



Reference Offer (RO)

Annex H

Operations and Maintenance Manual

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ANNEX H: Operations and Maintenance Manual

This Annex to the Reference Offer (RO) sets out the processes and principles by which **stc** and the Other Licensed Operator will maintain and operate the Network Interconnection between their respective Networks.

1 Planning

1.1 Provision of Network Information

- 1.1.1 **stc** and the Other Licensed Operator will cooperate in planning and implementing network capacity and Interconnection to ensure as far as possible that their respective Networks work together efficiently and effectively for carriage of interconnecting traffic. Such cooperation will include the mutual exchange of relevant capacity and network topology information to facilitate preparing for and implementing Interconnection in practice.
- 1.1.2 Each Party will provide the other Party with advance information about any planned introduction, decommissioning (closure), replacement or modification of or to any exchange (insofar as is relevant to the other Party's network or the operation thereof).
- 1.1.3 Each Party will provide the other Party with advance information about any proposed alterations to a network that would make it necessary to change the other Party's network in order to maintain the Interconnection between **stc** and the Other Licensed Operator.
- 1.1.4 Any changes should be notified as soon as the proposal becomes firm and in any event not less than seven (7) Calendar Months prior to the implementation of the alteration.
- 1.1.5 In case of any planned decommissioning work in either party's Network which will affect the Interconnected traffic between the parties or require other party to modify its network, then each party shall duly provide advance information



to the other party as specified in the Clause 1.3 of Annex D "Management of Intercommon" and in accordance with the Clause 1.1.4 of this Operation & Maintenance Manual Annex H.

- 1.1.6 In such an event of the planned modification/ decommissioning work in either party's network, both the parties will accordingly discuss the issue in the Joint Technical & Review Committee sufficiently well in advance and identify as to how and to what extent, the Interconnection traffic between the parties will be affected with the planned network modification / decommissioning. Both parties shall also agree upon the necessary contingent measures to be taken by either side. The schedule and duration of such planned modification/decommissioning work proposed by the requesting Party shall be duly agreed upon by the other Party before commencement of such works.
- 1.1.7 The details of the works to be carried out by the requesting party shall be recorded and communicated to the other party well in advance. The Advice form shall also state the date, time and duration of such works, the impact to the conveyance of Calls between the Parties' network, the necessary network management measures to be taken as well as any contingency plans & procedures to be adopted by either Party.
- 1.1.8 In case, the planned modification/decommission work involves outage of the Interconnected traffic for some period of time, then both the parties shall further discuss the traffic rerouting plans and agree on the contingent measures and traffic rerouting plans.
- 1.1.9 The requesting Party shall further notify the other Party when the work is complete by providing the "Advice of Planned Decommissioning Work Completion" which should be transmitted to the other Party without any delay.

1.2 Network Plan



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- 1.2.1 The Network Plan will form part of the Interconnection Agreement between **stc** and the Other Licensed Operator respectively to provide and underwrite Interconnection capability.
- 1.2.2 The Network Plan will contain those elements of necessary and specific information required to achieve Interconnection between **stc** and the Other Licensed Operator. Such information includes but is not limited to:
- Capacity and traffic forecast for the Other Licensed Operator
 - Capacity orders
 - Numbering plans for both stc and the Other Licensed Operator
 - Contact points for both stc and the Other Licensed Operator
 - Date of next review
 - A diagram of all Points of Interconnection and routing for all Interconnect Paths
 - Proposals for new Points of Interconnection
 - Changes to call routing
 - Circuit Identification Codes
 - Notification and information relating to planned network upgrades
 - Transmission plan (including principles for Tributary Allocation)
 - Traffic routing plan
 - Switch connections
 - Numbering information
 - Switch details
 - Switch testing
 - Link testing
 - Network performance
 - Resilience, diversity and security
 - Call handling sequences
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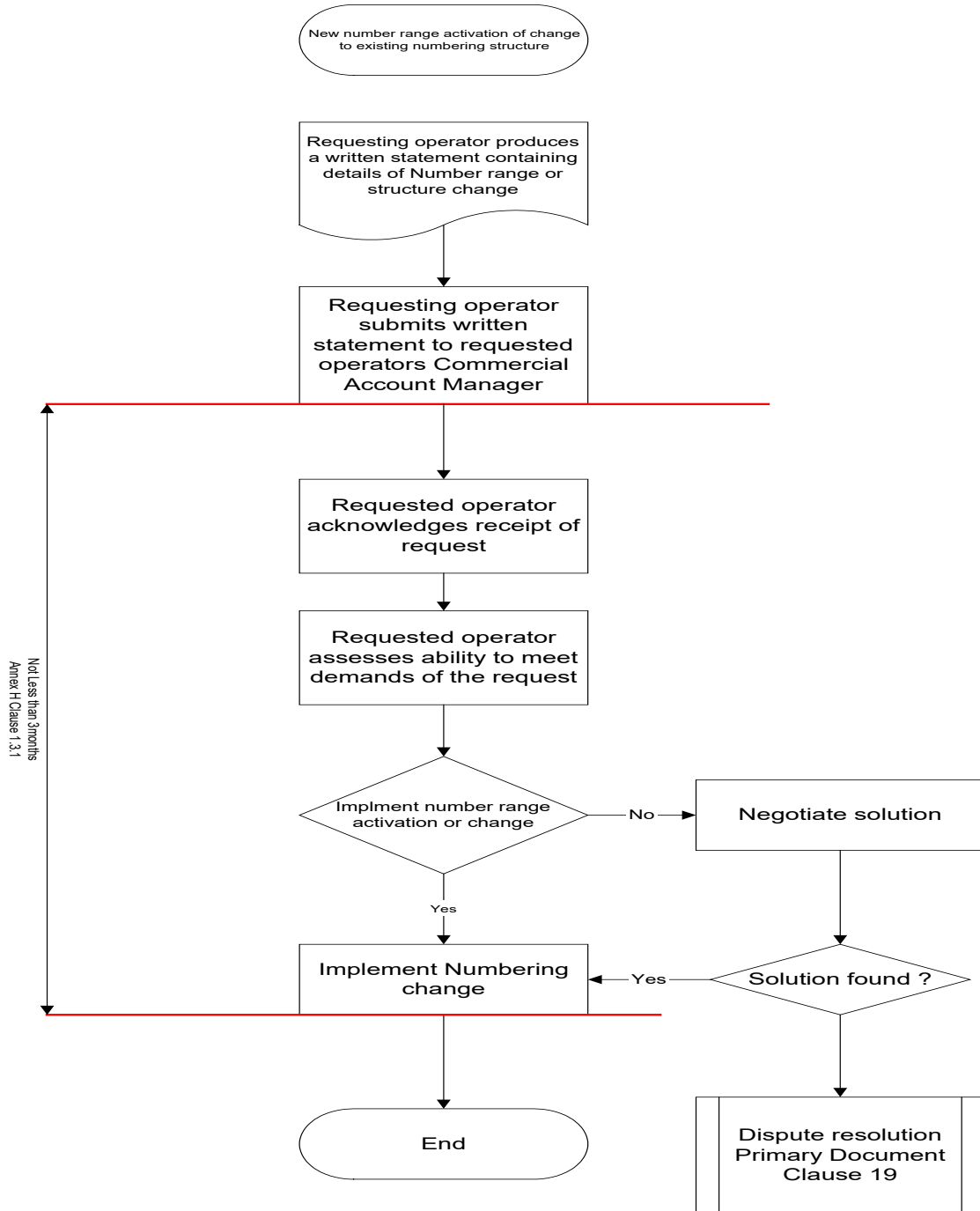
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- Capacity profiles
 - Operations and maintenance principles

- 1.2.3 As part of the planning of the initial and ongoing capacity each Party will provide the other, through the Joint Technical Review Committee, information on the availability (or otherwise) of sufficient transmission capacity in the core Network at any **stc** or Other Licensed Operator building for establishing Interconnection and SS7 Signalling Links and Wholesale Leased Line Services.
- 1.2.4 The Network Plan will be agreed between **stc** and the Other Licensed Operator in accordance with Clause 10 (Network Design and Planning) of the Primary Document and reviewed in accordance with Clause 11 (Network Alteration and Data Management Amendments) of the same, at least on a rolling quarterly basis.
- 1.2.5 The Network Plan will address the forecasts for the following two years for the Other Licensed Operator's Interconnection requirements in terms of traffic and location and number of Interconnection Links, according to the terms defined in Annex E (*Forecasting*). The first of the 12-monthly forecasts will constitute a commitment by the Other Licensed Operator to pay for and take up any incremental change in capacity.



1.3 Numbering

- 1.3.1 Prior to opening new numbering blocks on its network (including Mobile Station Roaming Numbers (MSRNs), either Party will notify the other in writing at least two (2) Calendar Months in advance of the activation of such numbers.
- 1.3.2 A Party will give not less than six (6) Calendar Months prior written notice to the other Party before making any change in its numbering structure, which may necessitate modifications to the other Party's network. Implementation periods for changes to existing routings and for the introduction of new number ranges will be specified in this Annex H.





1.4 Changes to Call Routing

- 1.4.1 Changes to call routing will be detailed in the Network Plan as specified in Clause 1.2 of this Annex H.

1.5 Interconnection of New Switching Equipment

- 1.5.1 Prior to making Interconnection available on new switching facilities, **stc** or the Other Licensed Operator, whichever is the equipment owner, will have completed all commissioning and testing activities in accordance with the recommendations of the switch vendor and industry best practice, including but not limited to inter-working testing within its own network, and activation of the SS7 Point Code.
- 1.5.2 The delivery of Customer Sited Interconnection (CSI) or In Span Interconnection (ISI) links is subject to the commissioning of a physical transmission path to the Other Licensed Operator's Node.

1.6 Ordering of New or Changed Interconnection Services

- 1.6.1 The Other Licensed Operator will submit a request for change(s) to existing interconnections such as alterations to network configuration and data management information by ordering according to Clause 11 of the Primary Document. Such orders will be executed by **stc** according to Clause 11 of the Primary Document.
- 1.6.2 The Other Licensed Operator will commit to charges for Interconnection changes in accordance with Annex F (*Price List*).
- 1.6.3 The Other Licensed Operator will endeavour to place orders for new Interconnection Links to allow sufficient lead time for **stc** to implement them in time for the planned delivery and availability dates. The indicative target lead times are detailed in Annex I (*Quality of Service Measures*).
- 1.6.4 A request for Interconnection services detailed in Annex G (*Service Schedules*) will be placed by the Other Licensed Operator using the order form provided in



Attachment 1 of this Annex H. All the relevant sections of the order form must be completed for an order to be valid. The order form should be sent to the **stc** commercial account manager by letter, fax or e-mail.

- 1.6.5 Requests for services other than those listed in Annex G (*Service Schedules*) will be made by letter addressed to the **stc** commercial account manager. Requests for new services will be made in accordance with the procedure outlined in Clause 12 of the Primary Document.
- 1.6.6 Upon receipt of the order as per Attachment 1 of this Annex H, the **stc** commercial account manager will review the form for validity. An order validation section of the order form in Attachment 1 of this Annex H will be sent to the Other Licensed Operator within five (5) Business Days of an order, acknowledging it.
- 1.6.7 Following receipt of a request under Clause 1.6.1, **stc** shall assess that request and notify the Other Licensed Operator within ten (10) Business Days that either:
- a) The implementation of the request in respect of the requested Wholesale Leased Line Service Interconnection or SS7 Signalling Link Service involves only network conditioning in **stc**'s Network, in which case the negotiation period shall be thirty (30) Business Days; or
 - b) The implementation of the request in respect of the requested Wholesale Leased Line Service Interconnection or SS7 Signalling Link Service involves work in addition to or as alternative to network conditioning in **stc**'s Network, in which case the negotiation period shall be sixty (60) Business Days and additional charges may be payable.
- 1.6.8 The Parties shall forthwith negotiate in good faith the requirements, implementation charges and timetable for the use of the Wholesale Leased Line Service, Interconnection and SS7 Signalling Link Services provided by **stc** in accordance with the Other Licensed Operator's request under Clause 1.6.4



for the negotiation period specified in Clause 1.6.7 (a) or (b), failing which either Party may commence the Dispute resolution procedure in accordance with Clause 19 of the Primary Document.

- 1.6.9 Where the Parties have reached an agreement, in accordance with Clause 1.6.7 (a) or (b) above, **stc** will commence implementation in accordance with the agreed timetable.
- 1.6.10 Nothing in this Clause 1.6 requires **stc** to perform any changes in its Network or to commence the supply of Wholesale Leased Line Service, Interconnection or SS7 Signalling Link Services until the Parties have completed the change process for that Wholesale Leased Line Service, Interconnection or SS7 Signalling Link Service and all charges have been agreed to by the Other Licensed Operator.
- 1.6.11 The Other Licensed Operator may, at any time, request **stc** to cease supplying the Wholesale Leased Line Service, Interconnection or SS7 Signalling Link Service and **stc** shall cease supplying the Wholesale Leased Line Service, Interconnection or SS7 Signalling Link Service as soon as practicable or at such later time as specified by the Other Licensed Operator in accordance with the terms and conditions specified in Clause 20 of the Primary Document.
- 1.6.12 In case of rejection of an order in whole or in part, the commercial account manager will state the reason for rejection to the requesting Other Licensed Operator. The Other Licensed Operator has the right to start a Dispute under Clause 19 of the Primary Document.
- 1.6.13 The Other Licensed Operator and CST have the right to request a progress report within three (3) Business Days at any time following the notification of the delivery date.

1.7 Order Cancellation



1.7.1 Order cancellations must be notified to **stc** by the Other Licensed Operator in accordance with Clause 20 of the Primary Document and will incur charges as per the relevant service schedule for the specific service.

1.7.2 **stc** reserves the right to charge the Other Licensed Operator for costs other than administrative costs incurred in processing orders up to the point of cancellation.

1.8 Data Center (DC) Services

1.8.1 The Datacentre Facilities Services refer to the provisioning of power, cooling, facility support and services for the stc Customer footprint colocated in the STC Datacentres and as managed by the Technical Facilities Management. Services include the allocation of power and cooling distribution, service level agreements, hosting agreements, whitespace access, etc, as captured in the Services Tables and responsibilities matrices listed further in this document.

1.8.2 This applies to the Datacentres Facilities Management ("Service") of STC's datacentres considering the availability of power, cooling and space provisioning in addition to any other support services as agreed per the service provisions.

1.8.3 The following is considered into the provision of Datacentres Facilities Management Services as provided by TFM:

1.8.4 Hosting Services Agreements that include the Provision of Power and Cooling resources for the Rack infrastructure hosted within the datacentres and supporting the redundancy sources supplies limited to the design and capacity limitations of the datacentre facility

1.8.5 Committed availability targets for the power and cooling sources for the customers rack infrastructure (excludes planned downtime)

1.8.6 Provision of access to the customers to the Datacentre Facilities Whitespace where the customer rack infrastructure is hosted



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- 1.8.7 Escalation Matrices and contingency measures in place between the two parties to facilitate services continuity during an emergency or disaster
 - 1.8.8 Default consideration of all Datacentre Facilities Management Services including preventive maintenance, corrective maintenance and facilities management as delivered as standard by the Technical Facilities Management in line with best practices and procedures
 - 1.8.9 Commitment to the agreed Service Level Availability for the Datacentres

1.9 Duct Services

- 1.9.1 stc shall provide Ducts Service to the Other Licensed Operator for the contract period and at the same standard and quality of service as stc provides in its own Network.
- 1.9.2 The Duct Service will be provided subject to the OLO agreeing that stc will install the OLO fiber cable(s) in the offered Duct.
- 1.9.3 The implementation of the Duct Service will be subject to physical and/or technical limitations and unforeseen costs highlighted during the implementation.
- 1.9.4 The Duct Service can only be offered where spare capacity is available.

1.10 Dark Fiber Service

- 1.10.1 stc shall provide Dark Fiber Service to the Other Licensed Operator for the contract period and at the same standard and quality of service as stc provides in its own Network.
- 1.10.2 Dark Fiber Service offers within the STC Network offered to the Seeker
- 1.10.3 The Dark Fiber Service will be provided subject to the OLO agreeing that stc will install the OLO fiber cable(s) in the offered Duct.



1.10.4 The implementation of the Dark Fiber Service will be subject to physical and/or technical limitations and unforeseen costs highlighted during the implementation.

1.11 Provisioning

1.11.1 Lead Times for Delivery

1.11.1.1 Lead times for delivery vary according to the type of service and requirements. Lead times for delivery are detailed in Annex I (Quality of Service Measures).

1.11.2 Implementation

1.11.2.1 **stc** will endeavour to complete the implementation of orders from the Other Licensed Operator in accordance with the timetable given in the agreed Network Plan that is current at the date of ordering.

1.11.2.2 **stc** will ensure that all new and changed network connections arising from fulfilling new orders will perform in a manner compliant with the Quality of Service measures as set out in Annex I (*Quality of Service Measures*) before being made available for productive use by the Other Licensed Operator. **stc** and the Other Licensed Operator shall perform the tests on the installed connection according to Clause 1.8.2.3 and 1.8.2.4 below. In case of errors, the sources of errors will be traced and rectified accordingly.

1.11.2.3 When commissioning a Wholesale Leased Line, Interconnection or SS7 Signalling Link, , **stc** will perform qualification tests including but not limited to:

- Attenuation
- Loop resistance
- Insulation
- SNR (Signal to Noise Ratio)



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- Impulse noise
 - Return loss

1.11.2.4 Once the transmission path is installed, **stc** will perform tests to bring the Wholesale Leased Line, Interconnection or SS7 Signalling Link into service, including but not limited to:

End-to-End test

- 24-hour BER test to reach target level of BER < 10⁻⁸

Commissioning Tests:

- Connection and testing of power
- Stand alone commissioning tests
- Optical tests
- Tributary cards and cabling tests
- Alarm Tests
- On Line Tests
- Stability Tests
- Setting options on multiplexers

Fibre tests

- Attenuation tests
- Power tests

1.11.2.5 The following tests will be performed as appropriate on all Customer Sited Interconnection Links, including but not limited to:

- Loop test
 - Bit Error Rate test
 - MTP Test Q.781
 - MTP Test Q.782
 - ISUP Test Q.784
 - Optical power tests
 - Ring tests
-



1.11.2.6 **stc** reserves the right to verify the System Qualifications Test (SQT) on the Other Licensed Operator's equipment to be used for Interconnection with the **stc** network. **stc** generic specifications shall be used for this purpose.

1.11.2.7 **stc** and the Other Licensed Operator will test generate and verify all alarms with **stc** and the Other Licensed Operator's network operations centres (NOCs)

1.12 Service Handover

1.12.1 Once the requested service is implemented, the **stc** commercial account manager will complete the service handover section on the order form, stating the handover date. The form will be sent to the Other Licensed Operator together with a report detailing the results of testing.

1.12.2 The Other Licensed Operator will confirm receipt of delivery and acceptance of the service by signing and returning the order form within two (2) Business Days of receipt of the form.



2 Monitoring & Network Traffic Management

2.1 Monitoring

- 2.1.1 **stc** and the Other Licensed Operator will monitor and control the flow and routing of traffic in order to maintain compliance with the measures specified in Annex I (*Quality of Service Measures*).
- 2.1.2 **stc** will carry out monitoring activities at regular intervals and at various levels of the network hierarchy to optimise use of network capacity and the quality of service.
- 2.1.3 **stc** will deploy resources to carry out all activities required to monitor and maintain the quality of service, in accordance with the terms of the Interconnection Agreement between **stc** and the Other Licensed Operator.
- 2.1.4 **stc** may also carry out specific monitoring activities on a case-by-case basis at its discretion or in response to a request from an interconnected Other Licensed Operator.

2.2 Reactive Capacity Planning

- 2.2.1 The Other Licensed Operator and **stc** will measure traffic on all Interconnection Links to identify congestion and enable maintenance at or above the target Unsuccessful Call Termination Ratio for voice interconnection.
- 2.2.2 In the event that the traffic, capacity and route forecasting processes have failed to maintain the target Unsuccessful Call Termination Ratio, **stc** and the Other Licensed Operator will agree to work together in good faith to resolve congestion issues by planning as necessary further Interconnection capacity or new traffic routing plans in an expedient manner and permit the free flow of traffic between the Networks according to the target Unsuccessful Call Termination Ratio.



2.2.3 Either **stc** or the Other Licensed Operator will have the right to call a meeting of the Technical Review Committee to progress resolution of congestion.

2.3 Transmission Management - Quality of Service Testing

2.3.1 In case of suspected Wholesale Leased Line, Interconnection or SS7 Signalling Link fault, **stc** will monitor the performance of the **stc** transmission network and the Bit Error Rate (BER) on specified Wholesale Leased Lines, Interconnection and SS7 Signalling Links by testing for between 15 minutes and 24 hours against the equipment manufacturer's specifications.

2.3.2 Other types of test which may be carried out at **stc**'s initiative or upon request from the Other Licensed Operator include:

- Remote Loop tests
- Random signal tests

2.3.3 **stc** will also monitor the following alarms:

- Remote alarm indication error
- Multi frame alarm indication error
- Loss of signal
- Alarm indication signal
- Out of frame error

2.4 Joint Operational Interconnection Testing

2.4.1 **stc** and the Other Licensed Operator will each be responsible for testing and monitoring the performance of its own Network. Testing of the Interconnection Link and signalling link will be kept to a minimum and will be avoided during the busy hour periods.

2.4.2 No testing that may adversely affect an Interconnection service will be carried out before **stc** and the Other Licensed Operator have agreed to the conduct of such tests, including any routine tests.

2.4.3 The requesting Party will book the required test date and the testing duration at least five (5) Business Days prior to the requested testing date. The



requesting Party will submit the application form (as contained in Attachment 4 of this Annex H) to the requested Party. The request will include the reason for testing and the necessary details for the planning of testing as well as the proposed test schedule.

2.4.4 The requested Party will respond in writing within two (2) Business Days upon receipt of the written request, stating whether it is able to accommodate the testing on the proposed test dates. If the requested Party is not able to perform the testing on the requested test dates, an alternative schedule will be submitted in response to the initial request and discussed in good faith with the requesting Party.

2.4.5 The requested testing duration is subject to mutual agreement between the Parties.

2.4.6 The Parties will act in good faith to complete all test items within the agreed testing period.

2.4.7 All test forms and test specifications for each interface shall be agreed between **stc** and the Other Licensed Operator. All test items and test results shall be recorded and signed by both Parties, and a copy of the test results shall be available in the respective sites for reference.

2.4.8 Any request for extension to the testing duration beyond the agreed timeframe is subject to mutual agreement. Any request for extension will be made at least two (2) Business Days prior to the end of scheduled testing.

2.4.9 Neither Party will be held responsible for any delay in completing the agreed testing unless such delay is directly attributable to one Party's fault or negligence.

2.5 Mass Call Event

2.5.1 A Mass Call Event is defined as the planned occurrence of an unusually high volume of Calls to a specific destination (number or group of numbers).



2.5.2 Either Party with knowledge of a user planning a Mass Call Event will provide the other Party with reasonable advance notice, not less than twenty one (21) Calendar Days, and sufficient information for the other Party to take appropriate action prior to the event.



3 Fault Management

3.1 Principles

- 3.1.1 Each Party will maintain its own fault reporting centre which will be responsible for handling faults between Networks, coordinating fault clearance (including escalations) within its own Network and subsequently reporting the clearance of faults to the other Party.
- 3.1.2 Each Party will provide twenty-four (24) hour contact points for fault reporting.
- 3.1.3 Contact details for the twenty-four (24) hour contact point for fault reporting to **stc** will be provided as illustrated in Table 1 below as follows:

For faults relating to International Traffic	
For all other types of faults	

Table 3-1 : Points of Contact

- 3.1.4 A Party detecting a fault which may affect Interconnection services will endeavour to inform the other Party immediately (and in any event within fifteen (15) minutes), regardless of the nature and ownership of the fault and of the fault reporting procedure outlined below.
- 3.1.5 Prior to activating the fault reporting procedure, the Party reporting the fault must reasonably ensure that a genuine fault exists and also that every effort has been made to prove that the fault is not within the network of the reporting Party.

3.2 Fault Reporting Procedure

- 3.2.1 All faults will be reported using the fault report form provided in Attachment 2 of this Annex H and transmitted to the other Party by fax or other means as mutually agreed to the designated Point of Contact (see 3.1.3 above).



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- 3.2.2 The fault report will include sufficient information to allow the recipient(s) to identify the fault, carry out diagnostics and progress the fault to restoration.
- 3.2.3 When a Party reports a fault to the other Party, they will specify the classification of the fault reported, i.e. whether it is service Affecting or non-service affecting. They will also exercise their expert judgment and discretion and agree upon whether a non-service affecting fault will eventually develop into a service affecting fault.
- 3.2.4 Service affecting fault(s) may cause service interruption to customers when interconnected Calls conveyed between the Networks encounter difficulty in completion. For example, failure of more than one Interconnection Link on a particular route, or loss of an Interconnection Node. Other circumstances that may cause service-affecting faults include: breakdown of major cable plant or loss of SS7 signalling link set.
- 3.2.5 Non-service affecting fault(s) do not adversely affect the call handling capacity of the Network to complete the interconnected Calls. For example, failure of one Interconnection Link or the loss of an SS7 signalling link (not affecting the signalling link set) will be included in the classification of non-service - affecting fault(s) unless otherwise agreed by both Licensees to upgrade it to service affecting fault(s).
- 3.2.6 Once in receipt of the fault report, the receiving Party will endeavour to identify the fault and respond to the reporting Party within the timeframe detailed in Annex I (*Quality of Service Measures*), indicating in the fault response section of the form: the date and time of response, whether the fault has been identified, whether it accepts ownership of the fault and whether it is deemed service affecting or not.
- 3.2.7 Both **stc** and the Other Licensed Operator will respond to a fault report in accordance with the target response time specified in the Annex I (*Quality of Service Measures*).
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- 3.2.8 The fault report will be returned to the designated twenty four (24) hour contact point, unless otherwise specified on the form.
- 3.2.9 The owner of the fault will assume responsibility for restoration. This may include for example a possible roll-back to initial configuration when a fault has appeared following a change.
- 3.2.10 The Parties will cooperate in any investigation and follow-up actions and keep each other informed on the status of the progress of the fault clearance in a timely manner.
- 3.2.11 Once the fault has been repaired, the Party in receipt of the initial fault report will complete the fault closure section on the form and return it to the reporting Party.
- 3.2.12 The fault will be considered to be cleared when the Party who initiated the fault report has accepted the fault clearance information or confirms a successful test within two (2) hours of receipt of fault closure.

3.3 Fault Escalation

- 3.3.1 Where a fault persists and the Parties agree that progress of the remedy is not satisfactory, the fault may be escalated according to the fault escalation timescales and escalation reporting levels.
- 3.3.2 The reporting Party will immediately inform its own first level of escalation at the same time as notifying the fault reporting point of the other Party for action.
- 3.3.3 The Parties will maintain the communication links at the affected site(s) and report on the progress of the restoration work.
- 3.3.4 The Parties will use the timescales shown in Table 2 as guidelines for the fault escalation process. The timescales will be used in deciding whether the restoration of a fault is being progressing satisfactorily. If the escalation time has expired and both Parties are satisfied with the progress of the fault restoration, no immediate escalation is necessary.



Fault type	Maximum Time before Escalation		
	First Level	Second Level	Third Level
Service affecting	Immediate (within (10 minutes)	Two (2) hours	Four (4) hours
Non-service affecting	Immediate (within (30) minutes)	Eight (8) hours	Twenty-four (24) hours

Table 3-2: Escalation Timescales

3.3.5 All requests for escalation will be notified through each Party's fault reporting point.

3.3.6 The reporting levels are shown in Table 3 below:

Escalation Level	stc	Other Licensed Operator
First/Normal	Chief Section Supervisor	To be advised by the Other Licensed Operator
Second	Operations and Maintenance Manager	To be advised by the Other Licensed Operator
Third	Management Centre Director	To be advised by the Other Licensed Operator

Table 3-3: Reporting Levels

3.3.7 Persistent faults or issues which cannot be resolved satisfactorily through the normal channels will be escalated to the second level to expedite the fault clearance process.

3.3.8 The Parties will notify their respective and appropriate officers stated in Table 3 above when problems are encountered in the implementation or execution of the fault escalation procedures.



3.4 Information Communication and Notification

3.4.1 Both Parties will provide a twenty four (24) hour point of contact to receive network traffic management information and queries from each other (contact points in Network Plan as created under Clause 1.2 of this Annex H).

3.4.2 Both Parties will maintain a database of in-service Interconnection and SS7 Signalling Links between their networks in order to facilitate the management of the Interconnection. These databases will contain the following information for each link, and will be reviewed and reconciled from time to time:

- Service Reference number
- A-end exchange (**stc**)
name, location, manufacturer, software release
- B-end exchange (Other Licensed Operator):
name, location, manufacturer, software release
- Transmission path – direction designation, type
- Capacity
- Associated signalling link(s)

3.4.3 Both Parties shall maintain a database of in-service Wholesale Leased Lines in order to facilitate the management of Interconnection. These databases will contain the following information for each link, and will be reviewed and reconciled from time to time:

- Service Reference number
- A-end location
- B-end location
- Capacity

3.4.4 Both Parties will use reasonable endeavours to notify each other when service-affecting problems occur that are likely to impact interconnected traffic. In the event of the failure of a Service Node or more than one interconnection route, the Parties will share information in accordance with Clause 1.5 of the Primary Document in order to facilitate resolution of the problem(s) and restore service.



3.4.5 Under no circumstances will either Party be required to provide commercially sensitive information. Information that is supplied by either Party to the other in the context of Interconnection management may be used solely for network management and billing purposes. The Parties will define and adhere to internal procedures that will ensure use of the other's information is restricted in this regard.

3.5 Traffic Controls

3.5.1 The Other Licensed Operator may request a control from **stc** in instances where it may be necessary to re-direct or reduce the volume of traffic to the network of the Other Licensed Operator.

3.5.2 The Other Licensed Operator may request re-routing of traffic or overflow from primary routes to pre-designated alternative routes. Such arrangements are subject to agreement between the two Licensees and will be documented in their Network Plans.

3.5.3 Protective measures such as call-gapping maybe requested by either Party to prevent overloads in the other's Network. Such measures however will only be applied to emergency or exceptional circumstances and after information has been exchanged and discussions held between **stc** and the Other Licensed Operator.

3.5.4 When taking such measures unilaterally, either Party will inform the other immediately. Advice of removal of the control will also be given without unnecessary delay.



4 Interconnection Maintenance Processes

4.1 Planned Engineering Work

4.1.1 For any planned engineering work within either Network which will result in an outage or degradation of Interconnection services between the Networks, the Party carrying out the engineering work will inform the other in accordance with the procedure detailed below.

4.1.2 The details of the works to be carried out will be recorded and communicated on the "Advice of Planned Engineering Work" Form as shown in Attachment 3 of this Annex H. The advice will state the date, time and duration of such works, the impact to the conveyance of Calls between the Networks, any management procedures required, and any contingency measures to be taken by either or both Parties. The schedule and duration of the planned work proposed by the requesting Party will be agreed upon by the other Party before commencement of such works and should wherever practical avoid peak traffic periods.

4.1.3 The requesting Party, prior to planned engineering works, will give advance notice of at least five (5) Business Days to the other Party.

4.1.4 The requesting Party will notify the other Party when the work is complete by filling the relevant section of the "Advice of Planned Engineering Work" form, which will be transmitted to the other Party without unnecessary delay.

4.2 Safety of Persons and Equipment

4.2.1 Both Parties will agree to ensure the protection and safety of persons and equipment at all times during the conduct of testing and engineering works activities.

4.2.2 The use of wrist straps, conducting mats and other safety precautions recommended by the equipment manufacturers shall be strictly followed at all times. **stc** shall not be held responsible for any consequences resulting from negligence by the Other Licensed Operator in this regard.



4.3 Integrity of Networks

4.3.1 Both Parties will agree to take adequate measures to maintain the integrity of their Networks. Integrity of the Network refers to the ability of its systems to preserve and retain their original operational status and remain unaffected by Interconnection with other Networks.

4.3.2 Both Parties will ensure that:

- c) Adequate measures are taken to prevent the transmission of any signalling message across to interconnected Networks which does not comply with industry standards
- d) Efficient arrangements are established for screening functions to detect and reject non-compliant signals which do not comply with industry standards.

4.3.3 Each Party is responsible for the safe operation of its own Network and will, so far as is reasonably possible, take all necessary steps to ensure that its Network and its network operations:

- a) Do not endanger the safety or health of any person, including employees and contractors of either Licensee as well as the general public; and
- b) Do not cause physical or technical harm to the other Licensee's Network, including but not limited to causing damage, interfering with or causing deterioration to the operations of the other Licensee's Network.



5 Interconnection Traffic Management

5.1 Routing Management

- 5.1.1 All routing will be carried out in accordance with the National Numbering Plan, as published by CST and amended from time to time. The Network Plan as defined in this Clause 1.2.5 will conform to this requirement.
- 5.1.2 Each Party will manage the routing of outgoing calls from their origin to the POI and incoming calls from the POI to their destination.
- 5.1.3 Each Party will make reasonable effort to ensure that all Calls to the Network of the other Party are successfully routed, using overflows to alternative routing if necessary and possible.
- 5.1.4 The Parties will each be able to require the other to deliver incoming traffic to their Network to certain destinations on specific Interconnection Links and to request the use of proportional routing or other traffic management techniques. Such requirements shall be reviewed and agreed during the network planning process.
- 5.1.5 Each Party will present to the other the full Calling Line Identifier (CLI) for all Calls insofar as it is available.
- 5.1.6 National numbers will not be passed in the international format.

5.2 Routing of the Other Licensed Operator's traffic towards stc

- 5.2.1 The Other Licensed Operator will convey to **stc** traffic of the type(s) described in the relevant service schedules included in the Interconnection Agreement pursuant to this RIO.
- 5.2.2 In order to ensure correct routing and accounting, the table below (Table 4) defines the minimum number length required to be implemented in the Other Licensed Operator's digit analysis:



Traffic type	Access code	Comments
International Access	00	5 digits
National termination	0zNxx	4 digits
Special services	9xx	3 digits
Premium rate services	700xxxxx	3 digits
Free phone	800xxxxxxx	3 digits
Directory Enquiries	905	3 digits
Emergency services	99x	3 digits

Table 5-1: Access Codes



6 Site Access

6.1 Access Times and Authority

- 6.1.1 **stc** sites are monitored and may be accessed twenty four (24) hours a day, seven (7) days a week.
- 6.1.2 Access will be granted only to the room(s) where the Other Licensed Operator needs to visit. Access will be escorted by the site operator's staff where necessary.
- 6.1.3 Only those individuals whose names the Other Licensed Operator has notified to the site operator, in advance, will be permitted to access a site. To that effect, the Other Licensed Operator will issue a list stating the full name and official personal identification number, such as Saudi ID, Iqama etc, of each authorized person on the form provided in Attachment 5 of this Annex H. The form will be sent to the site operator's NOC (Network Operations Centre) and the commercial account managers of both **stc** and the Other Licensed Operator, and may be amended from time to time as necessary. Both Licensees reserve the right to approve the submitted names according to their latest security policy and procedures before granting access.
- 6.1.4 Any individual requiring access will present an identity card at the entrance of the site. Access to the site will be granted upon verification that the name and signature of the individual is recorded on the list of authorized persons in the logbook which will state the date, arrival time, departure time, floor number, room number (if applicable) and purpose of the visit.



6.2 Responsibility

- 6.2.1 The Other Licensed Operator will remain responsible for the action of any authorised individual.
- 6.2.2 All persons entering **stc** premises on behalf of the Other Licensed Operator will be allowed to make reasonable use of essential facilities, such as power, lighting, water and toilets.
- 6.2.3 It is the responsibility of each individual entering **stc** premises to ensure that they work in a safe manner. The Other Licensed Operator will ensure that all persons entering the **stc** premises on its behalf have adequate training for working on **stc** premises, and that these persons comply with all safety and security requirements applicable on **stc** premises.
- 6.2.4 All questions and comments regarding safety and security on **stc**'s premises should be addressed in writing to the **stc** technical account manager.



7 Review and update

7.1 Review and Update Process

- 7.1.1 The Operational and Maintenance procedures stated in this Annex H will be reviewed periodically by stc after consultation with the Other Licensed Operatorss and updated as appropriate subject to technical and operational capabilities.



Service Order Form

Order Details (To be Filled by the Other Licensed Operator)	
A - Other Licensed Operator Details	
Order Date:	Other Licensed Operator reference:
B - Service Required:	
	☐
	☐
C- Detail of Requirements:	
E- Site details:	
Site A:	Site B (Customer Sited Interconnect ,Wholesale Leased line):
F- Required Delivery Date:	
As per SLA	Other:
G- Additional Information:	
Note: This order form will be completed and signed by a duly authorised representative of the Other Licensed Operator. Name:.....Signature:.....	



Order Validation (For stc Use Only):	
Date:	Order Receipt Date:
Order Accepted: Yes No Reason for rejection:	
stc Order Reference Number:	

Order Confirmation	
Date:	Order Receipt Date:
stc Service Reference:	stc Order Reference Number:
Planned Delivery Date:	Installation Fee:
	Annual Rental:
Comments:	

Service Handover	
Date:	Order Receipt Date:



Fault Report Form

fault report form		fault no.:	
Other Licensed Operator Details:			
Fault Details			

fault response	

fault closure	



Advice of Planned Engineering Work

Advice of Planned Engineering Work	



Interconnect Testing Request Form

Application Form for Interconnect Testing



Persons Authorised to Access stc Premises

The following persons are authorised to access **stc** premises on behalf of the other licensed operator starting from (dd/mm/yyyy) for of six (6) months

Name	Identity No.

the following persons are no longer authorised to access **stc** premises on behalf of the other licensed operator

Name	Identity No.

Signed at ... on behalf of the Other Licensed Operator.....

Date Name.....

Position: Contact Tel:.....

Signature:.....