

SINGAPORE STANDARD

Specification for eLearning framework

– Part 1 : An overview



Published by

SPRING
singapore
Enabling Enterprise

SS 496 Part 1 : 2001
(ICS 35.240.99)

SINGAPORE STANDARD

Specification for eLearning framework

– Part 1: An overview

All rights reserved. Unless otherwise specified, no part of this Singapore Standard may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from SPRING Singapore at the address below:

Standards
SPRING Singapore
1 Fusionopolis Walk,
#01-02 South Tower, Solaris
Singapore 138628
Email : standards@spring.gov.sg

ISBN 9971-67-892-6

This Singapore Standard was approved by Information Technology Standards Committee on behalf of the Standards Council of Singapore on 26 December 2001.

First published, 2002

The Information Technology Standards Committee appointed by the Standards Council consists of the following members:

	Name	Organisation
Chairman	: Mr Wilson Tan	<i>Standards Council</i>
Secretary	: Mr Benedict Wee	<i>Infocomm Development Authority of Singapore</i>
	Ms Thay Yean Lan	<i>Infocomm Development Authority of Singapore</i>
Members	: Assoc Prof Chi Chi-Hung	<i>National University of Singapore</i>
	Ms Susan Chong	<i>Singapore Productivity and Standards Board</i>
	Prof Robert Gay	<i>Singapore Computer Society</i>
	Prof Angela Goh	<i>Nanyang Technological University</i>
	Dr Derek Kiong	<i>Institute of Systems Science</i>
	Mr Raymond Lee	<i>Infocomm Development Authority of Singapore</i>
	Dr Low Hwee Boon	<i>Kent Ridge Digital Labs</i>
	Mr Alvin Ong	<i>Information Technology Management Association</i>
	Mr Wee Tew Lim	<i>Singapore Information Technology Federation</i>
Co-opted Members	: Mr Chee Lai Yong	<i>Individual Capacity</i>
	Dr Diana Young	<i>Association of Small and Medium Enterprises</i>

The Technical Committee on Learning Standards appointed by the Information Technology Standards Committee and responsible for the preparation of this standard consists of experts from the following organisations:

	Name	Organisation
Chairman	: Mr Hee Joh Liang	<i>Popular e-Learning Holdings Pte Ltd</i>
Secretary	: Mr Lim Kin Chew	<i>Temasek Polytechnic</i>
Members	: Mr Francesco Della Casa	<i>Infocomm Development Authority of Singapore</i>
	Mr Chan Heng Kee	<i>Ministry of Manpower</i>
	Mr Chan Ping Wah	<i>National Library Board</i>
	Assoc Prof Cheah Horn Mun	<i>National Institute of Education</i>
	Mr Chng Eng Leok	<i>Singapore Computer Systems Ltd</i>
	Mr Jansen Chua	<i>Infocomm Development Authority of Singapore</i>
	Assoc Prof Koh Thiam Seng	<i>Ministry of Education</i>
	Mr Philips Lai	<i>Sun Microsystems (Singapore) Pte Ltd</i>
	Dr Lee Tsao Yuan	<i>Skills Development Centre Pte Ltd</i>
	Mr Samuel Ng Hong Kok	<i>Institute of Technical Education</i>
	Mr Sim Wee Chee	<i>Ednovation Pte Ltd</i>
	Mr Tan Hong Choon	<i>Institute of Technical Education</i>
	Mr Tan Yap Kwang	<i>Ministry of Education</i>

Members : Ms Tham Yi Chuey *IMS Asia Centre, Kent Ridge Digital Labs*
Mr Colin Yam Chin Kwan *Times Publishing Limited*

The eLearning Specification Working Group appointed by the Technical Committee to assist in the preparation of this standard comprises the following members:

	Name	Organisation
Convenor	Mr Lim Kin Chew	<i>Temasek Polytechnic</i>
Members	Mr Eugene Hiew Fook Jin	<i>National University of Singapore</i>
	Mr Alfred Hong	<i>Singapore Polytechnic</i>
	Ms Kwek Siew Wee	<i>Nanyang Polytechnic</i>
	Mr Lee Boon Seng	<i>Defence Science & Technology Agency</i>
	Ms Julie Lim Poh Gek	<i>Nanyang Technological University</i>
	Mr Samuel Ng Hong Kok	<i>Institute of Technical Education</i>
	Ms Tan Joo Khim	<i>Ngee Ann Polytechnic</i>
	Ms Mary Tan	<i>National Library Board</i>
	Ms Teng Geok Lin	<i>Ngee Ann Polytechnic</i>
	Ms Tham Yi Chuey	<i>IMS Asia Centre, Kent Ridge Digital Labs</i>
	Mr Thong Chee Hing	<i>Ministry of Education</i>
	Mr Jonathan Yong	<i>Defence Science & Technology Agency</i>

(blank page)

Contents

	Page
Foreword _____	6
0 Introduction _____	7
1 Scope _____	7
2 Definitions _____	7
3 Standards making process _____	8
4 Rationale for framework _____	8
5 Reasons for an eLearning framework _____	10
6 Target audience _____	10
7 Relating to learning standards grouping _____	11
8 Conceptual model _____	12
9 Use of eLearning specifications in SeLF _____	12
10 Design goals _____	13
11 Usage _____	13
12 Details of SeLF components _____	14

ANNEXES

A List of reference websites _____	27
B Glossary of terms _____	29

TABLES

1 International eLearning standards initiatives _____	9
2 Components of the Singapore eLearning framework _____	11
3 Use of eLearning specifications in SeLF _____	13

FIGURES

1 Standards making process _____	8
2 SeLF conceptual model _____	12
3 Example of meta-data – Labels on a can _____	15
4 Using learner information in many areas _____	16
5 Competency definitions are useful in many situations _____	18
6 Aggregating and disaggregating learning objects _____	19
7 Assessment and progress tracking _____	21
8 The eBook industry _____	23
9 The wide scope of enterprise integration _____	24
10 Digital rights management is useful to everybody _____	26

Foreword

This Singapore Standard was prepared by the Learning Standards Technical Committee (LSTC) under the direction of the IT Standards Committee. The LSTC is responsible for tracking, developing and promoting standards on learning in Singapore.

This Framework is based on current internationally accepted specifications and practices. Such a framework will enable all the eLearning players (e.g. the eLearning service providers, the learning management system providers, the educators, the learners, the technology providers, the eLearning system integrators and the technology providers) in Singapore to benefit as they do not have to spend much time, money and effort tracking and monitoring the many different eLearning specifications. Ultimately, it is hoped that we can have more quality courseware developed for the learners in this part of the world. With more quality courseware developed, we will be able to achieve better learning.

This Framework comprises the following parts under the general title of Specification for eLearning framework, namely:

Part 1: An overview

Part 2: Learning resource identification (issued with Part 1)

Part 3: Learner profile (to be scheduled)

Part 4: Competency definitions (to be scheduled)

Part 5: Learning content packaging (to be scheduled)

Part 6: Assessment and progress tracking (to be scheduled)

Part 7: eBook (to be scheduled)

Part 8: Enterprise integration (to be scheduled)

Part 9: Digital rights management (to be scheduled)

In view of the rapid changes in IT, the Internet and the educational environments, the above standards will be reviewed and revised regularly. Other parts will be added whenever necessary. The LSTC will be responsible for adopting, developing and promoting the relevant standards for the different components of the Framework.

NOTE

1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.*
2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

Specification for eLearning framework – Part 1 : An overview

0 Introduction

Clauses 1 to 11 introduces the background and the rationale for setting up the eLearning framework and the objectives of having such a framework. It also maps the framework components with an international framework model and makes recommendations on the specific eLearning specifications that the framework components are based on. The target audience and key design goals of the framework are identified. The rest of the standard from Clause 12 onwards provides a summary of the individual SeLF framework components.

1 Scope

This multipart standard specifies the eLearning framework that provides a comprehensive approach to developing courseware that are able to interoperate in different learning environments, be reusable and provide adequate mechanism to safeguard the intellectual property of the content providers.

This framework does not address the following areas:

- Actual system implementation;
- Application system flow;
- Programming language details;
- Database design structure;
- Process flows;
- Transaction mechanisms;
- Exception processings and;
- Other implementation details.

The above are best left to the actual implementing organisations and companies, which have been contracted to implement the actual systems.