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RESOLUTION 21: "Provision of technology services by ATHEX"

(Codified into a single text to include the decision dated 31.01.2023 of the Stock Markets Steering Committee of ATHEX)

ANNEX A

**Provision of services for connectivity to the
Athens Exchange Transactions Network (ATHEXNet)**

Version 1.5

January 2023

Version History

Version	Date	Version description
1.1	December 2005	1 ⁿ version
1.2	May 2007	2 ⁿ version
1.3	July 2008	3 ⁿ version
1.4	November 2014	4 th version
1.5	January 2023	Update of Annex A to include the new telecommunications and network equipment of the members

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1 INTRODUCTION

The Athens Exchange Transactions Network (ATHEXNet) was initially developed in the period 1995-1996, in the framework of implementing the project for the Information Technology development of ATHEX, with the aim of enabling remote trading of shares (Automated Electronic Trading System [ASIS]) as well as other stock exchange products and services in the field of the capital market (Electronic Bond Trading System [SIDO], Dematerialized Securities System [DSS], Integrated Automatic Electronic Trading System [OASIS], etc.).

The main design components of the ATHEXNet infrastructure are:

- ✓ ability to conduct electronic trading from the premises of Users (ATHEX Members, banks, supervisory authorities, etc.),
- ✓ increased degree of reliability and availability,
- ✓ minimisation of operating and maintenance costs,
- ✓ attainment of uninterrupted operation,
- ✓ attainment of maximum data security,
- ✓ ensuring a level playing field in stock markets, and
- ✓ capacity for geographical and technological expansion to meet future needs, by taking full advantage of developments in the fields of telecommunications and networks.ⁱ

ATHEXNet is today the central point for the provision of network connectivity and communication services in the field of the capital market, achieving significant economies of scale and – through the further upgrading and expansion of applications and systems – enabling the effective and modern implementation of solutions to meet business needs in harmonisation with and according to the standards of developed European stock markets.

Through ATHEXNet, **Application Users** that are ATHEX Members, DSS Operators, data vendors and independent software vendors (ISVs) gain access to a range of services. In particular:

- ATHEX offers services to its Members for the use of OASIS applications for trading in securities (OASIS/Securities) and derivatives (OASIS/Derivatives),
- ATHEX offers services for the use of DSS applications for the clearing of transactions in its Securities Market and Derivatives Market.

The development of the ATHEXNet infrastructure as a Private Wide Area Network, with the use of a public telecommunications infrastructure (OTE/Data leased lines, etc.), was carried out in accordance with the requirements/specifications set by all parties involved (Providers and Users of ATHEXNet applications) and resulted in high-standard connectivity via a "shared network" supporting multiple protocols and services, between **Network Application User Connection Nodes** or **User Nodes** at their offices and the main premises of ATHEX.

This text regulates matters pertaining to the provision of ATHEXNet Connectivity Services. Its main purpose is to set out:

- ✓ the terms and general framework under which ATHEX provides ATHEXNet Connectivity Services to ATHEXNet Application Users,
- ✓ the conditions that must be met by Users in order to connect to ATHEXNet.

The content hereof is structured as follows:

- Chapter 2 sets out the definitions and explains key concepts to which reference is made in this text.
- Chapter 3 focuses on the agreement for the provision of ATHEXNet connectivity services for ATHEXNet Application Users and ATHEXNet Application Providers (hereinafter "ATHEXNet Users") and the obligations emanating from the aforesaid agreement for both ATHEX and ATHEXNet Users. Lastly, it refers to the relevant accompanying documents and reference documents for the provision of ATHEXNet connectivity services.
- Chapter 4 addresses the selection of the technical solution through which a User connects to ATHEXNet, depending on the category to which such User belongs (ATHEXNet Application User or ATHEXNet Application Provider) and its particular needs. In addition, in the case of ATHEXNet Application Users, reference is made to the emergency plan.
- Chapter 5 focuses on matters relating to the assistance available to ATHEXNet Application Users and ATHEXNet Application Providers and the Support services provided.
- Chapter 6 explains key concepts pertaining to the Management & Operation of ATHEXNet.
- Chapter 7 covers intellectual and industrial property rights.
- Matters concerning fees and payment method, liability, as well as the duration and termination of relevant contracts for the use of ATHEXNet are set out in Chapters 8, 9 and 10 respectively.
- Lastly, Chapter 11 deals with matters relating to confidential information, subcontractors, applicable law, etc., while the respective accompanying documents, which are an integral part hereof, are attached hereto as Annex I, and the reference documents as Annex II, the latest updated version of which can be found at the web address <https://www.athexgroup.gr>.

2 DEFINITIONS

"Athens Exchange Transactions Network or ATHEXNet": The Private Wide Area Network, with the use of a public telecommunications infrastructure (OTE/Data leased lines, etc.) for provision of connectivity services to ATHEXNet Application Users.

"ATHEXNet Application": Any ATHEX-approved service provided to companies duly authorised by ATHEX to use the application and receive connectivity services through ATHEXNet.

"ATHEXNet Connectivity Service Users or Users": The Users of applications provided via ATHEXNet.

"ATHEXNet Connectivity Services": The network services provided to ATHEXNet Application Users via ATHEXNet network interface ports.

"ATHEXNet Application User": Any entity that acquires the right to use an ATHEXNet application, either as an authorised Member of ATHEX or following the approval by the ATHEXNet Administrator of a proposal from the respective ATHEXNet services provider. The right to use one ATHEXNet application does not automatically entail the right to use another ATHEXNet application of either the same or of another ATHEXNet application provider. By way of indication, the following entities are considered to be ATHEXNet Application Users:

- ° ATHEX Members
- ° DSS Operators (Investment Firms, Credit Institutions)
- ° Clearing Companies (Investment Firms, Credit Institutions)
- ° Data Vendors
- ° ISVs

"ATHEXNet Application Provider": Any entity that provides an ATHEXNet application to other entities (ATHEXNet service users), in the framework of the organisation, continuous development and operation of the Capital Market, following relevant approval by ATHEX. By way of indication, the following entities are considered to be ATHEXNet Application Providers:

- ° Athens Exchange S.A. (ATHEX)
- ° Hellenic Central Securities Depository S.A. (ATHEXCSD)
- ° Athens Exchange Clearing House S.A. (ATHEXClear)

"ATHEXNet Administrator/ATHEXNet Technical Administrator": The person responsible for ensuring the day-to-day smooth operation and provision of technical support to Users, as well as for the necessary maintenance and expansion of the ATHEXNet infrastructure. In addition, the ATHEXNet Administrator shapes the regulatory framework for the operation of ATHEXNet and arranges for its constant updating in a way that responds to the needs of Application Providers and Users.

"ATHEXNet Point of Presence": For the purposes hereof, the Point of Presence (PoP) is the appropriately arranged space on the premises of the ATHEXNet Provider or User, where the ATHEXNet connectivity equipment is installed.

"ATHEXNet Node": The equipment through which ATHEXNet Application Users are provided with ATHEXNet connectivity services via network interface ports. Each ATHEXNet Node comprises a

configuration of router(s) and switch(es) (or a combination of the aforesaid devices) for connecting "(client) terminal" devices of the user to ATHEXNet services.

"ATHEXNet Network Access Port (or ATHEXNet connectivity port)": The port of the ATHEXNet connectivity equipment through which ATHEXNet Application Users are connected to ATHEXNet.

"ATHEXNet usage fees": The one-time and fixed monthly fees paid by ATHEXNet Application Users for the use of ATHEXNet, which are set in accordance with the pricing policy of ATHEX.

"Area of Responsibility of ATHEXNet Administrator/Technical Administrator": The Area of Responsibility of the ATHEXNet Administrator/Technical Administrator at the premises of Users includes:

(a) the installation, set-up, maintenance and proper functioning of the "ATHEXNet connectivity equipment" and "ATHEXNet connectivity ports" at the premises of Users, and

(b) the network interconnection and communication of the Provider's client-server devices from end-to-end, as well as Gateway devices with client-server devices in accordance with the requirements of the respective "User application connectivity service".

"Area of Responsibility of ATHEXNet Application Provider": The responsibility of the ATHEXNet Application Provider is confined to the "Server, Client and Gateway Devices" through which Users are provided with access to Applications of the Provider and the corresponding "User Application Connectivity Service", in the framework of the separate agreements and contracts with Users and the regulations on the administration and operation of the ATHEXNet service.

"Area of Responsibility of ATHEXNet Application User": The responsibility of the ATHEXNet Application User in respect of the use of one or more ATHEXNet Applications and proper communication therewith, through the corresponding Connectivity Service, is limited to: (a) the provisions of its relevant agreements/contracts with the respective Provider, and (b) ensuring the smooth operation of its internal network in the context of the restrictions set by requirements for the installation and operation of the "User application connectivity service".

The area of responsibility of the ATHEXNet Application User is essentially confined to the internal Network of the User, i.e. to all the computer, network and passive equipment which is installed and operates on the premises of the User.

"Head of Management and Financial Matters": The competent person on the side of the ATHEXNet User, who binds and represents the User vis-à-vis the ATHEXNet Administrator with regard to management and operational matters relating to the use of ATHEXNet, in the framework of the provisions hereof.

"Head of Technical Matters": The competent person on the side of the ATHEXNet User, who binds and represents the User vis-à-vis the ATHEXNet Administrator and ATHEXNet Technical Administrator with regard to technical matters relating to the use of ATHEXNet, in the framework of the provisions hereof.

3 AGREEMENT ON THE PROVISION OF ATHEXNET CONNECTIVITY SERVICES

3.1 Object

The purpose of this chapter is to describe matters relating to the agreement on the provision of ATHEXNet connectivity services not only between ATHEX and the ATHEXNet Application Provider but also between ATHEX and the ATHEXNet Application User.

The aforesaid agreement regulates specific issues regarding the provision of ATHEXNet connectivity services, as well as the relevant accompanying documents and reference documents that are specified in paragraph 3.2.

Lastly, the relevant obligations of interested parties which emanate from the said agreement are described below in paragraphs 3.3 and 3.4.

3.2 Accompanying Documents and Reference Documents

The contractual relationships between ATHEX and the ATHEXNet Application Provider, as well as between ATHEX and the ATHEXNet Application User, which emanate from the Agreement on ATHEXNet connectivity services, as well as other matters that are subject to continuous development and modifications aimed at providing an improved and more efficient service to ATHEXNet Users, are adequately documented in the Accompanying Documents and Reference Documents of these presents.

The aforesaid Accompanying Documents are the following:

3.2.1 Athens Exchange Transactions Network (ATHEXNet)

3.2.2 Connectivity/Support Services provided to ATHEXNet Application Users

The above accompanying documents, which are issued and amended on the sole responsibility of ATHEX, are available to ATHEXNet Users on the ATHEX website at <https://www.athexgroup.gr>.

In addition, the content of the accompanying documents and a brief description thereof are provided in Annex I.

ATHEX notifies ATHEXNet Users regarding any changes to accompanying documents one month before such changes are applied, except in cases where the changes must be applied urgently in order to provide an immediate solution to some problem with the functioning of applications.

The aforesaid Reference Documents are the following:

3.2.3 Procedures for the Provision of Connectivity Services to ATHEXNet Application Users

3.2.4 Technical Instructions/Specifications for equipment and tasks for configuring the ATHEXNet/ATHEX Point of Presence (PoP) infrastructure on the premises of ATHEXNet Application Users

3.2.5 Procedures for the Provision of Support to ATHEXNet Application Users

The above Reference Documents, which are issued and amended on the sole responsibility of ATHEX, are available to ATHEXNet Users on the ATHEX website at <https://www.athexgroup.gr>.

In addition, the content of the Reference Documents and a brief description thereof are provided in Annex II.

ATHEX may provide additional services to ATHEXNet Users. In such a case, there will be a supplementary agreement between ATHEX and the ATHEXNet User which will describe the additional services. There may also be a supplementary agreement in cases where there are deviations in the terms and conditions of the present Agreement in order to satisfy specific requirements of ATHEXNet Users which may be accepted by ATHEX.

The provisions hereof are applicable for all Supplementary Agreements, unless otherwise agreed.

3.3 Obligations of ATHEX

ATHEX provides connectivity services in accordance with the provisions hereof on the provision of ATHEXNet connectivity services and the specific needs of ATHEXNet Application Providers or ATHEXNet Application Users.

ATHEX may modify the services it provides, either by upgrading and optimising the technical environment, or by making changes when these are technically necessary. ATHEX reserves the right to temporarily suspend its services during the modification period after first notifying the ATHEXNet Application Provider or ATHEXNet Application User within a reasonable period prior to implementation of the modifications.

ATHEX shall make every possible effort to provide continuous and uninterrupted connectivity services to ATHEXNet Application Users in accordance with the obligations emanating from and falling within the Area of Responsibility of the ATHEXNet Administrator/Technical Administrator.

ATHEX has the obligation to provide ATHEXNet Application Providers and ATHEXNet Application Users with technical support services on a daily basis in respect of issues relating to the proper functioning of the ATHEXNet infrastructure.

3.4 Obligations of ATHEXNet Users

The ATHEXNet Application User, in order to meet its particular needs for connecting to ATHEXNet, must cooperate with ATHEX in a manner that facilitates the selection of the best possible technical solution for implementation.

The ATHEXNet Application User must pay to ATHEX the one-time and the monthly fees for the use of ATHEXNet (see Chapter 8) which are applicable for the connectivity technical solution it has selected (see Chapter 4) as well as for any additional service it may receive (e.g. transfer, conversion of node type, access speed upgrade, etc.).

The ATHEXNet Application User must fulfil all its obligations emanating from and falling within the Area of Responsibility of the ATHEXNet Application User.

The ATHEXNet Application User is responsible for:

- √ the safe operation, in compliance with the particular specifications, of the equipment installed in the Data Centre on its premises;
- √ complying with instructions relating to the specifications of the structured cabling that connects computer equipment to the ATHEXNet network node, as well as to the specifications of the cables used as carriers of the ATHEXNet telecommunications circuits.

The above are described in the relevant reference document 3.2.4.

In addition, the ATHEXNet Application User is responsible for:

- √ complying with the instructions regarding the precautions it must take in order to safeguard the equipment of the ATHEXNet node against unwanted interference from third parties;
- √ the operation of the equipment provided to it, in compliance with the relevant instructions of ATHEX,

in accordance with the details set out in the relevant accompanying document under 3.2.2.

The ATHEXNet Application User must allow ATHEX, or its subcontractors, to access its premises if this is deemed necessary by ATHEX and provided reasonable notice has been given, for reasons pertaining to the implementation of this agreement.

The ATHEXNet Application User must not use the equipment provided to it by ATHEX for any purpose other than the one described herein for the provision of ATHEXNet connectivity services.

The use of the equipment may not be transferred. The ATHEXNet Application User may not change, sell or rent the equipment, nor make it available to a third legal entity (even if the latter is an ATHEX Client), unless provision for this has been made in the terms and conditions hereof for the provision of ATHEXNet connectivity services. The ATHEXNet Application User may not permit use of the equipment and software by any third party, nor may they be used for the benefit of any third legal entity.

The ATHEXNet Application User must ensure that its computer environment (software and hardware) does not cause malfunctions and problems in the environment of the Services provided by ATHEX.

If it is found that irregular operation on the part of the ATHEXNet Application User is causing problems to ATHEX Services, ATHEX reserves the right to partially or fully suspend the ATHEXNet Application User's access.

The ATHEXNet Application User undertakes the technical support and maintenance of the network equipment and related cable infrastructure on its premises.

The ATHEXNet Application User bears sole responsibility for the development and acceptable operation of the infrastructures on its premises.

4 TECHNICAL SOLUTION FOR A USER'S INTERCONNECTION WITH ATHEXNET

4.1 General

The ATHEXNet User may select the connectivity technical solution that best suits its operating plans.

Specifically in the case of ATHEXNet Application Users, the available types of ATHEXNet nodes differ with respect to the degree of back-up functionality they provide in the event of faults in hardware and telecommunication circuits. The ATHEXNet User procures the network equipment at its own expense, on the basis of the guidelines and technical specifications of ATHEX, while the telecommunication equipment and telecommunication circuits are made available following an agreement between ATHEX and ATHEXNet Application Users, based on a *commodatum* (loan for use). On expiry of the said agreement, all the above equipment is returned to ATHEX.

For the purposes of the interconnection with ATHEXNet, the network equipment chosen by the ATHEXNet Application User is installed by the supplier in cooperation with ATHEX (for details, see the relevant reference document under 3.2.4). The ATHEXNet Technical Administrator reserves the right to not install the ATHEXNet connectivity equipment if the minimum specifications are not met for the ATHEXNet connection Node in the Data Centre of the User.

The management and operation of the ATHEXNet Node of the ATHEXNet Application User are performed by the ATHEXNet Technical Administrator, who undertakes the daily checking of the proper operation of all the network and telecommunications equipment and the telecommunications circuits between ATHEXNet network ports.

The ATHEXNet connectivity services include:

- determining the choice of the appropriate technical solution for the User's interconnection with ATHEXNet,
- provision of the connectivity equipment according to the specific needs of the ATHEXNet User (see accompanying document under 3.2.2),
- configuration for use by the ATHEXNet Application Provider / ATHEXNet Application User of all the network and telecommunications equipment, the necessary software, as well as the telecommunications circuits. The specific equipment provided to the ATHEXNet User is described in the accompanying document for the ATHEXNet Application User under 3.2.2,
- the management and operation of the connectivity equipment provided (for details, see Chapter 6 below),
- the provision of support services to ATHEXNet Users as described in the relevant reference document under 3.2.5.

4.2 Choice of technical solution

Subject to the restrictions set out in the relevant accompanying document under 3.2.2, the ATHEXNet User has the option to choose:

- ✓ the type of ATHEXNet Node (in the case of an ATHEXNet Application User) or ATHEXNet equipment to be installed at its offices,
- ✓ the number of Nodes to be installed in one or more of its Data Centres (in the case of an ATHEXNet Application User).

The choice of connectivity solution is made with the technical support and cooperation of the Head of Technical Matters on the side of the ATHEXNet Application User and the ATHEXNet Technical Administrator.

Specifically in the case of ATHEXNet Application Users, the ordering of a new ATHEXNet Node or deactivation of an existing Node or transfer of a Node or conversion of ATHEXNet Node type is carried out in accordance with the procedures (special application forms, etc.) and the price list for provided services which are described in the relevant documents 3.2.2 and 3.2.3, as well as in Resolution 24 on the charges applicable for ATHEX Markets.

4.3 Emergency plan

ATHEX enables ATHEXNet Application Users to develop emergency plans that ensure business continuity in exceptional cases where for any reason they are unable to use their Nodes that are permanently connected to ATHEXNet.

In this respect, the ATHEXNet Application User must have:

- √ prepared the backup Data Centre (disaster recovery site) in accordance with the specifications detailed in the relevant document 3.2.4,
- √ subscribed to the Disaster Recovery Node service of ATHEX through the procedures set out in the relevant document 3.2.3,
- √ paid to ATHEX the one-off Fee stipulated in the Price List of ATHEXNet connectivity services for inclusion in the Disaster Recovery Node service.

5 SUPPORT FOR ATHEXNET USERS

5.1 Object

The purpose of this chapter is to set out the terms and conditions under which ATHEX provides support to ATHEXNet Users.

5.2 General Principles

ATHEX Support Services to ATHEXNet Users relate to the services provided daily in connection with:

- * the diagnosis and repair of faults in the network infrastructure,
- * the diagnosis and repair of malfunctions or applications provided through ATHEXNet,
- * advisory services relating to the proper management and functioning of the network infrastructures,
- * choice of the optimal technical solution for connecting to ATHEXNet and checking of the effectiveness of emergency plans,
- * the further development and improvement of applications so that they:
 - √ make best possible use of the advantages afforded by the network infrastructure, and
 - √ are more adaptable to the particularities of the existing network infrastructure.

The above relates solely to ATHEXNet Application Providers.

- * Understanding the specifications and technical guidance issued by ATHEX.

On receiving the request from the ATHEXNet User and depending on the nature of the request, the One-Stop Support Desk of ATHEX provides:

- √ support, and/or the solution to the problem, either by telephone or through the use of remote access,
- √ support, and/or the solution to the problem, by means of an on-site visit when this is deemed necessary.

If a temporary solution (workaround) is given, it will be followed by a corrective resolution as soon as this becomes available.

5.3 One-Stop Support Desk

ATHEX operates a Network Operations Centre (NOC), to which ATHEXNet Users can submit requests relating to malfunctions/technical problems they have encountered when using the services and also be provided with relevant advisory services.

The support services relate only to the Services provided by ATHEX to Clients.

The support services do not cover:

- √ Incompatible installations and non-compliance with the rules and technical specifications as set out in reference document 3.2.4.
- √ Incompatible use of the Services provided, as these are described in the relevant accompanying document.
- √ Non-compliance with rules and procedures as set out in reference documents 3.2.3 and 3.2.5.

5.4 Support Services to ATHEXNet Application Users

In respect of ATHEXNet Application Users, ATHEX

- √ arranges the installation of new ATHEXNet Nodes of ATHEXNet Application Users and the conversion of ATHEXNet Node characteristics as described in the relevant documents 3.2.2 and 3.2.3;
- √ detects and repairs faults in the telecommunications circuits of ATHEXNet Nodes;
- √ replaces the network and telecommunications equipment in the event of hardware faults;
- √ implements procedures for the resolution of problematic issues in cases where the settings of network devices need to be changed in order to repair software faults;
- √ performs remote diagnosis of problems relating to the cables connecting the User's computer systems to the ATHEXNet Node switches at the premises of ATHEXNet Users;
- √ provides advisory services relating to services provided by ATHEXNet.

The Support Services provided to ATHEXNet Application Users are described in detail in the relevant reference document 3.2.5.

6 MANAGEMENT AND OPERATION OF ATHEXNET

6.1 General

The management and operation of ATHEXNet is performed by ATHEX, which in this framework undertakes:

- the daily checking of the smooth functioning of ATHEXNet;
- the detection and repair of malfunctions in ATHEXNet, as well as the repair of faults not only at the level of telecommunications circuits (Hellenic Telecommunications Organization, etc.), but also at the level of active and passive network equipment, in order to ensure the day-to-day proper functioning of ATHEXNet;
- the installation of new ATHEXNet Nodes of Users and the conversion of Node characteristics;
- the activation or deactivation of network ports on the Nodes of Users on the instructions of Providers in order to connect or disconnect computer equipment of the User;
- the satisfaction of requests for the adaptation of ATHEXNet to the needs of ATHEXNet Application Providers in order to meet new application requirements;
- the announcement to ATHEXNet Entities and Users of scheduled changes to ATHEXNet;
- the monitoring of the adequacy of ATHEXNet resources (CPU load of network devices, capacity of telecommunications circuits) and the implementation of upgrades whenever necessary;
- the application of precautionary settings in the equipment of ATHEXNet Users in order to address the possibility of problems arising which have previously arisen and been addressed in the equipment of other ATHEXNet Users;
- the collection and processing of statistical data relating to the operation of ATHEXNet and the use of its resources, as well as the issuance of reports on its performance (Accounting and Performance measurement);
- the development and implementation of a security policy and plan for ATHEXNet;
- the monitoring of contracts with Providers regarding the maintenance and technical support of the active and passive network equipment and telecommunications services of ATHEXNet (Maintenance tracking);
- the physical management of ATHEXNet equipment.

More information regarding the above is available in documents 3.2.1, 3.2.2 and 3.2.5.

7 INDUSTRIAL AND INTELLECTUAL PROPERTY RIGHTS

7.1 Property rights and user licences

The ATHEXNet User acknowledges that all trademarks, trade names, industrial and intellectual property rights used or incorporated in the framework of providing the ATHEXNet connectivity services or in connection with them, are and shall remain the property of ATHEX.

If the ATHEXNet User becomes aware of any breach of the aforementioned rights of ATHEX by a third party, it undertakes the obligation to notify ATHEX without delay.

7.2 Warranties of ATHEXNet Users

The ATHEXNet User warrants to ATHEX that it has all the necessary authorisations, permits and legal property rights for ATHEX to install and provide the requested ATHEXNet connectivity services.

8 FEES AND PAYMENT METHOD

8.1 General

The use of the ATHEXNet connectivity services provided will be priced by ATHEX in accordance with its pricing policy applicable at any time, based on the relevant resolutions of its Board of Directors.

Specifically for the use of the ATHEXNet connectivity services, ATHEXNet Users will pay a one-time and fixed monthly fees as described in detail in Resolution 24. On the side of the ATHEXNet User, the person responsible for handling the above is the Head of Management and Financial Matters.

The above-mentioned fees are subject to the applicable VAT rate.

ATHEX reserves the right to issue additional decisions that modify the cost of the ATHEXNet services when there are special circumstances.

The payment method in respect of the envisaged cost for the ATHEXNet connectivity services will be in accordance with the provisions set out in the documents referenced above.

If an ATHEXNet User does not pay the envisaged fees in accordance with the above, ATHEX will be entitled to charge additional interest on the fees owing for the period of non-payment.

9 LIABILITY

9.1 Specific issues of liability

Neither party shall be liable to the other for loss or damage caused at any time by or arising directly or indirectly from the use of the services, provided it was not due to wilful misconduct or gross negligence of the parties.

ATHEX is expressly released from liability for any actual or consequential loss and loss of profit which may arise in respect of the use of the services provided, or due to a data leak.

If any of the restrictions or provisions concerning the use of technology services provided is declared invalid for any reason whatsoever and ATHEX becomes liable for loss or damage for which in other circumstances the relevant liability would be lawfully excluded, the aforesaid liability of ATHEX may not in any event exceed the actual fee paid by the ATHEXNet User for the preceding twelve months.

9.2 Force majeure

Neither party shall be liable to the other for anything that may constitute a breach in respect of the ATHEXNet connectivity services provided but is caused by a force majeure event, and in particular cases that include – but are not limited to – natural phenomena, perils of the air or sea, fires, floods, drought, explosions, sabotage, accidents, embargoes, riots, civil disturbances, power failures, water damage, legislative acts, acts of public authorities, war, strikes, lockouts, boycotts and blockades, as well as the failure or delay of a subcontractor to fulfil its obligations for the aforesaid reasons. The proviso relating to strikes, lockouts, boycotts and blockades shall also apply in cases where the party or its subcontractor adopts or is subject to similar contradictory measures.

10 DURATION AND TERMINATION

10.1 Duration

The ATHEXNet connectivity services provided will commence as of the relevant decision of the Board of Directors of ATHEX.

10.2 Suspension

The ATHEXNet connectivity services provided may be suspended in the following cases:

The ATHEXNet User breaches a term or condition for the provision of the services in question or – from the viewpoint of the ATHEXNet User – ATHEX is unable to restore the services to the reasonable satisfaction of the other party, within a period of thirty (30) days and following written notification specifying the breach.

There is repeated failure on the part of the ATHEXNet User or ATHEX to discharge some obligation.

The ATHEXNet User or ATHEX submits or has submitted an application or has obtained a decision for its dissolution, or has proceeded to liquidation, or is found to be reasonably incapable of settling its debts, or has appointed a liquidator, administrator, trustee or other employee with similar powers for all or part of its tangible assets.

This provision does not prohibit the parties from pursuing other available remedies.

10.3 Termination

Upon termination of the ATHEXNet connectivity services provided, the User will at its own expense return to ATHEX the ATHEXNet Node as well as every Document and all copies of Documents, or will completely delete all such copies and furnish ATHEX with a written declaration confirming the aforesaid.

11 MISCELLANEOUS

11.1 Confidential information

All the information, Documents and codes to which reference is made herein, or in other sensitive information relating to the businesses of either of the parties and which may come into the possession of the other party or of its employee, authorised agent or subcontractor (hereinafter referred to as "Information"), are proprietary in nature and confidential. The parties agree that they will use the Information solely as stipulated in the provisions hereof and that during the course of this ATHEXNet Connectivity Services Agreement, as well as after its expiration or termination, they will not disclose the said information directly or indirectly to a third party, without the prior written consent of the other party.

All hardware, software and other materials received in accordance herewith are and shall remain the property of the providing party, while all the aforesaid Information and copies thereof will be duly returned in response to a written request, or will be destroyed at the option of the owner.

These measures have been taken in order to prevent access to information, for which there is no relevant provision herein. If one of the parties obtains access to information for which there is no agreement in breach of the measures taken, that party agrees not to use the said information for any reason whatsoever and not to disclose it directly or indirectly to a third party.

The recipient party warrants that its employees or agents who use or have access to confidential information shall maintain the confidentiality of such information.

11.2 Amendments

ATHEX reserves the right to amend or vary this text and the relevant accompanying documents and reference documents in the framework of the continuous development and optimisation of the connectivity services provided to ATHEXNet Users, in accordance with the relevant provisions of the ATHENS Rulebook in force at any time.

Up-to-date versions of the above will be posted on the ATHEX website (www.athexgroup.gr).

11.3 Subcontractors

ATHEX reserves the right to assign to Subcontractors the fulfilment of its obligations to ATHEXNet Users.

11.4 Applicable Law

The interested parties agree that these presents shall be governed by Greek law.

11.5 Arbitration

The interested parties expressly waive their respective jurisdictions and agree that all disputes which may arise between them (in the framework of their Agreement on the provision of ATHEXNet connectivity services on the basis of this text) and cannot be resolved in an amicable manner will be referred to arbitration in Athens in accordance with the provisions of the Code of Civil Procedure.

11.6 Entry into Force – Amendments

This text shall enter into force on the date of the relevant resolution of the Board of Directors of ATHEX.

Any amendment hereto shall be made after a relevant decision of the Board of Directors of ATHEX and appropriate notification to users.

12 ANNEX I: The Athens Exchange Transactions Network (ATHEXNet)

12.1 Introduction

The Athens Exchange Transactions Network (**ATHEXNet**) of Athens Exchange (**ATHEX**) was initially developed in the period 1995-1996, in the framework of implementing the project for the Information Technology development of ATHEX, with the aim of enabling remote trading of shares as well as other stock exchange products and services in the field of the capital market (Electronic Bond Trading System [SIDO], Dematerialized Securities System [DSS], Integrated Automatic Electronic Trading System [OASIS], etc.).

The main design components of the ATHEXNet infrastructure are:

- √ ability to conduct electronic trading from the premises of Users (ATHEX Members, banks, supervisory authorities, etc.),
- √ "high performance" coverage of ATHEX's London hub, with ability to conduct electronic trading from the premises of remote members,
- √ increased degree of reliability and availability,
- √ attainment of uninterrupted operation and minimisation of operating and maintenance costs,
- √ attainment of maximum data security,
- √ ensuring a level playing field in stock markets, and
- √ capacity for geographical and technological expansion to meet future needs, by taking full advantage of developments in the fields of telecommunications and networks.

This text constitutes the accompanying document for the Athens Exchange Transactions Network (ATHEXNet). The main aim of this text is to explain basic concepts of ATHEXNet (e.g. the technical configuration model, its management and operating model), through which Application Users (e.g. custodian banks, etc.) are given access to the Applications of Service Providers (e.g. ATHEX).ⁱⁱ

12.2 Technical Configuration Model

12.2.1 General

ATHEXNet is a Private Wide Area Network, the main purpose of which is to enable remote trading of shares, derivatives (Integrated Automatic Electronic Trading System [OASIS]), as well as other stock exchange products and applications (Dematerialized Securities System [DSS]), across the entire capital market.

ATHEXNet is today the central point for the provision of network connectivity and communication services in the field of the capital market, achieving significant economies of scale and – through the further upgrading and expansion of applications and systems – enabling the effective and modern

implementation of solutions to meet business needs in harmonisation with and according to the standards of developed European stock markets.

The use of ATHEXNet enables **Application Providers** to offer services to **Application Users** that are their clients (Members). In this framework, ATHEX offers:

- * services for the use of OASIS/shares & derivatives (remote broking and the ODL service) to its Members,
- * DSS services and transaction clearing services in the Securities and Derivatives Markets to ATHEX Members and banks/custodians.

12.2.2 Description of the Technical Configuration Model

ATHEXNet has a star topology with ATHEX as the Central Hub (points of presence at the twin data centres of the ATHEX building, the TSEC and the London hub) and end points:

- the ATHEXNet Application Provider Nodes or Provider Nodes,
- the ATHEXNet Application User Nodes or User Nodes (brokerage firms, banks, supervisory authorities, etc.).

ATHEXNet is divided into three (3) zones or areas (Core Network, Distribution Layer, Access Layer).

The three Areas that make up ATHEXNet are schematically shown in Figure 1 below.

More specifically:

12.2.2.1 Core Network Area

This is the backbone of ATHEXNet, which is located at the main premises of the Group. The central servers of ATHEXNet Application Providers are connected to the network equipment of this Area.

The Core Network of ATHEXNet extends around a central dual point of presence at the data centres of the new HELEX Group. This is the central point for the connection of all points of presence of the ATHEXNet Core Network. The following points are interconnected through a large number of WAN/Ethernet connections and LAN Ethernet connections in a “common network” of multiple protocols and services. In order to ensure increased availability and reliability, in addition to primary connections there are also secondary and alternative connections.

The purpose of the ATHEXNet Core Network is to create a common network infrastructure across the entire capital market for connecting the “central server” devices of Providers (wherever these may be located), and making the applications of these device accessible to Application User Nodes via the Access Layer (see paragraph 3.2.3 below).

12.2.2.2 Distribution Network Area

This is the intermediate layer between the Core Network Area and the Access Network Area. The Nodes of ATHEXNet Users (brokerage firms, banks) are connected to the network equipment of this area. Through this network equipment, ATHEXNet Users communicate with the services of ATHEXNet Providers, while for increased availability and redundancy purposes the equipment of this area is

connected via dual-homing Ethernet connections to the Core Network (for more details, see the Chapter below on Distribution Network).

It extends between the two central points of presence of ATHEXNet and constitutes the intermediate area between the Core Network Area and the Access Network Area of ATHEXNet. Through the equipment of the Distribution Network Area of ATHEXNet, the Nodes of ATHEXNet Users (brokerage firms, banks, etc.) are connected to the services of ATHEXNet Providers.

The network equipment of the Distribution Network Area of ATHEXNet and way it is connected to the equipment of the other two areas is shown in Figure 2 below.

As can be seen in Figure 2, the Distribution network comprises two (2) routers, i.e. one (1) at each of the twin data centres of the new HELEX Group building, thereby creating a Primary/Secondary site configuration. In order to ensure increased availability and reliability, the aforesaid routers connect with the Core Network Area of ATHEXNet through dual interfaces. In addition, the Access network is connected to the Distribution network of ATHEXNet by means of two (2) Ethernet connections and in such a way (see Chapter 4 below) that the router at the Primary or Secondary site of ATHEX can support the connection of all User Nodes to ATHEXNet services, even in the case where the router at the other site (Primary or Secondary) is partially or completely unavailable.

12.2.2.3 Access Network Area

The Access Network Area is comprised of all ATHEXNet User Nodes. Appropriate terminal devices (client) are connected to this area to enable communication with the central server devices of ATHEXNet and the services of ATHEXNet. For the same reasons as those referred to in paragraph 3.2.2 above, the equipment of this area is connected in dual-homing mode to the Distribution network of ATHEXNet.

The equipment and the connections of the Nodes of Users of ATHEXNet Services (ATHEX Members, banks, supervisory authorities, etc.) with **ATHEX** comprise the Access Network of ATHEXNet.

Each User Node comprises a router and switch configuration (or a combination of the above devices) to connect the terminal devices (client) of the user with ATHEXNet services. The terminal devices (client) of users are connected to the switches through the appropriate cabling infrastructure at the user's premises to a network access port (Ethernet), while they are connected – through ATHEXNet – to the central server devices of Application Providers online by means of the family of TCP/IP protocols. Each terminal device (client) of users is connected to a specific port of the switch.

Each User Node interconnection with the ATHEXNet Central Hub is via two (2) connections for increased availability and reliability:

The configuration of a User Node and its interconnection with the ATHEXNet Distribution Network is schematically shown in Figure 3 below.

In general, depending on the degree of availability of ATHEXNet services offered, but also the various interface technologies (telecommunications circuits), ATHEXNet Service Users can choose from the following types of access nodes:

Node Type 1.a.1: Its configuration is the minimum necessary. It has only one leased circuit and active equipment is not supported, which is why it is intended only for connecting the member's Disaster Recovery Site to ATHEX.

Node Type 1.a: Its configuration is characterised by high availability in terms of telecommunication circuits (two leased circuits), but it has a single drop point in the active equipment.

Node Type 2.a: Its configuration is characterised by very high availability in terms of active equipment and high availability in terms of telecommunication circuits (two leased circuits).

For instances of interconnection of ATHEXNet Users from Greece or abroad for specific services of ATHEX, in addition to the above permitted node types, it is possible to connect via Internet with the exclusive use of an encryption channel, IPSec Lan-to-Lan VPN tunnel.

For more detailed information about Application User node types, Access Network Areas and the services provided for connecting Application Users to ATHEXNet, see the Accompanying Document "Connectivity Services Provided to ATHEXNet Application Users".

With regard to the Price List and procedures relating to the connectivity services provided to ATHEXNet application users, more detailed information is contained in the Accompanying Document "Price List for Connectivity Services Provided to Application Users" and the reference Document "Procedures for Connectivity Services Provided to ATHEXNet Application Users".

Lastly, regarding procedures relating to the provision of support to ATHEXNet Application Users, more details are available in the reference Document "ATHEXNet Application User Support Procedures".ⁱⁱⁱ

12.3 Management and Operating Model

The way in which the Management and Operating Model of ATHEXNet/ATHEX is deployed internally at each User Node is shown in Figure 4 below.

According to this arrangement, Management Domains are defined for each entity in connection with ATHEXNet (ATHEX as Administrator/Technical Administrator of the Network, ATHEXNet Application Providers, and ATHEXNet Application Users).

More specifically:

12.3.1 ATHEXNet Administrator/Technical Administrator Management Domain

The ATHEXNet Administrator/Technical Administrator Management Domain at the premises of Users includes:

(a) the set-up, maintenance and proper functioning of the "ATHEXNet connection Equipment" and the "ATHEXNet connection Ports" at the premises of Users, and

(b) the online connection and communication of client devices-Provider server from end-to-end, as well as of Gateway devices (see Figure 4) with client devices/server in accordance with the requirements of the respective "user application connectivity service" (see below).

12.3.2 ATHEXNet Application Provider Management Domain

The responsibility of the “ATHEXNet Application Provider” is confined to the “Server, Client and Gateway Devices” (see below) through which the “ATHEXNet Service” and the corresponding “User Application Connectivity Service” are provided to Users in the framework of the separate agreements and contracts with Users and the rulebook on the management and operation of the ATHEXNet service.

12.3.3 ATHEXNet Application User Management Domain

The responsibility of the “ATHEXNet Application User” regarding the use of an ATHEXNet Application and its proper communication with it, through the respective Connectivity Service, is limited to: (a) the provisions of its relevant agreements/contracts with the competent Provider and (b) ensuring the smooth functioning of its internal network in respect of the restrictions set by the installation and operation requirements of the “user application connectivity service”.

The ATHEXNet Application User Management Domain essentially comprises the internal Network of the User, i.e. all the computer, network and passive equipment installed and operating at the premises of the User. There are no restrictions on the specifications of the user’s internal network other than those that may be required by the “User Application Connectivity Service”. This service is provided through ATHEXNet, by and to capital market participants (ATHEXNet service providers and users respectively), subject to the relevant approval of the ATHEXNet Administrator, for the purpose of connecting the applications of “ATHEXNet Service Users” with “ATHEXNet Services”. Responsibility for providing, managing and operating the service lies with the Provider of the respective ATHEXNet Service.

Communication between applications in the internal network of the User and ATHEXNet is enabled by means of special devices (hardware and software) which are installed at the “ATHEXNet Point of Presence” on the premises of each “ATHEXNet Service User”. These devices are called Gateways and are usually computer systems with two network cards, one of which is connected to an “ATHEXNet Connection Port” and the other to internal network equipment of the User.

Each Gateway device has all or part of the software required for the provision of the “User Application Connectivity Service”. In addition, through the aforesaid device, direct communication (at level 3 and 4 of the ISO Reference Model) with “Client-Server Devices” is prohibited and permitted only through the “User Application Connectivity Service” that is suitable for this purpose. Responsibility for managing and operating these devices in the above framework lies with the Provider of the respective user application connectivity service.

The ATHEXNet Application Provider is also responsible for the maintenance of the software that gives the User access to the connectivity service. This is the application programming interface (API) or application, which is either independent software or part of the software of the “User Application Connectivity Service”. This specific software is installed in computer systems in the internal network of Users, and through it and the corresponding “User Application Connectivity Services” network communication is possible between applications in the internal network of Users and ATHEXNet services.

12.4 FIGURES AND TABLE

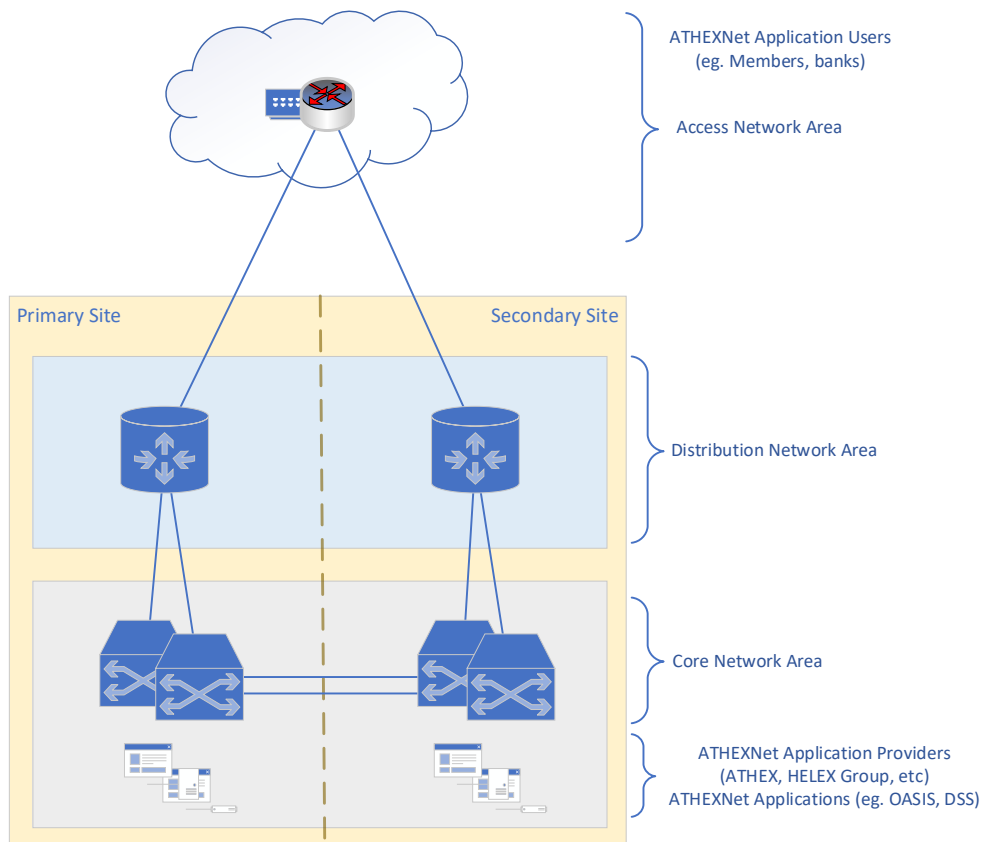


Figure 1: ATHEXNet Zones or Network Areas

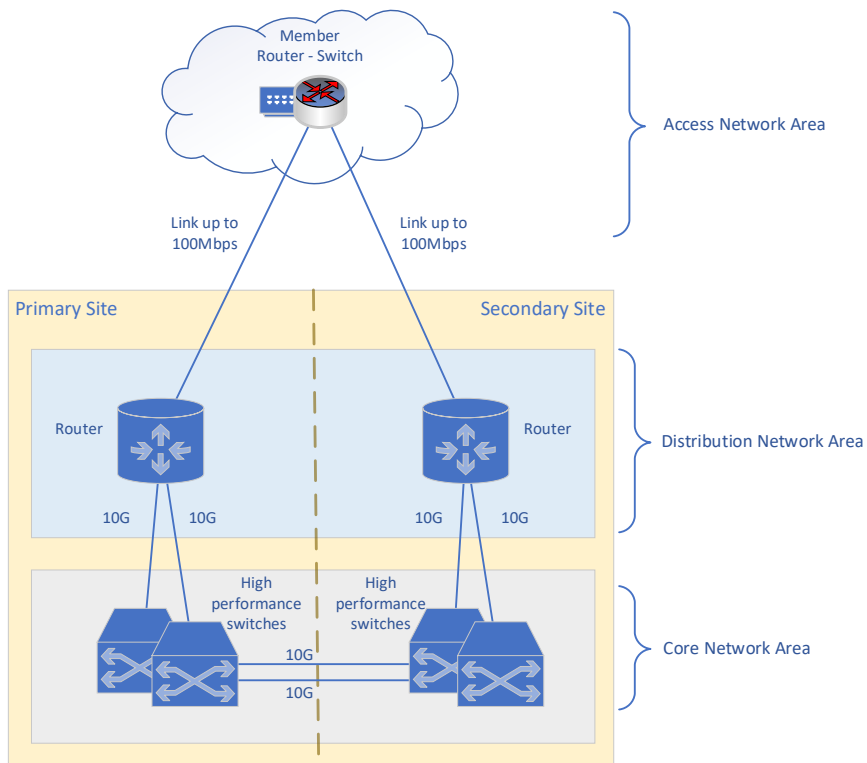


Figure 2: Distribution Network equipment and its connection to other ATHEXNet areas

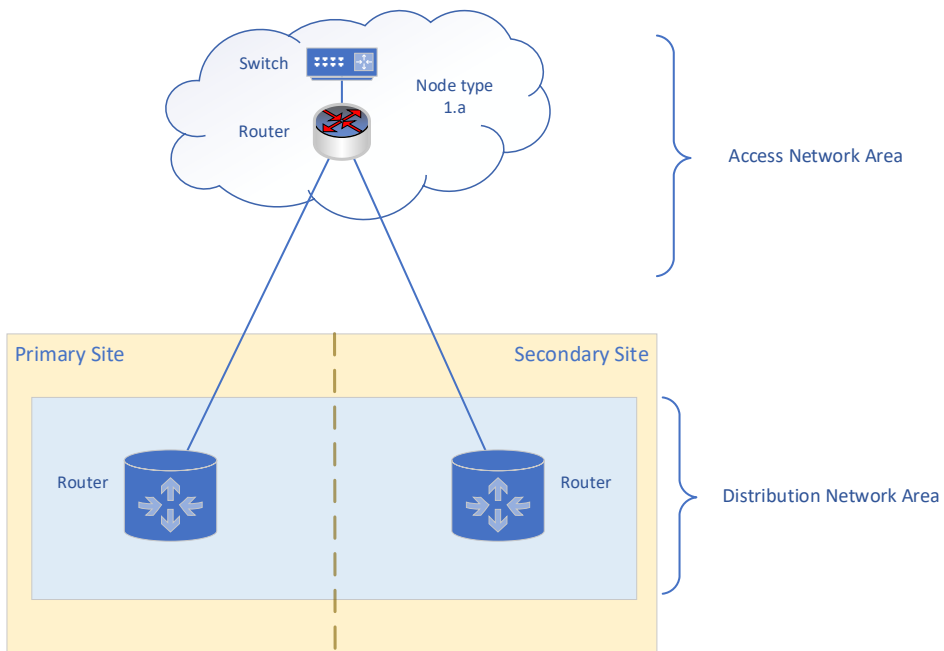


Figure 3: User Node configuration and its connection to the ATHEXNet Distribution network

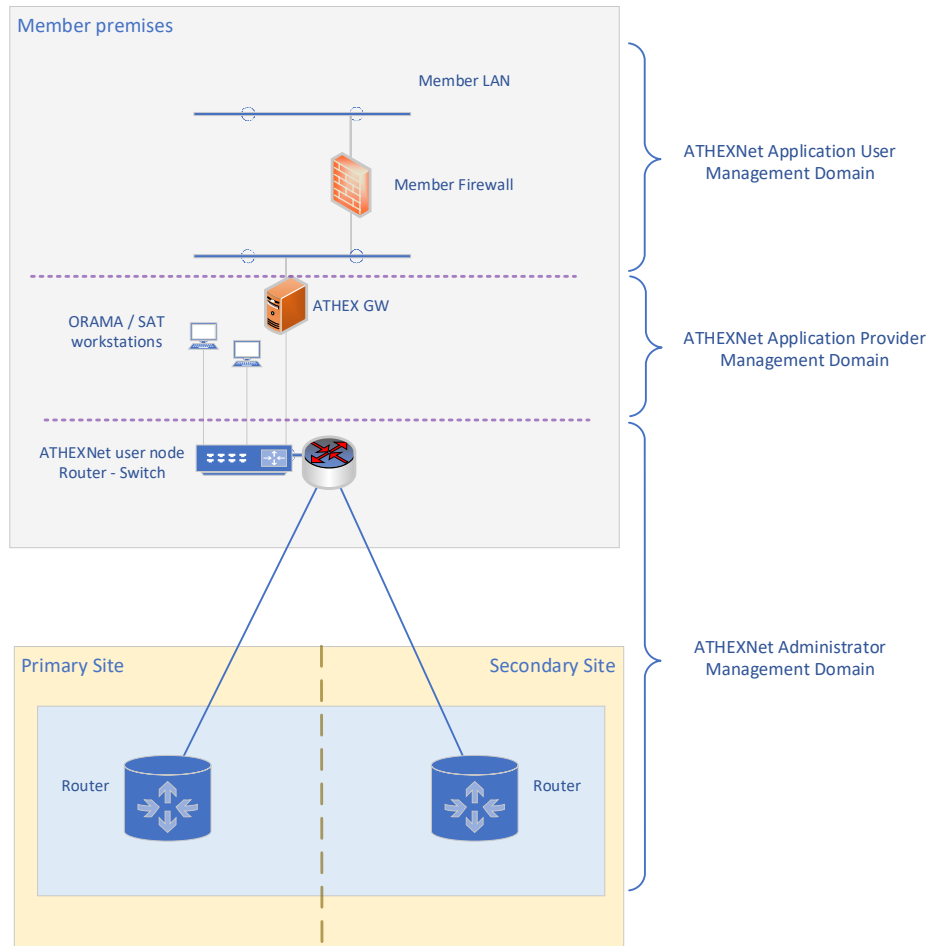


Figure 4: Description of a Member's internal network at each User Node – ATHEXNet/ATHEX Management and Operating Model

**Node with one (1) Cisco Switch
(Node type "1.a")**

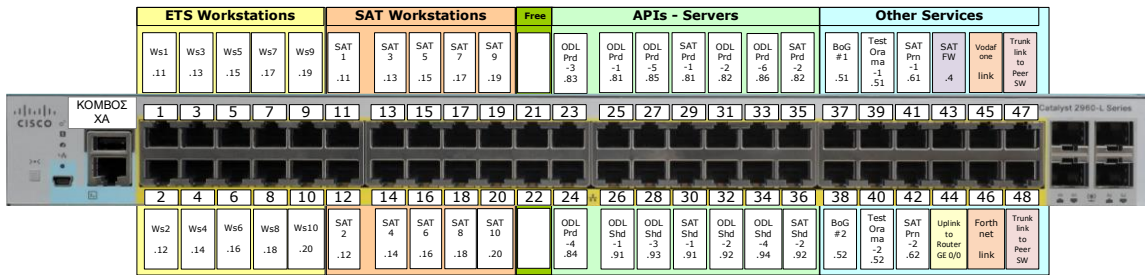


Figure 5: Port configuration at a node with one (1) switch^{iv}

**Node with two (2) Cisco Switches
(Node type "2.a")**

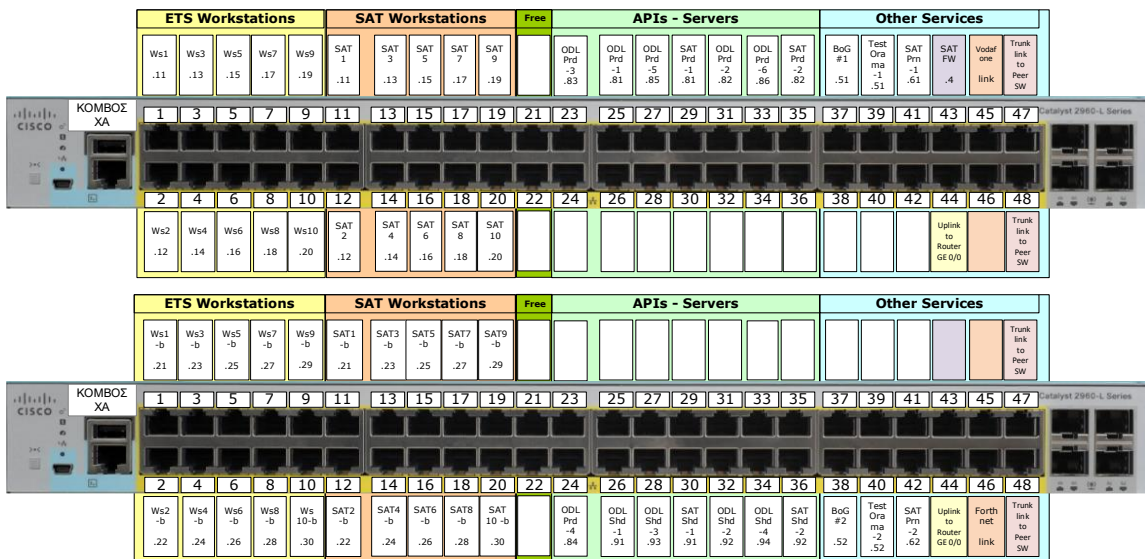


Figure 6: Port configuration at a node with two (2) switches^v

Table 6.1 Points of connection of computer systems to switch network ports ^{vi}

S/N Network Port	Terminal hostname	Terminal Description
1	Ws 1	1 st terminal ORAMA OASIS
2	Ws 2	2 nd terminal ORAMA OASIS
3	Ws 3	3 rd terminal ORAMA OASIS
4	Ws 4	4 th terminal ORAMA OASIS
5	Ws 5	5 th terminal ORAMA OASIS
6	Ws 6	6 th terminal ORAMA OASIS
7	Ws 7	7 th terminal ORAMA OASIS
8	Ws 8	8 th terminal ORAMA OASIS (former internal Control terminal ORAMA OASIS)
9	Ws 9	9 th terminal ORAMA OASIS (former Ws 0 terminal ORAMA OASIS)
10	Ws 10	10 th terminal ORAMA OASIS (former Ws 00 terminal ORAMA OASIS)
11	SAT 1	1 st terminal DSS
12	SAT 2	2 nd terminal DSS
13	SAT 3	3 rd terminal DSS
14	SAT 4	4 th terminal DSS
15	SAT 5	5 th terminal DSS
16	SAT 6	6 th terminal DSS
17	SAT 7	7 th terminal DSS
18	SAT 8	8 th terminal DSS
19	SAT 9	9 th terminal DSS
20	SAT 10	10 th terminal DSS
21	----	Free Network Port

22	----	Free Network Port
23	ODL Production Gateway	Production Application Gateway 3, Securities Market OASIS
24	ODL Production Gateway	Production Application Gateway 4, Securities Market OASIS

Table 6.1 Points of connection of computer systems to switch network ports

S/N Network Port	Terminal hostname	Terminal Description
25	ODL Production Gateway	Production Application Gateway 1, Securities Market OASIS
26	ODL Shadow Gateway	Test Application Gateway 1, Securities Market OASIS
27	ODL Production Gateway	Production Application Gateway 5, Securities Market OASIS
28	ODL Shadow Gateway	Test Application Gateway 5, Securities Market OASIS
29	SAT Production Gateway	Production Application Gateway 1, DSS API
30	SAT Shadow Gateway	Test Application Gateway 1, DSS API
31	ODL Production Gateway	Production Application Gateway 2, Securities Market OASIS
32	ODL Shadow Gateway	Test Application Gateway 2, Securities Market OASIS
33	ODL Production Gateway	Production Application Gateway 6, Securities Market OASIS

34	ODL Shadow Gateway	Test Application Gateway 6, Securities Market OASIS
35	SAT Production Gateway	Production Application Gateway 2, DSS API
36	SAT Shadow Gateway	Test Application Gateway 2, DSS API
37	BoG 1	1 st terminal for the connection of the cash settlement application to the Bank of Greece
38	BoG 1	2 nd terminal for the connection of the cash settlement application to the Bank of Greece
39	TEST ORAMA	Test Application 1, ORAMA OASIS

Table 6.1 Points of connection of computer systems to switch network ports

S/N Network Port	Terminal hostname	Terminal Description
40	TEST ORAMA	Test Application 2, ORAMA OASIS
41	SAT Prn	Network printer 1, for the needs of the DSS
42	SAT Prn	Network printer 2, for the needs of the DSS
43	SAT Firewall	Firewall for the needs of connecting ATHEXNet to the internal network of Members for the DSS services
44	UP Link to Router GE0/0	Retained for the purpose of connecting to ATHEXNet equipment
45	Vodafone Link	Telecommunications Port
46	Forthnet Link	Telecommunications Port
47	Trunk link	Retained for the purpose of connecting to ATHEXNet equipment
48	Trunk link	Retained for the purpose of connecting to ATHEXNet equipment

13 ANNEX II: AVAILABLE NETWORK CONNECTIVITY SERVICES

13.1 General

ATHEX provides Network Connectivity and Support Services to Stock Exchange Application Users (ATHEX Members, DSS Operators, Data Vendors, ISVs, etc.) via the Athens Exchange Transactions Network.

By means of the appropriate configuration (Access network), Users of ATHEXNet service are able to connect to ATHEXNet and communicate through the Distribution network and Core network with the servers of service Providers.

Paragraph 3.2 presents the options available to ATHEXNet Application Users to choose the technical connectivity solution that best suits their business plans depending on:

- their requirements in terms of the degree of availability of the network equipment and telecommunications circuits connecting the User Node to the distribution network,
- the total number of available network ports at each User.

Paragraph 3.3 presents the possibilities available to ATHEXNet Application Users to request the conversion of the characteristics of the technical solution they have chosen.

13.2 Connectivity services for ATHEX Members – DSS Operators

13.2.1 Choice of technical solution for connecting to ATHEXNet

ATHEXNet is managed by ATHEX, which for the provision of services to ATHEXNet users is paid fees as detailed in the relevant resolution on charges applicable to ATHEX Markets.

ATHEXNet Application Users are able to choose the type of ATHEXNet node as well as the telecommunications interface (e.g. connection speed) considered adequate to meet their operational needs. In the present phase, for the Athens area, two (2) Ethernet telecommunications circuits (underground fibre optic), each with a speed of 12 Mbps have been selected as the most advantageous solutions from an economic and technical perspective. With regard to ATHEXNet nodes, the available types are described in paragraph 3.2.1.

The network equipment is provided by ATHEXNet Application Users and is in conformity with the specifications issued by the **ATHEXNet Technical Administrator (i.e. ATHEX)**.

ATHEX places orders with its collaborating telecommunications providers for the construction of telecommunications circuits of appropriate specifications for connecting the premises of ATHEXNet Application Users with the Core Network. The circuits belong to ATHEX and the ATHEXNet User installs its equipment of choice in collaboration with ATHEX at a Data Centre which the user has set up on its own responsibility and in accordance with the guidelines and specifications issued by ATHEX (see reference document “Technical Guidelines – Specifications of equipment and tasks for configuring the ATHEXNet/ATHEX Point of Presence (PoP) at the premises of ATHEXNet Application Users”).

For ATHEXNet connectivity purposes, the network equipment is calibrated and passes under the exclusive control of the ATHEXNet Technical Administrator.

The management and operation of the ATHEXNet Node of the User are performed by the ATHEXNet Technical Administrator, who undertakes the daily checking of the functionality of all the network and

telecommunications equipment as well as of the telecommunications circuits of ATHEXNet nodes in accordance with the stipulations of the reference document “ATHEXNet Application User Support Procedures”.

The ATHEXNet connectivity services, which ATHEX provides to ATHEXNet Application Users, include:

- determining the choice of the appropriate technical solution for the User's interconnection with ATHEXNet,
- configuration for use by the ATHEXNet Application Provider / ATHEXNet Application User of all the network and telecommunications equipment, the necessary software, as well as the telecommunications circuits,
- the management and operation of the connectivity equipment provided,
- the provision of support services to ATHEXNet Users.

The ATHEXNet User has the option to choose:

- the type of ATHEXNet Node to be supplied and installed at its offices,
- the address at which the ATHEXNet equipment will be installed,
- the number of Nodes to be installed in one or more of its Data Centres (in the case of an ATHEXNet Application User).

The connection of each new ATHEXNet Node or deactivation of an existing Node or transfer of a Node or conversion of ATHEXNet Node type is carried out in accordance with the procedures detailed in the accompanying document “Procedures for the Provision of ATHEXNet Application User Connectivity Services”. The ATHEXNet User, depending on the technical solution it chooses, pays the corresponding ATHEX fees for the use of ATHEXNet as set out in the relevant ATHEX resolution on charges.

The choice of connectivity solution is made with the technical support and cooperation of the ATHEXNet Technical Administrator.^{vii}

13.2.2 Choice of ATHEXNet node type

The choice of ATHEXNet node type is made on the basis of the technical characteristics of the different node types. In summary, the available ATHEXNet User node types are shown in the following table:

Available ATHEXNet node types			
Node type code	Routers	Switches	Leased circuits
Type 1.a.1	1	1	1
Type 1.a	1	1	2
Type 2.a	2	2	2

Table 13-1 Available ATHEXNet node types

The technical characteristics of ATHEXNet nodes are detailed in paragraph 13.7.

In addition, in the case of ATHEXNet Users based abroad, as well as for the needs of Disaster Recovery sites, Users are given the option to choose node type 1.a.1 i.e. with one (1) instead of two (2) telecommunications circuits.

Lastly, ATHEXNet Users have the option to **connect, through a firewall, their internal network to the ATHEXNet node of their Offices. In this way they will have access to the services provided in this way by ATHEX (indicatively: collocation services, DSS).**^{viii}

firewall device “behind” the router(s) at their offices, with appropriate settings for the protection of their internal network.

13.2.3 Connectivity services in the Athens area

For the ATHEXNet User node types described above, the following types of charges apply:

a) One-time installation fees, which include the remuneration to ATHEX for the work provided by its technicians, as well as the charges of telecommunications providers relating to the installation of telecommunications connections.

b) Fixed monthly fees, which include the telecommunications fees of providers, as well as connection fees for the network ports used in ATHEXNet.

All the above fees are payable to ATHEX. For more detailed information on charges, see the relevant ATHEX resolution on Market charges.

13.2.4 Connectivity services in the Thessaloniki area

The types of applicable charges are those described in paragraph 3.2.3 above, for the node type and telecommunications connection circuits chosen by the User.

More specifically, the one-time installation fees and fixed monthly fees for new connections are set as appropriate, depending on the connection type and requirements in each case.

For more detailed information on charges, see the relevant resolution of ATHEX.

13.2.5 Connectivity services in other areas of Greece excluding Athens and Thessaloniki

The types of applicable charges are those described in paragraphs 3.2.3 and 3.2.4.

13.2.6 Connectivity services from abroad

The types of applicable charges are those described in paragraphs 3.2.3 and 3.2.4.

13.2.7 Conversion of ATHEXNet nodes

In addition to the main service for the connection of networks to ATHEXNet through the activation of ATHEXNet Application User nodes, other services are also provided such as:

- √ ATHEXNet User node transfer services
- √ ATHEXNet User node type conversion services

The procedures for the submission and satisfaction of requests relating to the aforementioned services are described in detail in the reference document “Procedures for the Provision of ATHEXNet Application User Connectivity Services”. The fees for implementation of the above services are described in detail in the relevant resolution on charges applicable to ATHEX Markets.

13.2.8 Creation of a Disaster Recovery node

ATHEXNet Users can also choose the Disaster Recovery node service.

The following connection options are available:

- a) 1st connection option: Two (2) telecommunications circuits
- b) 2nd connection option: One (1) telecommunications circuit

The procedure for satisfying requests relating to this service is described in detail in the reference document “Procedures for the Provision of ATHEXNet Application User Connectivity Services”. The fees for implementation of the above services are described in detail in the relevant resolution on charges applicable to ATHEX Markets.

13.3 ATHEXNet Connectivity Services for Independent Software Vendors (ISVs)

13.3.1 In the Athens area

For each type of ATHEXNet node chosen by an ISV, the following connection options are available:

- a) 1st connection option: Two (2) telecommunications circuits
- b) 2nd connection option: One (1) telecommunications circuit

13.3.2 In other areas of Greece excluding Athens

The types of applicable charges are those described in paragraph 3.3.1 above, for the node type and telecommunications connection circuits chosen by the User.

More specifically, the one-time installation fees and fixed monthly fees for new connections are set as appropriate, depending on the connection type and requirements in each case.

For more detailed information on charges, see the relevant ATHEX resolution.

13.4 ATHEXNet Connectivity/Hosting Services for Data Vendors

The following three (3) ATHEXNet connectivity/hosting solutions are available to Data Vendors.

13.4.1 1st connection option (via the Internet)

By choosing this connection type, Data Vendors gain access to Data via the Internet.

For more detailed information on the charges for this connection, see the relevant ATHEX resolution on charges.

13.4.2 2nd connection option (via Ethernet interface)

This connection type enables Data Vendors to connect to ATHEXNet and gain access to Data through an appropriate telecommunications connection device, router and Ethernet RJ45 interface.

In this particular case, services are also provided for the hosting of the Data Vendor’s aforesaid device at the Data Centres of ATHEX.

For more detailed information on the charges for this connection, see the relevant resolution of ATHEX on charges.^{ix}

13.5 Software Installation Services

ATHEX gives Users of OASIS technical services the option to themselves install the necessary software for accessing the services provided (e.g. OASIS/Securities, OASIS/Derivatives, DSS, etc.).

In cases where Users prefer the necessary software to be installed by ATHEX, the appropriate technicians are provided to perform the relevant software installations.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6 Other services provided

13.6.1 Preventive maintenance and monitoring of the proper functioning of Members' Gateway systems (Securities & Derivatives subsystem)

These services include:

- √ the installation of new software application versions (upgrades) for Gateways
- √ daily technical administration and monitoring of proper functioning (system administration) and
- √ timely notification of any hardware malfunctions to Users' technical administrators for the purpose of their repair.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.2 Server Hosting for Members' OASIS Gateway systems

This service involves the provision of a Server computing system for the installation of Gateway application software for the Securities or Derivatives subsystem and includes the following:

- √ Operating system upgrades
- √ Installation and upgrades of antivirus software
- √ Guarantee of good operation of system hardware, which includes the repair and/or replacement of components by the supplier (if required)

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.3 Preventive maintenance and checking of proper functioning of Members' DSS-API systems

These services include:

- √ the installation of new DSS-API software versions
- √ daily technical administration and monitoring of proper functioning (system administration) and
- √ timely notification of any hardware malfunctions to Users' technical administrators for the purpose of their repair.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.4 Monitoring of the smooth functioning of Data Vendor interfaces

This service relates to the daily monitoring of the operating performance of the telecommunications circuits connecting Data Vendors to ATHEXNet.

In addition, it provides Data Vendors' technical administrators with timely notification of any malfunctions in their ATHEXNet interface circuits, so that the necessary steps can be taken to resolve them.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.5 Technical administration of ATHEXNet User node (in Greece)

This service relates to:

a) The technical administration of the telecommunications circuits connected to the central nodes of ATHEXNet and includes:

- i)** the daily monitoring of the operating performance of the telecommunications circuits,
- ii)** communication with circuit providers for the purpose of restoring the smooth operation of circuits in cases of malfunctions.

b) The technical administration of ATHEXNet User node equipment, which includes:

- i)** the daily monitoring of the smooth operation of the active equipment of the ATHEXNet node,
- ii)** communication with providers for the purpose of restoring the smooth operation of nodes whenever necessary,
- iii)** the configuration of settings to serve the operating needs of Users' applications.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.6 Technical administration of ATHEXNet User node (outside Greece)

These services are the same as those described in paragraph 3.6.5, with the exception of a (ii) and b (ii) where communication with providers/suppliers is the responsibility of the Member.

For more detailed information on the charges for these services, see the relevant ATHEX resolution on charges.

13.6.7 Access to the Test environment of the Securities Market

This service gives ATHEX Members access to the Test environment of the Securities Market, so that they can familiarize themselves by performing tests in the operating environment of the ATHEX Securities Market. Such access is provided on a daily basis during regular business hours and days.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.8 Access to the Test environment of the Derivatives Market

This service gives ATHEX Members access to the Test environment of the Securities Market, so that they can familiarize themselves by performing tests in the operating environment of the ATHEX Derivatives Market. Such access is provided on a daily basis during regular business hours and days.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.9 Access to the Test environment of the DSS

This service gives ATHEX Members access to the Test environment of the DSS, so that they can familiarize themselves by performing tests in the DSS operating environment. Such access is provided on a daily basis during regular business hours and days.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.10 Access of Data Vendors to the Test environment

This service enables Data Vendors to access the data feed Test environment, so that they can familiarize themselves by performing tests in the respective operating environment. Such access is provided on a daily basis during regular business hours and days.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.11 Application development support for Users of ATHEX Technology Services

13.6.11.1 ATHEX Members – DSS Operators – Independent Software Vendors

This service provides technical support (e.g. via telephone, e-mail or the drafting of additional technical instructions) to ATHEXNet Users (ATHEX Members, ISVs, etc.) for the development of applications for use in the Securities Market, Derivatives Market and DSS.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.11.2 Data Vendors

This service provides technical support (e.g. via telephone, e-mail or the drafting of additional technical instructions) to Data Vendors for the development of applications for use in connection with the ATHEX Data Feed.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.12 Co-location services for ATHEX Members

The main advantage gained by users of these services is the closer proximity to the central services of the OASIS trading system, given that **ATHEX Members have faster communication with the central systems of OASIS at speeds ranging from 100 Mbps to 1 Gbps.** ^x

13.6.12.1 Monthly rental cost of Rack (42U)

This service is provided in combination with the services of paragraphs 3.6.12.2 ("Monthly cost for provision of additional power") and 3.6.12.3 ("Co-location of ATHEX Members' Gateway systems").

This particular service includes 1.5 kVA power consumption.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.12.2 Monthly rental cost of ½ Rack (21U)

This service is provided in combination with the services of paragraphs 3.6.12.2 ("Monthly cost for provision of additional power") and 3.6.12.3 ("Co-location of ATHEX Members' Gateway systems").

This particular service includes 0.75 kVA power consumption.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.12.3 Monthly cost for provision of additional power (1 kVA)

This service is provided in combination with the services of paragraphs 3.6.12.1 and 3.6.12.2.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.13 Co-location of ATHEX Members' Gateway systems (Securities/Derivatives)

This service enables the co-location of ATHEX Members' Gateway systems at the Data Centre of ATHEX, for the main purpose of providing closer proximity to the central services of the OASIS trading system of ATHEX in order to achieve speeds of up to 1 Gbps.

It entails the following charges:

(a) Fixed monthly connection charge (depending on the technical solution selected by the Member) and

(b) Fixed monthly charge for co-location equipment (per U).

There is a choice of three (3) connectivity options:

(a) Connection via Internet (VPN tunnel over Internet).

(b) Connection via the Member's existing circuits for connecting with ATHEXNet.

(c) Connection via an independent leased line and active network equipment of the Member.

For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.6.14 Technical Support from an ATHEX Engineer/Technician, outside the framework of the pre-agreed services (on business days, during working hours 09:00-17:00)

ATHEX has appropriate qualified technical staff for cases where technical support is requested outside the framework of the technology services already provided to ATHEXNet Users.

In such cases, the relevant charge is specified in the resolution on charges for ATHEX Markets.

13.6.15 Technical Support from an ATHEX Engineer/Technician, outside the framework of the pre-agreed services (outside business days/working hours)

The same applies as stated in paragraph 13.6.14 above.

For details of charges outside business days/working hours, see the relevant ATHEX resolution.

13.6.16 Use of Common Access Points (CSPs) at the premises of ATHEX

ATHEX Members and DSS Operators are provided with the option to install and set up a CSP environment according to the needs of each Member/Operator.

More specifically, they can use one (1) to six (6) terminals (ORAMA, DTW/DCW or DSS) as well as printing capability, the use of a telephone and fax transmission.

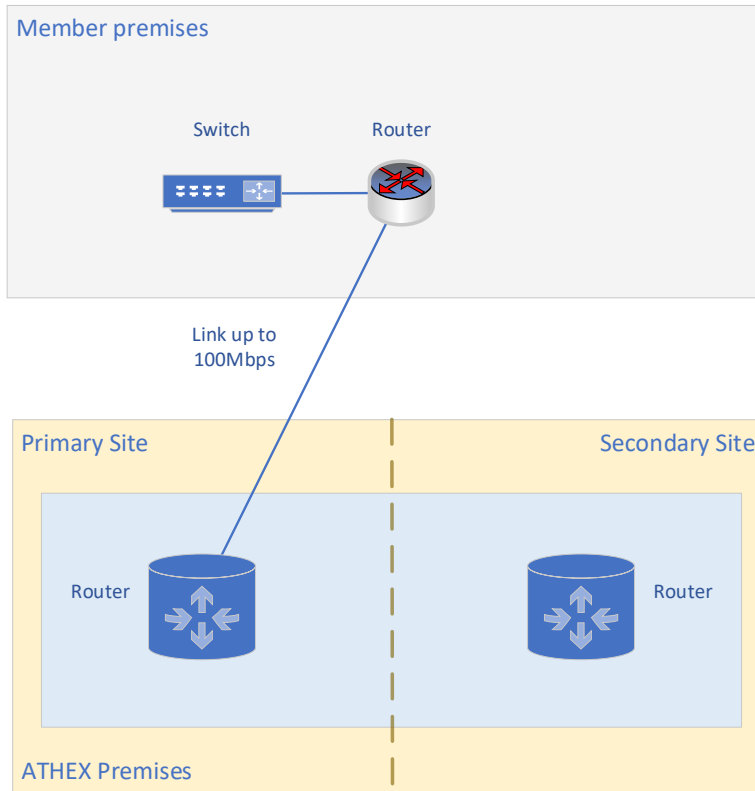
For more detailed information on the charges for this service, see the relevant ATHEX resolution on charges.

13.7 Technical characteristics of the different ATHEXNet node types

13.7.1 ATHEXNet node type 1.a.1

Its configuration is the minimum necessary. It has only one leased circuit and active equipment is not supported, which is why it is intended only for connecting the member's Disaster Recovery Site to ATHEX.

The node consists of one (1) switch (Cisco Catalyst), one router (Cisco **ISR**).



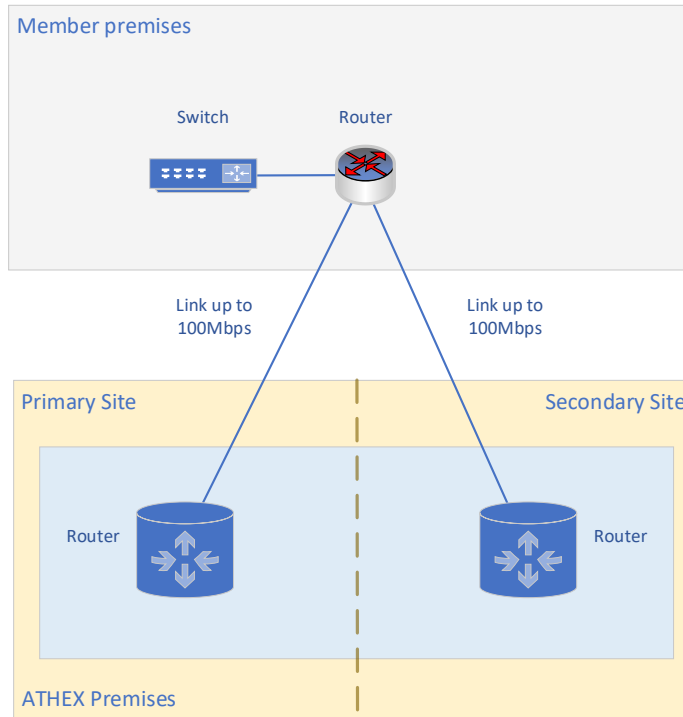
Type 1.a.1

Figure 13-1 Configuration of Node type 1.a.1

13.7.2 ATHEXNet node type 1.a

Its configuration is characterised by high availability in terms of telecommunication circuits (two leased circuits), but it has a single drop point in the active equipment.

The node consists of one (1) switch (Cisco Catalyst), one router (Cisco **ISR**).



Type 1.a

Figure 13-2 Configuration of Node type 1.a

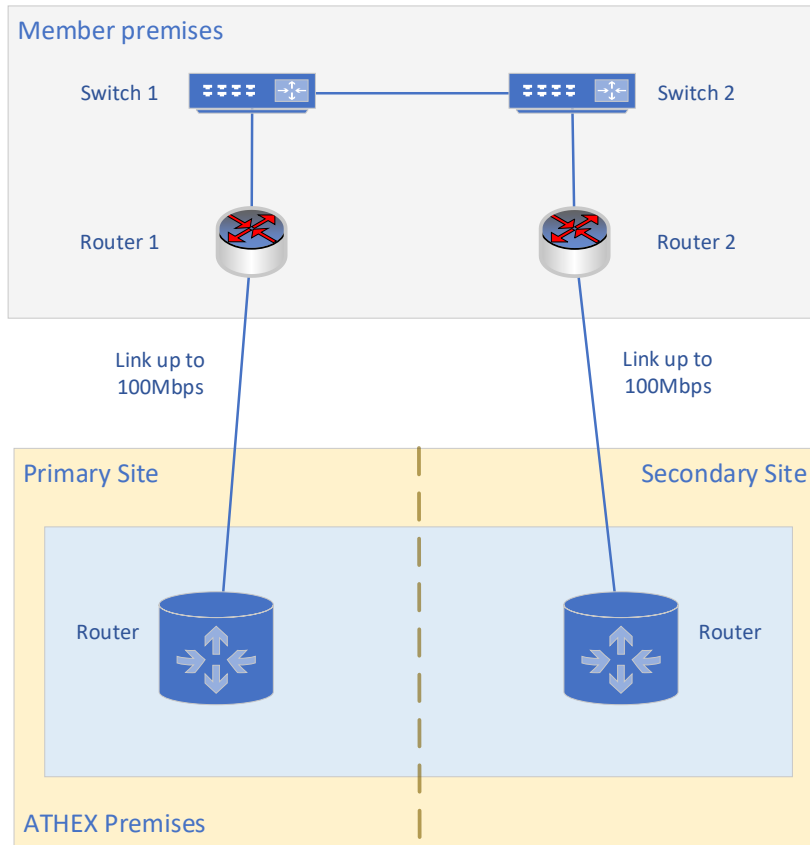
All the node status problems relating to node type 1.a are summarized in the following table:

Failure map – Node type 1.a					
Router	Down	Up	Up	Up	Up
Switch	Up	Down	Up	Up	Up
Forthnet Link	Up	Up	Down	Up	Up
Vodafone Link	Up	Up	Up	Down	Up
Node status	Down	Down	Up	Up	Up

13.7.3 ATHEXNet node type 2.a

Its configuration is characterised by very high availability in terms of active equipment (two routers and two switches) and high availability in terms of telecommunication circuits (two leased circuits).

The node consists of two (2) switches (Cisco Catalyst 2960), two routers (Cisco 2821) and one IP phone 7970G.



Type 2.a

Figure 13-3 Configuration of Node type 2.a

All the node status problems relating to node type 1.a are summarized in the following table:

Failure map – Node type 2.a							
Router 1	Down	Up	Up	Up	Up	Up	Up
Router 2	Up	Down	Up	Up	Up	Up	Up

Switch 1	Up	Up	Down	Up	Up	Up	Up
Switch 2	Up	Up	Up	Down	Up	Up	Up
Forthnet Link	Up	Up	Up	Up	Down	Up	Up
Vodafone Link	Up	Up	Up	Up	Up	Down	Up
Node status	Up	Up	Up	Up	Up	Up	Up

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13.8 Minimum specifications for ATHEXNet User Node premises

The technical specifications listed below relate to the configuration of the necessary infrastructure (space for the placement of the ATHEXNet active equipment, structured cable infrastructure, power supply, etc.), in the building of each remote point for the placement of the ATHEXNet active network equipment.

13.8.1 A. Space for the placement of the ATHEXNet active equipment:

Within a special 19-in metal mounting construction, there should be empty space for a 25 Rack Unit (height of 135 cm) for the placement of each ATHEXNet node:

Description of node 1.a.1 or 1.a equipment	Rack Unit for node type 1.a.1 or 1.a
1 route Cisco ISR	1 U
1 Switch Catalyst	1 U
1 terminal device for the fibre optic circuits	10 U

1 or 2 Ethernet converters of telecom providers	2 U
Patch panel for the structured cabling (48 U)	2 U
Total	16 U

Description of node 2.a.1 equipment	Rack Unit for node type 2.a
2 router Cisco ISR	2 U
2 Switch catalyst 2960 switches	2 U
1 terminal device for the fibre optic circuits	10 U
2 Ethernet converters of telecom providers	2 U
Patch panel for the structured cabling (48 U)	2 U
Total	18 U

The space in which the metal mounting construction is installed must be air-conditioned and with controlled access (hereinafter “ATHEXNet distribution frame”).^{xii}

13.8.2 B. Installation of Structured Cabling Infrastructure

13.8.2.1 B1 Installation of telecommunications circuit cables:

- Fibre optic cables

Installation of fibre optic input cable for circuit terminations.

The ATHEXNet User must assist the fibre optic circuit provider in routing the fibre optic cables from the street line of the building to the data centre. In cases where the office building is not owned by the ATHEXNet User, the latter must obtain permission from the building administrator for the performance of works for the routing of the fibre optic cables inside the building. ATHEX has secured the contractual obligation on the part of the provider to make good any damage caused by the cable routing works.

- Wireless link cables

Installation of antenna and cable termination of the wireless circuit.

The ATHEXNet User must assist the wireless link circuit provider in installing the antenna and routing the cables from the roof of the building to the data centre. In cases where the office building is not owned by the ATHEXNet User, the latter must obtain permission from the building administrator for the performance of works for the installation of the antenna and the routing of the cables inside the building. ATHEX has secured the contractual obligation on the part of the provider to make good any damage caused by the cable routing works.

- Hellenic Telecommunications Organization (OTE) cables

Installation of a four-pair (at least) cable for connecting the ATHEXNet distribution frame to the OTE main distribution frame (usually in the basement) of the building. The specifications of this cable must be at least UTP Category-3 (but preferably UTP Category-5).

Routing and termination of the above cable, to a patch panel with at least four (4) RJ45 connectors placed in the mounting construction in the ATHEXNet distribution frame and to a wall-mounted distribution terminal strip with ten (10) positions, placed in a secure metal frame next to the OTE distribution frame. The termination of the above cable at its two ends should be prepared so that one pair of the cable terminates at each RJ45 port of the ATHEXNet distribution frame, and specifically at pins 3, 4 of the RJ45 port.

Termination of one (1) telecommunications circuit (OTE/ISDN/BRI) which connects the building of the ATHEXNet User to the ATHEXNet central node at ATHEX (via the cable infrastructure specified above). Labelling of the ports of the ATHEXNet distribution frame on which the aforesaid line is listening.

13.8.2.2 B2 Installation of structured cabling:

Creation of a horizontal structured cabling system with UTP Category-6 specifications (recommended) to cover all possible workposts on the premises of the building. Gathering of all the horizontal cabling at a patch panel placed in the mounting construction in the ATHEXNet distribution frame. The exclusive use of UTP Category-6 materials (cables, sockets, patch panels) is required, as well as of plastic ducts, false ceiling or false floor for the routing of cables. Provision should be made for at least one (1) RJ45 socket at each workpost.

Existence of UTP Category-6 RJ45 to RJ45 patch cords, with a length of one (1) meter (for use in the ATHEXNet distribution frame) and three (3) meters (for connecting user terminals to sockets).

Electric power supply: Permanent power supply to all the telecommunications and network equipment from Uninterrupted Power Supply (UPS) equipment with a capacity of ≥ 1.5 kVA. It is also recommended that provision be made for an uninterrupted power supply also for user terminals to ensure their undisturbed operation in the event of a power cut or voltage drop.

14 ANNEX III: RELEVANT REFERENCE DOCUMENTS

14.1 Procedures for the Provision of Connectivity Services to ATHEXNet Application Users

14.2 Technical Instructions/Specifications for equipment and tasks for configuring the ATHEXNet/ATHEX Point of Presence (PoP) infrastructure on the premises of ATHEXNet Application Users

14.3 Procedures for the Provision of Support to ATHEXNet Application Users

ⁱ Paragraph 2 of Article 1 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

ⁱⁱ Article 12.1 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

ⁱⁱⁱ Article 12.2 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{iv} Image 5 of Article 12.4 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^v Image 6 of Article 12.4 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{vi} Table 6.1 of Article 12.4 was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{vii} Paragraph 13.2.1 of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{viii} Paragraph 13.2.2 of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{ix} Paragraph 13.4 of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^x Paragraph 13.6.12 of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{xi} Paragraph 13.7 of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.

^{xii} Paragraph 13.8.1.A of Annex II was replaced as above by virtue of decision 190/31.01.2023 of the Stock Markets Steering Committee with effect as of the date of activation of the ATHEX FIX Trading service in the productive Trading System.