



Addendum to BROBA

Vectoring in ADSL(2+) frequencies – phase 1

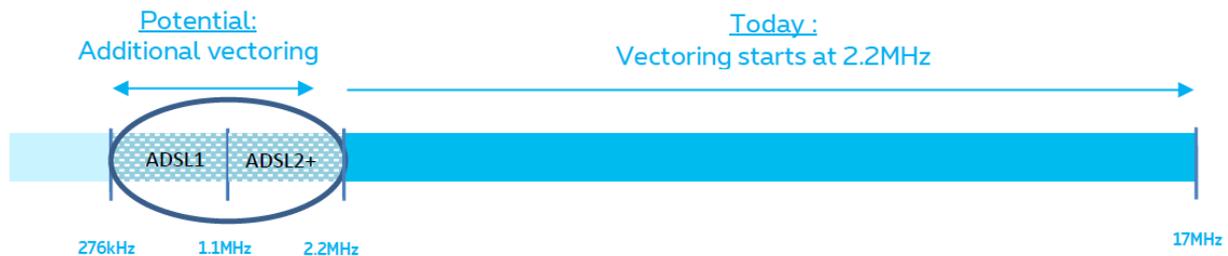
Approved by BIPT on 21/10/2016
Sensitivity: **Unrestricted**

Table of contents

1. Purpose	3
2. Dependencies with other addenda.....	4
3. Scope of this addendum	4
4. General planning	5
5. Activation of vectoring in ADSL(2+) frequencies	6
5.1 ROPs on which all Living Units are in reach of VDSL2	7
5.2 ROPs with Living Units out of VDSL2 reach.....	7
5.3 KVDs not served by a ROP and LEX/LDC connected Living Units	7
6. Operational impact	8
6.1 Provisioning.....	8
6.2 Migrations.....	8
6.2.1 Standard cases	9
6.2.2 Specific cases.....	9
6.3 Repair.....	9
6.4 E-Tools	10
6.5 Pricing.....	10
7. Adaptation on BROBA documents.....	11

1. Purpose

Currently vectoring only starts at 2,2 MHz because ADSL1 and ADSL2+ were not designed to collaborate in a vectoring group. This implies that the activation of vectoring in the ADSL2+ frequencies (i.e. below 2,2 MHz) is not possible as long as ADSL(2+) customers are present in the copper distribution area served by the ROP.



Getting a ROP “ADSL-free” can be achieved by migrating all its ADSL(2+) lines to VDSL2. This allows the activation of vectoring in the overlapping frequencies which is beneficial for all VDSL2 customers connected on that ROP.

A majority of the ROPs can be homogenized, meaning they serve a copper distribution area that allows all Living Units to be connected in VDSL2. Such homogenizable ROPs will be gradually closed for ADSL(2+) services.

ROPs that have a larger copper distribution area (meaning not all Living Units can be connected in VDSL2) will not be closed for ADSL(2+)-services.

In the 1st phase, vectoring will be activated ROP by ROP in the ADSL2+ spectrum from 1,1 MHz to 2,2 MHz after having migrated the remaining ADSL2+ lines to VDSL2 (preferred solution) or to ADSL1.

The present addendum focuses on the introduction of the stop sell and stop service of ADSL2+ services (phase 1) for all the ROPs that can be homogenized.

The 2nd phase which impacts ADSL1 services is described high level in this addendum and will be further elaborated in a separate addendum (see section planning below).

2. Dependencies with other addenda

Some addenda linked to this subject have already been submitted and approved by BIPT (non exhaustive list):

- Addendum to WBA VDSL2, “Preparation of vectoring” (approved by BIPT on 09/07/2012),
- Addendum to BROBA, “ADSL from ROP ” (approved by BIPT on 26/06/2013),
- Addendum to WBA VDSL2, “Vectoring Activation” (approved by BIPT on 19/02/2014),
- Addendum to WBA VDSL2, “Vectoring – Extension to vectoring zone 2 (<0.7dB)” (approved by BIPT on 12/12/2014),
- Addendum to BRUO & BROBA, “ADSL from ROP in non-BO-nets” (approved by BIPT on 08/02/2015),
- Addendum to WBA VDSL2, “DLM on vectoring” (approved by BIPT on 13/02/2015).

3. Scope of this addendum

This addendum addresses the impacts on the BROBA reference offer of the outphasing of ADSL2+ in copper distribution areas served by ROPs with all Living Units connectable in VDSL2, meaning all existing ADSL2+ customers can be migrated to VDSL2 (preferred solution) or can be downgraded to ADSL1.

4. General planning

The present addendum has been submitted for approval to the BIPT in order to become effective as from **01/07/2017**.

The general planning of Vectoring in ADSL(2+) frequencies is presented in the table hereunder which provides a complete overview of the timeline as the full scope of the project requires four additional addenda.

Submission date of addendum ¹	Event	Scope	Planned launch date ¹
01/07/16	Addendum "Vectoring in ADSL(2+) Frequencies" (Phase 1)	<ul style="list-style-type: none"> - Detailed explanation of the stop sell and stop service of ADSL2+ - High level explanation of the stop sell and stop service of ADSL1 - Impact on the VDSL2 fall-back line profile 	01/07/2017
01/01/17	Addendum "Vectoring profiles in the band 1,1MHz - 2,2Mhz" (zones 1, 2 & 3)	<ul style="list-style-type: none"> - New VDSL2 line profiles with vectoring in the frequency band 1,1MHz-2,2MHz in vectoring zones 1, 2 & 3 - The adapted VDSL2 fall-back profile 	01/07/2017
01/02/17	Addendum "Vectoring in ADSL1 Frequencies" (Phase 2)	<ul style="list-style-type: none"> - Detailed explanation on the stop sell and stop service of ADSL1 - Impact of this on the VDSL2 fall-back line profile 	01/02/2018
01/04/17	Addendum "Further vectoring evolution" (exact title TBD)	<ul style="list-style-type: none"> - New VDSL2 line profiles with vectoring in the band 1,1MHz-2,2MHz in vectoring zones 4 & 5 	01/10/2018
	Launch Phase 1	<ul style="list-style-type: none"> - Effective stop sell of ADSL2+ and start with "stop service" notifications - Activate vectoring² in the band 1,1MHz-2,2MHz on ROPs that are ADSL2+ free. 	01/07/2017
01/08/17	Addendum Vectoring profiles in the ADSL1-band (≤ 1,1 MHz)	<ul style="list-style-type: none"> - New VDSL2 line profiles with vectoring in the band ≤ 1,1 MHz for all vectoring zones - Impact of this on the VDSL2 fall-back line profile 	01/02/2018
	Launch Phase 2	<ul style="list-style-type: none"> - Effective stop sell of impacted ADSL1 services and start with stop service notifications - Activate vectoring in the band ≤1,1MHz on ROPs that are freed of impacted ADSL1 services (and ADSL2+). 	01/02/2018

¹ Proximus might postpone these dates in order to guarantee the quality of the deliverables

² Activation of vectoring in the band 1,1MHz-2,2MHz for the vectoring zones 4 and 5 starts only from 1/10/2018 onwards.

5. Activation of vectoring in ADSL(2+) frequencies

As a next step in the continuous improvements of VDSL2 performance, Proximus now plans the activation of vectoring in the ADSL2+ frequency band from 1,1MHz to 2,2MHz and in a 2nd phase for ADSL1 downstream frequencies below 1,1 MHz.

Vectoring could not yet be activated in the ADSL2+ spectrum (i.e. below 2,2 MHz) for two major reasons:

- Crosstalk from ADSL(2+) lines cannot be cancelled and could cause instabilities on vectored VDSL2 lines,
- The VDSL fall-back line profile, activated on VDSL2 lines equipped with a non whitelisted VDSL2-CPE, currently also uses the frequencies until 2,2 MHz.

To accomplish the activation of vectoring in the ADSL(2+) frequencies, different actions are needed:

- Introduce a “stop sell” for ADSL1 and ADSL2+ for all the ROPs for which all Living Units are in reach of VDSL2 (*this addendum only impacts ADSL2+*),
- Introduce a gradual “stop service” for ADSL1 and ADSL2+ with migrations towards VDSL2 for all the ROPs for which all Living Units are in reach of VDSL2 (*this addendum only impacts ADSL2+*),
- Adapt the current VDSL2 fall-back line profile. For the 1st phase a new VDSL2 fall-back line profile will be created that only uses the frequencies until 1,1 MHz.

For the sake of completeness:

- LEX-based SDSL and EFM services and BRUO RC Type 3 services can remain in service.
- ADSL(2+)-services remain possible to all Living Units served by ROPs on which **not** all Living Units are in reach of VDSL2, served by KVDs without ROP or which are connected directly to the LEX/LDC .

Three main use cases can then be distinguished:

1. ROPs on which all Living Units are in reach of VDSL2: these ROPs will be 'homogenized',
2. ROPs with Living Units out of VDSL2 reach: these ROPs will remain 'mixed' VDSL2 / ADSL(2+).
3. KVDs not served by a ROP and Living Units served directly from the LEX/LDC: these areas remain 'mixed' VDSL2 / ADSL(2+) for Living Units within reach of LEX-based VDSL2. Living Units not in reach of LEX/LDC-based VDSL2 remain only reachable in ADSL(2+).

5.1 ROPs on which all Living Units are in reach of VDSL2

A majority of the ROPs can be homogenized, meaning they serve a copper distribution area that allows all Living Units to be connected in VDSL2. **These homogenizable ROPs will be gradually closed for ADSL(2+) services** in two phases:

- The 1st phase closes the ROP for ADSL2+ services only and is further detailed in the present addendum (cf section "Operational impact" below).
- The 2nd phase will also impact ADSL1 services and the related addendum will be submitted later (cf section "Planning" above).

5.2 ROPs with Living Units out of VDSL2 reach

ROPs that have a large copper distribution area (meaning that not all Living Units can be connected in VDSL2) will not be closed for ADSL(2+)-services. ADSL(2+)-services remain available and these ROPs will remain 'mixed' VDSL2 / ADSL(2+).

In conclusion: **this existing use case is not impacted by the present addendum.**

5.3 KVDs not served by a ROP and LEX/LDC connected Living Units

KVDs not served by a ROP and Living Units who get broadband access directly from the LEX/LDC will not be closed for ADSL(2+)-services.

ADSL(2+)-services remain available and these KVDs will remain 'mixed' VDSL2 / ADSL(2+). The same applies for Living Units within reach of LEX/LDC-based VDSL2. Living Units not in reach of LEX/LDC-based VDSL2 can only obtain ADSL(2+) services.

In conclusion: **this existing use case is not impacted by the present addendum.**

6. Operational impact

This section describes the operational impact of the 1st phase of the activation of vectoring in ADSL(2+) frequencies where **vectoring will be activated ROP by ROP in the ADSL2+ spectrum** from 1,1 MHz to 2,2 MHz, **after having migrated the remaining ADSL2+ lines to VDSL2** (preferred solution) or to ADSL1.

6.1 Provisioning

A notice of this partial “stop sell” for BROBA ADSL2+ services has already been provided to concerned OLOs on 30 June 2016. Therefore, **as from 01 July 2017, Proximus will not accept any new order for ADSL2+ services for which the address is located in a copper distribution area that allows all Living Units to be served with a VDSL2 service.**

“Provide” orders sent via MTS and Open Calendar flows for BROBA ADSL2+ services on which a “stop sell” is applicable will be automatically rejected³ as from that date.

6.2 Migrations

Proximus will send quarterly notification lists of KVDs/ROPs planned to be homogenized in order to activate vectoring in the ADSL2+ frequency band between 1,1 MHz and 2,2 MHz.

As prerequisite, all these notified ROPs will previously have been transformed to support ADSL from the ROP (meaning that only active BRUO RC lines of Type 3 can still be present⁴).

A 6 months migration period applies after the notification to migrate any remaining ADSL2+ services towards an alternative solution (see cases below).

Proximus will communicate the list of all End-Users’ lines impacted individually to each OLO, minimum 3 months before the activation of vectoring in the ADSL2+ frequency band of the notified ROPs. This will allow OLOs to contact their End-Users well in advance and to notify them in case an intervention on site or a CPE replacement is necessary.

Example of timeline for notified ROP x⁵:

- Prerequisite: ROP x has been already transformed to support ADSL from the ROP before 01/10/2017.
- In Q4/2017, Proximus notifies ROP x planned to be homogenized in order to activate vectoring in the frequency band between 1,1 MHz and 2,2 MHz as from 01/07/2018.
- On 01/04/2018 at the latest, Proximus provides to the OLOs detailed list of impacted lines passing through ROP x and the other ROPs notified for the same date.
- On 01/07/2018 or later, activation of vectoring in the frequency band between 1,1 MHz and 2,2 MHz for ROP x.

Following the well-known governance of the Building Outphasing migrations, a CWS Service Manager will be appointed to plan with each OLO the best fit migration path for the BROBA ADSL2+ services currently in use by their End-Users, and a “From / To” matrix will be made available.

³ For more info, we refer to FLASH n° 5180 of 14 June 2016: “BRUO and BROBA Reject Code – Stop Sell”.

⁴ Cf Addendum to BRUO & BROBA, “ADSL from ROP in non-BO-nets” approved by BIPT on 08/02/2015.

⁵ This is an example to explain concretely how the timers will apply. Sooner or later dates are possible in respect of the announced timing in the present addendum.

6.2.1 Standard cases:

BROBA ADSL2+ Without Voice and BROBA ADSL2+ With Voice + PSTN:

ADSL2+ lines connected on a notified Remote Optical Platform (ROP) will have to be migrated towards the chosen product by the OLO: “WBA VDSL2”, “Carrier VDSL2” or “BROBA ADSL1 from the ROP”. The migration towards ADSL1 is not optimal since it will only offer a temporary solution until the 2nd phase of the project arrives.

This will cause some service interruptions for the concerned lines on the day of the migration. Any remaining ROP-served ADSL2+ lines at the end of the 6 months migration period will be downgraded to an ADSL1 service.

6.2.2 Specific cases:

BROBA ADSL2+ With Voice + ISDN:

As described in the approved addendum “ADSL_from_ROP”, existing installations of BROBA ADSL2+ With Voice + ISDN service will have been transformed through the use case “ADSL_from_ROP” without impact on the BROBA ADSL2+ service. When the ISDN service was moved to another pair, the BROBA subscription automatically became a “BROBA ADSL2+ without Voice” subscription which is handled as described in the previous paragraph.

BROBA ADSL2+ Without Voice on ISDN port:

In some uncommon cases of former BROBA ADSL(2+) With Voice + ISDN, the new BROBA ADSL2+ Without Voice has remained connected on an ISDN port. As described in the approved addendum “ADSL_from_ROP” this requires that Proximus realised a new connection on a PSTN port and that the OLO performed a swap of CPE at the side of his End-User. These rare cases were previously transformed through the use case “ADSL_from_ROP”.

6.3 Repair

The VDSL2 fall-back line profile is activated on VDSL2 lines on which a non-whitelisted VDSL2-CPE is connected.

The current VDSL2 fall-back line profile with a downstream bitrate of up to 7,5 Mbps limited the spectrum to 2,2 MHz in order to ensure spectral compatibility with the current vectoring mechanism that starts from 2,2 MHz onwards.

This will no longer be possible in the future since vectoring will be activated ROP by ROP in the ADSL2+ spectrum from 1,1 MHz. The adapted VDSL2 fall-back profile, which only uses the spectrum up to 1,1 MHz with a resulting downstream bitrate of around up to 7 Mbps, will be included in the separate addendum to WBA VDSL2 that will introduce vectoring profiles in the band 1,1 MHz-2,2MHz. (to be delivered in the beginning of 2017 – cf section “Planning” above).

Note that this addendum has no impact on the fault reporting and repair processes. The communication flows during reporting and during the repair process of the existing ADSL2+ services remain unchanged.

6.4 E-Tools

The XDSL availability tool (web interface and XML interface) will be adapted with the IT-release of February 2017 ⁽⁶⁾ to mention when an address checked is located in the copper distribution area of a ROP eligible for the “stop sell ADSL2+”.

6.5 Pricing

Waiving of the installation cost for migrations towards a VDSL2-service:

1. Proximus will take in charge certain costs that are normally billed by Proximus to the OLO for works executed by Proximus. The OLOs remain responsible for their own costs incurred.
2. Proximus covers the installation costs of both types of migrations: either “Convert” or “Provide new” & “Cease” from an ADSL(2+) service to a VDSL2 service.
3. Timing: the waiving of migration costs described in this document are valid for migrations executed as from the submission date of the present addendum onwards.
4. In order to simplify the correct billing of migration charges from ADSL(2+) to VDSL2, an identical waiving of charges is applied independently whether the concerned End-User line of an OLO terminates or not in a copper distribution area that allows all Living Units to be connected in VDSL2. This means an identical waiving of charges for **all** migrations from ADSL(2+) to VDSL2.
5. Proximus reserves the right to refund the waived fees linked to the costs covered by Proximus by issuing one-time credit notes or by directly adapting the amounts of the migration costs on the invoice.
6. Proximus will take in charge the CPE costs for ADSL (2+) lines effectively migrated to VDSL2 on the Proximus network (the BRUO lines migrated to ROP terminated BROBA services are included)
 - 1) if the CPE on the ADSL(2+) line before the migration is not a compatible whitelisted VDSL2 CPE at the moment of the stop service notification (where Proximus establishes the CPE as compatible, it will not take the CPE cost in charge),
 - 2) and if the concerned ADSL2+ line in phase 1 (or the ADSL1 line in phase 2) is located in the area of a ROP which is notified by Proximus as planned to be homogenized (see section 6.2 above).

For these lines, the OLO has the choice to obtain free VDSL2 Proximus CPEs (in accordance with the addendum to WBA VDSL2 “Evolution of the NGHGW+” approved by BIPT on 04/05/2016), or a financial compensation by Proximus amounting to 60€ per migrated line.

⁶ Proximus might postpone this date in order to guarantee the quality of the deliverables

7. Adaptation on BROBA documents

The sections of the BROBA offer documents which are impacted by this Addendum are indicated in the subsequent paragraphs (changes are highlighted in grey). Those adaptations refer to the consolidated version of the BROBA reference offer (version 17), published on the Proximus website, at http://www.proximuswholesale.be/en/id_broba/public/access/regulated-services/broba.html

Main Body

The following § must be adapted:

3. This offer and its tariffs are applicable for cases where DSLAMs are located in Proximus premises (LEX or LDC or KVD when provided by Proximus in the framework of its own retail or wholesale offer). In particular, for ADSL2+, this offer will only be applicable for cases where ADSL2+ enabled DSLAMs are installed in Proximus premises (LEX or LDC or KVD when provided by Proximus in the framework of its own retail or wholesale offer). The list of ADSL2+ enabled DSLAMs will be available on the Operator Personal Page of the CWS secured website.

As from 21/10/2013, the scope of this offer and its tariffs will be enlarged for cases where BROBA ADSL(2+) will be delivered from the ROP (and no more from the LEX or LDC).

As from 01/07/2017, the scope of this offer and its tariffs will be enlarged for cases where BROBA ADSL2+ will no longer be sold for Living Units located in a copper distribution area of which all Living Units are in reach of VDSL2 from the ROP.

25. In some local nets where a building (LEX) is out phased but also on selected ROPs in non Building Outphasing networks, the Alcatel NDLT-G card (also known as the vectoring or “multi-DSL” card) is also used to provide “BROBA from ROP” connectivity. Due to the incompatibility with the Alcatel NDLT-G card or the ROP having been activated for VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz, some BROBA services are not supported as from the ROP, and are de facto not available on ROPs with ADSL activated:

- * BROBA ADSL(2+) With Voice + ISDN
- * BROBA Re-ADSL
- * Some special VLAN configurations (e.g.: combining shared and dedicated VLANs on the same line)
- * BROBA ADSL2+ for ROPs for which VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz is activated.

The list of ROPs planned to be activated for ADSL(2+) is available on the Operator Personal Page of the CWS secured website.

The list of ROPs planned to be activated with VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz is also published on the same location.

26. In local nets where a building (LEX) is out phased, the BROBA SDSL service will only remain supported until the announced “End-of-Service date” for that local net. The list of the concerned local nets is available on the Operator Personal Page of the CWS secured website.

The activation of VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz is compatible with the BROBA SDSL service and the BRUO Raw Copper Type 3 service as long as it remains supported in the local net concerned.

27. The offering of the BROBA over Ethernet service through GE_NT cards covers:

- The provision by Proximus of one or several OLO Access Lines between the Customer Equipments and the Proximus Service PoPs;
- The provision by Proximus of bandwidth between the GE_NT aggregators located in the LEX in which the Beneficiary wants to connect End-Users and the Proximus Service PoPs to which the Customer

Equipments are connected; These VLANs can be either shared between several End-Users of a Beneficiary or dedicated per separate End-User.

- The provision and the configuration by Proximus of Ethernet Transport between the GE_NT aggregators and the Customer Equipments;
- The provision and the configuration by Proximus of ATM Transport (use of CBR, VBR or UBR+ service as defined further in this offer) between the DSLAMs and the GE_NT aggregators.
- The provision by Proximus of ADSL, Reach Extended ADSL2, ADSL2+ or SDSL lines to the End-Users.
- The provision by Proximus of ADSL2+ lines until 30/06/2017 to the End-Users. From 01/07/2017 onwards the provisioning by Proximus of ADSL2+ lines is no longer possible to Living Units connectable to ROPs from which all Living Units can be connected in VDSL2. The provisioning of ADSL2+ lines remains possible for Living Units connectable to ROPs from which not all Living Units can be connected in VDSL2, for Living Units connected to KVDs not served by a ROP and for Living Units directly connected to a LEX/LDC.

28. The offering of the BROBA over Ethernet service through the ROP covers:

- The provision by Proximus of one or several OLO Access Lines between the Customer Equipments and the Proximus Service PoPs;
- The provision by Proximus of bandwidth (VLANs) between the IP-DSLAMs in which the Beneficiary wants to connect End-Users and the Proximus Service PoPs to which the Customer Equipments are connected. These VLANs can be either shared between several End-Users of a Beneficiary in a same LEX or dedicated per separate End-User.
- The provision and the configuration by Proximus of Ethernet Transport between the IP-DSLAMs and the Customer Equipments.
- The provision by Proximus of ADSL or ADSL2+ lines to the End-Users.
- The provision by Proximus of ADSL2+ lines until 30/06/2017 to the End-Users. From 01/07/2017 onwards the provisioning by Proximus of ADSL2+ lines is no longer possible to Living Units connectable to ROPs from which all Living Units can be connected in VDSL2. The provisioning of ADSL2+ lines remains possible for Living Units connectable to ROPs from which not all Living Units can be connected in VDSL2.

71. Some BROBA services are not supported as from the ROP due to the incompatibility with the NDLT-G card or the ROP having been activated for VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz:

- BROBA ADSL(2+) With Voice + ISDN
- BROBA Re-ADSL
- Some special dedicated VLAN configurations (e.g.: combining shared and dedicated VLANs on the same line)
- BROBA ADSL2+ on ROPs for which VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz is activated.

A new paragraph has to be added after current § 72:

Proximus will gradually activate VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz for ROPS of which all Living Units of its copper distribution area are in reach of VDSL2 from that ROP. Activation of "VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz" limits the provision of BROBA services to BROBA ADSL1 from the ROP and BROBA SDSL from the LEX/LDC. The list of ROPs for which "VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz" is activated is available on the Operator Personal Page of the CWS secured website.

Proximus will notify the Beneficiaries of planned activations of "VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz" at least 6 months beforehand. Only ROPs for which ADSL_from_ROP has already been activated will be notified.

From 01/07/2017 onwards Proximus can also activate VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz without notification or before the 6 months notification period being expired in the following cases:

- ROPs connected to a street cabinet on which ADSL_from_ROP is already activated but without active ADSL2+ services.

- ROPs notified for the activation of vectoring in the frequency band between 1,1 MHz and 2,2 MHz for which all ADSL2+ services have been migrated to the alternative solution before the end of the notification period.

Proximus will coordinate with the Beneficiary the migration of the ADSL2+ services (e.g. BROBA services) to an alternative solution, e.g. WBA-VDSL2 or BROBA-ADSL1 (not recommended).

If Proximus wants to activate “VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz” before the end of the notification period, an alternative agreement in good faith discussion will be concluded with the concerned Beneficiaries.

Annex 2B technical specifications

In section 3.1.1., a footnote has to be added after the following sentence:

This BROBA over Ethernet – ADSL(2+) from ROP service is offering an Ethernet connectivity between the OLO Access Line and the ADSL2+ lines ⁽¹⁾.

⁽¹⁾ From 01/07/2017 BROBA ADSL2+ will no longer be sold for Living Units located in a copper distribution area of which all Living Units are in reach of VDSL2 from the ROP.

Annex 4 P&O

The following § must be adapted:

60. The check will be snapshot based and will rely on the following elements:

- Technical spectral check of the system at the time of inquiry;
- Pair gain system check;
- Check of spectral saturation of cable.
- Check if ADSL2+ is not available anymore because the Living Unit is located in a copper distribution area of which all Living Units are in reach of VDSL2 from the ROP (as from 1/7/2017 onwards).

64. In order to activate ADSL, Reach Extended ADSL2 or ADSL2+, on an End-User line, Proximus will perform, for each request, some checks, and a.o.

- Technical spectral check of the system at the time of request for activation;
- Pair gain system check;
- Spectral saturation of cable.
- Reach Extended ADSL not supported over ISDN
- Reach Extended ADSL not supported on local nets where BROBA II services are connected from the ROP (and no more from the LEX or LDC)
- ADSL2+ not supported because the Living Unit is located in a copper distribution area of which all Living Units are in reach of VDSL2 from the ROP (as from 1/7/2017 onwards).
- ADSL2+ supported only on ADSL2+ enabled DSLAMs
- ADSL2+ With Voice + ISDN not supported on local nets where BROBA II services are connected from the ROP (and no more from the LEX or LDC)

On the basis of these checks, the order will be rejected and/or accepted.

The list of reject codes is available on the Proximus CWS secured website.

*** End of the document ***