Operational Manual
(Translated Document)

Carrier Ethernet Service

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Agreement	Contract for Data Services Contract for MLF Leased Lines

Content

1 Introduction

1. This operating handbook describes the procedures between Swisscom and the PTS, which are used for the production and operation of the Carrier Ethernet Service and Carrier Ethernet Service MLF (both hereinafter referred to as CES).
2. Where nothing to the contrary is mentioned, the points of contact and areas mentioned in the list are responsible for the processes between Swisscom and the PTS, and declarations of intent are exchanged electronically (e.g. e-mail, fax, web tool/electronic interfaces, etc.).

2 Service fulfilment

2.1 Business cases

1. The service fulfilment services include in particular information, offers, provision and service adjustments. They are listed below in Table 1.
2. In addition to determining the circuit layout, the provision of a CES includes the configuration and installation of the relevant equipment as well as a line test.
3. Both new activations and service adjustments are made within normal business hours and cannot be carried out during the Coordinated Maintenance Window (CMW).

Business cases	Incoming	Outgoing	Duration in working days (guidelines)
Information	Wholesale Portal	Wholesale Portal	-
	Account manager	Account manager	-
Offers	Offer request	Offers	5
Order	Order form	Confirmation of receipt of order	1*
		Confirmation of planned commissioning date (individual agreement**)	5*
Commissioning – LE access – HE access 1G – HE access 10G			 10* 10* 15*
Confirmation after commissioning		Documentation of individual agreement	5*
		Activation of service by PTS	

* Working days from date of order receipt
** Within one working day if no objection is received from the PTS

Table 1: CES business cases

2. The given guideline values are only valid if sufficient resources are available.

2.2 Information

1. Swisscom will provide the PTS with the following information:
   − Non-binding price information, electronically via the Wholesale Portal
   − Non-binding information on availability and prices via the Account Manager

2.3 Offers

1. To receive an offer, the PTS forwards a request to Swisscom.
2. Replies to offer requests are generally issued within five working days.
3. Following receipt of the offer request, Swisscom creates an offer with the following details:
   − Price information
   − Realisation date from date of receipt of the order
   − Period during which the offer will remain valid

2.4 Production variations

1. The following variations are available for the production of a CES:
   − New service activation
   − Service adjustment
2. An overview of the production variations and business cases can be found in section 4.

2.4.1 New service activation

1. When a new service is activated a new CES service (CES Connectivity or CES Access) is provided. This involves the initial administrative entry of the service in the systems of Swisscom as well as the actual technical commissioning.
2. The guideline value for the commissioning of a new service is listed in Table 1.

2.4.2 Service adjustment

1. With a service adjustment, an existing CES can be adapted within the scope of the offer. The following possibilities are available:
   − Change to the CES Connectivity bandwidth or class of service
   − Smaller, logical changes at a location
   − Larger, physical changes at a location
2. The relocation of a CES Service access point is viewed as a location change. A change of location of two or more access points is treated as a cancellation and new order
3. Extensions to an existing CES service are viewed as a new service activation in line with section 2.4.1.

2.5 Order

1. To order a CES, the PTS sends a completed order form to Swisscom.
2. If Swisscom created an offer in advance, these details (e.g. offer ID) must be shown in the order.
3. Following receipt of the order, Swisscom checks the details. If the order details are correct and complete, Swisscom creates a confirmation of receipt of the order with the identification of the

service. The PTS generally receives this within one working day.

4. Swisscom generally confirms the planned commissioning date within five working days following receipt of the order from the PTS. The PTS also receives the following information with this confirmation:
   − Service description with addresses and all required specifications
   − Line identification
   − Recurring and one-time charges
5. If no objection is received from the PTS by e-mail within one working day following receipt of the confirmation, this is viewed as the conclusion of an individual agreement for the respective Carrier Ethernet Service.
6. If the individual agreement is concluded, commissioning takes place in accordance with section 2.6.
7. If Swisscom did not create an offer prior to receiving the order from the PTS, any expansion costs will be listed in a separate offer. In such cases, the individual agreement will only be viewed as concluded if the PTS agrees to the expansion costs.

2.6 Commissioning

1. Swisscom sends the PTS installation instructions.
2. The PTS is responsible for ensuring an appropriate infrastructure in line with the specifications of Swisscom (PTS infrastructure), such as rooms, in-house installations, air conditioning and power supply, is available in a timely manner. The required infrastructure work must be completed at least two working days prior to the agreed commissioning date.
3. The PTS must send Swisscom a confirmation regarding the completion of this work. The PTS is responsible for any delays in the installation work which result in a postponement of the commissioning date.
4. The PTS is responsible for the installation, maintenance and operation of the building access.
5. If a location cannot be commissioned on the agreed commissioning date, the service agreement governs any resulting claims of the PTS and/or Swisscom.
6. Prior to commissioning the PTS receives the information required for configuring the customer equipment.
7. Following commissioning of the service, Swisscom will carry out a line test to check functionality and also the ability to achieve the quality parameters. Swisscom will determine the measurement duration and measurement procedure in line with recognised technical criteria.
8. Swisscom documents the individual agreement on the respective service and sends it to the PTS following commissioning of the service. This includes the following information, among other things:
   − Service description with addresses and all required specifications
   − Identification of the service
   − Actual commissioning date
   − Recurring and one-time charges
9. Following conclusion of the production phase, a confirmation will be sent to the PTS confirming that the service is ready to be activated. To activate the service, the PTS must contact Swisscom on **0800 71 71 71**. The service will be available following successful activation.

2.7 Provision outside normal business hours

1. Upon request by the PTS, Swisscom will carry out the provision/service adjustment outside normal business hours in the customer windows.
2. Provision outside normal business hours must be requested when placing the order; otherwise it is carried out in customer window 0 (standard).

Customer window	Time		Comments
CW 0	Monday-Friday:	08:00-17:00	Normal business hours
CW 1	Monday-Friday:	06:30-08:00 17:00-19:00	
CW 2	Monday-Friday: Saturday-Sunday:	00:00-06:30 19:00-24:00 All day	No customer orders are processed during the Coordinated Maintenance Window (CMW)

Table 2: Customer Windows

2.8 Delivery deadlines for service adjustments

1. To adjust a service, the PTS sends the respective form to Swisscom.
2. The delivery deadlines (guideline values) for service adjustments are listed in Table 3.
3. Swisscom confirms the successful adjustments to the PTS.

Business case	Description	Duration in working days (guidelines)	Minor/ Major change
Change to the bandwidth without changing the access type (LE/HE 1G/HE 10G)[1]	Up/downgrade of bandwidth	1	--
Change to class of service	Deactivate/activate class of service	1	--
Change to number of MAC addresses	Addition/removal of additional MAC addresses	1	--
Logical change, encapsulation (S-Tag)	Encapsulation conversion (S-Tag) 802.1ad ↔ QinQ	2	Minor
Logical change, encapsulation (C-Tag)	Encapsulation conversion (C-Tag) Trunking (802.1q) ↔ No Trunking (untagged)	2	Minor
Changes Basic ↔ Premium Silver or Basic Light ↔ Silver Light	SLA change without physical adjustments	3	--
Changes Basic/Premium Silver ↔ Premium Platinum	SLA change. Existing access is adjusted.	15	--

[1] If the access type has to be adjusted because of the change, a new access must be provided parallel to this (Add Access).

Changes Basic Light/Silver Light ↔ Basic/Premium Silver/Premium Platinum	SLA change. New access made available in parallel. Existing access is then removed.	15	--
CPE change (L-/M-/H-CPE)[2]	CPE change	10	Major
Change LAN port	Adjust the LAN port (change pluggable LAN port)	10	Major
CPE ↔ Direct Connect[3]	Remove or install CPE	15	Major

Table 3: Delivery deadlines for service adjustments

2.9 Cancellation («disconnection»)

1. In the event of a regular termination of a CES in accordance with the conditions in the contract document, the service will be disconnected in the month following expiry of the notice period.
2. The business cases “Reduce CES Connectivity” (reduce VLAN), “Remove CES Connectivity” (delete VLAN) and “Remove CES Access” (delete access) enable the partial or complete termination of a service.

3 Service assurance

3.1 General demands

1. The Service Assurance services include the following activities:
   - Operation and maintenance, including the relevant CPE
   - Fault acceptance 24 hours a day, seven days a week
   - Reactive monitoring for CES with quality of service Basic, Basic Light and all Direct Connect variants
   - Pro-active monitoring for CES with Premium quality of service
   - Fault repair up to 24 hours a day, seven days a week, depending on quality of service, location factors and personnel capacities of Swisscom (Premium services are given priority in each case)
   - Quality of service reports with effectively measured quality of services

3.1.1 Swisscom Customer Care Centre

1. The Customer Care interface between Swisscom and the FDA is agreed on and recorded in the list containing the points of contact.
2. The monitoring and administration of CES takes place in accordance with the service agreement.
3. Swisscom initiates fault analysis and rectification for Premium services proactively and reports this information to the PTS.
4. Swisscom initiates fault analysis and rectification for Basic and Direct Connect services reactively based on fault reports received from the PTS.
5. For end customers, the PTS is the first point of contact in each case, of which it makes its end customers aware upon commencement of using the service.

[2] Note the restrictions (e.g. ENNI/E-Tree Root only available with H-CPE)
[3] Note the restrictions (e.g. for E-Tree Root and CES Light only CPE version is possible)

3.1.2 Maintenance: Coordinated Maintenance Window (CMW)

1. To ensure quality can be maintained, network maintenance is needed periodically. Reconfigurations, hard and software changes will be carried out during the CMW whenever possible.
   The CMW is always on a Sunday between 2:00 am and 6:00 am.
2. If the planned interruption is expected to last more than three minutes, the affected PTSs will be informed by Swisscom at least ten working days beforehand.
3. If the planned interruption is expected to be less than or exactly three minutes, the work will still be carried out during the CMW, but the PTS will not be informed about it.
4. In special cases work may be needed outside the CMW, which the PTS will also be informed about at least ten days in advance.
5. Swisscom reserves the right to adjust the CMW. Swisscom will inform the PTS in good time about any such changes.

3.2 Fault reporting and rectification

3.2.1 Conduct in the event of faults

1. The PTS will only contact Swisscom once it has confirmed that the fault is not in its equipment or in-house installation. If, following receipt and review of the fault notification, it can be proven that the fault lies within the area of responsibility of the PTS, the PTS must reimburse Swisscom for any costs incurred.
2. Swisscom is authorised to take measures to avoid or rectify faults, and to demand that the PTS takes appropriate precautions at its location. If the fault cannot be rectified as such, the PTS must change its installation or the installation of its customers or suspend operation at its expense.
3. The PTS will provide Swisscom employees with access to its premises within the scope of service provision and faults rectification.
4. If an event is identified as a fault, Swisscom will open a trouble ticket. The trouble ticket is updated on an ongoing basis with information on the measures completed in relation to this event. For the trouble tickets, a differentiation is made between faults determined by Swisscom and those identified by the PTS.

3.2.2 Faults identified by Swisscom (for Premium services with CPE)

1. If the management system of Swisscom identifies a fault, a trouble ticket will be created for CES services with Premium quality of service and CPE. Directly after opening the trouble ticket, fault rectification measures are initiated and a confirmation is sent to the PTS, if possible within the time defined in the service agreement.

3.2.3 Faults identified by the PTS

1. If an end customer of the PTS identifies a fault, they will contact the “End User Helpdesk” of the PTS. After reviewing the relevance of the fault, an authorised employee of the “End User Helpdesk” of the PTS reports the fault to Swisscom. A trouble ticket is opened as soon as the event is reported. Authorised persons are those expressly named in the contract. Fault rectification measures are initiated as soon as the trouble ticket is opened, and the PTS is notified as soon as possible.
2. In order to enable efficient fault rectification, the fault report of the PTS includes the following service information: CES Access ID and the CES Connectivity ID or CES Service ID.

3.2.4 Service restoration

1. Once the trouble ticket has been created and the confirmation has been sent to the PTS, Swisscom will work actively on fault rectification and provide the PTS with regular status updates.

3.3 Quality of service reports

1. Quality of service reports show the extent to which Swisscom has complied with the target service levels.
2. Depending on the quality of service, there is a quality report (SLA Reporting) and a performance report (Performance Reporting) in accordance with Table 5.

	CES Basic	CES Premium
Quality report	No	Yes
Operative report	Yes, on request	Yes
Performance report	Yes[4], on request	Yes, on request

Table 4: Possible reports based on quality of service

3.3.1 Quality report

1. The quality report shows the level of compliance with quality requirements in line with the service agreement for the respective service.
2. The monthly quality report includes the following key information:
   - Service name (ID)
   - Start date, total downtime and suspend time
   - Annual availability
   - Compliance with the recovery time per fault
   - Compliance (non-attainment) with/of maximum number of faults
3. The annual report also includes information on a possible refund.

3.3.2 Performance report (performance and traffic report)

1. A performance report is available for services with CoS containing the frame loss, delay and jitter measurements.
2. The traffic report includes the individual analysis of a CES Service, which means the respective throughput and loss rates are listed for the service classes Best-Effort (CoS 1) and Real-Time (CoS 5).
3. Swisscom issues a performance report at the request of the PTS. The PTS can determine the measurement interval of the analysis. The measured data are available from the request input date (no historical evaluation possible).

3.3.3 Operative report

1. The operative report includes the statistical data of the trouble tickets created for each fault.

[4] Only for services with CoS option

2. This report includes the following parameters, among other things:
   - Timestamp when trouble ticket was opened and closed
   - Swisscom trouble ticket number and trouble ticket number of the PTS
   - Details on the affected service and quality of service
   - Errors reported by the PTS or found by Swisscom

3.4 Escalations

1. If a quality of service parameter cannot be fulfilled, Swisscom is responsible for restoring the service appropriately. If the issue cannot be rectified within the agreed time, the event can be escalated. The escalation points can be found in the list containing the points of contact.

4 Annex: overview of business cases

1. The business cases listed below are used for CES. A differentiation is made between business cases that affect CES Access and those that affect the CES Connectivity.

Business case affects	Name	Description
CES Connectivity	Add CES Connectivity (Add VLAN)	A new CES Connectivity (VLAN) is realised on a CES Access. The CES Access can be an existing one or one that is yet to be implemented.
	Extend CES service (Extend VLAN)	Extends an existing CES Service to include additional CES Connectivity. The CES Access can be an existing one or one that has to be implemented beforehand.
	Reduce CES Service (Reduce VLAN)	Reduces an existing CES Service by removing CES Connectivity. If the CES Access does not have any further CES Connectivity, it will be removed after notifying the PTS.
	Remove CES service (Delete VLAN)	The CES Service and the affected CES Connectivity are removed. If the CES Access does not have any further CES Connectivity, it will be removed after notifying the PTS.
	Bandwidth adjustment (Bandwidth Change)	Bandwidth changes, if they are purely logical changes to the existing physical interface and the interface has enough capacity. Class of service changes are also possible with this business case.
	Minor change	A configuration change to an existing CES Connectivity, which only affects the logical properties and does not affect any of the physical properties.
CES Access	Add CES Access (Add Access)	A new CES Access with connection is created. This CES Access is linked to one or more CES Connectivity.
	Major change	A configuration change to an existing CES Access, which affects the physical properties, e.g. change of CPE type.
	Remove CES Access (Delete Access)	The CES Access is removed completely.

Table 5: Overview of CES business cases