

Schedule 3



Operations and Maintenance Manual

Table of Contents

1 Introduction 3

2 Non-Discrimination..... 3

3 Forecasting..... 3

4 Service Ordering 3

5 Implementation..... 5

 5.1 Transmission Path 5

 5.2 Service Provisioning 6

 5.3 Service Verification 6

 5.4 Service Fulfilment..... 6

6 Service Management and Maintenance 7

 6.1 Monitoring and Network Management 7

 6.2 Quality of Service 7

7 Fault Management 7

 7.1 Fault Classification 7

 7.2 Fault Escalation 9

 7.3 Planned and Emergency Maintenance..... 9

Annex C - Interconnect Service Form ("ISF") 10

Annex D – Escalation Matrix 11

Annex E - Planned Activity Form ("PAF")..... 12

8 Document Control 13

1 Introduction

- 1.1. This Schedule 3 (Operations and Maintenance Manual) sets out the general terms and conditions for the ordering and provisioning of the Services under this RIO.
- 1.2. Where there are discrepancies between this Schedule 3 and the specific Service schedules found in Schedule 2 (Service Descriptions), then the terms in Schedule 2 and all sub-schedules of Schedule 2 thereof take precedence over the terms of this Schedule 3.
- 1.3. This Schedule 3 is effective from the date of signing of Schedule 5 (Supply Terms) of this RIO.
- 1.4. Zain Bahrain may amend or vary the terms included in this Schedule 3 in accordance with Clause 3.3 of the Supply Terms.
- 1.5. Unless defined otherwise, capitalized terms will have the meaning assigned to them in Schedule 1 (Definitions) of this RIO.
- 1.6. A reference to a Clause or Figure, unless otherwise stated, is a reference to a Clause or Figure of this Schedule 3.

2 Non-Discrimination

- 2.1 Both Parties shall, to the fullest extent possible and using their best endeavours, follow the principle of non-discrimination with respect to the processes and principles described in this Schedule 3. This shall include the roles and responsibilities of both Parties while carrying out the processes described in this Schedule.

3 Forecasting

- 3.1 The Forecast process requires both Zain Bahrain and the OLO to plan and exchange Forecasts for each applicable Service provided pursuant to this RIO, and to ensure that changes to the Forecasts are communicated in a timely fashion, preferably on a quarterly basis.
- 3.2 The exchange of Forecast information is required to enable Zain Bahrain and the OLO to plan and manage their Networks and human resources.
- 3.3 For new interconnection with an OLO, the OLO shall provide in the ISF an annual Forecast (divided into quarterly figures), commencing on 1 January, 1 April, 1 July or 1 September.

4 Service Ordering

- 4.1 This section 4 contains general provisions for the process for placing an Order for a Service of Zain Bahrain. Further detailed service related processes are described within the related sub-schedule under Schedule 2 ("Service Descriptions").
- 4.2 An OLO seeking Services under this RIO with Zain Bahrain must follow the process below:
 - a) Sign two copies of the Supply Terms of this RIO;
 - b) Sign two copies of the Non-Disclosure Agreement ("NDA"), which can be found at www.bh.zain.com/ZainPortal/NDA.pdf;
 - c) Complete and sign the required Interconnection Service Form ("ISF") related to the requested services hereto appended in Annex C;
 - d) Submit all above documents to Zain Bahrain by hand or by registered mail to:

Regulatory & Interconnection Department
Zain Bahrain
Zain Tower, Road 2806
Building 401, Block 428
P.O. Box 266
Manama, Kingdom of Bahrain

- 4.3 The mandatory information required in the ISF includes:
- a) OLO company information;
 - b) point of contact details;
 - c) requested Services; and
 - d) forecasted traffic volume (in case of new interconnection).
- 4.4 Based on the submitted forecasted traffic volume figures, Zain Bahrain will calculate and coordinate with the OLO to ensure that the required capacity for Interconnection (number of E1 Paths) is in place.
- 4.5 The OLO shall provide the Bank Guarantees in accordance with Clause 5.5 of the Supply Terms Schedule prior to any service being activated.
- 4.6 For new E1 Paths, Zain Bahrain and the OLO shall meet within fifteen (15) Business Days to start discussing and planning interconnection technical and commercial aspects. As and when needed, further meetings may take place between the OLO and Zain Bahrain to finalize the interconnection design and any other pending issues.
- 4.7 Zain Bahrain shall share the minutes of meetings (via e-mail) to ensure the Parties have a mutual understanding of the meetings and agreed steps forward.
- 4.8 Should there be no feedback from the OLO (via e-mail) within three (3) Business Days the minutes of the meeting will be deemed as accepted by the Parties.
- 4.9 Any changes to the OLO's requirements, any alteration in the Interconnection design and any additional installation, setup and configuration done by Zain Bahrain as per the OLO's request shall be included either in the minutes of the meeting or by sending an updated ISF to Zain Bahrain.
- 4.10 Final Interconnection requirements and design details shall be signed by both Parties and form part of this agreement for Interconnection.
- 4.11 Zain Bahrain or the OLO is not required to accept Orders that are not Signed-Off by the authorized representative of the other Party.
- 4.12 For the avoidance of doubt, Zain Bahrain is not obliged to commence the implementation of any Service if:
- a) the OLO has not completed the required forms with the accurate information;
 - b) the OLO has not provided appropriate Bank Guarantee for the requested Service;
 - c) the OLO has not signed the Non-Disclosure Agreement ("NDA"); and
 - d) the OLO has not signed the Supply Terms.

4.13 Zain Bahrain may reject an Order, only if:

- a) the OLO has not obtained relevant or necessary consents from governmental bodies; bodies with administrative functions delegated from governmental bodies; and/or relevant third parties.
- b) the Order is not capable of being fulfilled technically;
- c) the Order duplicates an Order already made and not yet fulfilled; and
- d) the OLO failed to provide a Bank Guarantee.

5 Implementation

Following the prerequisites under Clause 4 of this document and the supply of service process as detailed in the sub-schedules 2.1, 2.2 and 2.3, the technical implementation phase shall include three phases as follows:

5.1 Transmission Path

- i) Zain Bahrain will arrange a site survey to the POI in coordination with the OLO, to assess the technical and commercial requirements for interconnection design, physical transmission path, installation and configuration.
- ii) Estimated milestone dates will be planned for physical transmission path installation and configuration. Any progress or complication with regards to implementation, revised dates for installation and configuration shall be shared mutually in a timely fashion.
- iii) Installation, setup and configuration dates are subjected to the complexity of the interconnection design in addition to the time required for conducting civil work (if any) and obtaining relevant necessary consents or authorizations from governmental bodies and third parties.
- iv) As mentioned in Clause 2.2 of Schedule 2.1 (Interconnection Link Services), following the OLO's request, Zain Bahrain may provide and set up conversion equipment if required; the OLO shall provide the technical requirements for the conversion equipment during the meetings with Zain Bahrain. In order for Zain Bahrain to proceed with implementing the technical requirements for the conversion equipment, the OLO must send a request in writing with full details of the request and confirming acceptance of the applicable charges.
- v) Both Parties will use their reasonable endeavours to perform all activities to ensure that any delay in Transmission process is minimized.
- vi) Zain Bahrain and the OLO will confirm the physical connectivity status by conducting Bit error rate (BER)¹ test for (15) minutes on each individual E1 Path.
- vii) Once it is confirmed as successful, both Parties shall exchange links and equipment references (i.e. serial numbers or any other identifiers as agreed between the parties).

¹ ITU-T Recommendation G.828 <http://www.itu.int/rec/T-REC-G.828-200003-I/en>

5.2 Service Provisioning

- i) Upon confirming the physical connectivity status by Zain Bahrain and the OLO, both Parties shall start configuring their switches for provisioning the Service, routing configuration and setting-up the traffic trunks.
- ii) Zain Bahrain and the OLO shall cooperate in order to conduct any necessary joint testing, where agreed as applicable, and will use all reasonable endeavours to complete such testing with minimum delay.
- iii) Ready for Test date ("RFT") shall be set by both Parties, by which Service Provision shall be completed in order to start Service Verification.
- iv) Zain Bahrain and the OLO shall confirm to the other Party when Service Provisioning is completed in order to proceed with the Service Verification phase. Both Parties shall exchange the systems' provisional references, if any (for example, CIC numbers, tag numbers and/or trunk identifications)).

5.3 Service Verification

- i) Starting on the RFT date, Zain Bahrain and the OLO shall arrange for service acceptance testing scenarios and then exchange the Call Data Records ("CDRs") of the testing scenarios for internal verification.
- ii) Should the testing results prove to be unsuccessful, both Parties may go back to the Transmission Path and Service Provisioning phases to conduct changes required. Thereafter, further testing trials shall be arranged in coordination with both Parties.
- iii) If the required changes in Transmission Path and Service Provisioning phases would alter the initially agreed Interconnection design, an amendment with the changes, costs, responsibilities and roles shall be Signed-Off by both Parties before proceeding with the changes.
- iv) Both Parties will use their reasonable endeavours to perform all testing scenarios to ensure that any delay in the Service Verification process is minimized.
- v) The Ready for Service date ("RFS") shall be set by both Parties, by which, if Service Verification is done successfully, the Service is ready to carry live traffic and to proceed to commercial launch.

5.4 Service Fulfilment

- i) Once the testing results are confirmed to be successful, and unless otherwise stated in the Service Descriptions in Schedule 2, Zain Bahrain shall inform the OLO by written notification of completion of a service delivery within two (2) Business Days from fulfilment of the Order by Zain Bahrain.
- ii) The OLO should inform Zain Bahrain with written notification within five (5) Business Days of receipt of the written notification in 6.4 (i) above 6.4(i), that a Service has not been provisioned correctly or otherwise does not conform to the applicable Service Description, otherwise the OLO is deemed to have accepted the provided Service.
- iii) Once the Service is deemed to be accepted, invoicing and charges shall start in accordance with Schedule 4 ("Billing").

6 Service Management and Maintenance

6.1 Monitoring and Network Management

- i) For Services provided by Zain Bahrain, Zain Bahrain will provide a Network Operation Centre (“NOC”) to monitor, troubleshoot and log fault tickets for any Service interruption. The NOC will operate 24 hours/day, every day. The fault management process is contained in this Schedule.

6.2 Quality of Service

- i) Each Party will convey Calls, SMS and MMS to the same standard and Quality of Service as either Party conveys Calls made by its own Subscribers.
- ii) Each Party shall provide the Services twenty-four hours per day, seven days per week. Over any ninety (90) Calendar Day period, the telecommunications Service shall be available at least 98% of the time.
- iii) The telecommunications networks shall maintain a busy hour call completion rate of at least 95% averaged over any ninety (90) Calendar Day period.

7 Fault Management

The Fault management process adopted by Zain Bahrain and the OLO shall ensure the prompt restoration of Service to the level agreed in Clause 7.2 of this Schedule.

7.1 Fault Classification

- i) Faults arising in segments of the network illustrated in *Figure 1* will be classified as follows:

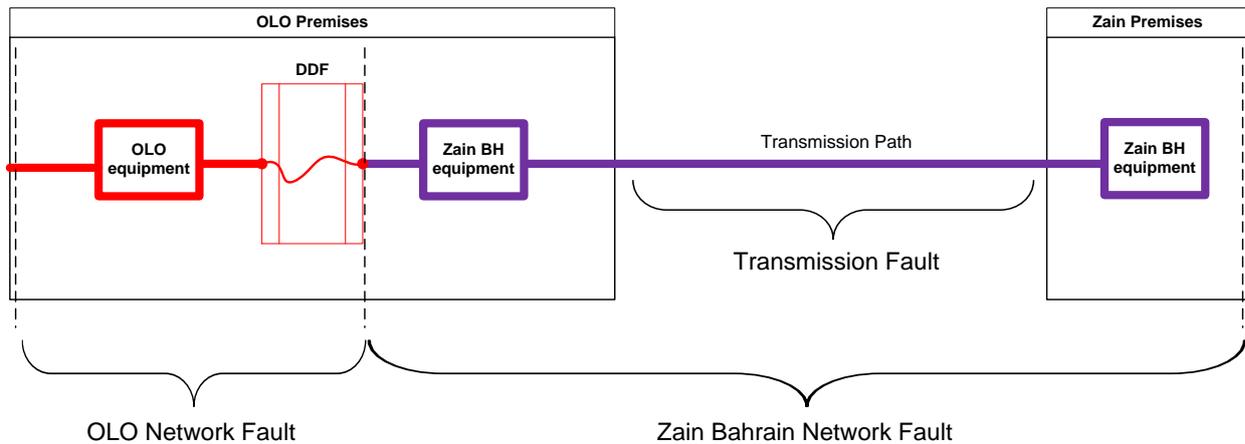
- a) Transmission Fault

A Fault resulting in the total loss of ability by either Zain Bahrain or OLO to transmit Calls between the two Parties’ Networks due to a fault in the Transmission Path.

- b) Network Fault

A Fault located within either Zain Bahrain Network elements (Zain Bahrain Network Fault) or within the OLO Network elements (OLO Network Fault). Network Faults include Faults within the signalling networks.

Figure 1: Fault Classification



- ii) Faults will be addressed depending on individual circumstances, with Service Affecting faults having the higher priority:
 - a) Service Affecting (SA)

Faults that result in a noticeable deterioration in the Quality of Service are caused by severely restricted ability by either Zain Bahrain or OLO to convey Calls between the two networks; or total loss of, or severely restricted access to, one or more of the Services which are terminated on either Zain Bahrain’s or OLO’s network.
 - b) Non Service Affecting (NSA)

Any other fault not in the Service Affecting category or as mutually agreed between Zain Bahrain and OLO.
- iii) Service Affecting (SA) Faults are further categorised into Critical, Major and Minor based on Capacity unavailability caused by the Fault, *see Figure 2*

Figure 2: Fault Categorization

Fault type	Classification
Critical Fault	> 50% of total capacity is unavailable
Major Fault	20% to 50% of total capacity is unavailable
Minor Fault	< 20% of total capacity is unavailable

- iv) Both Parties are required to provide a contact point for Fault reporting and Fault management. Each contact point should operate twenty four (24) hours per day, all days per year. Zain Bahrain shall use its NOC as a contact point for Fault reporting and Fault management.
- v) Each Party should maintain a unique set of fault Ticket Numbers. Where a fault is made by either Party, a fault Ticket Number shall be exchanged as a reference to that particular fault.

- vi) Both Parties will ensure sufficient information is exchanged to allow for efficient Fault resolution.
- vii) Both Parties will manage information relating to all outstanding Faults, including the status of the Fault. This information will be made available to either Party at agreed intervals or as required.
- viii) If both Parties cannot agree that the Fault is cleared then the fault ticket shall not be closed until Fault escalation and/or investigation has been satisfactorily carried out, using the appropriate mechanisms as defined in this Schedule.

7.2 Fault Escalation

- i) The Fault escalation process can be initiated when either Party has insufficient cooperation from the other affected Party; or when the target restoration time for a Fault has elapsed without any justifications.
- ii) Initiation of the escalation process is carried out in accordance with the Escalation Matrix in Annex D. Although the Parties may raise concerns by phone, the initiation of the escalation process shall be in writing by letter or email and all further correspondence must be documented during the Fault escalation process.
- iii) Every effort shall be made by both Parties to reach an agreement at each escalation level before proceeding to the next level.

7.3 Planned and Emergency Maintenance

- i) Planned Maintenance activity encompasses maintenance work that affects, or has the potential to affect the quality of service provided by Zain Bahrain or the OLO.
- ii) The Party planning to carry out Planned Maintenance activity should provide at least ten (10) Business Days' notice to the other Party. Both Parties shall notify the other Party using the Planned Activity Form ("PAF") hereto appended in Annex E.
- iii) Emergency Maintenance activity is maintenance work that needs to be carried out immediately due to the impact or potential impact to Services. If this Emergency Maintenance activity affects, or has the potential to affect Zain Bahrain or the OLO's Services, then, as much advance notice will be given as the situation permits and as soon as either Party is aware of it.
- iv) The escalation process can be initiated when either Party has insufficient cooperation from the other affected Party or when the Planned Maintenance activity or Emergency Maintenance activity time has elapsed while the Services are still being affected and not restored.
- v) Subject to agreement on the date and time, the maintenance work will be carried out as soon as possible. Upon completion of the maintenance work, the Parties shall exchange confirmation by e-mail that the maintenance work has been completed to the satisfaction of both Parties.

Annex C - Interconnect Service Form ("ISF")

The soft copy of the ISF can be found on www.bh.zain.com/ZainPortal/ISF.xlsx

Annex D – Escalation Matrix

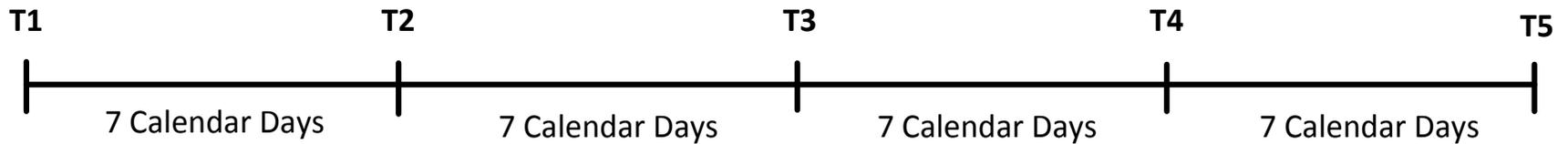
The OLO to advise the escalation contact points

Zain Bahrain					
Escalation Level	Designation	Contact Number	E-mail	Escalation Timeframe	Timer
First	NOC	+973 3603 9052	noc@bh.zain.com	Reporting the fault	T1
Second	NOC Manager	+973 3603 0085	Hussain.Oraibi@bh.zain.com	T1 + 07 Calendar Days	T2
Third	Network Director	+973 3603 0602	Hamad.AlRomaihi@bh.zain.com	T2 + 07 Calendar Days	T3
Fourth	R & I Manager	+973 3603 0064	Jaffar.Abdulla@bh.zain.com	T3 + 07 Calendar Days	T4
Fifth	General Manager Office	+973 3603 1241	Salah.Yousif@bh.zain.com	T4 + 07 Calendar Days	T5

OLO					
Escalation Level	Designation	Contact Number	E-mail	Escalation Timeframe	Timer
First				Reporting the fault	T1
Second				T1 + 07 Calendar Days	T2
Third				T2 + 07 Calendar Days	T3
Fourth				T3 + 07 Calendar Days	T4
Fifth				T4 + 07 Calendar Days	T5

Figure 2 Escalation Timeframe

Reporting the fault



Annex E - Planned Activity Form ("PAF")

Soft copy of the PAF can be found on www.bh.zain.com/ZainPortal/PAF.xlsx

