



Addendum to BROBA and BRUO

Vectoring in ADSL1 frequencies – phase 2

Approved by BIPT on 03/05/2017
Sensitivity: **Unrestricted**

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1. Purpose

The present addendum is the 2nd phase of the project “Vectoring in ADSL(2+) frequencies” that aims at further improving VDSL2 performances on all ROPs than can be homogenized.

For more details on the rationale and the definitions used for this project, reference is made to the addendum to BROBA “*Vectoring in ADSL(2+) frequencies – phase 1*” which has been approved by the BIPT on 21/10/2016.

The present addendum focuses on the introduction of the “Stop sell” and “Stop service” of ADSL1 services (phase 2) for the ROPs that are notified to be homogenized.

This 2nd phase which impacts ADSL1 services was already introduced in the addendum “*Vectoring in ADSL(2+) frequencies – phase 1*” (approved by the BIPT on 21/10/2016) and is now further elaborated.

2. Dependencies with other addenda

Different addenda related to vectoring technology have already been submitted and/or approved by BIPT:

- Addendum to BROBA, “*Vectoring in ADSL(2+) frequencies – phase 1*” (approved by BIPT on 21/10/2016),
- See list of other relevant addenda on vectoring referenced in the section 2 of the above mentioned addendum,
- Addendum to WBA, “*Vectoring in the frequency band 1,1MHz -2,2Mhz*” for vectoring zones 1, 2 & 3” (submitted to BIPT on 28/12/2016),
- Addendum to BROBA, “*ADSL from ROP*” (approved by BIPT on 26/06/2013),
- Addendum to BRUO & BROBA, “*ADSL from ROP in non-BO-nets*” (approved by BIPT on 06/02/2015).

3. Scope and planning

This addendum addresses the impacts on the BROBA and BRUO reference offers of the outphasing of ADSL1 services in copper distribution areas served by ROPs with all Living Units connectable in VDSL2, meaning that all existing ADSL1 customers can be migrated to VDSL2.

This addendum also opens Reach Extended ADSL2 services on all ROPs on which “ADSL from ROP” is activated and on homogenized ROPs.

The present addendum has been submitted for approval to the BIPT in order to become effective as from **01/02/2018**¹ for the “Stop sell” ADSL1 for the ROPs that are notified to be homogenized and as from **01/08/2018**² onwards for “Stop service” ADSL1 notifications.

¹ Proximus might postpone this date in order to guarantee the quality of the deliverables

² Proximus might postpone this date in order to guarantee the quality of the deliverables

4. Activation of vectoring in ADSL1 frequencies

As a next step in the continuous improvements of VDSL2 performance, Proximus now plans the activation of vectoring in the ADSL1 frequency band between 552kHz and 1,1MHz.

To accomplish the activation of vectoring in these ADSL1 frequencies, different actions are needed:

- Introduce a “Stop sell” for ADSL1 for all the notified homogenizable ROPs. These are ROPs for which all Living Units are in reach of VDSL2. The “Stop sell” for ADSL2+ for these ROPs was approved with the addendum “*Vectoring in ADSL(2+) frequencies – phase 1*”.
- Introduce a gradual “Stop service” for ADSL1 with migrations towards VDSL2 for all the notified ROPs. These are ROPs for which all Living Units are in reach of VDSL2. The “Stop service” ADSL2+ for a ROP, which was approved with the addendum “*Vectoring in ADSL(2+) frequencies – phase 1*”, may precede the “Stop service” ADSL1 for that same ROP. The “Stop service” ADSL1 and “Stop service” ADSL2+ can be notified simultaneously but a “Stop service” ADSL1 will never be notified before the “Stop service” ADSL2+.

For the sake of completeness:

- LEX-based SDSL- and EFM services and BRUO RC Type 3 services can remain in service.
- ADSL1 and ADSL2+ 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.
- Reach Extended ADSL2 services will be opened from 1 February 2018 onwards³ on all ROPs which support “ADSL from ROP”⁴ or which are homogenized. The impact of this on the BROBA Ethernet reference offer will be described hereafter.

Three main use cases can then be distinguished⁵:

1. Notified 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 VDSL2-only with ADSL(2+) services from the LEX or ‘mixed’ VDSL2 / ADSL(2+) after the activation of “ADSL from ROP”.
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+).

³ Proximus might postpone this date in order to guarantee the quality of the deliverables

⁴ Reference is made to the addendum to BROBA “ADSL from ROP” (approved by BIPT on 26/06/2013) and to the addendum to BRUO & BROBA “ADSL from ROP in non-BO-nets” (approved by BIPT on 06/02/2015).

⁵ Reference is made to the addendum to BROBA “Vectoring in ADSL(2+) frequencies – phase 1” which has been approved by the BIPT on 21/10/2016.

5. Reach Extended ADSL2 services

Reach Extended ADSL2 services will be opened on all ROPs which support “ADSL from ROP”⁶ or which are homogenized for different reasons:

- Keep the possibility to use modems that support READSL2 but are embedded in other hardware.
- Keep the possibility to keep ADSL1 lines connected after the “Stop Service” date until the migration to VDSL2 is executed. Note however that some (very old) ADSL1 modems do not support READSL2.

6. Operational impact

This section describes the operational impact of the 2nd phase of the project which is the activation of vectoring in ADSL1 frequencies where **vectoring will be activated ROP by ROP in the ADSL1 spectrum from 552kHz to 1,1MHz, after having migrated the remaining ADSL1 lines to VDSL2.**

The activation of vectoring in the ADSL2+ spectrum from 1,1 MHz to 2,2 MHz can have been performed previously as a separate 1st step which preceded the 2nd step being the activation of vectoring in the ADSL1 spectrum from 552kHz to 1,1MHz.

It is however possible that the activation of the complete sub 2,2MHz vectoring (from 552kHz to 2,2MHz) is performed in one step.

6.1 Provisioning

A notice of the partial “Stop sell” for BROBA ADSL2+ services from 1 July 2017 onwards has already been sent on 30 June 2016 to the concerned OLOs.

A notice of the partial “Stop sell” for BROBA ADSL1 services from 1 February 2018 onwards has been sent to the concerned OLOs on 31 January 2017. Therefore, **as from 01 February 2018, Proximus will not accept any new order for ADSL1 services for which the address is located in a copper distribution area that allows all Living Units to be served with a VDSL2 service. This list of homogenizable ROPs has been published on your CWS personal page on 19 September 2016.**

“Provide” orders sent via MTS and Open Calendar flows for BROBA ADSL1 services on which a “Stop sell” is applicable will be automatically rejected⁷ as from that date.

⁶ Reference is made to the addendum to BROBA “ADSL from ROP” (approved by BIPT on 26/06/2013) and to addendum to BRUO & BROBA “ADSL from ROP in non-BO-nets” (approved by BIPT on 06/02/2015).

⁷ For more info, we refer to FLASH n° 5180 of 14 June 2016: “BRUO and BROBA Reject Code – Stop Sell”.

6.2 Migrations

6.2.1 Reminder of the notification process:

Proximus will send quarterly notification lists of KVDs/ROPs planned to be homogenized in order to activate vectoring in the ADSL1 frequency band from 552kHz to 1,1MHz and/or the ADSL2+ frequency band from 1,1MHz to 2,2MHz.

The “Stop service” of ADSL2+ for the activation of vectoring in the ADSL2+ frequency band from 1,1MHz to 2,2MHz can have been notified earlier or will be notified with the same “Stop service” date as the ADSL1 “Stop service” date.

As a prerequisite, these notified ROPs will previously have been activated for ADSL(2+) from the ROP (meaning that only active BRUO RC lines of Type 3 can still be present⁸). Once ADSL(2+) from the ROP is activated it also becomes possible from 1 February 2018⁹ onwards to order READSL2 services to all Living Units served by that ROP.

A 6 months migration period applies after the “Stop service” ADSL1 notification to migrate any remaining ADSL1 services towards an alternative solution. (see cases below).

Proximus will communicate the list of all End-Users’ lines impacted individually to each OLO, at the latest 3 months before the notified activation date of vectoring in the ADSL1 frequency band. 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 a ROP x notified with a “Stop service” ADSL1 and ADSL2+ simultaneously ¹⁰:

- Prerequisite: ROP x has already been activated for ADSL(2+) from the ROP before 01/03/2018.
- End Q2/2018, Proximus notifies ROP x planned to be homogenized in order to activate vectoring in the frequency band from 552kHz to 2,2MHz as from 01/01/2019.
- On 01/10/2018 at the latest, Proximus provides to the OLOs the detailed list of impacted ADSL1 and ADSL2+ lines passing through ROP x and the other ROPs notified with the same “Stop service” date.
- As from 01/01/2019, activation of vectoring in the frequency band from 552kHz to 2,2MHz for ROP x.

ROPs on which vectoring in the ADSL2+ frequencies from 1,1 MHz to 2,2MHz was already activated previously will also be notified with a “Stop service” ADSL1 and ADSL2+ in order to add vectoring in the frequency band from 552kHz to 1,1MHz.

Following the well-known governance of the Building Outphasing migrations and similarly as for the impacted BROBA ADSL2+ services, a CWS Service Manager will be appointed to plan with each OLO the best fit migration path for the BROBA ADSL1 services currently in use by their End-Users.

⁸ Cf Addendum to BRUO & BROBA, “ADSL from ROP in non-BO-nets” approved by BIPT on 06/02/2015.

⁹ Proximus might postpone this date in order to guarantee the quality of the deliverables

¹⁰ 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.

6.2.2 Standard and specific cases for ADSL1:

The standard and specific cases for ADSL2+ have been described in the approved addendum “Vectoring in ADSL(2+) frequencies – phase 1”.

The standard and specific cases for ADSL1 are the migrations towards the chosen product by the OLO: “WBA VDSL2”, “Carrier VDSL2, BROBA Re-ASDL or Carrier Re-ADSL.

BROBA ADSL1 Without Voice and BROBA ADSL1 With Voice + PSTN:

ADSL1 lines connected on a notified Remote Optical Platform (ROP) will have to be migrated towards the chosen product by the OLO.

This will cause some service interruptions for the concerned lines on the day of the migration.

Any remaining ROP-served ADSL1 lines at the end of the 6 months migration period will be ceased.

BROBA ADSL1 With Voice + ISDN:

As described in the approved addendum “ADSL_from_ROP”, existing installations of BROBA ADSL1 With Voice + ISDN service will have been transformed through the use case “ADSL_from_ROP” without impact on the BROBA ADSL1 service. When the ISDN service was moved to another pair, the BROBA subscription automatically became a “BROBA ADSL1 without Voice” subscription which is handled as described in the previous paragraph.

BROBA ADSL1 Without Voice on ISDN port:

In some uncommon cases of former BROBA ADSL1 With Voice + ISDN, the new BROBA ADSL1 Without Voice has remained connected on an ISDN port. As described in the approved addendum “ADSL_from_ROP” this requires that Proximus realises 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

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 ADSL1 services remain unchanged.

6.4 E-Tools

The XDSL availability tool (web interface and XML interface) will be adapted with the IT-release of October 2017 ⁽¹¹⁾ to mention when an address checked is located in the copper distribution area of a ROP eligible for the “stop sell ADSL1 and ADSL2+”.

¹¹ Proximus might postpone this date in order to guarantee the quality of the deliverables

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 ADSL1 service to a VDSL2 service.
3. Timing: the waiving of migration costs described in this document is 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 ADSL1 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 ADSL1 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 ADSL1 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 ADSL1 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 ADS1 line in phase 2 is located in the area of a ROP which is notified by Proximus as planned to be homogenized.

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.

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 yellow). Those adaptations refer to the consolidated version of the BROBA reference offer (version 18), published on the Proximus website, at http://www.proximuswholesale.be/en/id_broba/public/access/regulated-services/broba.html.

For the sake of clarity:

- Impacts due to phase 1 (cf chapter 7 of the approved addendum “Vectoring in ADSL(2+) frequencies – phase 1”): original changes are left highlighted in grey
- Impacts due to phase 2 (the present addendum): additional changes are highlighted in yellow

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.

As from 01/02/2018, the scope of this offer and its tariffs will be enlarged for cases where BROBA ADSL1 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.

27. 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 or between 552 kHz 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, but will be supported from 01 February 2018 onwards
- * 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.
- * BROBA ADSL1 for ROPs for which VDSL2 vectoring in the frequency band between 552 kHz 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 lists of ROPs planned to be activated with VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz and for VDSL2 vectoring in the frequency band between 552 kHz and 2,2 MHz is also published on the same location.

28. 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 or between 552 kHz 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.

29. 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 on which all Living Units can be connected in VDSL2. The provisioning of ADSL2+ lines remains possible for Living Units connectable to ROPs from on 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.
- The provision by Proximus of ADSL1 lines until 31/01/2018 to the End-Users. From 01/02/2018 onwards the provisioning by Proximus of ADSL1 lines is no longer possible to Living Units connectable to ROPs on which all Living Units can be connected in VDSL2. The provisioning of ADSL1 lines remains possible for Living Units connectable to ROPs on 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.

30. 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 on which not all Living Units can be connected in VDSL2.
- The provision by Proximus of ADSL1 lines until 31/01/2018 to the End-Users. From 01/07/2017 onwards the provisioning by Proximus of ADSL1 lines is no longer possible to Living Units connectable to ROPs on which all Living Units can be connected in VDSL2. The provisioning of ADSL1 lines remains possible for Living Units connectable to ROPs from which not all Living Units can be connected in VDSL2.

74. 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 or between 552 kHz and 2,2 MHz:

- BROBA ADSL(2+) With Voice + ISDN
- BROBA Re-ADSL, but will be supported as from 01 February 2018 onwards.
- 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.
- BROBA ADSL1 on ROPs for which VDSL2 vectoring in the frequency band between 552 kHz and 2,2 MHz is activated.

A new paragraph has to be added after current § 75:

Proximus will gradually activate VDSL2 vectoring in the frequency band between 1,1 MHz 552 kHz 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. Activation of “VDSL2 vectoring in the frequency band between 552 kHz and 2,2 MHz” limits the provision of BROBA services to 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” or between 552 kHz 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” or between 552 kHz 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.

From 01/02/2018 onwards Proximus can also activate VDSL2 vectoring in the frequency band between 552 kHz 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 ADSL1 nor ADSL2+ services.
- ROPs notified for the activation of vectoring in the frequency band between 552 kHz and 2,2 MHz for which all ADSL1 and 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 ADSL1 and ADSL2+ services (e.g. BROBA services) to an alternative solution, e.g. WBA-VDSL2 or BROBA-ADSL1 (not recommended and only possible for ROPs notified for the activation of vectoring in the frequency band from 1,1 MHz to 2,2 MHz).

If Proximus wants to activate “VDSL2 vectoring in the frequency band between 1,1 MHz and 2,2 MHz” or between 552 kHz 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+ and from 01/02/2018 BROBA ADSL1 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 01/07/2017 onwards).
- Check if ADSL1 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 01/02/2018 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 until 01/02/2018 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 01/07/2017 onwards).
- ADSL1 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 01/02/2018 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.

8. Adaptation on BRUO documents

The sections of the BRUO offer documents which are impacted by this addendum are indicated in the subsequent paragraphs (changes are highlighted in yellow).

Those adaptations refer to the consolidated version of the BRUO offer (version 13), published on Proximus website, at http://www.proximuswholesale.be/en/id_bruo/public/access/regulated-services/bruo.html

BRUO Annex C – Technical Specifications

In section 6.9 “Specific requirements for ADSL2”:

71. ADSL2 systems complying with recommendation ITU G.992.3 (Asymmetrical Digital Subscriber Line Transceivers 2 (ADSL2)), and to one of the annex A (ADSL2 over POTS), annex B (ADSL2 over ISDN), annex L (Reach Extended ADSL2 – READSL2) or M (ADSL2 extended upstream) of the recommendation ITU G.992.3 are authorized for use from the Central Office (LEX) on local loops (raw copper or shared pair) except for copper pairs that pass via KVDs served by ROPs which are flagged as being opened for ADSL2 services or which have vectoring in ADSL(2+) frequencies activated.

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