



## **OPERATIONS AND MAINTENANCE MANUAL TEMPLATE**

---

**This O&M Manual is issued for Public Consultation by MAFB as part of the  
Voluntary Industry Access Code ver1.0 dated 25 Sept 2008.**

---

**(TO BE AGREED AND APPLIED AS PART OF THE ACCESS AGREEMENT ENTERED UNDER THE ACCESS CODE)**

**Dated this 25 September 2008**

## TABLE OF CONTENTS

<b>1. SCOPE .....</b>	<b>1</b>
<b>2. OPERATIONS &amp; MAINTENANCE PROCEDURE .....</b>	<b>2</b>
2.1 Routine and Detailed Testing .....	2
2.2 Planned Maintenance .....	3
2.3 Emergency Maintenance .....	4
2.4 Third Party Facilities .....	4
2.5 Safety .....	4
<b>3. FAULT HANDLING PROCEDURES .....</b>	<b>5</b>
3.1 Failure of Facilities and/or Services .....	5
3.2 Escalating Facilities and/or Services Problem .....	5
3.3 Fault Affecting other Networks or Equipment .....	6
3.4 Transmission Service Faults .....	6
<b>4. COMPLAINT HANDLING .....</b>	<b>7</b>
<b>5. OPERATIONAL INFORMATION .....</b>	<b>8</b>
<b>6. NETWORK MANAGEMENT .....</b>	<b>9</b>
6.1 Network Alarm Management .....	9
<b>7. ACCESS TO AND MAINTENANCE OF POI/POP SITE .....</b>	<b>9</b>
7.1 Access to Operator's Premises .....	9
7.2 Access to Third Party Premises .....	9
7.3 Physical Access to POI/POP Sites .....	9
7.4 Maintenance Of POI .....	10
<b>8. CALL TRACING .....</b>	<b>10</b>
8.1 General Principle .....	10
8.2 Emergency Call Trace .....	10
8.3 Engineering Call Trace .....	10
<b>9. CONTACT LIST .....</b>	<b>11</b>

## **OPERATIONS AND MAINTENANCE MANUAL TEMPLATE**

### **1. SCOPE**

- 1.1 This Operations and Maintenance manual Template (“O & M Manual”), sets out the operations and maintenance processes and the procedures that facilitate the smooth implementation of the Access Agreement[s] dated [            ] between the [ Access Seeker ] and the [ Access Provider ].
- 1.2 The Parties are encouraged to use the contents of this O & M manual as a template and may add to or amend the contents of this manual as dictated by the needs of the respective parties’ network. Any amendments or additions to this O & M Manual shall be agreed by both Parties in writing.
- 1.3 Both Parties acknowledge that the Networks of the Parties will be used to provide Access Services to Customers, as stated in the Access Agreement. It is therefore in their mutual interest to ensure that adequate attention is paid to the operations and maintenance of the network relating to Facilities and/or Service being provided.
- 1.4 Unless otherwise provided, all definitions, words and expressions, when used or referred to in this Manual, shall have the same meaning as that provided in the Access Agreement.
- 1.5 Notwithstanding anything stated to the contrary in this Manual, the Parties agree that this O&M Manual shall be read and applied as part of the Access Agreement[s] and other related documents including the Technical and Implementation Manual and:-
  - (a) in the event of any conflict between the provisions of this O&M Manual and those of the Access Agreement[s], the terms of the Access Agreement[s] shall prevail;
  - (b) this Manual shall take effect commencing from the effective date of the Access Agreement or the date of this O&M Manual, whichever is later and,
  - (c) this O&M Manual shall supersede all other manuals under any old Agreements pertaining to the subject matter of this O&M Manual.

## 2. OPERATIONS & MAINTENANCE PROCEDURE

### 2.1 Routine and Detailed Testing

2.1.1 **Routine Testing.** The Parties shall conduct *routine* interconnection tests at agreed half yearly intervals to ensure the maintenance of interconnection service at agreed service levels in accordance to ITU-T standards and or quality standards determined by the Commission, for purposes of ensuring call clarity, prevention of silent calls and cross lines. The trunk circuits shall be tested on each E1 by selecting circuits randomly and checking for call setup, supervision and clearing. A template of the Routine Test Sheet is set out in **Appendix A** and may be applied to conduct the routine interconnect testing described above, with any agreed modifications. In the event that there are any abnormalities arising from the routine tests, the Party conducting the tests must notify the other Party within five (5) Business Days from the time of discovery of the abnormality, and take all reasonable steps to remove such abnormalities.

2.1.2 **Detailed Testing.** Both Parties shall carry out *detailed* interconnect link tests as and when required and agreed by both Parties to ensure the maintenance of interconnection service at agreed service levels in accordance to ITU-T standards and or quality standards determined by the Commission. Each Party must supply the other Party with a list of test numbers to be used for testing of the interconnect links. Such testing must be kept to a minimum and shall be conducted during off-peak traffic hours. In the event that a Party wishes to conduct bulk circuit testing using automatic testers, prior agreement must be sought from the other Party. Detailed test on interconnection shall be confined but not limited to the following tests: -

- (a) Verify Call Detail Recording (CDR) to ensure validity of A-number and B-number;
- (b) Verify “End-of-Selection” (EOS) signal for any call terminating to announcement machine. Number Unobtainable (NU) tone and check whether the call is chargeable or non-chargeable;
- (c) Test line termination and verify ‘EOS’ results for any call terminating to i) B-party with Answer ii) B-party with No Answer and iii) B-party Busy; and
- (d) Check Call Forwarding and verify correct CDR of “Calling Number” and “Called Number” in each segment of the forwarded call;

2.1.3 The Parties shall have the liberty to carry additional circuit and interconnect tests as required upon mutual agreement.

2.1.4 Each Party shall supply the other Party with Test Numbers for the various Regions, including the location of the relevant POIs. A template for exchanging test numbers is set in **Appendix B**. Each Party will notify the other of any change to these test numbers.

- 2.1.5 The Party conducting the routine or detailed tests shall provide the results of the tests to the other Party. Any abnormal test results shall be investigated to determine which operator's network is causing the problem. Each party shall be responsible for ensuring that faults/problems in their respective networks are rectified immediately.

## 2.2 Planned Maintenance

- 2.2.1 Both Parties shall mutually agree upon suitable maintenance periods and expected duration for such planned maintenance in accordance with the provisions of the Access Code (**Article F4 - General Condition 27,28,29**) or in accordance with the agreed provisions of Access Agreement[s] executed by the Parties.
- 2.2.2 Planned maintenance must be kept to an absolute minimum and shall not be carried out during busy traffic hours so as to minimize traffic interruptions.
- 2.2.3 The notification to carry out planned maintenance shall be in writing and sent via e-mail or fax to the relevant addressees as stated in **Appendix C**.
- 2.2.4 The Parties may adopt and use the standard planned/emergency maintenance notification template set out in **Appendix D** hereof, with the following notification details : -
- type of notification (planned or emergency);
  - reason for maintenance;
  - notification date and time;
  - type of activity;
  - expected duration of maintenance;
  - expected outage duration (if any);
  - location;
  - list of circuits affected;
  - outage impact (e.g. service affecting, service threatening or others); and
  - contact numbers of personnel involved in the maintenance.
  - Such other information deemed required by the parties.
- 2.2.5 In the event that both Parties are involved in the planned maintenance activities, the interconnect testing shall be carried out by both Parties after the planned maintenance activity is completed to ensure that no inter-working problem has arisen as result of the planned maintenance. However, if only one Party undertakes maintenance, then only that Party is required to perform the testing as agreed by the Parties.
- 2.2.6 In the case of Facilities and/or Services provided by the Access Provider, preventive maintenance shall be conducted by the Access Provider at periodic intervals to ensure that the agreed service quality is maintained at all times.

## 2.3 Emergency Maintenance

- 2.3.1 Both Parties shall mutually agree on suitable maintenance windows and expected duration of such emergency maintenance in accordance with **Article F4 - General Condition 30** of the Access Code.
- 2.3.2 For the purpose of Emergency Maintenance notification, clause 2.2.4 of this manual shall apply.
- 2.3.3 Where the Emergency Maintenance does not restore full service within the expected duration, the additional outage time shall be regarded as unplanned outage and the procedure for dealing with unplanned outage shall apply.

## 2.4 Third Party Facilities

- 2.4.1 **Maintenance of Third Party Facilities.** The Party leasing the third party facilities shall be responsible to ensure that the third party facilities are maintained in accordance with the requirements of this manual.
- 2.4.2 **Quality and Standard.** The Party leasing the third party facilities shall be responsible to ensure that the standard and quality of the leased facilities conform to the specifications and standards agreed by the Parties under the Access Agreement or as provided in the Access Code.

## 2.5 Safety

- 2.5.1 **Safety at Work Place.** Both Parties shall ensure all work places are safe and they are in compliance with safety procedures appropriate to the activities being undertaken. When necessary, local safety procedures will be designed, agreed and incorporated into this O&M Manual.
- 2.5.2 **Optical Safety.** Due to the dangers of exposure to radiation from optical power sources, it is imperative that safety procedures be followed which ensures that personnel do not work on fibre optical systems unless the power sources to the laser has been turned off at both terminals.
- 2.5.3 **Accident Reporting.** All injuries occurring to either Operator's personnel, or to any 3<sup>rd</sup> party at the premises or in the course of carrying out maintenance operations, shall be reported to the other Operator by the discovering Operator within one (1) Business Day.

### 3. FAULT HANDLING PROCEDURES

#### 3.1. Failure of Facilities and/or Services

3.1.1 Any failure of the facilities and/or services persisting for longer than one (1) minute which is characterized by complete inability to perform all required functions at any component included in the Facilities and/or Services OR any failure persisting for less than one (1) minute but repeating more than once within fifteen minutes period is considered as a fault of Facilities and/or Services.

#### 3.2. Escalating Facilities and/or Services Problem

3.2.1 The Parties will have joint escalation procedures in respect of faults relating to traffic, which cross or are to cross both Parties' Network and also for faults that occur at the POI/POP. The process set out in **Article F4 – General Condition 28** of the Access Code shall apply or such other provisions as agreed by the Parties in the Access agreement.

3.2.2 In case of physical fault occurring in in-span capacity bearers, it is the individual Party's responsibility to ascertain and verify that the fault does not reside within its own network prior to escalating the fault to the other Party.

3.2.3 The target times for the restoration of services affecting communications which cross both Parties' networks are set out in **Article F4 – General Condition 28.12** of the Access Code. The parties ensure that their respective support systems are structure in a manner to meet these times.

Priority Level	Fault Types (examples)	Response Time	Restoration Time
Level 1	1. Major switch outage 2. Transmission bearer total outage 3. Route blocking > 50% 4. Major signalling problem 5. Major routing issues 6. Fraudulent calls	1 hr	4 hrs
Level 2	1. Minor switch outage 2. Minor routing issue 3. Minor signalling problems 4. Route blocking 10%-50% 5. Cross line & silent calls	4 hrs	24 hrs
Level 3	1. Faults affecting single or small number of Customers 2. Route blocking <10%	24 hrs	72 hrs
Level 4	1. Remote Congestion 2. External Technical Irregularities (ETI) 3. Other performance related issues	48 hrs	14 days

(a) *All faults reported shall be ascribed with a "Priority Level" as set out in the above table for response, reporting frequency and restoration purposes and the Parties shall cooperate with one another to achieve the given time targets based on the severity of the fault reported.*

(b) *Some of the common "Fault Types" are listed as examples in the above table.*

- (c) *“Response Time” refers to the time for the Party whose Network or service is faulty to respond to and appropriately attend to the fault. Response Times are to be measured from either the time the fault is notified by the Access Seeker or from the time when the Access Provider first becomes aware of the Fault, whichever is the earlier.*
- (d) *“Restoration Time” refers to the time taken by the Party to restore a faulty service and is determined by the period between the reporting of a fault to the respective IFRC/NMC of the Party and the restoration of the faulty service*

### **3.3 Fault Affecting other Networks or Equipment**

3.3.1 If a Party identifies a fault occurring in its Network or with its network facilities which may have an adverse effect on the other Party's Network, network facilities, network services or Equipment, the first-mentioned Party must promptly notify the other Party of:

- (a) the existence of the fault;
- (b) the actions being taken by the first mentioned Party to restore service and to further identify and rectify the fault; and
- (c) the outcome of those actions.

3.3.2 The notification shall be made to the other Party's interconnect Fault Reporting Center containing the following additional information :

- Circuit number
- The time the fault occurs
- Full details of the nature fault available
- Contact person telephone number and the fault reference number of the Operator reporting the fault
- Contact name and telephone number of the reporting Operator's personnel for fault clearing operation and assistance if needed

### **3.4 Transmission Service Faults**

3.4.1 **“Service Availability”**, in respect of Transmission Capacity Services and Virtual Co-Location, means end-to-end network service availability over that transmission. The standard formula of Service Availability is:

$$\% \text{ Service Availability} = \{1 - [X/Y]\} \times 100$$

Where; X = number of outage hours in a 12 month period (excluding planned outage)

Y = total service hours in 12 month period for the service calculated per circuit basis

3.4.2 Where the Access Provider provides an Access Seeker with Transmission Capacity Service, the Access Provider shall take such reasonable steps within its Network to facilitate service availability in accordance with the agreed service levels between the Parties or such other quality standards as may be determined by the Commission.

## 4. COMPLAINT HANDLING

- 4.1 The Parties shall each maintain a twenty-four (24) hours a day, seven (7) days a week Fault Reporting Centre (to manage customer complaints) and a corresponding rectification service to meet the restoration times stated above. This Fault Reporting Centre will deal with all faults relating to the network Facilities and/or Services. This centre shall also be equipped with necessary communication facilities to facilitate efficient handling of complaints.
- 4.2 The purpose of fault reporting system and fault management is to raise awareness of faults between Parties to ensure that the appropriate level of resources are directed towards fault resolution
- 4.3 The template to be used for setting out the details of each Operator's Fault Reporting Centre are set out in **Appendix E** hereof.
- 4.4 Each Party must first establish the nature of the fault by carrying out thorough test on its own network first to determine and eliminate whether the fault is on its own network. In the event, such test proves that the fault is genuine and not residing in its own equipment, then that Party must convey this information to the other Party's Fault Reporting Centre. Notwithstanding this clause, each Party will be responsible for its own fault management escalation procedures and shall offer full assistance for interconnection faults.
- 4.5 The Parties will negotiate procedures governing the review of fault reports (concerning faults, which adversely affect the carriage of traffic across the networks of the Parties) for the purpose of preventing the recurrences of such faults. The information provided in such reports is confidential information between the Parties and subject to the confidentiality obligation under the Access Agreement between the Parties.
- 4.6 Any communication to a Customer, by a Party, regarding a fault must be couched in terms, which are truthful and reflect the true nature and location of the fault.
- 4.7 The reporting Operator shall notify the other Operator Fault Reporting Centre via:-
- (a) telephone; or
  - (b) e-mail

of a fault/outage containing the following information where applicable.

- Circuit Number (if any);
- The time the fault occur;
- Full detail of fault available;
- Contact person, telephone number and the fault reference number of the Party reporting the fault (if any); and

- Contact name and telephone number of the reporting Party's personnel for fault clearing operation and assistance, if needed.
- 4.8 All fault reported to the relevant Fault Reporting Centre will be given the unique reference number which will be used at all times when referring to a particular fault case.
- 4.9 Upon fault resolution, the responding Party Fault Reporting Centre shall inform the reporting Party on the restoration of the service.
- 4.10 Upon request, for priority level 1 fault, the responding Party shall submit a failure report to the reporting Party. The failure report shall include but is not limited to the following details as set out below: -
- Trouble Ticket No.;
  - Date/Time Occurred;
  - Date/Time Restored;
  - Type of fault/Priority level;
  - Reporting personnel;
  - Fault description; and
  - Fault resolution

## **5. OPERATIONAL INFORMATION**

5.1 The Parties shall review the operational information of the Facilities and/ or Services in accordance with the requirements of the Access Agreement. At the service review meetings, both Parties shall exchange, review operational information and any other related information relating to the Facilities and/ or Services provided under the Access Agreement, which includes but is not limited to the following reports as set out below:

(a) **Interconnection Services**

- Service Quality Report Format as in **Appendix F**
- Circuit Utilization/Congestion Report (whichever applicable)
- MTTR Report Format information as in **Appendix G**
- Routing Diagram
- Planned and Emergency Maintenance

(b) **Transmission Capacity Services and Private Circuit Completion**

- Number of Active Circuits
- Circuit Activation / Termination
- MTTR Report Format information as in **Appendix G**
- Leased Line Availability

## 6. NETWORK MANAGEMENT

### 6.1 Network Alarm Management

Network alarm management will be monitored from the equipment alarms, which involve switching, transmission and CCS7 signaling between the Networks. Types of alarms include the following:

- (a) internal hardware equipment alarms;
- (b) route blocking alarms; and
- (c) circuit blocking alarms.

## 7. ACCESS TO AND MAINTENANCE OF POI/POP SITE

### 7.1 Access to Operator's Premises

Either Party may require access to the other Party's premises where the POI/POPs are situated if the following services are provided by one Party to the other:

- (a) full-span Interconnect Capacity for and on behalf of the other Party ;
- (b) Co-location
- (a) Transmission Capacity Services to the other Party

### 7.2 Access to Third Party Premises

The Party, leasing the Facilities and/or Services from a third party to install its POI/POP equipment, shall be responsible for negotiating and obtaining approval from the third party owner for the other Party to gain access to the third party premises in accordance with **Article F4 – General Condition 4** of the Access Code.

### 7.3 Physical Access to POI/POP Sites

7.3.1 **Security.** The Party which intends to gain physical access to POI/POP site belonging to another Party for installation or operations and maintenance work, must take necessary steps to comply with that Party's existing security procedure/arrangement in place at the site.

7.3.2 **Prior Notice.** Each Party shall give seven (7) Business Days prior written notice to each other of its intention to access each others' POI/POP site, unless where the network experiences a problem warranting immediate action by the Party so affected.

7.3.3 **Emergency Rectification at POI/POP site.** If a Party detects a fault, defect or problem at the other Party's equipment located at the POI/POP site, and this fault, defect or problem causes or might cause damage to its facilities and/or services, that Party must: -

- (a) notify the other Party as soon as possible; and

- (b) take immediate appropriate corrective action and subsequently notify the other Operator.

7.3.4 **Risk at POI/POP site.** If a Party reasonably determines that the other Party's POI/POP equipment located at the POI/POP site poses an immediate risk of personal injury or significant property damage, it may take interim measures necessary to prevent such injury or damage, pending attendance by the relevant Party to perform corrective works. Both Parties shall acknowledge the potential risk and mutually agree upon the interim measures to be taken.

#### 7.4 Maintenance Of POI

Each Party shall be responsible for inter alia :

- (a) maintaining its POI/POP Equipment located in POI/POP sites in good working condition;
- (b) maintaining the POI/POP sites in a tidy and safe condition;
- (c) ensuring that flammable material is not left in or around POI/POP sites following maintenance works or other operations;

## 8. CALL TRACING

### 8.1 General Principle

Call tracing may be undertaken only in respect of circumstances classified as "Emergency" or "Engineering" call traces. The Parties will use their best endeavour to trace calls at the time the call is in progress. On occasions where this is not possible, each Party will perform a trace retrospectively using detailed call records, where available. When a call is traced to another interconnect route, the corresponding Party to who the call has been handed over will be requested to complete the call trace.

### 8.2 Emergency Call Trace

Emergency call traces are typically undertaken in respect of 999 or 994 calls, malicious calls and serious crime. This includes emergency of any circumstances whatsoever resulting from major accidents and natural disasters. Emergency call traces are to be separately performed by individual Party according to its own internal guidelines and procedures. Each Party shall be responsible for ensuring their own compliance with statutory and license obligations.

### 8.3 Engineering Call Trace

Engineering call traces are typically undertaken in respect of test calls and customer or network held faults. Engineering call traces may be requested but priority will not normally be given in this instance, unless specifically agreed. These calls will be traced only at the discretion of a Party, upon request with reasons from the other Party and the call trace will be done solely under the control of the Parties. Each Party will have its own internal guidelines in permitting technical staff to carry out call tracing activity.

## 9. CONTACT LIST

The contact list of operation and maintenance personnel consisting of the name, designation, email address, telephone and fax numbers are available in the **Appendix E**. The escalation should be made in descending (top to bottom) sequence, proceeding to the next level in the escalation list when the personnel called cannot be reached, unable to provide a current status or not capable to provide satisfactory status. Each Party shall inform the other Party of any changes in their contact list.

SIGNED by )  
as authorised representative for )  
**OPERATOR A** )  
in the presence of : )  
)  
)  
)  
..... )  
Signature of Witness )  
)  
..... ) .....  
Name of witness (block letters) )  
)  
)

SIGNED by )  
as authorised representative for )  
**OPERATOR B** )  
in the presence of : )  
)  
)  
..... )  
Signature of Witness )  
)  
..... ) .....  
Name of witness (block letters) )  
)  
)

# **APPENDICES**

APPENDIX A

ROUTINE TEST SHEET

ROUTINE TEST SHEET						
ORIGINATING OPERATOR	▼	TERMINATING OPERATOR	Operator A ▼			
DATE						
POINT OF INTERCONNECT	▼					
NUMBER OF E1'S	▼					
ORIGINATING POI		TERMINATING POI				
ROUTE NAME						
PERIOD OF TESTING :	START		END			
TEST RESULTS						
DATE	NO	REF NO	SERVICE OBSERVATION			COMMENTS
			Silent	Cross	Clrit	
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
REMARKS						

## APPENDIX B

### LIST OF SERVICE TEST NUMBERS

List of Service Test Numbers for [ **Operator A** ] or [ **Operator B** ]

Region	POI (TS, MSC, TSC etc.)	Service Test Numbers (Manual, RVA, AAT)
Northern		
Central		
Southern		
Eastern		
Sabah		
Sarawak		

AAT – Automatic Announcement Tone (with high pitch tone)

RVA – Recorded Voice Announcement (with CDR generated)

**APPENDIX C**

**CONTACT DETAILS FOR PLANNED/EMERGENCY MAINTENANCE NOTIFICATION**

**Operator A**

**Network Management Center (NMC) for Fault Management**

**Location of NMC/NOC OF OPERATOR A :**

Name of Personnel	Responsibility	Contact Details
		Phone : Fax : E-mail :

**Network Management Center (NMC) for Performance Management**

Name of Personnel	Responsibility	Contact Details
		Phone : Fax : E-mail :

**Operator B**

**Location of NMC /NOC OF OPERATOR B :**

**Network Operation Center (NOC) for Fault Management (noc@digicom.my)**

Name of Personnel	Responsibility	Contact Details
		Phone : Fax : E-mail :

**Network Service & Performance Management**

Name of Personnel	Responsibility	Contact Details
		Phone : Fax : E-mail :

APPENDIX D

PLANNED/EMERGENCY MAINTENANCE NOTIFICATION FORM

PLANNED/EMERGENCY MAINTENANCE NOTIFICATION													
REFERENCE:	<input style="width: 90%;" type="text"/>	DATE:	<input style="width: 90%;" type="text"/>										
ORIGINATING OPERATOR	Operator A ▼	TERMINATING OPERATOR	Operator B ▼										
SERVICE CATEGORY	Non Network Affecting ▼												
ACTIVITY TYPE	Normal ▼												
PLANNED/EMERGENCY* EVENT ACTIVITY (* STRIKE OUT WHERE APPLICABLE)													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 25%;">Start Date &amp; Time:</th> <th style="width: 25%;">End Date &amp; Time:</th> <th style="width: 15%;">Duration:</th> <th style="width: 30%;">Locations:</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Start Date & Time:	End Date & Time:	Duration:	Locations:	1				
	Start Date & Time:	End Date & Time:	Duration:	Locations:									
1													
BEARERS / SYSTEMS/PATH (IF APPLICABLE)													
CONTACT PERSON ON SITE													
1	Name:	Telephone:											
LIST OF CIRCUIT AFFECTED													
REMARK/COMMENT													
REASON FOR MAINTENANCE													
ISSUED BY (AE/MANAGER)													
Name:													
Position													
Unit:													
Tel (Office):		Mobile:	Fax:										

**APPENDIX E**

**FAULT REPORTING CENTRE - CONTACT INFORMATION**

**Location of NMC /NOC : Operator A**

**Network Management Center (NMC) for Fault Management**

Name	Responsibility	Contact Details
NMC Duty Officer	First line network control 1 <sup>st</sup> level escalation	Phone: Fax: Email:
NMC Engineer	2 <sup>nd</sup> level escalation	Phone: Fax: Email:
NMC Manager		Phone: Fax: Email:
NMC Senior Manager	4 <sup>th</sup> level escalation	Phone: Fax: Email:

**Location of NMC /NOC : Operator B**

**Network Operation Center (NOC) for Fault Management**

Name	Responsibility	Contact Details
NMC Personnel	First line network control 1 <sup>st</sup> level escalation	Phone: Fax: Email :
NOC Engineer	2 <sup>nd</sup> level escalation	Phone: Fax: Email:
NOC Manager	3 <sup>rd</sup> level escalation	Phone: Fax: Email:
NMC Senior Manager	4 <sup>th</sup> level escalation	Phone: Fax: Email:

## APPENDIX F

## SERVICE QUALITY REPORT FORMAT

## SERVICE QUALITY REPORT

MONTH:

DATE:

REGION			
NO.	SERVICE QUALITY PARAMETER (%)	ROUTE	OPERATOR A POI TO OPERATOR B POI
		TARGET (%)	
1.0	<b>Successful Call (1.1+1.2+1.3+1.4)</b>	≥ 94	
1.1	Answered Call		
1.2	Busy Call		
1.3	No Answer Call		
1.4	Call Abandon		
1.5	<b>Call Establishment Rate (1.1+1.2+1.3)</b>	≥ 85	
2.0	<b>Unsuccessful Call (2.1+2.2)</b>	≤ 6	
2.1	<b>Network Congestion</b>	≤ 3	
2.1.1	Internal Congestion (ICONG)	≤ 1	
2.1.1	External Congestion (OCONG)	≤ 2	
2.2	<b>Network Fault</b>	≤ 3	
2.2.1	External Technical Irregularities/Error (ETI)	≤ 2	
2.2.1	Internal Technical Irregularities/Error (ITI)	≤ 1	

**NOTE:** “Successful Call” and “Unsuccessful Call” are service quality parameters used specifically for network service performance evaluation and they are unrelated with similar terms incorporated in the Technical and Implementation manual.

## APPENDIX H

### MEAN TIME TO RESTORE - REPORT FORMAT

#### MTTR for Interconnection Services

Level	MTTR Target	Total docket	Total hours	January			February			March			April			May			June			Current Cumm. MTTR
				No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	
1	4 hrs																					
2	24 hrs																					
3	72 hrs																					
4	14 days																					

Level	MTTR Target	Total docket	Total hours	July			August			September			October			November			December			Current Cumm. MTTR
				No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	
1	4 hrs																					
2	24 hrs																					
3	72 hrs																					
4	14 days																					

#### MTTR for Transmission Capacity Services

Level	MTTR Target	Total docket	Total hours	January			February			March			April			May			June			Current Cumm. MTTR
				No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	
1	4 hrs																					
2	24 hrs																					
3	72 hrs																					
4	14 days																					

Level	MTTR Target	Total docket	Total hours	July			August			September			October			November			December			Current Cumm. MTTR
				No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	No of docket	Total hours	MTTR	
1	4 hrs																					
2	24 hrs																					
3	72 hrs																					
4	14 days																					