

# SLA Vdsl/Gpon/fiber

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## Introduction

Each access link has its specified access capacity, technology and redundancy with which it connects to the Citymesh network. In addition, by using the access link, the client has the option to add a set of extra services. These services specify the type of service bundle delivered on each customer site.

Each service has its own performance criteria. Citymesh aims to achieve the performance criteria it has set for all of the services described in this SLA. Whenever Citymesh fails to meet the quality parameters described below, the Customer is entitled to request a credit of a proportion for the Charges for the Service. The definition of the proportion will be subject to the eligibility criteria and exclusions detailed in this SLA.

Performance criteria and penalties in this agreement only relate to services delivered in Belgium. Performance criteria and penalties relating to services delivered outside Belgium will be specified according to the specifics of the individual country.

This Service Level Agreement (“SLA”) as detailed below is submitted pursuant to the General terms and conditions and Service Order Forms for all Services, and all included documents, together forming the “Agreement”.

## Definitions and Interpretation

In this Agreement, the terms and phrases below have the following meaning:

CPE	Customer Premises Equipment – In general the router or access device installed at Customer premises.
RT	Repair timer – The time it may take to repair an incident after creating the ticket.
Local Loop	The last mile cabling between the End-user premises and the first access-router of Citymesh.
SLA	Service Level Agreement
Downtime	Unavailability of the service – A service is down when both the primary and backup line are unable to send or receive traffic or, in case the customer has one single line, whenever this line is unable to send or receive traffic.

Guaranteed Capacity	The capacity in Mbits per seconds of the access line. The capacity is defining the maximum guaranteed throughput of an access line to send or receive traffic to or from the Citymesh backbone.
ADSL	Asymmetrical Digital Subscriber Line – Digital modulator to send packets in an asymmetrical way over Copper pairs.
SDSL	Symmetrical Digital Subscriber Line – Digital modulator to send packets in a symmetrical way over Copper pairs.
VDSL	Very high bit rate Digital Subscriber Line – The currently newest digital modulator to send communication over Copper pairs. This can be either asymmetrical or symmetrical.
ATM	Asynchronous Transfer Mode – A network protocol which defines how packets are send to their destination. ATM is mostly used on ADSL and SDSL lines.
Ethernet	A network protocol which defines how packets are send to their destination. Ethernet is currently used in all new technologies as it has a much lower overhead as ATM has.
EOC	Ethernet over Copper – A technology allowed to transport Ethernet packets over Copper.
DSCP or CoS	(Differentiated Services Code Point or Class of Service) - Methods to give packets a label that specifies their level of priority. Each type of label defined by Citymesh will be transported with different priority over the network.
QoS	Quality of Service – general term used to express the quality of the transport of packets over the network.
Network Latency / RTT (Round-Trip Time)	The average time that an IP packet needs to make a round trip between Backbone hubs within the regions on the Network.
Packet Loss	The percentage of packets that are dropped between Backbone hubs on the Network.
IP	Internet Protocol
Country Range A	List of countries outside Belgium where Citymesh is delivering Services being The Netherlands, France, Luxembourg, Germany and Spain.

# Types of Services Level Agreements

Citymesh is offering the following types of SLA's on their product series:

- **Standard SLA** (no backup line, one CPE)
- **Advanced SLA** (backup line – preferably by means of a different medium, only one CPE)
- **Advanced SLA +** (backup line – different medium, different path, two CPE's)

## Helpdesk and Intervention Windows

A professional helpdesk, being available 24/7, can be contacted for reporting and opening new incident records. Incident handling and intervention windows are based on the SLA type selected by the customer.

24 x 7

All other SLA - Incidents are handled 24 hours a day, 7 days a week

# Planned and Emergency Maintenance

Citymesh reserves the right to perform Planned Maintenance on their backbone and customer equipment. Planned Maintenance will mostly take place the first Sunday of the month between 02:00 and 06:00 in the morning.

Whenever Citymesh performs a Planned Maintenance, the customer will be informed by email at least 10 working days in advance.

In case of Emergency Maintenance, the Customer will be informed at least 3 working days in advance by Email. If Citymesh does not have the possibility to inform the customer 3 working days in advance, the customer will be informed by telephone at least 12 hours in advance.

Emergency works will be limited to 3 times a year per site.

Each notification of intervention will include the start date/time, the expected duration and the affected services.

When feasible and possible, Citymesh will make temporary alternative arrangements during a Planned or Emergency Maintenance to avoid a break or downtime in the Customer's Service.

Unavailability of the service due to a Planned or Emergency Maintenance can never be seen as a downtime as long the information timers are respected. The repair timers do not apply in this case.

## Performance Criteria

### Access

Each I solution contains an Access service. The access service specifies the technology, redundancy and speed of the link to the Citymesh network. The access service, in combination, with the selected SLA type, defines a set of timers for your service.

### Levels of incidents

A severity level will be assigned to each incident reported. Based on the level assigned, certain responses and repair timers are applicable. The following incident levels can be indicated:

Level 1	Service unavailable
Level 2	Primary link unavailable, the back-up link successfully took over the service.
Level 3	Service degraded (interruptions, capacity issues, quality issues).
Level 4	Request for information, request for configuration changes.

Should the service be unavailable due to force majeure (any problem falling outside the scope of Citymesh's responsibilities) or by a fault by the Customer (the site cannot be accessed, the contact person cannot be reached, service breakdown caused by actions performed by the customer, application problems, power problems at customer side, etc.), neither the service repair timer nor the service availability level specified do apply. Unavailability caused by any of these reasons will not be counted as downtime minutes.

## 6.1.1 Monitoring and Reporting

Citymesh is using its own reporting tool to check availability of the line. All incidents will be logged in a ticket system including opening time and closing time.

All valid measurements are saved, stored and can be communicated to the customer upon request. They will be used for any type of unavailability and repair timers' penalty requests from the customer.

## 6.1.2 Response timers for incident notification/claims

For all incidents opened with incident level 1, 2 and 3 the following response timers do apply:

First response within 30 minutes of the incident window after opening the ticket. This feedback will contain the results of the pre-troubleshooting and will specify the next actions.

Second reaction after 1 hour within the incident window. Based on the technical analysis, further feedback will be given on regular basis. Each feedback will contain an expected next update. This last one is on a Best-Effort-Basis

For all incidents opened with incident level 4, the feedback will be sent on a Best-Effort-Basis.

## 6.1.3 Guaranteed Capacity

The theoretical and guaranteed speeds are mentioned on each order form.

All guaranteed speeds mentioned are situated on Layer 1, which means that Layer 2 traffic and overhead will use capacity of the guaranteed speed. As a result, measured IP (Layer 3)

speeds will be lower than the mentioned capacity dependent of the used underlying technology.

All ADSL and SDSL products are being transported over ATM. An overhead of about 20% needs to be accounted for. For example, a 8 Mbit/s SDSL speed will typically result in an IP speed of 6,2 Mbit/s.

All EOC, VDSL2 and fiber products are being transported over Ethernet. An overhead of about 3-5% needs to be accounted for. For example, a 8 Mbit/s EOC speed will typically result in an IP speed of 7,6 Mbit/s.

## 6.1.4 Service Availability Objective and Incident Handling (Repair timers)

A service is considered unavailable:

- if both the primary and the backup line are unable to send or receive traffic
- if the customer has one single line which is unable to send or receive traffic.

The yearly availability of the service is calculated as follows:

$$\frac{\text{Total minutes per year} - \text{amount minutes total downtime of the service} \times 100}{\text{Total amount of minutes per year}}$$

The number of minutes of downtime will be determined by the duration between the start of the interruption of the service and the end of the reparation by Citymesh.

The measured period for the yearly availability starts the 1<sup>st</sup> of January and ends the 31<sup>th</sup> of December. Connections that are added within this period will be seen as 100% available for the period previous to the installation. Connections that are ended within the measured period will be seen as 100% available for the period following their cancellation until the end of the year.

The repair timers as mentioned in the table below will not be applied in case of a complete breakdown of the local loop for which splicing work is needed to repair the medium. In this case, Citymesh guarantees that the Incident time will be calculated as from the moment that the repair of the medium starts.

When offering an Advanced SLA or Advanced+, Citymesh will try to foresee a backup link over a separated loop/medium. However, in cases where the customer accepts a backup link over the same loop/medium (eg VDSL and SDSL, EFM and VDSL etc), the customer is aware that the repair timers do not apply in case of a complete medium failure.

For each incident the customer needs to open an incident ticket. This can be done through email or by Phone. All incidents for which the customer wishes to use the guaranteed repair timer and guaranteed response timers as mentioned in level 1, 2 and 3 are to be opened by Phone. Updates on an opened ticket may follow by email or telephone.

Incidents launched by mail are not entitled to any repair or timer and will be handled on a best-effort basis.

The repair timer will be frozen whenever information is requested from the customer, whenever customer is not available or when no access on the end-user site is possible. The repair timer will end after the service has been restored to normal service.

Citymesh is offering the following service availability and repair timers (RT) based on technology and SLA:

	Advanced
Yearly availability	99.95%
RT Incident level 1	≤ 4hours
RT Incident level 2	≤ 8hours
RT Incident level 3	≤ 8hours
RT Incident level 4	≤ 5 business days

## 6.1.5 Penalties

- ✓ Response time for response to incident notification, valid for level 1 and 2 incidents only

Customer may request a penalty if one of the described service criteria has not been met. The following penalties are applicable in case the SLA targets are not met:

First response > 30 min.	5% of the monthly recurrent fee of the service for which the ticket had been opened.
Second response > 60 min.	5% of the monthly recurrent fee of the service for which the ticket had been opened.

- ✓ Repair timers

The following penalties are applicable in case the SLA targets are not met:

Targets	
RT incident level 1	> 4 hours => 10% of the monthly recurrent fee of the service > 8 hours => 20% of the monthly recurrent fee of the service > 24 hours => 50% of the monthly recurrent fee of the service
RT incident level 2 - 3	> 8 hours => 10% of the monthly recurrent fee of the service > 12 hours => 20% of the monthly recurrent fee of the service > 24 hours => 50% of the monthly recurrent fee of the service



RT incident level 4

> 5 Business Days => 5% of the monthly recurrent fee of the service  
 > 10 Business Days => 10% of the monthly recurrent fee of the service

✓ Availability

The following penalties are applicable in case the SLA targets are not met:

VDSL/GPON	
Availability	< 99,95 % => 1,5% of the yearly recurrent fee of the service
	< 99,90% => 5% of the yearly recurrent fee of the service
FIBER	
Availability	< 99,95 % => 1,5% of the yearly recurrent fee of the service
	< 99,90% => 5% of the yearly recurrent fee of the service

## 6.2 Internet

Internet is the service option for getting a Full internet service over the access lines provided. For each Internet service, the customer gets a guaranteed Round-trip time.

### 6.2.1 Size of Packets

The size of packets to calculate the round trip time is set on 128 bytes.

### 6.2.2 monitoring

Citymesh is continuously monitoring the RTT from its network to several networks and countries. However, since it is not possible to monitor the RTT for all networks, these monitoring pools are mostly informational.

### 6.2.3 Round-trip Time Objectives

The round-trip time depends on the technology with which the customer is connected on his end location. To calculate the round trip time, the Delay value as mentioned under the VPLS option should be counted by using the following figures:

- ✓ 35 milliseconds for Intra-Europe
- ✓ 50 milliseconds for Intra-US
- ✓ 85 milliseconds for Trans-Atlantic

- ✓ 350 milliseconds for LAM, Japan, India, Australia and the rest of Asian countries

This round trip time is guaranteed until the point where the packets access the mentioned region. We are not guaranteeing the round trip time up to the End-location as we do not control third-party networks.

## 6.2.4 Penalties

Customer can request for a penalty if the RTT to a location has not been respected for more than 3 working days during a given month following the closure of at least one level-1 trouble ticket opened by the customer with the mention "Citymesh Fault".

In case of a valid penalty request, Citymesh will credit 3% of the monthly fee of the services which were affected as mentioned in the ticket.

## Penalty claim

If Customer wants to claim a penalty based on Citymesh not meeting one or more of the performance criteria mentioned in this Service Level Agreement document, Customer can claim the described penalties by sending a registered letter to Citymesh, within 15 days after the incident occurs to the following address:

Citymesh NV  
Service Support  
Siemenslaan 13  
8020 Oostkamp

The parties agree that the compensation payments referred to in this document are the sole compensation that can be claimed against Citymesh in the event of failure to comply with the performance criteria and that Citymesh cannot, under any circumstances whatsoever, be held liable for any other compensation for either direct or indirect damages that the Customer may suffer due to failure by Citymesh to comply with Performance Criteria of the Service Level Agreement.