

SAUDI TELECOM COMPANY

Reference Interconnection Offer (RIO)

Annex H

Operations and Maintenance Manual

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TABLE OF CONTENTS

Clause	Page number
1 Planning	6
1.1 Provision of Network Information	6
1.2 Network Plan.....	6
1.3 Numbering.....	8
1.4 Changes to Call Routing	10
1.5 Interconnection of New Switching Equipment	10
1.6 Ordering of New or Changed Interconnect Services	10
1.7 Reservation of Collocation Space	12
1.8 Order Cancellation	14
1.9 Provisioning	15
1.10 Service Handover.....	17
2 Monitoring & Network Traffic Management	17
2.1 Monitoring.....	17
2.2 Reactive Capacity Planning.....	18
2.3 Transmission Management - Quality of Service Testing	18
2.4 Joint Operational Interconnection Testing	19
2.5 Mass Call Event	20
3 Fault Management	20
3.1 Principles	20
3.2 Fault Reporting Procedure	21
3.3 Fault Escalation	23
3.4 Information Communication and Notification	25
3.5 Traffic Controls.....	26
4 Interconnection Maintenance Processes	27
4.1 Planned Engineering Work.....	27

4.2	<i>Safety of Persons and Equipment</i>	27
4.3	<i>Integrity of Networks</i>	28
5	Interconnect Traffic Management.....	28
5.1	<i>Routing Management</i>	28
5.2	<i>Routing of the Other Licensed Operator traffic towards STC</i>	29
6	Site Access (Collocation Sites only).....	30
6.1	<i>Access Times and Authority</i>	30
6.2	<i>Responsibility</i>	30
	Attachment 1: Service Order Form	32
	Attachment 2: Fault Report Form.....	34
	Attachment 3: Advice of Planned Engineering Work	35
	Attachment 4: Interconnect Testing Request Form.....	36
	Attachment 5: Persons Authorised to Access Collocation Facilities	37
	Attachment 6: Collocation Forms	38

ANNEX H: OPERATIONS AND MAINTENANCE MANUAL

This Annex to the Reference Interconnection Offer (RIO) 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 interconnections 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, 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) months prior to the implementation of the alteration.

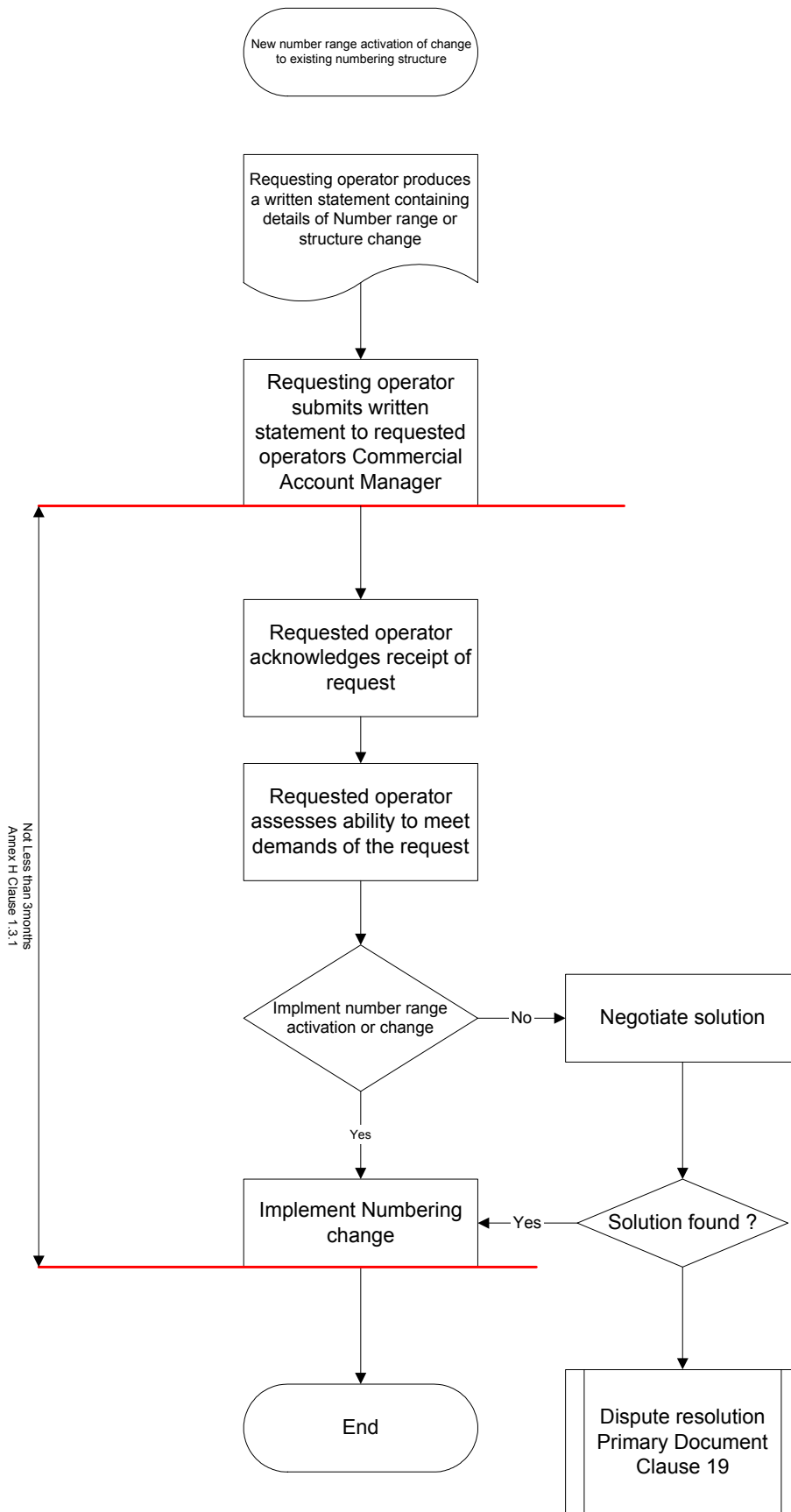
1.2 Network Plan

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
- Requirements for new Service Schedules
- 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
- Capacity profiles
- Collocation requirements
- 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 Technical Review Committee, information on the availability (or otherwise) of sufficient transmission capacity in the long distance network or the Junction Network at any STC or Other Licensed Operator building for establishing Interconnect Links and Transmission Link 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 Other Licensed Operator's Interconnection requirements in terms of traffic and location and number of Interconnect 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 MSRNs – Mobile Station Roaming Numbers), either Other Licensed Operator will notify the other party in writing at least six (3) months in advance of the activation of such numbers.
- 1.3.2 A party will give not less than six (6) 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.



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.

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) is subject to the commissioning of a physical transmission path to the Other Licensed Operator's Node.

1.6 Ordering of New or Changed Interconnect 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 Interconnect 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. 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 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, the STC Commercial Account Manager will review the form for validity. An Order Validation section of the order form in Attachment 1 of 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 Transmission 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 Transmission 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; or
 - c) Facilities are unavailable.
- 1.6.8 The Parties shall forthwith negotiate in good faith the requirements, implementation charges and timetable for the use of the Interconnect Link Service 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) and (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) and (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 Interconnect Link Service until the Parties have completed the Change Process for that Interconnect Link Service and all Network Conditioning 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 Interconnect Link Service and STC shall cease supplying the Interconnect 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, whereupon CITC will investigate with the co-operation of both Licensees and may make a determination on the subject.
- 1.6.13 The Other Licensed Operator and the CITC 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 Reservation of Collocation Space
- 1.7.1 Collocation space may be reserved up to one (1) year in advance, provided the request for reservation is reasonable and the space is available. Payment will be made for the reserved space in accordance with Annex F (*Price List*).

- 1.7.2 Requests for reservation should be addressed in writing to the Commercial Account Manager, who will respond within four (4) weeks to confirm whether the order is accepted or rejected.
- 1.7.3 In the event that a reservation is rejected on grounds of insufficient space, STC will propose an alternative solution.
- 1.7.4 The Other Licensed Operator shall notify STC of its request for the use of Interconnection by means of the request form set out in Attachment 6 (Request Form for Interconnection Equipment Collocation Services) of Annex H.
- 1.7.5 STC shall acknowledge, in writing to the Other Licensed Operator's nominated representative, receipt of the Other Licensed Operator's request under Clause 1.7.2 within five (5) Business Days of its receipt.
- 1.7.6 Following receipt of a request under Clause 1.7.4, STC shall assess that request and notify the Other Licensed Operator within ten (10) Business Days of acknowledgement that either:
- a) The request has been provisionally accepted on a non-binding basis, subject to the satisfactory completion of an Interconnection Equipment Collocation Services Project Survey, in which case STC will:
 - (i) Where building work is required, carry out a detailed site survey and produce a work schedule and bill of quantities with costs
 - (ii) Agree planned work schedule and costs with Other Licensed Operator
 - (iii) Accept the Other Licensed Operator order for collocation service
 - (iv) Execute building works
 - (v) Confirm acceptance of the collocation facility by the Other Licensed Operator
 - (vi) Produce an invoice and bill the Other Licensed Operator for the agreed work.

- b) The request has been rejected, in which case STC will provide the reasons for such rejection to the Other Licensed Operator. STC may reject a Collocation Request if:
- (i) The request is not made by using the correct process and procedure
 - (ii) The Request Form for Interconnection Equipment Collocation Services is not in the prescribed form; or
 - (iii) The data contained in the Request form for Interconnection Equipment Collocation Services is inaccurate or incomplete; or
 - (iv) The space requested is not within the limits prescribed in Service Schedule 5A of Annex G (*Service Schedules*);
 - (v) There is no available space at the Collocation Site that can meet the requirements of the Other Licensed Operator as determined in accordance with Service Schedule 5A of Annex G (*Service Schedules*) and the work required to create such space can be demonstrated to be practically and/or economically unviable; or
 - (vi) Acceptance of the Interconnection Equipment Collocation Services will give rise to significant health, safety, technical or engineering issues.

1.7.7 STC shall recover the cost of the physical site survey and the Collocation Request fee for the reasonable cost of processing the Request for Interconnection Equipment Collocation Services irrespective of the outcome of the Collocation Request.

1.8 Order Cancellation

1.8.1 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.

1.8.2 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.

1.8.3 In case of any cancellation of reserved floor space, the Other Licensed Operator must inform STC to release that space. In the event that such cancellation occurs

within the minimum lead time described in Clause 1.9.1 below for the service concerned STC reserves the right to charge a penalty.

1.9 Provisioning

1.9.1 Lead Times for Delivery

1.9.1.1 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*).

1.9.2 Implementation

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

1.9.2.2 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 1.9.2.3 and 1.9.2.4 below. In case of errors, the sources of errors will be traced and rectified accordingly.

1.9.2.3 When commissioning a Transmission Link or Interconnect Link, STC will perform the following qualification tests including but not limited to:

- Attenuation
- Loop resistance
- Insulation
- SNR (Signal to Noise Ratio)
- Impulse noise
- Return loss

1.9.2.4 Once the transmission path is installed, STC will perform the following tests to bring the CSI 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

1.9.2.5 The delivery of Interconnect Links to the Other Licensed Operator's equipment collocated on an STC site is subject to the prior physical connection of the Other Licensed Operator DDF to the STC DDF. The connection of the Other Licensed Operator's equipment to the STC DDF shall be the responsibility of the Other Licensed operator.

1.9.2.6 The following tests will be performed as appropriate on all Interconnect links (CSI or collocated), 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

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

1.9.2.8 STC and Other Licensed Operator will test generate and verify all alarms with STC and Other Licensed Operator NOCs.

1.10 Service Handover

1.10.1 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 result of testing.

1.10.2 The Other Licensed Operator will confirm receipt of delivery and acceptance of the service by signing and returning the order form within one (1) working day 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 Interconnect Links to identify congestion and enable maintenance at or above the Target Grade of Service for voice interconnection.
- 2.2.2 In the event that the traffic, capacity and route forecasting processes have failed to maintain the Target Grade of Service, 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 Grade of Service.
- 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 transmission link fault, STC will monitor the performance of the STC Transmission Network and the Bit Error Rate (BER) on specified Transmission 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 Interconnect 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) 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 Interconnection Agreement Parties.

- 2.4.6 The Interconnection Agreement 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 site 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 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 the fault between Networks, coordinating fault clearance (including escalations) within its own Network and subsequently reporting the clearance of the fault 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 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	Name: Phone: Fax: E-mail:
For all other types of faults	STC Hotline Phone: Fax: E-mail:

Table 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 and transmitted to the other Party by fax to the designated Point of Contact (see 3.1.3 above).

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 Interconnect 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, 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 Interconnect 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*).
- 3.2.8 The Fault Report will be returned to the designated 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 Interconnect Agreement 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 Interconnect Agreement 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 Interconnect Agreement Parties will maintain the communication links at the affected site(s) and report on the progress of the restoration work.
- 3.3.4 The Interconnect Agreement 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.

<i>Fault type</i>	<i>Maximum Time before Escalation</i>		
	<i>First Level</i>	<i>Second Level</i>	<i>Third Level</i>
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 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:

<i>Escalation Level</i>	<i>STC</i>	<i>Other Licensed Operator</i>
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: 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 Interconnect Agreement Parties will notify their respective and appropriate officers stated in the table 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 Interconnect Agreement Parties will provide a 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)

3.4.2 Both Interconnect Agreement Parties will maintain a database of in-service Interconnect 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 Interconnect Agreement Parties shall maintain a database of in-service Transmission Links in order to facilitate the management of the Interconnect. 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
- B-end exchange
- Capacity

3.4.4 Both Interconnect Agreement 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 Interconnect Agreement 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 Interconnect Agreement 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 Interconnect Agreement 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 Interconnect Agreement 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 Interconnect Agreement 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. 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.

4.1.3 The requesting Party, prior to planned engineering works, will give advance notice of at least five (5) Business Days notice 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 Interconnect Agreement 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 due to Other Licensed Operator's negligence in this regard.

4.3 Integrity of Networks

4.3.1 Both Interconnect Agreement 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 Interconnect Agreement Parties will ensure that:

- a) Adequate measures are taken to prevent the transmission of any signalling message across to interconnected networks which does not comply with industry standards
- b) 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 Interconnect Agreement 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 as well as the general public; and
- b) Do not cause physical or technical harm to the other's network, including but not limited to causing damage, interfering with or causing deterioration to the operations of the other's network.

5 INTERCONNECT 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 CITC 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 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 Interconnect Agreement Parties will each be able to require the other to deliver incoming traffic to their network to certain destinations on specific Interconnect 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 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 4: Access Codes

6 SITE ACCESS (COLLOCATION SITES ONLY)

6.1 Access Times and Authority

6.1.1 Collocation sites are monitored and may be accessed 24 hours a day, 7 days a week.

6.1.2 Access will be granted only to the room(s) where the Licensed Operator hires collocation space. Access will be escorted by the site operator's staff where necessary.

6.1.3 Only those individuals whose names the Licensed Operator has notified to the site operator, in advance, will be permitted to access a site. To that effect, the 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. 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 operators 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 entering a collocation site, until notification has been

received by STC that the individual is removed from the list of authorised persons.

- 6.2.2 All persons entering collocation sites 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 collocation facilities to ensure that they work in a safe manner. The Other Licensed Operator will ensure that all persons entering the STC collocation facilities on its behalf have adequate training for working on equipment collocated at 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 in collocation sites should be addressed in writing to the STC Technical Account Manager.

7 REVIEW AND UPDATE

- 7.1 The Operational and Maintenance procedures stated in this Annex H will be reviewed periodically by STC after consultation with the OLOs and updated as appropriate subject to technical and operational capabilities.

Attachment 1: Service Order Form

ORDER DETAILS (TO BE FILLED BY THE OTHER LICENSED OPERATOR)	
A - Other Licensed Operator Details	
Order Date:	Other Licensed Operator reference:
Address: Billing Address (if different):	Contact name: Company position: Phone: Fax: E-mail:
B - Service Required:	
Interconnect Link	
Transmission Link	
Collocation	
Any other required Service as specified in STC RIO, please indicate.	
C- Detail of Requirements:	
x 2Mbps Link(s)	Presentation: G.703 V.35 Ethernet Other:.....
Rack Space x Cabinet Space Space required:	Floor Space Secure Room
E- Site details:	
Site A:	Site B (Interconnect or Transmission Link only):
F- Required Delivery Date:	
As per SLA	Other:
G- Additional Information:	
<p>Note: This order form will be completed and signed by a duly authorised representative of the Other Licensed Operator.</p> <p>Name:.....Signature:.....</p> <p>.....</p>	

Attachment 2: Fault Report Form

FAULT REPORT FORM		Form No.:
Time of Report: hh:mm	Date: dd/mm/yyyy	
Other Licensed Operator Details:		
Other Licensed Operator Name:	Address:	
Report Contact Name:	E-mail address:	
Phone Number:	Fax Number:	
Fault Details		
Service Affected: Interconnect Link <input type="checkbox"/>	Transmission Link <input type="checkbox"/>	
Other: <input type="checkbox"/>		
Service Reference:	Fault Reference:	
Fault Description/symptoms:		
Fault classification: Service Affecting <input type="checkbox"/>		
Non-Service Affecting <input type="checkbox"/>		

Fault Response	
Time of Response: hh:mm	Date: dd/mm/yyyy
Response Contact Name:	E-mail address:
Phone Number:	Fax Number:
Fault Identified: Yes <input type="checkbox"/>	No <input type="checkbox"/>
Ownership accepted: Yes <input type="checkbox"/>	No <input type="checkbox"/>
Diagnostic:	
Fault classification: Service Affecting <input type="checkbox"/>	
Non-Service Affecting <input type="checkbox"/>	
Fault Reference:	Target Repair Time: hh-mm on dd/mm/yyyy
Action taken:	

FAULT CLOSURE	
Fault Reference:	Contact Name:
Time of Closure: hh:mm	Date: dd/mm/yyyy
This is to confirm that the Fault has been repaired/cleared and hereby close the instance	
Comments:	

Attachment 3: Advice of Planned Engineering Work

ADVICE OF PLANNED ENGINEERING WORK	
Subject: <i>(Title of the planned work)</i>	
Location: <i>(Location of the planned work)</i>	
Type of planned work: <i>(e.g. Signalling Link/Interconnect Link/Exchange)</i>	
Planned Outage Date: <i>dd/mm/yyyy</i>	Outage Time: <i>hh/mm</i>
Estimated Service Interruption Duration:	
Number of local leased circuits / Signalling links affected: <i>(Indicate the number of the local leased circuit or signalling links affected by the planned work)</i>	
Effect of planned work <i>(Describe the effect of the planned works on calls and in which direction)</i>	
Reason for planned work: <i>(Describe the reason for the planned works eg routine/urgent maintenance or software upgrade etc.)</i>	
Remarks: <i>(Additional comments or remarks, e.g. commencement date/time of preparation work)</i>	
Issuing Officer: <i>(Indicate the name and designation of the officer issuing the advice of planned work)</i>	

Attachment 4: Interconnect Testing Request Form

Application Form For Interconnect Testing
OPERATOR
Name of Other Licensed Operator
Business Address
I wish to apply for.....Test
For the period from.....to.....(.....Days)
Reason for Request / Purpose of Test
In support of my application, I provide the following Technical Information for setting up the Interconnect Testing.

Attachment 5: Persons Authorised to Access Collocation Facilities

The following persons <u>are authorised</u> to access collocation facilities on behalf of the Other Licensed Operator as from (dd/mm/yyyy) for a period of six (6) months	
Name	Identity No.
The following persons <u>are no longer authorised</u> to access collocation facilities 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:.....	

Attachment 6: Collocation Forms

Part 1 of 11

Request for Equipment Collocation Service Requesting Other Licensed Operator Details			
Other Licensed Operator Ref:		Other Licensed Operator Request Date:	
Location Details of STC Building:			
STC Building Ref:			
Other Licensed Operator Proposed Ready for Service Date:			
Forecast duration of collocation (if known):			
Estimated footprint of all equipment to be installed (m ²):			
Contact Details of Other Licensed Operator Representative Making the Collocation Request:			
Name:			
Job Title:			
Telephone Number:			
Facsimile Number:			
E Mail:			
Post Office Box Number and Location Details:			
Contact Details of Other Licensed Operator Representative Managing Equipment Collocation Service Request:			
Name:			
Job Title:			
Telephone Number:			
Facsimile Number:			
E Mail:			

Post Office Box Number and Location Details:	
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Part 2 of 11

Contact Details of Other Licensed Operator Representative Managing Equipment Collocation Service Billing and Invoicing:	
Name:	
Job Title:	
Telephone Number:	
Facsimile Number:	
E Mail:	
Post Office Box Number and Location Details:	

Request for Equipment Collocation Service Other Licensed Operator Physical and Technical Requirements of Collocation Facility	
Type, quantity, dimensions and power requirements of equipment racks / cabinets to be installed in the Collocation Facility are detailed in Annex (?)	
Maximum total AC power load which would be required by the Other Licensed Operator installed equipment to the STC building AC power supply (kW).	
Would all installed equipment be compliant with ETSI standard 300.019? :	
If 'No', state the required operational parameters:	
Maximum permissible room temperature in ° Celsius.	
Minimum permissible room temperature in ° Celsius.	
Relative humidity maximum (%RH).	
Relative humidity minimum (%RH).	
Maximum permissible rate of temperature change as 'degrees Celsius per minute'	

Part 4 of 11

Equipment Collocation Service – Other Licensed Operator Equipment Forecast Power Gradient						
Percentage of Stated Maximum Power Graduated from Brought Into Service (BIS) Date of:						
BIS + 6 Months	BIS + 12 Months	BIS +18 Months	BIS + 24 Months	BIS + 30 Months	BIS + 36 Months	BIS + 60 Months
%	%	%	%	%	%	%

Equipment Collocation Service – Method of Physical Interconnection			
Method Interconnection	Transmission Medium	Transmission Protocol	Required Bandwidth

Equipment Collocation Service – Summary of Additional Requirements

Part 5 of 11

STC Authorisation and Response to Building Survey		
Name of Other Licensed Operator Requesting Survey:		
Location Details of STC Building:		
Date and time Initial Survey Request was received:	Date:	Time:
Date response to Initial Survey required:	Date:	
Contact Details of STC work co-ordinator:	Name: Tel: Fax: E-mail:	
For STC Internal Use Only:		
STC Response Compiled By:	Name: Tel: E-mail: Date Compiled:	
Summary of Planning Hours Required to Complete the Initial Survey:	Normal Hours: Overtime Hours:	
Summary of Initial Survey Results		
STC Building Identity:		

Part 6 of 11

Can a Collocation Facility be provided that meets the requirements of the requesting Other Licensed Operator?		
If so, what is the degree of difficulty rating at this site:		High Medium Low
Estimated floor area available (m ²):		
Estimated work requirement:		
Any anticipated problems:		
If not, what is the main reason that a Collocation Facility cannot be provided at this site:		

Part 7 of 11

Collocation Facility Offer			
Name of Requesting Other Licensed Operator:			
To: (PO Box and location of requesting Other Licensed Operator)			
Location of STC Building where Collocation Facility has been requested: (Floor Plan to be Attached)			
Details of Collocation Facility to which this offer refers:			
Available floorspace offered (m ²):		Location of Floorspace:	Room ID: Floor
Method of providing Collocation Space:			
Method of access for Other Licensed Operator Personnel offered:			
Entry location and type:	Location: Type:	Entry Dimensions (mm):	Height: Width:
Locking Mechanism:		Entry Route:	
Escorted Access	YES/NO		

Part 8 of 11

Additional Relevant Information:			
Method of Equipment Entry:			
Restrictions:		Facilities for Vehicle Unloading:	
Details of Escorted Access Requirements:			

Part 9 of 11

Collocation Facility Offer			
Details of work required to comply with floor loading and load spreading:			
Estimated time duration from acceptance of order for Collocation Service requiring building works to commencement of installation (Business Days):			
Details of requirement for optional ancillary services:			
Potential risks and constraints that could inhibit the provision of Collocation Space:			
Activity Time Summary:			
Activity	Duration (Business Days)	Start Date	Completion Date
Works Planning and Programming			
Pre-building works			
Construction of Collocation Facility			
Electric power and fittings			
Ventilation, cooling and heating			
Ancillary services Provision – Standard: Optional:			
Building access and security			

Part 10 of 11

Provision of intra-building cabling			
Work for the provision of physical interconnection			
This Offer will be withdrawn on the date 10 Business Days after the Offer date.			
Offer Dated:		Date Offer will be withdrawn:	

Part 11 of 11

Collocation Facility Offer
Acceptance of this offer will only be recognised by the submission of a completed Acceptance Form which must be returned to STC at the Post Office Box and location shown.
<p>To:</p> <p>Saudi Telecom Company</p> <p>PO Box.....</p>
<p>From:</p> <p>Requesting Other Licensed Operator details</p>
<p>On behalf of the requesting Company listed above I formally accept the STC offer for Equipment Collocation Service.</p>
<p>Name:</p> <p>Position in Company:</p> <p>Acceptance Dated:</p> <p>Signed:.....</p> <p>On Behalf of (requesting Other Licensed Operator company name)</p>
<p>This acceptance form should be returned by post to the STC location shown above.</p>