ANNEXURE A: Current Infrastructure

1. **Server Infrastructure Head Office**
   - The environment consists of 60 Blade Servers connected to a SAN
   - Two HP Servers connected to a smaller SAN
   - Two Dell Servers
   - HP Store easy NAS
   - 4200 Users

   1.1   **Blade Infrastructure**

Quantity	Blade Server	CPU	Memory
19	HP Proliant BL460c	1 x Quad Core Xeon	2GB
29	HP Proliant BL460c	2 x Quad Core Xeon	4GB
2	HP Proliant BL460c	2 x Quad Core Xeon	8GB
2	HP Proliant BL680c	4 x Quad Core Xeon	8GB
1	HP Proliant BL680c	4 x Quad Core Xeon	24GB
3	HP Proliant BL680c	4 x Quad Core Xeon	16GB
4	HP Proliant BL680c	4 x Quad Core Xeon	32GB

   Table 1. Blade Server Count

   1.1.1   HP Eva 8100 Storage Area Network with a total capacity of 33 Terra Bytes (TB)

   1.2   Two HP Servers connected to a HP StorageWorks P2000 of 8 TB (Tera bytes)

Quantity	Rack Server	CPU	Memory
2	DL 380 G7	Intel Xeon Processor X5650	60GB

   1.3   **Space Usage considerations**
   - Total SQL (All databases and log files) capacity:- 3.2 TB
   - Exchange: - 28 TB
   - 4 TB of Video and Graphics worth of data in Tapes,DVD and external drives

   1.4   **Current Servers**
   - 436 Windows Servers
   - 4 SQL Clusters
   - 4 Exchange Servers
   - 7 SharePoint servers

2. Business Impact

Based on the risk assessment and the business impact assessment conducted, recovery objectives were identified for various business units and the associated ICT application systems and infrastructure was prioritised. Table below outlines the recovery requirements and priorities of ICT systems as per the business impact and risk assessment conducted on the DIRCO business:

Process priorities	Priority One	Priority Two
RTO	2hrs - 24hrs	3 days
RPO	1 hr- 24hrs	2 day
MTD	1 hr -24 hrs	2 days
Application Systems	Active Directory, ROSA, Mission Cash Book System, Network Infrastructure, Email system, Internet, MS Office, Foreign Currency System, MS Share Point	BAS, Logis, Persal, NuQ, Hardcat, Skill bank System, Library & Text based System, JAWS, Open Book, Zoom Text, IQUAL, Secure Vetting Admin System. Marval

3. Infrastructure requirements

- Head Office will cover the following
  - Production environment
  - Development and Testing environment (60% of production in terms of storage and compute)
  - Backup and archiving
- London
  - Production environment
- Washington
  - Production environment

4. Capacity Considerations

- The proposed environment must for Compute,Storage requirements through virtualisation:
  - Network Monitoring servers
  - Telephony
  - Network Security
- Desktop Virtualisation also been considered for future deploment

ANNEXURE B

Roles and Responsibilities

Activity	Bidder/s responsibility	DIRCO responsibility	Scope
Hardware	Provisioning of Hardware for solution.	Racking space and power.	In all three (3) data centredata centres.
Licenses	Provide Licenses for HCI and backup tools including any proposed tools	**Provide the** Microsoft Enterprise licenses	In all three data centredata centres.
Operating system Configurations	Design, Configure and Install Operating system according to Solution specifications.	Application installation and security guidelines.	In all three (3) data centredata centres.
Solution	Design. Configure and Implement full Solution	Provide the network configurations and device list.	In all three (3) data centredata centres.
Microsoft SQL	Design. Configure and Implement SQL Cluster	Provide current database environment and licensing	In all three (3) data centredata centres.
Microsoft SharePoint	• Hybrid Design. Configure and	Provide licenses	In all three (3) data

	Implement SharePoint • Migration of File servers to SharePoint on premise and SharePoint Online		centredata centres.
Maintenance and Support	Onsite support as and when necessary 24x7 Telephonic support for the duration of the contract. Software and patch management	Provide technical resources to work with service provider.	Per data centre
Reporting	Monthly reporting as agreed on SLA		
Training	Provide internationally recognised training and skills transfer in the following areas − Technical training for 25 officials as per the technical design.	Provide the training requirements for various administration levels.	

Project Management services	Provide all project management services.	Allocate space in the DIRCO building.	In all three (3) data centredata centres

Annexure C
Dirco Global MPLS WAN Status Quo

	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PDVM	Voice Module
	Region – Africa Hub						
1.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PDVM	Voice Module
2.	South Africa	OR Tambo	**2 x Cisco 4351**	BT-MPLS	1Mbps	32Mb	PRI – E1
3.	Ivory Cost	Abidjan	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
4.	Nigeria	Abuja	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
5.	Ethiopia	Addis Ababa	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
6.	Algeria	Algiers	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
7.	Jordan	Amman	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
8	Madagascar	Antananarivo	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
9	Eritrea	Asmara	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
10	Kazakhstan	Astana	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
11	Mali	Bamako	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
12	Guinea Bissau	Bissau	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
13	Turkey	Ankara	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
14	Congo	Brazzaville	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
15	Romania	Bucharest	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
16	Burundi	Bujumbura	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
17	Egypt	Cairo	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
18	South Africa	Cape town Airport	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	BRI's
19	South Africa	Cape town Parliament	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	BRI's
20	Benin	Cotonou	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
21	Guinea	Conakry	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
22	Senegal	Dakar	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
23	Syria	Damascus	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO

24	Tanzania	Daar Es Salaam	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
25	South Africa	Diplomatic Guest House	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	BRIs
26	Botswana	Gaborone	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	
27	Zimbabwe	Harare	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
28	Indonesia	Jakarta	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
29	Saudi Arabia	Jeddah	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
30	Southern Sudan	Juba	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
31	Uganda	Kampala	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
32	Sudan	Khartoum	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
33	Ukraine	Kiev	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
34	Rwanda	Kigali	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
35	South Africa	King Shaka Int. Airport	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
36	DRC	Kinshasa	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
37	Nigeria	Lagos	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
38	Gabon	Libreville	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
39	Malawi	Lilongwe	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
40	Angola	Luanda	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
41	DRC	Lubumbashi	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
42	Zambia	Lusaka	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
43	Equatorial Guinea	Malabo	1xCisco 4321/1xISR 2800	BT-MPLS	1Mbps	32Mb	FXO
44	Mozambique	Maputo	1xCisco 4321/1xISR2800	BT-MPLS	1Mbps	32Mb	FXO
45	Lesotho	Maseru	1xCisco 4321/1xISR2800	BT-MPLS	1Mbps	32Mb	FXO
46	Swaziland	Mbabane	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
47	Kenya	Nairobi	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO

48	Chad	N'Djamena	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
49	Mauritania	Nouakchott	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
50	Niger	Niamey	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
52	Burkina Faso	Ouagadougou	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
53	Liberia	Monrovia	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
54	Sao Tome & Principe	Sao Tome	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
55	Morocco	Rabat	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
56	Palestine	Ramallah	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
57	Israel	Tel Aviv	x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
58	Libya	Tripoli	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	
59	Tunis	Tunisia	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
60	Trinidad and Tobago	Port Of Spain	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
61	Namibia	Windhoek	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
62	Cameroon	Yaoundé	1x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO

Region - Brasilia							
No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Module
1	Brasilia	Sao Paulo	2 x4351	BT-MPLS	1Mbps	32Mb	PRI-E1
2	Argentina	Buenos Aries	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
3	Venezuela	Caracas	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
4	Peru	Lima	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
5	Mexico	Mexico City	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
6	Uruguay	Montevideo	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
7	Chile	Santiago	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO

Region – United Kingdom

No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Modules
1	UK	London	**2 x Cisco ISR 4351**	BT-MPLS	1Mbps	32Mb	PRI-E1
2	Ghana	Accra	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
3	Switzerland	Bern	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
4	Belgium	Brussels	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
5	Ireland	Dublin	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
6	Switzerland	Geneva	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
7	Cuba	Havana	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
8	Jamaica	Kingston	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
9	Portugal	Lisbon	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
10	Spain	Madrid	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
11	Comoros	Moroni	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
12	France	Paris	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
13	Saudi Arabia	Riyad	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	FXO
14	Netherland	The Hague	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	SIP
15	England	Whitehall	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1

Region – Singapore							
No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Module
1	Thailand	Bangkok	**2 x Cisco ISR 4351**	BT-MPLS	1Mbps	32Mb	PRI-E1
2	China	Beijing	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
3	China	Shanghai	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
4	Australia	Canberra	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
5	Sri Lanka	Colombo	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
6	Vietnam	Hanoi	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI

No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Modules
7	Japan	Hong Kong	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
8	Malaysia	Kuala-Lampur	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
9	Philippines	Manila	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
10	South Korea	Seoul	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
11	Fiji	Suva	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
12	Taiwan	Taipei	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
13	Japan	Tokyo	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
14	New Zealand	Wellington	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
15						32Mb	

Region - Austria							
No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Modules
1	Austria	Vienna	**2 x Cisco ISR 4351**	BT-MPLS	1Mbps	32Mb	PRI-E1
2	Greece	Athens	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
3	Germany	Berlin	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
4	Hungary	Budapest	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
5	Denmark	Copenhagen	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
6	Qatar	Doha	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
7	UAE	Dubai	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
8	Finland	Helsinki	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
9	Pakistan	Islamabad	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
10	Kuwait	Kuwait City	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
11	Italy	Milan	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
12	Russia	Moscow	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
13	India	Mumbai	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
14	Germany	Munich	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1

15	Oman	Muscat	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
16	India	New Delhi	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	PRI-E1
17	Norway	Oslo	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
18	Czech Rep.	Prague	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
19	Italy	Rome	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
20	Bulgaria	Sofia	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
21	Sweden	Stockholm	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
22	Iran	Teheran	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
23	Poland	Warsaw	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	BRI
24			1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1Mbps	32Mb	

Region – United States of America							
No.	Country	Capital City	WAN Equipment	WAN Tech	Bandwidth	PVDM	Voice Module
1	USA	Washington	2 x Cisco ISR 4351	BT-MPLS	1.5Mbps	32Mb	PRI-T1
2	USA	Chicago	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1.5Mbps	32Mb	PRI-T1
3	USA	New York	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1.5Mbps	32Mb	PRI-T1
4	USA	Los Angeles	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1.5Mbps	32Mb	PRI-T1
5	USA	Toronto	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1.5Mbps	32Mb	PRI-T1
6	USA	Ottawa	1 x Cisco 4321/1 x ISR 2800	BT-MPLS	1.5Mbps	32Mb	PRI-T1