ANNEX G

INTERCONNECTION
OPERATIONS AND MAINTENANCE
MANUAL

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1. Introduction

1.1. Background

The purpose of this Manual is to define the joint operational & maintenance procedures relating to the network of Interconnection Links between Melita and Operator. This Manual is not a legal document but supports the Interconnection Agreement and describes the mutually agreed processes, which will be used to manage the ongoing operational activity associated with the Interconnection between the two Networks.

For the avoidance of doubt the processes described relate to existing Interconnection agreements not to the implementation of new ones.

It is based on the premise that the efficient management of the physical and logical Interconnection is to the mutual benefit of both Parties.

The processes described are in general reciprocal between Melita and Operator. They address Melita's regulatory obligations towards Operator. It should be noted that whilst the text refers to Melita and Operator, that due to the reciprocity principle, these roles are interchangeable unless explicitly stated otherwise.

Where the Interconnection Agreement specifies issues relating to operation and maintenance, such issues shall be dealt with in accordance with the provisions of this Manual.

In the event that there is any conflict with the provisions of this Manual and the Main Body of the Interconnection Agreement, then the said Main Body shall have precedence.

1.2. The Status of this Manual

This is a working document and as such both Parties recognise that it shall have free circulation to all relevant staff in both organisations.

1.3. Definitions

For the purposes of this Manual, a reference to a Clause or Appendix unless stated otherwise is to a Clause or Appendix of this Manual. Words and expressions have the meaning given in Annex A of the Interconnection Agreement.

2. Scope

This Manual deals with the normal operations and maintenance activities, which arise from the operation of an Interconnection as agreed and defined in the Interconnection Agreement.

The activities, which are covered by this Manual, are divided into the following categories:

1) Forecasting Process

   This process describes the mechanism for producing and reviewing the Forecasts.

2) Pre-Provisioning Processes

   These processes relate to the format and process for the placement of orders for Interconnection elements and Interconnection Services as defined in the Interconnection Agreement.

3) Provisioning Processes

These processes relate to the mechanism for the implementation of the various Interconnection elements and Interconnection Services ordered using the processes described in the Pre-Provisioning section.

4) Post Provisioning Processes

The Post Provisioning Processes describe the mechanisms for dealing with the operational issues relating to the in-service Interconnection. These items include fault reporting & resolution, performance monitoring, planned outages etc.

5) Billing Processes

The Billing Processes describe the mechanisms and procedures for the Interconnection payment system.

6) Miscellaneous Processes

This section deals with various miscellaneous processes that do not fall within the above categories.

3. Forecasting Process

3.1. General

In the period leading up to commencement of service, Operator must provide Melita with a Forecast of capacity requirements. This Forecast of capacity requirements will be in terms of the "In Service Capacity" at the end of any particular Forecast period. Following commencement of service and for the duration of the Interconnection Agreement, Operator shall submit Forecasts to Melita at three monthly intervals. Each Forecast shall cover all Interconnection Services expected to be "In Service" by the close of the Forecast period, and the Forecast will be used by both Parties to:

- *plan* resources in advance
- *provide* the core Network facilities necessary to support future Interconnection Services; and
- *activate* the required core Network capacity in the correct time frame to meet the *demand* in the Forecast.

3.2. Forecasting Process

In order to compile a Forecast, Operator calculates the quantity of Interconnection Links expected to be required in the future. More specifically, a Forecast shall include the cumulative quantity of Interconnection Links expected to be required: within 3 months, within 6 months, within 9 months, within 12 months, within 15 months and within 18 months. These three-month periods shall start on the following designated dates: 1 January, 1 April, 1 July and 1 October.

Naturally, Forecasts are expected to be more accurate for the designated dates that are closer to the date when the Forecast is compiled. As such, the maximum error that can be tolerated shall be as follows:

Period	Months into the future from the date of compilation of forecast	Maximum error tolerable between forecast and actual qty of links
1	3	±0%
2	6	±0%
3	9	±10%
4	12	±20%
5	15	±30%
6	18	±40%

For example, if Operator compiles a Forecast on Month X and expects to start operations with 10 Interconnection Links and grow with 2 Interconnection Links every 3 months, then the Forecast would be as follows:

Operator					
Date when this Forecast was compiled: XXX					
Period	Designated Date	Max Error Tolerable	Details of Interconnection Links		
			Cumulative capacity	Address at Melita	Address at Operator
1		±0%	10	Address X	Address Y
2		±0%	12	Address X	Address Y
3		±10%	14	Address X	Address Y
4		±20%	16	Address X	Address Y
5		±30%	18	Address X	Address Y
6		±40%	20	Address X	Address Y

If Operator provides Forecasts that have an error that is greater than the maximum tolerable error shown above, Melita reserves the right to claim damages and not to honour the obligations of delivery target dates set out in the Service Level Agreement at Annex D of the Interconnection Agreement.

The compilation of Forecasts by Operator shall be done every 3 months i.e. every 3 months; Operator shall re-compile the Forecast for the subsequent 18 months in the form shown above. This rolling Forecast will ensure that errors in the Forecasts are minimised.

Forecasts shall be compiled and sent to Melita no later than 10 Working Days before the first designated date. If Forecasts are not received by this target date, and Operator and Melita shall not be able to agree on another date, then the case shall be treated as a Dispute, which shall be resolved

in accordance with the resolution procedure laid down in Clause 17 of the Main Body of the Interconnection Agreement.

4. Pre-Provisioning Processes

The Pre-Provisioning Processes describe the mechanisms for the ordering of Interconnection Services or for the modification or augmentation of the in-service Interconnection.

These processes shall be those laid down by the Service Level Agreement, in Annex D of the Interconnection Agreement.

Moreover, the following shall also apply:

4.1. Order Format

All orders for new or additional Interconnection Links and additional services shall be placed using the Order form for Interconnection Links as per Appendix 2.

4.2. Order Process

Operator will complete and send the Order Form to Melita. If the order form is incomplete, it will be returned to Operator with the reason for incompleteness stated. Operator may revise or amend the order and re-submit it. If this does not occur within a further 5 working days, the order will be deemed to have been cancelled.

5. Provisioning Processes

5.1. Introduction

These processes relate to the mechanism for the implementation of the various Interconnection services ordered using the processes described in the Pre-Provisioning section.

These processes shall be those laid down by the Service Level Agreement, in Annex D of the Interconnection Agreement.

Moreover, the following shall also apply:

5.2. Provision of Interconnection Links

Melita will specify which of the tests detailed in the Technical Manual, will be used for the testing of the Interconnection Links. Testing shall be done on a mutually agreed date. When testing is completed to the satisfaction of Melita, Melita shall notify Operator that the testing of the Interconnection Links has been successfully completed. At this point the Interconnection Links shall be deemed to be ready for service and the commissioning form included under Appendix 2 shall be signed by both Parties. **Full billing of the new provisioned service shall start on the date when both Parties sign the commissioning form included under Appendix 2.** If Operator fails to sign, then charging shall start anyway from a date that is 10 days after Melita notifies Operator that tests have been successfully completed.

If the results of the testing are not acceptable to Melita, there shall then follow a mutually agreed time period where both Parties shall attempt to repair faults and re-test the unacceptable aspects of the service. If a mutually agreeable solution is not found, then the case shall be considered as a Dispute and Clause 17 of the Main Body of the Interconnection Agreement shall apply.

6. Post-Provisioning Processes

6.1. Introduction

The post provisioning processes describe the mechanisms for dealing with the operational issues relating to the in-service Interconnection. These items include fault reporting and resolution, performance monitoring, and Network Alterations including planned maintenance.

These processes shall be those laid down by the Service Level Agreement, in Annex D of the Interconnection Agreement.

Moreover, the following shall also apply:

6.2. Alarm Thresholds

An A1 alarm shall be considered as a fault that adversely affects end users. On the other hand, an A2 alarm shall be considered as not affecting end users. Both alarm types shall be dealt with according to the timescales set in Annex D of the Interconnection Agreement.

6.3. Fault Reporting Procedures

In the event that a fault is discovered by either Party, a trouble ticket in the form specified in Appendix 3 shall be compiled and sent to the other Party. The fault shall be considered rectified when the Party reporting the fault confirms in writing to the other Party that the case may be considered closed. The Party receiving the trouble ticket shall provide a written acknowledgement to the ticket with a corresponding ticket reference.

6.4. Planned Maintenance Procedures

If either Party intends to carry out any planned work which may affect the Interconnection, then the originating Party must notify the other Party of the planned work as specified in Appendix 11, using the “Notification of Planned Maintenance” form in Appendix 4.

6.5. Implementation of Network Alterations

Both Parties will have to mutually agree on the required timescales to complete the implementation of a Network Alteration. If the results of the testing following the agreed Network Alterations are not acceptable, there shall then follow a mutually agreed time period where both Parties shall attempt to repair faults and re-test the unacceptable aspects of the service. If a mutually agreeable solution is not found, then the case shall be considered as a Dispute and Clause 17 of the Main Body of the Interconnection Agreement shall apply.

6.6. Network Management

6.6.1. General Network traffic management

a. Network traffic management is the function of supervising the Network and taking action when necessary to control the flow of traffic. The objective of Network management shall be to enable as many Calls as possible to be successfully completed through the application of the general principles laid down in Clause 6.6.1.b below. Network management assumes that the Network is adequately engineered to meet the normal levels of traffic.

b. The general principles to be adopted by both Parties are:

1. To make use of available interconnect capacity during periods of outage, such that after negotiation, some or all of the affected traffic may be re-routed, where capacity permits, to alternate routes for completion.

2. To identify and reduce, as close to their source as possible, Call attempts which are likely to be ineffective because of a situation in the Network, such as a failure, to allow trunk capacity to be available for Call attempts which have a higher probability of being effective.

3. To inhibit congestion and prevent its spread such that if a large increase in Call attempts results in congestion, controls shall be applied to inhibit the congestion by removing those Call attempts, which have a low chance of resulting in a successful Call (from the congested node).

6.6.2. Network management actions

a. The application or removal of Network management controls shall be based on reported faults and planned outages. This may also include Mass Calling Events as described hereunder. Performance data shall also be used to measure the effect of any Network management control taken, and to indicate when a Network management control should be modified or removed. Network management actions are divided into two categories:

1. “Expansive" actions, intended to make available lightly loaded parts of the Network to traffic experiencing congestion;

2. "Protective" actions, intended to remove traffic with a low probability of resulting in successful Calls from the Network during congestion.

b. The first choice response to a Network problem shall be an expansive action. Protective actions shall be applied if expansive actions are not available or not effective.

6.6.3. Expansive actions

a. Expansive actions involve the re-routing of traffic from links experiencing congestion to other parts of the Network which are lightly loaded with traffic by performing one of the following actions:

1. Establishing temporary alternative routing arrangements in addition to those normally available;

2. Where there is more than one access point nodes, temporarily reorganising the distribution of the affected traffic or services.

6.6.4. Protective actions

a. Protective actions involve removing traffic from the Network during congestion which has a low probability of resulting in successful Calls. Such traffic shall be removed as close as possible to its origin, thus making more of the Network available to traffic, which has a higher probability of success.

b. Protective actions that may be taken include:

1. *Temporary removal of interconnect path from service* – This action may be taken when a distant part of the Network is experiencing serious congestion.

2. *Special instructions to other Parties* – For example, such instructions may require that only a limited number of attempts (or none at all) be made to set up a Call via a congested link or node, or to a particular destination experiencing congestion.

3. *Inhibiting direct traffic* – This action reduces the traffic accessing an interconnect path in order to reduce the loading on the distant Network.

4. *Inhibiting traffic to a particular destination (code blocking or Call gapping)* – This action may be taken when it is known that a distant part of the Network is experiencing congestion.

6.6.5. Actions during disasters

In the event of disasters, whether man-made or natural, that result in damage to the Network, a single point of contact for Network-related information shall be established to prevent confusion, duplication of effort, and to ensure an orderly process of returning communications to normal. The single point of contact shall be the official responsible for business continuity within the Party or Parties affected by the disaster.

6.6.6. Process for Notification or Request for Network Management action

a. When either Party wishes to initiate Network management action or request the other Party to apply an action on its behalf, it shall complete a notification/request form as shown in Appendix 6 and described by the following process.

b. The Party requiring controls to be applied originates the form and is denoted as the Originating Party. The Party to whom the notification/report is initially sent is denoted as the Receiving Party.

c. The Originating Party may apply controls in which case it is a notification, or it may wish the Receiving Party to apply controls in its Network in which case the form is a request.

d. If the Party originating the request is applying the controls it shall, after verbally informing the Receiving Party, complete section A of the form as a notification and send to the Receiving Party. If Network management action is required as a result of a fault that has been reported via the fault management process the fault reference number shall be entered in section A.

e. The Receiving Party shall then complete section B of the form indicating that the requested Network management action is acknowledged. On receipt of the form with completed section B, the Originating Party shall then apply controls in the manner described on the form.

f. The Originating Party shall monitor the Network to determine the appropriate time for controls to be removed. At this time it shall complete

section C of the form and send it to the Receiving Party to notify them that controls have been removed. The Receiving Party will then complete section D of the form and return it to the Originating Party to indicate that the removal of the controls has been noted.

g. During the period when the controls are active, the Receiving Party shall monitor the Network and if during this time it wishes for the controls to be removed it shall complete section C of the form and send it to the Originating Party. The Originating Party will review the status of the Network and the reasons given by the Receiving Party for the removal of the controls.

h. If the Originating Party agrees to remove the controls it shall remove the controls and complete section D of the form and send it to the Receiving Party indicating that the controls have been removed.

i. If the Originating Party does not wish to remove the controls it shall continue to monitor the Network until such a time as it feels the controls may be removed. If the Receiving Party still requires that the controls are removed, it shall escalate the situation using the Dispute resolution procedure laid down by Clause 17 of the Main Body of the Interconnection Agreement.

j. If the Party originating the request wishes the Receiving Party to apply controls on its behalf, it shall, after verbally informing the Receiving Party's Network management Interconnection centre point (MICP), of the request, fill out section A of the form as a request and send it to the Receiving Party. If Network management action is required as a result of a fault that has been reported via the fault management process, the fault reference number shall be entered in section A.

k. If the Receiving Party agrees with the request it shall apply the controls indicated on the form, complete section B of the form and return it to the originating Party indicating that the controls have been applied.

l. If the Receiving Party does not agree to the request it shall complete section B of the form and return it to the originating Party indicating the reasons why. The originating Party shall review and/or revise its request before resubmitting it to the Receiving Party. If agreement is not reached the originating Party may then escalate using the Dispute resolution procedure laid down by Clause 17 of the Main Body of the Interconnection Agreement.

m. The Originating Party shall then monitor the Network and review the status in order to determine the effect of the controls and identify when they can be removed. If within the initial thirty (30) calendar days the Originating Party wishes for the controls to be removed, it shall complete section C of the form and send it to the Receiving Party requesting that the controls are removed. The Receiving Party shall then remove the controls and complete section D of the form, returning it to the Originating Party indicating that the controls have been removed.

n. If the controls have been in place for more than thirty (30) days and the Originating Party wishes that the controls remain in place it shall make a request to the Receiving Party for the controls to be continued. It shall do this using section A of the original form and indicating that this is a request for continuation.

o. If such a request for continuation is not made the Receiving Party may, after the initial 30-day period, remove the controls. It shall complete section C of the form indicating that the controls shall be removed and giving the reason for their removal. It shall then proceed to remove the controls.

p. If the Originating Party receives a form with section C completed by the Receiving Party it shall complete section D indicating that the removal of controls has been noted.

6.6.7. Mass Calling Events

a. Mass Calling Events can have catastrophic effects on both the Interconnection and one or both Parties' Networks. As such both Parties will endeavour as far as possible to ensure that end users generating Mass Calling Events provide adequate notice of such events and to disseminate this information as outlined below.

b. Where an event terminating on one Network which has not been notified causes quality degradations in the other Network, both Parties reserve the right to block future access to the terminating number(s) in question.

c. For events which cannot be accurately forecast (competitions etc.) then the terminating numbers assigned to the end users will be from a range designated for "bursty" traffic and for which generic Call management procedures may be put in place e.g. Call gapping.

6.6.8. Mass Calling Event Procedures

Advance notice of Mass Calling Events will be given using the form in Appendix 7. At least 10 Working Days' notice is required.

6.7. Quality of Service and Traffic Performance

6.7.1. Quality of Service and Traffic Performance Reporting

a. Quality of service statistics and traffic performance measurements shall be exchanged between both Parties for all in-service Interconnection Links. The measurements shall be exchanged upon request which shall not occur more frequently than on a quarterly basis.

b. The quality of service report will be produced by each Party for use in the Operations and Maintenance Forum, as described hereunder.

c. The quality of service and traffic performance parameters to be reported are defined in Appendix 8 and typical examples can be seen in Appendix 9. Additional reports and parameters may be available, at additional cost, subject to agreement between both Parties and subject to the development and implementation of the necessary systems and procedures to gather and process the required data.

6.7.2. Quality of Service and Traffic Performance Reviews

a. Reviews of the quality of service and traffic performance shall take place as part of the activities of the Operations and Maintenance Forum, as described hereunder.

b. Where the busy hour traffic on any Interconnection route exceeds 70% fill, this shall prompt a joint review by the Operations and Maintenance Forum of the capacity on the route in question.

6.8. Operational Performance

The mechanism for reporting operational performance statistics shall be the Operations and Maintenance Forum and is described in Appendix 10.

7. Billing Process

7.1. Introduction

These processes relate to the production of Interconnection bills and to the testing, for billing purposes, of an Interconnection Link.

7.2. Production of Interconnection Bills

The Billing Process shall be that laid down in Annex B of the Interconnection Agreement.

7.3. Billing Test Process

a. Melita and Operator shall agree on a set of test procedures aimed to validate the call handling and billing information that will be generated by both sides for the purpose of interconnect billing.

b. The test procedures to use shall be in line with the billing test procedures defined under section 9.1.2 of Annex H of this Interconnection Agreement.

c. Once both Parties reach agreement on the reconciliation process, the billing tests will be signed off and the route opened for traffic.

d. All aspects of the Billing tests will be co-ordinated by the respective Interconnection Commercial and Technical contact points listed under Appendix 11.

8. Miscellaneous Processes

8.1. Opening or Modification of Number Ranges

8.1.1. General

This Clause details the process for the opening of access to new number ranges within the Melita Network.

The process for opening of access to new number ranges within the Melita Network for local operators shall be as mandated by the MCA, as may be amended from time to time.

8.1.2. Number Ranges Accessible via the Operator Network

a. Operator shall submit a request utilising the form attached at Appendix 12 for the opening of a new number range, which they have obtained from the MCA, within the Melita Network via the contact point specified in Appendix 11.

b. The request shall detail the number range, the Operator node it is mapped to and the date that it will be active on the Operator Network. Each requested number

range shall contain at least **one test number** to allow verification of the number range implementation. This test number must be specified at the time of the request to open the range.

c. Melita and the Operator shall adhere to the timeframes as established in the National Numbering Conventions as published and as may be amended by the Malta Communications Authority from time to time, for the opening of new number range.

8.1.3. Number Ranges Accessible via the Melita Network

a. Melita shall issue an update detailing new Melita number ranges accessible via its Network together with activation dates and mapping to Interconnection Nodes.

b. The Operator shall take the necessary action to allow its end users to access the new Melita number ranges, provided that Operator is entitled to do so by virtue of the Service Schedules listed in Annex C of the Interconnection Agreement.

c. The Operator and Melita shall adhere to the timeframes as established in the National Numbering Conventions as published and as may be amended by the Malta Communications Authority from time to time, for the opening of a new number range.

8.2. Technology Changes Which Affect the Interconnection

a. Technology changes in either software or hardware which affect the technical parameters of the Interconnection must be forecasted in the Network Plan.

b. The timescales and process for the implementation of such changes must be requested via the contact points listed in Appendix 11. The request will be acknowledged within two weeks. Examples of these changes are:

i. Upgrades to software in network element such as node, transmission or signalling systems.

ii. Upgrades to software in Network monitoring or management systems.

iii. Upgrades to operational support systems such as provisioning or Billing Systems.

8.3. Health and Safety

a. Both Parties shall comply with any statutory national safety regulations that are applicable from time to time.

b. Both Parties shall also comply with any specific Melita or Operator health and safety practices that may be applicable, including any site-specific requirements.

c. All Melita internal health and safety guidelines shall be complied with at all times by both Parties.

9. Operations & Maintenance Forum

The Operations & Maintenance Forum shall be composed of technical representatives of both Parties. It shall meet at least once every quarter as a minimum to discuss all technical issues related to the Interconnection Agreement. Additional ‘emergency meetings’ may also be held between the two Parties as may be necessary.

The Operations and Maintenance Forum may further review and refine the operations and maintenance processes as may be necessary to enable targets to be met.

APPENDICES

Appendix 1: FORECAST Forms for each Interconnection Node and each Point of Interconnection

Appendix 1 Usage Guide

These forms are to be used to generate the Forecasts for interconnection node and transmission requirements for Interconnection.

TRAFFIC/TRANSMISSION FORECAST

Interconnection Links required to carry the traffic between the Melita Network and the Operator Network.					
Operator					
Date when this Forecast was compiled: XXX					
Period	Designated Date	Maximum Tolerable Error	Details of Interconnection Links		
			Cumulative Quantity of Interconnection Links	Address at Melita	Address at Operator
1		±0%		Address X	Address Y
2		±0%		Address X	Address Y
3		±10%		Address X	Address Y
4		±20%		Address X	Address Y
5		±30%		Address X	Address Y
6		±40%		Address X	Address Y

Appendix 2: Order/Commissioning Forms for Interconnection Links

Appendix 2 Usage Guide

These forms are to be used for the ordering/commissioning of new Interconnection Links and the rearrangement or cessation of existing Interconnection Links.

A number of possibilities exist:

1) New Melita Sited SIP Interconnect

In this case, the transmission information portion of the form should contain the required Melita Interconnection Node and the address of Operator's Point of Interconnection. For new Points of Interconnection, the date at which site access will be available to Melita should be stated. For Points of Interconnection served by diversity routes, the routing of the Interconnection Link should be specified in the comments field. Any special arrangements for site access should also be included in this field.

The routing information portion of the form should contain Operator Interconnection Node and the Melita Interconnection Node.

Sections 1 and 2 of the form should be completed.

2) Re-arrangement of the existing SIP interconnect

Three possibilities exist:

(i) Routing change with no transmission change: In this case, the transmission portion of the form is not required to be completed. It should be noted that the "rearrangement" of part of a route onto a new Interconnection Path requires the reconfiguration of the existing interconnect. Section 2 of the form should be completed in this case.

(ii) Transmission change with no routing change: In this case, the routing portion of the form is not required to be completed. Section 1 of the form should be completed in this case.

(iii) Transmission and routing change: In this case, both transmission and routing portions of the form should be completed.

3) Cessation of existing Interconnection Link

Only Section 1 of the form should be completed quoting the SIP interconnect references.

ORDER FORM FOR INTERCONNECTION LINKS
(Section 1).

Order Details - sent by Operator to Melita.

To: [*Melita Order contact point]*	From: *[Operator Order contact point]*
Date:	Operator Reference No.:
Order Type: ***Provide*** ☐ ***Re-arrangement*** ☐ ***Service Termination*** ☐	
Signed on behalf of Operator	

Transmission Information

Type of Interconnection:	
A-End (*Melita* Node):	
B-End (Point of Interconnection):	
Date when the site is accessible to Melita	
New B-End (In case of Rearrangement):	
SIP Trunk Reference ID Melita SIP Trunk Reference ID Operator	
Comments:	

Routing Information

Melita Interconnection Node:	
Operator Interconnection Node	
Operator's new Interconnection Node (In case of Rearrangement):	
Node IP address (in case of rearrangement)	
Comments:	

Order details (to be completed by Melita)

Account Number:	Equipment Code:
Service Order Number:	
Signed on behalf of Melita:	Date:

ORDER FORM FOR INTERCONNECTION LINKS
(Section 2)

Carrier name	**Melita**	**Operator name**
Connectivity Details		
Connection type		
SIP originating IP address		
SIP terminating IP address		
Media originating IP address		
Media terminating IP address		
SIP signalling port		
Media Type		
Number formats		
Originating from Melita: A party in user part of " From" header field		
Originating from Melita: B party in "To" and "Request-URI" header fields		
Terminating on Melita: A-party in user part of "From" header field		
Terminating on Melita: B-party in "To" and "Request-URI" header fields		
Anonymous indication in "From" header field		
Other parameters		
Codecs supported	G711	G711
ptime		
DTMF		
Fax		
SIP mandatory RFCs		
SIP (RFC 3261)		
SIP Session Timers (RFC 4028)		

Proposed Commissioning Form for Interconnection Links

[This form is to be filled in immediately on the completion of the agreed technical tests by the respective technical Parties, and shall mark the start of the Billing Process by Melita for the Interconnection Service concerned]

Completion of Works form with respect to Operator _____	*Operator Order ref.*	
	Order Dated:	

Date of Completion:	

Work Type:

New Service ☐ ***Re-arrangement*** ☐

This is to certify that all works related to this order have now been completed to the satisfaction of Operator in accordance with all established conditions and technical requirements. The date of signature of this commissioning form is the date on which the Billing Process begins.

Signed on behalf of Operator	
Signed on behalf of Melita	
Date of signing of Commissioning form	

Appendix 3: Interconnection Trouble Ticket

Appendix 3 Usage Guide

The form in this section should be used for the reporting of faults/failures relating to the Interconnection.

Faults may be advised by phone in parallel to the e-mail form, however the e-mail form will be the official trouble reporting mechanism.

INTERCONNECTION TROUBLE TICKET

Trouble Ticket Opening Information

Ticket Opened by (name):			
Ticket Opened on (date):		**Ticket Priority:**	
Ticket Opened at (time):		**Ticket Status:**	
Acknowledgement Time:			
Operator Ticket Reference:		**Melita Ticket Reference:**	

Designation Information

Time of Fault Start:	
Description of Fault:	
Interconnection Link(s) Affected:	
Services Affected:	
Proportion of Calls Affected:	
Nature of Fault Clearing:	

Trouble Ticket Closing Information

Ticket Closed by (name):	
Ticket Closed on (date):	
Ticket Closed at (time):	

Appendix 4: Notification of Planned Maintenance

Appendix 4 Usage Guide

Each Party shall notify the other Party of planned maintenance activities relating to the interconnection in accordance with the below.

The type of actions which require to be notified are activities directly or potentially affecting the Interconnection together with activities in one Party's Network at node level which will impact on the ability of users directly connected to that Network to access Interconnection Services on another interconnected Network. The Party performing planned maintenance activities must give prior notice to the other Party by email at the start of the maintenance and at the end of the maintenance.

NOTIFICATION OF PLANNED MAINTENANCE

The following information shall be provided via email:

Engineering work is due to be carried out on the following SIP Interconnection Link / Node and will necessitate the following interruption in service (relevant details for SCCP / SIP as required) : -

Interconnection Path(s) Affected: _____

Interconnection Link(s) Affected: _____

Interconnection Node(s) Affected: _____

Service Impact Description: _____
_____
_____

Start Date & Time of Impact: _____/_____
Finish Date & Time of Impact: _____/_____

Duration of Impact: _____hours
Comments: _____
_____
_____
_____

Signed: _____ Date: ____/_____/____

Appendix 5: Fault Resolution and Escalation Timescales

The procedure and commitments related to fault rectification are set out in Annex D of the Interconnection Agreement and are summarised below for ease of reference.

Fault type	Initial Response	Status Updates
Critical Faults	60 Minutes from when the fault is reported in accordance with Annex D of the Interconnection Agreement	every 60 minutes
Non-Critical Faults	1 Working Day from when the fault is reported in accordance with Annex D of the Interconnection Agreement	every Working Day

Appendix 6: Notification/Request for Network Management Action

Appendix 6 Usage Guide

The form in this section should be used to request/notify Network management actions as detailed in the body of this Manual.

NOTIFICATION/REQUEST FOR NETWORK MANAGEMENT ACTION

Section A

To: …… (Receiving Party)

This notification/request* is to confirm the verbal notification/request* made between Originating Party contact _____ and Receiving Party contact _____ that Network management action shall be applied / for Network management to be applied*

Originating Party's Reference: …… Receiving Party's Reference: ……..
Fault Reference Number: ……..

Reason:
Interconnect Affected:

Description of Network management action:
_____

Please note/apply/continue* the above Network management action as of:

Date: …… Time: …….. Duration: ……

Name: …….. Signature: …… Date: ……..

Section B

To: …… (Originating Party)

The requested Network management action:

has been applied*
has not been applied* Reason: ……..
is acknowledged*

Name: …….. Signature: ……. Date: …….

Section C

To: …… (Receiving Party)

Please remove/note removal* of the above requested Network management action

Name: …….. Signature: ……. Date: …….

* Delete as appropriate

Section D

To: …… (Originating Party)

The removal of the above requested Network management action has been noted/completed*

Name: …….. Signature: ……. Date: …….

Appendix 7: Notification of Mass Calling Event

Appendix 7 Usage Guide

The form in this section should be used for notification of Mass Calling Events as detailed in the body of this Manual.

Details

From: [Melita/Operator *]	To: [Operator/Melita*]
Date:	Reference No.:
Details of Event:	
Start Date	
Start Time:	
End Date:	
End Time:	
Calling Area/Point of Interconnection affected	
Destination Number (s)	
Expected Volume	
Notes:	
Signed on behalf of *Melita/Operator **	

Appendix 8: Quality of Service and Traffic Performance Parameters

QUALITY OF SERVICE PARAMETERS

General Quality of Service Parameters

The following general service quality parameters are applicable to both Melita and Operator Networks. The parameters represent a minimum set to be measured and recorded by both Parties in accordance with the process set out in this Manual.

The current state of implementation of systems to measure and report on these parameters shall be confirmed between Melita and Operator. Both Parties shall agree on the timetable for the introduction of the measurement of these parameters.

TRAFFIC PERFORMANCE PARAMETERS

Traffic Performance Parameters

Source Node: The identity of the Party's node at the traffic source.

Interconnect Details: IP details for the SCCP / SIP interconnect

Maximum number of MSUs (SCCP):

Time:	The time of day at which the busy hour commences, where the busy hour is determined by measurement of the average daily peak quarterly defined hour (ADPQH), per ITU-T E.500.
Busy Hour Traffic:	The peak number of simultaneous calls carried by the interconnect in the busy hour (BH). For daily reports this is the actual daily BH for weekly reports this is the busiest hour of the week, i.e. The BH for the busiest day
% Traffic Lost:	The traffic lost, expressed as a percentage of the total traffic offered to the SIP trunk.
% Loading:	The ratio of total traffic carried on the SIP trunk to the critical traffic value for the SIP trunk, where the critical value is calculated as ***[to be agreed]*** and the % loading is given as % loading = [total traffic/critical traffic value] x 100%.
Total Calls Lost:	The total number of Calls lost due to congestion on the SIP trunk.
ASR %	The answer seize ratio, defined as the number of answered seizures to total seizures i.e.: ASR % = [answered seizures / total seizures] x 100%.

Maximum number of allowed simultaneous calls (SIP):

Time:	The time of day at which the busy hour commences, where the busy hour is determined by measurement of the average daily peak quarterly defined hour (ADPQH), per ITU-T E.500.
Busy Hour Traffic:	The peak number of simultaneous calls carried by the interconnect in the busy hour (BH). For daily reports this is the actual daily BH for weekly reports this is the busiest hour of the week, i.e. The BH for the busiest day
% Traffic Lost:	The traffic lost, expressed as a percentage of the total traffic offered to the SIP trunk.

% Loading:	The ratio of total traffic carried on the SIP trunk to the critical traffic value for the SIP trunk, where the critical value is calculated as ***[to be agreed]*** and the % loading is given as % loading = [total traffic/critical traffic value] x 100%.
Total Calls Lost:	The total number of Calls lost due to congestion on the SIP trunk.
ASR %	The answer seize ratio, defined as the number of answered seizures to total seizures i.e.: ASR % = [answered seizures / total seizures] x 100%.

Appendix 9: Typical Quality of Service and Traffic Performance Report

Appendix 9 Usage Guide

The form in this Appendix is a draft template (to be agreed between the two Parties), for the reports to be produced as inputs to the Operations and Maintenance Forum.

Traffic Performance Date: _____

Measurement Period, Week Ending: _____

Route Description		Route Capacity		Busy Hour Traffic Measurements				ASR (for SIP)
Source Exch.	Interconnect (SCCP / SIP)	Number of allowed simultaneous calls / MSUs		Date & Time	Traffic (Max. Num. Of sim. Calls / MSUs)	Traffic Lost	% Loading	Busy Hour ASR %

Appendix 10: Typical Operational Performance Report

Appendix 10 Usage Guide

The form in this Appendix is a template for the report to be produced as input to the Operations and Maintenance Forum.

TYPICAL OPERATIONAL PERFORMANCE REPORT

Period From: _____ to _____

Part A: Fault Reporting

Reported Faults:

Fault Severity Level	Number of faults reported	Number of faults cleared	Average time to clear	% cleared within 12 hrs	% cleared within 24 hrs	% cleared within 48 hrs
A						
B						

Part B: Planned Maintenance

	Melita	Operator
Number of planned maintenance activities notified		
Number of planned maintenance activities started as planned		
Number of planned maintenance activities completed on target		
Number of planned maintenance activities not completed on target		
Number of urgent planned maintenance activities		
Number of unplanned maintenance activities		

Part C: Service Delivery

Service	Target Delivery Time	Quantity due for Delivery during period	Quantity delivered during period	% delivered within target time	% delivered outside target time	Quantity Outstanding outside target time

Appendix 11: Directory of Contact Points

The details contained in this Appendix shall be compiled and agreed between Melita and Operator.

The contact points information shall include – for each contact person in the directory:

- Name
- Title
- Mailing Address
- Contact Phone numbers (mobile + fixed line)
- E-mail information.

Contact Pt.	Contact Details	Melita	Operator
Main Technical Contact: For issues / decision related to: • Control / amendment to Technical Documents • Technology Changes which affect the Interconnection • Fault Escalation – Managerial Contact (Level 2)	**Name**		
	Title		
	Mailing Address		
	Phone		
	Mobile		
	Email		
Forecast, Provisioning and Number Changes: • *Forecast of interconnect traffic* • *Provisioning of new interconnect links* • *Number changes notification affecting interconnection*	**Name**		
	Title		
	Mailing Address		
	Phone		
	Mobile		
	E-Mail		
Planned Maintenance & Fault handling • *Single Pt. of Contact (SpoC) for fault handling and trouble reporting*	**Name**		
	Title		
	Mailing Address		
	Phone		
	Mobile		
	E-Mail		
Fault Escalation • *Fault Escalation – Technical Contact (level 1)*	**Name**		
	Title		
	Mailing Address		
	Phone		
	Mobile		
	E-Mail		
Commercial Contact For issues related to: • *Ordering of interconnect services* • *Update on international access information* • *All Billing issues*	**Name**		
	Title		
	Mailing Address		
	Phone		
	Mobile		
	E-Mail		

Appendix 12: Operator Number Range Activation Request Template

Activation Request Template

Name		
Contact details of applicant	*Numbering Manager*	
	Postal Address	
	Phone Number	
	Fax Number	
	e-mail	
Date of request		
Requested completion date		
Activation to cover period		
Terminating Point(s) of Interconnection on the Operator Network		

Melita only: -

Melita Reference Number	
Request Status	
Melita Point of Interconnection/ Routes	
Service Schedule	

Number Range(s) Details

Access Code	Number Range	Service Designation	Number Range Digit Length	Test Number(s) within the range	Quantity of Numbers within the specified range