



Addendum to BROTSoLL

BROTSoLL NGLL jumbo frames

Date
Sensitivity

Approved by the BIPT on 21/03/2022
Unrestricted

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1. Purpose of the addendum

The purpose of this addendum is to inform the sector about the increase of the MTU Size of the NGLL and NGLL Light service to 9000 octets. In this document, the MTU Size is defined as the Size of the "MAC Client Data" field in a tagged MAC frame.

With this improvement, Proximus follows up on the remark of the BIPT made on MTU size in the " Besluit van de Raad van het BIPT van 20 september 2021 met betrekking tot de analyse van het BROTSOLL - referentieaanbod van Proximus voor hoogwaardige toegangsdiensten" 5.4. Andere punten - Conclusie BIPT – *"Proximus moet voorlopig de ondersteuning van "jumbo frames" niet toevoegen aan het referentieaanbod, maar moet het referentieaanbod aanpassen zodra dit technisch mogelijk zou zijn, en een dergelijke technologische evolutie tijdig kenbaar maken."*

2. Dependencies with other addenda

There are no dependencies with other addenda.

3. Scope & planning

Tagged MAC Frames will be enabled to support a MAC Client Data +PAD data fields with an MTU size of 9000 octets on fiber based Gigabit Ethernet and 10 Gigabit Ethernet P2P lines. This feature is targeted to support Jumbo frames on the aforementioned lines.

The planned date to implement this feature on NGLL and NGLL Light is 25/04/2022.¹

4. Description

Thanks to the new TITAN MPLS network, Proximus is now able to increase the MTU size for fiber based Gigabit Ethernet and 10 Gigabit Ethernet P2P lines to 9000 octets in order to support Jumbo frames.

Proximus proposes to deploy this feature on all existing and new fiber based NGLL and NGLL Light Gigabit Ethernet and 10 Gigabit Ethernet End-User Sites and APALs. The installed base of these fiber based NGLL and NGLL Light Gigabit Ethernet and 10 Gigabit Ethernet End-User Sites and APALs will therefore be retrofitted to support Jumbo frames.

¹ Proximus might postpone this in order to guarantee the quality of the deliverables. The exact date will be communicated as soon as it is known by Proximus.

5. Operational impacts

Changes (reconfiguration) on the TITAN network and the CPEs are required to support Jumbo frames.

Proximus will remotely reconfigure all fiber based NGLL and NGLL Light Gigabit Ethernet and 10 Gigabit Ethernet End-User Sites and APALs via planned works during the standard maintenance windows as defined in the Main Body of the reference offer. This will give a short service interruption per CPE (less than 1 minute per CPE).

6. Pricing

There is no impact on the pricing of the NGLL and NGLL Light service. The deployment of the increased MTU size is free of charge for the Beneficiary without any impact on the monthly rental fees, nor on the one-time fees present in the BROTSoLL NGLL reference offer.

7. Adaptation on BROTSoLL documents

BROTSoLL – Annex 5 NGLL Technical Specifications

2.2.3. MTU size

In this document, the MTU size is defined as the size of the "MAC Client Data" field in a tagged MAC Frame. [Table 1a](#) and [Table 1b](#) list the fields in such a frame.

Table 1a: overview of fields in a tagged MAC Frame – End-User Sites on copper (using EFM technology)

<i>Field</i>	<i>Field size</i>
Destination Address	6 octets
Source Address	6 octets
Dot1Q inner VLAN tag (C-tag)	4 octets
MAC Client Length/Type	2 octets
MAC Client Data +PAD	1542 octets
Frame Check Sequence	4 octets
Total	1564 octets

Table 2b: overview of fields in a tagged MAC Frame - End-User Sites and APALs on P2P dedicated Fiber (Ethernet over Fiber)

<i>Field</i>	<i>Field size</i>
Destination Address	6 octets
Source Address	6 octets
Dot1Q inner VLAN tag (C-tag)	4 octets
MAC Client Length/Type	2 octets
MAC Client Data +PAD	9000 octets
Frame Check Sequence	4 octets
Total	9022 octets

Note that one C-tag at End-User demarcation point is mandatory for indicating the user priority (also for pO). On the OLO Aggregation Point the MAC Frame Size also includes the additional 4 octets of the dot1Q outer VLAN-tag (S-tag). **Error! Reference source not found** lists the MTU size and maximum Frame Size for both the End-User Site and the OLO Aggregation Point.

Table 3: MTU sizes for End-User Site and OLO Aggregation on Point on P2P dedicated Fiber (Ethernet over Fiber)

Access Type	MTU	Max Ethernet Frame Size
End-User Site	9000 octets	9022 octets
OLO Aggregation Point	9000 octets	9026 octets

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