ambiWAN Service Level Agreement (SLA)

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SLA of the **ambiFOX network GmbH**
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- in the following called **provider**

1. Preamble

The site networking "ambiWAN" is a service of ambiFOX network GmbH (hereinafter referred to as "Provider") and serves the IP based connection of customer sites with several service classes to a closed network or to provide defined network services. Thereby great importance is attached to quality, availability and security. The service is realized via special SD-WAN technology. Due to the closed network characteristics a clear separation to other customer networks and the Internet platform is ensured. The connection of individual locations can be realized by different technologies and with different service parameters. Due to the modular and flexible product structure this selection can be made by the customer according to his needs.

2. Introduction

Location networking is an excellent way to connect company locations digitally with each other in a cost-saving manner and thus achieve synergies. This applies both to companies with two locations and to internationally operating companies with a large number of locations. Not only the savings in networking the sites themselves are the criterion why companies choose the service of site networking ambiWAN of the provider. Central resources like internet access, servers, firewalls, etc. help to reduce costs and to concentrate core competences. Also topics like free internal company telephony, collaborative working and Unified Communications (telephone conferences, video conferences, etc.) support this service.

The sites are connected to each other - regardless of their geographical location - in a closed, virtual network, which is technically divided into defined subnets. This results in a multitude of advantages, which will be illustrated here shortly (details see below):

- Easier administration of systems, workstations, etc. by the IT department
- Security aspect regarding the differentiation from other networks
- Access to central data simplified (e.g. central file server)
- Communication of the applications (e.g. cash register systems of the branch offices with central server)
- Quality of Service allows defined packet prioritization for optimized transmission of real-time applications (e.g. Voice over IP) or company-critical data (e.g. RDP)
- Guaranteed Service Level Agreements (SLAs)
- High quality end devices from certified manufacturer

3. Product overview

With the service "ambiWAN" it is possible to connect locations via different access technologies and to use further services. The provider leaves ambiWAN to the customer within the existing technical and operational possibilities as router (ambiBOX) (on loan or purchase basis) or as virtualized appliance on a hypervisor provided and operated by the customer.
The maintenance and administration of hardware and software used locally at the customer's site as well as the local infrastructure (including the connection to the ambiWAN router (ambiBOX)) is not part of the scope of services of ambiWAN.

WAN connections are a prerequisite for ambiWAN, but not part of it and must be ordered separately.

A claim for access to the Internet is not included in the service of ambiWAN.

ambiWAN is offered in different versions and with different parameters and prices. These performance characteristics can change during the product life cycle.

The following features are currently defined, the extent of which depends on the ambiWAN product selected.

- ambiWAN Service
  an ambiWAN service is a target (application) in the network to be defined, including the access permissions to this service

- max. networked locations
  The maximum number of sites for the selected ambiWAN product that can be communicated with on network level within ambiWAN.

- max. Mbit/s of all services
  The maximum usable bandwidth in Mbit/s for all ambiWAN services that can be used, independent of the actually available bandwidth.

- max. services per location
  The maximum number of ambiWAN services that can be set up for the selected ambiWAN product.

- Internet access is limited
  Specifies if the bandwidth to the Internet is limited for the selected ambiWAN product, although it is higher than the feature "max. Mbit/s of all services".

- Transfer volume in GB included
  The inclusive volume for the selected ambiWAN product in Gigabyte.

- LTE - Transfer volume in GB included
  The LTE inclusive volume for the selected ambiWAN product in Gigabyte.

- HA
  Indicates whether the selected ambiWAN product is running as "High-Availability" (HA) with two or more machines. This requires special requirements on the customer side. This may cause additional costs on the customer side. In certain environments a realization is not possible. By default one node is the "active master" and the other node is the "passive slave" (active / passive). An active / active constellation can also be implemented under consideration of special requirements and circumstances.

4.   product details

4.1 Topology

ambiWAN realizes customer networks on new, groundbreaking SD technology. By this special kind of networking the customer is unrestricted in his network, because every location can communicate with other locations in the network (configuration dependent). This simplifies the visualization of the entire network and enables unrestricted communication within the network. Central facilities such as servers, a company-wide Internet access, etc. are optimally supported.
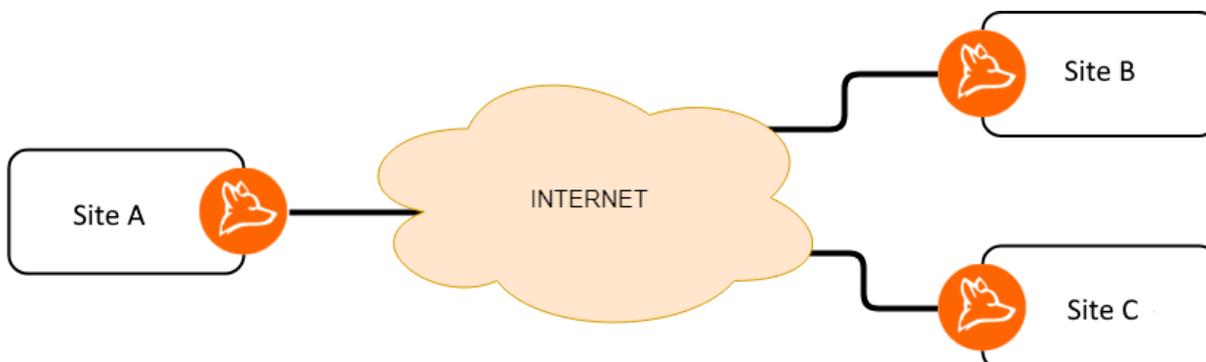
4.2 Location connection

Each company location has its own specific function and therefore different requirements for the connection. The requirements for availability and stability of a corporate headquarters with centralized, internal services are usually higher than those of a branch office. ambiWAN offers an ideally matched technology / and a bandwidth portfolio from small to large to connect locations according to the specific requirements. The actual achieved data throughput in ambiWAN depends on the used frame size, the services based on the Ethernet protocol (e.g. TCP) and other settings (e.g. Quality of Service) at the respective interfaces. Each protocol used has an overhead (additional management data), which means that not 100% of the technical bandwidth is available for data transmission. The speed, quality and latency of the WAN connection used and the hardware or hypervisor infrastructure used are also decisive. For connections with QoS, non-prioritized traffic or low-prioritized traffic is displaced by the higher-prioritized traffic.

4.3 Addressing

For each endpoint, IP addresses from the private network area can be freely assigned according to RFC1918. Private IP addresses belong to certain IP address ranges that are not routed in the Internet. IP addresses can be selected from the following ranges:

- 10.0.0.0/8
- 172.16.0.0/12
- 192.168.0.0/16

The addressing of the end points of the ambiWAN network is specified by the customer (network address and netmask). The assignment of network addresses must be unique in the customer network. Therefore it is not possible that two or more sites use the same addressing, unless the whole customer network is only unidirectional communication. The LAN interface of the network termination point (LAN Ethernet interface of the CPE) receives an IP address selected by the customer. Usually, the highest address from the IP network specified for the customer site is defined (example: network 10.35.2.0/24 as the network of the location, thus 10.35.2.254 as the interface address of the transfer point). For addressing the routes within ambiWAN further IP link network addresses are defined for each site by the customer or upstream supplier, which logically connect the CPE installed at the customer site with the WAN (e.g. Speedport, Fritzbox, modem). These IP addresses are visible to the customer as a hop through the network (e.g. with "traceroute") and may not be used by the customer in his own networks. All necessary IP addresses and ranges must be transmitted to the provider when ordering.

4.4 End devices

Depending on the choice of product, the provider will provide a high-quality terminal as CPE (customer premises equipment) from a certified manufacturer at each customer location upon request and at additional cost.
This high quality hardware ensures a more stable service and enables "business features" that are explained in more detail in this document. The CPE provided is only part of the service provided by the provider if ordered and paid for separately and remains the property of the provider even after the contractual relationship has ended.
The modem, splitter etc. required for operation and the associated cabling can be ordered separately, but are not part of the service.
For all other equipment such as computers, cables, network cards, etc. the customer must take care of it himself.
The terminal equipment supplied by other providers remains the property of the customer and must be returned to them after termination of the contractual relationship.
The same procedure is followed for line terminals from possible other suppliers or third party contractors.
The terminal device ensures the connection of the customer LAN (Local Area Network) with the commissioned network. In some cases, the installation of two or more end devices is required to cover special functionalities.
The location required for the terminal device shall be provided by the customer at a suitable location. This location must be made accessible at any time and without delay to the Provider or to companies commissioned by the Provider for on-site operations.
The customer has no claim to the provision of a terminal in a specific version.
The power supplies (230 VAC) required for the terminal device must be provided by the customer. Normally, a power supply must be provided for each terminal device. In addition, a further power supply must be provided for necessary interference suppression measures. The length of the power cables of the end devices is approx. 1.5 m.
The customer has to ensure the uninterrupted power supply of all terminal equipment provided by the provider in the course of this service. Failures of the power supply, regardless of the cause, shall not affect the availability of the service.
On-site operations commissioned by the customer and which are due to improper installation / handling / power supply of the terminal equipment will be invoiced separately to the customer on the basis of the valid price list of the provider.

If the customer is located in an area with an increased risk of lightning, so that the installation of a surge protection is necessary, the customer must have a potential equalization line and valve arresters installed in the mains power supply. The installation must be carried out by a licensed electrical company and at the customer's expense.

The provider may also have the installation of the terminal device carried out by commissioned third parties. Unless otherwise agreed, the terminal equipment provided remains the property of the provider or the third parties commissioned by the provider. 4.7 Administration

The following administrative services are provided within ambiWAN:

- Proactive Monitoring
- Troubleshooting

4.8 Updates

ambiWAN includes regular updates of all applications / components supported by the provider, as long as these updates do not endanger the operation of the systems and there is a necessity.

4.9 Monitoring

The operational readiness of the systems / networks is monitored by the provider. The performance of the systems / networks can also be assessed on the basis of this data. Thus, it is possible to react early on to growing demands on the part of the customer.

4.10 Quality of Service (QoS)

Quality of Service means the possibility of different prioritization of data packets. By prioritization, e.g. real-time applications such as Voice over IP are preferred over traffic that is not time-critical, such as web and mail traffic. This ensures that certain services reach and maintain a high quality level. Due to the way of realization ambiWAN ensures an end-to-end QoS. The data is only prioritized by the CPE and not in the WAN area. The prioritization can be defined by the customer. In general ambiWAN distinguishes between different service classes

Example:

- Service class "Standard": This class includes all traffic which is not upgraded to a higher class by "Advanced" or "Premium".

- Service class "Advanced": Mostly business critical protocols or data, which are preferable to the "standard" traffic, but if necessary, they are placed after the "premium" traffic.

- Service class "Premium": The Premium class is intended for time-critical applications that need to transmit data in real time. For this reason, this class is available to any voice and video services.

Dynamic bandwidth management:

This technical procedure enables customers to use 100% of the available bandwidth at all times. Unused bandwidth of the higher service classes can be used by the lower classes. Here is a practical example:

If, for example, there is no "Premium" traffic, this portion (depending on the workload) can be used for the "Advanced" or "Standard" service class. If there is no "Advanced" traffic either, 100% of the bandwidth can be used for "Standard" traffic.

In addition, it is also possible that more "premium" traffic is generated than the bandwidth available for it. In this case frames of the lower service classes are discarded.

4.11 LTE / 5G Backup

At present, the permanent networking and availability of digital services in the company has a very high priority. A backup line is a separately laid connection that takes over traffic in the event of failure of the primary line(s) and thus maintains the availability of the site in the event of a failure. The LTE / 5G backup is a dedicated "hot standby" backup radio solution: In the event of a fault, the system switches over from the main line to the LTE / 5G radio line.

The LTE / 5G line does not have to have the same bandwidth as the primary line. In case of a backup, only selected data and services can be made available as needed, so that the radio data volume and radio bandwidth are not burdened with unimportant data traffic.

Customers receive a wireless additional "line" at the specified location with the LTE / 5G backup. Any failure of the primary data line(s) is immediately detected and automatically redirected to the wireless line. Customers usually do not notice this failure in daily operation and can therefore continue their work unhindered. The latency of the data connection can be increased by the "airlift".

4.12 High-Availability (HA)

The customer receives with HA a second / additional hardware at the specified location. The provided end devices are virtually and physically connected to each other, so that any failure is immediately detected and automatically redirected to the further CPE. Just like with LTE / 5G backup (4.11), customers usually do not notice this failure in daily operation and can therefore continue their work without interruption. However, this is only guaranteed if both end devices in the customer's LAN have a physical Layer 2 connection.

Both CPEs (ambiBOX) offer at least one RJ45 Ethernet slot as physical interface, which is integrated into the LAN-IP network specified by the customer. Thus it is solely up to the customer's network concept whether this redundancy is continued up to the PCs of the employees or is terminated into only one hub/switch according to the CPEs provided by the provider.

Furthermore, the WAN connection must also offer the possibility to connect both CPEs simultaneously.

4.13 Service Level Agreement (SLA)

The following standard SLAs are included in ambiWAN. Optionally an upgrade to "Business Hours" or "24/7" can be done with costs.

	Standard - E-Mail	Business Hours	24/7
Fault assumption:	Monday to Sunday, 00:00-24:00	Monday to Friday, 07:30-17:30[1)2)]	Monday to Sunday, 00:00-24:00
Availability of a service technician	Monday to Friday, 08:00-17:[001)2)]	Monday to Friday, 07:30-17:30[1)2)]	Monday to Sunday, 00:00-24:00
Response time	8 hours[3)]	4 hours[3)]	4 hours
Interim report	No	No	On request

1) except 24.12., 31.12. and public holidays at the location of the provider.
2) GZ (legal time) in Germany
3) Times outside the availability of a service technician interrupt the specified response time

Fault acceptance defines the period of time during which a fault can be reported to the service hotline. Response time defines the maximum time period from the complete completion of the notification of the fault by the customer until the start of the operative fault rectification by the provider. The CPE used is monitored reactively by the provider. This means that in the event of a malfunction, a specialist from the provider will also analyze the equipment on site as part of the fault analysis. An on-site deployment may be necessary in case of a hardware defect, but can also be replaced by a postal delivery.

The availability of the ambiWAN service represents the possibility of access between the locations within the service hours.

The executability of the individual applications/services is not important for this.

Interruptions previously agreed with the customer or caused by the customer are also not taken into account.

Thus, the functionality of the provided network elements (all data lines and hardware are not considered) is taken into account when calculating the availability.

If a central node (data center, HQ) is not secured by HA 4.12, on which the availability of other operating sites depends, in case of a malfunction the availability is only calculated for this site and all dependent operating sites are considered available.

4.13.1 Guaranteed availability

Due to technical conditions of the ambiWAN service disturbances cannot be completely excluded. However, the provider endeavors to minimize all risks as far as possible and therefore makes an availability promise in the sense of the above mentioned definitions of more than 99% over the period of one year. The calculation period starts with the month for which the first remuneration is paid.
The Provider is entitled to use third parties to provide his services. In particular, international server capacities and data lines may be booked by the Provider with third parties in order to guarantee performance. The above availability is only guaranteed to the extent that the third party provider provides its service. No liability is assumed for the failure of the third-party company to provide its service to the provider. The provider is only liable for gross negligence and intent. Downtimes due to the lack of performance by third party companies are not taken into account when calculating the availability time in section 4.13.2 (Appendix B).

The respective availability promises of a third party service can be viewed at https://www.ambifox.com/sla.

4.13.2 Calculations

The availability is calculated from the actual available operating time of the network elements (availability time) and the sum of the failures (downtime). If a customer has several separate ambiWAN projects, the availability is calculated for each individual project and not in its entirety.

The availability period is calculated as follows:

Service hours (Mo. to Fr. 7:30 - 17:30)	10 hours 00 min.
./. Less interruptions agreed with the customer (e.g. software update etc.)	
./. Less failures in the customer's area of responsibility	
./. Less data line failures	
./. Less downtime	
availability time	= 100 %

4.13.2.1 Calculate availability of a facility

$$Verf\ddot{u}gbarkeit = \frac{Verf\ddot{u}gungszeit}{Verf\ddot{u}gungszeit + Ausfallzeit} \quad \%$$

If the sum of all failures within one year results in 10.00 hours (one working day), the availability is calculated as follows:

$$Verf\ddot{u}gbarkeit = \frac{249\,Tage\,*\,10{,}00\,Stunden}{249\,Tage\,*\,10{,}00\,Stunden\,+\,10{,}00\,Stunden} \quad = \quad 99{,}6\%$$

4.13.2.2 Calculate total availability

$$Verf\ddot{u}gbarkeit = \frac{Summe\,\rightleftarrows\,der\,Verf\ddot{u}gbarkeiten\,je\,Betriebstaette}{Summe\,aller\,Betriebstaetten} \quad \%$$

In the case of several operating sites, the agreed availability is calculated as the arithmetic mean of the availabilities of the individual operating sites.

4.14 Troubleshooting

In the event of a malfunction, the customer must report this immediately by e-mail or telephone in a comprehensible and detailed form, stating all information useful for the detection and analysis of the malfunction. In particular, the work steps which led to the occurrence of the fault, the form in which it appears and the effects of the fault must be stated. Unless otherwise agreed, the relevant forms and procedures of the Provider shall be used for this purpose.

If a fault is reported, the Provider shall immediately initiate appropriate measures based on the circumstances reported by the Customer in order to first locate the cause of the fault.

If the notified malfunction - after first analysis - does not turn out to be an error in the provider's area of responsibility, the provider will inform the customer immediately.

If the effort of the provider increases due to a disturbance which is the responsibility of the customer (e.g. network operator), the provider can demand compensation for the resulting proven additional effort.

In case of disturbances in the area of responsibility of the provider, the provider will initiate appropriate measures for further analysis and for the elimination of the reported disturbance. The customer will immediately implement the measures for the elimination of disturbances communicated to him and will then immediately report any remaining disturbances to the provider again.

The customer shall also ensure that competent personnel are available to support the provider.

4.15 Maintenance window

For maintenance purposes the services of ambiWAN can be taken out of operation (maintenance window). The provider provides a daily maintenance window from 00:00 to 05:30 GZ in Germany especially in case of current events. For more extensive maintenance work a maintenance window is provided on the first Sunday of each month in the time from 00:00 to 06:00 hrs GZ in Germany. The customer will be notified of the use of a maintenance window in good time in advance by e-mail. The times of the used maintenance windows are not included in the calculation of the availability.

4.16 Deviations from availability

In the event of deviations from the guaranteed availability at the end of the billing period, the following reductions of the remuneration paid in the billing period shall be deemed agreed:

From	Until	Reduction
99,0 %	98,0 %	5 %
< 98,0 %	97,0 %	10 %
< 97,0 %	96,0 %	15 %
< 96,0 %	95,0 %	20 %
< 95,0 %		30 %

If, through no fault of the customer, the connection of a site is not available for the entire availability period of two consecutive working days, the customer will be reimbursed 30% of the respective monthly remuneration for the respective site. For three working days, the reimbursement is 60% and from the fourth working day onwards, 90%.

Reductions and refunds of the monthly fee are arranged by the provider and may not be charged independently by the customer.

5. Security

In the near past, security awareness in companies has increased significantly. The provider realizes services that are state-of-the-art in terms of security. By using SDWAN technology, networks are defined which can differentiate the customer from other networks (e.g. networks of other customers) and especially from the Internet and thus protect the customer. This is additionally supported by the provider by the principle separations. Since every modern company needs access to the Internet, it is recommended to secure the Internet breakout with an appropriate solution that distributes the checked traffic as needed. The said solution can be planned and implemented by the security specialists of the provider and is not an included part of ambiWAN.

6. Service handover

The service is provided after the customer has fulfilled all technical and other requirements incumbent upon him. Excluded from these provision times are non-standard and special requirements, these are listed separately in the offer. In particular, a period can only begin to run when the Customer has provided the Provider with all the data necessary for the conclusion and execution of the contract (e.g. connection owner, IP address concept).

7. Network termination point (NAP)

The network termination point is the LAN interface of the CPE. It is implemented as 10/100/1000 Mbit/s Ethernet interface as standard and defines the limit of responsibility between ambiFOX and the customer. All network equipment before the network termination point is not in the responsibility of the provider. Only the CPE itself is the responsibility of the provider. All facilities behind the network termination point (e.g. server, internet lines, radio relay, etc.) are the responsibility of the customer, who has to make necessary configuration changes. The customer connects his technical components (hub, router, switch, host, PBX, etc.) to the network termination point via appropriate connecting cables. This provides access to the service of the provider. The customer has to provide the required connection cables. Only devices that are suitable for the service and that comply with the electrical and mechanical interface conditions may be connected to the connection device. In case of doubt, the customer must obtain the consent of the provider. For devices that were not supplied by the Provider or its commissioned third parties, the Provider does not provide any functional guarantee or support.

8. Installation / Configuration

The installation of the CPE(s) on site is not part of the service and can be carried out by a technician of the Provider or a technician appointed by the Provider upon request. No network components of the customer are accessed. Finally, access is tested and confirmed by the customer by signing the acceptance document. The configurations required on the customer's equipment are to be carried out by the customer himself.

9.   Requirements for installation and operation

The following requirements must be met by the customer in order to ensure standard installation and a smooth transition to operation:

- The provider configures a CPE for each commissioned site of the customer, as far as it is economically and technically possible.

- The smooth operation of the CPE requires an installation or operating room at the customer's site that is clean, dry, dust-free and adequately ventilated. The customer must ensure that an operating temperature range of +5° C to +40° C and a relative humidity of 35 to 75% (non-condensing) is maintained.

- When ordering, the customer provides the provider with the data necessary for the installation for each end point: address, room number or name, local contact person, the desired IP addresses and the WAN connection.

- The establishment of site connectivity is carried out according to the usual rules for installation (standard installation). The cabling is carried out with a shielded, 4-core cable "surface-mounted" and it must be ensured that there are no foreign and interference fields (e.g. transformer stations, radio equipment) in the immediate vicinity of the cabling.

- If the subscriber connection line is to be routed in piping or cable ducts within buildings, or if this is necessary for other reasons for which the provider is not responsible (e.g., requirement of the party entitled to dispose of the line), the customer shall provide the corresponding piping or cable ducts including cables.

- A special CPE is required for the connection type FO, which causes additional costs.

- Any necessary cabling within the building must be provided by the customer.

- Costs for any necessary protective measures against external voltage influences shall be borne by the customer.

- The customer shall ensure that the provider is granted access to the terminal equipment and network termination points within the scope of installation (in the case of on-site service) as well as for fault clearance and maintenance purposes.

- The customer ensures that the end devices are protected against damage.

- Service assignments that are due to the fault of the customer or third parties commissioned by the customer (e.g. configuration changes) are not included in the fee and will be invoiced by the provider according to the respective specialist hourly rate - based on the provider's current price list.

- For the agreed duration of the service provision, the implementation of configurations or their changes as well as the extension of the hardware provided by the Provider may only be carried out by the Provider or third parties commissioned by the Provider.

- Configuration changes are not included in the scope of services and are treated as a new order. Billing is based on time and effort at the currently valid specialist hourly rate - based on the currently valid price list of the provider. As an option, a flat rate can be agreed upon for an additional fee.

10. Service Management / Support Data

The support hotline +49 (2561) 8693 800 is available to customers from Monday to Friday from 07:30 to 17:30. Outside this time, an emergency call can be initiated by pressing "9".

The emergency hotline does not cover the entire range of services provided by the helpdesk. The support is also available from Monday to Sunday from 00:00 to 24:00 hours by e-mail at noc@ambifox.de.

The processing takes place from Monday to Friday in the time from 07:30 to 17:30 clock usually within 24 hours. Faults in the central components in the provider's network are monitored and rectified by the provider from Monday to Sunday from 00:00 to 24:00 hours (regular fault clearance time). A proactive notification of the customer about possible malfunctions takes place within the customer portal https://portal.am-bifox.net/ambiwan .

11. Decommissioning

After the written termination of ambiWAN, the shutdown of the terminated service shall take place with the effective date of the termination. In this context the customer's obligations to cooperate as mentioned in the following paragraphs shall be observed.

1. The accesses and/or servers operated by the provider will be switched off immediately at the end of the contract and irrevocably deleted within the scope of the deletion routine 7 days after the end of the contract. Further data, which were necessary for the fulfilment of the contract, will be deleted by the provider within the above mentioned period, unless there are legal periods of retention.

2. If the customer does not fulfill his obligation to return the terminal equipment within 14 days after termination of the contract, he is obliged to pay the Provider an amount corresponding to the respective list price of the terminal equipment plus EUR 100,- handling fee.

3. If there are time delays in decommissioning for which the customer is responsible, the customer shall bear the costs incurred.

4. Any services provided by the provider beyond the end of the contract will be charged to the customer. The execution of the deletion routine is without separate calculation.

12. Adjustments of the services

The provider reserves the right to make minor adjustments to the service offered due to technical, economic or legal changes.

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