

# Product Attributes and Business Rules

## TECHNICAL SPECIFICATION

INTERFACE VERSION **23**

**JUNE28 SEPTEMBER** 2012



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NBN Co Limited

## Product Attributes and Business Rules Technical Specification

~~26 June~~28 September 2012

Version: ~~3.2.0~~

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### Environment

NBN Co asks that you consider the environment before printing this document.

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# 1 About this document

This document describes the product order business rules [that the](#) Access Seeker must adhere to when ordering NBN Co Products via [the B2B Gateway Access](#). These business rules should be read in conjunction with the B2B Developer's Guide (Fulfilment) and the [product templates Product Templates](#) specified in consultation with Access Seeker during the Solution Definition phase of the On-boarding process.

Access Seeker may refer to the relevant Product [Description and the Product](#) Technical Specification under the Wholesale Broadband Agreement [between NBN Co and Access Seeker](#) for a detailed description of each product attribute.

## 1.1 In scope

This document applies to the following orders placed via NBN Co's B2B [Gateway Access](#):

- Connect Order;
- Amend Order; [and](#)
- ~~Cancel Order;~~
- Modify Order; [and](#)
- ~~Disconnect Order~~

This document applies in respect of the following Products and Product Components:

- NFAS;
- [NWAS](#);
- UNI;
- AVC;
- CVC; and
- NNI

NBN Co may also make the functionality defined in this document available in respect of other [products Products](#) and [product components Product Components](#) made available by NBN Co from time to time ~~(such as the Beta NWAS product which is not provided under the Wholesale Broadband Agreement as at the date of this document.~~

## 1.2 ~~Related Documents~~

<del>Document Number</del>	<del>Document Title</del>	<del>Owner/Link</del>	<del>Date of Issue</del>	<del>Version Number</del>
<del>1</del>	<del>B2B Gateway Developer's Guide, Fulfilment, Interface Version 2</del>	<del>NBN Co</del>	<del>26/06/2012</del>	<del>2.0</del>
<del>2</del>	<del>B2B Product Definition Technical Specification</del>	<del>NBN Co</del>	<del>6/04/2012</del>	<del>1.1</del>



## 2 Product Business Rules

### 2.1 Definitions

Term	Meaning
Attribute	Name of the Product attribute that may be specified by an Access Seeker when submitting a Product order, or provided by NBN Co in an order notification.
Attribute Type	Attribute classification being one of: <ul style="list-style-type: none"> <li>• Aggregate. This attribute is defined by the collection of its child attributes.</li> <li>• Key/Value – String. An attribute whose value is represented as a string.</li> <li>• Key/Value – Integer. An attribute whose value is represented as an integer number.</li> <li>• Key-Value – IP. An attribute whose value is represented as an Internet Protocol address.</li> <li>• Enumeration. An attribute that is defined by a list of possible values.</li> <li>• Enumeration Value. An attribute whose value is one of list of possible values.</li> <li>• Multiplicity. An attribute that indicates the number of times its child attribute is allowed to be defined.</li> </ul>
ID	Canonical attribute identifier that is referenced by specific business rule(s).
Read Only	Where represented within the business rules as a “Y”, the associated attribute is read only and provided by NBN Co in order notifications. It is not available to be specified when submitting an order.

## 2.2 Network-Network Interface (NNI) Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	NNI	Aggregate			
1.1	NNI Group	Aggregate			
1.1.1	POI Name	Key/Value - String			
1.1.2	TPID	Enumeration			
1.1.2.1	0x88a8	Enumeration Value			
1.1.2.2	0x8100	Enumeration Value			
1.1.3	Group Interface Rate	Enumeration			
1.1.3.1	1G	Enumeration Value			
1.1.3.2	10G	Enumeration Value			
1.1.4	Redundancy Option	Enumeration			
1.1.4.1	Single Chassis	Enumeration Value			
1.1.4.2	Chassis Diversity	Enumeration Value			
1.1.5	ID	Key/Value - String	NNI[0-9]{12}	Y	
1.2	NNB's In NNI Group	Multiplicity[1..8]			<a href="#">Between 1 to 8 NNB's are possible if 1.1.4.1 is specified.</a> <a href="#">Either 2, 4, 6, or 8 NNB's are possible if 1.1.4.2 is specified.</a>
1.2.1	NNB	Aggregate			
1.2.1.1	Interface Type	Enumeration			
1.2.1.1.1	1000BASE-LX	Enumeration Value			Available if 1.1.3.1 is specified
1.2.1.1.2	1000BASE- <del>ZXEX</del>	Enumeration Value			Available if 1.1.3.1 is specified
1.2.1.1.3	10GBASE-LR	Enumeration Value			Available if 1.1.3.2 is specified
1.2.1.1.4	10GBASE-ER	Enumeration Value			Available if 1.1.3.2 is specified
<a href="#">1.2.1.3</a>	<a href="#">Chassis</a>	<a href="#">Enumeration</a>			
<a href="#">1.2.1.3.1</a>	<a href="#">Chassis A</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.2.1.3.2</a>	<a href="#">Chassis B</a>	<a href="#">Enumeration Value</a>			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
<a href="#">1.2.1.34</a>	D Side ODF TX	Key/Value - String		Y	
<a href="#">1.2.1.45</a>	D Side ODF RX	Key/Value - String		Y	
<a href="#">1.2.1.56</a>	ID	Key/Value - String	NNB[0-9]{12}	Y	



## 2.3 Connectivity Virtual Circuit (CVC) Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	CVC	Aggregate			
1.1	NNI Group Id	Key/Value - String	NNI[0-9]{12}		
1.2	CSA Id	Key/Value - String	CSA[0-9]{12}		
1.3	SVLAN Id	Key/Value - Integer	0 =< X =<<4000		Where specified as 0, NBN Co will allocate the value
1.4	CVC Type	Enumeration			
1.4.1	1:1	Enumeration Value			
1.4.2	N:1	Enumeration Value			
<a href="#">1.4.3</a>	<a href="#">Multicast</a>	<a href="#">Enumeration Value</a>			
1.5	Bandwidth Profile	Aggregate			
1.5.1	TC1 Bandwidth Profile	Enumeration			Available if either 1.4.1 or 1.4.2 is specified
1.5.1.1	D0_U0_Mbps_TC1_C	Enumeration Value			Is the default value if 1.4.1 is specified
1.5.1.2	D5_U5_Mbps_TC1_C	Enumeration Value			Is the default value if 1.4.2 is specified
<a href="#">1.5.1.3</a>	<a href="#">D10_U10_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.1.4</a>	<a href="#">D20_U20_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			
1.5.4	TC4 Bandwidth Profile	Enumeration			Available if 1.4.1 is specified
1.5.4.1	D0_U0_Mbps_TC4_C	Enumeration Value			
1.5.4.2	D100_U100_Mbps_TC4_C	Enumeration Value			
1.5.4.3	D150_U150_Mbps_TC4_C	Enumeration Value			
1.5.4.4	D200_U200_Mbps_TC4_C	Enumeration Value			
1.5.4.5	D250_U250_Mbps_TC4_C	Enumeration Value			
1.5.4.6	D300_U300_Mbps_TC4_C	Enumeration Value			
<a href="#">1.5.4.7</a>	<a href="#">D400_U400_Mbps_TC4_C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.4.8</a>	<a href="#">D500_U500_Mbps_TC4_C</a>	<a href="#">Enumeration Value</a>			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
<a href="#">1.5.5</a>	<a href="#">TCMC Bandwidth Profile</a>	<a href="#">Enumeration</a>			<a href="#">Available if 1.4.3 is specified</a>
<a href="#">1.5.5.1</a>	<a href="#">D100 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.2</a>	<a href="#">D200 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.3</a>	<a href="#">D300 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.4</a>	<a href="#">D400 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.5</a>	<a href="#">D500 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.6</a>	<a href="#">D600 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.7</a>	<a href="#">D700 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.8</a>	<a href="#">D800 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.9</a>	<a href="#">D900 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.5.5.10</a>	<a href="#">D1000 U1 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			
<a href="#">1.6</a>	<a href="#">Media Streams in MC Domain</a>	<a href="#">Multiplicity[1..400]</a>	<a href="#">SUM(1.6.2.1.2) &lt;= 1.5.5</a>		<a href="#">Available if 1.4.3 is specified</a>
<a href="#">1.6.1</a>	<a href="#">MS</a>	<a href="#">Aggregate</a>			
<a href="#">1.6.1.1</a>	<a href="#">Title</a>	<a href="#">Key/Value – String</a>	<a href="#">Length &lt;= 40</a>		
<a href="#">1.6.1.2</a>	<a href="#">Peak Bandwidth</a>	<a href="#">Key/Value – Float</a>	<a href="#">2.5 =&lt; X =&lt;20</a>		<a href="#">Increment size is 0.1</a>
<a href="#">1.6.1.3</a>	<a href="#">IP Address</a>	<a href="#">Key/Value – String</a>	<a href="#">Excluding 224.0.0.0 =&lt; X =&lt; 224.0.0.255</a>		<a href="#">Lower 23 bits of the media stream IP group address must be unique within the multicast domain</a>
<a href="#">1.6.1.4</a>	<a href="#">ID</a>	<a href="#">Key/Value - String</a>	<a href="#">MSI[0-9]{12}</a>	<a href="#">Y</a>	
<a href="#">1.7</a>	<a href="#">IGMP Reporter Address</a>	<a href="#">IP Address</a>			<a href="#">Available if 1.4.3 is specified</a>

## 2.4 NFAS DSCP Mapped Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	NFAS-DSCP Mapped	Aggregate			
1.1	NTD	Aggregate			
1.1.1	Location	Enumeration			
1.1.1.1	Indoor	Enumeration Value			
1.1.1.2	Outdoor	Enumeration Value			Available if 1.1.2.2 is specified
1.1.2	NTD Type	Enumeration			
1.1.2.1	Internal	Enumeration Value			Available if 1.1.1.1 is specified
1.1.2.2	External	Enumeration Value			
1.1.3	CSA Id	Key/Value - String	CSA[0-9]{12}	Y	
1.1.4	Region	Enumeration		Y	
1.1.4.1	Urban	Enumeration Value		Y	
1.1.4.2	Major Rural	Enumeration Value		Y	
1.1.4.3	Minor Rural	Enumeration Value		Y	
1.1.4.4	Remote	Enumeration Value		Y	
1.1.5	Access Service Technology Type	Enumeration		Y	
1.1.5.1	Fibre	Enumeration Value		Y	
<del>1.1.5.2</del>	<del>Fixed Wireless</del>	<del>Enumeration Value</del>		<del>Y</del>	-
<del>1.1.5.3</del>	<del>Satellite</del>	<del>Enumeration Value</del>		<del>Y</del>	-
1.1.6	ID	Key/Value - String	NTD[0-9]{12}	Y	
1.2	UNI-D's in NFAS	Multiplicity[1..1]			
1.2.1	UNID	Aggregate			
1.2.1.1	UNI Type	Enumeration			
1.2.1.1.1	UNI-D	Enumeration Value			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.2.1.2	VLAN Mode	Enumeration			
1.2.1.2.1	DSCP-Mapped	Enumeration Value			
1.2.1.3	Port Id	Key/Value - Integer	0 <= x <= 4		Where specified as 0, NBN Co will allocate the value
1.2.1.4	Speed and Duplex	Enumeration			
1.2.1.4.1	Auto Negotiation (10/100/1000Mbps, Half/Full Duplex)	Enumeration Value			
1.2.1.4.2	100Mbps, Auto Duplex (Half/Full)	Enumeration Value			
1.2.1.5	Interface Type	Enumeration			
1.2.1.5.1	10/100/1000BASE-T	Enumeration Value			
1.2.1.6	UNI Transient Id	Key/Value - Integer			
1.2.1.7	ID	Key/Value - String	UNI[0-9]{12}	Y	
1.3	UNI-V's in NFAS	Multiplicity[0..1]			
1.3.1	UNIV	Aggregate			
1.3.1.1	UNI Type	Enumeration			
1.3.1.1.1	UNI-V	Enumeration Value			
1.3.1.2	Port Id	Key/Value - Integer	0 <= x <= 2 Only 1 is valid		Where specified as 0, NBN Co will allocate the value
1.3.1.3	FTP Username	Key/Value - String			Mandatory if 1.3.8.1 is specified
1.3.1.4	FTP Password	Key/Value - String			Mandatory if 1.3.8.1 is specified
1.3.1.5	Configuration Filename	Key/Value - String			
1.3.1.6	UNI Transient Id	Key/Value - String			
1.3.1.7	ID	Key/Value - String	UNI[0-9]{12}	Y	
<a href="#">1.3.1.8</a>	<a href="#">Configuration Mode</a>	<a href="#">Enumeration</a>			
<a href="#">1.3.1.8.1</a>	<a href="#">TFTP</a>	<a href="#">Enumeration Value</a>			Availability is subject to network capability
<a href="#">1.3.1.8.2</a>	<a href="#">TR-069</a>	<a href="#">Enumeration Value</a>			Availability is subject to network capability
1.4	AVC-D's in NFAS	Multiplicity[1..1]			
1.4.1	AVCD	Aggregate			
1.4.1.1	AVC Type	Enumeration			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.4.1.1.1	1:1	Enumeration Value			
1.4.1.2	Bandwidth Profile	Enumeration			
1.4.1.2.1	D12_U1_Mbps_TC4_P	Enumeration Value			
1.4.1.2.2	D12_U1_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.4.1.2.3	D25_U5_Mbps_TC4_P	Enumeration Value			
1.4.1.2.4	D25_U5_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.4.1.2.5	D25_U10_Mbps_TC4_P	Enumeration Value			
1.4.1.2.6	D25_U10_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.4.1.2.7	D50_U20_Mbps_TC4_P	Enumeration Value			
1.4.1.2.8	D50_U20_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.4.1.2.9	D100_U40_Mbps_TC4_P	Enumeration Value			
1.4.1.2.10	D100_U40_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
<a href="#">1.4.1.2.11</a>	<a href="#">D12_U1_Mbps_TC4_P</a> , <a href="#">D0.3_U0.3_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.12</a>	<a href="#">D25_U5_Mbps_TC4_P</a> , <a href="#">D0.3_U0.3_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.13</a>	<a href="#">D25_U5_Mbps_TC4_P</a> , <a href="#">D0.5_U0.5_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.14</a>	<a href="#">D25_U10_Mbps_TC4_P</a> , <a href="#">D0.3_U0.3_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.15</a>	<a href="#">D25_U10_Mbps_TC4_P</a> , <a href="#">D0.5_U0.5_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.16</a>	<a href="#">D25_U10_Mbps_TC4_P</a> , <a href="#">D1_U1_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.17</a>	<a href="#">D50_U20_Mbps_TC4_P</a> , <a href="#">D0.3_U0.3_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.18</a>	<a href="#">D50_U20_Mbps_TC4_P</a> , <a href="#">D0.5_U0.5_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.19</a>	<a href="#">D50_U20_Mbps_TC4_P</a> , <a href="#">D1_U1_Mbps_TC1_C</a>	<a href="#">Enumeration Value</a>			-

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
<a href="#">1.4.1.2.20</a>	<a href="#">D50 U20 Mbps TC4 P,</a> <a href="#">D2 U2 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.21</a>	<a href="#">D100 U40 Mbps TC4 P,</a> <a href="#">D0.3 U0.3 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.22</a>	<a href="#">D100 U40 Mbps TC4 P,</a> <a href="#">D0.5 U0.5 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.23</a>	<a href="#">D100 U40 Mbps TC4 P,</a> <a href="#">D1 U1 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.24</a>	<a href="#">D100 U40 Mbps TC4 P,</a> <a href="#">D2 U2 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.4.1.2.25</a>	<a href="#">D100 U40 Mbps TC4 P,</a> <a href="#">D5 U5 Mbps TC1 C</a>	<a href="#">Enumeration Value</a>			-
1.4.1.3	Access Loop Identification	Enumeration			
1.4.1.3.1	Active	Enumeration Value			
1.4.1.3.2	Inactive	Enumeration Value			
1.4.1.4	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.4.1.5	NNI CVLAN Id	Key/Value - Integer	0 <= x <= 4000		Available if 1.4.1.1.1 is specified. Where specified as 0, NBN Co will allocate the value
1.4.1.6	Connected to UNI	Key/Value - String			
<a href="#">1.4.1.7</a>	<a href="#">AVC Transient ID</a>	<a href="#">Key/Value - String</a>			
1.4.1. <del>78</del>	Access Service Technology Type	Enumeration		Y	
1.4.1. <del>78</del> .1	Fibre	Enumeration Value		Y	
<del>1.4.1.7.2</del>	<del>Fixed Wireless</del>	<del>Enumeration Value</del>		<del>Y</del>	-
<del>1.4.1.7.3</del>	<del>Satellite</del>	<del>Enumeration Value</del>		<del>Y</del>	-
1.4.1. <del>89</del>	ID	Key/Value - String	AVC[0-9]{12}	Y	
1.5	AVC-V's in NFAS	Multiplicity[0..1]			
1.5.1	<a href="#">AVC\AVC-V</a>	Aggregate			
1.5.1.1	AVC Type	Enumeration			
1.5.1.1.1	N:1	Enumeration Value			
1.5.1.2	Bandwidth Profile	Enumeration			
1.5.1.2.1	D0.15_U0.15_Mbps_TC1_C	Enumeration Value			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.5.1.3	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.5.1.4	Connected to UNI	Key/Value - String			
1.5.1.5	ID	Key/Value - String	AVC[0-9]{12}	Y	
<a href="#">1.6</a>	<a href="#">AVC-M's in NFAS</a>	<a href="#">Multiplicity[0..1]</a>			-
<a href="#">1.6.1</a>	<a href="#">AVC-M</a>	<a href="#">Aggregate</a>			-
<a href="#">1.6.1.1</a>	<a href="#">AVC Type</a>	<a href="#">Enumeration</a>			-
<a href="#">1.6.1.1.1</a>	<a href="#">Multicast</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2</a>	<a href="#">Bandwidth Profile</a>	<a href="#">Enumeration</a>			-
<a href="#">1.6.1.2.1</a>	<a href="#">D5 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.2</a>	<a href="#">D20 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.3</a>	<a href="#">D30 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.4</a>	<a href="#">D40 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.5</a>	<a href="#">D50 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.3</a>	<a href="#">CVC Id</a>	<a href="#">Key/Value - String</a>	<a href="#">CVC[0-9]{12}</a>		-
<a href="#">1.6.1.4</a>	<a href="#">Connected to UNI</a>	<a href="#">Key/Value - String</a>			-
<a href="#">1.6.1.5</a>	<a href="#">ID</a>	<a href="#">Key/Value - String</a>	<a href="#">AVC[0-9]{12}</a>	<a href="#">Y</a>	-
1.8	Priority Assist	Enumeration			
1.8.1	Yes	Enumeration Value			
1.9.2	No	Enumeration Value			
1.9	Connection Type	Enumeration			
1.9.1	Type 1	Enumeration Value			
1.9.2	Type 2	Enumeration Value			
<a href="#">1.15</a>	<a href="#">Service Restoration SLA</a>	<a href="#">Enumeration</a>			-
<a href="#">1.15.1</a>	<a href="#">Standard</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.15.1</a>	<a href="#">Enhanced - 12</a>	<a href="#">Enumeration Value</a>			-

## 2.5 NFAS Default Mapped Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	NFAS-Default Mapped	Aggregate			
1.1	NTD	Aggregate			
1.1.1	Location	Enumeration			
1.1.1.1	Indoor	Enumeration Value			
1.1.1.2	Outdoor	Enumeration Value			Available if 1.1.2.2 is specified
1.1.2	NTD Type	Enumeration			
1.1.2.1	Internal	Enumeration Value			Available if 1.1.1.1 is specified
1.1.2.2	External	Enumeration Value			
1.1.3	CSA Id	Key/Value - String	CSA[0-9]{12}	Y	
1.1.4	Region	Enumeration		Y	
1.1.4.1	Urban	Enumeration Value		Y	
1.1.4.2	Major Rural	Enumeration Value		Y	
1.1.4.3	Minor Rural	Enumeration Value		Y	
1.1.4.4	Remote	Enumeration Value		Y	
1.1.5	Access Service Technology Type	Enumeration		Y	
1.1.5.1	Fibre	Enumeration Value		Y	
<del>1.1.5.2</del>	<del>Fixed Wireless</del>	<del>Enumeration Value</del>		<del>Y</del>	<del>-</del>
<del>1.1.5.3</del>	<del>Satellite</del>	<del>Enumeration Value</del>		<del>Y</del>	<del>-</del>
1.1.6	ID	Key/Value - String	NTD[0-9]{12}	Y	
1.2	UNI-D's in NFAS	Multiplicity[1..1]			
1.2.1	UNID	Aggregate			
1.2.1.1	UNI Type	Enumeration			
1.2.1.1.1	UNI-D	Enumeration Value			



ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.2.1.2	VLAN Mode	Enumeration			
1.2.1.2.1	Default-Mapped	Enumeration Value			
1.2.1.3	Port Id	Key/Value - Integer	0 <= x <= 4		Where specified as 0, NBN Co will allocate the value
1.2.1.4	Speed and Duplex	Enumeration			
1.2.1.4.1	Auto Negotiation (10/100/1000Mbps, Half/Full Duplex)	Enumeration Value			
1.2.1.4.2	100Mbps, Auto Duplex (Half/Full)	Enumeration Value			
1.2.1.5	Interface Type	Enumeration Value			
1.2.1.5.1	10/100/1000BASE-T	Enumeration Value			
1.2.1.6	UNI Transient Id	Key/Value - Integer			
1.2.1.7	ID	Key/Value - String	UNI[0-9]{12}	Y	
1.3	UNI-V's in NFAS	Multiplicity[0..1]			
1.3.1	UNIV	Aggregate			
1.3.1.1	UNI Type	Enumeration			
1.3.1.1.1	UNI-V	Enumeration Value			
1.3.1.2	Port Id	Key/Value - Integer	0 <= x <= 2 Only 1 is valid		Where specified as 0, NBN Co will allocate the value
1.3.1.3	FTP Username	Key/Value - String			Mandatory if 1.3.8.1 is specified
1.3.1.4	FTP Password	Key/Value - String			Mandatory if 1.3.8.1 is specified
1.3.1.5	Configuration Filename	Key/Value - String			
1.3.1.6	UNI Transient Id	Key/Value - String			
1.3.1.7	ID	Key/Value - String	UNI[0-9]{12}	Y	
<a href="#">1.3.1.8</a>	<a href="#">Configuration Mode</a>	<a href="#">Enumeration</a>			
<a href="#">1.3.1.8.1</a>	<a href="#">TFTP</a>	<a href="#">Enumeration Value</a>			Availability is subject to network capability
<a href="#">1.3.1.8.2</a>	<a href="#">TR-069</a>	<a href="#">Enumeration Value</a>			Availability is subject to network capability
1.4	AVC-D's in NFAS	Multiplicity[1..1]			
1.4.1	AVCD	Aggregate			
1.4.1.1	AVC Type	Enumeration			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.4.1.1.1	1:1	Enumeration Value			
1.4.1.2	Bandwidth Profile	Enumeration			
1.4.1.2.1	D12_U1_Mbps_TC4_P	Enumeration Value			
1.4.1.2.2	D25_U5_Mbps_TC4_P	Enumeration Value			
1.4.1.2.3	D25_U10_Mbps_TC4_P	Enumeration Value			
1.4.1.2.4	D50_U20_Mbps_TC4_P	Enumeration Value			
1.4.1.2.5	D100_U40_Mbps_TC4_P	Enumeration Value			
1.4.1.3	Access Loop Identification	Enumeration			
1.4.1.3.1	Active	Enumeration Value			
1.4.1.3.2	Inactive	Enumeration Value			
1.4.1.4	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.4.1.5	NNI CVLAN Id	Key/Value - Integer	0 <= x <= 4000		Available if 1.4.1.1.1 is specified. Where specified as 0, NBN Co will allocate the value.
1.4.1.6	Connected to UNI	Key/Value - String			
<a href="#">1.4.1.7</a>	<a href="#">AVC Transient ID</a>	<a href="#">Key/Value - String</a>			
<a href="#">1.4.1.78</a>	Access Service Technology Type	Enumeration		Y	
<a href="#">1.4.1.78.1</a>	Fibre	Enumeration Value		Y	
<a href="#">1.4.1.78.2</a>	Fixed Wireless	Enumeration Value		Y	
<a href="#">1.4.1.78.3</a>	Satellite	Enumeration Value		Y	
1.4.1.8	ID	Key/Value - String	AVC[0-9]{12}	Y	
1.5	AVC-V's in NFAS	Multiplicity[0..1]			
1.5.1	AVCV	Aggregate			
1.5.1.1	AVC Type	Enumeration			
1.5.1.1.1	N:1	Enumeration Value			
1.5.1.2	Bandwidth Profile	Enumeration			
1.5.1.2.1	D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.5.1.3	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.5.1.4	Connected to UNI	Key/Value - String			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.5.1.5	ID	Key/Value - String	AVC[0-9]{12}	Y	
<a href="#">1.6</a>	<a href="#">AVC-M's in NFAS</a>	<a href="#">Multiplicity[0..1]</a>			-
<a href="#">1.6.1</a>	<a href="#">AVC-M</a>	<a href="#">Aggregate</a>			-
<a href="#">1.6.1.1</a>	<a href="#">AVC Type</a>	<a href="#">Enumeration</a>			-
<a href="#">1.6.1.1.1</a>	<a href="#">Multicast</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2</a>	<a href="#">Bandwidth Profile</a>	<a href="#">Enumeration</a>			-
<a href="#">1.6.1.2.1</a>	<a href="#">D5 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.2</a>	<a href="#">D20 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.3</a>	<a href="#">D30 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.4</a>	<a href="#">D40 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.2.5</a>	<a href="#">D50 Mbps TCMC C</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.6.1.3</a>	<a href="#">CVC Id</a>	<a href="#">Key/Value - String</a>	<a href="#">CVC[0-9]{12}</a>		-
<a href="#">1.6.1.4</a>	<a href="#">Connected to UNI</a>	<a href="#">Key/Value - String</a>			-
<a href="#">1.6.1.5</a>	<a href="#">ID</a>	<a href="#">Key/Value - String</a>	<a href="#">AVC[0-9]{12}</a>	<a href="#">Y</a>	-
1.8	Priority Assist	Enumeration			
1.8.1	Yes	Enumeration Value			
1.8.2	No	Enumeration Value			
1.9	Connection Type	Enumeration			
1.9.1	Type 1	Enumeration Value			
1.9.2	Type 2	Enumeration Value			
<a href="#">Beta-1.15</a>	<a href="#">Service Restoration SLA</a>	<a href="#">Enumeration</a>			-
<a href="#">1.15.1</a>	<a href="#">Standard</a>	<a href="#">Enumeration Value</a>			-
<a href="#">1.15.1</a>	<a href="#">Enhanced - 12</a>	<a href="#">Enumeration Value</a>			-

## 2.6 NWA Default Mapped Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	NWA-Default Mapped	Aggregate			
1.1	NTD	Aggregate			
1.1.1	Location	Enumeration			
1.1.1.1	Indoor	Enumeration Value			
1.1.2	NTD Type	Enumeration			
1.1.2.1	Internal	Enumeration Value			Available if 1.1.1.1 is specified
1.1.3	CSA Id	Key/Value - String	CSA[0-9]{12}	Y	
1.1.4	Region	Enumeration		Y	
1.1.4.1	Urban	Enumeration Value		Y	
1.1.4.2	Major Rural	Enumeration Value		Y	
1.1.4.3	Minor Rural	Enumeration Value		Y	
1.1.4.4	Remote	Enumeration Value		Y	
1.1.4.5	Access Service Technology Type	Enumeration		Y	
1.1.4.5.1	Fibre	Enumeration Value		Y	
1.1.4.5.2	Fixed Wireless	Enumeration Value		Y	
1.1.4.5.3	Satellite	Enumeration Value		Y	
1.1.4.6	ID	Key/Value - String	NTD[0-9]{12}	Y	
1.2	UNI-D's in NWA	Multiplicity[1..1]			
1.2.1	UNID	Aggregate			
1.2.1.1	UNI Type	Enumeration			
1.2.1.1.1	UNI-D	Enumeration Value			
1.2.1.2	VLAN Mode	Enumeration			
1.2.1.2.1	Default-Mapped	Enumeration Value			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.2.1.3	Port Id	Key/Value - Integer	0 <= x <= 4		Where specified as 0, NBN Co will allocate the value
1.2.1.4	Speed and Duplex	Enumeration			
1.2.1.4.1	Auto Negotiation (10/100/1000Mbps, Half/Full Duplex)	Enumeration Value			
1.2.1.4.2	100Mbps, Auto Duplex (Half/Full)	Enumeration Value			
1.2.1.5	Interface Type	Enumeration Value			
1.2.1.5.1	10/100/1000BASE-T	Enumeration Value			
1.2.1.6	UNI Transient Id	Key/Value - Integer			
1.2.1.7	ID	Key/Value - String	UNI[0-9]{12}	Y	
1.4	AVC-D's in NWAS	Multiplicity[1..1]			
1.4.1	AVCD	Aggregate			
1.4.1.1	AVC Type	Enumeration			
1.4.1.1.1	1:1	Enumeration Value			
1.4.1.2	Bandwidth Profile	Enumeration			
1.4.1.2.1	D12_U1_Mbps_TC4_P	Enumeration Value			
1.4.1.3	Access Loop Identification	Enumeration			
1.4.1.3.1	Active	Enumeration Value			
1.4.1.3.2	Inactive	Enumeration Value			
1.4.1.4	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.4.1.5	NNI CVLAN Id	Key/Value - Integer	0 <= x <= 4000		Available if 1.4.1.1.1 is specified. Where specified as 0, NBN Co will allocate the value.
1.4.1.6	Connected to UNI	Key/Value - String			
1.4.1.7	Access Service Technology Type	Enumeration		Y	
1.4.1.7.1	Fibre	Enumeration Value		Y	
1.4.1.7.2	Fixed Wireless	Enumeration Value		Y	
1.4.1.7.3	Satellite	Enumeration Value		Y	
1.4.1.8	ID	Key/Value - String	AVC[0-9]{12}	Y	
1.8	Connection Type	Enumeration			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
18.1	Type 2	Enumeration Value			

## 2.7 ~~Beta~~ NWAS DSCP Mapped Connect or Amend Order Business Rules

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1	NWAS-DSCP Mapped	Aggregate			
1.1	NTD	Aggregate			
1.1.1	Location	Enumeration			
1.1.1.1	Indoor	Enumeration Value			
1.1.2	NTD Type	Enumeration			
1.1.2.1	Internal	Enumeration Value			Available if 1.1.1.1 is specified
1.1.3	CSA Id	Key/Value - String	CSA[0-9]{12}	Y	
1.1.4	Region	Enumeration		Y	
1.1.4.1	Urban	Enumeration Value		Y	
1.1.4.2	Major Rural	Enumeration Value		Y	
1.1.4.3	Minor Rural	Enumeration Value		Y	
1.1.4.4	Remote	Enumeration Value		Y	
1.1.5	Access Service Technology Type	Enumeration		Y	
1.1.5.1	Fibre	Enumeration Value		Y	
1.1.5.2	Fixed Wireless	Enumeration Value		Y	
1.1.5.3	Satellite	Enumeration Value		Y	
1.1.6	ID	Key/Value - String	NTD[0-9]{12}	Y	
1.2	UNI-D's in NWAS	Multiplicity[1..1]			
1.2.1	UNID	Aggregate			
1.2.1.1	UNI Type	Enumeration			
1.2.1.1.1	UNI-D	Enumeration Value			
1.2.1.2	VLAN Mode	Enumeration			
1.2.1.2.1	DSCP-Mapped	Enumeration Value			

ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.2.1.3	Port Id	Key/Value - Integer	0 <= x <= 4		Where specified as 0, NBN Co will allocate the value
1.2.1.4	Speed and Duplex	Enumeration			
1.2.1.4.1	Auto Negotiation (10/100/1000Mbps, Half/Full Duplex)	Enumeration Value			
1.2.1.4.2	100Mbps, Auto Duplex (Half/Full)	Enumeration Value			
1.2.1.5	Interface Type	Enumeration Value			
1.2.1.5.1	10/100/1000BASE-T	Enumeration Value			
1.2.1.6	UNI Transient Id	Key/Value - Integer			
	ID	Key/Value - String	UNI[0-9]{12}	Y	
1.4	AVC-D's in NWS	Multiplicity[1..1]			
1.4.1	AVCD	Aggregate			
1.4.1.1	AVC Type	Enumeration			
1.4.1.1.1	1:1	Enumeration Value			
1.4.1.2	Bandwidth Profile	Enumeration			
1.4.1.2.1	D12_U1_Mbps_TC4_P, D0.15_U0.15_Mbps_TC1_C	Enumeration Value			
1.4.1.3	Access Loop Identification	Enumeration			
1.4.1.3.1	Active	Enumeration Value			
1.4.1.3.2	Inactive	Enumeration Value			
1.4.1.4	CVC Id	Key/Value - String	CVC[0-9]{12}		
1.4.1.5	NNI CVLAN Id	Key/Value - Integer	0 <= x <= 4000		Available if 1.4.1.1.1 is specified. Where specified as 0, NBN Co will allocate the value.
1.4.1.6	Connected to UNI	Key/Value - String			
1.4.1.7	Access Service Technology Type	Enumeration		Y	
1.4.1.7.1	Fibre	Enumeration Value		Y	
1.4.1.7.2	Fixed Wireless	Enumeration Value		Y	
1.4.1.7.3	Satellite	Enumeration Value		Y	
1.4.1.8	ID	Key/Value - String	AVC[0-9]{12}	Y	
1.9	Connection Type	Enumeration			



ID	Attribute	Attribute Type	Validation Format	Read Only	Rule
1.9.1	Type 2	Enumeration Value			

## 2.8 Modify Order Business Rules

Product	Product Component (Spec)	Modifiable Attributes	Applicable Actions on MODIFY
NFAS Default Mapped	NFAS Product	Priority Assist	MODIFY/NO CHANGE
	UNID	Speed and Duplex	MODIFY/NO CHANGE
	UNIV	FTP Username, FTP Password, Configuration Filename	ADD/MODIFY/DELETE/NO CHANGE
	AVCD	Bandwidth Profile, NNI CVLAN Id, CVC Id <sup>1</sup> , Access Loop Identification	MODIFY/NO CHANGE
	AVCV	CVC Id <sup>1</sup>	ADD/MODIFY/DELETE/NO CHANGE
	<a href="#">AVCM</a>	<a href="#">Bandwidth Profile</a>	<a href="#">ADD/MODIFY/DELETE/NO CHANGE</a>
NFAS DSCP Mapped	NFAS Product	Priority Assist	MODIFY/NO CHANGE
	UNID	Speed and Duplex	MODIFY/NO CHANGE
	UNIV	FTP Username, FTP Password, Configuration Filename	ADD/MODIFY/DELETE/NO CHANGE
	AVCD	Bandwidth Profile, NNI CVLAN Id, CVC Id <sup>1</sup> , Access Loop Identification	MODIFY/NO CHANGE
	AVCV	CVC Id <sup>1</sup>	ADD/MODIFY/DELETE/NO CHANGE
	<a href="#">AVCM</a>	<a href="#">Bandwidth Profile</a>	<a href="#">ADD/MODIFY/DELETE/NO CHANGE</a>
<a href="#">Beta</a> -NWAS	NWAS Product		NO CHANGE

<sup>1</sup> Modifying this attribute will result in a temporary service outage whilst NBN Co's reconfigures the network.

Product	Product Component (Spec)	Modifiable Attributes	Applicable Actions on MODIFY
Default Mapped	UNID		NO CHANGE
	AVCD	Bandwidth Profile, NNI CVLAN Id	MODIFY/NO CHANGE
<del>Beta</del> -NWAS DSCP Mapped	NWAS Product		NO CHANGE
	UNID		NO CHANGE
	AVCD	Bandwidth Profile, NNI CVLAN Id	MODIFY/NO CHANGE
CVC (N1:1)	CVC Product		NO CHANGE
	CVC	TC1 Bandwidth, <a href="#">TC4 Bandwidth</a> , <a href="#">SVLAN Id</a> <sup>2</sup> , NNI Group Id <sup>2</sup>	MODIFY
CVC (1N:1)	CVC Product		NO CHANGE
	CVC	TC1 Bandwidth, <del>TC4 Bandwidth</del> , <a href="#">SVLAN Id</a> <sup>3</sup> , NNI Group Id <sup>2</sup>	MODIFY
CVC (Multicast)	<a href="#">CVC Product</a>	-	<a href="#">NO CHANGE</a>
	<a href="#">CVC</a>	<a href="#">TC1 Bandwidth</a> , <a href="#">SVLAN Id</a> <sup>3</sup> , <a href="#">IGMP Reporter IP</a>	<a href="#">MODIFY</a>
	<a href="#">Media Streams</a>	<a href="#">Title</a> , <a href="#">Bandwidth</a> , <a href="#">IP Address</a>	<a href="#">ADD/MODIFY/DELETE/NO CHANGE</a>
NNI	NNI Product		NO CHANGE
	NNI	TPID	MODIFY/NO CHANGE
	NNB		ADD/MODIFY/DELETE/NO CHANGE

<sup>2</sup> A request to modify this attribute will be rejected if the CVC has any associated AVCs.

<sup>3</sup> A request to modify this attribute will be rejected if the CVC has any associated AVCs.

## 3 Document Control

### Revision History

Major changes to this document will be listed in a table for each version of the document distributed.

Date	Version	Author	Description/Section Revised	Reviewed By
26/06/2012	V2.0	Guy Liyanage	First Release for Industry Interface v2	Martin Pittard
<a href="#">1/06/2012</a>	<a href="#">V3.0</a>	<a href="#">Guy Liyanage</a>	<a href="#">Updated for Industry Interface v3 to include:</a> <ul style="list-style-type: none"> <li>• <a href="#">NNI multi bearer LAG</a></li> <li>• <a href="#">Additional AVC/CVC speed tiers</a></li> <li>• <a href="#">TR-069 UNI-V</a></li> <li>• <a href="#">NFAS small business broadband</a></li> <li>• <a href="#">Multicast</a></li> </ul>	<a href="#">Martin Pittard</a>
<a href="#">21/06/2012</a>	<a href="#">V3.1</a>	<a href="#">Martin Pittard</a>	<a href="#">Changed Service Restoration SLA attribute value from "Business" to "Enhanced – 12"</a>	<a href="#">Martin Pittard</a>
<a href="#">28/09/2012</a>	<a href="#">V3.2</a>	<a href="#">Martin Pittard</a>	<a href="#">Published under the WBA for Industry Interface v3</a>	<a href="#">Martin Pittard</a>

### Providing Feedback

Please direct any feedback regarding this Technical Specification to your Account Manager or [feedback@nbnco.com.au](mailto:feedback@nbnco.com.au)



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