



**SESAME**

*Synchrotron-light for Experimental  
Science and Applications in the  
Middle East*

## Scientific Sector

Subject:  
NGFW, Network  
Infrastructure and  
VoIP tender

More specified area: Technical  
Specification for Supplying,  
Installing and Commissioning  
for Next Generation Firewall  
(NGFW), Active and Passive  
Networking Infrastructure and  
Voice over Internet Protocol  
(VoIP) solution for SESAME's  
Datacenter, Beamlines, Guest  
House and Main Building

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### **Technical Specification for Supply, Delivery, Installation, Testing and Operation of Next Generation Firewall (NGFW), Active and Passive Networking Infrastructure and VoIP Solution for SESAME's Datacenter, Beamlines, Guest House and Main Building**

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## 1. [Introduction](#)

SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) is a third-generation synchrotron light source under construction in Allan (Jordan). It is the Middle East's first major international research center. The main idea of SESAME is to foster scientific and technological excellence in the Middle East and neighboring countries (and prevent or reverse the brain drain) by enabling world-class scientific research in subjects ranging from biology, archaeology and medical sciences through basic properties of materials science, physics, chemistry, and life sciences; and Build scientific and cultural bridges between diverse societies, and contribute to a culture of peace through international cooperation in science.

In each experimental lab at SESAME (namely Beamline), the Beamline scientists and researchers from worldwide universities and research institutes will return home to analyze their data, which were obtained from SESAME Beamlines. The amount of data could vary based on experiment type and imaging detectors, in many cases the produced raw data reach few Tera Bytes, this leads users' to be more demanding for the computing power to do the processing on SESAME's Beamline data sets.

This tender partially comes under the Computing Group at SESAME. The group provides hardware and software resources and services to help accomplish the SESAME's scientific mission. It also supports networking, WiFi, private cloud, workstations, PCs and other specialised facilities which do not directly support the scientific programme, but also provide support for many of the engineering, technical and administrative needs of the SESAME. The group services includes but not limited to:

- Physical and virtual servers for machine control and all other services
- High-speed networks and wide area access to and from the site
- International connectivity to educational and research network
- Computing for simulation, reconstruction, and data analysis
- Short and long term storage for SESAME Experimental Data (SED)
- General application software tools
- Web services
- Email services
- Advance desktop support
- Computer and network security

## 2. [Scope of Contract](#)

This tender covers purchasing, delivering, installing, testing and operating of the following solutions for SESAME's Datacenter, Beamlines, Guest House and Main Building:

- NGFW with high availability.
- Active networking.
- Passive networking components.

- Voice over IP (VoIP)

For the active network component, this tender is a “Cisco part number tender” due to the following facts:

- Parts will be installed as expansion and fully integrated with the current running systems (i.e. Wifi Aps and IP telephony)
- Some existing equipment will be integrated with the new system
- All new devices and equipment will be installed and configured on the running network in SESAME which is Cisco based.
- For the security solution, SESAME needs a complete solution from one vendor including the main gateways, mail security, end clients and network identity service, which is already covered in Cisco solution.

For the passive components, bidders can submit their offers, which should be complying with the technical specs. This is also implied on the UPSs.

For the security cameras, bidders have to provide the needed cameras with the exact part number, as it will be installed as expansion of the current running system.

### 3. Technical Specifications and Requirements Description

**Important Note 1:** the technical specifications below for active network components are based on Cisco products (Cisco part number).

**Important Note 2:** the offer should cover the active and passive components together with some other required items where no splitting is applicable

**Important Note 3:** vendor should provide services for SESAME site located on Allan -Jordan, the SLA should be back to back with the Cisco for spare parts with the form of 5X8XNBD

**Important Note 4:** if applicable, it is highly preferable to offer the required cisco parts in bundles (Cisco Bundles).

**Important Note 5:** Hands-on training should be delivered to SESAME engineers to assure smooth operations for all new installed systems.

**Important Note 6:** Vendor should enable all required services and features on the installed hardware.

**Important Note 7:** Vendor should conduct quarterly preventative visits per year for five years to SESAME site.

**Important Note 8:** Vendor should provide a security review per year for five years, which should include the best practices for IT security measures at SESAME.

**Table 1: Security Solution Technical Specifications Table**

Num.	Item	Part number	QTY	Notes/Comments	Category
1	Cisco Firepower 2110 NGFW appliance, 1U	FPR2110-NGFW-K9	2	NGFWs to be installed in SESAME Data Centre with two active internet gateways from two different ISPs	NGFW
2	Next business day support for Cisco Firepower 2110 NGFW	CON-SNT-FPR21FWN	2	Support for five years (60 months) back to back with Cisco	
3	Cisco FPR2110 threat defense threat, malware and URL 5 years subscription	L-FPR2110T-TMC-5Y	2	To be configured on the NGFWs	
4	Cisco Firepower management center, (VMWare) for 2 devices	SF-FMC-VMW-2-K9	1	NGFW management applications on VMware	
5	Cisco Software Support Service (SWSS) upgrades Cisco Firepower Management Center	CON-ECMU-SFMMCVWK	1	Cisco support service including upgrade, five years (60 months)	
6	Cisco AnyConnect 25 user plus perpetual license	AC-PLS-P-25-S	1	VPN access with support for five years (60 months)	
7	SWSS UPGRADES Cisco AnyConnect 25 user plus perpetual license	CON-ECMU-ACPL25	1		
8	Umbrella insights	UMB-INSIGHTS-K9	100	DNS lockup security and validation, for five years (60 months)	DNS security
9	Cisco Advanced Malware Protection 5 years, 100-499 nodes	FP-AMP-5Y-S2	200	To protect PCs and servers from Ransomware, Malware, Spyware and cybersecurity attack.	AMP for clients
10	Cisco CES inbound essentials bundle 5 years, 200-499 users	L-CES-ESI-5Y-S2	200	Cisco email security, Antispam on cloud, subscription for five years (60 months)	Mail security
11	Cisco CES Advanced Malware Protection (AMP) 5 years, 200-499 users	L-CES-AMP-5Y-S2	200	Add-on advance malware protection (Sandboxing) for mail system (cloud), subscription for five years(60 months)	
12	Cisco ISE virtual machine small	R-ISE-VMS-K9=	1	Cisco identity service engine.	Network security and administration
13	SWSS UPGRADES Cisco ISE virtual machine small	CON-ECMU-RISEV9SM	1	Cisco ISE support for 5 years	
14	Cisco ISE Base license - sessions 1000 to 2499	L-ISE-BSE-P4	1500	ISE license, basic physical port control	

**Table 2: Access Switches, Access Points and SFPs Technical Specifications Table**

Num.	Item	Part number	QTY	Notes/Comments	Category
1	CISCO Catalyst 2960-X 48 GigE PoE 740W, 2 x 10G SFP+, LAN base	WS-C2960X-48FPD-L	7	Three switches to be installed in the Guest house, Three switches for the next phase beamlines and One switch as spare part	Enterprise access switches specifications
2	Catalyst 2960-X 24 GigE PoE 370W, 2 x 10G SFP+, LAN base	WS-C2960X-24PD-L	3	To be installed in the guest house	
3	Catalyst 2960-X FlexStack plus stacking module	C2960X-STACK	6	To be installed in the switches located at the guest house	
4	3M length of stack cable	CAB-STK-E-3M	8	Stacking cable	
5	10GBASE-LR SFP module, enterprise-class	SFP-10G-LR-S=	14	12 to be installed and 2 spare parts	SFPs
6	10G SR SFP module, Enterprise-Class	SFP-10G-SR-S=	12	12 to be installed, spare part already exists at SESAME	
7	Cisco WiFi wireless access point	AIR-AP1832I-E-K9	22	WiFi access point to be installed in the beamlines hutches and new guesthouse building and configured on Cisco 2504 controller (license is already exist).	Wifi access point

**Table 3: IP Telephony, Voice over IP (VoIP), and video conferencing systems Technical Specifications Table**

Num.	Item	Part number	QTY	Notes/Comments	Category
1	Cisco Business edition 6000M (M5) appliance	BE6M-M5-K9	2	Servers to host VoIP	Cisco IP telephony system
2	SNTC-8X5XNBD Cisco Business Edition 6000M (M5)	CON-SNT-BE6MM5K9	2	Next business day support for five years (60 months)	
3	Cisco ISR 4321 Bundle, w/UC License, CUBE-10	ISR4321-V/K9	1	Voice router for VoIP system	
4	SNTC-8X5XNBD Cisco ISR 4321 UC bundle, PVDM4-32, UC L	CON-SNT-ISR4321V	1	Support for voice router for 5 years	
5	1 port Multiflex trunk voice/clear-channel data T1/E1 module	NIM-1MFT-T1/E1	1	Cisco multiflex trunk Voice and WAN network interface	
6	32-channel DSP module	PVDM4-32	1	Cisco 32-channel high-density packet voice digital signal processor module	
7	BE6000 starter bundle with 35 UWL standard licenses	BE6K-START-UWL35	1	Licenses for telephone extensions total of 125 with support for five years (60 months)	
8	Cisco Business Edition 6000 - essential user connect license	BE6K-UCL-ESS	60		
9	Cisco Business Edition 6000 - enhanced plus user connect license	BE6K-UCL-ENHP	30		
10	SWSS UPGRADES BE6K UCM 10X enhance	CON-ECMU-UCMUCENH	30		
11	SWSS UPGRADES BE6K UCM 10X essential	CON-ECMU-UCMESSUC	60		
12	SWSS UPGRADES BE6000 v11 UWL standard Starter licenses, 35 license	CON-ECMU-BE11WXUR	1		
13	Cisco IP phone 8845	CP-8845-K9=	4	IP phone for Manager	
14	Cisco UC phone 7811	CP-7811-K9=	60	IP phone for Staff	
15	Cisco UC phone 7861	CP-7861-K9=	1	IP phone for Operator	
16	Cisco unified SIP phone 3905, charcoal, standard handset	CP-3905=	60	IP phone for Guest house /among building	
17	NU cloud meetings	A-FLEX-NUCM-MC	2	Cisco webex meetings service with subscription for five years (60 months)	Professional remote meeting service
18	Cloud device registration	A-FLEX-ADD-DEVREG	1	Registration to allow hosting video conference, host multipoint meeting with subscription for five years (60 months)	

Num.	Item	Part number	QTY	Notes/Comments	Category
19	Room kit with touch10	CS-KIT-MSRP-K9	1	Video conference, room kit which includes camera, codec, speakers, and microphones integrated in a single device	
20	SUPP 8X5XNBD spark room kit with touch10	CON-SSSNT-CSKITMSR	1	8X5 next business day support for room kit, with service for five years (60 months)	
21	Table Mic20 extention cable, grey (33ft/10m)	CAB-MIC-T20EXT	1	Cisco microphone	
22	Cisco TelePresence table microphone 20	CTS-MIC-TABL20	1	Cisco omnidirectional microphone	
23	SUPP 8X5XNBD Cisco TelePresence table microphone 20	CON-SSSNT-CTSMICT2	1	8X5NBD support with service for five years (60 months)	



**Table 4: Passive Components Technical Specifications Table**

Num.	Item	Specification	QTY	Notes
1	Cat6A network cables	F/FTP AWG23 Cat 6A LSZH orange 500m reel	12	Cable color should be orange.
2	Cat6 patch cord	Patch cord Cat.6, RJ45 unshielded LSZH 1m	500	Factory crimped. Cable color should be gray.
3	Multi mode fiber cable + pulling	8 core Multi mode (MM) fiber cable OM4 10G, outdoor and armored	500	Datacenter to beamlines. Lengths are subject to change 10% + or -, QTY 500 Meter
4	Single mode fiber cable + pulling	8 core Single Mode (SM) fiber cable 10G, outdoor and armored	700	Datacenter to guesthouse. Lengths are subject to change 10% + or -, QTY 700 Meter
5	Fiber termination (with pigtails)	Termination on fiber patch panels	28	Fiber termination (with pigtails)
5	Fiber patch cord	OM4 MM 3 meters connector type to be provided later (LC / SC)	16	MM (LC / SC)
6	Fiber patch cord	SM 3 meters, connector type to be provided later (LC / SC)	20	SM (LC / SC)
7	Snap-in connector	Cat 6 Snap-in connector	700	
8	Fiber patch panel (for access switches)	4 Ports, pigtails and castle included, include termination	6	
9	Patch panel	Modular empty patch panel for 24 snap-in	20	
10	Patch guide	2U with rings	20	
11	Modular outlet	50x50 Angled empty for 2 Snap-in	200	
12	Face plate	Flat single gang 50x50 unt 86x86 ext white	200	
13	Cat6 cable pulling and 2 side termination	2 side termination (Using the above mentioned parts) for 181 network point	181	
14	Networking rack	42U floor standing standard cabinet, compatible will all server/networking hardware (Depth 80 cm)	3	

**Table5: Related Components Technical Specifications Table**

<b>Num.</b>	<b>Item</b>	<b>Specification</b>	<b>Part number</b>	<b>QTY</b>	<b>Notes</b>
1	Uninterruptable Power Supply (UPS)	3KVA, rack mountable, 2/3U UPS	NA	10	9 rack-mounted, to be installed in stander network cabinet (depth 80 cm). one tower UPS
2	Samsung (Hanwha) IP camera	12M (4000 x 3000) resolution, 20fps@12M, 30fps@8M	PNO-9080R	8	7 to be installed and configured on Samsung PRN-4011 NVR (already exist), one spare part
3	Power Distribution Unit (PDU)	Server PDU, C13, 8 outlet, 230V, IEC309, 16A, 1RU	NA	6	
4	Server Power Cord	Power Extension Cord C13-C14, 10A	NA	48	

#### 4. Warranty and Guarantee

- a. SLA agreement for some active components (as described in the above tables) shall cover 5 years (60 months) back to back with Cisco starting from the date of the project acceptance by SESAME technical team.
- b. The supplier has to proof that no refurbished, used, or gray market equipment or services are provided.

#### 5. Formation

- a. The bidder shall foresee, propose, and include in the offer basic training and knowledge transfer skills for 2 members of SESAME Technical Staff
- b. The tender is not divided into lots.
- c. Cisco vendors have to provide official “Letter for Channel Purchasing”. Other vendors can do the same if applicable.
- d. The bidder shall provide company profile, which has to include list of references with their contact information and a list of relative certified engineers who are working currently in the company.
- e. With the offer, the bidder has to provide a detailed bill of quantities and compliance sheet.
- f. The prices in the offer should be quoted in net per unit (after breakdown)
- g. The bidder is encouraged to offer different accessories with the price of each component in financial offer

#### 6. Acceptance

In order to complete the contract, the following statements shall be fulfilled:

- Acceptance of the of the hardware installation/implementation.
- Acceptance of the operation and inspection at SESAME site.
- The new system should be connected and fully operational to (compatible with) the current setup at SESAME.

#### 7. Delivery Schedule

The delivery is required within **six weeks** after placing the purchase order or Contract. Any delay by the supplier on the delivery cycle shall render the supplier liable to the liquidated damage according to the contract conditions.

The delivery Inco-term is DDP (Delivery Duty Paid) to SESAME Premises in Allan – Salt (INCOTERMS 2010)

#### 8. Packaging and Transport

The supplier is responsible for the packing and transport of the hardware from the factory to the SESAME site.

Adequate packing and protection must be provided to prevent damage during transport.