



PROCUREMENT & INVESTMENTS DIVISION

**TED 070/2021
CALL FOR TENDERS
FOR THE SUPPLY OF PHYSICAL SERVERS**

SUMMARY OF THE CALL

OPEN CALL	
ECONOMIC OPERATOR	THESSALONIKI PORT AUTHORITY SA Main line of business: Port works Address: Within the Port of Thessaloniki PC: 54625, Thessaloniki Tel.: 2310593121, Fax: 2310510500 Email: secretariat@thpa.gr Website: http://www.thpa.gr
Deadline for the Submission of Bids	01/10/2021
Deadline for the Submission of Requests for clarification	27/09/2021
Evaluation Criterion	Price
Information/clarifications	For the tender procedure Name: Giorgos Papageorgiou E-mail: gpapageorgiou@thpa.gr Telephone: 2310 593305 Name: Panagiota Tounousidou E-mail: ptounousidou@thpa.gr Telephone: 2310 593325 For technical issues Name: Konstantinos Parthenis E-mail: kparthenis@thpa.gr Telephone: 2310 593369

PART A'
GENERAL CONDITIONS

ARTICLE 1 - Description of the Object of the Supply

This call is for the provision of physical servers for THE CTOS (Container Terminal Operating System). The offered equipment shall comply with the technical specifications set out in detail in Part B hereof.

The supply includes the transfer and delivery to the port of Thessaloniki and the installation of the equipment in the Racks of the two (2) data centers of ThPA SA.

After prior communication, interested parties can visit the places where the equipment will be installed, in order to be informed of the current situation (Mr. Konstantinos Parthenis, tel.: 2310593369 and Mr. Christos Papadopoulos, tel.: 2310593380).

ARTICLE 2 – Award Criterion

The contract will be awarded based on the most economically advantageous bid (lowest price), provided that the specifications herein are met.

ARTICLE 3- Right of Participation - Selection Criteria

3.1 Right of Participation

3.1.1. Bid submission shall be open to natural or legal persons and, in the case of associations of economic operators, their members who have a professional activity related to the object of this call. Economic operators established in Greece are required to be registered with the Chamber of Handicrafts, Chamber of Commerce or Industry.

3.1.2. Participants shall:

- Not be under bankruptcy, liquidation or administration;
- Not have been irrevocably convicted (the administrators for the case of limited partnerships, limited liability companies, private companies-IKE, the Chairman and the CEO for the case of SAs and the natural persons performing management duties in other cases) for:
 - a) participation in a criminal organization, pursuant to article 2(1) of Joint Action No. 98/733/JHA of the Council of the European Union;
 - b) corruption, as it is respectively defined in Article 3 of the Council Act dated 26th May 1997(21) and in Article 3, paragraph 1 of Council Joint Action 98/742/JHA;
 - c) fraud within the meaning of article 1 of the Convention on the protection of financial interests of the European Communities;
 - d) money laundering, according to article 1 of the Council Directive 91/308/EEC of 10 June 1991 on the prevention of the use of the financial system for the purpose of money laundering;
 - e) embezzlement (Criminal Code 375);
 - f) fraud (Criminal Code 386- 388);
 - g) extortion (Criminal Code 385);
 - h) forgery (Criminal Code 216- 218);
 - i) perjury (Criminal Code 224);
 - j) corruption (Criminal Code 235- 237);
 - k) fraudulent bankruptcy (Criminal Code 398).

In case the interested Economic Operators participate as an association or consortium, the above shall be met by each member of the consortium.

In the case of an Association or Consortium, all members are jointly and severally liable to the contracting entity.

ARTICLE 4 - Bid Submission Way and Time

Bids shall be submitted electronically, no later than **01.10.2021** by sending a compressed locked file folder to both email addresses: gpapageorgiou@thpa.gr, ptounousidou@thpa.gr. The password shall be sent to the above e-mail addresses after the deadline for submission of bids, upon notice to the participants. Indicative instructions for creating a locked file have been posted along with this call on the website of ThPA SA.

ARTICLE 5 - Provision of Clarifications on the Call

Requests for clarifications shall be submitted electronically no later than five days before the deadline for submission of bids as follows:

a) Inquiries about technical issues shall be submitted to the e-mail address kparthenis@thpa.gr also forwarding the inquiry to gpapageorgiou@thpa.gr and ptounousidou@thpa.gr.

b) Inquiries about issues related to the tender process shall be submitted to the e-mail address ptounousidou@thpa.gr also forwarding the inquiry to gpapageorgiou@thpa.gr and kparthenis@thpa.gr.

Requests for clarifications submitted in any other way will not be considered.

The clarifications are posted electronically on the website of ThPA SA www.thpa.gr.

ARTICLE 6 - Extension, amendment, addition or cancellation of the tender

ThPA SA reserves the right to extend before the expiration of the bidding procedure the time for submitting bids or to cancel the award procedure, or to decide to repeat it at any stage, without any liability, cost or penalty, following a decision by its competent body. It also reserves the right to modify the terms of the procedure with transparency.

ARTICLE 7 - Bid Content

The bid contents are defined as follows:

7.1 - Participation documents

For their participation in the tender, economic operators shall submit the following supporting documents:

- A certificate of registration in the relevant chamber (national economic operators) or a corresponding certificate/approval/authorization from the relevant authority of their country of origin (foreign economic operators).
- A Solemn Declaration through which the participating company and its legal representatives declare that there are no grounds for exclusion, as set out in paragraph 3.1.2 and that there are no grounds for believing that such impediments will occur during the period of validity of the bid and any possible extensions thereof;
- A Solemn Declaration through which the Candidate declares that he has taken note of the technical requirements of the Object of the Tender and that he unconditionally accepts the terms of the Call. In the case of disagreement, he shall explicitly indicate the points with which he disagrees.
- A Solemn Declaration with which the candidate states that the engineer who will undertake the installation is approved by the manufacturer of the equipment and that, at the signing of the contract, he will present to ThPA SA the relevant certificate of the manufacturer.
- For proof of legal constitution and representation, legal documents of constitution and legal representation shall be presented on a case-by-case basis (such as statutes, certificates of amendment, the corresponding GG, BoD formation). The above documents shall specify the lawful establishment, the person(s) legally binding the company on the date of the tender (legal representative, right of signature, etc.), any third parties authorized to represent the contractor, as well as the term of office of the person(s) and/or the members/legal representative of the management body.
- Information document for the processing of personal data, according to Article 13 of the GDPR 679/2016, signed by the Candidate.

7.2 - Technical Bid

The Technical bid shall include the following information:

- The Compliance Tables included in Part B of this call, fully completed. Participants shall report any deviations from the technical requirements, clearly describing the type and size of the deviation. The above also applies to features that are considered better than those required.
- Technical Brochures of manufacturers, or detailed technical descriptions of the services, software or the way of interconnection and operation or references of installation and support methodology, etc., which at the discretion of the candidate Contractor document the information of the Compliance Tables.
- Time plan for the completion of the works
- Price list of the necessary spare parts-accessories and consumables required at the discretion of the Supplier.
- A training programme

7.3 - Economical Bid

The economical bid shall bear the stamp of the participating economic operator and the signature of its duly authorized representative and shall state:

- the price offered in Euro (excluding VAT) per unit and in total for each equipment group;
- the delivery time, as defined in article 14.2 hereof;
- the period of guaranteed good operation, in accordance with the provisions of article 14.4.
- the payment method as provided for in article 14.3 hereof;
- time of bid validity, in accordance with article 8 herein;

ARTICLE 8 - Time of Bid Validity

Bids submitted shall be valid for one hundred and eighty (180) days from the day following the date of expiry of the deadline for the submission of bids.

The bid validity may be extended upon request by ThPA SA prior to its expiry, for a maximum period of time equal to the initial bid validity period specified in the Call.

ARTICLE 9 – Price Adjustments

The offered prices are considered **fixed and final** and are not subject to adjustment for any reason and cause until the end of the procurement. For that reason, the participation of any interested party in the tender entails his explicit, unconditional and irrevocable resignation from any right to adjust the prices offered and possibly resulting from another relevant provision.

ARTICLE 10 - Counterbids

Alternative bids, counter-bids or modifications of bids or any proposals that can be characterized as counter-bids, will not be considered and will be rejected by the competent body of ThPA SA, upon consultation with the Tender Committee.

ARTICLE 11 - Language

The official languages of the proceedings are Greek and English. All details of the bids shall be either in Greek or English (if they are drafted in the language of their country of origin) and accompanied by an official translation into one of the above languages. In case of disagreement, the prevailing wording shall always be the translation into one of the official languages of the tender.

ARTICLE 12 – Bid Evaluation

During the evaluation of bids, ThPA SA may address requests to the economic operators concerned for clarifications and economic operators must provide clarifications within the time limits set.

After completion of the evaluation, participants are informed of the acceptance or rejection of their bid.

ARTICLE 13 - Contract

After the announcement of the result of the tender, a contract is signed between ThPA SA and the selected economic operator.

The contract may be modified during its term, without the need for a new contract procedure, only upon the mutual agreement of the parties.

ARTICLE 14 – Special terms for the performance of the supply

14.1 Performance Guarantee

For the full and proper performance of the terms of the supply, the Contractor is obliged to present a Performance Guarantee, the amount of which is determined at a rate of five percent (5%) on the contractual value, excluding VAT.

The above performance guarantee is issued by credit institutions and covers in total and without exceptions the application of all terms of the contract and any claims of ThPA SA against the Contractor and is submitted before or at the signing of the relevant contract.

The submitted Performance Guarantee shall cover the entire duration of the supply and shall expire at least (60) days after the expiration of the contractual delivery time.

The Performance Guarantee shall be returned upon successful receipt of the supply and shall be forfeited in the event of a breach of the terms of the contract, as specifically stated in the contract.

14.2. Delivery

The delivery time of the system in full operation shall be less than 90 calendar days, from the day that the contractor will be appointed and the relevant decision will be notified.

The equipment shall be delivered at the responsibility and expense of the Contractor at the points to be indicated by ThPA SA within the port.

In the case of overdue delivery, a fine of 1% on the contractual value for each week of delay, with a maximum of 5%, shall be imposed.

14.3. Payment method

The total cost of the equipment and related services shall be payable after the completion of the project, within 60 days from the date of issuance of the relevant invoice and the certification, on the document, of the proper operation of the equipment.

14.4 Guaranteed Proper Operation

14.4.1 Time of guaranteed proper operation

The offered equipment shall be accompanied by a five (5) year warranty. The start date of the warranty is the date of receipt of the equipment.

During the warranty, technical support shall be provided in accordance with the provisions of Part B' hereof.

14.4.2 Letter of guarantee

Upon reception of the Equipment, a Letter of Guarantee is submitted, the amount of which is set at a rate of up to five per cent (5%) of the value of the contract, excluding VAT, with a maturity of sixty (60) days after the end of the period of guarantee.

In the event of non-compliance of the Contractor with his contractual obligations, the Competent Body of ThPA SA shall decide the total or partial forfeiture of the Letter of Guarantee.

14.5 ThPA staff training

In the framework of the implementation of the project, the seller shall conduct a training seminar in accordance with the provisions of Part B hereof.

14.6 Deliverables

The seller shall deliver to ThPA SA the deliverables that are detailed in Part B hereof.

PART B'
TECHNICAL TERMS

Technical specifications for the supply of IT equipment

The **minimum** acceptable composition for equipment-per category shall meet the technical specifications provided below.

SERVER TECHNICAL SPECIFICATIONS

S/N	SPECIFICATION	Requirement	Reply	Reference
1.	The model and the construction company shall be mentioned. There shall be compliance with ISO 9001.	YES		
2.	Quantity	2		
3.	Rack mount Server	≤ 2U		
4.	It shall have Quality and Safety Certificates, CE. They shall be provided.	YES		
5.	It shall have Sliding Rack Rails with cable management arm.	YES		
6.	Motherboard			
7.	CPU Intel Xeon Gold 6234 3.3G, 8C/16T, 10.4GT/s, 24.75M Cache, Turbo, HT (130W) DDR4-2933	≥ 2		
8.	Provide ≥4x PCIe slots	YES		
9.	Support ≥8x PCIe slots in maximum configuration	YES		
10.	USB ports	≥ 4		
11.	VGA connector	≥ 1		
12.	Serial connector	≥ 1		
13.	Network			
14.	Gigabit Ethernet ports	≥ 6		
15.	16Gb Fibre Channel ports	≥ 2		
16.	RAM			
17.	Maximum supported memory	≥ 3TB		

S/N	SPECIFICATION	Requirement	Reply	Reference
18.	DDR4 memory offered	≥ 128GB (16GB x 8)		
19.	Rated memory frequency regardless of the processor	≥ 3200MT/s		
20.	Hard Disk Controller - disks			
21.	Server to support 2.5" hot-plug hard drives on delivery	≥ 8		
22.	SATA/SAS disk controller with 2Gb NV Cache	YES		
23.	RAID 0,1,5,6,10,50,60 support	YES		
24.	Server to be offered with 960GB SSD SAS Read Intensive 12Gbps 2.5in Hot-plug Drive, 1 DWPD	≥ 4 discs		
25.	Management controller			
26.	Dedicated NIC for management	YES		
27.	Interfaces/standards support: IPMI 2.0, DCMI 1.5, Redfish, Web GUI, local/remote CLI, Telnet, SSH	YES		
28.	Connectivity support: IPv4, IPv6, DHCP, DNS	YES		
29.	Security support: SSL, Role-based authority, IP blocking, Single sign-on, PK authentication, Directory services (AD, LDAP)	YES		
30.	Support system lock mechanism to avoid configuration or firmware change on the server	YES		
31.	Support a mechanism in which the administrator can delete data from local storage (HDDs, SSDs, NVMs) and embedded flash devices	YES		
32.	Support USB connectivity with the management controller interface on the front-panel of the server for fast configuration	YES		
33.	Have built-in one-to-many monitoring and inventory capability for other servers with the same management controller, without the need	YES		

S/N	SPECIFICATION	Requirement	Reply	Reference
	for other software and separate monitoring console			
34.	Virtual Media, Virtual Folders, Virtual Console, Virtual Console Chat, Virtual Console Collaboration, Remote File Share support	YES		
35.	HTML5 support	YES		
36.	Monitoring support for temperature, fan power supply, memory, CPU, RAID, NIC, HD, as well as Agent-free monitoring, Predictive failure monitoring, Out of Band Performance Monitoring	YES		
37.	Email Alerting, SNMPv1, v2, and v3 (traps and gets), System Event Log, Remote Syslog support	YES		
38.	Other features			
39.	2 redundant hot plugs	YES		
40.	Power supply for each hot plug	≥ 750W		
41.	Power cables, as many as the number of hot plugs	YES		
42.	The system shall be cooled by at least six hot plug redundant fans.	YES		
43.	Support the ability to define a physical means of restoring the operating system from the BIOS, in case of failure.	YES		
44.	LCD panel on the front for information on consumption in BTU/hr or Watts and temperature and quick access to the system.	YES		
45.	Warranty			
46.	Guarantee of good operation from the manufacturer	≥ 5 years		
47.	Hardware response, On-Site within four hours, for critical issues, after remote fault diagnosis, including spare parts and work.			

S/N	SPECIFICATION	Requirement	Reply	Reference
48.	24x7x365 telephone support from the manufacturer for hardware and software issues.	YES		
49.	Offer manufacturer's service, for the remote installation and configuration of the system.	YES		
50.	Provide a manufacturer's statement for the offered guarantee - support - installation.	YES		

SERVER TECHNICAL SPECIFICATIONS

S/N	SPECIFICATION	Requirement	Reply	Reference
1.	The model and the construction company shall be mentioned. There shall be compliance with ISO 9001.	YES		
2.	Quantity	1		
3.	Rack mount Server	≤ 2U		
4.	It shall have Quality and Safety Certificates, CE. They shall be provided.	YES		
5.	It shall have Sliding Rack Rails with cable management arm.	YES		
6.	Motherboard			
7.	CPU Intel Xeon Gold 6234 3.3G, 8C/16T, 10.4GT/s, 24.75M Cache, Turbo, HT (130W) DDR4-2933	≥ 2		
8.	Provide ≥4x PCIe slots	YES		
9.	Support ≥8x PCIe slots in maximum configuration	YES		
10.	USB ports	≥ 4		
11.	VGA connector	≥ 1		
12.	Serial connector	≥ 1		
13.	Network			
14.	Gigabit Ethernet ports	≥ 6		

S/N	SPECIFICATION	Requirement	Reply	Reference
15.	16Gb Fibre Channel ports	≥ 2		
16.	RAM			
17.	Maximum supported memory	≥ 3TB		
18.	DDR4 memory offered	≥ 128GB (16GB x 8)		
19.	Rated memory frequency regardless of the processor	≥ 3200MT/s		
20.	Hard Disk Controller - disks			
21.	Server to support 2.5" hot-plug hard drives on delivery.	≥ 8		
22.	SATA/SAS disk controller with 2Gb NV Cache	YES		
23.	RAID 0,1,5,6,10,50,60 support	YES		
24.	Server to be offered with 1.92TB SSD SAS Read Intensive 12Gbps 2.5in Hot-plug Drive, 1 DWPD	≥ 4 discs		
25.	Management controller			
26.	Dedicated NIC for management	YES		
27.	Interfaces/standards support: IPMI 2.0, DCMI 1.5, Redfish, Web GUI, local/remote CLI, Telnet, SSH	YES		
28.	Connectivity support: IPv4, IPv6, DHCP, DNS	YES		
29.	Security support: SSL, Role-based authority, IP blocking, Single sign-on, PK authentication, Directory services (AD, LDAP)	YES		
30.	Support system lock mechanism to avoid configuration or firmware change on the server	YES		
31.	Support a mechanism in which the administrator can delete data from local storage (HDDs, SSDs, NVMs) and embedded flash devices	YES		

S/N	SPECIFICATION	Requirement	Reply	Reference
32.	Support USB connectivity with the management controller interface on the front-panel of the server for fast configuration	YES		
33.	Have built-in one-to-many monitoring and inventory capability for other servers with the same management controller, without the need for other software and separate monitoring console	YES		
34.	Virtual Media, Virtual Folders, Virtual Console, Virtual Console Chat, Virtual Console Collaboration, Remote File Share support	YES		
35.	HTML5 support	YES		
36.	Monitoring support for temperature, fan power supply, memory, CPU, RAID, NIC, HD, as well as Agent-free monitoring, Predictive failure monitoring, Out of Band Performance Monitoring	YES		
37.	Email Alerting, SNMPv1, v2, and v3 (traps and gets), System Event Log, Remote Syslog support	YES		
38.	Other features			
39.	2 redundant hot plugs	YES		
40.	Power supply for each hot plug	≥ 750W		
41.	Power cables, as many as the number of hot plugs	YES		
42.	The system shall be cooled by at least six hot plug redundant fans.	YES		
43.	Support the ability to define a physical means of restoring the operating system from the BIOS, in case of failure.	YES		
44.	LCD panel on the front for information on consumption in BTU/hr or Watts and temperature and quick access to the system.	YES		
45.	Warranty			

S/N	SPECIFICATION	Requirement	Reply	Reference
46.	Guarantee of good operation from the manufacturer	≥ 5 years		
47.	Hardware response, On-Site within four hours, for critical issues, after remote fault diagnosis, including spare parts and work.			
48.	24x7x365 telephone support from the manufacturer for hardware and software issues.	YES		
49.	Offer manufacturer's service, for the remote installation and configuration of the system.	YES		
50.	Provide a manufacturer's statement for the offered guarantee - support - installation.	YES		

TECHNICAL SPECIFICATIONS FOR THE LICENSES OF OPERATING SYSTEMS

S/N	SPECIFICATION	Requirement	Reply	Reference
1.	Offer Windows Server 2019, Standard, 16 CORE licenses	≥8		
2.	Offer Windows Server 2019, Standard, 2 CORE licenses	≥8		
3.	Offer Red Hat Enterprise Linux, 2SKT, 1 Physical OR 2Guest, 1Yr PREMIUM SUB licenses	≥3		

DATA STORAGE SYSTEM

S/N	SPECIFICATION	Requirement	Reply	Reference
1.	Number of units	2		
2.	Mention the manufacturer and model	YES		
3.	Server and Storage to be from the same manufacturer for comprehensive support	YES		
4.	ISO 9001 quality certificate for the manufacturer	YES		
5.	Offer a single ALL FLASH NAS and SAN system (unified) with unified management software	YES		
6.	The offered storage system shall meet features of high availability with no single point of failure.	YES		
7.	The offered storage system shall offer 99.999% availability	YES		

S/N	SPECIFICATION	Requirement	Reply	Reference
8.	Presence of two (2) active-active storage controllers with automatic failover	YES		
9.	Presence of two (2) CPUs in the array at least 6-core each.	YES		
10.	Have interface ports with 10G Base-T (RJ45) Ethernet servers for iSCSI and NAS interface	≥ 4		
11.	Have interface ports with 16 Gb/s FC servers	≥ 4		
12.	Possibility of expansion with the addition of 10G Ethernet ports (Base-T, or optical, or via TWINAX) and/or 16 Gb/s FC. Have at least two free I/O expansion modules per controller to add additional ports	YES		
13.	Support interface with SAN hosts	≥ 512		
14.	Support Direct Host Attach connection	YES		
15.	Support Max Initiators per Array	≥ 1000		
16.	Total amount of memory offered in the system	≥ 128GB		
17.	The offered storage system shall support natively, from the offered storage controllers: Block Level Access, and File Access (NFS, SMB, FTP) and VVOLS, without the need to use external devices	YES		
18.	LUNs/volumes support	≥ 1000		
19.	VVOLS support	YES		
20.	SNAPSHOTS support	≥ 1000		
21.	REPLICATION SESSIONS support	≥ 1000		
22.	FILESYSTEMS (NAS) support	≥ 500		
23.	Maximum LUN size support	≥ 256TB		
24.	Maximum FILESYSTEM size support	≥ 256TB		
25.	The offered storage system shall support the following interface protocols: <ul style="list-style-type: none"> • NFSv3, 4, 4.1 • CIFS/SMB 1, 2, 3, 3.1 • FTP • SFTP • ISCSI 	YES		
26.	Maximum number of supported disks in basic enclosure	≥ 25		

S/N	SPECIFICATION	Requirement	Reply	Reference
27.	Maximum number of supported disks with expansion enclosures	≥ 300		
28.	12Gb/s SAS ports (back-end connection) for connection of expansion enclosures	YES		
29.	Support RAID 1/0, 5, 6 as well as mixing them	YES		
30.	Maximum RAW capacity supported	≥ 2.3 PB		
31.	Data protection by dynamically distributing them to single drive spaces. In the event of a drive failure, the vital data shall be automatically recognized and dynamically restored to equilibrium so that the array can return to an optimal state faster than if it were in a standard RAID environment.	YES		
32.	FLASH SAS ≥ 1.92TB discs offered	≥ 7		
33.	The above disks in RAID-5 layout	YES		
34.	Total offered useful capacity with indicative profile 80% Read - 20% Write, Block Size 8K, which includes the necessary spare space in case of disk failure.	≥ 7TB 1TB = 1024 ⁴ bytes		
35.	Offered performance with indicative profile 80% Read - 20% Write, Block Size 8K	≥ 47000 IOPS		
36.	In the event of a disk failure, the system shall not be required to add individual disks declared as hot spare	YES		
37.	Available, free disc slots in the offered system on delivery	≥ 18		
38.	In case of failure, support the change of defective components (power supplies, disks, controllers), without affecting the operation of the overall system (hot swap / hot plug)	YES		
39.	Offer all the necessary hardware and software for the complete, central and unified management of the system	YES		
40.	The offered management of the Storage System shall have features of high availability and it shall be able to be performed through: <ul style="list-style-type: none"> • graphical user interface (GUI) • command line interface(CLI) • REST API 	YES		
41.	The solution shall be complete with virtualization solutions such as: Microsoft	YES		

S/N	SPECIFICATION	Requirement	Reply	Reference
	Hyper-V (Systems Center), Openstack, Vmware vSphere, Site Recovery Manager, VAAI and VASA			
42.	Offer asynchronous replication technology for Block & File replication (with another system to be requested in the future)	YES		
43.	Offer synchronous replication technology for Block replication (with another system to be requested in the future)	YES		
44.	Offer the ability to dynamically expand & reduce a filesystem (nas)	YES		
45.	Provide the ability to encrypt data when stored on disks (Data at Rest Encryption/D@RE)	YES		
46.	The above Data at Rest Encryption feature shall be able to be achieved natively, without the need for external Key Management Servers or Software	YES		
47.	If required, support an external key management server	YES		
48.	Offer the possibility of thin provisioning	YES		
49.	Offer Quality of Service (Block and VVols)	YES		
50.	Update the system software (firmware upgrade) of the controllers without having to shut down the entire system	YES		
51.	Size in Rack Units of the offered composition	≤ 2U		
52.	The supply of the system shall be done with dual power supplies (redundant power supplies)	YES		
53.	Support for at least the following operating systems: <ul style="list-style-type: none"> • Microsoft Windows • IBM AIX • HP-UX • Oracle Linux • Oracle Solaris • Red Hat Linux • SUSE Linux • Vmware ESXi 	YES		
54.	The offered storage system shall support the following protocols: <ul style="list-style-type: none"> • SNMP 			

S/N	SPECIFICATION	Requirement	Reply	Reference
	<ul style="list-style-type: none"> • SMTP • LDAP • NDMP • NTP • Link Aggregation for File (IEEE 802.3ad) • Virtual LAN (IEEE 802.1q) • ICMP 	YES		
55.	WARRANTY- TECHNICAL SUPPORT			
56.	Guarantee of good operation from the manufacturer	≥ 5 years		
57.	Hardware response, On-Site within four hours, for critical issues, after remote fault diagnosis, including spare parts and work	YES		
58.	24x7x365 telephone support from the manufacturer for hardware and software	YES		
59.	Offer manufacturer's service, for the on-site installation and configuration of the system.	YES		
60.	Provide a manufacturer's statement for the offered guarantee - support - installation	YES		

FC SWITCH TECHNICAL SPECIFICATIONS

S/N	SPECIFICATION	Requirement	Reply	Reference
1.	1U Rack mount Switch	≥ 4		
2.	The model and the construction company shall be mentioned	YES		
3.	Have the necessary components for installation on the rack	YES		
4.	Fiber Channel Switch	YES		
5.	Active FC 16Gb ports with their SFPs, per switch	≥ 8		
6.	Include OM4 LC/LC Fiber Cable, 3 Meter	≥ 6		
7.	Ability to activate 16 additional ports (for a total of 24 on each switch)	YES		
8.	Maximum Aggregate bandwidth	≥ 768 Gbps		
9.	Embedded management & diagnostics	YES		
10.	OTHER REQUIREMENTS			
11.	Guarantee of good operation from the manufacturer	≥ 5 years		

S/N	SPECIFICATION	Requirement	Reply	Reference
12.	Include 24x7x365 telephone support for issues related to the manufacturer's software and hardware	YES		
13.	The equipment shall be covered by the manufacturer's warranty, with on-site repair and response within 4 hours from the fault diagnosis, for critical faults	YES		
14.	Offer manufacturer's service, for the on-site installation and configuration of the system.	YES		
15.	Provide a manufacturer's statement for the offered guarantee - installation	YES		

Participants are asked to fill in the columns "*Reply*" and "*Reference*" in the above tables. In the "*Specification*" column, the corresponding technical terms, obligations or explanations for which corresponding answers shall be given are described in detail.

If the column "*Requirement*" is filled in with the word "YES" or a number (which means mandatory numerical size of the specification and requires compliance) then the corresponding specification is mandatory for the candidate Contractor, considered as an inviolable term in accordance with this Call. Bids that do not meet completely inviolable terms shall be rejected as unacceptable.

For cases where there is a "YES" in the title of requirements, which is analyzed in individual characteristics, it is considered that the requirement includes all the individual characteristics and an answer shall be given for each one separately. This note does not apply when there is a separate analysis for the requirement of each special feature.

Where there is nothing filled in the "*Requirement*" column, unless otherwise explicitly stated or provided in any other point in the specifications that it is not a mandatory requirement, the corresponding specification is not mandatory for the supplier, but is a desirable feature.

The "Reply" column shows the Contractor's answer in YES/NO form, regarding whether or not the corresponding specification is met by the Bid or a numerical is provided indicating the quantity of the corresponding feature in the Bid. A simple affirmation or explanation does not constitute proof of fulfillment of the specification and the competent Committee has the obligation to check and confirm the fulfillment of the requirement (especially if it is a minimum requirement).

In the "*Reference*" column, there shall be clear reference, per cell, to other points of the Technical Bid or to an Annex thereof, which will include numbered Technical Manuals or detailed technical descriptions of the services, software or way of connection and operation or

reports on installation and support methodology. etc., which, at the discretion of the candidate Contractor, document the data of the Compliance Tables. At the beginning of the Annex, a detailed table of its contents is recorded.

All the above documentation will be a separate party of the bid, numbered per page. It is highly desirable to complete the references in full, which shall be as specific as possible (e.g. Technical Manual 3, Page 4, Paragraph 4, etc.). Accordingly, in the technical manual or in the relevant report, methodological tool, technique, etc., the point that documents compliance or exceeded coverage will be underlined, along with the corresponding paragraph of the Compliance Table, in which the requested specification is recorded (e.g. Spec. 4.18). Generic details or ambiguous references may be grounds for rejection of the bid.

Participants may also offer equipment with technical features that are better than the ones mentioned above.

Installation

All equipment will be installed in the Racks of the two (2) data centers of ThPA SA. The above shall also include any other added spare part necessary for the overall and proper operation of the system (connection cables, installation kits in RACK, etc.). If they so wish, each candidate can be informed of the existing systems at ThPA SA.

In case of assignment, the participant shall acquire and install the equipment in consultation with the Information & Communications Technology Department in days and hours that will not affect the operation of the Company.

The installation of all the equipment, its configuration and the training that will follow, will be done by a **certified** engineer/partner of the Contractor, with the appropriate technical experience, in consultation with the Information & Communications Technology Department of ThPA SA.

The solution is "*turnkey*". The contractor shall be solely responsible for the integration of the proposed equipment in ThPA SA's network and its proper operation, according to the plan.

Also, the equipment that will be installed shall be:

- new, unused and shall not derive (including its parts) from a rebuilding or any similar process
- in the original packaging and shall derive from the official branch of the manufacturer
- declared to the original buyer and covered by an official warranty and technical support

Finally, for any software related to the above equipment, the buyer will be the only authorized user.

Training

The contractor shall conduct at least 2 three-hour training seminars on the management of the new equipment, to at least 6 employees and partners of the Information & Communications Technology Department, after the successful completion of the installation and within the next two weeks. The seminars will be delivered preferably day by day, so as not to disturb the operation of the Department. The training will take place either at the offices of the Information & Communications Technology Department of ThPA SA or via teleconferencing systems.

Documentation

The contractor shall provide ThPA SA with all the operating manuals of the devices, the user licenses and the installation files of all types of software. Upon completion of the installation of the equipment and software, a complete recording of the physical connections of the installed equipment, as well as any other documentation material of the installation that may be required (serial numbers, host names, IPs, user names / passwords, etc. shall be delivered to the Information & Communications Technology Department of ThPA SA in printed and electronic form (editable, e.g. MS OFFICE files).

Support

- The offered guarantee - technical support shall be offered by the equipment **manufacturer**
- There shall be 24x7 telephone and electronic support from the equipment **manufacturer**.
- The support shall cover the equipment in its entirety or individually and have a duration of **at least five (5) years, with on-site repair and response within 4 hours of fault diagnosis**, for critical faults, on the premises of ThPA SA, including spare parts and labor.

THE MANAGING DIRECTOR– CHIEF EXECUTIVE OFFICER OF THPA SA

FRANCO NICOLA CUPOLO