Product Description
Ethernet Services

Contents

2015

EVOLINK AD

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1. PURPOSE OF THIS DOCUMENT

1.1 Scope

The purpose of this document is to describe Evolink network, the procedures at Evolink related to service provision and description of Internet Access and MPLS VPN services including SLA.

Evolink offers MPLS IP VPN services in accordance to RFC2547/RFC4364 and later RFCs describing such service.

1.2 Definitions and abbreviations

Definition/abbreviation	Description
IT	Information Technology
IP	Internet Protocol
Customer site	Location of the customer premises.
Last mile connectivity	Connectivity from Evolink PoP to end-point at customer site
CPE	Router or other communication device used by the customer to connect to Evolink network and to use the service at the particular customer site
Customer Interface	The interface made available by Evolink to Customer at the Demarcation Point, to which the Customer can connect the Customer Equipment.
Demarcation Point	Hand-over point of a given Evolink service to Customer
In-house cabling	The cabling from Evolink demarcation point to the customer equipment or to other premises or equipment at the customer site
Incident	Every event that deviates from the standard operation of the services and which can or interrupts the services or partially affects the service performance
MPLS	Multiprotocol Label Switching. Communication technology applied in the backbone networks based on label switching using multiple protocols to enable the delivery of advanced services in a secure and scalable manner
MPLS backbone network	Evolink backbone built based on MPLS technology
Evolink PoP	Point of Presence of Evolink in a particular geographic location in datacenter type premises owned or controlled by Evolink, housing Evolink network equipment used to provide services to customers
Kbps	Kilobit per second (1024 bps, also abbreviated as Kbit/s)
Mbps	Megabit per second (1024 Kbps, also abbreviated as Mbit/s)
SLA	Service Level Agreement
VPN	Virtual Private Network

CoS	Class of Service
QoS	Quality of Service
L2	Layer 2 of the OSI model
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
CRM	Customer Relationship Management
ERP	Enterprise Resource Planning
Broadband IP	Broadband Internet Access
ISDN	Integrated Services Digital Network

2. Service Description

2.1. Internet Access (IP Transit)

Evolink's IPv4 and IPv6 peering relations with over 500 international and Bulgarian networks and direct links to at least two TIER-1 carriers guarantee seamless services with premium performance and throughput.

Evolink is focused on providing speed and availability to match the highest requirements of both service providers and enterprises. The resilient network performance and the talented team of engineers allow us to offer industry leading SLA for all the services provided by the company including the Internet Access services. Our services are designed as flexible as possible to meet every need even of the most-demanding customers and the variety of communication services offered could make the best combination for everyone.

Extending further the standard IPv4 service, Evolink provides full-feature IPv6 service, either as native or dual-stacked with IPv4.

Benefits and features

All Internet Access services come with the following benefits and features:

- **Guaranteed bandwidth**. Unlike all shared Internet services with the Evolink Internet Access services you can be sure you get 100% what you pay for at any time;
- **Fully symmetrical service.** There are no limitations on upload and download speeds;
- **Fiber-based high bandwidth solutions.** Ensures high quality and scalability of the services. All services are fast and easily upgradable and new services added via the same pipe, lowers your costs and gives you high flexibility;
- **Support of static or dynamic routing** with BGP-4 protocol;
- **Ethernet based.** Allows for a wide choice of bandwidth, flexibility, scalability and cost efficiency.
- **IPv4 or IPv6** address space registration. As RIPE registrar we can provide support for registering of both IPv4 and IPv6 addresses spaces. Evolink network is well connected to IPv6 backbones;
- **24x7 proactive Network Operation Center.** Our engineers are not only there 24/7 to answer any questions regarding the service performance but you can be sure they will call you upfront in case our systems show any incidents with your service;
- **Web interface** for service monitoring.

Value Added Services

Evolink provides upon request and further negotiation the following value-added services:

- Autonomous System (AS) registration assistance;
- Rent or sale of equipment;
- Co-location for customer equipment at Evolink Data Center or cloud services;
- Preferential routing, traffic prioritization and filtering.

a. Types of Internet Access Services

Four types of Internet Access services are supported by Evolink:

A. Primary Internet.

Primary Internet provides you with global Internet access via IP Transit to all international upstream providers (at least two) and over 400 international peers of Evolink.

Advantages:

- Frees managers to focus on core business and reduces cost;
- Highly resilient and secure network;
- Low latency connectivity;
- Provides the best IP routes at the most competitive price;
- One hop to Tier1;
- Proactive network management;
- 24/7 support team;
- Delivering bandwidth-on-demand –from 1 Mbps up to 10 Gbps;
- Available at any Evolink PoP locations.

B. Internet Local Traffic - Partial IP Transit (Bulgaria only)

Internet Local Traffic provides you with access to all Bulgarian networks via partial IP Transit to all Bulgarian peers of Evolink.

Advantages:

- Reduces costs;
- Provides flexibility of choice depending on the needs for specific traffic;
- Highly resilient and secure network;
- Low latency connectivity;
- Provides the best IP routes in Bulgaria at the most competitive price;
- Proactive network management;
- 24/7 support team;
- Delivering bandwidth-on-demand –from 1 Mbps up to 10 Gbps;
- Available at any Evolink PoP locations.

C. Business Internet

Business Internet is a combination of both of the above and provides you with full connectivity to the whole Internet based on IP Transit to all international upstream providers (at least two) and over 400 international peers and all Bulgarian peers of Evolink.

Advantages:

- Reduces costs;
- Highly resilient and secure network;
- Low latency connectivity;
- Provides the best international and Bulgarian IP routes at the most competitive price;
- Proactive network management;
- 24/7 support team;
- Delivering bandwidth-on-demand –from 1 Mbps up to 10 Gbps;
- Available at any Evolink PoP locations.

D. Remote Peering.

Remote Peering provides you with direct access to Internet exchanges from any Evolink PoP without committing to significant investments through our network and partnership with:

- DE-CIX - Founded in 1995, DE-CIX in Frankfurt is the Internet Exchange that provides direct and settlement-free IP interconnection ("peering") infrastructure to over 450 leading internet providers from 52 countries.
- BIX – the Bulgarian Internet eXchange. Established in the mid 2009, BIX.BG is the first neutral Bulgarian Internet eXchange Point (IXP) located in Sofia. More than 40 members are joined to it through high speed connections.

With remote peering you are not required to build dedicated infrastructures at these exchanges. Instead you connect with them remotely, enabling you to reduce capital costs and potentially benefit from enhanced network performance due to lower latency.

Advantages:

- A cost-effective and efficient opportunity for additional routing options;
- No far end equipment needed, peer directly from your existing router;
- Delivering bandwidth-on-demand – 100 Mbps up to 10 Gbp;
- Low latency connectivity directly to the Internet exchanges;
- Available at any Evolink PoP locations.

2.2. Virtual Private Networks

Evolink's Cisco and Juniper based highly resilient and fully redundant national network with over 30 PoPs around the country guarantee premium performance and seamless services.

Extending the network to international locations, building PoPs in Frankfurt, Amsterdam, New York and Bucharest and constantly adding new ones, gives you the opportunity to receive the services as close to home as possible and provides you with full control by our engineers to the last PoP.

Evolink is focused on providing the highest quality to match the requirements of even the most demanding customer. Always challenged with innovation and new technologies we are constantly on the lookout for adding more value into our services and ways to provide more competitive and cost-saving services. The focus on quality, flexibility, innovation and competitive pricing makes Evolink a desirable partner for every company willing to achieve the highest results at a reasonable price.

Evolink's Virtual Private Network (VPN) services provide a reliable and secure connection between geographically dispersed customer sites in any location in Bulgaria or globally. Evolink provides and supports the following types of VPN services:

a. Types of VPN Services

2.2.1 IP Ethernet Connect

IP Ethernet Connect provides a reliable and secure IP VPN connection between all customer sites irrespective of their location. The service follows all world recognized standards and it is provided over Evolink's MPLS network. Evolink can provide IP Ethernet Connect services not only all over Bulgaria but through its PoPs in Frankfurt (Germany), Amsterdam (The Netherlands), New York (USA), Bucharest (Romania) and Skopje (Macedonia) and our partners we can provide services to any location worldwide. This solution enables customers to manage multiple applications and IT systems such as CRM, ERP, video conferences, voice services, standard email, web-based applications, etc. benefiting from the network advantages such as speed, security, scalability, QoS and traffic management.

Advantages of the IP Ethernet Connect service:

- ✓ High efficiency
  - IP Ethernet Connect is a financially efficient solution helping customers to cut down costs for leased lines benefiting from the advantages provided by the intelligent MPLS network of Evolink;
  - IP Ethernet Connect add even more efficiency by providing the functionality of the full-mesh communication between all sites as opposed to the more costly "any-to-any" site communication;

- No need for specific VPN equipment at each customer site.

✓ Easy to manage and highly scalable
- IP Ethernet Connect provides is easy to manage, to add new sites to an existing client IP VPN network and to change the ports capacity;

✓ Security
- IP Ethernet Connect separates the customer traffic from any other traffic within Evolink's network;

✓ Quality
- IP Ethernet Connect allows the identification of different types of customer traffic and their prioritization based on packet data labeling of and not based on IP address.
- IP Ethernet Connect provides a secure platform for transport of multimedia, voice and data over a scalable network.

Technical Specification

IP Ethernet Connect features:

- MPLS based service in accordance with RFC2547/RFC4364;
- Access ports: 100% guaranteed capacity to Evolink MPLS network at all PoPs of the company;
- Access ports capacity: as requested by the customer, from 256 Kbps up to 100 Mbps;
- Access ports physical interface: Ethernet 10/100/1000Mbps;
- Network access method (Link type): Fiber-optic Ethernet line between the customer location and a PoP from Evolink MPLS Network;
- Class of Service (CoS): Implemented mechanism for categorizing different types of data packets according to their business criticality. Service classes are determined according to the applications used by the customer over the VPN and prioritized accordingly. Evolink IP MPLS Ethernet Connect VPN service supports four CoS types:
  - Class A – Premium Traffic: this class is recommended for Voice over IP (VoIP), Video over IP, and other time-critical data.
  - Class B – Critical Traffic: this class is suitable for high-priority, delay-sensitive data services.
  - Class C – Business Traffic: this class is appropriate for medium-priority data applications where time-sensitivity is less critical.
  - Class D – Normal Traffic: is used for applications with the lowest business priority and which are not time-sensitive.
- Managed CPE: delivery, installation and support of a router or other end-device for each customer site;
- Link layer port protocol: Ethernet;
- Technical support: 24/7 NOC;
- Service monitoring: IP VPN port loading monitoring via web interface.

2.1.2 L2 Ethernet Connect

L2 Ethernet Connect provides a secure and reliable connection on a Link Layer 2 level between geographically dispersed customer sites into one corporate network. The service is based on world standards and is provided via Evolink MPLS network following the customer needs and requirements.

Advantages of the L2 Ethernet Connect service:

- ✓ High efficiency
  - L2 InterCity Ethernet Connect is a cost-effective solution based on the intelligent Evolink MPLS network which reduces the initial facility investment and communication costs and the operation, maintenance and management costs;
  - The client requests and pays only for the capacity he needs.

- ✓ Easy management
  - L2 InterCity Ethernet Connect is a turn-key solution ready for direct implementation and easy management by the customer;
  - L2 InterCity Ethernet Connect enables easy migration and integration with the existing Layer 2 level networks;

- ✓ Security
  - L2 InterCity Ethernet Connect provides high security level without any intervention by the Evolink regarding the IP routing of the customer;

- ✓ Quality
  - L2 InterCity Ethernet Connect provides high quality and reliability based on the MPLS Traffic Engineering and Class of Service.

Technical Specification

L2 Ethernet Connect features:

- 100% guaranteed capacity for each customer Layer 2 virtual circuit;
- Type of each virtual Layer 2 circuit: 100% symmetrical virtual channel for data transfer;
- No limit on the bandwidth of the customer Layer 2 virtual circuits: from 1 Mbps up to 10 Gbps (for certain nodes of the Evolink IP MPLS network);
- Network access method (Link type): Ethernet links with the necessary capacity;
- Proactive CPE monitoring;
- Technical Support: 24x7 NOC;
- Service monitoring of the load, performance and the correct functionality of the customer Layer2 virtual circuits via WEB interface

2.2 Value-added services

✓ Managed CPE

Evolink provides upon request end-devices to be placed at each customer VPN site. The equipment is provided during the contract term as part of the service. This solution provides the following benefits:

- Control and monitoring of all quality service parameters at the customer end-points;
- Enhanced network security;
- Fast and unified installation of the whole VPN service;
- Full hardware and software support of the provided equipment;
- Lower investment costs for the customer.

✓ Back-up

- Last mile connectivity redundancy: Evolink provides different type backup last mile connectivity to the customer site depending on the desired level of service redundancy and customer preferences (fiber link, wireless connection, broadband IP, ISDN);
- Equipment redundancy: Evolink provides and installs backup CPE in one or more customer sites;
- Central VPN port redundancy: Evolink can build a backup central VPN port at a location requested by the customer.

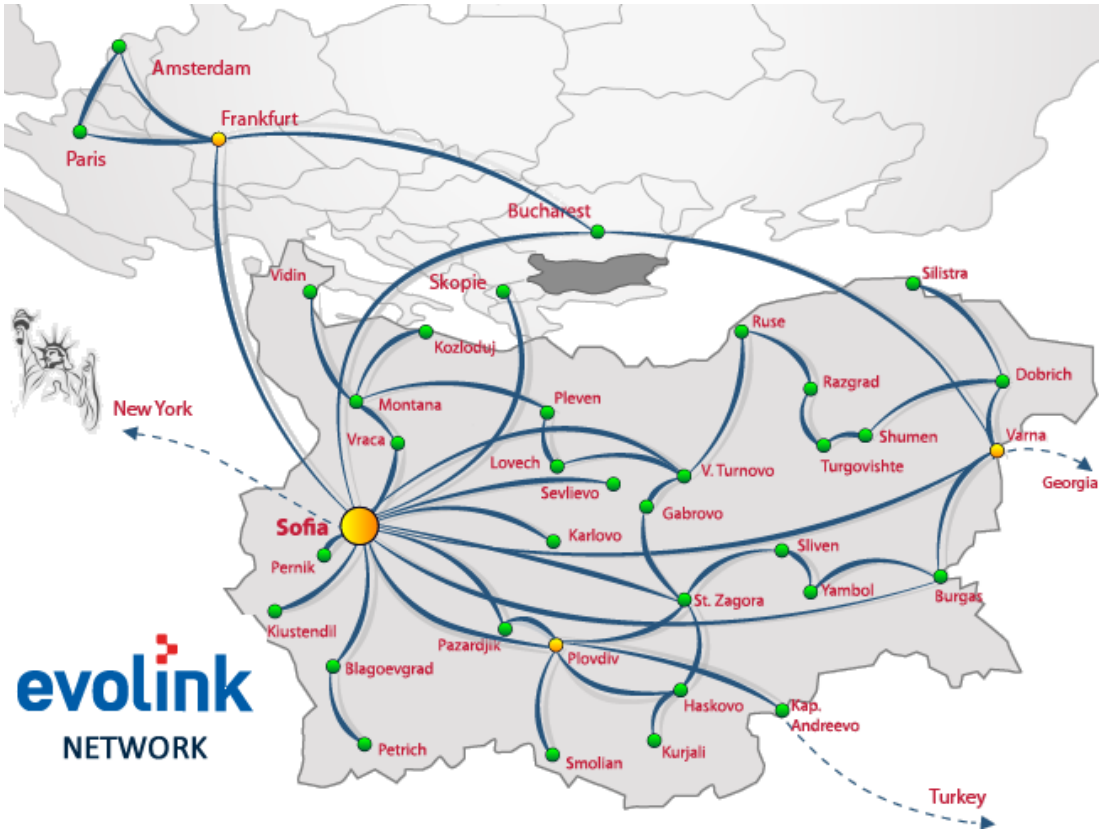
✓ Dedicated engineer

Evolink allocates a qualified engineer to consult the customer on all technical issues related to the services.

✓ Personalized service and quality monitoring platform based on Evolink VPN Manager.

3. EVOLINK Network

Fig. 1



Key Network Parameters

a) Number of PoP's (Point of Presence) of EVOLINK in Bulgaria > 40

b) Number of managed 10Gbps interfaces > 150

c) Number of managed Layer 2 and IP interconnects via direct fiber links to carriers and peering partners in Bulgaria > 50. Member of BIX since 2010

d) Number of peering partners at DE-CIX, Frankfurt > 250; AMS-IX, Amsterdam > 150. Member of DE-CIX and AMS-IX since 2010

e) All active network equipment used in EVOLINK network is solely from renowned world vendors such as Cisco Systems, Juniper Networks and Force10 Networks.

Evolink PoP list

EVOLINK Network PoPs	Services
BULGARIA	
Sofia	IP transit, L2 VPN, L3 VPN, Collocation
Blagoevgrad	IP transit, L2 VPN, L3 VPN
Burgas	IP transit, L2 VPN, L3 VPN, Collocation
Varna	IP transit, L2 VPN, L3 VPN, Collocation
Veliko Turnovo	IP transit, L2 VPN, L3 VPN
Vidin	IP transit, L2 VPN, L3 VPN
Vraca	IP transit, L2 VPN, L3 VPN
Gabrovo	IP transit, L2 VPN, L3 VPN
Dobrich	IP transit, L2 VPN, L3 VPN
Kozloduj	IP transit, L2 VPN, L3 VPN
Kurdzali	IP transit, L2 VPN, L3 VPN
Kiustendil	IP transit, L2 VPN, L3 VPN
Lovech	IP transit, L2 VPN, L3 VPN
Montana	IP transit, L2 VPN, L3 VPN
Pazardzik	IP transit, L2 VPN, L3 VPN
Pernik	IP transit, L2 VPN, L3 VPN
Pleven	IP transit, L2 VPN, L3 VPN
Plovdiv	IP transit, L2 VPN, L3 VPN
Razgrad	IP transit, L2 VPN, L3 VPN
Ruse	IP transit, L2 VPN, L3 VPN
Sevlievo	IP transit, L2 VPN, L3 VPN
Silistra	IP transit, L2 VPN, L3 VPN
OTHER COUNTRIES	
Frankfurt, Germany	L2 VPN, L3 VPN
Bucharest, Romania	IP transit, L2 VPN, L3 VPN
Skopje, Macedonia	IP transit, L2 VPN, L3 VPN
New York, USA	L2 VPN, L3 VPN

4. Customer Care

The customer care is what makes EVOLINK special and it is something we care about deeply. Our highly qualified personnel know the customer needs and is always available to provide information and support where and when needed.

For all matters regarding sales or financial matters an Account Manager from the Sales Department is appointed and all contact details are provided in advance.

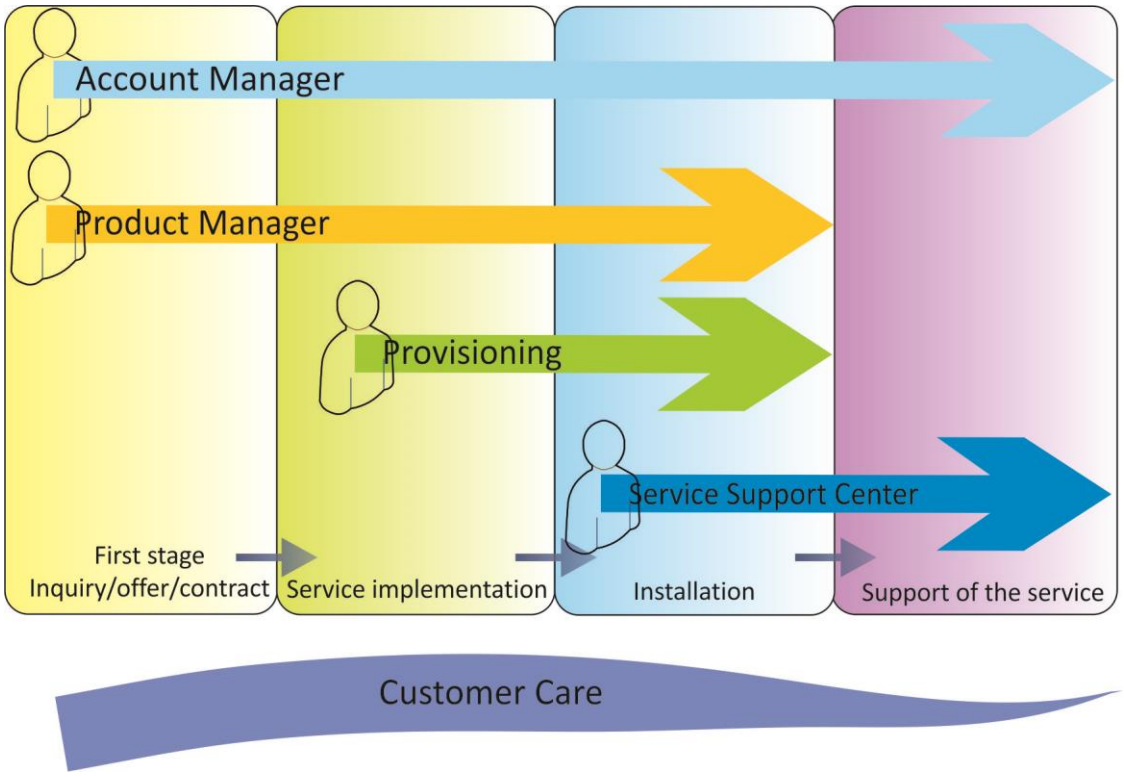
For all matters regarding technical matters and service performance the customers can address:

a. Network Operation Center (NOC), available 24/7; telephone: +359 2 9691 650, mobile: +359 886 700 882, e-mail: support@evolink.com;

b. Dedicated engineer: EVOLINK can dedicate a qualified engineer to act as a personal consultant on all technical matters regarding the provided services.

5. Service delivery procedure and change management

EVOLINK customers benefit from the highest level of customer service. The whole process – starting at the initial contact and through the installation, support, change and adding of new services (**Figure 2**) is very simple so the customers can rely on ease of cooperation and to have complete peace of mind when working with Evolink.



Service Delivery Process:

1. The customer sends a request to EVOLINK for provision of service;
2. The EVOLINK Sales Team prepares an agreement or annex to the agreement for the specific customer request;
3. The agreement/annex is signed by both parties;

4. The EVOLINK Sales Team sends an order form to the EVOLINK Technical Division for installation/change of the service;
5. EVOLINK Technical Division install/change the service;
6. The customer signs an acceptance protocol to acknowledge the start of the service.

Standard delivery dates:

1. Service Installation: within 30 days after signing the agreement;
2. Service change:
   - Installation of a new customer location: within 30 days after signing an annex to the agreement;
   - Upgrading/downgrading a customer port capacity: within 3 days after signing an annex to the agreement;
3. Cancellation of Service: upon a 30-day written notice sent by the client.

Change Management

EVOLINK performs any changes after a formal approval by the customer. Any change in the configuration will follow the same process as new installation.

Lead-time between order or notification and change execution for the below possible changes are as follows:

- ✓ Upgrade/downgrade capacity – within 3 days from receiving a signed document by the Client.
- ✓ Change of bandwidth – within 3 days from receiving a signed document by the Client.
- ✓ Physical change of location – within 30 days from receiving a signed document by the Client.
- ✓ installation/relocation of new/existing site – within 30 days from receiving a signed document by the Client.

EVOLINK follows the below-mentioned change management procedures:

Generally the person responsible for the change management procedure for a client's services is the account manager. He/she coordinates the whole process from the preparing a proposal, drafting and signing of contract and execution throughout the contract term this including also the change management. For larger projects the Project Manager may appoint a Change Manager to be responsible

for the Change Management or perform this task in person. The process is generally the same with exception on the scale of the project.

EVOLINK change management procedures:

Changes may occur pro-actively or reactively.

1. **Pro-active**

The account manager may proactively suggest a change in the services for variety of reasons (e.g. improving the quality of the service, suggesting upgrades when necessary, improving the cost/benefit effect of the service). In this process the steps are:

- Survey whether the change is technically possible with the help of the Evolink Technical Department;
- Proposing a change to the client and supervising the process of acceptance or refusal of the suggested change by the client;
- In case of approval by the client of the change, the account manager prepares the necessary documentation – annex to the contract or order form to be signed by the client, defining the scope of the change, the cost and delivery terms, order to the Technical Department for executing the change, a follow-up documentation on the successful execution of the change in proper term, its effect on the customer's service.

2. **Reactive**

The account manager may reactively acknowledge the client's desire for a change in the services. In this process the steps are:

- He/she receive a signed document by the client for the desired change.
- He/she conducts a survey whether the change is technically possible with the help of the Evolink Technical Department;
- He/she informs the client of the outcome of the survey.

In case the change is possible, the account manager prepares the necessary documentation – annex to the contract or order form to be signed by the client, defining the scope of the change, the cost and delivery terms, order to the Technical Department for executing the change, a follow-up documentation on the successful execution of the change in proper term, its effect on the customer's service.

EVOLINK supports change management procedures having different intervention levels (problem, critical upgrade, non-critical level) and depending on the critical level of the problem it is escalated to the proper level in the company, shortening the term for taking action.

The standard notice period required for planned changes depending on the type of change may vary from 3 days up to 30 days in cases of relocating a customer site. Planned changes within Evolink's network

affecting our customers are always performed during the night after proper notification to all parties concerned.

The bandwidth of an existing fixed connection can be increased on a very short notice up to 3 days after receiving notification. The first necessary step is written and signed annex, order or approval by the client followed by the internal process for executing changes within our company – order to the Technical department for execution, signing of protocols with the client.

6. Incident Management

The Incident Management process is part of the Network Operation Center (NOC)/ServiceDesk procedures.

The Network Operation Center operates on 24/7 terms basis and proactively monitors EVOLINK network and customer services. Substantial element in the NOC activities is the Incident Registering and Management Procedure.

Incident Registering and Management Procedure

ServiceDesk Response Time

Incident reporting and response are available 24 hours a day, 7 days a week and holidays in Bulgarian and English language. Troubleshooting for system outages commence as soon as an incident is reported.

The EVOLINK escalation procedure is included in the agreement.

The Trouble Ticketing System used at EVOLINK is software -OTRS specially modified and customized for our needs.

Below we are shortly describing the process of problem registration and troubleshooting, escalation procedure, etc.

- ✓ The EVOLINK NOC makes use of state-of-the-art technologies and workflow, based on the standard software packages for network management.
- ✓ Each PoP (Point of Presence) of EVOLINK is setup in air-conditioned premises according to the recommendations and the standards in the area. Redundant power supply provides for autonomous operation of the node even in case of power outages.
- ✓ In order to minimize the service interruptions, EVOLINK monitors constantly the network trunks and the international Internet connections. In case of emergency the system administrators (of EVOLINK and the client) are notified immediately.
- ✓ The EVOLINK staff consists of highly qualified specialists using contemporary means for network management and control, who are able to provide adequate assistance and consultancy to the client.

- ✓ The detailed procedures for service restoration after disruptions are an essential part of the preventive work, done to improve the quality of services offered by EVOLINK.
- ✓ EVOLINK has elaborated a trouble-ticket work procedure at providing services to the client.

Incident detection is performed based on registered events and notifications during the passive and active control of the customer operation and telecommunication network performance, received in the following ways:

a) **Unautomated**: via the communication means with the customers:

- **telephone** – the customer calls the ServiceDesk telephone number. The call is answered and registered by ServiceDesk. ServiceDesk notifies the network engineer or the engineer on duty, if necessary.
- **e-mail** – the client sends an email to the ServiceDesk email address (support@evolink.com). From here on the procedure is the same as for telephone calls. Email receipt confirmation is sent to the customer.

b) **Automated**: by the network monitoring system, which generates alarms to the on duty personnel, Field Engineer, Senior Network Engineer (FE, SNE).

The received messages are stored and registered in the TT (Trouble Ticket) system. Statements and monthly reports are submitted via the TT system at the end of the month for the purposes of the Billing Department and the Quality Control Department at Evolink.

The incident detection is performed during working hours by the network support engineer and during non-working hours by the engineer on duty who if necessary may consult the network support engineer. After the incident is detected it is also registered. Not all registered messages can lead to incident registering.

Incident registration

After detection, the incident is registered and a Trouble Ticket (TT) is assigned. The customer is notified of the TT number assigned.

Incident are categorized and allocated by priorities by the engineer who accepted them, as follows:

PRIORITY	DEFINITION
Priority 1	• Failure of a network equipment which leads to interruption of services provided to one or more customers; • Failure of a network connection which leads to interruption of services provided to one or more clients; Failure of a particular customer's connection to the network and lack of opportunity for alternative routing; • Failure of a backbone international connectivity and lack of opportunity

	for alternative routing; • Failure of a backbone connectivity to the Bulgarian Internet and lack of opportunity for alternative routing; • Failure of key servers affecting the service operation DNS / MAIL / WEB.
Priority 2	• Service Performance degradation as a result of high latency and packet loss. • Service Performance degradation as a result of insufficient throughput of the channels to other networks (Bulgarian and/or international operators); • Incidents involving violation of the Acceptable Network Use Policy
Priority 3	• Failure of backup connectivity to customer site; • Failure of backup network equipment.
Priority 4	• Occurrences within the network that do not affect the service performance; • General matters involving the service support.

Incident solving or escalation procedure

During the process of registered incident elimination activities, depending on the incident priority the following terms are observed:

LEVEL	Maximum time Priority 1	Maximum time Priority 2
Level1 Customer support engineer	1 hour	2 hours
Level2 Network support engineer	2 hours	4 hours
Level3 Network and service support Manager	3 hours	8 hours
Level4 CEO	4 hours	12 hours

Informing the customers

EVOLINK ServiceDesk shall inform the customer in case of registered incident about his current state according to schedule as follows:

PRIORITY	Preliminary status in the time range:	Following status in every:
Priority 1	30 minutes	1 hour

Priority 2	1 hour	2 hours
Priority 3	8 hours	24 hours
Priority 4	8 hours	Depending on the problem

Incident closing

Incident is considered resolved when certified by the network support engineer and confirmed by the customer (when he is affected), the Trouble Ticket is closed within the TT system and date and time are marked.

The following indices are marked when closing a certain TT:

a) **MTTReact** – the mean time from problem occurring until its registration;

b) **MTTRestore** – the mean time from problem occurring until its solving.

Different time schedule (MTTR) for incident solving is applied depending on the priorities of the incidents that occurred:

Priority 1	Priority 2	Priority 3	Priority 4
Up to 2 hours	Up to 8 hours	Up to 10 hours	Up to 24 hours

EVOLINK grants on-line access via **acc.evolink.net** to statistics for the service parameters guaranteed, as well as monthly reports. **EVOLINK** maintains up-to-date and correct all the statistics and reports.

All the employees in **EVOLINK** ServiceDesk hold a minimum certification of CCNA (Cisco Certified Network Associate). EVOLINK ServiceDesk is fully capable of troubleshooting all most common network problems. According to the current statistics more than 60% of trouble-tickets are solved within the ServiceDesk.

SCHEDULED MAINTENANCE

Customer will be proactively informed about all maintenance activities that may affect the IP MPLS VPN Services provided to Customer. Customer shall be informed about such maintenance activities ('Scheduled Maintenance') no later than 2 Business Days in advance. Evolink usually executes Scheduled Maintenance activities during low traffic periods and has adopted the standard maintenance windows (the 'Maintenance Windows').

Scheduled Maintenance, while being conducted, may degrade the quality of the Service. A Fault caused by Scheduled Maintenance conducted within the Maintenance Windows shall not be taken into account when calculating service availability (see 'SLA')

URGENT MAINTENANCE
'Urgent Maintenance' shall refer to any efforts by Evolink to correct network conditions which are likely to cause or are causing a Fault of the Service and which require immediate correction.

Evolink may undertake Urgent Maintenance at any time that Evolink deems necessary and shall provide notice of Urgent Maintenance to Customer as soon as is reasonably practicable under the circumstances. Evolink will keep Customer regularly informed of the status of such maintenance activities.

A Fault of the Service caused by Urgent Maintenance shall be taken into account when calculating service availability (see SLA), unless the Fault is not attributable to the actions or omissions of Evolink or its Personnel or is otherwise excluded from this calculation under the Agreement.

7. Network and Service Monitoring

EVOLINK supports a number of solutions for monitoring of its network and the service performance features. They are defined in five sections by function:

- Fault Management;
- Configuration Management;
- Productivity Management;
- Security Management;
- Statistics and Reporting Management

Apart from the network monitoring tools available for the EVOLINK network, each customer is able to monitor the services Evolink provides to him. For this purpose EVOLINK installs the **EVOLINK VPN MANAGER** platform free of charge to each VPN customer.

The EVOLINK VPN MANAGER enables the customers to freely monitor real-time the performance of the VPN service provided by EVOLINK and to generate statistics for random past periods. The Platform provides means for management of the service, the equipment, the configurations and the system access control.

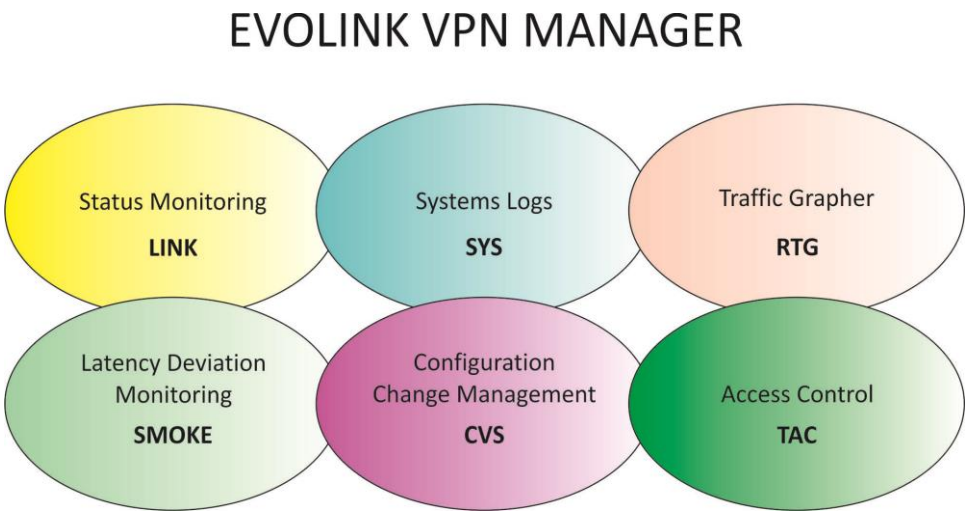
The EVOLINK VPN MANAGER is not simply specialized software. EVOLINK provides the overall cloud platform. The customers benefit from:

- Complete software product;
- Server resources for product installation;
- Full hardware redundancy for support of the platform;
- Installation, setup and configuration;
- Integration with the customer network;

- Basic use training.

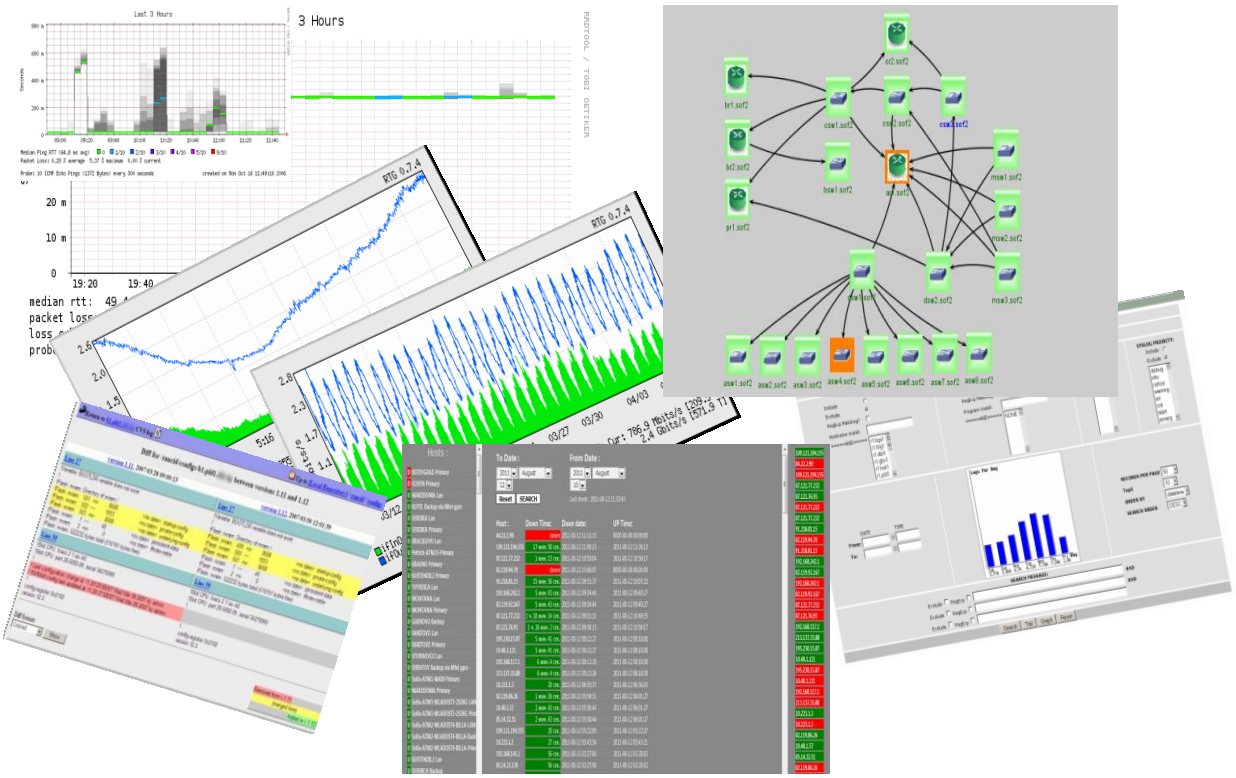
The EVOLINK VPN MANAGER platform consists of the following six[1] basic modules:

Figure 3



[1] The full set or part of the modules could be activated depending on the specific technical solution.

Figure 4



Status Monitoring (LINK) – is a module to monitor the availability of connectivity to a specified list of IP devices. Supports notification via e-mail and SMS, and displays the status in tabular and graphical form.

System Logs (SYS) – is a module for collecting all system data generated by the devices and storing it in a database. Various reports and tracking of events are made possible via a web interface. Alarms via e-mail and SMS messages upon occurrence of predefined events are available.

Traffic Grapher (RTG) - is module for monitoring and measuring the traffic load on all network links, VPN and Internet ports in the customer network. It stores the data in RRD databases and illustrates them in detail using PNG images. It allows the user to see traffic load on a network over time in graphical form.

Latency Deviation Monitoring (SMOKE) – is a module for tracking packet loss, latency and jitter according to configured predefined destinations. Shows statistics over a different time periods in PNG images.

Configuration Change Management (CVS) – is a module to track configuration changes in the network equipment. It stores the changes and the original configurations in different formats.

Access Control (TAC) – is a web module for defining and assigning privileges and access rights for network users/administrators by using the AAA (Authentication Accounting Authorization) Cisco model.

8. Reporting

Evolink can provide the following types of reporting to its customers:

Trouble Ticket reporting

Evolink TT System generates reports on a given period of time. These reports cover:

Item	Description
TT ID	the TT number assigned for a specific incident
Customer	Customer name
Incident description	Incident type
Start time	Time of automatic alarm or customer complaint
End time	Time of closing of TT
Fault	Indicating the responsible side
Short Description	Description of the incident
Created	Time of TT registration
Downtime	Shows the exact amount of time of the service outage
Detailed Description	Description of the troubleshooting and reasons for the incident

A monthly report from the TT System is generated for each customer for use by the Billing Department and Quality Control Department at Evolink.

SLA Key Parameters reporting

The monitoring tools at Evolink allow the customers not only to monitor real time the key parameters of the SLA available for their services but also to generate reporting. These reports cover:

Item	Description
ID	Customer Site ID
Latency (ms)	Shows average monthly Latency in milliseconds for the relevant customer site
Packet Loss (%)	Shows average monthly Packet Loss in percentage for the relevant customer site

Availability(%)	Shows average monthly Availability in percentage for the relevant customer site