



Standard Access Agreement relating to Wholesale Bitstream and VUA Broadband Products

National Broadband Ireland

AND

[Service Provider]



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This reference offer relates to the set of wholesale Bitstream and Wholesale VUA broadband products outlined in the Project Agreement between National Broadband Ireland and DCCAIE as signed on 19th November 2019. This product set includes the Minimum Wholesale Bitstream Product and the Minimum VUA Wholesale Product as well as the Additional Required Wholesale Products, the latter of which are variants of the Minimum Wholesale Bitstream and Minimum VUA products.

Version control

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1.0	Active	Published authorised version	01/04/2020
1.1	Active	Published authorised version	01/04/2020
1.1.1	Active	Published authorised version	01/04/2020
1.1.2	Active	Published authorised version	01/04/2020

Glossary of terms:

BE:	Best Efforts
CIR:	Committed Information Rate
Co-Lo:	Co-Location
CPE:	Customer Premises Equipment
CSID:	Calling Station Identifier
DHCP:	Dynamic Host Configuration Protocol
EF:	Expedited Forwarding
E-NNI:	External- Network to Network Interface
FTTH:	Fibre to the Home
NBI:	National Broadband Ireland
NTU:	Network Termination Unit
ODP:	Optical Distribution Point
OLT:	Optical Line Terminal
ONT:	Optical Network Terminal
PE:	Provider Edge node
PoH:	Point of Handover
PoP:	Point of Presence
Service Provider:	Service Provider (also known as RSP – Retail Service Provider)
UNI:	User Network Interface (as defined by MEF 13)
VLAN:	Virtual Local Area Network
VPLS:	Virtual Private LAN Service
VUA:	Virtual Unbundled Access
WSP:	Wholesale Service Provider
XGS-PON:	10Gbp/s Symmetrical Passive Optical Network

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This **WHOLESALE [BITSTREAM AND VUA] AGREEMENT** is made on [date]

BETWEEN

[], a company registered in Ireland with registration number [] and having its registered office at [Service Provider Address] (“Service Provider”);

and

NATIONAL BROADBAND IRELAND INFRASTRUCTURE DAC, a company registered in Ireland with registration number 631656 and having its registered office at 10 Earlsfort Terrace, Dublin 2, D02 T380, Ireland (“NBI”),

(each of the Service Provider and NBI shall be referred to individually as a “Party” and together shall be referred to as the “Parties”).

INTRODUCTION

WHEREAS

- A. The Minister (as defined below) has appointed NBI to make certain wholesale Products (as defined below) available in the areas specified by the Minister in the NBP Agreement (as defined below).
- B. NBI has in turn agreed to provide the Service Provider with the Products on the terms of this Agreement.

This Agreement has been written in accordance with the Body of European Regulators for Electronic Communications (BEREC) Guidelines¹ and is assumed to be compliant with the proposed best practices set out in the BEREC Guidelines.

In consideration of the mutual covenant and obligations contained in this Agreement, the Parties **HEREBY AGREE AS FOLLOWS:**

1. DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, words and expressions have the following meanings:

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|---|---|
| “Affiliate” | means, in relation to a Party, a Subsidiary of that Party or a Holding Company of that Party or any other Subsidiary of that Holding Company. |
| “Agreement” | means the terms and conditions applicable to the provision of the Product as set out in this agreement and its Schedules (which may be updated by NBI from time to time and published on NBI’s website in accordance with the NBP Agreement and Clause 26 of this Agreement). |
| “Application Programming Interface” or “API” | means a set of routines, protocols and tools for building software applications. An Application Programming Interface specifies how the Service |

¹ Body of European Regulators for Electronic Communications (BEREC) Guidelines on the Minimum Criteria for a Reference Offer, BEREC Document No. BoR 19 (238), 5th December 2019, available at: https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/8899-berec-guidelines-on-the-minimum-criteria-for-a-reference-offer-relating-to-obligations-of-transparency

“Architect’s Opinion on Exemption”

Provider and NBI software components should interact.

means a professional opinion provided by an architect accredited by the Royal Institute of the Architects of Ireland (the “RIAI”) in a form approved by the Law Society of Ireland and the RIAI declaring that planning permission is not required for works or that the Building Control Regulations do not apply to such works.

“Authorisation Regulations”

means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (SI 335 of 2011).

“Authorised Undertaking”

means an Authorised Undertaking as defined in the Authorisation Regulations.

“Best Industry Practice”

means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled, experienced and expert supplier in the Irish or United Kingdom electronic communications services and network industry and sector engaged to carry out and provide services, works, duties, deliverables, functions, responsibilities and activities of a similar scope, nature, scale, complexity and importance to the Services, Network and Products (or the relevant part of them) and under the same or similar circumstances or conditions and doing its best in good faith to comply with its contractual obligations and applicable Laws, Codes and Standards, Binding Guidance and Consents and, to the extent that it does not give rise to disproportionate or material cost, Non-Binding Guidance.

“Breach Notice”

means a written notice service by either Party on the other Party in the event of a breach of this as further described in Clause 12.2.

“Building Control Regulations”

means the Building Control Regulations 1997-2015, as amended, replaced or superseded from time to time.

“Claim”

means any action, claim, demand, proceedings or similar.

“Co-Location Reference Offer”

means the specification, terms and conditions applicable to the Co-Location Product as set out in this Agreement, the Service Schedule entitled “Building and Cabin Co-Location Product” and as specified in the NBI Building and Cabin Co-Location Product Description, the NBI Building and Cabin Co-Location Access and Health & Safety Requirements, the NBI Building and Cabin Co-Location Service Level Agreement and the NBI Building and Cabin Co-Location Price List (all as published on the NBI website and as may be updated and re-published from time to time).

“Co-Location Site”

means the premises, property or site at which or upon which the Co-Location Product is provided by NBI (as may be notified by NBI to the Service Provider from time to time).

“Commencement Date”

means the date on which this Agreement is executed and delivered by the Parties, namely the date first written above.

“Connection Request”

means a request from the Service Provider to NBI via the NBI Operational Environment to connect the Product to the Customer’s premises.

“Customer”

means a person subscribing to the Service Provider Service, including without limitation, End Users and resellers.

“Dedicated Test Connection”

means the connection made available by the Service Provider at the regional or national Point of Handover which will include a Service Provider modem connected back to the Internet Service Provider breakout point which is used solely for End User Panel Testing as described in more detail in Clause 4.

“Department”

means the Department of Communications, Climate Action and Environment.

Deployment Area (DA)

means the geographical area that is served by an Optical Light Terminal (OLT) deployed by NBI for the purpose of providing Product(s) and Services to Premises located in that geographical area.

“End User”

means the customer of the Service Provider on whose behalf the Service is ordered.

“Equipment”	means any equipment owned, leased or licensed by the Service Provider and used by the Service Provider in connection with its use of the Products.
“Holding Company”	means, in relation to a company or corporation, any other company or corporation in respect of which it is a Subsidiary.
“Incorrect Overpayment”	means a price that NBI charged to the Service Provider which was higher than the price which should have been charged in accordance with the Pricing Rules.
“Intellectual Property Rights”	means any patent, patent application, copyright, moral right, trade name, trade mark, service mark, trade secret, copyright, and any applications or right to apply for registration therefor, internet domain names, logos, designs, slogans, and general intangibles of like nature, computer software programs or applications, tangible or intangible proprietary information, know-how, proprietary processes, formulae, algorithms, or any other intellectual property right, whether registered or unregistered, and whether first made or created before, on, or after the date of this Agreement.
“Interconnect Product”	means, if applicable to the Service Provider, the Interconnect Product as described in more particular detail in the Interconnect Product Reference Offer.
“Interconnect Product Reference Offer”	means the specification, terms and conditions applicable to the Interconnect Product as set out in the “Interconnect Product Reference Offer” and as specified in the NBI Interconnect Product Description, NBI Interconnect SLA, NBI Interconnect Pricelist, NBI Interconnect Process Manual and NBI Interconnect Technical Handbook (all as published on the NBI website and as may be updated and re-published from time to time).
“Minister”	means the holder of the office of the Minister for Communications, Climate Action and Environment and any successor to that role.
“Minister Representative”	means such person or persons (or such substitute or substitutes) (other than the National Regulator) as may be appointed by the Minister under the NBP Agreement.

“Minimum Performance Specification”

means as a minimum, the following indicators and related minimum performance:

- (i) minimum Download Speed between retail CPE and the internet demarcation point of 150 Mbit/s;
- (ii) minimum Upload Speed between retail CPE and the internet demarcation point of 30 Mbit/s;
- (iii) maximum Latency (round trip) between the retail CPE and the internet demarcation point of 100 ms;
- (iv) maximum Jitter between the retail CPE and the internet demarcation point of 50 ms;
- (v) maximum Packet Loss between the retail CPE and the internet demarcation point of 0.10%; and

minimum end-to-end service availability of 99.95%

“National Regulator”

means the Commission for Communications Regulation (ComReg) or any person or body designated as the National Regulatory Authority pursuant to Council Directive 90/388/ EEC.

“NBI Operational Environment”

means the web portal and web services provided by NBI that can be accessed by the Service Provider to perform eligibility checks, place orders for Products, create or schedule appointments for End Users and create or track faults for End Users.

“NBI Product and Commercial Team”

means the team of NBI staff reporting into the Chief Commercial Officer of NBI with responsibility for all Service Provider engagement activities and all Product management and development activities within NBI.

“NBP Agreement”

means the agreement entered into between NBI and the Minister under which the Minister appointed NBI to make certain wholesale services available in certain intervention areas.

“Non-Compliant Overpayment”

means a price that NBI charged to the Service Provider which was non-compliant with the Pricing Rules. This definition is more particularly set out in the NBP Agreement and defined therein as an amount equal to the difference between the Wholesale Price that NBI charged and the price which NBI should have charged in accordance with the Wholesale Pricing

	Rules over the total relevant period of non-compliance.
“Onboarding Process”	means NBI’s process of onboarding RSP/WSPs to allow those RSP/WSPs to procure and avail of the Products.
“Optical Network Termination” or “ONT”	means wholesale customer premises equipment (WCPE), that is the network termination device located in the End User Premises that is used to terminate NBI’s Access Network and is the physical network termination point for the Wholesale Service Provider’s network and to which the Service Provider’s equipment is directly connected. The output of the WCPE provides the Demarcation Point between the NBI Network and the Service Provider’s equipment.
“Point of Handover” or “PoH”	means the point at which NBI hands over the conveyance of a Product to the Service Provider so that the Service Provider is then able to use a number of connection options to connect the PoH to its own network.
Pre-ordered Connection Request	means a Connection Request in respect of a Product which is ordered in the prescribed pre-order timeframe prior to availability at that location (such information available in the NBI deployment plan as published on the secure RSP/WSP portal).
“Prospective Customer”	means an entity or individual including without limitation End Users and resellers, that has requested to or wishes to subscribe to the Service Provider Service.
“Pricing Rules”	means the Wholesale Pricing Rules, Retail Pricing Rules, Price Benchmarking Rules and Wholesale Product Benchmarking Rules as set out in the NBP Agreement.
“Product(s)”	means each variant of the Wholesale Bitstream and VUA Products provided by NBI under this Agreement and as described in more detail in Schedule 1 and which may be updated by NBI from time to time in accordance with the NBP Agreement and published on NBI's website.
“Quarter” or “Quarterly”	means each three (3) month period during this Agreement from the Commencement Date onwards, with:

- the first Quarter commencing on the Commencement Date and ending on the last day of the third calendar month after which the Commencement Date falls (e.g. if the Commencement Date is 15 February, the Quarter commences on 15 February and ends on 30 April); and
- each subsequent Quarter being a period of three calendar months commencing on the day following the expiry of the preceding Quarter,
- with four (4) Quarters in each twelve (12) month period.
- “RoLR”** means an RSP/WSP which has notified NBI that it is prepared to receive requests from NBI to act as a retailer of last resort (RoLR) to the extent that a different RSP/WSP is unable or unwilling to provide the Service Provider Service to a Prospective Customer. In circumstances where no RSP/WSP is willing to act as a retailer of last resort NBI is obliged under the Project Agreement to do so.
- “RoLR List”** means list of RoLRs, which is maintained by NBI for the provision of RoLR services.
- “RSP(s)”** means a retail service provider including the Service Provider which has entered into a contract with NBI for the Products and will provide services to Customers or Prospective Customers.
- “Service Provider Material”** means documents, data, information, video, graphics, sound, music, pictures, text, code, scripts, photographs, software and any other material (in whatever form) published or otherwise made available (directly or indirectly) by or on behalf of the Service Provider using the Products.
- “Service Provider Service”** means the products and/or services provided by the Service Provider to the Customer (or End User) using the Products.
- “Subsidiary”** means a company in respect of which another company, its holding company (i) holds a majority of the voting rights in it, (ii) is a member of it and has the right to appoint or remove a majority of its board of directors, or (iii) is a member of it and controls alone, pursuant to an agreement with other members, a majority of the voting rights in it, or if it is a subsidiary of a company that is itself a subsidiary of that other company.

“Technical Manual”	means the technical document describing the Wholesale Bitstream and VUA Products.
“Third Party”	means any individual, company, firm, partnership, competent regulatory authority association or body corporate other than the Parties to this Agreement, or a Party to this Agreement acting in any capacity other than a capacity in which it enters into this Agreement.
“VUA”	means Virtual Unbundled Access.
“Wholesale Bitstream and VUA Service Level Agreement”	means the document published on NBI’s website that sets out the degree of service and support that will be provided by NBI in respect of the Products and the corresponding charges.
“Wholesale Bitstream and VUA Product Technical Manual”	means the document published on NBI’s website that provides a detailed description of the Wholesale Bitstream and VUA products that will be made available to Wholesale Service Providers (WSP) and Retail Service Providers (RSP).
“Wholesale Bitstream and VUA Product Process Manual”	means the document published on NBI’s website that sets out the processes for Service Provider eligibility, ordering, fault management and billing for the Product.
“Wholesale Bitstream and VUA Product Price List”	means the document that details the prices and charges for the Product as set out in Schedule 3 which may be updated from time to time by NBI and published on NBI’s website in accordance with the NBP Agreement and Clause 26 of this Agreement.
“Working Day”	means 08:00 – 20:00, during any Working Day other than Saturdays, Sundays, or public holidays as defined in the Second Schedule to the Organisation of Working Time Act, 1997.
“Works”	means any works to be carried out by or on behalf of the Service Provider in connection with its use of a Product or the use by any Customer of a Service Provider Service.

“WSP(s)”

means a Wholesale Service Provider including a Service Provider which has entered into a contract with NBI for the Products and will provide services to Retail Customers.

- 1.2 In this Agreement, except if the context requires otherwise, words and expressions are as defined in Clause 1.1 above or in the appropriate Schedule.
- 1.3 References to acts, statutory instruments and other legislation including European Union legislation are to such legislation as amended from time to time, any legislation of which it is a re-enactment and includes any subordinate legislation made from time to time under that legislation.
- 1.4 Terms defined in relevant European Union legislation concerning the provision of electronic communications networks and/or services or in consequent Irish implementing legislation (which, for the avoidance of doubt includes decisions published by the National Regulator) shall, where used in this Agreement, have the meanings ascribed to them in such legislation.
- 1.5 The following documents form part of this Agreement and, in the event of any inconsistencies between them, the order of precedence shall (unless expressly stated to the contrary) be as follows:
 - 1.5.1 Main body of the Agreement; and
 - 1.5.2 The provisions of the Schedules.

2. COMMENCEMENT AND DURATION

- 1.6 This Agreement takes effect on the Commencement Date and shall continue until:
 - 1.6.1 the Service Provider ceases to be an Authorised Undertaking; or
 - 1.6.2 termination pursuant to this Agreement.

3. THE PRODUCTS AND GENERAL REQUIREMENTS

- 3.1. Schedule 1 provides a detailed description of the Products that NBI may provide under this Agreement. The terms of Schedule 1 are incorporated into this Agreement by reference.
- 3.2. The Service Provider shall not use a Product or allow or permit any Customer to use a Service Provider Service:
 - 3.2.1. other than in accordance with all applicable laws, including, but not limited to, the terms of any licence, approval, clearance or consent applicable to the Service Provider or the Customer (as applicable), data privacy laws, the laws of copyright and Intellectual Property Rights;
 - 3.2.2. in any way that contravenes the criminal law or to export or re-export any material in violation of any applicable export control laws and regulations;
 - 3.2.3. other than in accordance with the acceptable usage policies of any connected networks;
 - 3.2.4. other than in accordance with any instructions and / or notice given by NBI; and/or
 - 3.2.5. other than in accordance with the provisions of this Agreement.
- 3.3. The Service Provider shall include and maintain in its contracts with Customers provisions which are no less onerous than those contained in this Agreement (including, for the avoidance of doubt, its Schedules). The Service Provider shall be responsible for the enforcement of all such provisions with Customers.
- 3.4. The Service Provider shall exercise the reasonable skill and care of a competent electronic communications services provider in performing its obligations under this Agreement.
- 3.5. The Service Provider shall not place any Connection Requests or Pre-ordered Connection requests without the prior written authorisation of the Customer.
- 3.6. The Service Provider shall ensure that in providing the Service Provider Service to the Customers, the Service Provider Service meets or exceeds the Minimum Performance Specifications set out in Appendix 1. If the Service Provider fails to provide the Service Provider Service in accordance with the Minimum Performance Specifications set out in Appendix 1 it shall immediately inform NBI of such failure and take all steps necessary to ensure the performance specifications are met within 5 (five) Working Days after the failure was identified. Failure to notify NBI within the specified timeframe may result in the

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temporary suspension of the provision by NBI of the Products under his Agreement, until such time as the issue has been resolved.

- 3.7. The Service Provider shall be solely responsible for ensuring any Service Provider Material and Third Party material (in whatever form) complies with all applicable laws and regulations. The Service Provider further acknowledges and agrees that NBI has no responsibility in relation to any such Service Provider Material or Third Party material (in whatever form).
- 3.8. The Service Provider shall provide NBI with a quarterly forecast of its projected number of Connection Requests and Pre-Ordered Connection Requests, broken out by Deployment Area (OLT) Area, at least 20 Working Days in advance of each Quarter.
- 3.9. The Service Provider shall indemnify NBI, its employees, officers, servants and agents in full and on demand against any liability, fines, loss, cost, damage and expense (including but not limited to reasonable legal fees) incurred by it and arising directly or indirectly from any Claim instituted or threatened against NBI by any Third Party in relation to:
 - 3.9.1. the manner in which the Product has been used where such use is in breach of the provisions of this Clause 3;
 - 3.9.2. the Service Provider's installation and use of any equipment relating to the Products (including the Equipment);
 - 3.9.3. incidents (of any duration) in which the Service Provider Service is faulty or cannot be used by any Third Party (including a Customer);
 - 3.9.4. the content of data conveyed via the Products; and/or
 - 3.9.5. the Service Provider Material or any Third Party material which is provided to or made available to Customers or any other Third Party.

The provisions of this Clause 3.9 are not subject to the provisions of Clause 17 of this Agreement.

- 3.10. In the event that the use, maintenance, installation and / or removal of Equipment by or on behalf of the Service Provider causes any loss, damage, interference or disruption to any asset, equipment, installation, activities and / or operations of any Third Party ("Third Party Damage"), the Service Provider shall indemnify and hold NBI harmless from and against any Claim or proceeding arising out of or in connection with the Third Party Damage suffered by NBI (including Claims made against NBI by Third Parties resulting from the Third Party Damage) for each event or series of related events howsoever arising whether in contract, tort (irrespective of negligence) or from breach of duty (statutory or otherwise).

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The indemnity under this Clause 3.10 shall include any Claim or proceedings arising out of or in connection with:

3.10.1. damage to Third Party equipment located at or in a Co-Location Site;

3.10.2. indirect or consequential loss arising from Third Party Damage;

3.10.3. all costs and expenses incurred in repairing and remediating the Third Party Damage;

3.10.4. all costs and expenses incurred in taking such measures as are reasonably required to bring the asset, installation, equipment, activities and / or operations affected by the Third Party Damage back to normal order; and

3.10.5. all Claims made or proceedings instituted against NBI by any Third Party in respect of the Third Party Damage.

3.11. The Products shall be made available to the Service Provider for the term set out for each Product in Appendix 1.

3.12. The Products provided by NBI will meet the service levels which are set out in the Wholesale Bitstream and VUA Service Level Agreement. In the event that the Service Provider does not meet the required service level set out in Appendix 1, Minimum Performance Specification for Service Providers, it shall be subject to the breach notifications set out in the Clause 12.

3.13. The Service Provider shall obtain all and any licences, approvals, clearances or consents necessary to use a Product or allow or permit any Customer to use a Service Provider Service, including any planning permissions or rights-of way.

3.14. Where the Service Provider is successful in obtaining planning permission for any Works, it shall provide NBI with all details of the planning permission and not commence the Works detailed therein without the written permission of the NBI. Permission may be withheld if, in the opinion of NBI, the conditions attached to the planning permission are not acceptable to NBI.

4. END USER TESTING

4.1. Upon receipt of a request in writing from NBI, the Service Provider shall, as soon as reasonably practicable or in any event within forty five (45) Working Days of receipt of NBI's request, establish a panel of its End Users for the purpose of recording the Service Provider's performance at Layer 3 (each a "panellist" and together the "**End User Panel**").

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- 4.2. NBI will be responsible for providing the technical on-premises equipment required by the Service Provider to facilitate End User Panel testing.
- 4.3. The Service Provider shall provide NBI with full details of its End User Panel, including but not limited to, the name and contact details of each panellist, within the period specified in Clause 4.1.
- 4.4. The Service Provider shall ensure that the End User Panel is comprised of the greater of:
 - 4.4.1. one (1) End User per Point of Handover; or
 - 4.4.2. one per cent (1.0%) of End Users per Point of Handover,

connected to each point of handover in NBI's network, from which the Service Provider provides the Service Provider Service.
- 4.5. NBI shall adopt the test configuration agreed in advance with the Department / Minister which shall include measuring test results between (i) a test client located at the panellists' premises; and (ii) a test server located logically close to INEX, the principal peering point for Irish Internet Service Providers (the "Tests"). Subject to any changes to the Tests which may be agreed between NBI and the Department / Minister, the Tests shall measure the following:
 - 4.5.1. TCP/IP Upload and Download speed;
 - 4.5.2. Round Trip Latency;
 - 4.5.3. Jitter; and
 - 4.5.4. Packet Loss.
- 4.6. The Service Provider shall ensure that each panellist participates in any Tests notified to it in writing by NBI and complies with all instructions set out in such notification. Each panellist shall connect a test agent to the Service Provider home gateway, via an ethernet cable, and each test agent will automatically run a sequence of non-intrusive Layer 2 tests every ~15 minutes on a 24x7x365 basis.
- 4.7. The Service Provider will be in breach of its obligations under this Clause 4 in the event of failure by the greater of 5 or >5% of panellists to provide Test results within the period stipulated by NBI in writing in respect of each Test ("Panel Breach"). Panel Breaches shall result in the following:
 - 4.7.1. Commission of a Panel Breach by the Service Provider will result in receipt by the Service Provider of a formal, written notification from NBI outlining the nature of the

Panel Breach and the expected remediation requirements (“First Panel Breach Notice”).

- 4.7.2. If, within six months of receipt of a First Panel Breach Notice, the Service Provider (i) commits a second Panel Breach; or (ii) fails to carry out the remediation requirements in the First Panel Breach Notice to the satisfaction of NBI, NBI shall issue a further formal, written notification to the Service Provider, outlining the nature of the further Panel Breach and the expected remediation requirements (“Second Panel Breach Notice”);
- 4.7.3. If, within a 12 month period during the term of the Agreement, the Service Provider (i) commits three Panel Breaches; or (ii) fails to carry out the remediation requirements in the First Panel Breach Notice or the Second Panel Breach Notice to the satisfaction of NBI, NBI shall publish the Service Provider’s details on a “Defaulter List” on NBI’s website. The details published shall include a description of the Service Provider’s repeated breaches and any failure to remediate. In addition, NBI shall issue a further, formal written notification to the Service Provider, outlining the remedial action required by the Service Provider (“Third Panel Breach Notice”).
- 4.7.4. If, within a 12 month period during the term of the Agreement, the Service Provider (i) commits four Panel Breaches; or (ii) fails to carry out the remediation requirements in the First Panel Breach Notice, the Second Panel Breach Notice or the Third Panel Breach Notice to the satisfaction of NBI, the Service Provider will be barred from placing any new product orders until such time as the Service Provider has satisfied the NBI Product and Commercial Team that all Panel Breaches have been appropriately remedied and that the appropriate steps have been taken by the Service Provider to minimise the risk of any further Panel Breaches;
- 4.7.5. In circumstances where the Service Provider has incurred a bar on the placing of new product orders and such bar has been subsequently lifted through the process described in Clause 4.7.4 above, and that Service Provider commits a further Panel Breach following the removal of the bar, it will automatically be issued with a Second Breach Notice by NBI and the process described in Clauses 4.7.3 and 4.7.4 shall be initiated.
- 4.8. The Service Provider shall provide a Dedicated Test Connection used solely for End User Panel Testing. Where the Service Provider is availing of a Wholesale Bitstream product pursuant to this Agreement, the Dedicated Test Connection must be connected at the national Point of Handover in Dublin. Where a Service Provider is availing of VUA product pursuant to this Agreement, a Dedicated Test Connection must be connected at each regional Point of Handover.

5. RETAILER OF LAST RESORT

5.1. During the Onboarding Process, the Service Provider shall indicate whether it wishes to become a RoLR and to be added to the RoLR List. If the Service Provider elects to become a RoLR, NBI shall provide further information on the RoLR obligations and processes following the Onboarding Process.

6. DATA PROTECTION

6.1. This 'Data Protection' section should be read in conjunction with Appendix 2 of this document which details the 'NBI Data Processing Agreement' and its associated stipulations.

6.2. For the purposes of this clause, "Data Protection Laws" means the General Data Protection Regulation (Regulation (EU) 2016/679) (the "GDPR"), (ii) the Data Protection Act 2018, and (iii) the European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011, in each case as amended, supplemented or replaced from time to time; and the terms "processing", "controller", "data subject" and "personal data" have the meanings given to them in the GDPR.

6.3. To the extent that personal data of Customers is provided to NBI by the Service Provider pursuant to this Agreement, the Parties acknowledge and agree that the Service Provider is the data controller and NBI is the data processor in respect of such personal data subject to Appendix 2. Each Party shall at all times comply with its obligations under applicable Data Protection Laws regarding such personal data.

6.4. The Service Provider shall ensure that it has provided all necessary notices to relevant data subjects, including but not limited to Customers (and to the extent applicable, obtained all necessary consents) to enable the lawful transfer of such personal data to NBI.

7. CHARGES, BILLING AND PAYMENT

7.1. The Service Provider shall be liable to pay NBI for all charges and fees set out in the Wholesale Bitstream and VUA Price List set at Schedule to this Agreement (the "Charges"). NBI reserves the right to update the Wholesale Bitstream and VUA Price List and publish it on NBI's website in accordance with the NBP Agreement.

7.2. The Charges shall be paid by the Service Provider at the billing intervals specified in the Wholesale Bitstream and VUA Price List. If no billing interval is specified, NBI shall issue invoices on a monthly basis.

7.3. The Charges set out in a Wholesale Bitstream and VUA Price List are exclusive of value added tax ("VAT"). VAT shall be levied on all invoices issued pursuant to the terms of this

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Agreement at the appropriate VAT rate for each Product and such VAT will be payable by the Service Provider.

- 7.4. Invoices shall include detailed itemised billing of the Products provided and the relevant billing information.
- 7.5. Unless explicitly stated otherwise in this Agreement invoices are due and payable in EURO. Invoices are payable within twenty-five 25 Working Days from the date of issue the invoice unless provided otherwise in this Agreement.
- 7.6. The Service Provider shall pay each invoice by electronic transfer to a bank account nominated by NBI and notified to the Service Provider on the invoice in accordance with Clause 7.4.
- 7.7. Any disputes which arise in respect of the Charges or invoices shall be subject to the provisions of Clause 11 of this Agreement.
- 7.8. NBI shall refund to the Service Provider any Incorrect Overpayment or any Non-Compliant Overpayment (together with interest, as applicable) where required in accordance with the NBP Agreement.
- 7.9. Any undisputed amounts which are not paid when due shall accrue interest at a rate equal to 5% per annum over the base lending rate of the ECB ("Interest Rate") from the due date until the date of payment. If such unpaid sum is disputed in good faith and subject to a dispute resolution process in accordance with Clause 11 of this Agreement, interest shall accrue on such of the sum as is determined to be the proper sum due and payable at a rate equal to the Interest Rate from the date the disputed sum would have been due and payable had the sum not been disputed. Interest shall accrue daily but shall not be compound interest.

8. NETWORK SAFETY AND PROTECTION

- 8.1. Each Party is responsible for the safe operation of its network and shall take all reasonable and necessary steps in its operation and implementation of this Agreement to ensure that its network does not:
 - 8.1.1. endanger the safety or health of employees, contractors, agents or customers of the other Party; or
 - 8.1.2. damage, interfere with or cause any deterioration in the operation of the other Party's network.
- 8.2. Neither Party shall connect or knowingly permit the connection to its network of any equipment or apparatus, including, but not limited, to any terminal equipment that is not approved by the relevant approvals authority for attachment to its network.

9. INTERFERENCE

9.1. Where it is suspected that either parties' Equipment interferes with any other transmission or reception in such a way as to affect other services operating at the Co-Location Site then either party shall, on written request from either party, no later than twenty-four (24) hours after such request, use its best endeavours to prove the Equipment is not the cause of the interference. If the either party is unable to prove that the Equipment is not the cause of the interference within this period, then the Service Provider and NBI shall meet at the Co-Location Site and work together over a further twenty-four (24) hour period to ascertain whether the Equipment is the cause of the interference. If after this further twenty-four (24) hour period the interference remains and it has not been possible to prove that the Equipment is not the cause of the interference, then Clause 9.2 shall apply.

9.2. If the Equipment of either party is proven to be the cause of the interference, the relevant party shall take all necessary action to cease the interference as soon as possible but no later than one (1) Working Day after either party has served a written notice upon the other party requesting that such action be taken.

9.3. Where:

9.3.1. Either party requests the other party comply with the provisions of Clauses 9.1 or 9.1; and

9.3.2. Either party fails to comply with that request within the periods as mutually agreed or as set out in the said clauses, as the case may be, or if in the case of a service affecting interference, referred to in Clause 9.1, the either party is unable to prove that the interference is not caused by the Equipment within the relevant notice period,

Either party shall be entitled to take any action in relation to the Equipment in whatever manner it deems appropriate and the offending party shall be liable to the injured party for all losses which they may suffer as a result of the failure by the offending party to comply with such a request.

10. PROVISIONING, OPERATION AND MAINTENANCE

The procedures for the provisioning of the Products and for the continuing operation and maintenance of the Products shall be as set out in the Wholesale Bitstream and VUA Process Manual as published on NBI's website and updated by NBI from time to time in accordance with the NBP Agreement.

11. RESOLUTION OF DISPUTES

- 11.1. If a dispute arises out of or in connection with this Agreement or the performance, validity or enforceability of it (a “Dispute”), then, except as expressly provided elsewhere in this Agreement, the Parties shall follow the procedure set out in this clause:
- 11.1.1. either Party shall give to the other a written notice of the Dispute, setting out its nature and full particulars, together with relevant supporting documents (a “Dispute Notice”). On service of the Dispute Notice, the Account Manager of NBI and Product Manager of Service Provider shall attempt in good faith to resolve the Dispute;
- 11.1.2. if the Account Manager of NBI and Product Manager of Service Provider are for any reason unable to resolve the Dispute within Twenty-five (25) Working Days of service of the Dispute Notice, the Dispute shall be referred to the Head of Product of NBI and Head of Product of Service Provider who shall attempt in good faith to resolve it.
- 11.2. The time limits specified above may be extended by mutual agreement between the Parties.
- 11.3. The above procedures are without prejudice to any rights and remedies that may be available to the Parties in respect of any breach of any provision of this Agreement.
- 11.4. Nothing in this Agreement shall prevent a Party from seeking (including obtaining or implementing) interlocutory or other immediate or equivalent relief.
- 11.5. Where the Service Provider invokes the provisions of this clause after the due date of a disputed invoice, then the Service Provider shall not be entitled to withhold any portion of the amount due and payable. The Service Provider shall be entitled to raise a billing dispute within twenty-four (24) months of the end of the disputed billing period.
- 11.6. In the event either Party identifies an undetected billing error which may have resulted in either under or over billing with twenty-four (24) months of the billing period, the Party may raise this matter along with all relevant material and / or information. Upon review and consideration of the available information the Parties may issue a supplemental invoice or credit as appropriate.
- 11.7. Following resolution of the Dispute, the Parties will issue a credit or tender payment as appropriate.
- 11.8. Either or both Parties shall be entitled, provided that they have failed to resolve a Dispute in accordance with the provisions of this Clause 11 within the time limits specified or agreed for such resolution, to refer an unresolved Dispute to arbitration by a sole arbitrator. The arbitration shall be held in Dublin and shall be conducted in accordance with the arbitration procedure published from time to time by the Dispute Resolution

Board of Engineers Ireland. Any such reference to arbitration shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act 2010 or any statutory re-enactment or amendment thereof for the time being in force. The arbitrator shall be appointed by agreement between the Parties or, if such appointment has not been agreed within ten (10) Working Days of the referral of a Dispute to arbitration pursuant to this clause by the President for the time being of the Institution of Engineers of Ireland (commonly known as “**Engineers Ireland**” or “**IEI**”) upon the request of either Party.

- 11.9. In the event that the assistance or co-operation of the Service Provider is required in connection with any Dispute governed by the provisions of the NBP Agreement with which NBI is involved and which is relevant to the subject matter of this Agreement, the Service Provider shall provide any assistance and co-operation as may reasonably be required by NBI or the Minister in connection with such Dispute.

12. BREACH, SUSPENSION AND TERMINATION

- 12.1. If the Service Provider’s network adversely and materially affects the normal operation of the NBI network, or is a threat to any person’s safety, NBI may suspend, to the extent necessary, the provision to that Service Provider of any and all Products for such period as it may consider reasonable to ensure the normal operation of its network or to reduce the threat to safety.

- 12.2. If either Party is in material breach of this Agreement (including in relation to a failure by the Service Provider to pay an undisputed sum due hereunder within the required timeframe i.e. a sum which is not subject to the provisions of Clause 11), the other Party may serve a written notice on the Party in breach specifying the breach and requiring it to be remedied within:

12.2.1. Twenty-five (25) Working Days from the date of receipt of such breach notice; or

12.2.2. in case of emergency (excluding financial obligations) within such shorter period as the Party not in breach may reasonably specify,

(“**Breach Notice**”).

- 12.3. If the Party fails to remedy the breach within the period stated in the Breach Notice, the other Party may terminate this Agreement by providing two (2) weeks’ written notice. If the Party in breach remedies the breach within such two (2) weeks’ notice period, this Agreement shall not terminate as a result of such notice.

- 12.4. In the event the Service Provider fails to pay an undisputed invoice within the time provided in the Breach Notice, NBI may initiate credit vetting as defined in Clause 13 of this Agreement. The purpose of this vetting is to establish whether the non-payment is

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likely to cause a specific financial risk to NBI, due to the financial circumstances of the Service Provider.

12.5. If justified by credit vetting, NBI may request a financial security guarantee following the principles outlined in Clause 13. Failure (within the time specified in 13 or refusal (at any time) by the Service Provider to provide a financial guarantee shall give NBI the right to terminate this Agreement with seven (7) Working Days' notice.

12.6. This Agreement may be terminated immediately by either Party by written notice (or on the termination of such other period as such notice may specify) if the other Party:

12.6.1. is unable to pay its debts within the meaning of the Companies Acts 2014; or

12.6.2. has a receiver or examiner appointed or has been subject to an application for the appointment of a receiver or an examiner in relation to all or any of its assets or an encumbrance has taken possession of all or a material part of its assets; or

12.6.3. has an order made or a resolution passed for its winding up (other than for the purpose of amalgamation or reconstruction); or

12.6.4. enters into a voluntary arrangement with creditors under the Companies Acts 2014; or

12.6.5. ceases to carry on business.

12.7. NBI shall be further entitled to terminate this Agreement immediately by notice in writing to the Service Provider if the Service Provider ceases to be an Authorised Operator.

12.8. The Service Provider may terminate this agreement at any time by giving NBI not less than twelve (12) months' written notice.

12.9. The Service Provider acknowledges that it shall not be entitled to any compensation upon the expiry or in the event of termination of this Agreement by NBI pursuant to the provisions of this Clause 12 and that upon such expiry or termination any sum due by the Service Provider to NBI shall become immediately payable.

12.10. The basis of NBI's right to make the Products available is the NBP Agreement. NBI shall have the right to (i) suspend or cease providing any or all of the Products; and (ii) terminate this Agreement where it is required to do so pursuant to the NBP Agreement (including under a remedial plan or to ensure compliance with the Pricing Rules).

12.11. Termination of this Agreement shall not be deemed a waiver of a breach of any term or condition of this Agreement and shall be without prejudice to a Party's rights, liabilities or obligations that have accrued prior to such termination.

13. CREDIT ASSESSMENT AND CREDIT RISK MANAGEMENT

- 13.1. As part of the Onboarding Process, NBI shall be entitled to carry out credit vetting of a prospective Service Provider prior to (i) entering into this Agreement; or (ii) providing Products to a Service Provider. The Service Provider shall provide NBI with such information as NBI may request at any time for the purpose of determining the Service Provider's creditworthiness.
- 13.2. Should the result of the credit vetting of a prospective Service Provider confirm that the provision of the Products poses a financial risk which is greater than can be controlled by a credit limit, NBI may request a form of financial security. The level of security requested shall be proportional to the risk involved and may be provided by a means such as bank deposit or guarantee.
- 13.3. NBI may carry out credit vetting of an existing Service Provider where NBI has reasonable concern about the ability of the Service Provider to cover debts including without limitation where NBI has evidence of a poor payment history or the Service Provider's credit rating has been downgraded or threatened to be downgraded. The method to be used will be communicated to the Service Provider and will be standard to all Service Providers.
- 13.4. Should the result of credit vetting of an existing Service Provider confirm the existence of a financial risk, NBI has the right to request a form of financial security. The level of security requested shall be proportional to the risk involved and shall take due account of historic levels of payments, liability, payment frequency and credit terms. The financial security may be provided by a means such as bank deposit or guarantee, and NBI shall not unreasonably refuse to accept any other form of financial guarantee proposed by the Service Provider. The financial security will be subject to Quarterly review and will be removed or reduced where the security or its level is no longer justified. NBI reserves the right to treat failure to provide an agreed security within twenty-five (25) Working Days (or such longer period as NBI may reasonably allow) of the date of NBI's request as a breach of this Agreement.
- 13.5. NBI may, at any time, require the Service Provider to enter into bank or other guarantees or to provide some other form of financial security, (for example a deposit) which in the reasonable and fair opinion of NBI is/are appropriate as proportionate security against the possibility of the Service Provider's non-compliance with or non-observance of any of the provisions hereof (including failure to pay Charges due). NBI reserves the right to treat refusal to provide such security or failure to provide such security within twenty-five (25) Working Days (or such longer period as NBI may reasonably allow) of the date of NBI's request for the same as a breach of this Agreement by the Service Provider.

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13.6. Credit terms are subject to review by NBI from time to time and NBI shall at all times have the right to suspend or vary any credit terms granted.

13.7. For avoidance of doubt, any Disputes relating to credit vetting and credit management shall be subject to the conditions set out in Clause 11 of this Agreement.

14. CONFIDENTIALITY

14.1. Pursuant to this Agreement, a Party may be given access to or acquire information which is proprietary or confidential to the other Party and its Affiliates, clients and Customers and subject to the terms of the NBI Non-Disclosure Agreement signed as part of the NBI Onboarding Process. Any and all such information obtained by either Party shall be deemed to be confidential and proprietary information. Each Party agrees to hold such information in strict confidence and not to disclose such information to Third Parties or to use such information for any purposes whatsoever other than the provision and receipt of Products under this Agreement save where:

14.1.1. it is required on a need to know basis to its employees, agents, contractors or sub-contractors to ensure compliance with the provisions of this Agreement;

14.1.2. it is in the public domain other than in breach of this Agreement;

14.1.3. it is or becomes publicly available through no fault of the Service Provider; or

14.1.4. it is required to be disclosed by a government, regulatory or public service body (including the Minister and the Minister's duly appointed agents or delegates), National Regulator or a court or other comparable authority of competent jurisdiction.

15. INTELLECTUAL PROPERTY RIGHTS

15.1. Except as expressly otherwise provided in this Agreement, Intellectual Property Rights shall remain the property of the Party creating or owning the same and nothing in this Agreement shall be deemed to confer any assignment or right or title whatsoever or licence of the Intellectual Property Rights of one Party to the other Party, and nothing in this Agreement shall be deemed to restrict the rights of any Party to own, use, enjoy, licence, assign or transfer its own Intellectual Property Rights.

16. FORCE MAJEURE

16.1. Neither Party shall be liable to the other Party for any delay in or failure to perform its obligation under this Agreement caused by a Force Majeure Event. For such purposes a **"Force Majeure Event"** means any event beyond the reasonable control of a Party, including act of God, insurrection or civil disorder, war or military operations, national or local emergency, acts or omissions of government, highway authority or other competent authority, compliance with any statutory, regulatory or legal obligation, industrial disputes

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of any kind (whether or not involving either Party's employees), fire, lightning, explosion, flood, subsidence, weather of exceptional severity, outbreak of a viral animal disease in Ireland such as "foot and mouth disease" (in response to which the Government of Ireland has issued an order halting the operation of the relevant Party's business), acts or omission of persons for whom neither Party is responsible or any other cause whether similar or dissimilar outside its reasonable control.

- 16.2. The Party initially affected by a Force Majeure Event shall promptly notify the other of the circumstances in question and their effect on the performance of obligations under this Agreement, and the estimated extent and duration of its inability to perform or delay in performing its obligations ("**Force Majeure Event notification**").
- 16.3. Upon cessation of any service (including the provision of the Products by NBI and provision of the Service Provider Services) provided by the Party initially affected by a Force Majeure Event due to the effects of the Force Majeure Event that Party shall promptly notify the other of such cessation.
- 16.4. If as a result of a Force Majeure Event, the performance by the Party, initially affected, of its obligations under this Agreement is affected, such Party shall, subject to the provisions of Clause 16.6, perform those of its obligations not affected by a Force Majeure Event. In performing those of its obligations not affected by a Force Majeure Event, the Party initially affected by a Force Majeure Event shall deploy its resources such that (when taken together with other obligations to its customers and third parties) there is no undue discrimination against the other Party.
- 16.5. Each Party shall use its reasonable endeavours: (i) to avoid or remove the circumstances constituting a Force Majeure Event, and (ii) to mitigate the effect of the Force Majeure Event as and when it exists.
- 16.6. To the extent that a Party is prevented as a result of a Force Majeure Event from providing all of the Products to be provided under this Agreement, the other Party shall be released to the equivalent extent from its obligations to make payment for such Products or complying with its obligations in relation thereto.
- 16.7. Following a Force Majeure Event notification and if the effects of such Force Majeure Event continue for:
- 16.7.1. a continuous period of not more than six (6) months from the date of the force majeure notification (whether or not notice of cessation has been given pursuant to Clause 16.3) any obligation outstanding shall be fulfilled by the Party initially affected by the Force Majeure Event as soon as reasonably possible after the effects of the Force Majeure Event have ended, save to the extent that such fulfilment is no longer possible or is not required by the other Party;

16.7.2. a continuous period of six (6) months or more from the date of the Force Majeure Event notification (and notice of cessation has not been given pursuant to Clause 16.3, the Party receiving the Force Majeure Event notification shall be entitled (but not obliged) to terminate this Agreement by giving not less than thirty (30) Working Days written notice to the other Party, provided that such notice shall be deemed not to have been given if notice of cessation is received by the Party receiving the Force Majeure Event notification prior to the expiry of the thirty (30) Working Days' notice. If this Agreement is not terminated in accordance with the provisions of this Clause 16.7.2, any obligations outstanding shall be fulfilled by the Party initially affected by the Force Majeure Event as soon as reasonably possible after the effects of the Force Majeure Event have ended, save to the extent that such fulfilment is no longer possible or is not required by the other Party.

17. LIMITATION OF LIABILITY

17.1. If NBI is in breach of any of its obligations under this Agreement or otherwise (including liability for negligence or breach of statutory duty) NBI's total liability to Service Provider shall be limited to the total amount of the Charges paid by Service Provider in the twelve (12) months immediately preceding the incident or action which has given rise to a claim.

17.2. If the Service Provider is in breach of any of its obligations under this Agreement or otherwise (including liability for negligence or breach of statutory duty) the Service Provider's total liability to NBI shall be limited to €1,250,000 (One million, two hundred and fifty thousand euro) in respect of any single incident or action which has given rise to a claim or up to a total of €2,500,000 (Two million, five hundred thousand euro) for greater than one incident within a 12-month period.

17.3. Neither Party shall be liable to the other in contract, tort (including negligence or breach of statutory duty) or otherwise for loss (whether direct or indirect) of profits, business or anticipated savings, wasted expenditure or for any indirect or other consequential loss whatsoever arising in connection with the operation of this Agreement, howsoever caused.

17.4. Each provision of this Clause 17 is a separate limitation applying and surviving even if one or more such provisions is inapplicable or held unreasonable in any circumstances.

18. INSURANCE

18.1. The Service Provider shall insure at its own cost, throughout the duration of the this Agreement, its liability in respect of:

18.1.1. employer's liability; and

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18.1.2. third party liability for loss, injury or damage,

such insurances to carry a limit of indemnity of not less than €13,000,000 (thirteen million euro) per claim or series of claims arising from one event and unlimited in the aggregate.

19. ASSIGNMENT OF RIGHTS AND OBLIGATIONS

19.1. Unless otherwise agreed in writing, and subject to Clause 19.2, no rights, benefits or obligations under this Agreement may be assigned or transferred, in whole or in part, by a Party without the prior written consent of the other Party. Such consent shall not be unreasonably withheld.

19.2. No consent is required under Clause 19.1 for an assignment of rights, benefits or obligations under this Agreement (in whole or in part) to an Affiliate of the assigning Party provided that:

19.2.1. such Affiliate is legally authorised to operate the network of the assigning Party;

19.2.2. the assigning Party shall promptly give notice to the other Party of any proposed assignment; and

19.2.3. no assignment shall be valid unless the assignee / successor agrees in writing to be bound by the provisions of this Agreement.

19.3. Nothing in this Agreement shall prevent NBI from novating or assigning its rights and obligations under this Agreement to the Minister or a replacement supplier where required to do so under the terms of the NBP Agreement.

20. MINISTER STEP-IN

20.1. The Service Provider recognises and agrees to comply with all of the Minister's step-in rights under the NBP Agreement ("**Step-In Rights**"). In the event that the Step-In Rights are invoked by the Minister in accordance with the NBP Agreement, the Minister will be entitled to take certain actions including the right to assume (either itself or through the appointment of a suitable third party) the rights and obligations of NBI pursuant to this Agreement.

21. RIGHTS OF INSPECTION, REPORTING AND AUDIT

21.1. Subject to the provisions of this clause, the Service Provider shall at all times permit NBI or the Minister's representatives (including external auditors or advisors) (together, the "**Auditors**") to have access to:

21.1.1. the business records maintained by the Service Provider relating to the Products;

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- 21.1.2. the Service Provider site(s) where the Service Provider Services using the Products are performed;
 - 21.1.3. the Service Provider personnel who are passing the benefit of the Products to the Customers;
 - 21.1.4. copies of Service Provider internal reports (including internal audit reports) relating to the provision of the Service Provider Services using the Products;
 - 21.1.5. Service Provider's business premises in order to inspect any one of the above;
 - 21.1.6. any additional information and / or documentation in connection with this Agreement that is reasonably required to be reported to the Minister pursuant to the terms of the NBP Agreement, including information in relation to the operational performance of the Products under this Agreement.
- 21.2. The Service Provider agrees to provide the Auditors with access to and / or copies of any information requested pursuant to this Clause 21 within five (5) Working Days from the time of any such request.
- 21.3. On an annual basis, the Service Provider will participate in and respond to NBI's reasonable information security questionnaire processes.
- 21.4. Upon reasonable request, the Auditors will arrange for their relevant subject matter experts to meet with the relevant subject matter experts of the Service Provider to review Service Provider's security controls and any deficiencies identified in same. The Auditors may view Service Provider's security-related policies and procedures, however, no documentation may be copied, shared, transmitted or removed from the Service Provider's premises, except as mutually agreed or required by applicable law.
- 21.5. Not more than once each year, and subject to the Service Provider's reasonable security requirements and availability of personnel (which shall be secured as soon as reasonably possible), Service Provider will at the Auditor's request arrange a tour of Service Provider's facilities for Auditors subject matter experts. In the event that an Auditor identifies any technical or operational deficiencies, Service Provider will discuss such findings with the Auditor and the parties shall work together to develop a mutually agreeable remediation plan.
- 21.6. All non-public documentation and information disclosed to an Auditor in accordance with this clause shall be deemed proprietary and confidential information of Service Provider. The Auditor shall not disclose such documentation or information to any third party or use it for any purpose other than evaluating Service Provider's security controls, except (1) as may be permitted under the terms of this Agreement (including Clause 14 (Confidentiality)) and (2) that an Auditor may disclose information gained from

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the security questionnaire processes to its own external auditors and advisors provided that such external auditors and advisors are required to be bound by confidentiality obligations that are at least equivalent to those assumed by the Auditor disclosing such information.

21.7. The Service Provider will ensure that all information and materials to be provided to the Auditors pursuant to this Clause 21:

21.7.1. will be kept in a form that is reasonably capable of audit pursuant to this Clause 21; and

21.7.2. will to the best of its knowledge, information and belief, be true, correct and accurate and will not be false or materially misleading in any way.

22. NOTICES

22.1. A notice shall be duly served if:

22.1.1. delivered by hand, at the time of actual delivery;

22.1.2. sent by facsimile, upon its receipt being confirmed;

22.1.3. sent by recorded delivery post, two (2) Working Days after the day of posting.

22.2. Except if otherwise specifically provided all notices and other communications relating to this Agreement shall be in writing and shall be sent as follows:

22.2.1. If to the Service Provider [Telephone 01 xxxxxxx Address, Facsimile 01 yyyyyyy];
and

22.2.2. If to NBI: Wholesale Contracts Manager, National Broadband Ireland, 10 Earlsfort Terrace, Dublin 2, D02T380, Ireland with carbon copy to the Head of Product at SP_engagement@nbi.ie.

or to such other addresses as the Parties may notify from time to time pursuant to this Clause 22.

23. ENTIRE AGREEMENT

This Agreement represents the entire understanding of an agreement between the Parties in relation to the subject matter of this Agreement, and, unless otherwise agreed in writing, supersedes all previous understandings, commitments, agreements or representations whatsoever, whether oral or written.

24. WAIVER

The waiver of any breach of, or failure to enforce, any term or condition of this Agreement shall not be construed as a waiver of any other term or condition of this Agreement. No waiver shall be valid unless it is in writing and signed on behalf of the Party making the waiver.

25. SEVERABILITY

The invalidity, unenforceability of any provision of this Agreement shall not affect the validity or enforceability of the remaining provisions of this Agreement.

26. AMENDMENTS

- 26.1. Any amendments, including changes to the Charges or changes to the Products required in order to give effect to NBI's rights or obligations under the NBP Agreement or specified by directions, decisions determinations, specific obligation, obligations, measures and requirements of the National Regulator or other competent regulatory or statutory body, shall be deemed to be automatically incorporated into this Agreement with immediate effect or on such alternative date as specified by NBI, the Minister or a Minister's Representative. In particular, the (i) Charges; or (ii) the nature of the Products, may be changed from time to time and published on NBI's website where NBI is required to make such changes under the terms of the NBP Agreement.
- 26.2. Notwithstanding Clause 26.1, the automatic incorporation of changes in the Agreement shall apply only to the Party subject to the obligations and to extent that the mandating body has jurisdiction to impose such obligations.
- 26.3. All other changes to this Agreement shall be in writing and agreed between the Parties to become effective and binding upon the Parties.

27. RELATIONSHIP OF PARTIES

- 27.1. The relationship between the Parties is that of independent contractors. Nothing in this Agreement shall be construed to make either Party hereto an agent, joint venture or partner of or with the other. Neither Party is granted any right of authority or agency, expressly or implicitly, on behalf of, or in the name of, the other, nor any right to legally bind the other in any manner whatsoever. Neither Party shall become liable through any representation, act or omission of the other which is contrary to or unauthorised by the provisions of this Agreement. Nothing in this Agreement shall be treated or construed as creating the relationship of landlord and tenant between the Parties.

28. GOVERNING LAW

The interpretation, validity and performance of this Agreement shall be governed in all respects by the laws of Ireland and the Parties submit to the exclusive jurisdiction of the Irish Courts.

IN WITNESS WHEREOF THIS AGREEMENT WAS ENTERED INTO THE DAY AND YEAR FIRST ABOVE WRITTEN.

Appendix 1 – Minimum Performance Specification for Service Providers

NBI requires and procures that the Service Provider provides a Performance Specification for Business and Residential Retail Products, based on the Minimum Wholesale Bitstream/VUA Product, which meets or exceeds the minimum performance for all specifications set out in the 'Minimum Performance Specification for Service Providers', i.e. this appendix to the NBI Reference Offer. NBI requires that Service Providers do not provide any Business or Residential High-Speed Broadband retail products whose specifications do not at least meet or exceed the specifications provided in this appendix.

The '**Minimum Performance Specification for Service Providers**' for the Products is detailed below in Fig. 1:

Indicators	Minimum Performance
Minimum Download Speed between retail CPE and the internet demarcation point	150 Mbit/s
Minimum Upload Speed between retail CPE and the internet demarcation point	30 Mbit/s
Maximum Latency (round trip) between the retail CPE and the internet demarcation point	100 ms
Maximum Jitter between the retail CPE and the internet demarcation point	50 ms
Maximum Packet Loss between the retail CPE and the internet demarcation point	0.10%
Minimum end-to-end service availability	99.95%

Figure. 1 Minimum Performance Specification for Service Providers

Appendix 2 – Data Processing Agreement

THIS DATA PROCESSING AGREEMENT IS MADE BETWEEN:

(1) **NBI INFRASTRUCTURE DAC**, a company registered in Ireland, with company number 631656 having its registered office at 10 Earlsfort Terrace, Dublin 2, D02 T380, (“**NBI**”)

and

(2) [], a company incorporated in Ireland whose registered office is at [] (the “**RSP**”).

BACKGROUND:

- A. Each Party is an authorised undertaking for the provision of electronic communication networks and services in Ireland pursuant to the Authorisation Regulations.
- B. NBI and the RSP entered into the Agreement on or around [] for the provision by NBI of certain broadband services to the RSP for the purposes of offering such broadband services to End Users.
- C. In the ordinary course of providing or receiving such services the Parties will be required to process, transmit and/or share Customer Personal Data. Further to the Agreement, the Parties agree to the this data processing agreement (the “DPA”) for the purposes meeting their respective obligations to each other under the Agreement and the Data Protection Laws in relation to such processing activities in respect of the Customer Personal Data.
- D. In particular, in connection the RSP’s provision of the Service Provider Services, the RSP will provide certain Customer Personal Data to NBI in order to enable NBI to undertake certain data processing activities as a processor on behalf of NBI.

THE PARTIES AGREE as follows:

1. DEFINITIONS

In this DPA all defined terms in the Agreement shall apply. To the extent not otherwise defined in the Agreement, the following terms shall have the following meanings:

“**Agreement**” means the Agreement between NBI and the RSP.

“**Authorisation Regulations**” means European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (SI 335 of 2011);

“**Customer Personal Data**” shall in particular have the meaning as described in in the Data Processing Schedule 1, which forms part of this DPA;

“**Minimum Security Requirements**” shall mean the security measures specified in the Data Processing Schedule 2, which forms part of this DPA, as may be updated or reissued from time to time by the Parties in accordance with the terms of the Agreement;

“Processing Purposes” has the meaning as described in in the Data Processing Schedule 1, which forms part of this DPA;

“Relevant Personnel” means the Data Processor’s employees, agents and personnel and such other personnel of the Data Controller as may be approved in writing by the Data Controller from time to time in respect of access to the Personal Data;

“Services” shall mean the Service Provider Services as described in the Agreement;

“Standard Contractual Clauses” shall mean the model contract clauses set out in the European Commission’s Decision of 5 February 2010 on standard contractual clauses for the transfer of Personal Data to Processors established in third countries, under the Data Protection Directive as may be amended by the European Commission from time to time; and

“Supervisory Authority” shall mean the Irish Data Protection Commission or any other competent data protection supervisory in accordance with the GDPR.

2. APPLICATION OF TERMS OF THIS DPA

- 2.1. The Parties agree that terms of this DPA shall apply to and govern NBI’s processing of Customer Personal Data where, in accordance with Clause 6 of the Agreement, NBI acts as a processor on behalf of the RSP acting a controller.
- 2.2. To the extent that NBI processes Customer Personal Data independently of the Agreement, including where NBI obtains Customer Personal Data directly from End Users or subjects separate to the Agreement, NBI will in such circumstances act as an independent controller and, in doing so, shall comply with its obligations under Data Protection Laws.

3. DURATION

The provisions of this DPA shall apply from the Commencement Date for the duration of the Agreement and shall continue to apply to any processing of Customer Personal Data undertaken by NBI on behalf of the RSP after the termination of the Agreement.

4. DATA PROCESSING OBLIGATIONS

- 4.1. From the Commencement Date, where NBI processes Customer Personal Data provided to it by or on behalf of the RSP, as a processor in connection with the Processing Purposes, NBI agrees that it:
 - 4.1.1. shall process Customer Personal Data only for the Processing Purposes in connection with the provision of the Services, as described in this DPA, or as subsequently instructed in writing from time to time by the RSP;
 - 4.1.2. shall ensure that it shall not transfer the Customer Personal Data outside the European Economic Area (“EEA”) without the express written instructions of the RSP and where such instructions are received by NBI, such transfers of Customer Personal Data shall be undertaken in accordance with the Data Protection Laws;

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- 4.1.3.** shall ensure that all Relevant Personnel authorised to be involved in the processing of Customer Personal Data for and on behalf of NBI have committed themselves to a duty of confidentiality in respect of Customer Personal Data;
- 4.1.4.** shall implement appropriate technical and organisational measures in accordance with Article 32 of the GDPR to ensure the security of Customer Personal Data, in particular as described in Minimum Security Requirements under Data Processing Schedule 2 of this DPA;
- 4.1.5.** shall only engage sub-contract or outsource the processing of Customer Personal Data under this DPA to any other person or Third Party processor (“Sub-processor”) subject to:
- 4.1.6.** (i) having notified the RSP of the identity of such Sub-processor and obtaining the written authorisation of the RSP before engaging any such Sub-processor; and
- 4.1.7.** (ii) NBI putting in place binding contractual terms with such Sub-processor on terms no less onerous than those contained in this DPA;
- 4.1.8.** taking into account the nature of the processing of Customer Data, NBI shall reasonably assist the RSP in meeting its responsibilities as a controller by putting in place appropriate technical and organisational measures to enable NBI to provide reasonable assistance on request from RSP in responding to any data subject requests received by the RSP in accordance with the Data Protection Laws;
- 4.1.9.** on becoming aware of a “personal data breach” (as such term is defined in the Data Protection Laws) affecting the Customer Personal Data, NBI shall notify the RSP without undue delay and in any event within a period of [24] hours using the following contact details:

RSP email addresses	[●]	[●]
RSP phone number	[●]	[●]

- 4.1.10.** on becoming aware of a personal data breach affecting Customer Personal Data, NBI shall provide reasonable assistance to the RSP in investigating and remediating any such incident(s);
- 4.1.11.** depending on the nature of the processing activities, NBI shall not retain Customer Personal Data for any longer than is necessary having regard to the Processing Purposes;
- 4.1.12.** on request, NBI shall reasonably assist the RSP in ensuring compliance with the RSP’s obligations to comply with Articles 32 to 36 of the GDPR (inclusive);

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- 4.1.13. based on written instructions of the RSP, either return of securely delete the Customer Personal Data on the termination of the Agreement and relevant processing of Customer Personal Data. If NBI has not received instructions from RSP return or delete the Customer Personal Data within received within 25 Working Days of the effective date of termination of the Agreement, NBI shall by default delete the Customer Personal Data;
- 4.1.14. on written request, it shall makes available to the RSP all information strictly necessary for the RSP to demonstrate compliance with its obligations under Article 28 of the GDPR, including records of the processing undertaken by NBI of the Customer Personal Data, on receipt of reasonable notice of not less than 10 Working Days;
- 4.1.15. on written request from the RSP, NBI shall contribute to audits, including inspections, conducted by or on behalf of the RSP of NBI's relevant data processing facilities, data files, procedures or documentation as is strictly necessary for the RSP to demonstrate its compliance with the Data Protection Laws as they relate to the processing of Customer Personal Data. Any such right of audit is subject to the conditions that:
- (i) the RSP shall provide notice of not less than 20 Working Days in advance of any such audit;
 - (ii) any such auditor nominated by the RSP must be independent, impartial and suitably qualified and must be acceptable to NBI and not, in NBI's reasonable opinion, present any conflict of interest or be a competitor of NBI;
 - (iii) any such auditor, including a third party auditor nominated by the RSP, must commit itself to a written duty of confidentiality; and
 - (iv) the RSP shall be permitted to undertake no more than one such audit in any 12-month period (save in exceptional circumstances, where the RSP is compelled to do so based on binding request from a Supervisory Authority).
- 4.1.16. For the purposes of Clause 5.15 above, the RSP hereby authorises the appointment of the NBI connection company as Sub-processor on behalf of NBI to process Customer Personal Data for the purposes of providing certain of the Services.
- 4.1.17. Any additional costs incurred by NBI (which in NBI's sole discretion exceed the costs reasonably contemplated by it) in order to ensure compliance with Clauses 4.1.6, 4.1.8 and 4.1.10 shall be at the expense of the RSP. NBI shall provide written evidence in support of such costs incurred by it when requesting re-imbursement of such costs.

5. DATA CONTROLLER OBLIGATIONS

- 5.1. The RSP shall provide Customer Personal Data to NBI only to the extent necessary to enable NBI achieve the Processing Purposes and in this regard the RSP shall not provide

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any excessive or unnecessary Customer Personal Data to NBI. All Customer Personal Data provided by the RSP to the NBI shall be accurate and up to date.

- 5.2. The RSP acknowledges that NBI is reliant on the RSP for lawful instruction as to the extent of the NBI's processing of Customer Personal Data and accordingly the RSP agrees to provide clear written instructions in a timely manner to NBI, which shall at all times be in compliance with the Data Protection Laws.
- 5.3. Notwithstanding Clause 5.2 above, NBI retains the discretion to refuse any such instruction received if, in NBI's reasonable opinion, such instruction infringes the Data Protection Laws or any other applicable law. In such circumstances, NBI shall notify in writing the RSP of same, including the reasons underlying its opinion.
- 5.4. As regards access to the NBI Operational Environment, the RSP shall ensure that its staff, employees, contractors and all other personnel authorised to access NBI Operational Environment, shall ensure the security and confidentiality of all passwords, credentials and access codes. The RSP shall maintain an up to date list of all persons authorised by it to access, upload and download data to and from the NBI Operational Environment.

6. APPLICABLE PROVISIONS

- 6.1. To the extent there is any conflict between the provisions of this DPA and the Agreement concerning the processing of Customer Personal Data, the provisions of this DPA shall in all such cases prevail over the provisions of the Agreement.
- 6.2. Subject to Clause 6.1 above, all other provisions of the Agreement shall continue to apply and govern the provision of the Services.

DATA PROCESSING SCHEDULE 1 OF DPA

DESCRIPTION OF CUSTOMER PERSONAL DATA AND PROCESSING PURPOSES

<p>1. Categories of Data Subject</p>	<p>The data subjects are comprised of End Users of the broadband services provided by the RSP (and in some limited cases, neighbours, friends or other points of contact for purposes of facilitating appointments).</p>
<p>2. Categories of Customer Personal Data</p>	<p>- Contact details: End-User names, personal addresses and contact telephone numbers (including mobile and/or landline) (together “End User Contact Details”); and</p> <p>- Appointment information: Details of appointments / orders to perform eligibility check-ups and place orders from End Users (together “Appointment Information”).</p>
<p>3. Duration of processing</p>	<p>See Clause 3 of the DPA.</p>
<p>4. Processing Purposes</p>	<p>A. General purpose: NBI will provide a web portal and web services that RSP will access to perform eligibility checks, place orders for the Services, create/schedule appointments for End Users, create/track faults for End Users.</p> <p>B. Specific data processing: The NBI operational environment is used to connect NBI RSPs with NBI in order to deliver the Services to End Users. The following data flows are applicable:</p> <ol style="list-style-type: none"> 1. RSP provides contact details to NBI for appointment reservation purposes; 2. NBI’s poll gateway for work orders, which contain the contact details from the appointment reservation; and 3. If an RSP is viewing work orders for the Services or appointments on NBI portal front-end, then this data would go over VPN between the RSP and NBI’s platform.
<p>5. Physical location of Customer Personal Data</p>	<p>Amazon web services (servers located within the EEA).</p>

DATA PROCESSING SCHEDULE 2 OF DPA
MINIMUM SECURITY REQUIREMENTS

NBI shall in particular implement the following technical and organisational security measures to ensure the security of Customer Personal Data:

1. Encryption-at-rest: Personal Data for appointments will be encrypted (by https and SSL certs) web services and portal access to this data (whether submitting or viewing via the NBI operational environment).
2. Encryption-at-rest: Similarly, the web services used by retail service provider (RSP) to access this information will also be encrypted (HTTPs and SSL certs).
3. Encryption-in-transit: All access to BSS data – whether by Managed Service Front-End or Web Services will be encrypted in transmission.

Schedule 1 – Wholesale Bitstream & VUA Product Descriptions

This Reference Offer relates to the set of Wholesale Bitstream and Wholesale VUA Broadband Products outlined in the Project Agreement between National Broadband Ireland and DCCAIE as signed on 19th November 2019. This product set includes the Minimum Wholesale Bitstream Product and the Minimum VUA Wholesale Product as well as the Additional Required Wholesale Products (these are variants of the Minimum Wholesale Bitstream and VUA products).

1. Wholesale Bitstream Product Overview

This Product Description details specifications of the Wholesale Bitstream Products available to Service Providers, focusing on the FTTH solution used to deliver the service to the vast majority of End Users. The NBI Wholesale Bitstream service includes the access service from an End User premises back to a Regional Point of Handover (PoH) and a backhaul component to carry traffic from the Regional Point of Handover (PoH) to a National Point of Handover location.

This schedule refers to and should be read in conjunction with the published Wholesale Bitstream/VUA Wholesale Technical Manual which is located on the NBI website Service Provider portal or can be obtained via the NBI Service Provider Account Manager. Any Service Provider specific technology mentioned in this document is current as at the date of issue and is for guidance purposes only. All changes to this Product Description will be reflected in the published Wholesale Bitstream/VUA Technical Manual and will follow the NBI change management process. NBI reserves the right to adapt the technology used to deliver the products through the change management process at any time subject to the notification and timelines agreed for this product set.

1.1. Wholesale Bitstream Product set

This section provides a high-level overview of the Wholesale Bitstream products available from NBI within the Intervention Area (IA). The Minimum Wholesale Bitstream Product is the Consumer Standard Product as set out in Table A below. The Additional Wholesale Bitstream products are as set out in Table B below.

The Wholesale Bitstream Product set consists of the following Consumer and Business broadband products. The products have connection, rental and usage charges which are aggregated and applied at Service Provider level. Charges are outlined in the published Wholesale Bitstream/VUA Wholesale price list. Tables A, B, and C show the products currently available.

Table A – Minimum Wholesale Bitstream Product		
Product Name	Downstream	Upstream
Consumer Standard	150 Mbit/s	30 Mbit/s

Table B – Additional Wholesale Bitstream Products		
Product Name	Downstream	Upstream
Consumer Premium	300 Mbit/s	50 Mbit/s
Consumer Elite	1,000 Mbit/s	100 Mbit/s
Business Standard	150 Mbit/s	50 Mbit/s
Business Premium	300 Mbit/s	75 Mbit/s
Business Enterprise	1,000 Mbit/s	200 Mbit/s

The Consumer product has one Class of Service option available, while the Business Product has two. The default for both Consumer and Business is 100% Best Effort (BE). See Table C, CoS service options:

Table C				
	EF	AF	EF	AF
	Downstream	Downstream	Upstream	Upstream
Default	0	0	0	0
Consumer Option	1 Mbit/s	0	1 Mbit/s	0
Business Option 1	10 Mbit/s	20 Mbit/s	10 Mbit/s	20 Mbit/s
Business Option 2	20 Mbit/s	40 Mbit/s	20 Mbit/s	40 Mbit/s

1.2. Wholesale Bitstream Product Key Attributes

Below is an overview of the Wholesale Bitstream Product key product attributes:

- (a) Delivered over an all-fibre network capable of supporting individual user services up to 10 Gbit/s
- (b) Layer 2 ethernet-based unicast product enabling Service Providers to provision their own Layer 3 service offerings (e.g. VoIP)
- (c) An N:1 service, using a split ratio of no more than 1:32
- (d) Specific upstream and downstream bandwidths (asymmetrical) providing high speed broadband access

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- (e) Class of service support for traffic prioritisation
- (f) Traffic based EF CoS is supported on offerings using 802.1p markings
- (g) Ethernet interface on Optical Network Terminal (ONT) providing visual indication of power and network connectivity
- (h) Optical Network Terminal (ONT) user ethernet Interface is the demarcation point for service
- (i) Unicast as standard with guaranteed unicast bandwidth both downstream and upstream
- (j) Support for Multicast available on all products
- (k) Multicast bandwidth delivered in addition to unicast bandwidth
- (l) Multicast bandwidth does not consume the unicast bandwidth in the Access network for the 150 Mbit/s or the 300 Mbit/s products.
- (m) Multicast bandwidth does consume the unicast bandwidth in the Access network for the 1,000 Mbit/s product
- (n) Handover of traffic at designated Points of Handover across the network at dispersed locations
- (o) Configured S-VLAN tags at the Interconnect Handover with exclusive S-VLAN IDs for Service Providers
- (p) Usage will be measured using 95th percentile measuring as described in Schedule 3. A fixed charge for Wholesale Bitstream will be applied to connections where the average usage for a Service Provider is below the threshold as defined in the Wholesale Bitstream/VUA price list. Where average per user usage is above the threshold a small incremental fee will be applied per user.
- (q) The support of multiple-VPLS, to enable a Service Provider to provide wholesale services to other service providers (via separate Egress Domains)
- (r) All traffic management is impartial across all Service Providers, thus ensuring no discrimination between Service Provider traffic.

1.3. Wholesale Bitstream Solution Architecture

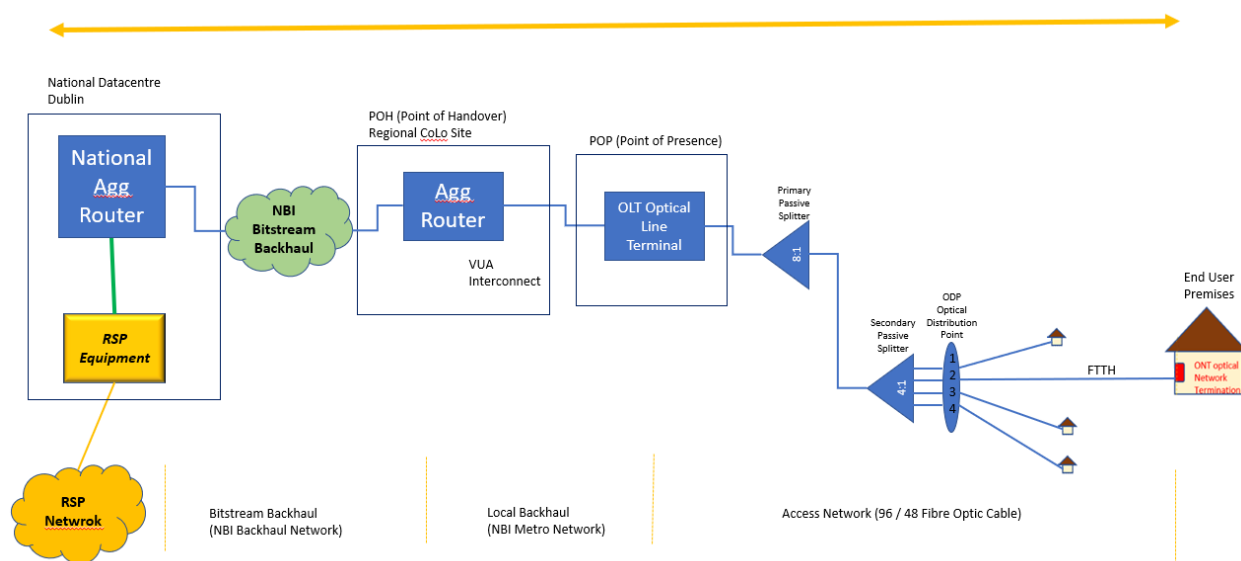


Figure 1: Overview of the Wholesale Bitstream solution architecture

The NBI Wholesale Bitstream Products are delivered by means of an optical fibre connection directly from the End User premises to the Local OLT location and from there to the Regional PoH and onwards over a backhaul network to a National Point of Handover. This technical solution is a Fibre to the Home (FTTH) end-to-end ethernet Layer-2 product delivered using 10 Gigabit/s Passive Optical Network (XGS-PON) fibre. This network is deployed with a maximum Optical Distribution Network (ODN) split ratio of 1:32. At the End User premises it is terminated on an Optical Network Terminal (ONT) providing a standard ethernet termination for connection to the Service Provider CPE. From the PoH, the Wholesale Bitstream traffic is transmitted over the backhaul network to an agreed Service Provider Interconnect location. Details on the Interconnect types and locations are contained in the Interconnect Product Description and Interconnect Technical Manual which are available on the NBI website or via NBI Service Provider Account Manager where applicable. Further details of the design and specification of the Wholesale Bitstream products are contained in the product technical manual.

Table D - Performance Parameters	
Performance Parameter	Wholesale Bitstream
Maximum utilisation of the backhaul link between first point of active aggregation and PoH	80%
Maximum Latency (two way) between WCPE and PoH	50ms
Maximum Jitter between the WCPE and the PoH	22ms
Maximum Packet Loss between the WCPE and PoH	0.1%
Minimum service availability	99.95%

In the exceptional case where FTTH is not feasible, an alternative technical solution may be provided. This solution will only be used where fibre feed costs of an FTTH solution are excessively prohibitive and the alternative technical solution has been agreed with the DCCA.

1.4. Availability, Ordering and Installation

Wholesale Bitstream orders are only accepted within the Intervention Area (IA), where the network has been deployed by NBI and where the requesting Service Provider has the required Wholesale Bitstream infrastructure in place to facilitate service for an End User (note that, network build and Service Provider infrastructure checks do not apply to Pre-Orders). Premises eligibility details will be provided in the NBI monthly deployment plan including an indication of service availability and service capability at a premises level and via the “eligibility check” order type on the Service Portal GUI / Webservice application. Service Providers can use the Service Portal GUI or a Representational State Transfer Application Programming Interface (REST API) to place orders, report faults, perform pre-qualification / eligibility checks, manage appointments and place amend, change, transfer or cease orders.

To facilitate the installation of the required ONT, an engineer premises visit is required. This is at the request of the Service Provider to NBI on behalf of the customer that enables the Wholesale Bitstream product connection inside the premises. An engineer visit is not required if the ONT has already been installed and is capable of being configured remotely.

Further details of the design and specification of the Wholesale Bitstream products are contained in the Wholesale Bitstream / VUA Product Process Manual.

1.5. In-Home Services

NBI offers optional chargeable In-Home services in relation to any work carried out beyond the demarcation point as detailed in the published In-Home Services Product Description. Services

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will include, but will not be limited to, the installation of the RSP's Residential Gateway, Data Port Extension (DPE), IPTV services, and additional wiring. Where the Service Provider wishes to avail of these services on behalf of their end customer, they can be ordered via NBI once the relevant contract addendum is agreed and signed.

Where the Service Provider does not purchase In-Home services from NBI, it will be the responsibility of that Service Provider to arrange installation and/or connection of devices / services beyond the demarcation point on the ONT such as the Service Provider router and other End User devices contractually agreed between NBI and the respective Service provider.

1.6. Wholesale Bitstream Service Level Agreement

Details of the SLA are outlined in the Wholesale Bitstream / VUA SLA document. This document is available on the NBI website or directly via the Service Provider's account manager.

1. Wholesale Virtual Unbundled Access (VUA) Product Overview

This Product Description provides details of the Wholesale VUA Products that are available to Service Providers, focusing on the FTTH solution used to deliver the service to the vast majority of End Users. The NBI Wholesale VUA service includes the access service from an End User premises back to a local OLT location and from there it will be carried to the appropriate Regional Point of Handover (PoH) where it will be handed over to the Service Provider on their nominated Interconnect Point. It will only be possible to place an End User Wholesale VUA order if the Service Provider has an operational Interconnect in place at the Regional Point of Handover.

This schedule refers to and should be read in conjunction with the published Wholesale VUA Product Technical manual and Process manual which are both located on the NBI website service provider portal or can be obtained via NBI Service Provider Account Manager where applicable. Any Service Provider specific technology mentioned in this document is current as at the date of issue and is for guidance purposes only. All changes to this Product Description will be reflected in the published Wholesale VUA Product Description documentation and will follow the NBI change management process. NBI reserves the right to adapt the technology used to deliver the products through the change management process at any time subject to the notification and timelines agreed for this product set.

1.1. Wholesale VUA Product Set

This section provides a high-level overview of the Wholesale VUA Products available from NBI within the Intervention Area (IA).

The Wholesale VUA Product set offers the following Consumer and Business offerings. The products have connection and rental charges which are aggregated and applied at Service Provider level. Charges are outlined in the published Wholesale Bitstream/VUA price list. Tables E and F show the product offerings currently available.

Table E – Minimum Wholesale VUA Product		
Product Name	Downstream	Upstream
VUA Consumer Standard	150 Mbit/s	30 Mbit/s

Table F – Additional Wholesale VUA Products		
Product Name	Downstream	Upstream
VUA Consumer Premium	300 Mbit/s	50 Mbit/s
VUA Consumer Elite	1,000 Mbit/s	100 Mbit/s
VUA Business Standard	150 Mbit/s	50 Mbit/s
VUA Business Premium	300 Mbit/s	75 Mbit/s
VUA Business Enterprise	1,000 Mbit/s	200 Mbit/s

The Consumer product has one Class of Service option available, while the Business Product has two options. The default for both Consumer and Business is 100% Best Effort (BE). See Table G, CoS service offerings:

Table G				
	EF	AF	EF	AF
	Downstream	Downstream	Upstream	Upstream
Default	0	0	0	0
Consumer Option	1 Mbit/s	0	1 Mbit/s	0
Business Option 1	10 Mbit/s	20 Mbit/s	10 Mbit/s	20 Mbit/s
Business Option 2	20 Mbit/s	40 Mbit/s	20 Mbit/s	40 Mbit/s

1.2. Wholesale VUA Product Key Attributes

Below is an overview of the Wholesale VUA Product key product attributes:

- (a) Delivered over an all-fibre network capable of supporting individual user services up to 10 Gbit/s
- (b) Layer 2 ethernet based unicast product enabling Service Providers to provision their own Layer 3 service offerings (e.g. VoIP)
- (c) An N:1 service, using a split ratio of no more than 1:32
- (d) Specific upstream and downstream bandwidths (asymmetrical) providing high speed broadband access
- (e) Class of Service (CoS) support for traffic prioritisation
- (f) Traffic based EF CoS is supported on offerings using 802.1p markings
- (g) Ethernet interface on Optical Network Terminal (ONT) providing visual indication of power and network connectivity
- (h) Optical Network Terminal (ONT) user ethernet Interface is the demarcation point for service
- (i) All products offering unicast as standard with guaranteed unicast bandwidth both downstream and upstream
- (j) Support for Multicast available on all product offerings
- (k) Multicast bandwidth delivered in addition to unicast bandwidth

- (l) Multicast bandwidth does not consume the unicast bandwidth in the Access network for the 150 Mbit/s or the 300 Mbit/s products
- (m) Multicast bandwidth does consume the unicast bandwidth in the Access network for the 1,000 Mbit/s product
- (n) Handover of traffic at designated handover points across the network at dispersed locations
- (o) Configured S-VLAN tags at the Interconnect Handover with exclusive S-VLAN IDs for Service Providers
- (p) The support of multiple-VPLS, to enable a Service Provider to (via separate Domain IDs)
- (q) All traffic management is impartial across all Service Providers, thus ensuring no discrimination between Service Provider traffic.

1.3. Wholesale VUA Solution Architecture

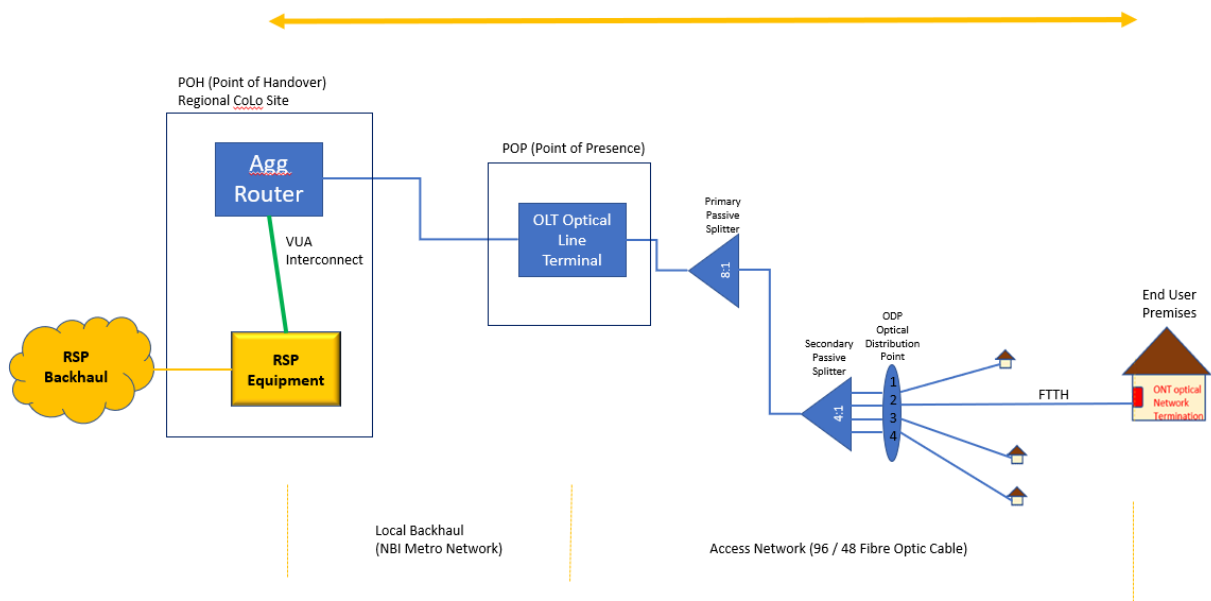


Figure 2: Overview of the Wholesale VUA solution architecture

The NBI Wholesale VUA Products provide fibre directly from the End User premises to the Local OLT location and from there to the local PoH where it is handed off to the service provider at their local Interconnect. This technical solution is a Fibre to the Home (FTTH) end-to-end ethernet Layer 2 product delivered using 10 Gigabit Passive Optical Network (XGS-PON) fibre. This

network is deployed with a maximum Optical Distribution Network (ODN) split ratio of 1:32. At the End User premises it is terminated on an Optical Network Terminal (ONT) providing a standard ethernet termination for connection to the Service Provider CPE.

In the exceptional case where FTTH is not feasible, an alternative technical solution may be provided. This solution will only be used where fibre feed costs of an FTTH solution are excessively prohibitive and the alternative technical solution has been agreed with the DCCAE.

At the PoH, the Wholesale VUA traffic is handed off to the Service Provider Interconnect. Details of the Interconnect types and locations are contained in the Interconnect Product Description and Interconnect Technical Manual which are available on the NBI website or via NBI Service Provider Account Manager where applicable.

Table H - Wholesale VUA Performance Parameters	
Performance Parameter	Wholesale VUA
Maximum utilisation of the backhaul link between first point of active aggregation and PoH	80%
Maximum Latency (two way) between WCPE and PoH	50ms
Maximum Jitter between the WCPE and the PoH	22ms
Maximum Packet Loss between the WCPE and PoH	0.1%
Minimum service availability	99.95%

1.4. Availability, Ordering and Installation

Wholesale VUA orders are only accepted within the Intervention Area (IA), where the network has been deployed by NBI and where the requesting Service Provider has the required Wholesale infrastructure in place to facilitate service for an End User (note that, network build and Service Provider infrastructure checks do not apply to Pre-Orders). Premises eligibility details will be provided in the NBI monthly deployment plan, including an indication of service availability and service capability at a premises level and via the “eligibility check” order type on the Service Portal GUI / Webservice application. Service Providers can use the Service Portal GUI or a Representational State Transfer Application Programming Interface (REST API) to place orders, report faults, perform pre-qualification / eligibility checks, manage appointments and place amend, change, transfer or ceases orders.

To facilitate the installation of the required ONT, an engineer premises visit is required. This is at the request of the Service Provider to NBI on behalf of the customer that requires the Wholesale

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VUA product connection inside the premises. An engineer visit is not required if the ONT has already been installed and is capable of being configured remotely.

Further details of the design and specification of the Wholesale VUA products are contained in the Wholesale Bitstream / VUA Product Process Manual.

1.5. In-Home Services

NBI offers optional chargeable In-Home services in relation to any work carried out beyond the demarcation point as detailed in the published In-Home Services Product Description. Services will include, but will not be limited to, the installation of the RSP's Residential Gateway, Data Port Extension (DPE), IPTV services, and additional wiring. Where the Service Provider wishes to avail of these services on behalf of their end customer, they can be ordered via NBI once the relevant contract addendum is agreed and signed.

Where the Service Provider does not purchase such services from NBI, it will be the responsibility of the Service Provider to arrange installation and/or connection of devices / services beyond the demarcation point on the ONT such as the Service Provider router and other End User devices contractually agreed between NBI and the respective Service provider.

1.6. Wholesale Bitstream Service Level Agreement

Details of the SLA are outlined in the Wholesale Bitstream / VUA SLA document. This document is available on the NBI website or directly via the Service Provider's account manager.

Schedule 2 – Wholesale Bitstream / VUA Product Billing

Connection, rental and one-off charges exist for all Wholesale Bitstream / VUA Products and variants. All details of the relevant charges are outlined in the Wholesale Bitstream/VUA Price List available on NBI's website, and contained within Schedule 3 of this Reference Offer, or directly from the Service Provider's Account Manager.

Rental charges are billed monthly in advance and will include any broken period rentals (pro-rata basis) from the time of installation. A Minimum Period of Service is applicable to all Wholesale Bitstream orders.

Invoices are issued monthly detailing connection, one-off, Managed Service (if applicable) and rental charges payable. The Wholesale Bitstream / VUA Billing details will be described in full as part of the NBI Process Manual as published on the NBI Website

Schedule 3 – Wholesale Bitstream / VUA Product Price List

This Price List sets out the charges applicable in respect of the Wholesale Bitstream and VUA Products and variants only (the “Product”). For information on pricing for alternative NBI product sets, please visit the NBI website or consult with your NBI Account Manager.

The charges in this Price List reference the NBI Wholesale Bitstream and VUA Product price list as published on the NBI website. These prices may increase or decrease in accordance with the provisions of this Reference Offer. All pricing changes will go through the defined NBI change management process in accordance with the rules of the Project Agreement in place between NBI and the DCCAE and will be reflected in the published NBI Wholesale Bitstream and VUA Products Price List.

All charges in this Price List are exclusive of VAT and are listed in EURO.

1. Wholesale Bitstream Port Prices

Table A - Wholesale Bitstream Rental Prices – Effective from 1 st April 2020					
Charge Ref	Product(s):		Service Speed	Access Service Provider	Wholesale Bitstream ²
					Price per Month
RC1.0	Bitstream Standard	Consumer	150 Mbit/s / 30 Mbit/s	NBI	€29.34
RC1.1	Bitstream Premium	Consumer	300 Mbit/s / 50 Mbit/s	NBI	€34.34
RC1.2	Bitstream Elite	Consumer	1000 Mbit/s / 100 Mbit/s	NBI	€44.34
RC1.4	Bitstream Standard	Business	150 Mbit/s / 50 Mbit/s	NBI	€ 64.00
RC1.5	Bitstream Premium	Business	300 Mbit/s / 75 Mbit/s	NBI	€ 74.00
RC1.6	Bitstream Enterprise	Business	1000 Mbit/s / 200 Mbit/s	NBI	€ 84.00

² Interconnect required. The Interconnect is charged separately

Table B - Wholesale Bitstream Rental Prices – Effective from 1st July 2020					
Charge Ref	Product(s):		Service Speed	Access Service Provider	Wholesale Bitstream ³
					Price per Month
RC1.0	Bitstream Standard	Consumer	150 Mbit/s / 30 Mbit/s	NBI	€29.49
RC1.1	Bitstream Premium	Consumer	300 Mbit/s / 50 Mbit/s	NBI	€34.49
RC1.2	Bitstream Elite	Consumer	1000 Mbit/s / 100 Mbit/s	NBI	€44.49
RC1.4	Bitstream Standard	Business	150 Mbit/s / 50 Mbit/s	NBI	€ 64.00
RC1.5	Bitstream Premium	Business	300 Mbit/s / 75 Mbit/s	NBI	€ 74.00
RC1.6	Bitstream Enterprise	Business	1000 Mbit/s / 200 Mbit/s	NBI	€ 84.00

Table C - Additional Features (Optional)				
RC1.7	Consumer COS	1 Mbit/s EF		€ 1.00
RC1.8	Business COS	10 Mbit/s EF, 40 Mbit/s AF		€ 20.00
RC1.9	Business COS	20 Mbit/s EF, 80 Mbit/s AF		€ 30.00

2. Wholesale Bitstream Usage Charging

Table D - Wholesale Bitstream per user usage charge from 1st April 2020				
RC1.10	Wholesale Bitstream monthly per Mbps usage per user	Per user monthly charge based on 95 th percentile average usage across a service providers base	From 1 st April 2020	€ 0.44

³ Interconnect required. The Interconnect is charged separately

Table E - Wholesale Bitstream per user usage charge from 1st July 2020				
RC1.10	Wholesale Bitstream monthly per Mbps usage per user	Per user monthly charge based on 95 th percentile average usage across a service providers base	From 1 st July 2020	€ 0.37

**Usage charge is subject to a usage threshold*

Wholesale Bitstream Usage Measurement

NBI measures all Wholesale Bitstream traffic, in both directions, at each RSP/WSP's Wholesale Bitstream interconnect points every 15 minutes. At the end of each month, the 5% highest measurements are discarded and the next highest value, the 95th percentile, is used to calculate an average peak usage per customer figure for each RSP/WSP for the month.

To obtain an RSP/WSP's average peak usage per user, NBI divides the calculated 95th percentile peak usage figure by the RSP/WSP's average wholesale Bitstream subscriber base for the month:

$$\text{Average no. of subscribers} = \frac{\text{(Live Subscriber Base on Day 1)} + \text{Live Subscriber Base on last day}}{2}$$

Figure 1 – Wholesale Bitstream usage management

This per-user usage figure is then used to calculate the appropriate monthly charge to the RSP/WSP.

Note: NBI recognises that End User usage on this new network may be difficult to estimate. NBI will cap the aggregate charges for each End User until 31st December 2021 as follows:

Table F - Wholesale Bitstream per user usage aggregate price cap valid until 31st December 2021			
Bitstream Consumer Standard	150 Mbit/s / 30 Mbit/s	Max aggregate charge	€ 30.00
Bitstream Consumer Premium	300 Mbit/s / 50 Mbit/s	Max aggregate charge	€ 35.00
Bitstream Consumer Elite	1000 Mbit/s / 100 Mbit/s	Max aggregate charge	€ 45.00

3. Wholesale VUA Price list

The NBI network is designed such that it aggregates End User lines to a minimal number of Points of Handover (33) which are designed to be easily accessible to all Service Providers. By offering a minimal number of traffic handover points, NBI has simplified network build for many operators who wish to utilise their own infrastructure and opt for a Wholesale VUA service in many or all locations.

Table G - Wholesale VUA Rental Prices – Effective from 1st April 2020				
Charge Ref	Product(s):	Service Speed	Access Service Provider (NBI)	Wholesale VUA (Interconnect products charged separately)
				Price per Month
RC2.0	Minimum Wholesale VUA Product (VUA Consumer Standard)	150 Mbit/s / 30 Mbit/s	NBI	€26.00
RC2.1	VUA Consumer Premium	300 Mbit/s / 50 Mbit/s	NBI	€31.00
RC2.2	VUA Consumer Elite	1000 Mbit/s / 100 Mbit/s	NBI	€41.00
RC2.3	VUA Business Standard	150 Mbit/s / 50 Mbit/s	NBI	€54.00
RC2.4	VUA Business Premium	300 Mbit/s / 75 Mbit/s	NBI	€64.00
RC2.5	VUA Business Enterprise	1000 Mbit/s / 200 Mbit/s	NBI	€74.00
Additional Features (Optional)				
RC2.6	Consumer COS	1 Mbit/s EF	NBI	€0.50
RC2.7	Business COS	10 Mbit/s EF, 40 Mbit/s AF	NBI	€5.00
RC2.8	Business COS	20 Mbit/s EF, 80 Mbit/s AF	NBI	€10.00

4. Multicast Price list

i. Wholesale Bitstream Multicast

Multicast products are a set of products that allow operators to provide IPTV services. NBI offers the following charging structure:

Table H – Wholesale Bitstream Multicast charges – Effective from 1st April 2020			
Charge Ref	Wholesale Bitstream Multicast charges	Fee Structure	Wholesale price
MC1.1	Connection per Multicast Domain	One-off	€5,000
MC1.2	Rental – up to 700 Mbit/s	Annual	€50,000
MC1.3	Rental per Site – up to 700 Mbit/s	Annual per Site	€3,500
MC1.4	Connection per End User	One-off	€2.50
MC1.5	PoH Setup	One-off	€50.00

ii. Wholesale VUA Multicast

The Wholesale VUA product suite allows an operator to “inject” multicast at the local PoH. It is envisaged that a Service Provider will require support in setting up Multicast and troubleshooting Multicast issues as they arise.

NBI will charge for the initial set-up of Multicast in the network (one-off) and charge an annual rental for support.

Table I – Wholesale VUA Multicast charges – Effective from 1st April 2020			
Charge Ref	Wholesale Bitstream Multicast charges	Fee Structure	Wholesale price
MC2.1	Connection & Set-up per Multicast domain (not per site)	One-off	€10,000
MC2.2	Annual support per Multicast domain (not per site)	Annual	€5,000
MC2.3	Connection per End User	One-off	€2.50
MC2.4	Per PoH site Setup	One-off	€50

5. General Charges

Table J - General Charges (GC) - Effective from 1st April 2020				
Charge Ref	Charge Description	Effective From	Effective To	Wholesale Bitstream / VUA
GC1.0	Bandwidth Change ⁴	01/04/2020	-	€2.50
GC1.1	Cessation Charge (Soft) ⁵	01/04/2020	-	€2.50
GC1.2	Cessation Charge (Hard) ⁶	01/04/2020	-	€100.00
GC1.3	Missed Appointment & Cancellation Charge ⁷	01/04/2020	-	€30.00
GC1.4	No Fault Found charge ⁸	01/04/2020	-	€100.00
GC1.5	Unicast Setup ⁹	01/04/2020	-	€50.00

⁴ Bandwidth changes apply to upgrades and downgrades

⁵ No requirement for equipment removal or site visit

⁶ Full disconnection, where End User has requested that plant is removed from the premises

⁷ Order Cancelled after 5:30 previous day, customer not available, customer not ready or cancellation at door

⁸ Where Technical Support have run diagnostics to establish that there is a fault in the premises. Tech support must make best efforts to isolate the source of the fault prior to sending a field engineer to site.

⁹ Access to Aggregation area per logical Unicast

Table K – Standard Connection Charges - Effective from 1st April 2020				
Charge Ref	Charge Description	Effective From	Effective To	Wholesale Bitstream / VUA
CC1.0	Initial Charge ¹⁰	01/04/2020	-	€100.00
CC1.1	Reconnection Charge ¹¹ (software only)	01/04/2020	-	€2.50
CC1.2	Reconnection Charge ¹² (engineer required)	01/04/2020	-	€100.00
CC1.3	Migration/Other Connection Charge No Appointment required	01/04/2020	-	€2.50

Table L – Missed Appointment Charges - Effective from 1st April 2020				
Charge Ref	Charge Description	Effective From	Effective To	Wholesale Bitstream / VUA
MA1.0	End User Missed Appointment	01/04/2020	-	€30.00
MA1.1	NBI Missed appointment ¹³	01/04/2020	-	€-30.00 (credit)

¹⁰ Standard Appointment required

¹¹ No Appointment required

¹² Standard Appointment required

¹³ Issued via credit to the Service Provider from NBI

Table M - Standard Appointment required - Data Port Extension Charge				
Charge Ref	Charge Description	Effective From	Effective To	Wholesale Bitstream / VUA
DP1.0	Data Port Extension Connection charge ¹⁴	01/04/2020		€55.00

¹⁴ Pricing applies to DPE ordered on site or as part of the standard ordering process. On site ordering subject to WSP/RSP forecast and technician availability