Carrier Ethernet Service 3.0

Secure and flexible. Next-generation Swisscom network receives MEF Carrier Ethernet 2.0 certification and brings innovations for wholesale and end customers.

Over ten years since it was launched, CES remains a success story. With more than 5'000 services provided, this managed service offers comprehensive wide-area networking throughout Switzerland, all from a single source, ensuring the highest quality with up to five SLA categories.

CES 3.0 relies on the next generation Cisco-based MPLS-VPLS backbone and is now available with two different access categories. The High-End access version is based on traditional business optical fibre to meet the highest quality requirements.
The portfolio is complemented with the new Low-End access offering (CES Light) based on cost-effective access technologies: VDSL vectoring or FTTH optical fibres[1].

Swisscom is proud to be the first MEF CE 2.0-certified Service Provider in Switzerland. Standardisation would improve interoperability, while lowering operational risks and accelerating time-to-service.

With the Platinum Dual Line[1] option the highest resiliency is achieved thanks to end-to-end route diversity throughout the network. Furthermore, all premium services are guaranteed with extended end-to-end SLAs.

[1] Feature to be introduced in a later release

CES 3.0 offers

- MEF-industry standard CE 2.0 certification
- Standardised services: E-Line, E-LAN, E-Tree and E-Access
- Bandwidth scalability from 2 Mbps to 10 Gbps
- CES Light with two new SLA types (Basic Light and Silver Light) and bandwidths of up to 1Gbps[1]
- Improved service availability via extended SLA with end-to-end guarantees up to 99.99% p.a. (connectivity-based) and full route diversity with Platinum Dual Line[1]
- E-OAM for efficient end-to-end service management across the CES network
- Improved Quality of Service (up to 7 CoS, transparency)
- Performance measurements for frame loss, jitter and delay according to Y.1731
- Flexible VLAN allocation (VLAN-ID assigned by the PTS)
- Increased MAC addresses (up to 10,000)
- Full transparency for Layer 2 Control Protocols (based on EPL option 2)[1]

Facts & Figures

Carrier Ethernet Service

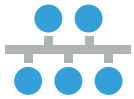
Service type „point-to-point“

E-Line (point to point EVC)
UNI-UNI
Connect two sites end to end

E-Access (point to point OVC)
ENNI-UNI
Connect customer site to a provider

Service type „any-to-any“

E-LAN (multipoint to multipoint EVC)
UNI-UNI
Connect multiple sites in one EVC



E-Tree (routed multipoint EVC)
UNI-UNI
Connect multiple sites with strict policies

Service level agreement (SLA)

SLA type	Basic Light	Silver Light	Basic	Premium Silver	Premium Platinum
Support time	7 x 24h				
Removal of defects	Mo-Fr 8-17h	Mo-So 7-22h	7 x 24h		
Service monitoring	reactive	pro active	reactive	pro active	
End-to-end availability	Yearly end to end availability on the L2-EVC (point-to-point or hub-and-spoke)				
	99.80% CPE typically not guaranteed	99.90% CPE guaranteed	99.90% CPE typically not guaranteed	99.95% CPE 99.93% DC guaranteed	99.99% CPE 99.97% DC guaranteed
Time to repair	10h, not guaranteed	8h, guaranteed	6h, not guaranteed	4h, guaranteed	2h, guaranteed
Max # of incidents	8 p.a. not guaranteed	max. 6 p.a. guaranteed	max. 6 p.a. not guaranteed	max. 4 p.a. guaranteed	max. 2 p.a. guaranteed
Access type	Low-end Access (CES Light) with copper VDSL/CAN or fiber FTTH/FAN		High-end Access (CES) with FTTO/FTTH fiber direct connected to MAE (EC/BAC)		

Bandwidth up to 10 GBit/s

	Basic Light + Silver Light		Basic	Premium Silver	Premium Platinum
Access quality	Low End		High End		
Access type	> Single Access LE (xCAN) VDSL	> Single Access LE (FAN)	> Single Access HE (EC / BAC)	>Single Access HE (EC / BAC)	> Dual Access HE (EC / BAC)
Bandwidth / Medium	> 2M - 20M VDSL sym. copper	> 2M - 1G sym, FTTH fiber	>2M – 10G sym. FTTO/FTTH fiber		

Options (CoS, CPE etc.)

	Basic Light	Silver Light	Basic	Premium Silver	Premium Platinum
CPE Options	n.a. (CPE with single PS already incl.)		> Direct Connect (no CPE) > Mid-range CPE (1G WAN, AC/DC) > High-range CPE (10G WAN, AC/DC)		
MAC-addresses	max. 5 addresses per access		10`000 addresses (default 4`000 per service)		
Class of Service	Yes (7 CoS)		Yes (7 CoS)		
SA reporting	n.a.	Yes, incl.	n.a.	Yes, incl.	
Traffic Report	Yes (Delay / Jitter)		Yes (Delay / Jitter / Loss)		
Flex - VLAN	Yes (1 VLAN supported per access)		Yes (1`000 VLAN supported per access)		
MTU size	1`794 bytes (LEC), 2`048 bytes (LEF)		9`000 bytes		

CES Light