

Proximus Reference Offer for Duct Access in GPON Underground Deployments

Main Body

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1. Introduction

1.1 Scope of the Reference Offer

- 1) The present Reference Offer for Duct Access deals with the duct access services that Proximus offers to a Telecommunications Operator, hereafter called “Beneficiary”, under the conditions of this offer.
- 2) The present version contains a functional and quantitative reference offer setting out both
 - the technical characteristics necessary to allow the Beneficiary to obtain an accurate picture of the product that he will be able to order, and
 - the general pricing principles and pricing structure as can be determined at this stage.
- 3) The duct access services included in this reference offer encompass the following services, as defined and described below:
 - Access to a Proximus SRV Subduct
 - Lead-in to a Proximus SRV Subduct
 - Interconnection of Proximus SRV subduct in Proximus street infrastructure
- 4) The Proximus Reference Offer for Duct Access in GPON Underground Deployments offers to Beneficiaries that do not own large existing fixed networks at the date of the adoption of the BCA Decision, on FRAND terms wholesale physical access to Available Subducts at the level of SRV-type of subducts in the geographical area covered by the Proximus P2MP footprint, in view of use of such access for FTTx infrastructure deployment. In case other types of ducts are used in the future in the geographical area covered by the Proximus P2MP-footprint, Proximus will develop a similar access regime for the sharing of such ducts.
- 5) Proximus will perform all the required actions and interventions in its underground infrastructure. By procuring wholesale services under the present PRODA, the Beneficiary explicitly commits not to undertake itself or through any other person any actions and/or interventions in the Proximus underground infrastructure and agrees that its failure to respect this commitment will automatically lead to the termination of the (sub)duct access from which it benefits. In line with section 10, the PRODA offer will be kept up to date, consolidated and made available on the Proximus website.
- 6) In this regard, the reference offer thus contains the access to available subducts within the SRV deployed in Proximus fiber GPON zones where Proximus has placed end to end underground infrastructure.
- 7) The subducts made available by Proximus are the distribution infrastructure of the Proximus GPON deployment, i.e. they are situated between the Proximus OFP and the Proximus DTP-X's. Figure 1 depicts an underground GPON deployment and shows which SRV's are made available through the present Reference Offer.

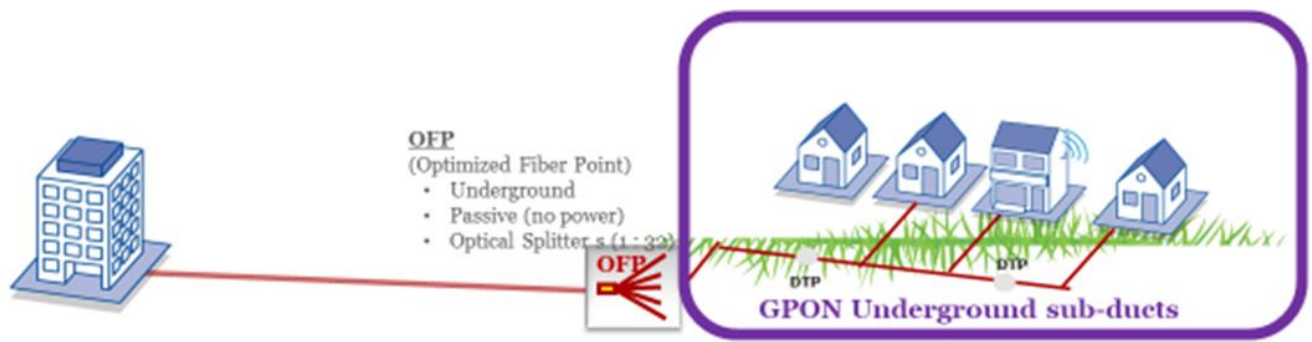


Figure 1: schematic of a GPON underground zoning.
The purple square indicates the distribution SRV's which are made available through the Proximus Reference Offer for Duct Access in Underground GPON deployments.
The drop subduct connecting the End-Users are not part of the offer.

- 8) GPON underground ducts are not accessible during a one-year moratorium period after the ending of the civil works for the deployment of these (sub)ducts. Proximus announces well in advance its plans for works on the public domain in the tools GIPOD, POWALCO or OSIRIS, i.e. tools collecting all information on works on public domain of the particular region. The end date of finalized works serves as start date of the one-year moratorium period.
- 9) Under the conditions of this reference offer, the Reference Offer for Duct Access allows the Beneficiary to use, in a planned construction project by the Beneficiary, pre-existing available Proximus GPON underground ducts. As such, ordering is done as part of the existing steps by a Beneficiary in preparing for a construction project of the Beneficiary.
- 10) The current presence of Proximus underground GPON duct infrastructure is limited, and extremely disperse over the Belgium territory, with scattered geographical coverage.
- 11) Proximus notes that the number of existing and free Proximus underground GPON duct infrastructure in the local access network is limited and there are often, both foreseeable or emerging needs for Proximus' own use. Proximus will investigate, at the time of the request, the availability of the relevant subducts, taking into account inter alia effective use and identified future needs for such ducts by Proximus, inter alia in view of use by Proximus for repair, capacity extensions, and/or dedicated fiber connections.

1.2 General Principles and Limits of the Reference Offer

- 12) The provision of Duct Access Services is subject to the conclusion of a Duct Access agreement between Beneficiary and Proximus according to the General Terms and Conditions of the Bitstream Fiber GPON reference offer when deemed relevant for the said provision. As specified in the Main Body of the Bitstream Fiber GPON reference offer, the General Terms and Conditions of the Reference Offer for Duct Access in GPON Underground Deployments will be set out by Proximus by means of an engineering study covering the technical and IT feasibility as well as the reasonability of the request.
- 13) Proximus will keep the full ownership of the network elements that belong to it and that have been installed by Proximus or on behalf of Proximus and that are used to provide Duct Access Services to the Beneficiary.

- 14) The Beneficiary will keep the full ownership of the network elements that belong to the Beneficiary and that have been installed by the Beneficiary or on behalf of the Beneficiary, using the Proximus GPON underground duct infrastructure.
- 15) Proximus is not responsible for the content of the communications conveyed using the infrastructure placed by the Beneficiary inside the Proximus ducts.

1.3 Definitions

16) The capitalized terms in the present Reference Offer for Duct Access have the meaning as defined below.

GPON	Gigabit Passive Optical Network.
SRV	Cable type used in the Proximus underground GPON deployments, consisting of 7 + 2 subducts. The name comes from the maker of these cables: Speedpipe Rohr Verband.
DTP-X	Proximus handhole used in underground GPON deployments. It is used to connect the distribution subducts to the drop-ducts, connecting the End-User.
End-User	end customer (a (retail) legal or physical person using electronic communications services of a network operator or communications provider (regardless of whether such operator or provider is a reseller) and not for the purpose of (re)selling these or similar electronic communications services (as such or incorporated into another product) themselves).
OFP	Optimized Fiber Point. Is the end point of the feeding and the beginning of the distribution.
ONTP	Optical Network Termination Point. Box that terminates one fibre in the Living Unit or in the technical room (for some MDUs).
FTTB	Fiber To The Business: business zones where there is a mix of GPON and copper technologies.
FTTH	Fiber To The Home.
FTTx	fiber-to-the-premise, i.e., both fiber-to-the-home (to residential Subscribers) and fiber-to-the-office/building (to business Subscribers), excluding any bespoke applications of fiber access.
Point-to-Multipoint (P2MP)	Proximus' Fiber PON network topology. This is a shared fiber solution, shared amongst a number of End Users.
By-Pass (of a manhole)	a connection of two T or L-branches on Proximus sub-ducts that are located at both sides of a manhole, where such manhole is located in between the Beneficiary's Entry and Exit Points of a subduct on the Trajectory over which the Beneficiary desires to rent (a) subduct(s).
Pass-Through (of a manhole)	a connection of two subducts in a Proximus manhole, where the latter is located in between the Beneficiary's Entry and Exit Points of a subduct on the Trajectory over which the Beneficiary desires to rent (a) subduct(s).

Discontinuous Works	Works are discontinuous when, within one Subduct Access Construction Area, several works on (sub)duct segments have been included that are in separate parts of this Subduct Access Construction Area, without being linked with each other for (sub)duct testing/calibration or subduct blowing. Discontinuous works within one Subduct Access Construction Area can in principle be executed within the same Working Day, but trigger additional costs on the field related to additional organisation and works that need to be carried out (moving equipment, additional signalisation, parking reservations).
Entry and Exit Points	points where a fiber cable of a Beneficiary is physically entering into a rented subduct and exiting from a rented subduct by means of Y-branches
Presence & Availability Request	request of a Beneficiary to Proximus to obtain preliminary information on the presence and location of available Proximus physical underground fiber (sub)duct infrastructure in a NIS9 geographic area in the framework of its subduct access PRODA offer
Subduct Access Construction Area	area where several works on (sub)duct segments for (sub)duct testing/calibration or subduct blowing can in principle be executed within the same Working Day.
Track	the physical path that HDPE ducts follow between two manholes or between a manhole and the end of the duct.
Trajectory	the physical path that a specific subduct follows underground in the public domain, between an Entry Point and an Exit Point
Working Day	Monday to Friday, excluding official Belgian public holidays as well as 2 January and 26 December

1.4 Terminology, Structure and Concepts

1.4.1 GPON infrastructure

- 17) The description below sets out the current Proximus GPON underground infrastructure network architecture, which is based on a topology and deployment rules as carried out presently.

This is without prejudice to modifications to such topology and deployment rules which might have an impact on the availability of duct access as described under the current offer.

- 18) The Fiber GPON infrastructure is a shared network solution, i.e. a distribution network that is shared amongst several End-Users. The fiber GPON underground distribution infrastructure consists of several components:

- The OFP (Optimized Fiber Point), which is equipped with splitters and splits the signal from the feeding cable over the different distribution fibers
- The distribution cable, running from the OFP to several DTP-X's
- The DTP-X, a small handhole used for splicing the distribution fibers onto the introduction fiber cable
- The ONTP, the network termination point within the End-User's home

A full description of the GPON Infrastructure is available in the Proximus Reference Offer for Bitstream Fiber GPON Access.

- 19) At Proximus, Fiber GPON infrastructure is deployed in different areas ("*polygons*"), which are split into two types:

- Greenfield areas (where no copper had been deployed before, and only fiber is available)
- Brownfield areas (where copper pre-existed, and in certain circumstances is meant to be outphased).

- 20) The GPON areas are further split into two categories:

- FTTH areas (mostly residential and also businesses)
- FTTB areas (exclusively business areas (e.g. industrial zonings, office multi-dwelling units)).

- 21) Combining 19) and 20), Proximus considers 4 types of deployments:

- FTTH Greenfield
- FTTH Brownfield
- FTTB Greenfield
- FTTB Brownfield

1.4.2 SRV ducts in GPON underground deployments

- 22) The SRV assemblies used in GPON underground deployments consist – within an outer orange sheath – of

- 7 subducts in a black inner sheath, and
- 2 outer subducts outside the black sheath.

These subducts are sufficiently sturdy to be put in the ground without outer protection. The inner black sheath is to keep the subducts straight so as to allow blowing of fiber cable, the orange sheath serves to keep the whole assembly together and, by its colour, to identify the SRV as a Proximus asset. Figure 2 and Figure 3 show the SRV cables.



Figure 2: Proximus SRV in an open trench, next to other cables

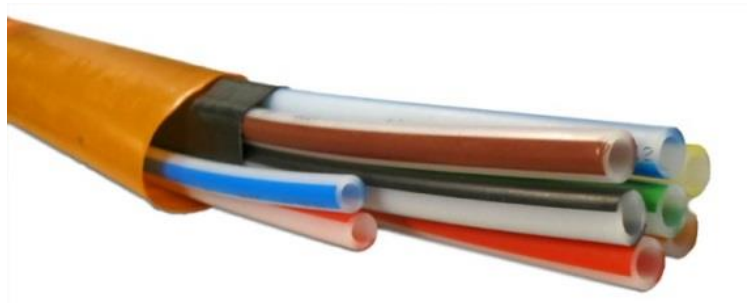


Figure 3: Inside of a Proximus SRV cable: 2 outer subducts are visible + 7 inner subducts within a separate black sheet

- 23) The 2 outer subducts within the SRV are used for home termination by Proximus. They are cut at each DTP and the 4 ends (2 to the right and 2 to the left) are brought into the DTP-X.
- 24) The 7 inner subducts are primarily used for the actual distribution network of the GPON infrastructure. The relevant inner subduct that is being used for the distribution is cut at each DTP-X handhole and brought in and out of that DTP-X handhole.

1.4.3 DTP-X handholes in GPON underground deployments

- 25) Following Proximus' current engineering rules, typically DTP-X handholes are placed every 2 buildings.
- 26) At each DTP-X, one of the inner subducts is brought in and out of the DTP-X handhole and will contain the fiber distribution cable for the Proximus PON network. Both of the outer subducts are also cut and the 4 ends (2 to the right and 2 to the left) are brought into the DTP-X.
- 27) The DTP-X has a maximum capacity of 6 terminating subducts. It follows from 26) that the full capacity of the DTP-X is occupied and in use by Proximus. There is thus no access to DTP-X handholes for Beneficiaries. If necessary, Beneficiaries will deploy their own handholes in case of termination in the vicinity.
- 28) A schematic view of the deployment of the DTP-X and the SRV is shown in Figure 4.

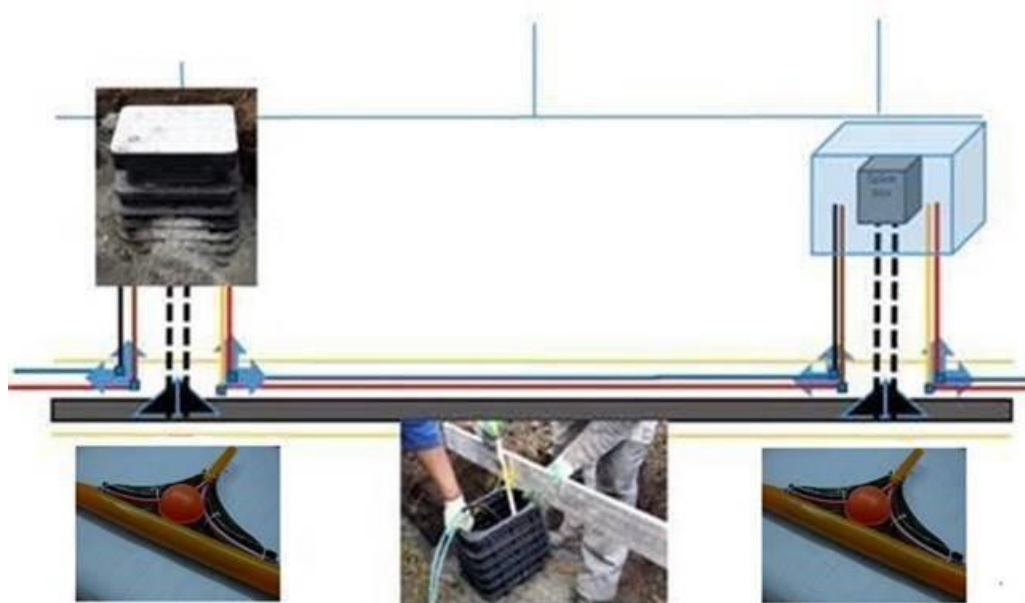


Figure 4: Schematic of DTP-X handholes and the SRV with subducts connected to the handholes

1.4.4 Presence of underground subduct GPON infrastructure

1.4.4.1 FTTH

- 29) In FTTH greenfield zones where Proximus has installed GPON infrastructure since 2015 (start of FTTH in Greenfields as standard solution) it may be assumed that an SRV is present at both sides of the street.
- 30) A number of Proximus FTTH Greenfield deployments consist of a single multi dwelling building that is connected, in which the OFP is situated inside the building and distribution is achieved through indoor vertical cabling works. In these deployments no SRV is used, and thus no GPON underground SRV subduct access is available.
- 31) In FTTH brownfield zones, in the initial stages of deployment priority is given to façade deployment in centers of cities and communes throughout Belgium. In fact, Proximus today maximally selects projects for construction where underground deployment is minimal given the trenching costs, thus with maximal façade deployment. As a result, in such FTTH brownfield polygons underground segments of SRV's are likely to be small stretches, and not continuous.
- 32) Therefore, the current presence of Proximus underground GPON duct infrastructure is limited, and extremely disperse over the Belgium territory, with scattered geographical coverage.

1.4.4.2 FTTB

- 33) The sites in FTTB zonings are typically connected through SRV underground, both for greenfield and brownfield cases.
- 34) A number of Proximus FTTB Greenfield deployments consist of a single multi office building that is connected, in which the OFP is situated inside the building and distribution is achieved through indoor vertical cabling works. In these deployments no SRV is used, and thus no GPON underground SRV subduct access is available.

1.5 Practical information

- 35) Further requests for information concerning the present Reference Offer can be made in writing by interested Parties at the following Proximus contact point. In particular, in the event of doubt as to the interpretation of the provisions of this Reference Offer, Proximus should be contacted. In the event of doubt and as stated by the BIPT, contacting Proximus is without prejudice to any clarification of the reference offer given by the BIPT.
- 36) In case of disagreement about the interpretation, one of the Parties can request the BIPT for a decision on the specific case. This decision will be taken within a reasonable term and will take into account the legal framework and the valid advices. The possibility for the Parties to present the BIPT a problem in interpretation will not influence the legal means that remain at the Parties' disposal in case of a conflict.

Proximus

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- 37) The sharing by Proximus of some types of information (e.g. the addresses of Proximus buildings) is subject to the prior signing of a Non-Disclosure Agreement by the requesting Party.
- 38) It is also a right for everyone who has signed a Non-Disclosure Agreement to obtain information via the Proximus website through a secured access. Information on how to access the mentioned website can be obtained at the Proximus contact point mentioned above.
- 39) This offer is made by Proximus PLC under Belgian Public Law, a Belgian autonomous public enterprise organized under the Law of March 21, 1991, with registered office at B-1030 Brussels, 27 Boulevard du Roi Albert II, VAT BE 0202 239 951 Brussels Register of Legal Entities, exercising its activities under the commercial name Proximus, and referred to as "Proximus" in all the documents that are part of this Reference Offer.

2. Technical Implementation of the Service

40) The below section describes the technical characteristics of the Proximus subduct GPON underground infrastructure and the technical possibilities to access these in order for the Beneficiary to install its own network infrastructure.

41) In order to build a network using the Proximus subduct GPON underground infrastructure, the Beneficiary must combine two service components: access to the SRV subduct itself, and lead-in in order to connect the SRV subduct to its own subduct infrastructure.

Figure 5 shows an example implementation: the beneficiary connects onto the Proximus SRV subduct using an L branch. Further down the cable the Beneficiary again leaves the Proximus SRV subduct infrastructure using another L branch. In between the two points the Beneficiary can place a T branch to connect to an intermediate point.



Figure 5: example implementation of a network infrastructure using components of the Proximus Reference Offer for Duct Access.

2.1 Access to a Proximus SRV subduct

42) The Beneficiary is allowed access for rents to subduct between two points, both located on the same SRV, from an “Entry point” A to an “Exit point” B.

43) The Beneficiary can combine duct access between two points (e.g. Entry point A to an exit point B) with access between two other points (Entry point C to an exit point D).

44) The Beneficiary is responsible to install its own passive physical infrastructure such as ducts and manholes to and from the Entry and Exit points, in order to connect the relevant Proximus subduct GPON underground infrastructure with its own network infrastructure.

45) All construction work and authorizations for the Beneficiary’s own subducts, handholes and any street-furniture needed are the responsibility of the Beneficiary.

2.2 Lead-in to Proximus SRV subduct

46) The lead-in to Proximus SRV is the demarcation point of the Proximus Reference Offer for Duct Access in GPON Underground Deployments.

47) Two different types of lead-ins are available:

- L branch: a subduct in the SRV is cut and one side of the subduct is connected to the Beneficiary's subduct. This lead-in can be used for single Entry or Exit points. Figure 6 depicts an L branch.
- T branch: a subduct in the SRV is cut and both sides of the subduct are connected to the Beneficiary's subduct. Two subducts need to be foreseen by the Beneficiary. This lead-in can be used for combined Entry and Exit points. Figure 7 depicts a T branch.

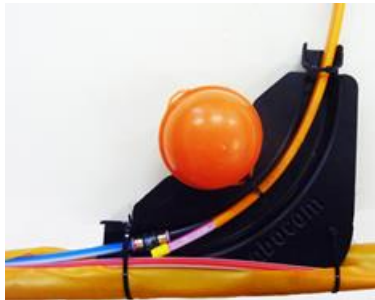


Figure 6: L branch serving as Entry or Exit point



Figure 7: T branch serving as both Entry and Exit point

- 48) The Beneficiary is to foresee a subduct of the right specifications for Proximus to connect to the lead-in.
- 49) The Proximus lead-ins are buried and not accessible without civil works. A beacon can be included in the branch for easy localization.
- 50) Lead-ins cannot be located in passive physical infrastructure (hand- or manhole) owned or operated by Proximus. The Beneficiary is responsible to install its own hand- or manhole near the Proximus manhole for connection to the Proximus man- or handhole or T or L branch.

2.3 Connection of Proximus SRV subducts in Proximus handhole street infrastructure

- 51) In case a Proximus handhole is located in between the Entry Point and the Exit Point of a subduct on the trajectory over which the Beneficiary desires to rent (a) subduct(s), the standard solution is to construct a Pass-Through of the relevant handhole, to allow the subduct that would be rented by the Beneficiary to cross the relevant handhole. When all conditions permit as set out below, if there is a Proximus handhole on the desired trajectory, Proximus will first always check if it would be possible to let the subduct "pass through" the Proximus handhole.
- 52) Proximus will interconnect subducts of two SRV's if both SRV's arrive in the same Proximus handhole, provided that the following conditions are cumulatively met
- if two SRVs enter the handhole from opposite sides (the concerned entry and exit subducts are sufficiently aligned in a longitudinal direction so as to avoid an S curve in the connection of the two subducts),
 - sufficient space is available within the handhole to interconnect the two subducts,
- 53) the total distance and physical technical characteristics of the relevant subduct technically allows blowing; taking due account of the fact that: fiber cable blowing technology is conditioned by physical technical limitations, related to elements such as number of curves in a trajectory, number and distance of handholes being passed-through, presence of drillings and the characteristics of fiber cable to be blown. In that

respect, the blowing of fiber cable is generally limited to a maximum total distance of 750 m in medium and densely populated areas; Proximus investigates in the Request For Design phase and possibly at the moment of the Infrastructure Survey, case by case, whether the conditions permit the solution described above.

3. Technical specifications

54) The Beneficiary is obliged to adhere to the technical specifications, described in Annex B “Technical Specifications”

4. General principles for ordering and provisioning

4.1 Introduction

55) Proximus shall deliver access to reasonable requests to Proximus GPON underground subducts according to the Beneficiary's orders submitted to Proximus in accordance with the rules set out in this Reference Offer.

56) The documentation of the Proximus network elements is spread over different documentation systems. To create a technical design for a new Proximus installation, Proximus must bring together information from these two systems to form a complete picture of the available network elements. Moreover, a visit to the site is often needed to investigate the situation in reality. As such no large-scale studies for access to Proximus ducts are possible.

57) Ordering of access to a Proximus SRV subduct and corresponding lead-ins to a Proximus SRV subduct is to be done in 1 ordering cycle.

58) Any extra lead-ins to be added afterwards in a subduct already used by the Beneficiary is to be done in a separate ordering cycle, to allow verification as to feasibility of such lead-ins.

59) A Beneficiary can enquire in advance the locations and roll-out plans of substantial upcoming underground infrastructure at the occasion of the Proximus communication of its planned construction works for substantial new network infrastructure through the existing regional coordination platforms (GIPOD, OSIRIS, or Powalco).

60) In practice, through these platforms and/or the GPON availability check tool, Beneficiary can obtain transparent information on substantial planned infrastructure deployment typically between two to four months prior to actual deployment, possibly up to 6 months for greenfield deployment.

61) Proximus makes Available Subducts access available after an initial period of 1 year after the ending of the civil works for the deployment of these (sub)ducts.

4.2 Available Subducts – Engineering rules on reserved subducts for Proximus

- 62) In the below processes on Presence Request under 4.3.3 and Request for Design under 4.4, Proximus will respond indicating the (as regards 4.3.3 - preliminary) information on the presence and location of Available Subducts, as evaluated at the time of the request based on the criteria below.
- 63) An Available Subduct is defined as a subduct that is not in use and is not anticipated for use, either based on fiber network design or needed for legitimately expected and reasonably possible future needs of Proximus (as predictable at the time of the assessment), as assessed by Proximus on the basis of the at that time applicable engineering rules on reserved subducts for Proximus.
- 64) Along the same Track, different cables with different types of traffic for different networks run in parallel to different network nodes. It is therefore not possible to predict at all times for what the network or parts of it will be used in the future. At this stage, the availability rules are based on today's knowledge. Proximus will conduct this assessment on the basis of the at that time applicable engineering availability rules on reserved subducts for Proximus.
- 65) Proximus applies the following engineering availability rules on reserved subducts, based on today's knowledge:
- a. per Proximus SRV: two (2) sub-ducts will be reserved by Proximus, including any other entity of the Proximus group;
 - b. for Proximus HDPE type of subducts, on each Track :
 - i. three (3) subducts per Track + one (1) subduct per duct will be reserved by Proximus including any other entity of the Proximus group;
 - ii. in addition, in the below particular cases that may, where relevant be applicable in a cumulative manner, the following number of additional subducts need to remain reserved:
 - first, depending on the foreseen planning, design or construction of FTTx networks within a sufficiently large contiguous geographical area (local copper network of that area):
 - a. where the FTTx deployment in a sufficiently large contiguous geographical area is confirmed for rollout and for part of that area already deployed or designed (but design has not yet started for close-by other parts of a given area): two (2) additional subducts will be reserved for further FTTx network deployment by Proximus including any other entity of its group;
 - b. where the FTTx deployment in a sufficiently large contiguous geographical area is confirmed for rollout but design has not started yet for any part of that area: four (4) additional subducts will be reserved for further FTTx network deployment by Proximus including any other entity of its group;
 - c. where, typically in rural areas, the FTTx deployment in a sufficiently large contiguous geographical area is not confirmed for rollout at the moment of the access request: as in such zone, there is no information available at this stage on whether and how a new access network would be rolled out, a case-by-case analysis will be conducted to assess the number of subducts which will need to be reserved for further FTTx network deployments by Proximus including any other entity of its group;
 - second, in specific geographic areas with a high concentration of Proximus network infrastructure, and where extension is difficult (such as crossings of e.g. railways/waterways or close to an aggregation point (airport, data center, LEX ...)): four (4) additional subducts

will be reserved. This is due to the fact that it is not possible to deploy a communications network at any place and in under any conditions given in particular the presence of natural barriers in the landscape (such as rivers, ports, harbours, high ways, rail ways, etc..).

4.3 Pre-provisioning

4.3.1 NDA

- 66) The sharing by Proximus of some types of information (e.g. the addresses of Proximus buildings) is subject to the prior signing of a Non-Disclosure Agreement by the requesting Party.
- 67) Information obtained in the provisioning process can only be used for specific related underground GPON duct access.

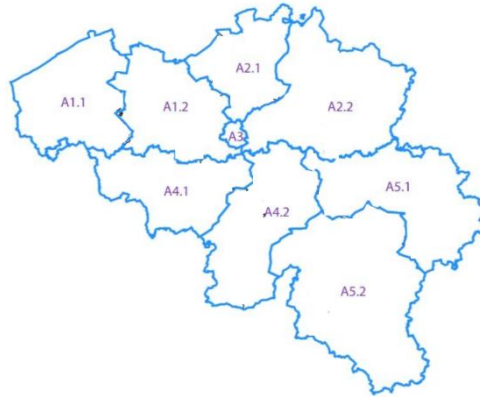
4.3.2 Obligatory testing of fibre cables used in Proximus ducts

- 68) Before the Beneficiary can start ordering access to Proximus duct infrastructure, he is obliged to have the cable types he wishes to blow into the Proximus subducts tested by Proximus. The procedure and pricing for testing a new cable type are described in Annex E "Testing protocol and pricing for new fibre cable types".
- 69) The Beneficiary is obliged to have every new cable type he wishes to use inside the Proximus subducts tested.
- 70) Without proof of having performed the necessary tests, the Beneficiary will not receive access to the Proximus Subduct Infrastructure.

4.3.3 Presence & Availability Request

- 71) Proximus applies the following manual request process for access to Available Subducts.
- Submission by the Beneficiary of a Presence & Availability Request (in excel format, completed with a QGIS format) specifying the geographic NIS9 area for which preliminary information on the presence and location of available Proximus physical underground fiber subducts and related manholes is requested.
 - Response by Proximus (in QGIS format) to the Presence & Availability Request, specifying the preliminary information of type, number and location of the Available Subducts within the whole requested NIS9 area as well as related manholes. Proximus commits to provide its response within a maximum period of ten (10) Working Days after the submission of a request.
- 72) .
- 73) If no subducts are available for use by a Beneficiary in the particular SRV ordered by the Beneficiary, the SRV subducts access requests issued by the Beneficiary with respect to the Proximus GPON zone concerned will be discarded, since the provisioning of access to these SRV subducts cannot be performed. Proximus will inform the Beneficiary of the reasons for non-availability in case of negative result of the Presence Request.

74) For planning purposes in the manual process, Proximus commits to handle a minimum of fifty (50) Presence & Availability Requests (irrespective of the Beneficiary(ies) that introduced such Requests) per period of ten (10) Working Days, and per specified Proximus network sub-area (Proximus network organisation being based on five network areas which are each split in two network sub-areas (except the Brussels network area)), as follows:



- 75) Upon request from the Beneficiary or access seeker, Proximus can provide a GeoPackage (shapefile) containing the Proximus network sub-area to which the relevant NIS9 areas have been mapped for organisational purposes.
- 76) If in the manual process Proximus is unable to process Presence & Availability Requests in excess of 50 per period of ten (10) Working Days, it shall inform the Monitoring Trustee and submit for approval a plan to address the excess requests in question within a reasonable period, including by undertaking reasonable additional investments and/or committing reasonable additional resources to that end.
- 77) After the above-referenced manual request process, the current section 4.3.3. will be replaced by the automated process as follows:
- Proximus provides access to Beneficiaries to an IT Application providing preliminary geographical information on the presence and location of available Proximus physical underground fiber subduct and related manholes, after which the information on Available Subducts will be integrated in Proximus' response to the Request for Design, under section 4.4.
 - The IT Application will be available via the Customer's Proximus Wholesale portal and will provide per requested NIS-9 a QGIS file that will graphically display a map with
 - the location and number of subducts potentially available for renting, specifying the type of subducts
 - the location of manholes.
 - The preliminary information on the presence and location of available Proximus physical underground fiber subduct infrastructure provided through the IT Application will be based on the application of a first set of engineering and availability rules that can reasonably be automated and on the documentation available at the relevant time in the Proximus data sources at hand, and kept up-to-date without Proximus being able to warrant that this information will reflect in a fully accurate manner the actual conditions in the field.
 - If no information is available in the IT Application, the Beneficiary remains entitled to seek verification by Proximus of the availability of subducts by means of a common Site/Infrastructure Field survey at location by Proximus in presence of the Beneficiary, subject to the payment of a one-time fee covering this activity (see the Site/Infrastructure Field survey under "Ordering") payable by the Beneficiary in the event the IT Application rightfully provided no information.

- Access to the IT Application will be granted subject to (i) the provision of reasonable guarantees necessary for ensuring and protecting data security and confidentiality (in particular, in relation to business-sensitive data), and (ii) where relevant, to measures related to national security regarding network infrastructure, subject to the approval of the Monitoring Trustee.
- The QGIS file provided by the IT Application will provide the same level of information as the QGIS file provided by the manual process.
- The requests entered in the IT Application will be processed during the night and the output will be available the next day.

78) Once the IT Application is available, the manual request process will stop to exist. However, an individual request process will continue to be made available by Proximus for manual treatment of ad hoc requests by a Beneficiary (up to nationally 20 Presence & Availability Requests per month per Beneficiary). Such individual ad hoc request will be handled within five (5) Working Days. Multiple and larger, substantial requests shall only be handled through the automated IT Application, and Proximus therefore will no longer accept multiple (larger scale) requests through a manual process once the IT Application is available.

79) Proximus publishes templates for the Presence & Availability Request, the Request for Design and the Order for Subduct Rental on its website during the manual process. At the time of IT Application, Proximus integrates templates for the Request for Design and the Order for Subduct Rental in the IT Application.

4.4 Request For Design

80) If the Beneficiary is interested in renting part of Proximus underground GPON subduct infrastructure, he will send a request for design to Proximus for an Available Subduct, providing at least the following information:

- Geographical position of the relevant subduct infrastructure of interest
- For each lead-in,
 - side of the street to which it should connect
 - geographical position with accuracy within 2m
 - Type of lead-in requested (L branch or T branch)
- Topographical plan of own construction works for connection to be made near the network

81) Upon receiving the Request for Design, Proximus will investigate and respond whether for the requested specific construction work, at the specific locations, lead-ins are feasible. In case the relevant subduct infrastructure of interest passes a Proximus handhole, Proximus will investigate whether the conditions for implementation of the standard Pass-Through solution, as described in Section 2.3 are fulfilled, and if not propose the alternative By-pass Solution.

82) If the required subducts are documented as present and preliminary available in the response by Proximus to the Presence & Availability Request or in the IT Application, Proximus applies the following request process in order to assess their actual availability:

- Based on the above preliminary information of Available Subducts under 4.3.3, submission by the Beneficiary of a Request For Design, specifying the concrete details of subducts to which access is requested (number of subducts and location) for a Subduct Access Construction Area size up to:
 - 10.000 square meters within high dense areas (statbel reference);
 - 30.000 square meters within other areas.

- Response by Proximus to the Request For Design within a maximum period of ten (10) Working Days after the submission of a request:
 - Positive response: Proximus submits a concrete design proposal which remains valid for at least one (1) month; or
 - Negative response: Proximus provides a substantiated explanation to the Beneficiary.
Proximus will report on a regular basis the cases where a negative response to a Request for Design occurs to the Monitoring Trustee and include in its reporting the reason for the negative response. This reporting will be included in a dedicated section of the quarterly reporting.
- Proximus will reply to the Request For Design with, inter alia, the following information:
 - a. Confirmation of the availability of the requested subducts
 - b. The full Monthly Rental Charge of the requested subduct path
 - c. The full Installation Cost of the requested subduct path
 - d. An estimation of the lead time, needed by Proximus to realistically perform the necessary network adaptations after ordering

If

- 83) For planning purposes, Proximus commits to handle a minimum of fifty (50) Requests for Design per period of ten (10) Working Days (irrespective of the Beneficiary(ies) that introduce such requests).
- 84) If Proximus is unable to process Requests for Design in excess of 50 per period of ten (10) Working Days, it shall inform the Monitoring Trustee and submit for approval a plan to address the excess requests in question within a reasonable period, including by undertaking reasonable additional investments and/or committing reasonable additional resources to that end.

4.5 Ordering

- 85) The Beneficiary may place an order to rent the required subduct(s) following the Presence Request and the Request for Design, provided that the requested subduct(s) and/or the introduction subduct or fiber cable at the specified locations are available, and the Beneficiary agrees with the response to the Request for Design.
- 86) The order is placed by returning a signed copy of the Request for Design via email. By signing the Request for Design, the Beneficiary confirms its acceptance of the terms and conditions outlined in the document.

4.6 Provisioning

- 87) The Beneficiary is to act as lead synergy operator following the normal coordination processes between utility and telco companies.
- 88) The Beneficiary is in charge of obtaining all authorizations including those for the punctual openings to be made by Proximus to create the Entry- and Exit points.
- 89) The Beneficiary can blow its own fiber cable through subduct routes created by combining its own segments and rented segments. In doing so, the Beneficiary must respect technical guidelines to avoid damage to the Proximus subduct.
- 90) Additional fees will be billed in case the Beneficiary requests lead to Discontinuous Work(s) (2 or more subduct portions) within the same Subduct Access Construction Area of 10.000 or 30.000m2.

4.7 Roles and responsibilities of the Parties

4.7.1 Proximus' roles and responsibilities

- 91) Proximus will couple the Beneficiary subduct to the Proximus subduct through the L or T branches, referenced in chapter 2.2
- 92) The installation of all Entry and Exit points (in the form of L or T branches) is to be done under Proximus supervision by a Proximus certified subcontractor.

4.7.2 Beneficiary's roles and responsibilities

- 93) The Beneficiary must
- follow the Proximus technical specifications,
 - ensure that all work carried out on Proximus network infrastructure is in accordance with Proximus engineering principles, good industry practice and laws and federal or regional regulations (i.a. in relation to safety, permits and public road interventions),
 - avoid any interference with existing communications services whether belonging to Proximus or other customers.
- 94) Beneficiary or Beneficiary's subcontractors cannot carry out civil engineering interventions on Proximus infrastructure.
- 95) If the cable gets stuck in the Proximus segment during blowing, the Beneficiary must request an unblocking by Proximus. In no circumstance is the Beneficiary allowed to open the Proximus SRV itself to try and unblock the cable.

5. Network Adjustments

5.1 Roadworks

- 96) If Proximus is ordered to remove the SRV due to a roadwork the Beneficiary's access to the subduct ends automatically.
- 97) The Beneficiary will need to redesign its network and can order new spare ducts from Proximus if available
- 98) Proximus has no obligation to design its modification to the roadwork to restore the Beneficiary's subduct. As is the case for Proximus, all costs caused by roadworks are to be taken by the Beneficiary.

6. Repair

- 99) When the Proximus SRV is damaged, the Beneficiary needs to remove its fiber cable, at Proximus request, and afterwards re-blow it after Proximus has repaired the subduct.
- 100) In the absence of concrete response from the Beneficiary, Proximus can remove the fiber cable to make sure repair is not blocked.
- 101) All costs to remove, reinstall and restore service over the Beneficiary cable are at the Beneficiary's expense.
- 102) The Beneficiary can try to recoup this cost from the party at fault for the damage. Proximus takes no responsibility.

7. Removal of lead-in & repair to original state of subduct

- 103) When the access to the Proximus SRV subduct is stopped, either by the Beneficiary or by Proximus (in the case of non-compliance to the Terms and Conditions) Proximus will remove the lead-ins and restore the Proximus subducts to their original conditions.
- 104) In order to restore the subduct to its original state, the Beneficiary will need to remove its own infrastructure from the Proximus subduct. Proximus will communicate a timing by which this action should be taken. If the infrastructure is not removed by this time, Proximus reserves the right to remove the infrastructure itself, and, if necessary, cut it.
- 105) Where a duct cannot be restored in original state and becomes unavailable for re-use the goodwill related to the asset will be borne by the Beneficiary.

8. SLA

106) Details on SLA will be worked out, following a first concrete reasonable access request.

107) In the meantime, the provisional SLA timers as set out hereunder are to be considered as “best effort” targets and will be subject to further review in a learning curve period of one (1) year. After this learning curve period, these SLAs will become binding:

Ref.	Activity	Description	SLA target
1.	Presence Request – NIS 9 pre-study	The requested preliminary information on the presence and location of Available Subducts will be made available by Proximus to the Beneficiary after a check of the different Proximus documentation systems.	Manual process: 95% within 10 Working Days Ad hoc requests once IT Application is operational: 95% within 5 Working Days
2.	Ordering & Provisioning – Request for Design	Proximus will respond to the Request For Design	95% within 10 Working Days
3.	Ordering & Provisioning – Infrastructure or site survey & completion to delivery date	Given the high variance in responding to the authorization requests between the Belgian authorities and the close link to the actual construction works, Proximus will communicate an estimated lead time in the answer on the Request For Design, by when, inter alia, the infrastructure or site survey will be carried out. Given Proximus will not be the pilot of the construction works, this lead time should be seen as a guideline to when the works could be carried out at the earliest. The actual delivery date will be defined in collaboration between Proximus and the Beneficiary.	Respect of the agreed delivery date in 95% of the cases
4.	Repair	In the case of a subduct which has been damaged and needs to be repaired, Proximus will make the subduct available again for the Beneficiary.	95% within the next Working Day

9. Pricing

- 108) General pricing principles and pricing structure for the Proximus Reference Offer for Duct Access in GPON Underground Deployments is found in Annex C “Pricing”.

10. Evolution of the reference offer

- 109) As the technology, infrastructure design and operational choices are in constant evolution, Proximus is continuously in the process of adapting and upgrading its telecommunication infrastructure, as well as its engineering and operational rules.
- 110) Proximus reserves the right to change its engineering and operational rules and deployment architecture in particular to stay relevant in the market, which means that e.g. future evolutions may lead to different materials being used in underground deployments.
- 111) In such case, Proximus will adapt the Reference Offer if needed and inform the BIPT.
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