



**INSTITUT BELGE DES SERVICES POSTAUX ET DES
TELECOMMUNICATIONS**

**DECISION DU CONSEIL DE L'IBPT
DU 12 DECEMBRE 2007
CONCERNANT
BROBA REACH EXTENDED ADSL2**

VERSION PUBLIQUE

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INTRODUCTION

Le 16 juillet 2007, Belgacom a introduit auprès de l'IBPT une proposition relative à l'utilisation de Reach Extended ADSL (ADSL2 annexe L) dans BRUO & BROBA.

L'annexe L utilise une modulation spécifique du signal online afin d'étendre la distance éventuelle entre l'utilisateur final et l'équipement de l'opérateur ; l'annexe sert à desservir les abonnés éloignés dans des régions reculées. L'introduction de la technologie Reach Extended ADSL2 fait passer la couverture large bande de 98,5% actuellement à 99,3% de la population.

La Plate-forme a réagi par écrit à cette proposition le 20 août 2007.

Le Task Group Spectrum Management s'est réuni à ce sujet le 24 août 2007; cette réunion a débouché sur un projet de décision du Conseil de l'IBPT du 11 septembre 2007 dans lequel l'IBPT a soumis les règles relatives au spectre en vue de l'introduction de cette nouvelle technologie pour consultation au secteur.

L'introduction de cette nouvelle technologie dans BROBA fait partie d'un projet de décision séparé étant donné que de nombreuses imprécisions devaient encore être éclaircies entre Belgacom et les opérateurs alternatifs. Ces précisions ont été apportées au cours de la réunion trilatérale du 17 septembre 2007.

Le 24 septembre, Belgacom a fourni encore quelques précisions supplémentaires par e-mail. Mobistar, Tele2-Versatel & Scarlet y ont réagi le 26 septembre 2007.

Sur la base des réactions du secteur et de ses propres opinions, l'Institut a rédigé un projet de décision qui a été soumis pour consultation au secteur du 3 au 18 octobre 2007. L'Institut a reçu des réactions de Belgacom, de la Plate-Forme, de Scarlet et de Mobistar.

Après avoir traité les réactions, l'Institut transmet une version adaptée du projet de décision aux régulateurs communautaires conformément aux principes contenus dans l'accord de coopération. Les régulateurs communautaires n'ont pas eu d'objections contre la décision.

ANALYSE

Belgacom a précisé que les lignes BROBA ADSL existantes ne sont pas remplacées s'il apparaît pendant la réparation que l'atténuation se situe au-dessus de 6,5dB. Cela nécessiterait un autre modem, un autre profil de ligne et la présence d'une carte Multi-DSL.

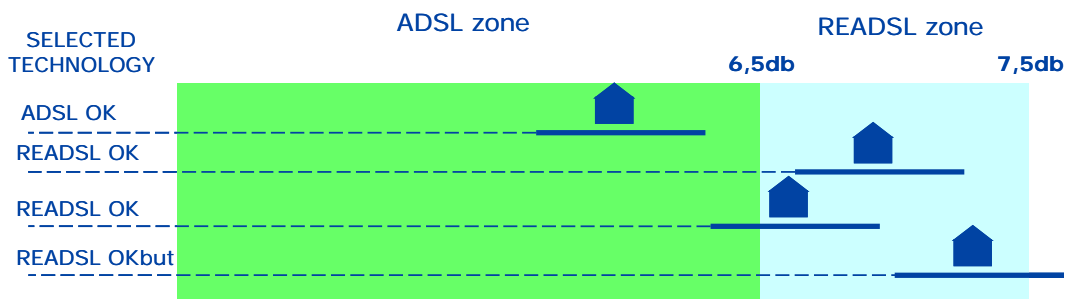
Migrer un client existant de BROBA ADSL vers BROBA ReADSL ne peut se faire que via une désinstallation et une installation. C'est également le cas lors d'un MOVE. Les opérateurs alternatifs plaident pour un processus MOVE plus flexible où l'OLO peut choisir lui-même quelle technologie et quel produit est installé lors d'un MOVE.

Mobistar, Tele2-Versatel & Scarlet sont contents que l'ADSL2 Reach Extended soit introduit dans BROBA afin d'augmenter la couverture d'ADSL dans les zones périphériques. Elles font toutefois remarquer que la couverture de la variante simple de l'ADSL ne peut pas diminuer étant donné que le matériel de nombreux utilisateurs finals n'est pas approprié pour le ReADSL2. L'introduction de ReADSL2 nécessite donc des investissements supplémentaires en matériel (e.a. des modems compatibles ReADSL2) chez les opérateurs alternatifs. Cette introduction nécessite également des adaptations IT chez chaque OLO.

Le 17 septembre 2007, Belgacom a proposé des règles sur la base desquelles il est décidé si le client doit être desservi via ADSL ou ReADSL. Les règles ci-dessous sont d'application tant chez Belgacom Retail que pour BROBA.

This process uses a decision tree based on the Maximum and Minimum Attenuation of the end-user adress.

- *Case I : As long as the Maximum Attenuation is lower than 6,5 dB, only an ADSL order can be accepted.*
- *Case II : If the Maximum Attenuation is between 6,5 dB and 7,5 dB, only an ADSL2 Reach Extended order can be accepted. Case II covers actually case IIa & case IIb*
 - *Case IIa : the Minimum Attenuation is lower than 6,5 dB,*
 - *Case IIb : the Minimum Attenuation is higher than 6,5 dB,*
- *Case III : If the Maximum Attenuation is higher than 7,5 dB and the Minimum Attenuation is lower than 7,5 dB, an additional technical analysis will determine if the provisioning in ADSL2 Reach Extended can be realized or not.*



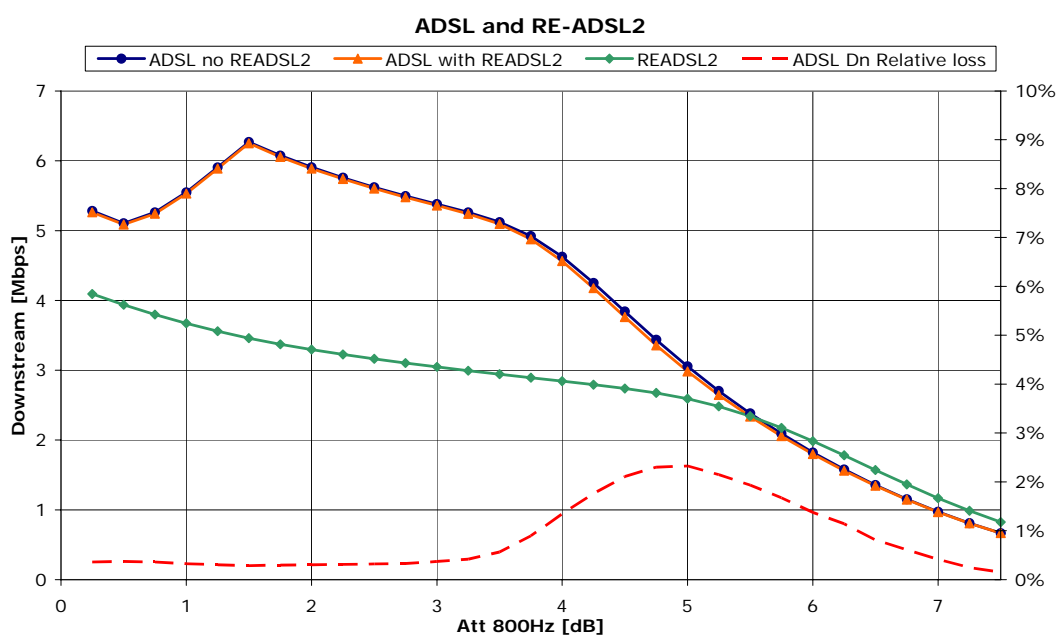
Mobistar, Scarlet & Versatel/Tele2 se posent des questions quant au choix de Belgacom dans le cas IIa, étant donné que la portée de BROBA ADSL diminuerait.

Belgacom n'est pas d'accord avec cela. Belgacom souligne que l'introduction de BROBA ADSL2 Reach Extended permet justement de connecter des utilisateurs finals qui n'avaient auparavant pas d'accès à l'Internet large bande, plutôt que de restreindre les possibilités de l'ADSL. Grâce à Reach Extended, Belgacom accroît sa responsabilité dans la couche

physique de 6,5dB à 7,5dB. Ce qui représente une augmentation de 15% de l'atténuation autorisée.

En ce qui concerne le cas IIa, Belgacom a décidé d'offrir le meilleur service au client. L'ADSL2 Reach Extended a une meilleure performance au-dessus de 5,5 dB. Il n'y a qu'une différence de 0,25dB entre l'atténuation minimale et maximale, donc l'ADSL2 Reach Extended n'apparaîtra qu'à partir de 6,25 dB, où la qualité du Reach Extended est clairement supérieure à l'ADSL.

Belgacom fait remarquer enfin que l'intérêt du cas IIa doit être considéré dans la bonne perspective. En supposant que la différence moyenne entre l'atténuation minimale et maximale est de 0,25dB, cela n'aura d'influence que sur un pourcentage marginal de 0,2% de la population. Belgacom ne voit pas pourquoi ce pourcentage est significatif pour les OLO.

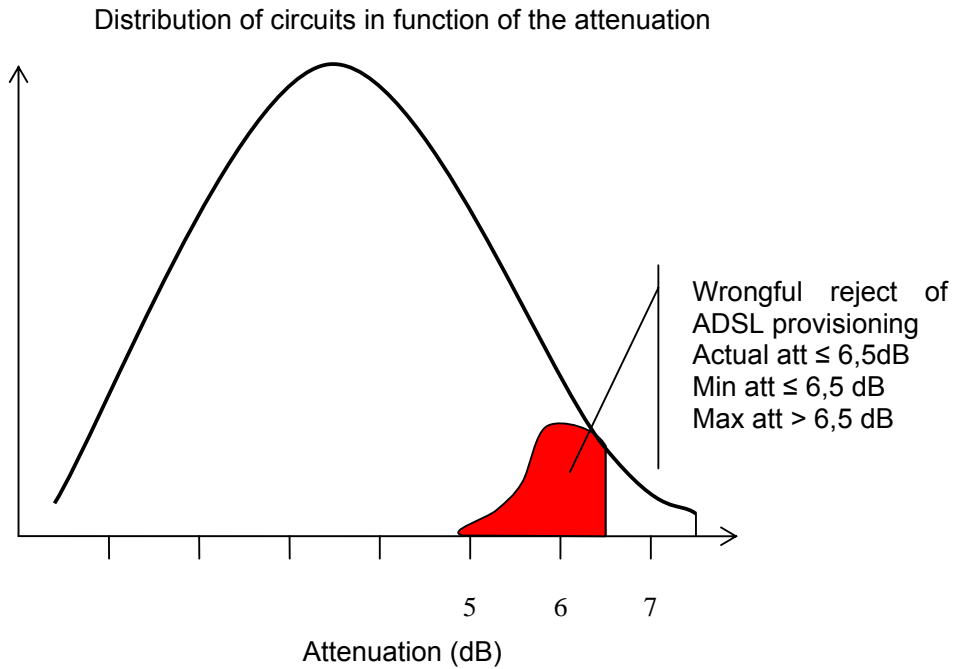


Mobistar, Tele2-Versatel & Scarlet ne sont pas d'accord avec le raisonnement de Belgacom. L'impact ne peut pas être calculé sur la base de la couverture de la population entre 6,5dB et 7,5dB étant donné que la perte de la couverture ADSL n'intervient que pour les lignes où l'atténuation réelle reste en dessous de 6,5dB. De plus, seul l'espacement moyen entre les circuits est pertinent dans le cas IIa et pas uniquement l'espacement entre leur dernier segment, par conséquent, l'espacement entre min. et max. est probablement supérieur à 0,25dB.

Etant donné que la distribution des circuits en fonction de l'atténuation n'est généralement pas plane et que l'espacement est probablement supérieur à 0,25dB, les suppositions de Belgacom constitueront sans doute une sérieuse sous-estimation de la diminution de la couverture ADSL comme le montre leur schéma suivant (pour raisonnement voir appendix 1).

Sur cette base, Mobistar, Tele2-Versatel & Scarlet demandent d'examiner plus en profondeur la diminution de la couverture. Dans le cas IIa, une étude technique complémentaire devrait en tout cas avoir lieu pour voir si la fourniture via ADSL est possible ou non.

La Plate-forme formule d'importantes objections concernant le nombre limité de profils qu'un bénéficiaire peut déterminer librement. Sur le marché en évolution, de nouveaux services sont ajoutés et les opérateurs auront de plus en plus de besoins spécifiques pour les profils des lignes. La Plate-forme renvoie au BROBA ReADSL pour attirer l'attention sur le fait que 8 profils de ligne ADSL maximum par bénéficiaire est trop peu pour définir également des profils ReADSL. Dans ce cadre, Belgacom a signalé que 2 profils de ligne déjà définis ReADSL peuvent être utilisés au-delà de la limite existante. Dans le cadre de la présente consultation, l'Institut demande si c'est suffisant pour le marché.



RÉACTIONS À LA CONSULTATION NATIONALE

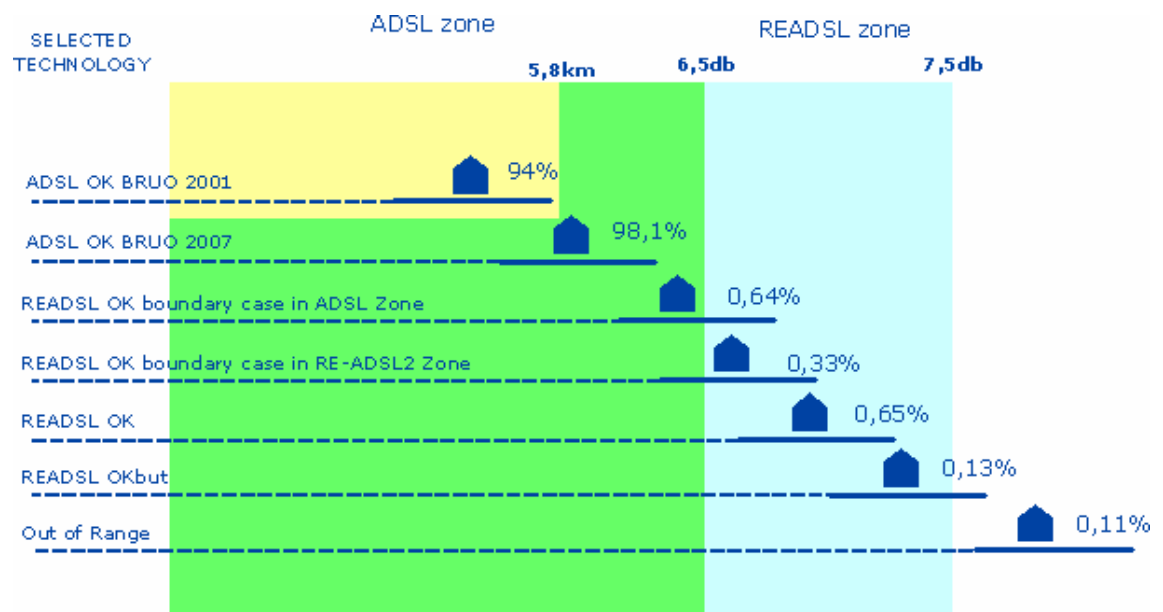
La Plate-forme est contente que l'ADSL2 Reach Extended soit introduit tant dans BRUO que BROBA de manière à permettre une couverture nationale de l'offre. La Plate-forme demande toutefois que le lancement de ReADSL2 se fasse simultanément dans BRUO & BROBA pour pouvoir concurrencer les offres de Belgacom retail et de différer le lancement de 6 mois tant pour retail que wholesale de manière à ce que les systèmes logiciels de chaque opérateur soient prêts.

La Plate-forme fait remarquer que l'ADSL est actuellement autorisé jusqu'à 5.5 km du central, ce qui se traduit à environ 7.15dB en atténuation; par conséquent la couverture d'ADSL diminuera de toute façon si l'on prend 6,5 dB comme seuil.

Belgacom tient à rappeler à la Plate-forme que la nouvelle courbe de déploiement est exprimée en Mb/dB au lieu de Mb/km de sorte que des vitesses plus élevées sont disponibles.

La Plate-forme fait remarquer qu'il n'y a pas de transparence concernant le calcul de la couverture large bande.

Sur la base d'un exercice statistique récent, Belgacom a obtenu la distribution suivante de clients sur la base de calculs d'atténuation chez 535.314 utilisateurs finals:



Le cas IIa avec une atténuation minimale inférieure à 6,5 dB et une atténuation maximale supérieure à 6,5 dB ne survient que chez 0,64% de la population. Belgacom répète que ce pourcentage est insignifiant en comparaison des avantages de ReADSL.

Belgacom souligne que la technologie ADSL Reach Extended offre systématiquement un service optimal au end-user dans les lignes appartenant au cas IIa. Belgacom ne comprend donc pas les réticences de la Platform à appliquer ce principe de service optimal.

La Platform accorde beaucoup d'importance à une prétendue diminution de la portée de l'ADSL classique, représentée par une partie des cas IIa. Belgacom insiste que l'introduction d'ADSL Reach Extended n'a évidemment pas d'impact sur le end-user (au contraire, cfr paragraphe précédent) pour lequel le choix de l'une ou l'autre technologie est indifférent.

Mais selon les opérateurs, cette introduction les obligerait à faire "des investissements dans du matériel compatible ReADSL" (modem). Cet argument d'investissement supplémentaire n'est pas correct. Le service BROBA sur ReADSL ne sera fourni que pour une nouvelle demande (d'où pas de problème de migration, de reprise de modem ou autres problèmes logistiques). Dans le cas d'une nouvelle demande, les opérateurs fournissent déjà le modem à leurs clients finaux. Après consultation des offres publiées sur les sites des opérateurs, il apparaît que les principaux opérateurs offrent déjà actuellement des modems compatibles ADSL Reach Extended (Annex L). Il n'y a donc pas lieu pour eux d'investir dans du nouveau matériel.

[confidentiel]

La Plate-forme trouve dommage que l'adaptation du système IT ne sera imposée qu'à partir de la prochaine sortie de logiciel étant donné que cela a de toute manière un impact sur la couverture.

En ce qui concerne les profils, la Plate-forme demande soit de porter le nombre de profils spécifiques par OLO de 8 à 10, soit que chaque OLO puisse définir 2 profils spécifiques à ReADSL2. Il doit en outre y avoir un consensus concernant les profils communs dans la common pool.

Belgacom fait remarquer que pour chaque profil de ligne ajouté, il y a 9 profils de ligne en plus (un pour chaque opérateur BROBA). Étant donné le nombre de profils autorisés actuellement, les DSLAM's ne peuvent plus supporter d'augmentation du nombre de profils propres.

Belgacom a aussi bien pris connaissance de la condition posée par l'Institut quant à son ajout – la possibilité de provisionner de l'ADSL exclusivement jusqu'à 6,5 dB dans un futur release dans le courant de 2008. Les premières estimations évaluent le travail à 200 à 300 mandays. Selon Belgacom l'implantation ne pourrait être prévue avant au plus tôt notre release de mars 2008 (sans engagement à ce stade).

L'ACCORD DE COOPERATION

La concertation est prescrite dans l'article 14, § 2, 5° de la loi du 17 janvier 2003 réglant les missions de l'Institut: « l'Institut peut uniquement prendre des décisions relatives aux réseaux de communications électroniques pour lesquels les Communautés sont également compétentes, après l'entrée en vigueur d'un accord de coopération avec les Communautés portant sur l'exercice des compétences en matière de réseaux de communications électroniques. » L'accord de coopération est entré en vigueur le 29 septembre 2007. Le projet de décision a été soumis dès lors à la procédure prévue dans l'accord de coopération.

L'IBPT a reçu une réponse de la part du VRM et du CSA, lequel dit de pas avoir d'objections contre la décision. Aucune réaction n'a été reçue de la part du Medienrat.

DÉCISION

La réduction de la couverture d'ADSL au profit de ReADSL est négligeable et ne s'élève qu'à 0,64%. Obliger Belgacom à ne refuser BROBA ADSL, à partir de la première sortie de logiciel possible, que lorsque l'atténuation minimum dépasse les 6,5dB, serait disproportionné.

L'Institut marque son accord sur l'addendum proposé.

VOIES DE RECOURS

Conformément à la loi du 17 janvier 2003 relative au statut du régulateur des secteurs des postes et des télécommunications belges, vous avez la possibilité d'interjeter appel de cette décision devant la cour d'appel de Bruxelles, Place Poelaert 1, B-1000 Bruxelles dans un délai de soixante jours à compter de la notification de celle-ci. L'appel est formé 1° par acte d'huissier de justice signifié à partie; 2° par requête déposée au greffe de la juridiction d'appel en autant d'exemplaires qu'il y a de parties en cause; 3° par lettre recommandée à la poste envoyée au greffe; 4° par conclusions à l'égard de toute partie présente ou représentée à la cause. Hormis les cas où il est formé par conclusions, l'acte d'appel contient, à peine de nullité, les indications de l'article 1057 du code judiciaire.

M. VAN BELLINGHEN
Membre du Conseil

G. DENEFF
Membre du Conseil

C. RUTTEN
Membre du Conseil

E. VAN HEESVELDE
Président du Conseil

ANNEXE 1 : REDUCTION COUVERTURE ADSL

Ci-dessous figure une étude assesment réalisée par Mobistar, Tele2/Versatel et Scarlet qui examine la mesure dans laquelle la couverture ADSL est réduite suite aux règles proposées par Belgacom.

In order to assess this reduction of the population reached by ADSL only more precisely, one must quantify the cases where ADSL is wrongfully rejected i.e. where the actual attenuation $\leq 6,5$ dB in case IIa.

Hereby one assumes within a segment an equal distribution, i.e. the actual attenuation for a given min – max attenuation pair is equally distributed between both values. This is a conservative assumption as the farer on gets from the city centre and thus the LEX, the less dense the population gets.

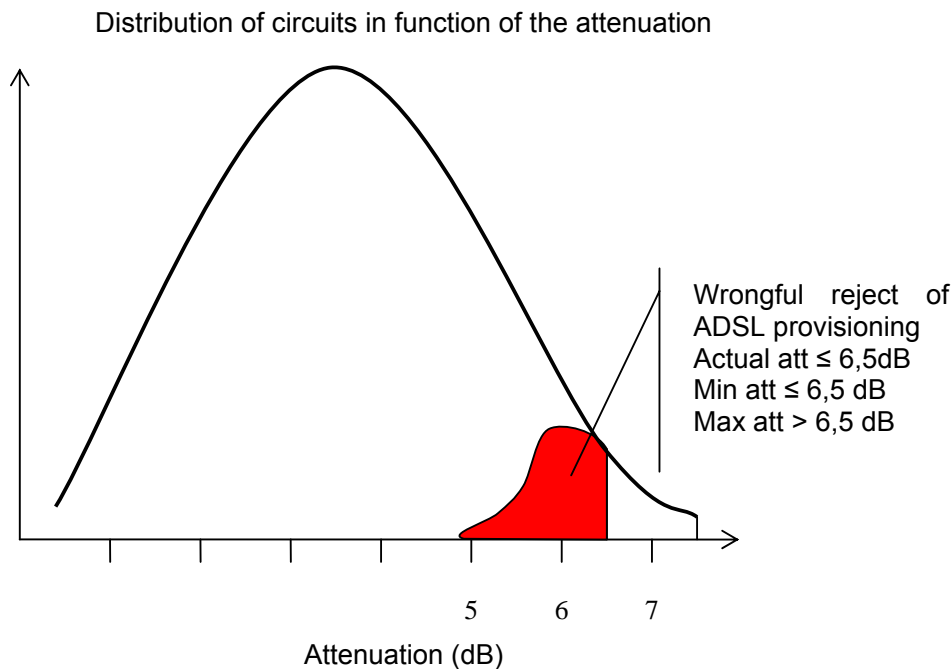
The following steps are needed

- Quantify the fraction in case IIa (P_{IIa}).
 - minimum attenuation $\leq 6,5$ dB
 - maximum attenuation $> 6,5$ dB
- For the circuits in case IIa calculate the average minimum and maximum attenuations ($Avg_{casella}(att_{min})$ and $Avg_{casella}(att_{max})$)
- In a first approach one could assume an equal distribution between both averages. (A more elaborate approach, assuming equal distribution in the individual circuits, would lead to a normal distribution.)

This would lead to the following reduction of reach for ADSL:

$$\text{Reduction} = P_{IIa} * (Avg_{casella}(att_{min}) - 6,5dB)/(Avg_{casella}(att_{min}) - Avg_{casella}(att_{max}))$$

This reduction may well be substantially larger than the 0,2% indicated by Belgacom as the figure below indicates.



Addendum n°4 to the Belgacom Reference Offer for Bitstream Access

Reach Extended ADSL2

1. Introduction

The present addendum aims at introducing the Reach Extended ADSL2 technology in the current Belgacom Reference Offer for Bitstream Access. This technology allows to increase the ADSL coverage from 98,5% to 99,3%¹.

The present addendum describes the impact of this addition on the documents of the Belgacom Reference Offer for Bitstream Access.

A similar addendum is proposed simultaneously to the BIPT in the framework of the BRUO offer.

2. Scope of this addendum

The scope of this addendum is limited to BROBA ADSL.

In case of BROBA lines with voice, Reach Extended ADSL2 is only supported for PSTN lines.

3. Preliminary information provided to the Operators

The following information has been given by Belgacom to the Platform of Operators on June 27th, 2007:

Objective : Increase ADSL coverage from 98,5% to 99,3% by the introduction of Reach Extended technology i.e. Reach distant end-users with ADSL-like service

Technology : Reach Extended ADSL2 (ITU-T standard G.992.3 Annex L)

Scope :

RE ADSL2 is not supported for ISDN lines (no standard available for this technology)

- ADSL allowed for loops with attenuation at 800Hz < than 6,5dB
- RE ADSL2 allowed for loops with attenuation at 800Hz between 6,5 and 7,5dB

Deployment rule : Specific for RE ADSL

¹ Indicative figures.

Pricing : Same as ADSL

Process : Same process, same XML, new offer name

Start date : 23/10/07

4. Planning

The present addendum becomes effective as from 23 October 2007.

5. Interaction with other addendum

On April 12th, 2007 Belgacom submitted to the BIPT an addendum to BROBA, regarding the replacement of length by attenuation in the BROBA deployment rule.

Some parts of the BROBA documents² are impacted by both the current and the previous addendum. As Belgacom intends to apply both addenda as from October 23rd, 2007 the deployment rule in the current addendum are directly provided in attenuation.

Of course the current addendum will be aligned as to the timing and spirit in accordance with the BIPT decision regarding the addendum of April 12th, 2007.

6. Adaptation on BROBA documents

This addendum impacts the document "BROBA II ADSL Main Body". The sections of the BROBA documents which are impacted by this Addendum are indicated below.

In order to limit the volume of documents or of document adaptations, and due to the high similarity between ADSL and Reach Extended ADSL2 in terms of operational processes, SLA and pricing, the word "ADSL" should be read from now on in all BROBA documents³ (other than the BROBA II ADSL Main Body) as referring both to ADSL and Reach Extended ADSL2.

Adaptations to the BROBA II ADSL Main Body

The title of the document must be replaced by "Belgacom Reference Offer for Bitstream Access BROBA II ADSL and Reach Extended ADSL2".

The following definition must be added to the section 1. "Glossary" :

² Namely the whole section "ADSL deployment rule" in the BROBA II ADSL Main Body.

³ Annex 1 "General Terms & Conditions", Annex 2 "Technical specifications", Annex 3 "Exchange of Information", Annex 4 "Planning and Operations", Annex 5 "Basic Service Level Agreement", Annex 6 "Pricing and Billing", Annex 7 "Operational systems", Annex 8 "Prepayment terms and Conditions", Annex 9 "Guaranteed Positions & Related Migrations, Concentrations and Pricing Rules".

"- The word "ADSL" equally refers both to ADSL and Reach Extended ADSL2 in all BROBA documents, except the Main Body. "

The paragraphs 1 and 2 must be replaced by :

1. "This document entails the conditions related to the provision by Belgacom to the Beneficiary, of the Broba II ADSL or Reach Extended ADSL2 service, which will enable the Beneficiary to define its own ADSL or Reach Extended ADSL2 products and to market, distribute and sell under its name and on its behalf its own ADSL or Reach Extended ADSL2 products towards End Users, using Belgacom installed and existing Network infrastructure, pursuant to the technical limitation of this existing infrastructure for offering the service.
2. The attention is drawn to the fact that taking into account that the present offer by definition implies the use of Belgacom DSLAM, this offer is related to the provision of ADSL or Reach Extended ADSL2 services only. In the future, this offer will be enlarged to other DSL technologies, after approval by BIPT as soon as these technologies are tested and at least 3 months before they are commercialized (retail and/or wholesale) by Belgacom."

The title of section 4 must be replaced by : "Description of the Broba II ADSL and Reach Extended ADSL2 services"

The paragraph 12 must be replaced by :

12. "The provision by Belgacom to the Beneficiary of Broba II ADSL or Reach Extended ADSL2 service will enable the Beneficiary to define its own ADSL or Reach Extended ADSL2 products, and to market, distribute and sell under its name and on its behalf its own ADSL or Reach Extended ADSL2 products towards End Users, using Belgacom's installed and existing network infrastructure, pursuant to the technical limitation of this existing infrastructure for offering this service."

The paragraph 14 must be replaced by :

14. "This offer is related to the provision of ADSL or Reach Extended ADSL2 services only but will evolve according to other DSL technologies planned by Belgacom and offered as Bitstream Access Services at least 3 months before commercialisation by Belgacom. The Broba II ADSL or Reach Extended ADSL2 will allow the Beneficiary to connect on Belgacom network at ATM Access Points and to receive any ATM cells from the End User using ADSL or Reach Extended ADSL2 technology. The transport end-to-end between the End User and the Beneficiary is ATM."

The paragraphs 40 and 41 must be replaced by :

40. "Virtual Paths (VPs) will be configured by Belgacom, on behalf of the Beneficiary, to transport the ADSL or Reach Extended ADSL2 traffic of the Beneficiary's End Users from the DSLAMs on which Beneficiary's End Users are connected up to the Beneficiary's Equipment and reversely."
41. "In each Lex + LDC's + other relevant points where Belgacom installed DSLAM's, Belgacom will create, for the Beneficiary, maximum 6 VP per DSLAM to which the Beneficiary's End Users are connected to in order to transport the ADSL or Reach Extended ADSL2 traffic of these End Users from the DSLAM they depend up to the Beneficiary Equipment and reversely."

The title of section 4.5 must be replaced by : "Activation of ADSL or Reach Extended ADSL2 on a specific End User line"

The paragraphs 44, 45 and 46 must be replaced by :

44. "Subject to the conditions that the Beneficiary has ordered the necessary infrastructure (Access Line and Virtual Path(s)), the Beneficiary will be able to offer to End Users services based on ADSL or Reach Extended ADSL2 technology, using Belgacom's installed and existing Network infrastructure, pursuant to the technical limitation of this existing infrastructure for offering ADSL or Reach Extended ADSL2 technology.
45. Belgacom will deliver Broba II ADSL or Reach Extended ADSL2 service to specific End Users according to the Beneficiary's orders transmitted to Belgacom. Belgacom is able to configure the individual lines of End Users at the DSLAM level on basis of following characteristics:
- Maximum 12 VP per DSLAM;
 - Maximum 10 VC per ADSL or Reach Extended ADSL2 connection;
 - VP of minimum 256kbps SCR per DSLAM
 - VP granularity of 256 kbps;
 - ADSL or Reach Extended ADSL2 and ATM profiles: see point 47.
46. (For so long that the total number of line profiles in the system is below 128), the Beneficiary can obtain 8 own ADSL or Reach Extended ADSL2 Line Profiles and 8 own ATM Profiles. Additionally, the Beneficiary can use the profiles defined in a common pool of 20 ADSL and 2 Reach Extended ADSL2 Line Profiles and 100 ATM Profiles. The ADSL profiles in the common pool will be added after agreement of all concerned Beneficiaries and Belgacom. The Reach Extended ADSL2 profiles in the common pool will be defined for maximum downstream bit rates of 1120 kbps and 512kbps, other values being maximum upstream bit rate 192, and minimum downstream and upstream bit rates of 32 kbps."

The paragraphs 48, 49 and 50 must be replaced by :

48. "The provision of ADSL or Reach Extended ADSL2 on an existing End User line requires the installation of an in-line filter or a full rate splitter both at the End User designated premises and at the Belgacom Local Exchange concerned to split the traffic between data and voice. At the Belgacom Local Exchange side, this filter is integrated in the DSLAM.
49. The provision of ADSL or Reach Extended ADSL2 on an existing End User line also requires the installation of a modem or a modem/router at the End User side. The access to the Broba II ADSL or Reach Extended ADSL2 Service at the End User site will be at the Belgacom Network Termination Point (NTP).
50. An intervention of a Belgacom technician on the End User site will be required in the following cases:
- For ADSL, if the End User has an ISDN line and the End User site does not have an AETHRA NT1-2ab as Belgacom Network Termination Point;
 - The End User line has an alarm configuration (X25 line)⁴
 - The End User line has a PABX configuration⁵

The paragraph 54 must be replaced by :

54. "The ATU-C handles different standards and supports ADSL or Reach Extended ADSL2 modems in conformity with Belgacom's UNI. The technical specifications of the User To Network Interface (UNI) for ADSL or Reach Extended ADSL2 equipments to be connected to the Belgacom network can be found on:
- http://www.belgacom.be/company/com/jsp/static/legal_technic.jsp

⁴ A line containing an alarm is fixed for security reasons into the wall or the wall socket. Installation using a micro filter is therefore impossible. A full rate splitter is installed by Belgacom.

⁵ Putting a splitter before each CPE connected to a PABX makes these splitters installed at the wrong place in the configuration. Therefore a full rate splitter is installed by Belgacom before the PABX and his internal wiring.

List of terminals tested by Belcomlab according to Belgacom UNI standard:

- <http://www.belcomlab.com/fr/default.htm>

The paragraph 56 must be replaced by :

56. "Reach Extended ADSL2 is not supported for ISDN lines. For ADSL, the splitter and modem type are dependent on the type of telephone line (PSTN or ISDN). Consequently, any cancellation or any conversion on the telephone services may possibly affect the Beneficiary ADSL based service and require the installation of new equipment at the End User premises, at the Beneficiary expense, for the ADSL based service in question. Attention of The Beneficiary is drawn to the fact that, for ADSL over ISDN related technology, the ISDN-low-pass filter standardization is not standardized yet (type 3 within ANNEX E from ITU-T 992.1) and mentioned as subject for further study by the standardization commissions. When applying an ADSL over ISDN low-pass filter at the Beneficiary side, it needs to be taken into consideration that in the Belgacom network, for ISDN, 4B3T line coding is used."

The paragraph 58 must be replaced by :

58. "In case no Introduction Cable is available for the provisioning of a Broba II ADSL or Reach Extended ADSL2 without voice, the following solutions will be applicable:

- Realization of a new introduction in the building of the Beneficiaries User
- Renewal of the introduction in the building of the Beneficiaries User
- Splicing additional pairs in the existing introduction splice of the building of the Beneficiaries User
- Moving existing introduction from an existing Distribution Cable to another existing Distribution Cable."

The paragraph 61 must be replaced by :

61. "In case no more free pairs are available in the Distribution Cable or the Feeder Cable, the request for Broba II ADSL or Reach Extended ADSL2 without voice will be rejected. The construction or trenching of new distribution cabling, new street cabinets or new feeder cabling is outside the scope of the present offer."

The paragraph 65 must be replaced by :

65. "The provision of ADSL or Reach Extended ADSL2 on an existing End User line requires the installation of a modem or a modem/router at the End User side:

- For single line PSTN service, the Beneficiary will install a distributed splitter on the Belgacom Network Termination Point at End User site or a Full rate splitter between the Belgacom Network and the Network Termination Point at End User site.
- For ADSL and a single line ISDN service with Telecom installation, Belgacom will install a Full Rate splitter between the Belgacom Network and the Network Termination Point at the End User site. Belgacom is responsible up to the splitter-splitter included
- For ADSL and a single line ISDN service without Telecom installation, the Beneficiary will install a Full Rate splitter between the Belgacom Network and the Network Termination Point at the End User site. Belgacom is responsible up to the splitter-splitter excluded
- For line without voice, Belgacom will install a Network Termination Point (TF2001). The Beneficiary will be invoiced the Telecom Installation fee as described in Anne 6 less the splitter price. "

The paragraph 67 must be replaced by :

67. "The NTP can be of the following types:

- PSTN Lines:
 - i. TF95
 - ii. TF2001
- ISDN Lines (in case of ADSL):
 - iii. TWIN
 - iv. NT1
- Lines without voice:
 - v. TF2001"

The section "ADSL deployment rule" must be replaced by :

"ADSL and Reach Extended ADSL2 deployment rule

74. ADSL is allowed for loops with attenuation at 800Hz less than 6,5dB.

75. Reach Extended ADSL2 is allowed for loops with attenuation at 800Hz comprised between 6,5 and 7,5dB.

76. Reach Extended ADSL2 is not allowed over ISDN loops

77. In order to improve the provisioning process and the repair process of Broba II, ADSL deployment curves have been developed on basis of statistics of actual network. Different curves are defined for ADSL over POTS and for ADSL over ISDN as well as for the upstream and the downstream for both ADSL flavours. Those curves are only deployment rules and not a performance guarantee. The curves are subject to evolution and could be reviewed.

ADSL deployment curves

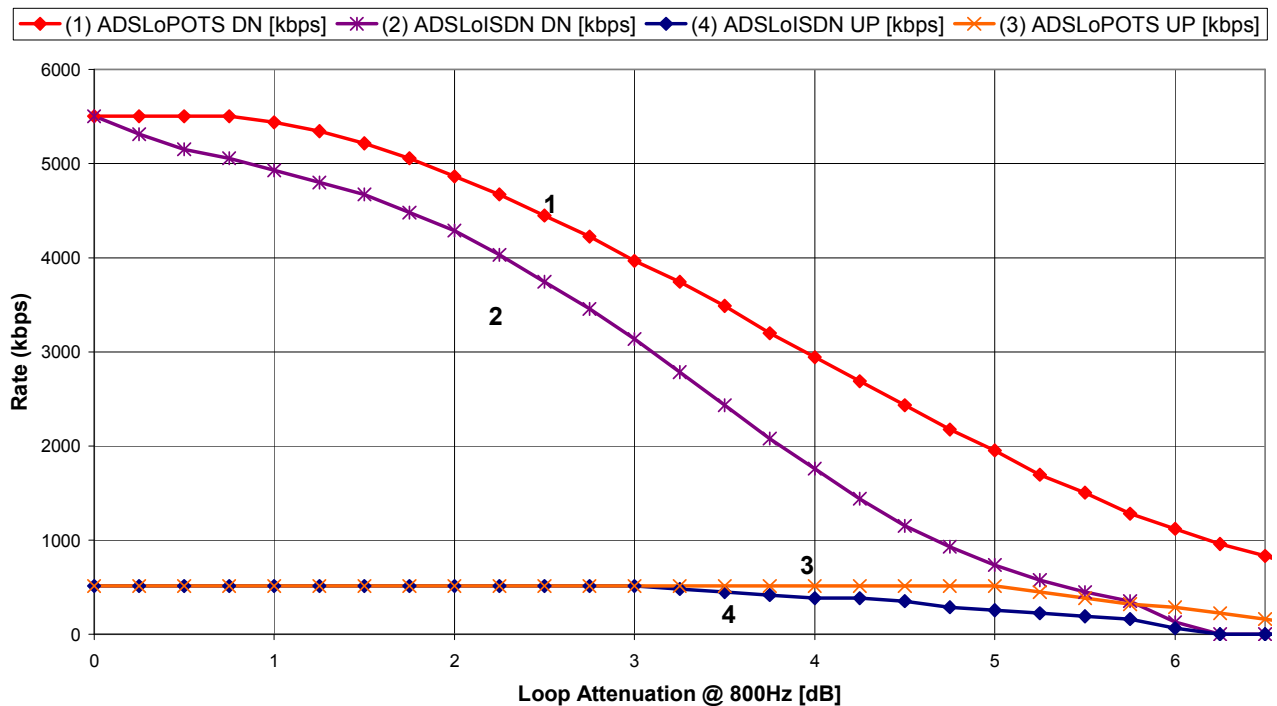


Fig. 1

The axes of the above graphic are the loop attenuation at 800Hz, versus the attainable bit rate.
 Line 1, the most upper line, represents the ADSL over POTS downstream.
 Line 2 represents the ADSL over ISDN downstream.
 Line 3 represents the ADSL over POTS upstream.
 Line 4 represents the ADSL over ISDN upstream.

78. The discrete values related to the above curve are listed hereunder:

Att @ 800Hz [dB]	ADSLoPOTS		ADSLoISDN	
	(3) ADSLoPOTS UP [kbps]	(1) ADSLoPOTS DN [kbps]	(4) ADSLoISDN UP [kbps]	(2) ADSLoISDN DN [kbps]
0	512	5504	512	5504
0,25	512	5504	512	5312
0,5	512	5504	512	5152
0,75	512	5504	512	5056
1	512	5440	512	4928
1,25	512	5344	512	4800
1,5	512	5216	512	4672
1,75	512	5056	512	4480
2	512	4864	512	4288
2,25	512	4672	512	4032
2,5	512	4448	512	3744
2,75	512	4224	512	3456
3	512	3968	512	3136
3,25	512	3744	480	2784
3,5	512	3488	448	2432
3,75	512	3200	416	2080
4	512	2944	384	1760
4,25	512	2688	384	1440
4,5	512	2432	352	1152
4,75	512	2176	288	928
5	512	1952	256	736
5,25	448	1696	224	576
5,5	384	1504	192	448
5,75	320	1280	160	352
6	288	1120	64	128
6,25	224	960	0	0
6,5	160	832	0	0

Table 1: Table of ADSL deployment rules

79. The provisioning and repair rules, for ADSL, are the following:

- Belgacom will provision ADSL BROBA II service on an end-user line only if loop attenuation at 800Hz is less than 6,5dB and if both upstream and downstream Minimum bit rates of the Line Profile are lower than indicated in above table for the corresponding ADSL flavour and loop attenuation.
- Belgacom will accept trouble tickets for resynchronisation problems only if both upstream and downstream Maximum bit rates of the Line Profile are lower than indicated in above table for the corresponding ADSL flavour and loop attenuation. (The nearest above loop length in the table shall be considered).

80. The provisioning and repair rules, for Reach Extended ADSL2, are the following:
- Belgacom will provision BROBA II Reach Extended ADSL2 service on an end-user line only if following conditions are respected :
 - The loop attenuation at 800Hz is comprised between 6,5 and 7,5dB.
 - Upstream minimum bit rate is not greater than 64kbps.
 - Downstream minimum bit rate is not greater than 256kbps
 - Belgacom will accept trouble tickets for resynchronisation problems only if :
 - Upstream Maximum bit rate is not greater than 192kbps.
 - Downstream Maximum bit rate is not greater than 512kbps”

The paragraphs 77 and 78 must be replaced by :

81. “In case of a Broba II ADSL or Reach Extended ADSL2 with voice service where both Belgacom and the Beneficiary provide services to an End User, it can occur that the End User cancels his voice subscription for that Broba II with voice service. In that case, independent of the reason for termination of the voice subscription, Belgacom will ensure that the service on the high bandwidth remains into service.
82. Belgacom will inform the Beneficiary that the Broba II ADSL or Reach Extended ADSL2 with voice service has been converted to a Broba II ADSL or Reach Extended ADSL2 without voice service, for which the Beneficiary will be charged the monthly rental fee for Broba II on a non-active loop instead of Broba II on an active loop. For the change to Broba II ADSL or Reach Extended ADSL2 without voice, a conversion fee as specified in Annex 6 Pricing and Billing is applicable. ”

As from paragraph 79 (becoming 83), all following paragraphs must be renumbered.

The title of section 5.2 must be replaced by : “Activation of ADSL or Reach Extended ADSL2 on a specific End User line”

The paragraphs 85 and 86 must be replaced by :

89. “At the moment the Beneficiary requests the activation of ADSL or Reach Extended ADSL2 on an End User line, within a specific Lex + LDC’s + other relevant points where Belgacom installed DSLAM’s, Belgacom verifies the existence of the VP necessary to transport the ADSL or Reach Extended ADSL2 traffic of this End User between the DSLAM from which this End User depends and the Beneficiary equipment and reversely.
90. When the existence of the necessary VP has been confirmed, Belgacom does the configuration of the individual line (i.e. the configuration of the ATM profile & the ADSL or Reach Extended ADSL2 profile) of the End User on DSLAM level. ”

The paragraph 88 must be replaced by :

92. “On the basis of these parameters a positive or negative technical advice will be given on the possibility to activate an ADSL or Reach Extended ADSL2 service on the considered End User line at the moment this check is carried out. Therefore, a positive technical advice does not necessarily mean or guarantee that the service can be made available to the Beneficiary at any time. ”

The paragraphs 91, 92 and 93 must be replaced by :

95. “The Beneficiary introduces a Broba II ADSL or Reach Extended ADSL2 request to Belgacom, with the following mandatory information:
- The Beneficiary requested date of activation (binding for Belgacom – see SLA);
 - For line with voice, Directory Number and address are mandatory. For line without voice, address is mandatory. Currently, CID is optional in all cases.

- The name, address, contact person phone number during office hours, of the End User.

The request will be managed between Belgacom and the Beneficiary via electronic messages or via fax as back-up procedure. For more information, reference is made to Annex 4 – Appendix D.

In case of Small Network Adaptations

With every request for a Broba II without voice, the Beneficiary needs to indicate whether executions of small network adaptations are allowed if required. If small network adaptations are needed to provide the requested service and the Beneficiary included its approval in the request, small network adaptations will be executed automatically. Belgacom will charge the Beneficiary the relevant fees for this specific Network Adaptations, according to the different elements set out in "Annex 6: Pricing and Billing".

If small network adaptations are necessary to provide the requested service and Beneficiary did not include his approval in his request, Belgacom shall point out to the Beneficiary that he has the possibility to ask for small network adaptations (an absence of approval in the initial request shall not be considered as a reject).

This type of communication will at first be done on a case-by-case basis. Belgacom will inform the Beneficiary in good faith, as soon as possible, of modifications of the current ordering procedures relating to these Small Network Adaptations.

96. In order to activate ADSL or Reach Extended ADSL2 on an End User line, Belgacom 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

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

If the order is accepted, the Beneficiary order intake will be performed including:

- The performance of the necessary preparatory works in the Local Exchange for connecting an individual End User line to DSLAM installed in the Belgacom Local Exchange;
- The realization of the necessary documentation to track that the End User line carries ADSL or Reach Extended ADSL2 technology of the Beneficiary (only for Belgacom purposes).

The list of reject codes is available on the Belgacom NWS secured website.

97. To be able to offer the Broba II ADSL or Reach Extended ADSL2, the Beneficiary needs to order bandwidth between a DSLAM in the Lex + LDC's + other relevant points where Belgacom installed DSLAM's to which he wants to connect End Users and the ATM Access Point to which the Beneficiary is connected."

The paragraphs 100, 101 and 102 must be replaced by :

104. "The maintenance and the development of the Network may require Belgacom to limit the Broba II ADSL or Reach Extended ADSL2 service or to suspend it temporarily. Belgacom undertakes to limit the duration of this period to the time that is required for the execution of the work and that duration will, in no way, be longer than the period

that Belgacom would require if her own services needed to be suspended and to inform the Beneficiary in due time at least 48 hours in advance. Such service interruptions are not included in the (I)SLA on service availability.

105. The Beneficiary will communicate possible network related problems of End Users to Belgacom. Belgacom will never be first line of contact with the End User for the Beneficiary ADSL or Reach Extended ADSL2 based service, based on Broba II ADSL or Reach Extended ADSL2 service.

106. If problems occur as a consequence of a Beneficiary ADSL or Reach Extended ADSL2 based service (for instance: interference of the Beneficiary system with existing system in service in the cable bundle, connection of non-compatible equipment), Belgacom may solve the problem by removing the concerned Beneficiary service on the concerned End User line under LIFO (Last In First Out) mode. The related costs will be invoiced to the Beneficiary after Belgacom has asked permission by and received permission from BIPT.”

--- end of text ---