



Project NIMS Common Featured Set-Top Box Functional Requirements

Draft Version 0.3
2 July 2010



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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 V0.1” document. The subsequent release, “Draft V0.2” document, was published on 22 March 2010). The NIMS Panel¹, which is co-chaired by IDA and MDA, and comprising key industry players, would use the 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 V0.1 and Draft V0.2 documents. 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.
- 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. As part of the Forum (I) activities, the IPTV standards bodies were invited to showcase implementations of their specifications in a small-scale exhibition. A similar event, Forum on IPTV Standards (II), was held on 6-7 April 2010. In this event, the chipset manufacturers were invited to showcase the capabilities and applications enabled by their chipsets.
- 1.5 IDA and MDA have incorporated key comments received during the submission of responses for Draft V0.2 document. These changes are reflected in the Draft Functional Requirements for NIMS Common Featured Set-Top Boxes (CF STB) document which is released on 2 July 2010 (hereafter referred to as “Draft V0.3” document). IDA and MDA would like to express their appreciation to the companies and entities for their inputs.
- 1.6 With the release Draft V0.3 document, IDA and MDA would like to invite the industry to provide further inputs, if any, to this revised document. Following which, IDA and MDA target to finalise the functional requirements for the purpose of standards recommendation by the NIMS Panel.
- 1.7 Specifically, the Draft V0.3 document seeks to:
 - 1.7.1 Invite interested companies and/or entities to provide further inputs, if any, to the revised Draft V0.3 document; and

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

1.7.2 Outline the upcoming key activities and timeline.

2 STRUCTURE

2.1 This document has been structured as follows:

2.1.1 PART A – Overview & Administrative Instructions: Part A outlines the administrative instructions for companies and/or entities that wish to provide inputs to Draft V0.3 Document.

2.1.2 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.

2.1.3 The structure and content of this document is listed in Table 1 below.

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 V0.3 Document	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 2 July 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 companies and entities that had provided inputs to Draft V0.1 and V0.2 documents, Part A and B of Draft V0.3 document 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 V0.1 and/or Draft V0.2 documents and are interested to provide inputs to Draft V0.3 document 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 V0.3 Document)**".

(a) For companies and/or entities that had not participated in the NIMS Industry Dialogue Phase 1 or 2, 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 or 2, they are only required to provide **Annex A.1** and **Annex A.2**, or 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 V0.3 document is to finalise and seek comments, if any, 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 V0.2 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 V0.3 document. 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 V0.3 document. 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 V0.1 document, IDA and MDA had established 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. There are no further updates to the Stage 2 activities.

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 V0.2 document.

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

5 ADMINISTRATIVE INSTRUCTIONS FOR INPUTS TO DRAFT V0.3 Document

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 0.3 document, if any, and aim to finalise a version of the draft functional requirements.

5.1.2 For the companies and entities that had provided inputs to the earlier Draft V0.1 and V0.2 documents, this revised Draft V0.3 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 V0.1 or V0.2 documents and are interested to provide inputs to Draft V0.3 document, 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 For any submission, 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, if any, shall be submitted to the following address in securely enclosed envelopes:

5.5 Submission of Responses to Project NIMS – Functional Requirements Document

Ms Veronica Tan

Senior Manager (Next Generation Programmes Office)

Infocomm Development Authority of Singapore

8 Temasek Boulevard

#14-00 Suntec Tower Three

Singapore 038988

5.6 Post Submission Activities

5.6.1 Upon receipt of the submission of comments to the Draft V0.3 document, IDA and MDA may invite participants to present their response or seek clarifications to the participants' submission.

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

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

5.7 Addendum to Draft Functional Requirements

5.7.1 IDA and MDA will inform participants who have submitted responses should there be any change or amendment of information to the Draft V0.3 document. 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.

5.7.2 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. The timeline described below could be subject to further changes.

Milestones	Date
Issue Draft Requirements for NIMS Common Featured Set-Top Box V0.3 Document ("Draft V0.3" Document)	2 July 2010
Publish NIMS Prelim Reference Guidelines	Q3 2010
Publish NIMS Final Reference Guidelines	Q1 2011

Table 2: Broad Activity Timeline

7 OTHER ADMINISTRATIVE INSTRUCTIONS

7.1 In preparing the responses to the Draft V0.3 document, participants should ensure that the following guidelines are met:

7.2 Language

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

7.3 Ownership of Document

7.3.1 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.

7.4 Clarifications sought by IDA and MDA

7.4.1 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.

7.5 Clarifications by Participants

7.5.1 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.

7.5.2 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.

7.5.3 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.

- 7.5.4 If there is any change or amendment of information to Part A of this document, 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 for any Addendum.
- 7.5.5 If there is any change or amendment of information to Part B of this document, notification will be given through the issuance of an Addendum to Part B of this document to the companies and/or entities that are authorised 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.
- 7.5.6 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.
- 7.6 Expense of Participants
- 7.6.1 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.
- 7.7 Inclusion of Consultants
- 7.7.1 IDA and MDA reserve the right to invite their consultants to participate as observers for related NIMS activities.

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 Programmes Office)

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 V0.3 Document)**

We, the above named Participant, hereby submit our response to the IDP2 – Common
Featured Set-Top Box Functional Requirements Document (Draft V0.3 Document).

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:	_____

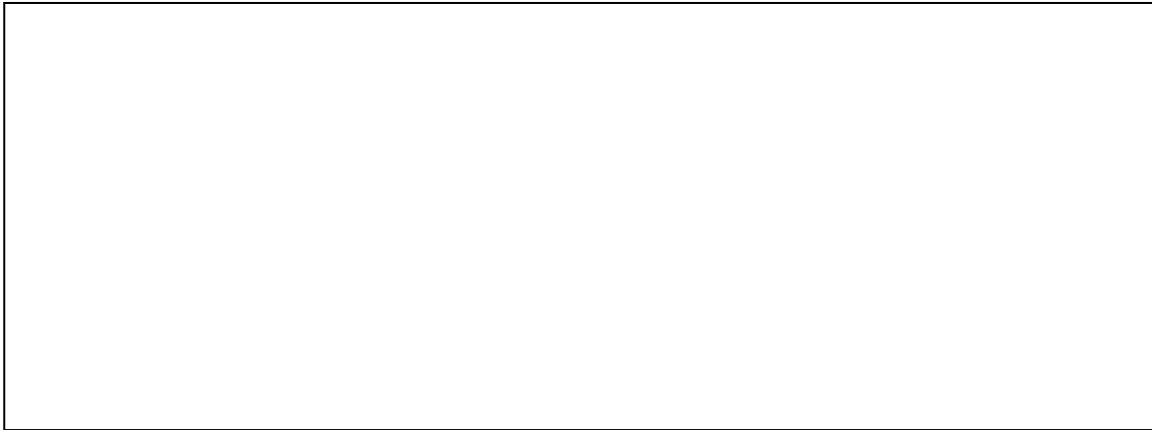
ANNEX A.3 – ROLES AND RESPONSIBILITIES OF PARTICIPANTS

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

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.