Service Description
(translated document)

Carrier Line Service

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Agreement	Contract for Data Services Contract for Mietleitung FMG

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1 Introduction

1. This service description describes the services offered by Swisscom in conjunction with the Carrier Line Service (CLS) and Carrier Line Service FMG (hereinafter referred to both CLS).
2. All Carrier Line Services with Ethernet interfaces are certified compliant to the MEF 9 and MEF 14 standards of the Metro Ethernet Forum (MEF).
3. Where not otherwise mentioned below, responsible for the processes between Swisscom and the FDA are stated in the list of points of contact points and declarations of intent made by electronic means (e.g. e-mail, fax, Web Tool / electronic interfaces, etc.).

2 Service overview

1. The Carrier Line Service is a leased line with various bandwidth and interfaces. With CLS, Swisscom offers other providers of telecommunication services (PTS) transparent point-to-point connections with symmetrical, pre-agreed bandwidth.
2. The basic properties of a CLS are the transmission capacity between the two endpoints and the service quality (service level). The service level determines the availability and guarantee levels for the service, as well as the degree of redundancy and fault rectification intervention times.
3. The Service Access Points (SAP) are located at the Network Termination Unit (NTU) interface at each of the endpoints. The responsibility of Swisscom for the operation of the CLS ends at the SAP, where it transfers to the PTS.
4. CLS is generally implemented as follows:
   - Access: Connection between the Swisscom point of presence (PoP) and the PTS's SAP
   - Backbone: Connection between the two Swisscom PoPs
   - End-to-end Circuit: Connection between the PTS's two SAPs

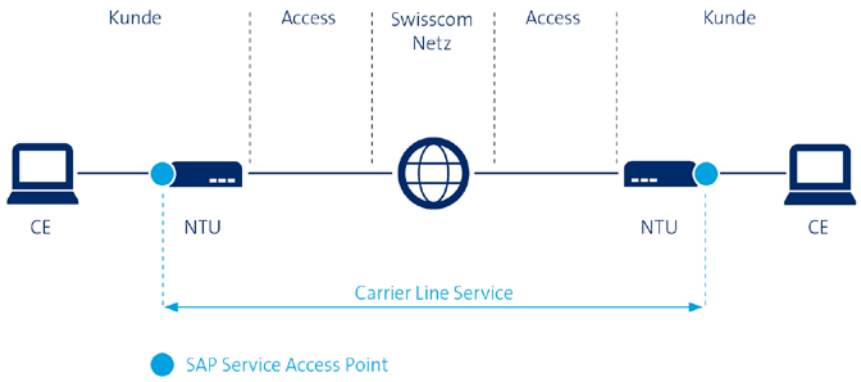

Figure 1: Graphical representation of a Carrier Line Service

5. CLS can be realized using fiber or copper access media. Swisscom will define the suitable realization medium.
8. Carrier Line Service Basic and Premium are available throughout Switzerland.

3 Service Levels

3.1 Overview

1. In order to meet many different needs in terms of availability and redundancy, etc., Swisscom offers CLS with the corresponding service levels Basic, Premium Silver and Premium Platinum.
2. The service level is agreed for each individual service.
3. The availability will depend on the chosen service level. Availability indicates how long the individual service remains in fault-free operation over the course of a year, in terms of total running time.
4. An overview of the differences between the Basic and Premium services can be found in Table 1.

Parameter	CLS Basic	CLS Premium
End-to-end availability	Typical value, not guaranteed ≥ 99.90 %	Guaranteed value Silver: ≥ 99.95 % Platinum: ≥ 99.99 %
Redundancy	None	Silver: None Platinum: Diversified redundant access
Quality reporting	None	Yes
Warranty claim	None	Yes
Service monitoring	Reactive	Proactive
Fault acceptance	24 hours / 365 days	24 hours / 365 days
Fault rectification	24 hours / 365 days[1]	24 hours / 365 days
Time to restore service	Typical value, not guaranteed ≤ 6 hours	Guaranteed value Silver: ≤ 4 hours Platinum: ≤ 2 hours

Table 1: Service Level Agreements offered for CLS Basic and Premium

3.2 Carrier Line Service Basic and Premium Silver

1. CLS Basic is the standard product offered by Swisscom. The service is reactively monitored and has no redundancy in the access and along the backbone.
2. CLS Premium Silver is a proactively monitored service. In order to implement CLS as a Premium Silver service, a monitored NTU is required at both endpoint sites. Usually, Premium Silver services are protected by automatic rerouting in the backbone. The access is not protected, however.

[1] Dependent on local factors and Swisscom staffing capacities. Preferential treatment is given to Premium services.

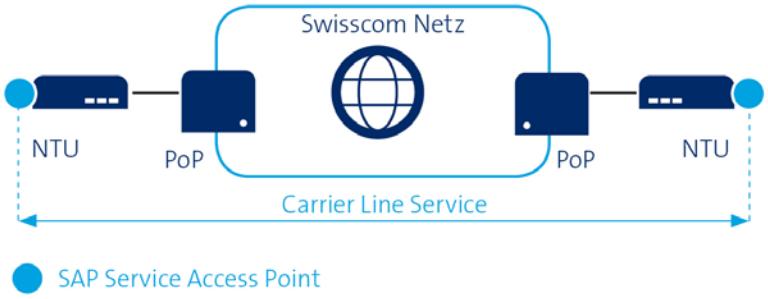

Figure 2: Graphical representation of a Carrier Line Service Basic / Premium Silver

3.3 Carrier Line Service Premium Platinum

1. CLS Premium Platinum is a proactively monitored service. In order to implement CLS as a Premium Platinum service, a monitored NTU is required at both endpoint sites.
2. Thanks to the diversified redundant access, CLS Premium Platinum has SAP-to-SAP protection. The service comprises two completely discrete lines (connections) and has no single point of failure, neither in the backbone nor in the access. Each access uses a separate cable (cabling ducts). There are two Swisscom NTUs at both the starting and end points of the line.

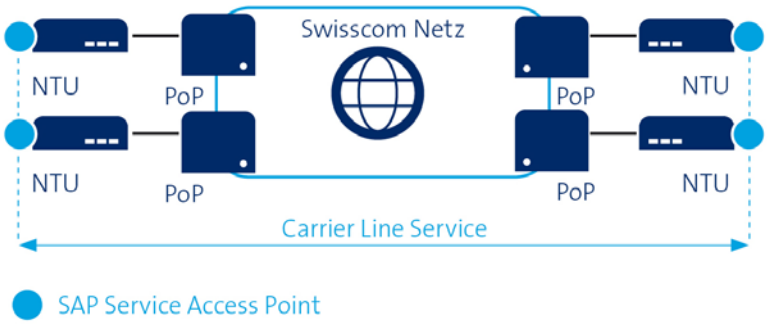

Figure 3: Graphical representation of a Carrier Line Service Premium Platinum

3. In operational terms, the PTS is permitted to use both lines of the Premium Platinum service. It should be noted that Swisscom merely ensures the capacity of one line.
4. If a fault is caused due to the use of the secondary connection, the PTS is responsible for rerouting the connection.
5. A CLS Premium Platinum access is only considered to be not available if both lines fail simultaneously.
6. In the case of planned maintenance work, it is ensured that at least one of the two lines will always be in operation.

3.3.1 Premium Platinum Light

1. An alternative variant (Premium Platinum Light) provides a solution in which the access lines are not routed on separate cables. There is therefore a single point of failure in the access.
2. There are specific SLA conditions for the Premium Platinum Light service.

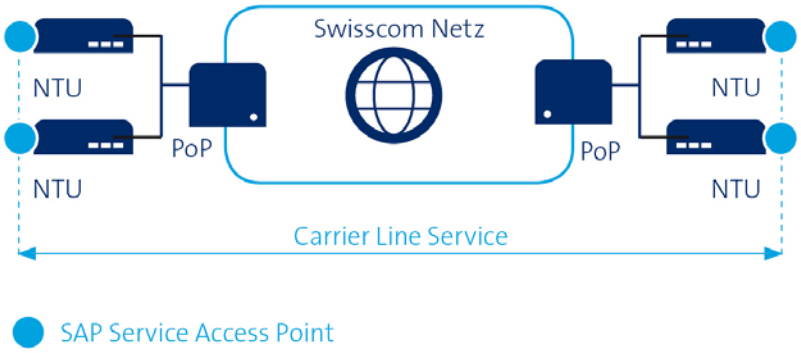

Figure 4: Graphical representation of a Carrier Line Service Premium Platinum Light

4 Technical specifications

4.1 Available transmission capacities and interfaces

1. CLS is available with the transmission capacities and interfaces listed below in Table 2.

Transmission capacity		Basic	Premium Silver	Premium Platinum
2M	1984 Kbps	X.21; V.35 ; V.36; G.703 120Ω	G.703 120Ω	Not available
	2048 Kbps	X.21; V.35; G.703 120Ω; 10/100 Base-T	G.703 120Ω	G.703/120Ω
4M	4096 Kbps	10/100 Base-T	Not available	Not available
6M	6144 Kbps	10/100 Base-T	Not available	Not available
8M	8192 Kbps	10/100 Base-T	Not available	Not available
10M	10 Mbps	10/100 Base-T		
34M	34 Mbps	G.703/75Ω		
45M	45 Mbps	G.703/75Ω		
100M	100 Mbps	100 Base-T		
155M	155 Mbps	STM-1, G.703/75Ω; G.707, G.957/optical		
622M	622 Mbps	STM-4, G.707, G.957/optical		

Transmission capacity	Basic	Premium Silver	Premium Platinum
1G	1'000 Mbit/s 1'062 Mbit/s	1000 Base-T FC100 (1GFC)/FICON 1G	
2G	2'125 Mbit/s	FC200 (2GFC)/FICON 2G	
2.5G	2'488 Mbit/s	STM-16c, G.707, G.957/optical	
4.25G	4'250 Mbit/s	FC400 (4GFC)	
8G	8'500 Mbit/s	FC800 (8GFC)	
16G	14'025 Mbit/s	FC1600 (16GFC)	
10G	9'953 Mbit/s 10'000 Mbit/s 10'519 Mbit/s	10 GE WAN, STM-64c 10 GE LAN FC1200 (10GFC)	
40G	40'000 Mbit/s	40GE LAN	
100G	100'000 Mbit/s	100 GE LAN	

Table 2: Available transmission capacities and interfaces for CLS

2. Details are provided in the Technical Manual.

4.2 Network Termination Unit

1. Swisscom will provide the appropriate NTU type for the selected service level and number of interfaces required.
2. The PTS undertakes to leave the NTU at the site at which they were installed. Any moving of NTU to another location shall require the prior written consent of Swisscom. No modifications may be made to the NTU. Repairs, maintenance or any other intervention on the NTU must be performed by an authorized representative of Swisscom. The PTS ensures that only qualified personnel have access to the NTU.

4.3 Technical feeder

1. The handover of a CLS can be arranged in a technical feeder in the conditions stated in the Technical Manual.

5 Options

5.1 Function test with report

1. **New lines**

   If the PTS requires a report on the function test (15 minutes or 24 hours) for the corresponding new Carrier Line Service, this must be specified in the order.

   Lines in service

   Swisscom will test lines in service for 15 minutes or 24 hours at the PTS's written request. These

function tests are only carried out during standard working hours.

5.2 Fulfillment outside standard working hours

1. At the PTS's request, Swisscom will arrange installation or modification of services in Customer Windows outside standard working hours.

5.3 Express Orders

1. If the necessary resources are in place, the PTS may place an express order for CLS 2MBit/s to 1GBit/s for the service level Basic and Premium Silver.

Prerequisites in customer access	Service level	Express target lead times
Cable and equipment available	Basic, Premium Silver	5-9 working days[2]

Table 3: CLS expedited provisioning

[2] Depending on local factors and personnel capacities of Swisscom.