1. INTRODUCTION

1.1 Framework and Function

This Joint Working Manual constitutes an integral part of, and should be read in conjunction with, the Supply Terms and the Batelco Reference Offer.

The primary function of the Joint Working Manual is to specify the procedures to be established by the signatory parties to the Supply Terms and any other activities to be undertaken by parties to plan, implement, manage and change inter-carrier arrangements between their Networks, including but not limited to:

(i) forecasting traffic loadings;
(ii) for one party to order Capacity from the other; and
(iii) for joint testing before such Capacity is brought into service.

A secondary function of the Joint Working Manual is to record, from time to time, technical and operation information which if it is included in the Supply Terms, may render those terms unmanageable.

2. TECHNICAL SPECIFICATION

2.1 Introduction

This section describes the technical specifications applicable to the Services. The specifications in this paragraph are applicable to each party as Access Seeker and as Access Provider in respect of each relevant Service.

2.2 Technical characteristics for the Interconnect Service:

Principles

Carrier Systems based on Synchronous Digital Hierarchy (SDH), 2.048 Mbit/s Interconnect Links.

Figure 1 represents a functional overview of the service:

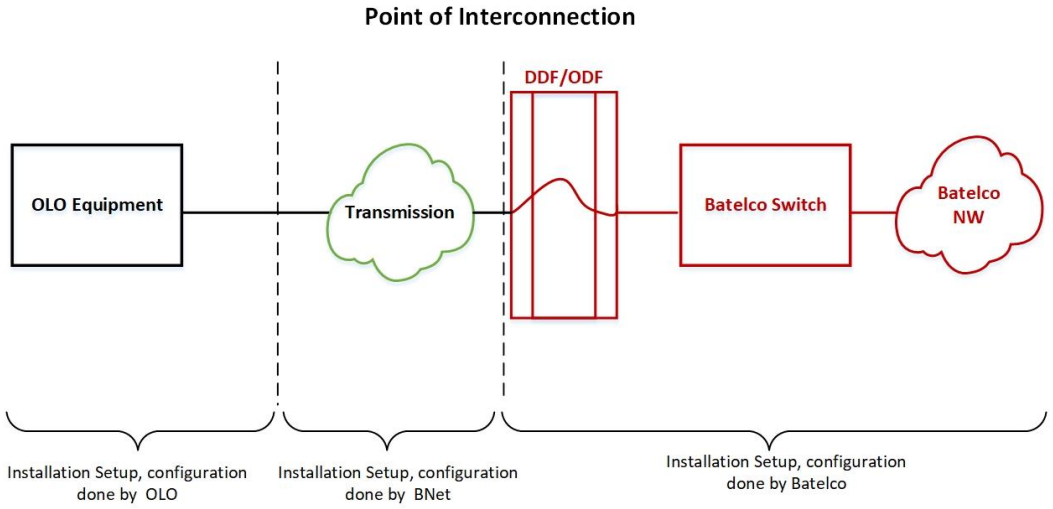


Figure 1

2.3 Link Requirements:

	Element	Specification
1	Interconnect Interface (E1 /STM1)	Batelco network supports Interconnection links with the specifications of: **1- E1 Links (TDM)** Huawei MGW E1s are standard 2Mbps E1s and support 64kbps Signaling Links **2- STM1 Links** Huawei MGW E1s are standard 2Mbps E1s and support 64kbps Signaling Links
2	Switch Vendor and Model	Huawei Softswitch- UGC 3200 / Huawei MGW – UMG 8900
3	Network Indicator (NI)	National & International

4	SP Signaling Point Code (SPC)	National network code: B3(hex) 179 in decimal National reserved network code: B4(hex) 180 in decimal
5	ISUP version (ITU-T, ANSI, TTC)	ITU-T
6	Time slot(s) for Signaling Link	Based on agreement with the Interconnection partner.
7	Signaling Link Code (SLC)	Based on agreement with the Interconnection partner.
8	Circuit Identification Codes (CICs)	Default sequencing and (Based on agreement with the Interconnection partner)
9	E1 direction	Both ways
10	Dialing Format	For National Traffic, Number Portability RN + MSISDN. For International Traffic, CC+MSISD

2.4 Testing Requirements

2.4.1 Process

The parties shall jointly agree test plans in accordance with Appendix 1 (Testing Parameters/Procedures). Each test plan shall include all required tests to be performed at specified intervals throughout the implementation of the relevant Interconnection or Capacity Order and the contact names and telephone numbers of the representatives of the respective parties.

Both parties shall sign the relevant test plan in advance of the commencement of testing. Any delay in signing the test plan may result in consequential delay of all previously scheduled implementation dates.

If either party cannot proceed with the tests as scheduled, a new date mutually convenient to both parties will be agreed between the nominated operational representatives in both parties and advised to the Batelco CSD. In the event of testing difficulties which cannot be resolved quickly by the representatives carrying out the tests, a defined escalation procedure will be followed.

2.4.2 Testing approach

Testing is performed to ensure that connection of capacity to the Access Provider network will not have adverse effects on the network and customers of either company following Appendix 1.

Testing requirements for the first route between the Licensed Operator switch and the Batelco network will consist of a combination of three activities, namely Interface Validation Testing (IVT), Network Interworking Tests (NIT) and Operational Testing. The combination will depend on whether the proposed Switch Type / Build combination and Facilities to be used has been connected to the Batelco network previously.

Testing of subsequent routes and additional capacity on existing routes will require operational testing only, provided that the build, facilities and service types have not changed since the previous capacity provision.

2.5 Performance and uptime

Each party will use its reasonable endeavours to meet the relevant Target Availability for the types of failures set out in the table below, which states the Service Rebate regime that will apply if the relevant Target Availability falls below the stated thresholds:

Calculation	Target Availability	Service Rebate

Target Availability for periods free of Critical Link Failures or Critical Route Failures	99.9%	2 Service Credits per 0.01 % or part thereof below the Target Availability but not exceeding the Link Availability Rebate Cap
Target Availability for periods free of Major Link Failures or Major Route Failures	99.5%	2 Service Credits per 0.01% or part thereof below the Target Availability but not exceeding the Link Availability Rebate Cap

2.6 Grade of Service measurements

Batelco will monitor the Grade of Service over the Interconnection Link in order to measure and monitor the overall quality of service over it, including at least measurement by the following parameters:

(a) total number of call attempts;

(b) total number of successful calls, including total number of answered calls; and

(c) total number of unsuccessful call attempts.

2.7 Fault response and repair

(d) Each party will, as soon as reasonably practicable after becoming aware of a Fault with the Interconnection Link, notify the other party of that Fault in accordance with the procedures set out in Schedule 6 (Fault Management) for the reporting of faults, Fault investigation and identification of the Fault Owner and Other Affected Party.

(e) The parties acknowledge that the applicable Response Times and Restoration Times depend on the nature of the Fault, and that Service Affecting Faults shall be prioritised over Non-Service Affecting Faults. Batelco agrees to observe the following Response Times and Restoration Times with respect to a Fault on the Interconnection Link:

Fault type (as defined in Schedule 6)	**Response Time**	**Restoration Time**	**Threshold Response Time**	**Threshold Restoration Time**
	(in hours, as defined in Schedule 6)			
Critical Link Failure	10 minutes	3 hours	15 minutes	5 hours
Major Link Failure	30minutes	5 hours	45 minutes	8 hours
Critical Route Failure	10 minutes	3 hours	15 minutes	5 hours
Major Route Failure	30 minutes	5hours	45 minutes	8 hours

APPENDIX 1 – Testing Parameters/Procedures

IN CONFIDENCE

Batelco / Licensed Operator ROUTE ADVICE (SRA)

Licensed Operator Name	

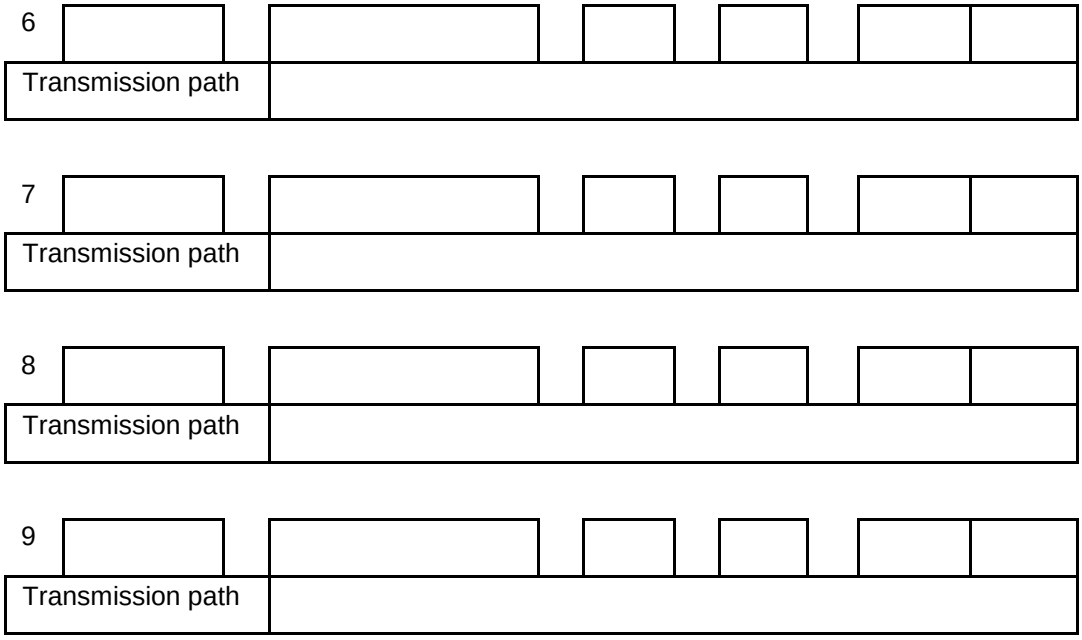
Licensed Operator Switch			**Batelco Switch**	

SRA Serial Number			Issue		Page		Of	

Route Designation		-	

Circuit Information

	Service Order	Circuit Designations	Timeslots	CIC	Term. Device Batelco	Term. Device OLO
1						
Transmission path						
2						
Transmission path						
3						
Transmission path						
4						
Transmission path						
5						
Transmission path						


6
Transmission path
7
Transmission path
8
Transmission path
9
Transmission path

	Interconnection					
10						
Transmission path						

Directionality of Circuits

Both ways / Incoming Batelco / Outgoing Batelco

C7 Point Code and Protocol

Signaling Point Codes to be used for this Interconnect

	Batelco		Licensed Operator	
Format	National	International	National	International
ITU				
Hex.				
Decimal				

	Batelco	Licensed Operator
Network Indicator		
C7 Protocol		
Protocol Version		

Routing Information

Method Of Circuit Selection	Control On Dual Seizure	Reset Facilities
Signaling Mode	Continuity Check	Load Sharing

C7 Signaling Link Set Information

	Signaling Link Designation	SLC Code
Link 1		

Link 2		

C7 Network Diagram

Signaling Routing

Signaling Relation	Route	Primary Route	Secondary Route