



Project NIMS Common Featured Set-Top Box Functional Requirements

Draft Version 0.2
22 March 2010



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DISCLAIMER

The Common Featured Set-Top Box (“CF STB”) Functional Requirements Document (“Document”) is furnished for the purpose of assisting prospective participants in making the decision whether or not to take part in the CF STB functional requirements development process and does not purport to be all-inclusive or to contain all the information that the prospective participants may require. All prospective participants should make their own independent decisions on the CF STB functional requirements development process and of the relevance and adequacy of the information contained in this Document and they should make such other investigations or clarifications as they deem necessary to determine whether or not to take part in the CF STB functional requirements development process.

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PART A – OVERVIEW & ADMINISTRATIVE INSTRUCTIONS

1 INTRODUCTION

- 1.1 The Infocomm Development Authority of Singapore (“IDA”) is a statutory board established pursuant to the Info-communications Development Authority of Singapore Act (Chapter 137A). The Media Development Authority of Singapore (“MDA”) is a statutory board established pursuant to the Media Development Authority of Singapore Act (Chapter 172).
- 1.2 On 18 December 2009, IDA and MDA released the draft Functional Requirements for Common-Featured Set-Top Boxes as part of Project NIMS (hereafter referred to as “Draft Version 0.1”). The NIMS Panel¹, which is co-chaired by IDA and MDA, and comprising key industry players, would use the final functional requirements document as a basis for recommending a set of standards for IPTV deployments in Singapore. A detailed set of technical specifications for NIMS common featured STB would be subsequently developed based on the set of IPTV standards selected.
- 1.3 Interested companies and/or entities were invited by IDA and MDA to provide inputs on the Draft Version 0.1 document. The intent of the industry consult was to ensure a robust and pragmatic set of requirements for the NIMS common featured STB to be established. Till date, IDA and MDA have received inputs from 37 companies and entities. The list of 37 companies and entities can be found in **ACKNOWLEDGEMENT** of this document.
- 1.4 As part of the industry engagement process, IDA and MDA organized a Forum on IPTV Standards (I), which was held on 8 – 10 February 2010, which was attended by players from across the IPTV value-chain, including standards bodies, content protection solution providers, equipment manufacturers, operators and regional Telecommunications and Broadcasting regulators.
- 1.5 IDA and MDA have incorporated key comments received from the 37 companies and entities and inputs arising from the presentations and discussions at the Forum (I). These changes are reflected in the Draft Functional Requirements for NIMS Common Featured Set-Top Boxes (CF STB) document which is released on 22 March 2010 (hereafter referred to as “Draft Version 0.2”). IDA and MDA would like to express their appreciation to the 37 companies and entities for their inputs, and to the presenters, panellists and participants of Forum (I) for their comments.
- 1.6 With the release Draft Version 0.2, IDA and MDA and would like to invite the industry to provide further inputs, if any, to this revised document. Following which, IDA and MDA target to finalize the functional requirements for the purpose of standards recommendation by the NIMS Panel.
- 1.7 Specifically, the Draft Version 0.2 document seeks to:
 - 1.7.1 Invite interested companies and/or entities to provide further inputs, if any, to the revised Draft Version 0.2;

¹ More details on the NIMS Panel can be found at URL: <http://www.ida.gov.sg/Infrastructure/20090807131841.aspx>

- 1.7.2 Advise interested industry companies and/or entities on the process to provide inputs to Draft Version 0.2; and
- 1.7.3 Outline the upcoming key activities and timeline.

2 STRUCTURE

1.1 This document has been structured as follows:

1.1.1 PART A – Overview & Administrative Instructions: Part A outlines the administrative instructions for companies and/or entities that wish to provide inputs to Draft Version 0.2 Document.

2.1.1 PART B – Revised Draft Functional Requirements for CF STB: Part B details the revised draft functional requirements for CF STB, the proposed operational scenarios and implementation considerations.

PART A – OVERVIEW & ADMINISTRATIVE INSTRUCTIONS	PART B – REVISED FUNCTIONAL REQUIREMENT FOR NIMS COMMON FEATURED SET-TOP BOX	ANNEXES A AND B
INTRODUCTION	INTRODUCTION	ANNEX A.1 – COVER LETTER
STRUCTURE	DESIGN PRINCIPLE	ANNEX A.2 – PARTICIPANT’S CONTACT INFORMATION
ACCESS TO DOCUMENT	MULTI-OPERATOR SUPPORT	ANNEX A.3 – ROLES AND RESPONSIBILITIES OF PARTICIPANTS
APPROACH TO DEVELOPMENT OF TECHNICAL SPECIFICATIONS	VIDEO CONSUMPTION CAPABILITIES	ANNEX A.4 - DETAILS OF PARTICIPATING TEAM (OPTIONAL)
ADMINISTRATIVE INSTRUCTIONS FOR INPUTS TO DRAFT VERSION 0.2	MIDDLEWARE	ANNEX A.5 - ADDITIONAL INFORMATION BY THE PARTICIPANT (OPTIONAL)
OVERALL TIMELINE AND MILESTONES	METADATA	ANNEX B.1 – OPTIONAL FEATURES
OTHER ADMINISTRATIVE INSTRUCTIONS	SECURITY AND AUTHENTICATION	ANNEX B.2 – OPERATOR-SPECIFIC FEATURES
	NETWORK	
	PHYSICAL ATTRIBUTES	
	REMOTE MANAGEMENT	
	STB PROVISIONING & CUSTOMER SUPPORT MODELS	
	CF STB IN ACTION	
	CONCLUSION	

Table 1: Structure and Content of Document

3 ACCESS TO DOCUMENT

3.1 PART A – Overview and Administrative Instructions

3.1.1 Part A would be **available to the industry and public** via IDA's and MDA's websites from 22 March 2010.

3.2 PART B – Revised Functional Requirements for NIMS CF STB

3.2.1 Part B would not be publicly available to the industry and public.

3.2.2 For the 37 companies and entities that had provided inputs to Draft Version 0.1, Part A and B of Draft Version 0.2 would be sent to them through their respective account managers.

3.2.3 For companies and/or entities that did not provide inputs to the earlier Draft Version 0.1 and are interested to provide inputs to Draft Version 0.2 would be required to submit their requests to IDA and MDA. Requests can be sent to the email – "broadband@ida.gov.sg", with the subject header – "**Request for PROJECT NIMS COMMON FEATURED SET-TOP BOX FUNCTIONAL REQUIREMENTS (DRAFT VERSION 0.2)**".

(a) For companies and/or entities that had not participated in the NIMS Industry Dialogue Phase 1, they are also requested to furnish a completed copy of **Annex A.1** to **Annex A.5**.

(b) For companies and/or entities that had participated in the NIMS Industry Dialogue Phase 1, they are only required to provide an updated copy of the relevant **Annex A.1** to **Annex A.5** if there were changes since the earlier submission.

3.2.4 As the intent of Part B of the Draft Version 0.2 is to seek comments from relevant companies and/or entities on the proposed functional requirements for CF STB, IDA and MDA reserve the right to reject requests by companies, entities and/or individuals that are assessed to be not relevant for this purpose.

4 APPROACH TO DEVELOPMENT OF TECHNICAL SPECIFICATIONS

4.1 Overview of Approach

4.1.1 The overall approach to establish technical specifications for the CF STB, as described in Part A, Section 5, 6 and 7 of the Draft Version 0.1 document remains largely unchanged. The key updates to the overall approach are highlighted below.

4.1.2 Stage 1 – Draft functional requirements for industry comments

- (a) IDA and MDA have incorporated key inputs into the revised draft functional requirements for the CF STB, which is described in Part B of the Draft Version 0.2. Refer to Part A, Section 3 for the administrative instructions on how to obtain a copy of Part B of this document.
- (b) IDA and MDA would like to invite interested companies and/or entities, including IPTV operators, content providers, standards bodies, industry forums, equipment manufacturers and solutions providers to provide further comments, if any to this Draft Version 0.2 by **5 April 2010**. Following which, IDA and MDA aim to finalise a version of the draft functional requirements to guide the NIMS Panel in recommending a set of IPTV standards for CF STB.

4.1.3 Stage 2 – Establishment of reference guidelines by NIMS Panel

- (a) Formation of NIMS Panel
 - (i) As outlined in the earlier Draft Version 0.1 document, IDA and MDA would establish a NIMS Panel to recommend a set of standards that best met the functional requirements². The recommended set of standards would form the basis of the technical specifications of the CF STB.
- (b) Forum on IPTV Standards (II)
 - (i) To facilitate the understanding of the NIMS Panel, IDA and MDA had organised the Forum on IPTV Standards (I) from 8 to 10 February 2010, where invited IPTV standards bodies, industry forum and players shared with the local and regional industry players an overview of their standards work and roadmap.

² More details on the NIMS Panel can be found at URL: <http://www.ida.gov.sg/Infrastructure/20090807131841.aspx>

- (ii) The Forum on IPTV Standards (I) was well received by industry players, as well as regional Telecommunications and Broadcasting regulators. As a follow-up, IDA and MDA are organizing the Forum on IPTV Standards (II) from 6 to 7 April 2010 to facilitate the IPTV standards bodies and industry forums to provide a more in-depth sharing of key components of their standardisation efforts. As part of the Forum (II), IDA and MDA will also invite key players in the IPTV ecosystem, such as chip makers, in sharing their capabilities in enabling next generation IPTV services. **Companies and/or entities that are interested to attend Forum (II) can register via broadband@ida.gov.sg.**

4.1.4 Stage 3 - Development of technical specifications by industry standards working group

- (a) There are no further updates to the Stage 3 activities that were described in Draft Version 0.1.

5 ADMINISTRATIVE INSTRUCTIONS FOR INPUTS TO DRAFT VERSION 0.2

5.1 Target Audience

5.1.1 IDA and MDA would like to invite interested companies and/or entities, including IPTV operators, standards bodies, industry forums, equipment manufacturers and solutions providers to provide comments to this Draft Version 0.2 document by **5 April 2010**.

5.1.2 For the 37 companies and entities that had provided inputs to the earlier Draft Version 0.1, this revised Draft Version 0.2 document would be sent to them through their respective Project NIMS account managers.

5.1.3 For interested companies and/or entities that did not provide inputs to the earlier Draft Version 0.1 and are interested to provide inputs to Draft Version 0.2, please refer to Part A, Section 3 of this document on instructions on how to obtain a copy of Part B of this document.

5.2 Format of Submission

5.2.1 Respondents shall submit one (1) set of their response, including the list of applicable Schedules, in softcopy in a compact disc (CD). The softcopy submission shall be provided in both Microsoft Office and PDF format.

5.2.2 The main response, excluding schedules and annexes (if any), shall not exceed 100 pages. While there is no prescribed format requirements for the main response, for ease of reference, participants should identify the specific provisions of the functional specifications document (by paragraph/section number, where provided) to which comments are being made.

5.2.3 Respondents can also provide additional reference materials, for example white papers, analyst reports or technical papers to substantiate their comments. There is no size or format restriction for annexes and attachments.

5.3 List of Applicable Schedules

5.3.1 Please refer to Part A, Section 3 for the list of applicable schedules to be submitted.

5.4 Responses shall be submitted to the following address in securely enclosed envelopes:

Submission of Responses to Project NIMS – Functional Requirements Document

Ms Veronica Tan

Senior Manager (Next Generation Services Provisioning)

Infocomm Development Authority of Singapore

8 Temasek Boulevard
#14-00 Suntec Tower Three
Singapore 038988

5.5 Clarifications about Submission of Comments on Draft Functional Requirements

5.5.1 Respondents can direct clarifications or queries to broadband@ida.gov.sg by **31 March 2010**. To facilitate a prompt response by IDA and MDA, applicants are requested to send their clarification emails with the subject header – “Clarifications on PROJECT NIMS COMMON FEATURED SET-TOP BOX FUNCTIONAL REQUIREMENT (DRAFT VERSION 0.2)”.

5.6 Closing Date and Time

5.6.1 Responses shall be received at the given address no later than **12 Noon (Singapore time) on 5 April 2010 (Thursday)**. IDA and MDA reserve the right to reject late submissions.

5.7 Post Submission Activities

5.7.1 Upon receipt of the submission of comments to the Draft Version 0.2 document, IDA and MDA may invite participants to present their response or seek clarifications to the participants’ submission.

5.7.2 IDA and MDA may also engage respondents in focus group discussions on specific topics of interest. IDA and MDA reserve the right to selective participants for one-to-one sessions.

5.7.3 More details on the post-submission activities will be provided to respondents at a later date.

5.8 Addendum to Draft Functional Requirements

5.8.1 IDA and MDA will inform participants who have submitted responses should there be any change or amendment of information to the Draft Version 0.2 document after the closing date. IDA and MDA also reserve the right to publish the amendments through the issuance of Addenda to the PROJECT NIMS COMMON FEATURED SET-TOP BOX FUNCTIONAL REQUIREMENT on IDA and MDA websites.

5.8.2 The URL for IDA and MDA websites are:

(a) IDA: <http://www.ida.gov.sg/Infrastructure/20090807131841.aspx>

(b) MDA:
<http://www.mda.gov.sg/Reports/ConsultationReports/Pages/NIMSIndustryDialogue.aspx>

6 OVERALL TIMELINE AND MILESTONES

6.1 The broad indicative timeline for upcoming key activities in the CF STB process is shown in Table 2 below. IDA and MDA would provide companies and/or entities that provide inputs to the Draft Version 0.2 document with a more detailed schedule on activities related to them. The timeline described below could be subject to further changes.

Milestones	Date
Issue Draft Requirements for NIMS Common Featured Set-Top Box Version 0.2 ("Draft Version 0.2")	22 March 2010
Pre-Submission Clarifications	Before 31 March 2010
Deadline for submission of responses to Draft Version 0.2	5 April 2010
Forum on IPTV Standards (II)	6 – 7 April 2010
Publish NIMS Reference Guidelines	End 2Q 2010
Publish NIMS Technical Specifications	From 3Q 2010

Table 2: Broad Activity Timeline

7 OTHER ADMINISTRATIVE INSTRUCTIONS

In preparing the responses to the Draft Version 0.2 document, participants should ensure that the following guidelines are met:

7.1 Language

7.1.1 The responses and all supporting data and documentation to be supplied by the participant shall be written in the English language.

7.2 Ownership of Document

7.2.1 All media and documents (if any) submitted by the participants in response to CF STB shall become the property of IDA and MDA. However, intellectual property in the materials originating from the participant and contained in the documents submitted by the participant shall remain vested in the participant.

7.3 Clarifications sought by IDA and MDA

7.3.1 In the event that IDA and MDA seek clarification on any aspect of the participant's submission, the participant shall provide full and comprehensive responses within seven (7) days of IDA's and MDA's request.

7.4 Clarifications by Participants

7.4.1 IDA and MDA reserve the right not to entertain clarification requests that are received after the respective deadline stipulated above, as well as clarification requests via telephone enquiries.

7.4.2 To ensure that all interested participants have a common level of understanding on the participation process and draft functional requirements document, IDA and MDA reserve the right to make such clarification, as may be necessary available to all interested participants.

7.4.3 Should any participant feel that any clarification should be deemed confidential or is otherwise subject to intellectual property restrictions, the participant can request that the clarification not be made public. Should IDA and MDA disagree with the participant on the nature of the clarification, the participant can request for a withdrawal of the clarification. Except as provided in this document, no information contained in or relating to the responses or submissions will be disclosed to any participant or other persons not officially involved in the submissions.

- 7.4.4 If there is any change or amendment of information to Part A of this document before the closing date, notification will be given through the issuance of an Addendum to Part A of this document on IDA's and MDA's websites. Participants are advised to check the agencies' websites stated above to ensure that the Addendum, if any, has not been missed before submitting their responses to this document.
- 7.4.5 If there is any change or amendment of information to Part B of this document before the closing date, notification will be given through the issuance of an Addendum to Part B of this document to the companies and/or entities that are authorized to receive Part B of this document. Please refer to Part A, Section 3 on details of how to obtain a copy of Part B of this document.
- 7.4.6 IDA and MDA reserve the right to make public a summary of any submission received. The submission may be quoted or referred to in subsequent publications or made available to 3rd parties. Any part of the submission considered commercially confidential should be clearly marked. IDA and MDA will take this into consideration when disclosing the information submitted. IDA and MDA will not publish the source of the submission.
- 7.5 Expense of Participants
- 7.5.1 All costs and expenses incurred by participants in the preparation and submission of its responses, as well as the engagement process shall be borne by the participants. IDA and MDA will not entertain any claims for such costs and expenses.
- 7.6 Inclusion of Consultants
- 7.6.1 IDA and MDA reserve the right to invite their consultants to participate as observers for related NIMS activities.

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ANNEX A.1 – COVER LETTER

To: Info-communications Development Authority of Singapore
8 Temasek Boulevard
#14-00 Suntec Tower Three
Singapore 038988

Attention: Ms Veronica Tan
Senior Manager (Next Generation Service Provisioning)

From: [Name of Participant], of [Entity/Company Name]

INVITATION TO PARTICIPATE IN PROJECT NIMS INDUSTRY DIALOGUE PHASE 2 – COMMON FEATURED SET-TOP BOX FUNCTIONAL REQUIREMENTS DOCUMENT (DRAFT VERSION 0.2)

We, the above named Participant, hereby submit our response to the IDP2 – Common Featured Set-Top Box Functional Requirements Document (Draft Version 2).

We understand that:

- (1) IDA and MDA are entitled to reject this response; and
- (2) this response is not intended to be legally binding.

We have read and understood the documents provided to us and that all information provided by us is accurate and true to the best of our knowledge and understanding.

Dated this _____ day of _____, 20__

Entity/Company Business Registration No:

Company's official Stamp:

Authorised Signature

Name:

Designation:

(The signatory should be an Authorised Officer in the company.)

ANNEX A.2 – PARTICIPANT’S CONTACT INFORMATION

1.	Name of Entity / Company:	_____
2.	Address:	_____
3.	Name of Contact Person (s):	_____
4.	Designation of Contact Person (s):	_____
5.	Telephone no:	_____
6.	Fax no.:	_____
7.	Email address:	_____

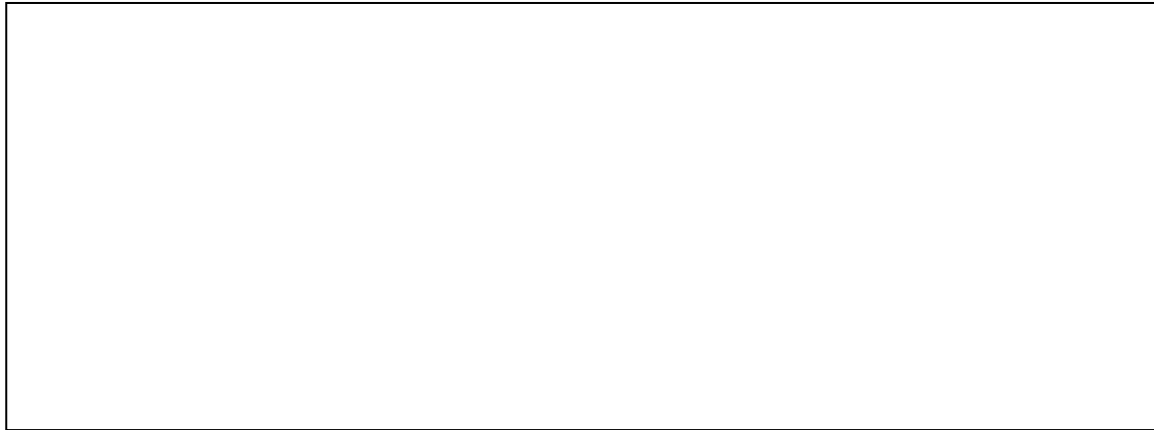
ANNEX A.3 – ROLES AND RESPONSIBILITIES OF PARTICIPANTS

S/N	Company Name	Principle Business Activity	Competencies & Areas of Expertise	Proposed Roles
1.	<Company Name>			<p><E.g. Content Provider, Pay TV retailer, CE Manufacturer></p> <p>Please provide responses on separate rows if company plans to play multiple roles.</p>

ANNEX A.4 – DETAILS OF PARTICIPATING TEAM (OPTIONAL)

1. Please describe the organization structure of the participating team, indicating the responsibilities and designation of each member of the participating team. These should be the personnel who will be attending and participating in Project NIMS on behalf of the participating company.

Please indicate “Not Applicable” if no detailed information is provided under ANNEX A.4.



ANNEX A.5 – ADDITIONAL INFORMATION BY THE PARTICIPANT (OPTIONAL)

The participant may list here or provide any additional information, such as company brochures, references or testimonials from clients, that is submitted with the document response.

Please indicate “Not Applicable” if no additional information is provided under ANNEX A.5.