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**Project NIMS - Industry Dialogue**  
**Comments on NIMS Connect Requirements**  
**ALCATEL-LUCENT**

6 January 2011



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## 1 Introduction

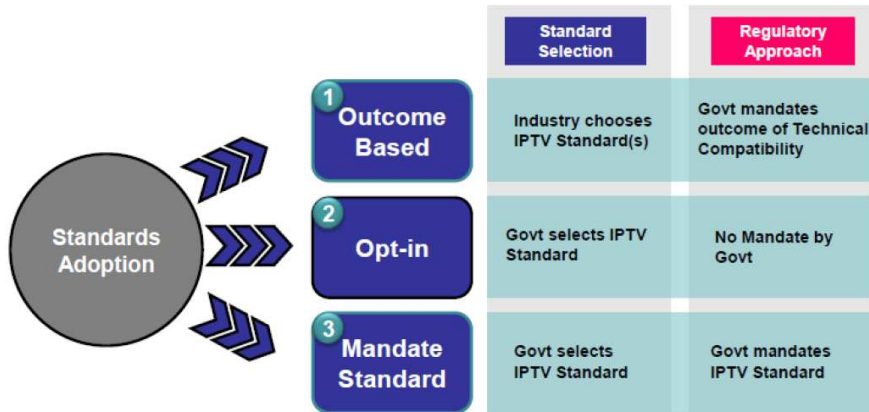
We would like to take the opportunity to thank IDA and MDA for inviting Alcatel-Lucent to participate in the ongoing industry dialog and discussions around Next Generation Interactive Services (NIMS).

This document is provided in the context of the Singapore IDA/MDA project NIMS (IDA 2010a and 2010b) made accessible by IDA/MDA at the following site:

<http://www.ida.gov.sg/Infrastructure/20090807131841.aspx>

In this paper, Alcatel-Lucent provides feedback to the topics raised by IDA/MDA in Project NIMS Industry Dialog on NIMS - Connect Requirement (or ID1C) and as a continuation of the ID1A and ID1B.

## 2 Comments to 4.2 Connection by RSPs to NIMS



### 2.1 Comments to 4.2.1

Alcatel-Lucent understands that IDA and MDA are considering to achieve mass adoption of NIMS CF STB by RSP by appointing the NIMSCo role to a company and by mandating “the outcome of the technical compatibility” whilst enhancing the value proposition to consumers.

*Extract from 3.2.1.*

*The key objective of the NIMSCo RFP is to select an operator to design, finance, build, and operate a platform for the delivery of interactive video-based services (“NIMS Platform”) over the Next Gen NBN, and provide services on a wholesale basis to RSPs upon non-discriminatory and non-exclusive terms.*

In other words, IDA and MDA are seeking comments on the best way to manage the technical compatibility in order to facilitate:

- Open Access (and underlying concepts of Equivalence of Inputs)
- Mass Adoption
- Consumer Value

Alcatel-Lucent would like to re-iterate the comments that in a market based economy, it would be hard to achieve mass adoption, a reasonable customer value and a viable open access model without enabling:

- A great flexibility for the NIMS Company to address the needs of its RSP customers
- Certainty and flexibility in terms of Regulatory Environment & Frameworks
- A great flexibility in terms of Service Offering
- A solid business case (preferably externally validated)
- Wireless and wireline delivery (at a large market)

In this context, and given the growing competitive fragmentation of the video platform market, Alcatel-Lucent would like to raise attention on the risks for NIMSCO to end-up in a cost plus model where either: the end customer is required to pay a premium for added operational costs; or for NIMSCO to end up with unattractive wholesale prices, poor take-up, and consequently, lead to a business failure.

Alcatel-Lucent would also like to highlight some of the fundamental principles behind concepts of “Separation v.s. Integration” which have been covered recently in academic telecommunication policy publications. Howell, Meade and O’Connor (2010) have summarized the cost of market transactions that pushes firms toward a model favoring a vertical integration organization model and analyzed lessons learned for other industrial sectors.

They advocate that if the following key costs are high:

- costs of frequent, repeated transactions.
- the restriction of contractual incompleteness.
- bounded rationality (contracting errors may be made because it is difficult to predict certain future states e.g. uncertain demand growth)
- costs of contractual hold-up (parties renegotiating or renegeing on commitments, and stranding long-term and/or relationship-specific investments of their counterparties).
- costs of market power imbalances between transacting parties (especially in the presence of asymmetric information).
- costs of regulation (such as compliance costs, costs of distorted investment incentives, regulatory hold-up risks, and possibly inefficient pricing).

Then, in such cases, firms will prefer internal organizations over buying and selling through the market and a structurally separated firm that transact frequently will also prefer to integrate.

Considering the amount of variables and moving parts in the project NIMS, Alcatel-Lucent’s recommendation would be to ensure that:

- (1) the regulatory framework is contractually finalized
- And that (2) the RSP demands and requirements are addressed and firmed up (demand driven approach)

before proceeding with a project, otherwise there is a real risk of embarking in a “virtual” (meaning with no or low demand) technical implementation tracks. And such a step by step approach would enable to mitigate business and implementation risks of a project that would certainly suffer from contractual incompleteness, problems of bounded reality and cost of uncertain regulation stated above.

## 2.2 Comments to 4.2.2

Alcatel-Lucent would like to comment that:

- The timeframes required to grow an IPTV platform are long. (for NIMSCO and a RSP)
- A timely critical mass is a must for a positive business case. (for NIMSCO and a RSP)
- Singapore’s current TV market is already saturated and therefore it is difficult to envision: a compelling event for the user to change its STB onto fiber without additional premium services or content; and a flexible model which would avoid to pass-on acquisition and services costs in the home at the right level without heavy sponsorship (since those in existing homes have been occurred already). At the very least, subscribers would demand to be able to plug and play their existing IP enabled STB services onto broadband ports (NBN).

To the comment regarding the need of intervention by the regulator, one should acknowledge that uncertainty in terms of regulatory environment for video over the NBN

does also contribute to a certain market barrier given the investment required for any TV business. In addition, an interventionist approach should also be weighted against its own drawbacks and the benefits of a greater liberalization.

### 3 Comments to 5.1 Outcome of Proposed Measure

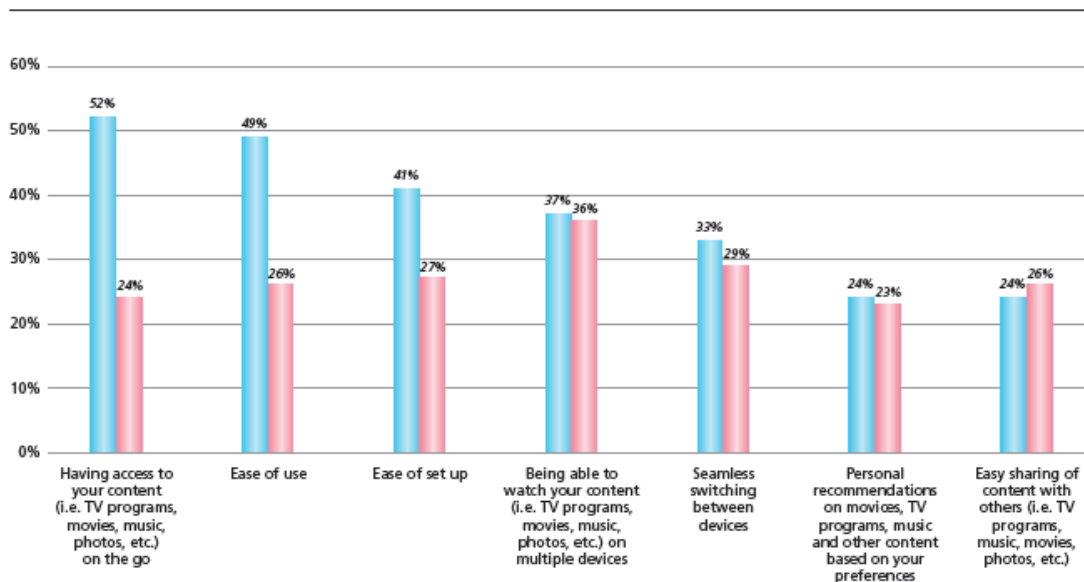
#### 3.1 Comments to 5.1.1

Alcatel-Lucent understands that revisions of policies are required in order to support new developments in terms of NIMS. However, given the widespread and growing usage of connected broadband devices from STB to media center, PC, consoles and even connected TVs, given the large consumption of overseas content services such as YouTube or Facebook, applications or other bundled devices; Alcatel-Lucent’s feedback remains that technologically oriented choices linked to policies in the given areas would constrain innovation and competition; therefore we would recommend to IDA and MDA to maintain their adherence to a technology neutral approach and advocate a greater liberalization, simplifications and certainty of the various policies surrounding commercial and social media.

#### 3.2 Comments to 5.1.2

Research shows that consumer demand could be summarized as access to my services and applications on any devices. Consumers demands for many and any devices including mobility. Alcatel-Lucent would like to understand if there has been local primary research done by IDA and MDA substantiating and quantifying the consumer’s perspectives surfaced on section 5.1.2 and 5.1.3 (and if possible to make it available).

Alcatel-Lucent’s own research has shown that today’s youth value Multi-Screen Video Services that provide easy access to their favorite multimedia content at home or on the go.



Top Reasons to purchase Multi-Screen Services (Alcatel-Lucent 2010)

For more detailed information on this study and how Alcatel-Lucent is working with service providers and stakeholders globally to better understand consumer needs, please visit [www.alcatel-lucent.com/map](http://www.alcatel-lucent.com/map).

### 3.3 Comments to 5.1.3

Alcatel-Lucent's understanding of consumer needs is that they would like to receive any contents or services on any devices, with the ability to seamlessly shift access and consumption between their favorite devices and that they would need to include their personal choices in terms of favorite CE brand, services preference, time and type of consumptions, payment, quality, VAS, customer service, etc...

In Alcatel-Lucent's view, research has shown that the expectation, demand and willingness to pay is not for a "single box" but for the convenience of accessing one's favorite content on any preferred devices or services.

It is Alcatel-Lucent's understanding that IDA and MDA had indicated that the purpose or outcome of NIMS was not "a single box" however all three sections of the desired policy outcome seem to indicate otherwise. It has also been Alcatel-Lucent's understanding that the intention behind Singapore's NGNBN has been to stimulate as many services as possible on the very many broadband access ports option available to Singapore's homes, therefore, Alcatel-Lucent feedback would be mainly to enable a great diversity of devices and technologies to compete freely for a broadband connection to the TV sets or other screens emerging in the homes, such as tablets and other digital media consumption terminals.

## 4 Comments to 6.1 NIMS and RSP Obligations

This section (NIMS and RSP Obligation to Achieve the Policy Outcome) is elaborated in the context of the desired policy outcome & measures elaborated by IDA / MDA in section 5.

### 4.1 Comments to 6.1

*Wrt to 5.1.1 - would a recommendation on technical standards for NIMS facilitate the outcome for the end-users to be able to receive the widest possible spectrum of content and services.*

Alcatel-Lucent would propose that the approach to NIMS should be technology neutral and that regulatory aspects should be de-coupled from technology choices because discussions, selection and evolution processes of those technical choices and priorities would slow down the local market because of the time it takes to complete comprehensive consultations or to reach agreement between mostly competing market players. Alternatively, there is always the option to adopt obvious lower layer technological recommendation such as Ethernet or IP with popular and very high level (applicative domains) standards such as HTTP and XML.

*Wrt to 5.1.2 - would a recommendation on technical standards for NIMS facilitate a wide number of RSP to offer their services over NIMS.*

A “wide adoption” at RSP scale needs to be defined. NIMSco would need to be flexible towards its RSPs (its only customers), and it would be difficult to envision a one-size-fits-all solution or for NIMSco to cover all technologies under the sky profitability. In a wholesale model however, for NIMS business model to work, it would need to find economies of scale across several RSPs in order to be relevant for its customers. Therefore, it would be advisable to ensure that anchor tenants requirements are taken into account before venturing into the technical solution domains. It is also a natural requirement from businesses to require clarity in their regulatory frameworks before companies can do their business case and could decide on their commitments toward NIMS. Alcatel-Lucent’s feedback would be for IDA and MDA to adopt a technology neutral approach, provide certainty to the market on the regulatory frameworks while encouraging as many technological innovations as possible on the NGNBN.

*Wrt to 5.1.3 - Would a recommendation on technical standards facilitate consumptions from users on multiple RSP on a common device?*

The main concern behind “a technical standard recommendations” at any specified point in time is how this “recommendation” can enable or tie down an overall ecosystem. Can a standard recommendation guarantee that it can live up to the expectations in the long run and with means for evolutions that can compete, adapt and keep up with an open platform such as the Internet?

The NIMS Technical Standards in the way Alcatel-Lucent understands the current usage of the terms by IDA and MDA seems more into the End to End Closed Model IPTV area for NIMS as “a reference solution standard or an internal architecture recipe”, in that context or with that definition; such so-called “standards” have been suffering from very poor market receptions and are either not proven, not complete or hardly forward looking (unlike for example 3GPP in the mobile arena which enjoys a wide industry support).

Alcatel-Lucent’s feedback is that for NIMS to be relevant as a next generation platform, it does not need to choose an “internal Standards Recommendation” but it needs an exposure layer of (external) IT friendly APIs (e.g. REST) in open, documented and consumable formats. Such an approach would stimulate inter-RSP platform connectivity and

competition and would enable innovation and creativity to take place, leveraging a global developer community potential and therefore help to provide consumers with more value by drawing on synergies between different specialized platform, services or applications.

## 4.2 Comments to 6.1.2

There is not much detail provided in the consultation on the thinking or reasons behind such a need or much detail on applicable areas.

Alcatel-Lucent would comment there would be a need to consider that such a measure:

- Does not seem non-discriminatory, as it would seem penalize Nationwide RSPs
- Could mean that bundled discounts could not apply to CF-STB services?
- Could render the NIMS “market” over regulated and not attractive?
- Could discourage a high number of nationwide RSPs?
- Would mean more regulation rounds on which service are or are not mandated?
- Make it difficult to differentiate or introduce exclusive or differentiating services?
- Penalize NIMS CF-STB over OTT video delivery?
- Would not necessarily be in control of the RSP if the RSP does not own the content, service or application?
- Could mean more administrative cost for RSPs to operate over NIMS CF-STB ?
- Could render pricing of new content or services over NIMS very inflexible?
- Would mean a high cost and price for NIMS mandated CF-services?

(Please ref. also to the comments provided to 4.2.1)

## 5 Comments to 7.1 Implementation Considerations

### 5.1 Comments to 7.1.1

Due to the broad usage of the term “NIMS CF-STB” and the scope envisioned which includes future and current type of definitions or usage, Alcatel-Lucent would feedback that given the information provided it would not be realistic to attempt to provide a “*technical recommendation for compliance*” because it would certainly be prescriptive and in this case would not be able keep up with a more open market pace. In addition, NIMS would need to flexibility to choose its own technology in order to cope with the demand. Alcatel-Lucent’s feedback to IDA/MDA is to take a technology neutral approach and ensure that actual RSP demand estimations and requirements are taken into consideration since an assumption under a wholesale model is that as a business it would need to be fully funded by its customers buying in bulk.

In reading carefully the “*scope envisioned*” (incl. 7.2.1) for the implementation of measure that would require Nationwide RSPs to provide their services onto the NIMS CF STB in non-discriminatory manner, it seems that there is a point of view suggested that NIMS needs to be regimented by specific technical standard, not only for compliance, but also for Nationwide RSP (definition?) obligation to deliver all their services onto a NIMS CF-STB.

Given the broad language usage and perhaps lack of detailed definitions or targeted questions, the impression given is that the approach suggested would seem to increase the cost of regulation for IPTV RSPs and actually de-incentivize RSPs to enter the Singapore market and compete onto the NBN market because of heavy regulatory mandate and involvement onto the Next Generation TV area. It is also not clear how RSPs would be allowed to differentiate, either from content or a technological feature or device perspectives; therefore, the perception of the NIMS outcome might seem to lean towards a monopolistic governance model.

### 5.2 Comments to 7.1.2

Please note that from the point of view of consumers at home, they would have a basic expectation to be able to use their existing TV and IP enabled video delivery device by simply plugging them onto an NBN RSP service port provided by their chosen service providers.

### 5.3 Comments to 7.2.1 and 7.2.2

This statement implies a prolonged period of uncertainty regarding the upcoming regulatory frameworks which would need to be factored into the business plan of NIMS, its RSP candidates and other TV retailers. It would be advisable to be more specific on this point and avoid a regime that rules under exceptions.

### 5.4 Comments to 7.2.3

This statement has some more implications. NIMS would need to adopt some backward compatibility approach. However, upgrade cost would need to be allocated somewhere and it is also not a given (taking from ref. the PC market) that the hardware would be able to support software features that will need to be enabled in the future. There is a trade-off low cost v.s. future proof which needs to be considered by the RSPs (NIMSCO’s customers).

## 5.5 Comments to 7.3.1

The technical solution will need to support and take inputs from

1. Regulatory requirement (as part of the business environment)
2. RSP requirements (requirement to the wholesaler and business case)
3. Consumer requirements and demands (requirement to the RSP)
4. Market and technology trends (industrial considerations)

Technology alone can perform wonders; however, there would be a need to provide some certainty in terms of the (1) business frameworks and (2) initial RSP requirements and (3) demand commitments. In order for RSP businesses to firm up the business cases, they also need to understand with a best of certainty the evolution of the regulatory environment especially for multi-year business plans.

Alcatel-Lucent would also comment that once point 1 and 2 are provided in a mature stage those inputs would then need to feed in a solution design and project plan phases. (Please ref. again to the comments provided to 4.2.1 & re-iteration of comments to 5.1.2)

## 5.6 Comments to 7.3.2

If the NIMS provider is the wholesaler and the RSPs are the customers, does this paragraph implies that the wholesaler would impose requirements on its customer? In this case, those requirements will need to make sense for the RSP's business plans, product definitions and markets. How would such a proposition compete or compare against an internet based delivery model or a vertically integrated one?

What are the so called "key-areas"? Typically head-ends are constructed for specific encoding schemes and requirements. The RSP who would want to provide contents or services could either purchase a solution in a managed service model by trusting the NIMS company to provide the particular channel or require connectivity to source feed depending on the content provider, in addition it would need to make sense economically for the RSP. Technical requirement of NIMS needs to be RSP and demand driven. (Please ref. again to the comments provided to 4.2.1)

## 5.7 Comments to 7.3.3

RSPs and NIMS need to be able to choose their own individual technologies and standards in order to support their given market segments. Alcatel-Lucent's recommendation is to adopt a technology neutral approach towards NIMS and to promote inter-platform open communication and access via RSP back-end API layers. (Please ref. again to the comments provided to 4.2.1)

## 5.8 Comments to 7.4.1

The CF-STB requirement of a given RSP might have little commonality with other RSP's CF-STB requirements beside the basic video consumption and a few common channels. If a customer adopts a basic service approach, moving forward, would he be able to benefit from differentiated services easily? Would a horizontal approach provide the same incentive for RSP to subsidize the video delivery STB or connectivity or would it be charged back to the end-consumer?

(Please ref. again to the comments provided to 4.2.1)

## 5.9 Comments to 7.4.2

Depending on the scale, diversity of the demand and speed of the uptake, it is also very likely that the additional operational transaction costs for the NIMS and NBN wholesalers might exceed the scale effect. It is also not clear that once the required scale is reached, would the deployed STB still be relevant for new entrants? For this reason, Alcatel-Lucent recommends to optimize the approach as discussed in 4.2.1.

## 5.10 Comments to 7.5.1

This requires NIMS to provide the flexibility for the RSPs to own their own STB and associated back-ends. For this reason, in addition for NIMS to be neutral, it needs to be technology neutral (in effect multi-standard interoperable). If NIMS is to be involved with other operator managed STB, there also needs to be a simple way for both the RSP and NIMS to exchange information without compromising security. There would need to be a sort of exposure layer where NIMS publishes its API for the RSP operators to consume. However such an operating model would also need to make sense economically (making sense for both NIMS and the RSPs).

## 5.11 Comments to 7.6.1

Please note that at the very least current TV customers would require to be able to re-use (plug and play) their current IP enabled STB over the NBN fiber environment.

The IDA and MDA statements in this paragraph would also require more clarity. Alcatel-Lucent would recommend providing more certainty and more simplicity on the regulatory front. Alcatel-Lucent would advocate a step by step approach as discussed in 4.2.1 and 7.3.1.

## REFERENCES

- Alcatel-Lucent (2010). Multi-Screen Video Hooks Young Subscribers, Available at [http://www2.alcatel-lucent.com/youthlab/files/MSV\\_YL\\_EN\\_ExecutiveSummary.pdf](http://www2.alcatel-lucent.com/youthlab/files/MSV_YL_EN_ExecutiveSummary.pdf)
- IDA/MDA (2010a). Project NIMS Industry Dialogue Phase 2 Briefing 1. Singapore, IDA/MDA.
- IDA/MDA (2010b). NIMS IDP2: Industry Dialogue on Adoption of NIMS Standards. IDA/MDA. Singapore, IDA/MDA.
- IDA/MDA (2010c). Project NIMS Industry Dialog on NIMS connect requirement. IDA/MDA
- Howell, B., Meade, R., & O'Connor, S. (2010). Structural separation versus vertical integration: Lessons for telecommunications from electricity reforms. [doi: DOI: 10.1016/j.telpol.2010.05.003]. *Telecommunications Policy*, 34(7), 392-403.

## CONTACTS

Philippe GERARD ( [philippe.gerard@alcatel-lucent.com](mailto:philippe.gerard@alcatel-lucent.com) )  
Sian Teck KHO ( [sian\\_teck.kho@alcatel-lucent.com](mailto:sian_teck.kho@alcatel-lucent.com) )

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