conclusion of an access agreement. To achieve this, it is thus imperative that the RAO contain sufficient and pertinent information, while maintaining commercially sensitive information confidential, which will guide all parties (access seeker, access provider and the Authority) involved in the commercial negotiation of an access offer.

As such, the RAO should include, among other things, prices, the technical, billing and planning conditions for access to facilities services.

The main elements of the RAO shall include:

- 1) The Legal Framework,
- 2) The specification of all minimum Access services;
- 3) The technical specification requirements; and
- 4) The proposed Access charges for services.

The RAO shall also highlight the grounds for denial of an access request in accordance with Regulation 23 of the Access to Facilities Regulations.

4. Guidelines for Development of Legal Framework

Terms and conditions

One of the key elements of the RAO is the Legal Framework. This framework should contain the contractual terms and conditions under which the access provider is granting access to its facilities to an access seeker. It shall be a requirement of the provider to provide these terms and conditions in a non-discriminatory manner as mandated by Regulation 5 (1) of the Access to Facilities Regulations, 2006.

The Legal Framework should include, at a minimum, terms relating to the administration of the contract including provisions relating to:

- The person to be notified to initiate an access request;
- Commencement and duration of agreement;
- Obligations and responsibilities of both parties;
- Breach, suspension and termination of agreement;
- Amendment of the agreement;
- Force Majeure;
- Billing and payment;
- Limitations of liability;
- Confidentiality of information shared in the conduct of negotiations, and associated limitation of use of such information; and
- Dispute resolution.

In conjunction with the items previously listed, the Legal Framework should outline terms and conditions as it relates to technical, operational, planning and pricing matters of the Reference Access Offer. As such, the RAO shall include *inter alia*:

- (a) Conditions for site assessment surveys which shall include at minimum;
 - ***Provisions to ensure that the first site visit is conducted as far as practicable within fourteen (14) days of access request, but in any instance no time outside twenty-eight (28) days of the access request;***
 - ***Provisions ensuring that where more than one site visit is required, these are concluded within forty-two (42) days of access request;***
- (b) Conditions for alteration or modification of existing sites to accommodate co-location;

- *The cost for such modification shall be in accordance with Regulations 22 of the Access to Facilities Regulations*
- (c) Conditions for accessing utilities at the site;
 - Provision should clearly articulate the approach for the access seeker to also access main and standby Power & HVAC*
- (d) Conditions for provisioning, operation and maintenance works;
 - Maintenance works can be scheduled or unscheduled. The RAO shall include provisions to ensure that access to sites to conduct unscheduled maintenance works (e.g. emergency repair) are granted within twenty-four (24) hours of notification.*
- (e) Conditions for Service Levels;
- (f) Compliance conditions for installation of equipment;
- (g) Compliance conditions for operation of equipment;
- (h) Conditions for service charging;
- (i) Provisions for assignment and subcontracting; and
- (j) Conditions and procedures for the provision of information (e.g. location of sites, information about space capacity, deadline for provision of information, etc.).

Definitions and Interpretations for the RAO

The minimum requirements when defining terms and expressions in the RAO are as follows:

- Any word or expression which has been previously defined by the relevant Telecommunications governing law and applicable legislation shall maintain the definitions ascribed to them in the relevant legislation when defined in the RAO and their definitions must refer specifically to the respective legislation.
- Any terms defined with reference to any Clause, Schedule, Annex or other Attachment shall be a reference to a Clause of, or Schedule, Annex or Attachment to the RAO and any reference to the RAO shall include any such Schedule, Annex or Attachment.

5. Guidelines on Minimum Requirements for Service Descriptions

Access to facilities services on offer must be outlined and described in the RAO. The RAO shall provide at a minimum, the type of access to facility service, general information about the service and a detailed description of the service, providing the relevant information for provision of same.

Types of Facility Sharing Services

1. Co-location Service

Co-location as defined by the Telecommunications (Access to Facilities Regulations), 2006 means the provision of space on the premises of an access provider for use by an access seeker for the purpose of installing equipment. For the purposes of this document, premises shall include the land and all structures located thereupon, including but not limited to poles, towers and buildings. There three (3) main types of co-location services are:

1. Physical co-location service

This refers to the installation of the seeker's equipment in the vicinity of and on the premises of the host operator. In this type of co-location, the seeker retains control of the installed equipment. This type of co-location can either be in the form of:

- (a) Building or non-building space co-location or; and
- (b) Tower co-location which includes pole or post co-location.

2. Duct and Manhole Access Service

Duct and manhole access service refers to sharing of ducts inclusive of pipes and conduits, for the purpose of installing and operating cables and equipment. This type of service plays a vital role in the rolling out of fiber networks.

3. Additional services

In addition to seeking access to physical infrastructure (passive) for site sharing, access seekers may also require access to the support or supplementary services of the access provider. As such, it is imperative that the conditions for the provision of these be clearly stated in the RAO, as these too play an integral role in achieving effective site sharing. These services include, *inter alia*:

- Utility services:
 - Electrical power;
 - The access provider shall indicate in the RAO how electrical power and lighting will be provided to the access seeker's equipment. The various methods may include:

- Separate T&TEC metre;
 - Sub-metred from the access provider's supply;
 - Estimated electricity consumption included in space rental charges.
- Back-up electricity via an on-site generator;
- Lighting; and
- Heating, Ventilation and Air Conditioning (HVAC).
- Supplementary services:
 - Security and alarm services;
 - Maintenance and janitorial services; and
- Supervised site access services

Service Description

The service description shall include basic information about the service, together with specific details of the means and conditions by which such services shall be provided. The description of the site sharing service shall include details specified in the Draft Standards and Guidelines.

These requirements include:

- General service information, such as the name and type of service;
- Responsibilities of both parties for ordering, provisioning, operations and maintenance and fault repair;
- Specifications, protocols and standards of equipment to be installed;
- Provisions for service charging and pricing of ancillary services; and
- Service standards to which the provider commits with regard to the provision and repair of the services covered in the agreement.

6. Guidelines on Minimum Requirements for Technical Specifications

In preparing the RAO, it is imperative that the access provider addresses technical issues in order to ensure that facility sharing is achieved in an effective manner. At a minimum the RAO shall include technical specifications as it relates to:

- (i) Equipment characteristics;
- (ii) Faults;
- (iii) Maintenance;
- (iv) Grounding; and
- (v) Loading.

1. Equipment Characteristics

To facilitate co-ordination and equipment compatibility, the access provider developing the RAO shall endeavour to provide the access seeker with relevant equipment information to ensure that standardized equipment and unified techniques are used in equipment installation. Such a requirement is necessary to ensure that access seekers do not install incompatible equipment which may cause interference to other parties' equipment or impede allocated space. In developing the RAO, the access provider, shall include the minimum requirements as outlined in the Draft Standards and Guidelines -IRAO. These requirements include:

- Restrictions on equipment that can be co-located;
- Technical specifications of equipment that can be co-located;
- International standards to which equipment shall comply;
- Physical parameters (dimension and weight) of equipment that can be co-located;
- Installation guidelines; and
- Operation and safety guidelines.

2. Faults

During the period of the sharing agreement, it is expected that faults may occur. These faults may occur on the infrastructure or on each operator's equipment. In the case of equipment faults, the RAO should include assurances to ensure that:

- (i) each operator shall be responsible for addressing faults on their own equipment; and
- (ii) the access provider shall grant the access seeker with access to sites to conduct fault repair.

With reference to infrastructure faults, the RAO shall also include the relevant procedures, principles and provisions to address such faults that may affect the access seeker.

3. Maintenance

The access seeker's equipment will be housed on the premises of the access provider for a given period of time. It is expected that during such time, maintenance works will be undertaken to ensure optimum performance of equipment. As such, it shall be the responsibility of the access provider to establish in the RAO, rules and principles governing maintenance works, which can either be scheduled or unscheduled.

4. Grounding

The equipment used in the provision of telecommunications services is very costly. As such, operators invest in the protection of such equipment which is essential in reducing costly downtime and damage to sensitive and expensive technology. Proper grounding can protect these valuable and sensitive equipment. As a result, it is imperative that the grounding system is reliable and standards compliant.

Single-point grounding

More than one grounding point can cause surge and lightning to travel from one grounding point through the equipment to the other grounding point. As a result, the RAO shall make provisions to ensure that the access seeker's equipment is connected to the single grounding point.

Additionally, the RAO shall indicate that upon request by the access seeker that the provider shall make available evidence that the grounding has met the relevant grounding standards and has followed proper grounding guidelines.

5. Facility Loading and Installation

Potential impact of co-locating additional equipment must be assessed and fully understood in order to ensure that there are no adverse effects on the operation of the site and the supporting network equipment and systems. In this regard, it will be a requirement of the RAO that the access provider provides assurances that the necessary assessments were undertaken to facilitate the installation of the seeker's equipment. Such loads which are to be taken into consideration are:

- Equipment weight/ volume loading of the facility –
e.g. Equipment load bearing capacity of the towers.
Sub-duct/ duct nest capacity.
- Equipment spatial usage/ availability of the facility
e.g. Antennae space usage/ availability on towers
Dark-Fibre utilisation
Duct/ sub-duct space availability

- Environmental loading of the facility -
 - e.g. *Loading due to wind acting on equipment surface area.*
 - Sub duct/ Manhole location*
- Installation standards

For each site where access is requested, the RAO shall include a facility-loading profile which may include spatial equipment (e.g. antennae) capacity on the facility (e.g. tower), the maximum permissible weight and environmental load (e.g. antenna weight and wind load) for which the facility (e.g. tower) was designed or the current usage of such loads by the access provider.

6. Environmental Systems - Temperature, Humidity, Dust

Potential impact of additional equipment on the environmental systems must be assessed and fully understood in order to ensure that there are no adverse effects on the operation of the site and the supporting network equipment and systems. In this regard, it will be a requirement of the RAO that the access provider provides assurances that the necessary assessments were undertaken to facilitate the installation of the access seeker's equipment.

7. Guidelines on Minimum Requirements for Access Charges

7.1 Regulatory oversight

Facilities are required by rival operators to compete in a particular market in order to provide services to end users. International experiences have suggested that without regulatory intervention, there is a marked tendency amongst owners of telecommunications facilities to limit access to these, by setting high access prices. Evidently, such an act often results in prohibiting the further development of the sector and stifling competition within the industry. In light of this, the Authority considers it necessary to regulate the rates for such facilities as mandated by Section 26 (4) of the Act, whereby ensuring that access facilities required for the provision of service are available to competitors on reasonable terms.

“The Authority may regulate the rate terms and conditions for access to any facility, such rates, terms and conditions to be just and reasonable and it may adopt procedures necessary and appropriate to facilitate, by such means as the Authority deems appropriate, the determination of complaints concerning such rates, terms and conditions.”

Section 26 (4)

Further to this, Section 29 (2) of the Act gives the Authority statutory powers to regulate rates where there is a monopoly, where a concessionaire has a dominant position in a relevant market or where the Authority detects anti-competitive or unfair pricing. In addition, section 29 (5) empowers the Authority to regulate rates of any telecommunications services which are provided on an exclusive bases.

7.2 Access to facilities charges

When setting rates for access to facilities, the access provider shall ensure that the same terms and conditions which are applied to its own services, subsidiaries, affiliates or partners are applied to the access seeker as prescribed by Regulation 5(1) of the Access to Facilities Regulations. Additionally, the access provider shall set rates in a non-discriminatory manner and the rates should not be anti-competitive in nature.

Essential Facilities

To further assist the Authority in regulating facilities in consonance with the nature of the facility, the Authority, in its Draft Telecommunications (Pricing) Regulations has established certain criterion to classify a facility as essential to which a specific pricing regime shall apply.

“Essential Facility means any facility in Trinidad and Tobago where in the reasonable opinion of the Authority the following criteria are satisfied:

- (i) The facility is exclusively or predominantly provided in a market by a single or limited number of concessionaires;*
- (ii) The facility is required by other concessionaires in order to compete in a downstream market; and*
- (iii) The facility cannot practically be duplicated or substituted by the other concessionaire for technical or economic reasons.”*

For such a facility, the Authority shall impose a cost based pricing which shall be determined based on a costing methodology, model or formulae. However, in the absence of these, the access provider may set rates with reference to benchmarks as determined by the Authority. These requirements are in accordance with the Authority’s imposition of cost-based pricing set out in Regulation 29 of the Draft Pricing Regulation (2008) and are also consistent with international best practices³.

Non-essential facilities

Rates for facilities which have not been classified as essential shall be commercially negotiated amongst operators. The access provider shall endeavor to set these rates on a non-discriminatory and on an equitable basis.

In the event of a dispute arising with respect to any matter regarding access, the matter may be referred to the Authority for consultation and guidance in accordance with the Dispute Resolution process outlined in Part VII of the Telecommunications (Access to Facilities) Regulations, 2006. In such an instance, the concessionaire shall be required to set rates based on costs and such costs shall be in accordance with costing methodologies, models or formulae which the Authority shall establish. However, in the absence of these, rates shall be set in accordance with costing benchmarks as determined by the Authority.

7.3 Additional service charges

As outlined in Section 5 of this document, there are additional services which the access provider may provide to the access seeker to ensure the effective and safe operation of the collocated equipment. The RAO shall include the applicable charges for such services and the rates shall be

³ Best Practice Guidelines for Enabling Open Access ITU 10th Global Symposium for Regulators; input was received from: France, India, Lebanon, Liberia, Mauritius, Portugal, Saudi Arabia, Senegal, Suriname, Switzerland, Thailand, and the United States.

commercially negotiated and set in such a manner that it does not restrict nor distort competition⁴. The additional service elements shall include but are not limited to:

- Electricity and lighting;
- Generator back up electricity;
- HVAC services;
- Security and alarm services;
- Maintenance and janitorial services; and

⁴ Concession condition A21.

8. Overview of the Standards and Guidelines

Draft Standards and Guidelines for the Development of Reference Access Offers

Version 0.2

This Indicative Reference Access Offer developed by the Authority serves to provide access providers with the minimum requirements for establishing a Reference Access Offer. The RAO forms the basis for the final Agreement made between the access provider and the access seeker.

8.1 Minimum Requirements for the Legal Framework of the Access Agreement

All general terms and conditions shall be included in the Legal Framework and it shall include at a minimum:

- The person to be notified to initiate an access request;
- Provisions for commencement, duration, breach, suspension and termination of agreement;
- Provisions for dispute resolution;
- Obligations of both parties;
- Provisions for limitations of liability;
- Provisions for billing and payment;
- Provisions to treat with confidentiality of information shared in the conduct of negotiations, and associated limitation of use of such information; and
- All terms and conditions as it relates to technical, operational, planning and pricing.
- Conditions for site assessment surveys which shall include at minimum;
- Conditions for alteration or modification of existing sites to accommodate co-location;
- Conditions for accessing utilities at the site;
- Conditions for provisioning, operation and maintenance works;
- Conditions for Service Levels;
- Compliance conditions for installation of equipment;
- Compliance conditions for operation of equipment;
- Conditions for service charging;
- Provisions for assignment and subcontracting; and
- Conditions and procedures for the provision of information (e.g. location of sites, information about space capacity, deadline for provision of information, etc.).

8.2 Minimum Requirements for Service Description

A description and details governing the access to facilities shall be outlined in the RAO. It shall include general information such as:

1. Service Description

The description of the service shall provide detailed and specific information as it relates provision of same. These minimum requirements include *inter alia*:

- General service information:
 - Name, type and description of service;
 - Conditions and procedures for the provision of information on request of the access seeker with respect to geographic location of facilities (co-ordinates and sites addresses); and
 - Maps where necessary;
- Conditions for the provision of additional services;
- Conditions for conducting site visits and surveys which should be concluded as per the timeframe outlined in Section 4 of this document;
- Access conditions for staff of competitive concessionaires;
- Specifications and standards of equipment that can be installed;
- Responsibilities of both parties for ordering, provisioning, operations and maintenance and fault repair;
- Security measures at the location;
- Health and safety standards;
- Provisions for service charging and pricing of support services; and
- Service standards to which the provider commits with regard to the provision of the services.

In addition, the RAO shall detail the service levels to which the provider commits with regard to the provision of access to facilities services. At a minimum it should include:

- Time frame for provision of service;
- Accountability of delays;
- Penalties for delay in provision of service;
- Prescription of new service delivery date; and
- Conditions to treat with outages.

8.3 Minimum Technical Requirements

1. Equipment Characteristics

The RAO shall include, at a minimum the following requirements:

- Restrictions on equipment that can be co-located;
- Outline of specifications of cables, wires, fibre optics to be installed;
- Technical specifications of equipment that can be co-located;
- International standards to which equipment shall comply;
- Physical parameters (dimension and weight) of equipment that can be co-located;
- Installation guidelines;
- Operation and safety guidelines;
- Provisions to ensure that the access seeker's equipment is connected to the single grounding point;
- Assurances that the necessary assessments for wind and load capacity were undertaken to facilitate the installation of the seeker's equipment; and
- Procedures for installation and testing of equipment.

2. Fault repair

The RAO shall outline a fault management process which shall include at minimum, details such as:

- The main contact person for purposes of overseeing the fault repair process;
- The procedures, including timeframes, terms and conditions under which the access provider shall grant the access seeker with access to sites to conduct emergency equipment fault repair within the time frame stipulated in the Legal Framework;
- The procedures, principles and provisions to address infrastructure faults that may affect the access seeker; and
- Provisions for repair of all services;

3. Maintenance

The RAO shall include site maintenance details, such as:

- Site maintenance personnel contact details;
- Rules and principles governing maintenance works, which can either be scheduled or unscheduled;
 - o *Provisions for advance notice to be given to the access seeker and*
 - o *Time during which maintenance works shall be conducted*
 - o *Other terms and conditions*

4. Facility Loading and Installation

The RAO shall include at minimum, for the various classes of facilities:

- Spatial/ volume availability of the facility
- Equipment weight capacity/ loading of the facility
- Environmental load of the facility
- Current usage of the facility by the access provider, re:
 - o Spatial usage
 - o Equipment weight/ volume
 - o Environmental load
- Any recognised standard for the installation of equipment on or in the facility in question.

5. Grounding

The RAO shall include provisions to ensure that the access seeker's equipment is connected to a single grounding point.

6. Environmental Systems – Temperature , Humidity, Dust

The RAO shall provide assurances that the necessary assessments were undertaken to facilitate the installation of the access seeker's equipment.

Where applicable, the RAO for a particular class of facility (e.g. towers, ducts, etc.) should include a comprehensive listing of the information identified above as relevant for the facility class.

8.4 Minimum Requirements for Access Charges

The charges for specific elements of site sharing shall include but may not be limited to:

1. Space rental - the rental of space charged on the basis of a per square metre or otherwise specified in the RAO, applicable to each individual site or the nature of each facility;
2. Electricity and lighting service charges, based on measured or assessed usage;
3. Generator back-up electricity;
4. Installation charges, based on the once only cost of installing and testing equipment on site or in association with facilities, together with related costs for project management and administration, and for the rearrangement of other equipment, if required, to enable the site or facility sharing service to be provided;
5. Supervised site access charges;
6. Security and alarm services; and
7. Maintenance and janitorial services.

Bibliography

1. Booz & Co. “Telecom Infrastructure Sharing Regulatory Enablers and Economic Benefits, 2007.” Pwc.com.
http://www.strategyand.pwc.com/media/file/The_Power_of_Telecom.pdf (accessed October 28, 2013).
2. CSMG. “Economics of Shared Infrastructure Access.” csmg-global.com.
<http://stakeholders.ofcom.org.uk/binaries/consultations/wla/annexes/csmg.pdf> (accessed March 10, 2014).
<https://www.kpmg.com/BE/en/IssuesAndInsights/ArticlesPublications/Documents/Passive-Infrastructure-Sharing-in-Telecommunications.pdf> (accessed February, 2014).
3. International Telecommunications Union (ITU). “Best Practice for Implementing Next Generation Networks (NGN) In the Asia and Pacific Region Case Study India, Philippines, and Sri Lanka, June 2012.” itu.int. http://www.itu.int/ITU-D/tech/NGN/CaseStudies/NGN_CaseStudy_IND_PHIL_SLKA_V2.pdf (accessed November 22, 2013).
4. International Telecommunications Union (ITU). “Best Practice Guidelines for Enabling Open Access, 10th Global Symposium for Regulators.” itu.int. https://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR10/consultation/guidelines/GSR10_guidelines_V3-en.pdf (accessed November 28, 2013).
5. International Telecommunications Union (ITU). “Best Practice Guidelines on innovative infrastructure sharing strategies to promote affordable access for all.” itu.int. https://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR08/PDF/GSRguidelines08_E.pdf (accessed November 28, 2013).
6. International Telecommunications Union (ITU). “Harmonization of Policies Governing the ICT Market in the UEMOA-ECOWAS Space Interconnection.” itu.int. <http://www.itu.int/ITU-D/treg/projects/itu-ec/Ghana/modules/FinalDocuments/Interconnexion.pdf> (accessed December 10, 2013).
7. International Telecommunications Union (ITU). “TRAI’s Recommendation on Infrastructure Sharing, India, April 11th, 2007.” ictregulagaltiontoolkit.org.

- <http://www.ictregulationtoolkit.org/en/toolkit/docs/Document/3632> (accessed November 28, 2013).
8. KPMG. “Passive Infrastructure Sharing in Telecommunications”. KPMG.com. <https://www.kpmg.com/BE/en/IssuesAndInsights/ArticlesPublications/Documents/Passive-Infrastructure-Sharing-in-Telecommunications.pdf> (accessed January 3, 2014).
 9. Nigerian Communications Commission (NCC). “Guidelines on Collocation and Infrastructure Sharing.” ncc.gov. www.ncc.gov.ng/.../Legal-Guidelines_Collocation_and_Infrastructure_S (accessed February 2014).
 10. OFCOM. “Review of the Wholesale Local Access Market, 7th October, 2010.” ofcom.com. <http://stakeholders.ofcom.org.uk/binaries/consultations/wla/summary/wlacondoc.pdf> (accessed October 14, 2013).
 11. OMANTEL. “Reference Access Offer C03 Co -location Services.” omantel.om. <http://www.omantel.om/OmanWebLib/Business/Wholesale/OmanTelRAO.aspx?LinkID=2&MenuId=601> accessed (October 25, 2013).
 12. Ruanda Utilities Regulatory Agency (RURA). “Guidelines for siting and sharing of telecommunications base station and infrastructure.” rura.gov.rw. http://www.rura.rw/fileadmin/docs/GUIDELINES_FOR_SITING_AND_SHARING_OF_TELECOM_BTS_INFASTRUCTURE.pdf (accessed January 01, 2013).
 13. Srinuan Pratompong. “Infrastructure Sharing in Thailand: Challenges and way forward.” itu.int. [http://academy.itu.int/moodle/pluginfile.php/51375/mod_resource/content/2/Infra%20Sharing%20in%20Thailand%20\(May%202013\).pdf](http://academy.itu.int/moodle/pluginfile.php/51375/mod_resource/content/2/Infra%20Sharing%20in%20Thailand%20(May%202013).pdf) (accessed March 7, 2013).
 14. Tanzania Communications Regulatory Authority (TCRA). “Electronic and Postal Communications (Access, Co-location and Infrastructure sharing) Regulations, Tanzania.” tanzania.go.tz. http://www.tanzania.go.tz/egov_uploads/documents/access%20Co-location%20Infrastructure%20Sharing%20regulations%202011.pdf (accessed February 5, 2014).

15. Telecommunications Authority of Trinidad and Tobago (TATT). “Pricing Regulation Framework, 2013.” tatt.org.tt
http://tatt.org.tt/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=239&PortalId=0&TabId=222 (accessed January 1, 2014).
16. Telecommunications Authority of Trinidad and Tobago (TATT). “Telecommunications Act, Chap 47:31, Laws of Trinidad and Tobago.” tatt.org.tt.
<http://www.tatt.org.tt/Portals/0/ConsultativeDocuments/Telecommunications%20Act.pdf> (accessed 2013)
Telecommunications Authority of Trinidad and Tobago (TATT). “The Telecommunications (Access to Facilities) Regulations, 2006.” tatt.org.tt.