



Addendum to BROTSoLL NGLL

New CPE for NGLL

Approved by BIPT on 01/02/2019

Sensitivity: **Unrestricted**

Table of contents

Table of contents.....	2
1 Purpose of the addendum.....	3
2 Glossary	3
3 Scope of this addendum	3
4 Planning	3
5 Pricing	4
6 Impact on the regulated offers	5
6.1 Adaptations to the BROTSoLL NGLL documents	5
6.1.1 BROTSoLL - Annex 4 “NGLL Pricing”.....	5
6.1.2 BROTSoLL - Annex 5 “Technical specs NGLL”	6

1 Purpose of the addendum

The NGLL offer must be adapted to reflect the choice to evolve towards new Layer 2 devices from a new vendor. New NGLL End-customer sites will be delivered with the new OneAccess CPE.

The new CPE will be available on both EFM and Fiber Access, and supports all the features documented in the NGLL reference offer: QoS, reporting, reliability and interoperability with your existing NGLL lines.

This new OneAccess CPE also offers you and your End-customer additional benefits:

- Fanless design resulting in low noise: the perfect solution for office environments
- Minimal rack or desk space required
- Green solution thanks to the limited power consumption: <30 Watt
- Future-proof solution

The present addendum has been submitted to the BIPT in order to update the technical specifications of the CPE in the NGLL reference offer. It does not introduce any new features nor process changes.

2 Glossary

- APAL: Aggregation Point Access Line
- NGLL: Next Generation Leased Line
- BROTSoLL: Proximus Reference Offer for Terminating Segments of Leased Lines
- CPE: Customer Premises Equipment
- QoS: Quality of Service

3 Scope of this addendum

This addendum is applicable to the following reference offer:

Proximus Reference Offer for Terminating Segment of Leased Lines (BROTSoLL), limited to the Next Generation Leased Line (NGLL).

4 Planning

The present addendum has been submitted for approval to the BIPT in order to become effective as with the availability of the new CPE.

5 Pricing

The installation and rental tariffs for NGLL-services remains unchanged.

6 Impact on the regulated offers

6.1 Adaptations to the BROTSOLL NGLL documents

The sections of the NGLL Reference Offer documents that are impacted by this addendum are indicated in the subsequent paragraphs.

Those adaptations refer to the consolidated version of the BROTSOLL NGLL Reference Offer (version approved by BIPT on 16/02/2018), published on Proximus website, at https://www.proximus.be/wholesale/en/id_brotsoll/public/connectivity/regulated-services/brotsoll.html

6.1.1 BROTSOLL - Annex 4 “NGLL Pricing”

In Section 2.2 “Rental fee”

The rental fee of the CPE is included in the NGLL rental fee both for the OLO aggregation point and for End-customer sites :

As availability of CPEs can change in the future the currently proposed model can be replaced in the future with an equivalent model. These CPEs will be used today :

- OLO aggregation point Customer-sited or Proximus sited :
 - o Up to 1Gbps:
 - OneAccess 1646: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); AC power
 - ME-3400E-24TS-D - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); DC Power
 - ME-3400EG-2CS-A - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); AC Power
 - o For 10Gbps:
 - ASR-920-12CZ-A/D - LAN: SFP 10Gigabit Ethernet (multimode or single-mode); AC or DC power
- OLO aggregation point Proximus-sited :
 - o Up to 1Gbps:
 - OneAccess 1646: Gigabit RJ45 port or SFP Gigabit Ethernet (single-mode); AC power.
 - ME-3400E-24TS-D - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (single-mode); DC Power
 - ME-3400EG-2CS-A - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (single-mode); AC Power
 - o For 10Gbps:
 - ASR-920-12CZ-A/D - LAN: SFP 10Gigabit Ethernet (single-mode); AC or DC power
- End-customer sites :
 - o OneAccess 1646: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); AC power

- ME-3400E-24TS-D - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); DC Power
- ME-3400EG-2CS-A - LAN: Gigabit RJ45 port or SFP Gigabit Ethernet (multimode or single-mode); AC Power

Disclaimer: further tests are required to validate that the used CPEs support extreme configurations such as eg 50% Voice QoS on a 1 Gbps or more than 750Mbps Voice QoS on a 10 Gbps NGLL-line.

6.1.2 BROTSOLL - Annex 5 “Technical specs NGLL”

Section 3.1 “Connectivity services”, paragraph “protocol limitations” must be replaced as follows:

The service is intended for transport of IP packets by Ethernet frames (IPoE). Some protocols outside of this IPoE framework do not transparently pass. [Table 1](#) summarizes the transparency test results for the different NGLL CPE.

The lists provided are indicative and non-exhaustive.

Transparency of the types of L2CP frames as listed in the table has been validated upon Destination MAC address of the L2CP frame, but not on any other field of the L2CP frame.

OLO has the opportunity to request on a project mode basis for ad hoc testing to check the transparency of any specific protocol in the context of NGLL.

Table 1: summary of transparency results for NGLL CPE's ¹

	DA Ethernet / DA IP	Cisco ME3400	Cisco ASR920	OneAccess 1646
Control frames				
IGMP		Discard	Forward	Forward
IEEE L2CP Frames				
STP IEEE	01-80-c2-00-00-00	Policed ²	Policed ²	Forward
Pause Frames	01-80-c2-00-00-01	Discard	Discard	Discard
LACP/LAMP	01-80-c2-00-00-02	Discard	Discard	Forward
802.3 ah	01-80-c2-00-00-02	Discard	Discard	Discard
Port authentication	01-80-c2-00-00-03	Discard	Policed ²	Forward
E-LMI	01-80-c2-00-00-07	Discard	Policed ²	Forward
LLDP	01-80-c2-00-00-0E	Policed ²	Policed ²	Forward
MMRP	01-80-c2-00-00-20	Forward	Forward	Forward
MVRP	01-80-c2-00-00-21	Forward	Forward	Forward
Cisco L2CP frames				
CDP	01-00-0c-cc-cc-cc	Policed ²	Policed ²	Forward
PVSTP+	01-00-0c-cc-cc-cd	Policed ²	Policed ²	Forward

¹ Lab validation has been performed on the following CPE image versions:

- Cisco ME3400: Cisco IOS 12.2.60 EZ 11 – Metro Access (release date 05/06/2017)
- Cisco ASR920: Cisco ASR 920 Series IOS XE UNIVERSAL-NO PAYLOAD ENCRYPTION 3.18.0.SP – Metro Access Service License (release date 29/06/2016)
- OneAccess 1646: TDRE14.002.793 (release date 08/09/2017)

² For security reasons, parameters will not be publicly shared. Beneficiary shall contact Proximus if he has the need to receive this information.