



**INFO-COMMUNICATIONS DEVELOPMENT AUTHORITY
OF SINGAPORE**

**SUMMARY OF RESPONSES OF REQUEST-FOR-
CONCEPT FOR NEXT GENERATION NATIONAL
BROADBAND NETWORK -**

15 AUGUST 2006

SUMMARY OF RESPONSES OF REQUEST-FOR-CONCEPT FOR NEXT GENERATION NATIONAL BROADBAND NETWORK

OVERVIEW OF NEXT GENERATION NATIONAL BROADBAND NETWORK (NEXT GEN NBN)

- 1.1 The Next Gen NBN is the wired component of Singapore's new digital super-highway for super-connectivity – the Next Generation National Infocomm Infrastructure (Next Gen NII).
- 1.2 The strategic outcome of the Next Gen NBN is to provide at a lowest overall cost, a strategic enabler to exploit new economic opportunities through a faster and much higher household and business broadband take-up; leading to greater productivity gains and new possibilities for working, living and learning.
- 1.3 The Next Gen NBN was first announced by Prime Minister Lee Hsien Loong in the Budget Speech 2006, and details of the project shared by Minister of Information, Communication and the Arts, Dr Lee Boon Yang in March 2006 during the Committee of Supply Debate.

REQUEST-FOR-CONCEPT FOR NEXT GEN NBN

- 1.4 In line with the approach of a public-private partnership, the Infocomm Development Authority (IDA) of Singapore launched a Request-for-Concept (RFC) for Next Gen NBN on 23 March 2006 to assess market interest in the project and to obtain industry inputs on key project parameters.
- 1.5 The RFC closed on 15 June 2006, 5 p.m. with a total of 33 submissions from both local and international telecommunication operators, hardware and software providers; and system integrators among others. See [Annex 1](#) for the list RFC respondents.

SUMMARY OF RFC RESPONSES

- 1.6 IDA respects that the RFC responses might contain commercially sensitive information that was shared in confidence with IDA. As

such, only a summary of RFC responses to the key project parameters is listed in Table 1 below.

Table 1 – Summary of RFC Responses

S/N	Project Parameter	Summary of Responses
1.	<p>Choice of Technology The most appropriate choice of technology which could provide ultra-high speed symmetric broadband access of 1Gbps and above and future proofing the network to serve the strategic objectives of the Next Gen NBN (hereinafter referred to as “the Network”).</p>	<p>All 33 RFC responses proposed Fibre Optics (“Fibre”) as the most appropriate physical transport medium to meet the strategic objectives and future-proof the Network.</p> <p>The RFC responses proposed various Fibre-based solutions, comprising Passive Optical Networks (PON), Metro Ethernet and Hybrid Fibre-Coaxial.</p>
2.	<p>Government Support The need for Government’s support in the project.</p>	<p>All 33 RFC responses indicated that Government’s support was critical to the success of the project.</p>
3.	<p>Network Coverage & Timeline The proposed market coverage target of 95% of all physical addresses in Singapore by 2012.</p>	<p>32 out of the 33 RFC responses supported the proposed market coverage of 95% of all physical addresses in Singapore by the Network.</p> <p>All RFC responses who supported the 95% nation-wide coverage considered the 2012 target for completion as realistic.</p>
4.	<p>Network Rollout The cost effectiveness of a soft rollout (with no requirements of physical connectivity in the first instance, but with connection upon request within a fixed period) and the possible deployment strategies to meet</p>	<p>30 out of the 33 RFC responses did not support a soft rollout of the Network. Most respondents held that a nation-wide, prioritised rollout was preferable to a soft-rollout in order to benefit from economies of scale.</p>

S/N	Project Parameter	Summary of Responses
	<p>the strategic objectives of the Network at the lowest cost and minimal disruptions to homes and offices.</p>	<p>Several installation techniques, such as micro-trenching, surface ducting and air-blown fibre installation were proposed to minimise project cost.</p> <p>In additional, various home networking solutions such as wireless connections and power line communications were proposed to minimise disruptions to homes and offices.</p>
5.	<p>Open Access The Network to be an open platform which supports multiple service providers in delivering multiple services to homes and offices.</p>	<p>All 33 responses agreed with the principle of open access, allowing multiple service providers to leverage on the Network to deliver multiple services to customers.</p>
6.	<p>Ownership & Operation Model The proposed structural separation of the Operating Company (OpCo)¹ and the retail service providers (RSPs) to ensure that all RSPs would be treated on an equitable basis in terms of pricing and contractual arrangements for equivalent services and volumes.</p>	<p>5 out of 33 RFC responses did not support the proposed structural separation of the OpCo and RSP operations.</p>
8.	<p>Wholesale & Retail Services The possible wholesale and retail services that could be delivered over the Network which would achieve the Network's objectives of high take-up.</p>	<p>All 33 RFC responses agreed that the bandwidth connectivity demand by residential and business customers would increase significantly over the next few years.</p> <p>Proposed wholesale services</p>

¹ The OpCo will be responsible for running the Network, providing bandwidth connectivity on a wholesale basis to RSPs who would compete with each other providing services to end-users.

S/N	Project Parameter	Summary of Responses
		<p>ranged from pure connection service to a variety of service-aggregation models.</p> <p>Proposed retail services that could be delivered over the Network include immersive applications for education and healthcare, grid-computing, interactive digital entertainment, intelligent remote security & surveillance systems and real-time cross-country research and development collaboration.</p>

NEXT STEPS

- 1.7 IDA thanks all respondents to the Next Gen NBN RFC for their inputs. IDA will be drafting detailed specifications for the Request-for-Proposal (RFP), slated to be released at the end of 2006.

MEDIA QUERIES

- 1.8 Please direct all media queries to the following contact:

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Annex 1

List of Respondents to IDA's RFC on Singapore's Next Gen NBN

As of the RFC closing deadline of 15 June 2006, 5:00pm, IDA had received a total of 33 submissions from both local and international Telecommunication operators, hardware and software providers among others. The 33 respondents are listed below.

S/N	Company
1.	3M Technologies (S) Pte Ltd
2.	ADC Telecommunications
3.	Alcatel Singapore Pte Ltd
4.	Axia Netmedia Corporation
5.	Caspian Networks, Inc
6.	Cisco Systems (USA) Pte Ltd
7.	Corning Cable Systems Pte Ltd
8.	Datacraft (Singapore) Pte Ltd
9.	Emtelle Asia Pacific (M) Sdn Bhd
10.	Exfo Asia Pacific Pte Ltd
11.	Huawei Technologies Co. Ltd, Singapore Representative Office
12.	Hutchison Global Communications Ltd
13.	LS Cable Limited, Singapore Branch Office
14.	Lucent Technologies Inc
15.	M1 Ltd and BlueTel Pte Ltd
16.	Motorola Inc
17.	NEC Solutions Asia Pacific Pte Ltd
18.	Nippon Telegraph and Telephone West Corporation
19.	Pacific Internet Corporation
20.	Reliance Communications
21.	Siemens Communications
22.	Singapore Computer Systems Ltd
23.	Singapore Telecommunications Ltd
24.	Skycom Satelite Systems Pte Ltd
25.	SMRT Engineering Pte Ltd
26.	StarHub Ltd
27.	ST Electronics (Info-Comm Systems) Pte Ltd
28.	STELOP Pte Ltd
29.	Taihan Electric Wire Co. Ltd
30.	T-Systems Singapore Pte Ltd
31.	UTStarcom Telecom Co. Ltd

S/N	Company
32.	Videsh Sanchar Nigam Ltd (VSNL)
33.	VPISystems Inc