

Clarification 3

16 March 2009

**Support & Maintenance of the
Government Network of Maldives**

Clarifications

Question 1: What are the configurations of the Main Cisco switches?

Answer to Question 1: The configurations of the Cisco devices are given below:

Cisco 6506E Switches Hardware Configuration (2 units)

Slot	Part Number	Description
-	WS-C6506-E	Catalyst 6500 Enhanced 6-slot chassis
1	WS-X6548-GE-TX	Catalyst 6500 48-port fabric-enabled 10/100/1000 Module
2	WS-X6408A-GBIC	Catalyst 6000 8-port GE, Enhanced QoS (Req. GBICs)
3	Empty Slot	
4	WS-SVC-FWM-1-K9	Firewall blade for 6500 and 7600 (FWSM)
5	WS-SUP720-3B	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 PFC3B
6	WS-SUP720-3B	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 PFC3B
-	WS-CAC-3000W	Catalyst 6500 3000W AC power supply
-	WS-CAC-3000W	Catalyst 6500 3000W AC power supply

Cisco 4507R Switches Hardware Configuration (2 units)

Slot	Part Number	Description
-	WS-C4507R	Catalyst 4500 7-Slots Chassis
-	PWR-C45-1000AC	Catalyst 4500 1000W AC Power Supply (Data Only)
-	PWR-C45-1000AC/2	Catalyst 4500 1000W AC Power Supply Redundant (Data Only)
1	WS-X4013+	Catalyst 4500 Supervisor II-Plus (IOS), 2GE, Console (RJ-45)
2	WS-X4013+/2	Catalyst 4500 Redundant Sup II-Plus, (2GE), Console (RJ-45)
3	WS-X4306-GB	Catalyst 4500 Gigabit Ethernet Module, 6-Ports (GBIC)
4	WS-X4424-GB-RJ45	Cisco Catalyst 4500 24-port 10/100/1000 Module (RJ-45)
5	WS-X4148-RJ	Catalyst 4500 10/100 Auto Module, 48-Ports (RJ-45)
6	Empty Slot	
7	Empty Slot	

Cisco 4507R Switches Hardware Configuration (2 units)

Slot	Part Number	Description
-	WS-C4507R	Catalyst 4500 7-Slots Chassis
-	PWR-C45-1000AC	Catalyst 4500 1000W AC Power
-	PWR-C45-1000AC/2	Catalyst 4500 1000W AC Power
1	WS-X4013+	Catalyst 4500 Supervisor II-Plus (IOS), 2GE, Console (RJ-45)
2	WS-X4013+/2	Catalyst 4507R Redundant Sup II-Plus, (2GE), Console (RJ-45)
3	WS-X4306-GB	Catalyst 4500 Gigabit Ethernet
4	Blank	
5	Blank	
6	WS-X4148-RJ	Catalyst 4500 10/100 Auto Module, 48-Ports (RJ-45)
7	WS-X4148-FE-LX-MT	Catalyst 4500 FE module, 48-port 100LX SMF (MTRJ)

Cisco 4507R Switches Hardware Configuration (2 units)

Slot	Part Number	Description
-	WS-C4507R	Catalyst 4500 7-Slots Chassis
-	PWR-C45-1000AC	Catalyst 4500 1000W AC Power Supply (Data Only)
-	PWR-C45-1000AC/2	Catalyst 4500 1000W AC Power Supply Redundant (Data Only)
1	WS-X4013+	Catalyst 4500 Supervisor II-Plus (IOS), 2GE, Console (RJ-45)
2	WS-X4013+/2	Catalyst 4507R Redundant Sup IIPlus, (2GE), Console (RJ-45)
3	WS-X4306-GB	Catalyst 4500 Gigabit Ethernet Module, 6-Ports (GBIC)
4	Blank	
5	Blank	
6	Blank	
7	WS-X4148-FE-LX-MT	Catalyst 4500 FE module, 48-port 100LX SMF (MTRJ)

Question 2: Redundant connectivity of core equipment.

Answer to Question 2: Reference is made to clarification document 2 questions 10 and 17. Please see attachment 1 for a revised network core diagram.

Question 3: Please provide the details of fibre network to calculate the maintenance costs.

Answer to Question 3: Please see attachment 2 for details of the fibre infrastructure

Question 4: Is it the responsibility of the maintenance contractor to carry out the expansion of the fibre infrastructure?

Answer to Question 4: Yes. Maintenance contractor should carry out expansion of the fibre network (both in Male' and atoll capitals) when required by NCIT.

Question 5: Please provide the details of the satellite communications equipment?

Answer to Question 5: Please find the details below:

Satellite Hub System

A motorized 7.6m antenna with redundant 1:1 200W RFT is located at the Central HUB and a 2.4m manual antenna non-redundant RFT with L-Band 5W at all the remote islands. The network system solution FlexiDAMA-SkyIP Central Hub common equipment is designed and supplied at 1:1 auto redundant. The system is based on SCPC-DAMA for Inbound and TDM for outbound. The network is based on Agilis RFT and Polarsat FlexiDAMA SkyIP technology. The network topology is a star network with a single hub or gateway.

The Satellite Hubs antenna is from Andrew Corporation 1 and is Intelsat type approved and meets Eutelsat standards. The Hub consists of motorized Antenna with tracking mechanism, 1:1 redundant 200W transceiver, 1:2 LNB redundant system, FlexiDAMA system and Grizzly Hub.

Satellite Remote Terminal

The remote terminal consists of a 2.4m VSAT Antenna, 5W Block Upconverter (BUC), SkyIP Terminal and PEP Client. A GPS is used for the synchronization of the sites and for location purpose. The 2.4m communication antenna for the remote terminal is M-T2.4R by Suman Satellite Technology Company.

Question 6: Is VoIP mandatory? Why is VoIP included in a Support and Maintenance Contract?

Answer to Question 6: VoIP is not mandatory, but bidders are strongly urged to provide a solution. VoIP is included in this tender to give the bidders the option to use the GNM infrastructure for commercial purposes so by profit sharing they can propose a lower Support and Maintenance cost to the Employer.

Question 6: Is Licensing required to deploy VoIP Services?

Answer to Question 6: Any licensing requirement will be taken care of by NCIT if the bidder is interested.

Question 6: Should the VoIP system have a PSTN gateway?

Answer to Question 6: Yes.

Question 6: Will the Employer own the VoIP infrastructure?

Answer to Question 6: The bidder should propose the ownership of the VOIP infrastructure and will be agreed subject to discussions between the selected bidder and NCIT.

Question 6: If the VoIP is deployed in a profit sharing model, the bidder may not be able to recover the cost of the system within the 3 year contract period. How will the bidder be compensated after the 3 year contract period?

Answer to Question 6: The bidder should propose a solution where the cost of implementation is recovered within the 3 year contract period or the Bidder may propose the contract period of 4 years or longer based on the investment being made. A solution will be finalized in discussion with selected bidder.

Question 7: What should be the Capacity of the VoIP system and how should it be sized? There might be licensing requirements (of hardware or software) based on number of nodes.

Answer to Question 7: The VoIP system is to be deployed to government agencies connected to the GNM, which is about 150 sites in Male' and 150 sites in the rest of the atolls. The bidder may propose licensing rates on a per node basis.

Question 8: Are the network equipments currently under warranty?

Answer to Question 8: The bidder is requested to include the yearly price for warranty as part of the yearly aggregate cost of Support & Maintenance

Attachment 1

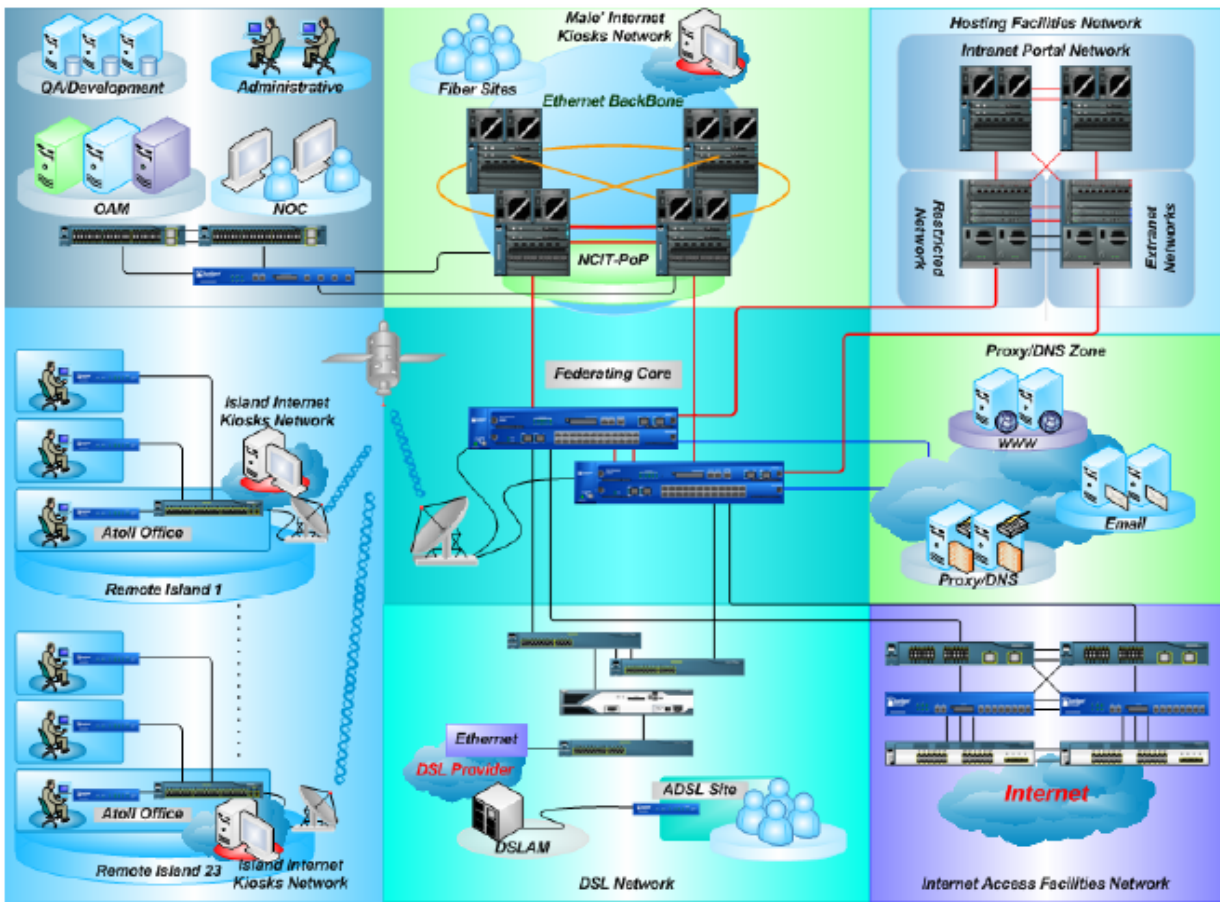


Figure 1: Diagrammatic representation of the core equipment showing redundant connectivity. The connection configurations are subject to changes.

Attachment 2

Male' MAN Fibre Distribution Network

PoPs (Main Distribution points)	3	
No. of Sub-Pops (Fibre distribution points)	13	
No. of Building with Fibre connections	88	
Sites with physical redundancy (16 core Single Fibre)	13	
Sites with physical redundancy (8 core Multiple fibre)	23	
Total No. of Sites in Male'	110 (Fibre + ADSL)	
Type of Fibre used	No. Cores	Estimated Length (KM)
Single Mode	96	7.7
Single Mode	16	6.6
Single Mode (Sub-pops to End-user)	08	19.5
Total Estimated Length of Outdoor Fibre cables used (KM)	33.8	

Island MAN Distribution Network

Number of island with fibre infrastructure	23		
Sites connected in island	Government facilities		
Total No. of Sites connected	150 sites		
Island with Fibre infrastructures	No of Active Sites	Average No. of Core	Type of Fibre used
H.A. Dhidhdhoo	6	4 core	Multimode
H.Dh. Kulhudhuffushi	8	4 core	Multimode
R. Ugufaaru	6	4 core	Multimode
B. Eydhafushi	6	4 core	Multimode
Lh. Naifaru	6	4 core	Multimode
K. Thulusdhoo	7	4 core	Multimode
A.A. Rasdhoo	6	4 core	Multimode
V. Felidhoo	6	4 core	Multimode
M. Muli	6	4 core	Multimode
Dh. Kudahuvadho	6	4 core	Multimode
L. Fonadhoo	6	4 core	Multimode
G.Dh. Thinadhoo	8	4 core	Multimode
Gn. Fuvahmulah	7	4 core	Multimode
Sh. Funadhoo	6	4 core	Multimode
N. Manadhoo	6	4 core	Multimode
A.Dh. Mahibadhoo	6	4 core	Multimode
F. Nilandhoo	6	4 core	Multimode
Th. Veymandoo	6	4 core	Multimode
G.A. Vilingilli	6	4 core	Multimode
S. Hithadhoo	10	4 core	Multimode
Villigili, K.Male'	7	4 core	Multimode
Hulhumale, K.Male'	4	4 core	Multimode
Hulhule, K.Male'	9	4 core	Multimode