COMMUNICATIONS ALLIANCE LTD

NBN CO INDUSTRY CONSULTATION ON:

PRODUCT OVERVIEWS FOR FIBRE, WIRELESS AND SATELLITE AND

PRODUCT TECHNICAL SPECIFICATION FIBRE ACCESS SERVICES

SUBMISSION BY COMMUNICATIONS ALLIANCE

SEPTEMBER 2010

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1 INTRODUCTION

1.1 About this submission

Communications Alliance members welcome the release of the NBN Co Product Overviews for Fibre, Wireless and Satellite services, and the Product Technical Specification for Fibre Access Services, and notes the very close alignment between these product descriptions and the reference product descriptions developed within the Wholesale Services working group of the Communications Alliance NBN Project.

We are very pleased to assist NBN Co in shaping the product design for the wholesale network infrastructure and the continuing work on the operational aspects.

1.2 About Communications Alliance

Communications Alliance is the peak telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including carriers, service providers, vendors, consultants and suppliers as well as business and consumer groups.

Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see
http://www.commsalliance.com.au

Communications Alliance has been leading the industry activity on the National Broadband Network (NBN) through its NBN Project. More information on the NBN Project is available from the Communications Alliance website and a dedicated NBN wiki established to facilitate the NBN Project outcomes.

2   COMMENTS ON THE PRODUCT OVERVIEW – FIBRE ACCESS SERVICES

Page	Section	NBN Co Ltd text	Communications Alliance response	CA WG
5	1.1 Service Migration	NFAS services and support systems are designed to enable a predictable service migration process from existing copper based access services to new fibre based services.	It is vital that the NBN operational processes and systems have the appropriate range of 'hooks' and signals to enable RSPs to synchronise migration and transfer activities (and subsequent churn activities), that will not be visible to the NBN network, with the activities that NBN Co will be enabling – for example, in number portability processes which are primarily managed through bilateral agreements.	Operational
6	1.2.1	Standard deployment of the NTU will be indoor. Additional external deployment options will be available and may be subject to additional pricing.	The Communications Alliance *NBN End-User Premises Handbook* considered both internal and external NTUs, and identified a range of factors to be taken into account in reaching a decision on the type of NTU e.g. refer to sections 4.6.17 to 4.6.21 of the handbook (Release 2).	End User Premises
14	3.1 VLAN Tags	A high level of security is achieved by including the NTU as part of the service – it will not be possible for customers to connect directly to the fibre in the End-user's premises.	Depending on what security arrangements NBN Co puts in place there may be potential for malicious and/or non-technical users to deliberately or inadvertently disconnect the supplied NTU and connect a different and compromised NTU that is under the user's control to the optical fibre. For example, will the NTU registration/configuration protocol with the Optical Line Termination, the NBN Co management of the activation, and the associated management software prevent the ability for illegal NTU activation?	Technical

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			Communications Alliance recommends NBN Co formulate a plan to protect the integrity of the network and RSP services against a physically compromised rogue NTU. This security plan may require consultation and a joint design between NBN Co and RSPs.	
15	3.4 Class of Service (COS)	Two Classes of Service are offered with the initial release of NFAS: Traffic Class 1 supports a Committed Information Rate with no excess information rate support, while Traffic Class 4 supports a Peak Information Rate with a Committed Information Rate set to zero.	Previous work within Communications Alliance has already developed existing guidelines for multi-provider IP QoS, and matching Ethernet QoS labels, based on international standards. Adherence to a common scheme for QoS marking and related performance expectations for all Australian networks will foster end-to-end interoperability and performance assurance as traffic passes through networks belonging to different providers – including RSPs, backhaul providers, and NBN Co infrastructure. Communications Alliance Guideline *QoS for networks using IP protocols* (G632) defines an initial three QoS classes, based on RFC 4594 and ITU Y.1541 in which Class 0 and Class 5 are the labels corresponding to NBN Co's Class 1 and Class 4. Communications Alliance encourages NBN Co to adopt international standards where possible, and without guidance as to the reasons for selecting 1 and 4 suggests NBN Co relabel the initial two classes to 0 and 5 to enable further classes to be enabled in future in a standards based format, and allow the performance targets and measurement methods defined in further standards to be applied consistently.	Wholesale Services

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16	3.5	The NTU will be able to accommodate an optional backup battery capability (ie a power supply unit capable of supporting a battery).	In this document the discussion of battery backup capability has been included within a section dedicated to telephony. Battery backup features should not be associated only with telephony services – battery backup may be required even if only UNI-D ports are in use. Communications Alliance recommends that ordering options for battery backup features be available irrespective of the types and numbers of services being delivered.	End User Premises
16,17	3.6 Multicast	(all 3.6)	It would be helpful to include a discussion of upstream traffic handling on multicast ports and AVCs and clarify whether the AVCs are uni-directional or bi-directional in nature – this section currently describes only downstream traffic. Interactive media will require some form of 'backchannel' to be supported e.g. carrying channel-change information and interactive data from the UNI back towards the RSP.	Wholesale Services
21	Table 4.2		Communications Alliance considers certain classes of RSPs and end-users will seek to order symmetric circuits, and encourages NBN Co to add symmetric PIR options to the PIR availability matrix.	Wholesale Services
21	Table 4.2		In addition, Section 7.2 appears to imply the standard 150kbps PIR and CIR option provisioned automatically for UNI-V ports should also be an orderable option for other ports, to reduce excessive bandwidth reservation for UNI-D ports intended to be used primarily to carry telephony calls from an outboard ATA.	Wholesale Services

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22	Table 4.4 Enhanced SLA	Enhanced SLA / 24/7 response and restoration timeframes / range of enhanced service levels	We note the document does not discuss anywhere what the standard SLA, restoration and response times will be, or the measurement methods and metrics, or if standard SLA will be available nationally or on a geographic basis. We would like to understand the standard SLA, including traffic performance guarantees expected to be offered, before enhanced SLAs can be evaluated.	Operational
23	Table 4.5	Connectivity VC Orderable Options and Descriptions	The CVC table does not indicate if these options provide symmetric capacity, or whether different capacity can be ordered in each direction. Communications Alliance requests this be clarified in future versions.	Wholesale Services
23	Table 4.6	Modification / AMC	Editorial – Possibly the "Modifications" item should be in a Non Recurring Charge (NRC) column, similar to Tables 4.4 and 4.7.	-

3   COMMENTS ON THE PRODUCT TECHNICAL SPECIFICATION – FIBRE ACCESS SERVICES

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10	3.1.1	Should an Access Seeker change their product offering in any way, or NBN Co. modify its offering or network implementation, a re-assessment will be performed to understand what (if any) re-verification needs to be performed.	If it is NBN Co that modifies the offering or network implementation, then consequential re-assessment and re-verification should be performed at no cost to the RSP.	Operational
10	3.1.2	Once the on-boarding phase is complete, the Access Seeker may define their service footprint…	Given the likely long lead times to arrange backhaul capacity and augmented port equipment, the requirement for the whole on-boarding phase, including integration testing of services and equipment, to be completed prior to defining service footprints and ordering NNI ports seems unnecessarily linear. Communications Alliance recommends the service footprint definition and ordering of backhaul and interconnect infrastructure be able to overlap with integration testing.	Operational
15	5.1	NFAS unicast data services fully support IPv4 as well as IPv6 protocols, allowing Access Seekers a smooth migration path to future IP-based network architectures.	Will the number of EtherTypes be explicitly restricted only to these two layer 3 protocols, or will the full range of other EtherTypes be permitted as well (e.g. MPLS, AppleTalk, SMB, etc)?	Wholesale Services
20	6.4	NBN Co will discard any service frames received as the UNI with	This restriction prevents untagged frames and Customer Equipment (CE) that does not support tagged Ethernet	Wholesale Services

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		C-TAG VIDs that are not agreed upon as part of the Access VC service. It is the responsibility of the Access Seeker to ensure that the C-TAG is present on all ingress traffic at the UNI, and the C-TAG VID field is as per the agreed service configuration.	frames from connecting to the UNI, in contradiction to Section 7.1. Communications Alliance strongly supports the ability to have a UNI-D operate as an untagged service, and for classification methods to set the appropriate queue and priority as described in 8.1.1.3.1.	
26	Table 4	Traffic Class Performance – TBA	The Communications Alliance Guideline *QoS for IP networks* (G632) has defined industry agreed performance limits for Delay, Delay Variation and Loss Ratio, based on ITU-T Y.1541 standards.	Wholesale Services
26	Table 6 NFAS Class of Service Encoding and Table 7	TC_1 using CoS = 4	When Communications Alliance investigated Ethernet prioritisation in the 802.3p for G632, we found most equipment set p-bits for IP telephony packets to 5 or 6, with 5 being the preferred standard – refer to G632, Para 5.3.2, Table 2 and Notes. We suggest changing CoS=4 to CoS=5 for TC_1.	Wholesale Services
27	Table 7	Egress CoS decoding is indicated in Table 7	Does this indicate that a RSP-supplied frame with a particular CoS or DSCP value that does not correspond to one of these options on ingress to the NNI will have the value remapped on egress at the UNI? CA G632, Section 5.4 recommends that packets with unsupported markings received at a NNI may be dropped, or may be carried with marking preserved, and should not be remarked in transit.	Wholesale Services
30	8.1.1.2.1	Fixed – The Access Seeker specifies the desired Line Rate for	Even when the port speed is fixed, the port should still participate in auto-negotiation handshaking with the	Technical

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		the UNI-D. This is the default and recommended mode.	CE to ensure the CE port adjusts to match the fixed configuration of the NTU port.	
30	8.1.1.2.2	Note that once provisioned, Access VC capacity will not be automatically re-adjusted as a result of changing Line Rates as a result of Auto-Negotiation. Should a UNI-D undergo a decrease in Line Rate whilst active (i.e. an End-User swaps CPE, and the UNI-D auto-negotiates to a lower Line Rate than previous), the End-User may experience increased discard on any provisioned Access VCs.	Will the current Line Rate being used by the UNI-D be available for RSPs to query through the OSS/NMS?	Operational
35	8.1.2.1.2	The NFAS UNI-V supports IPv4-based SIP services in the first release. NBN Co intends to support IPv6-based SIP services in future.	Communications Alliance strongly encourages NBN Co to source NTUs that support IPv6-based SIP services from the beginning, to reduce the double-work that will be required by an RSP that is has already enabled IPv6.	Wholesale Services
36	8.1.2.2	Access Seekers will be responsible for creating and maintaining an XML based configuration file for each active UNI-V in use on the network. The UNI-V ATA will download its configuration file upon boot-up of the NTU.	Access Seekers will require a capability for triggering a reboot of the NTU on demand, or preferably a reload of the port without disturbing the operation of other ports, as many NTUs particularly outdoor installations may not be accessible for a manual interruption of power.	Operational
53	9.3.1.2	Service Qualification	To support transfer, RSPs will need to perform a SQ that	Operational

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			includes identifying an existing Service ID (the service to be taken over, with another RSP) to enable the NBN Co systems to calculate availability of UNI and AVC bandwidth as if the indicated service did not exist (otherwise the existing service will be double-counted against bandwidth and free ports)	

4   COMMENTS ON THE PRODUCT OVERVIEW – WIRELESS ACCESS SERVICES

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6	1.1.5 Service Migration	NWAS services and support systems are designed to enable a predictable service migration process from existing copper-based or other access-based services.	It is vital that the NBN operational processes and systems have the appropriate range of 'hooks' and signals to enable migration and churn activities that will not be visible to the NBN network to be synchronised by RSPs with the activities that NBN Co will be enabling – for example, number portability processes	Operational
12	3.1	AVC speeds at launch are speeds of 12 Mbps downstream and 4 Mbps upstream.	The '4 Mbps upstream' should be changed to something like '1, 2 or 4 Mbps upstream' or 'up to 4 Mbps upstream'.	Wholesale Services
12	3.1	4 x Ethernet ports at User Network Interface (UNI) Access speeds of 12 Mbps downstream (PIR) and 1, 2 or 4 Mbps upstream	Please clarify whether the 12 Mbps downstream and 1/2/4 Mbps upstream is per UNI-D, or is this the maximum in aggregate summed across all active services.	Wholesale Services
17	Table 4.5	1Gbps 1000BaseLX- 10Km range 1Gbps 1000BaseZX-40Km range	Technically, 1000Base-LX has a minimum 2m to 5km range[1] and 1000Base-LX10 has a minimum 10km range[2]. Suggest either: (a) for the range for 1000Base-LX replace "10km" with "5km"; or (b) replace "1000BaseLX" with "1000BASE-LX10" if the range remains at 10km.	Technical

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			1. IEEE 802.3-2008 Section 3 Table 38–6. 2. IEEE 802.3-2008 Section 5 Table 59-1. Communications Alliance understands that 1000BASE-ZX is a proprietary standard in popular use.	

5   COMMENTS ON THE PRODUCT OVERVIEW – SATELLITE SERVICES

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18	3.2 Ethernet Bitstream Service Features for Business	AVC Encryption	Para 3.10 indicates encryption will be a standard feature for all AVCs while the pricing matrix suggest AVC encryption will be an added cost item. This should be clarified. While encryption of Internet services by a network provider is often thought to be optional (as the end-user equipment often instigates end-to-end encryption when necessary), in a satellite multiple-listener model other forms of services may need to be encrypted by default.	Wholesale Services
			Telephony services – even residential telephone services – may need to be encrypted over satellite access to avoid trivially easy eavesdropping and provide a level of security for the conversation that is no less than is provided by fixed-wire PSTN services.	
14	3.3 VLAN Tags	A high level of security is achieved by including the NTU as part of the service – it will not be possible for customers to connect directly to the satellite in the End-user's premises.	Malicious and non-technical users alike may deliberately or inadvertently disconnect the supplied NTU from the cable to the external radio equipment and connect a different NTU to the cable. It is foreseeable that sophisticated, malicious or criminal elements may obtain identical satellite NTUs from other sources – or steal them from other premises - and connect compromised NTUs that are under the user's control to the radio cable from the outdoor unit.	Technical
			Communications Alliance recommends NBN Co formulate a plan to protect the integrity of the network and RSP services against a physically compromised	

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			rogue NTU. This security plan may consultation and a joint design between NBN Co and RSPs.	
23	3.9 PEP – Protocol Enhancing Proxies		PEP Features modify the standard behaviour of Internet protocols, and while they may provide performance improvements under most situations, they may also cause protocol errors. Access Seekers will require the capability to dynamically turn the various accelerators off and on on-demand, to facilitate trouble-shooting of application protocol errors or performance problems and to assure correct behaviour if Internet protocols behave in unexpected ways.	Technical
28	Table 4.4 – AVC CIR Options	Voice Access dimensioned to the UNI-V only	Previous material in section 2.1.1 indicates the NSAS provides only a UNI-D interface, and no UNI-V interface is likely to be offered. The overview does not include any mention of a UNI-V in a similar form to that described in the Fibre product description. Please clarify if the NSAS NTU will include an analog PSTN UNI-V port.	Wholesale Services